

## Blue Gold Program

Bangladesh Water Development Board Campus

Town Kalikapur, Patuakhali

### Report on Vegetables Post Harvest Handling, Management and Business Skill Development Training

**Introduction:** Vegetables are the most perishable agricultural products. One-third of food produced for human consumption is lost or wasted globally. The loss at BGP polder area is also a serious concern. In polder area farmers are not aware about post-harvest losses, causes of post-harvest losses and way to reduce post-harvest losses. Food is wasted throughout the supply chain, from initial agricultural production down to final household consumption. A major portion of produced vegetable is wasted due to quality standards, i.e. rejecting food items, due to imperfect shape or not desirable appearance. Blue Gold has limited resources and preventing food loss should be out utmost priority. So Blue Gold program organized the training for Resource Farmers (RF) on postharvest handling, management and business skill development in order to reducing post-harvest losses for higher income and reduce rejection. Later on, these trained Resource Farmer will play vital role to disseminate knowledge and skills on post-harvest handling and management to the Water Management Group's.

**Venue of the training:** The venue of the first batch training was Patabunia Adarsha Krishi and Technical College in Golachipa upazila in 55/2C polder and 2<sup>nd</sup> batch training venue was in Baliatoli union parishad in Kolapara upazila of Patuakhali district in Polder 47/4

**Duration of the training:** This was a one-day training from 9 Am to 5 Pm.

**Participants:** A total of 49 Resource Farmer from four polder participated the training program. Of them 26 were Male and 23 were female Resource Farmers.



Figure 1: Participants in the training

**Number of batch of the training:** Two batches training on post-harvest handling, management and business skill development were organized in Polder 55/2A+ 55/2C and 47/3+47/4 on 24 December'2019 and 12 January'2020 respectively

**Facilitators:** Two facilitators were hired for each batch of the training from two government organizations. A scientific Officer from Bangladesh Agriculture Research Institute, Labukhali, Patuakhali and another one from DAE (Agriculture Extension Officer-Golachipa) facilitated 1<sup>st</sup> batch training and Upazila Agriculture Officer and Sub Assistant Agriculture Officer of Kolapara facilitated the 2<sup>nd</sup> batch training. All the facilitators had enough theoretical and practical experience on post-harvest handling and management and their facilitation were very smart. Besides there were four vegetables traders were invited the training who practically shown how to grading, sorting, cleaning/washing, packaging transporting and why these operations are so important for better quality of products and for better

price. In addition, the traders discussed about some improved equipment's presently uses for vegetables carrying to reduce post-harvest losses.

**Sessions:** There were main five sessions in whole day program which are -1. Vegetables harvest, maturity and post-harvest management losses2. Vegetables post-harvest process3. Major vegetables maturity and time of harvesting4. Vegetables post harvesting technique5. Profit loss calculation in business and business planning.

1<sup>st</sup> session on vegetables harvest, maturity and post-harvest management losses

The facilitators mainly discussed on causes of post-harvest losses. The causes of post-harvest losses are, harvesting of immature or over mature vegetables, not maintain properly sorting and grading, low temperature and humidity during storing, cleaning/washing were not done properly, delay marketing etc. and the ways to minimize the losses in different stages. The facilitators also discussed the types of post-harvest losses like Biological, chemical, mechanical and physical.

In 2<sup>nd</sup> session - vegetables post-harvest process

The main discussion points were-

- Harvesting process of different vegetables
- Types of maturity of vegetables (harvesting, physiological, commercial or horticultural maturity)
- Pre-cooling systems of vegetables
- Cleaning of vegetables
- Drying
- Sorting and grading
- Packing and packaging and
- Transporting etc and how these factors can influence the quality as well as pricing of vegetables.

In 3<sup>rd</sup> session - Major vegetables maturity and time of harvesting, the main discussion points of the session were, how many days different vegetables became suitable for harvesting. Below is given some examples -

- Sweet gourd is harvest after 3-4 months of seed sowing
- Bottle gourd is harvest 12-15 days after flowering
- Bitter gourd is harvest 50-60 days after germination and 15-20 days after flowering
- Ash gourd is harvest after 14-16 days of flowering



Figure 2: Scientific Officer of BARI facilitated session



Figure 3: AEO of DAE facilitated session



Figure 4: UAO of DAE facilitated session



Figure 5:SAAO of DAE facilitated session

- Country bean harvesting depends on different variety. Normally it is suitable for harvesting after 95-145 days after seed sowing
- Red Amaranth is harvest with 20-25 days
- Pink amaranth is harvest with 6-7 weeks

Besides the facilitators discussed on maturity symptoms of tomato, cabbage, cauliflower, carrot, brinjal, yard long bean, snake gourd, cucumber etc. The time of harvesting is very important for every crop. Quality will be deteriorated, demand will be going down, market price will be fall, farmers will not get fair price if vegetables are not harvest in proper time.

In 4<sup>th</sup> session on vegetables post harvesting technique

The following points were discussed –

Tomato, brinjal, cucumber, bitter gourd, yard long bean, country bean etc, the following activities have to be done for good quality of products and for better price-

Harvesting----- sorting-----cleaning-----drying-----  
-----grading-----packing-----transporting-----  
marketing.

Cauliflower= Harvesting-----sorting-----grading-----packing--  
---transporting-----marketing

Cabbage= Harvesting-----sorting-----grading----- Air drying---  
-----packing-----transporting-----marketing.

From the above it was clear that many steps have to be done in every vegetable after harvesting. If a farmer properly maintains every step, he or she can reduce post-harvest losses resulting gets good market price.

5<sup>th</sup> Session: Profit loss calculation in business and business planning

The session was facilitated by Business Development Coordinator of Blue Gold program. The main objective of the session was to keep the record of different transections i.e. income and expenditure in different times so that end of the business the RF can calculate profit or loss which help them to make decision and to orient them about business planning, its importance and make a simple template which will they use for future expansion of business.



Figure 6: practical session by traders



Figure 7: Demonstrated cauliflower rapping by newspaper



Figure 8: Traders in the session



**Output of the training:**

- Active participation of female RF's who are mainly involved with major post-harvest management activities in homestead vegetables cultivation and management
- Participants are introduced with new carrying equipment's like use of plastic crat, bamboo basket, plastic bag etc and its importance to reduce the post-harvest losses.
- Participants acknowledged that they had light knowledge on post-harvest management. They have seen such types of equipment's but never thinks that these equipment's have great impact to reduce the post-harvest losses in different stages of vegetables
- Participants said that some but very simple important tips like sorting, grading and cleaning of tomato, radish and country bean can play vital role for attracting buyers and getting higher price in the market.
- The participants informed that over mature or immature harvesting is crucial factors not only for post-harvest losses but also factors for good quality of products
- The traders informed that if the farmers simply rapping the head of cauliflower by newspaper, no spot will be on the head. The demand and market price of that cauliflower will definitely more than spotted cauliflower
- Through the training a business linkage has been established between RF's and traders