

Training report

Post-harvest Project Grant Report: Training Post-Harvest Handling Practices of Avocado Growers in Southern Part of Ethiopia



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1) Background of the report:

Food insecurity is a great problem worldwide and Ethiopia is one of the sub-Saharan countries that is suffering from poverty and food insecurity. To increase food security it is important to focus on ways to decrease post-harvest losses of food products and not only have the productivity of agriculture in focus. The Southern part of the country is dominated by fruit and vegetable production; accordingly, the research data indicated a high post-harvest loss in the region. The main reasons expected for this loss were lack of awareness among the farmers, lack of infrastructure, and weak market linkages. We proposed a post-harvest education grant to train the farmers that were expected to increase the farmers' awareness of post-harvest handling practices. We proposed the model farmers in the area for training them on the perspective of post-harvest handling practices of the avocado fruit.

2) Training accommodations and Evaluation checklist questionnaires preparation

Before a month, the training accommodations like identification of the training hall, arranging a coffee break and lunch, and identification of transportation system were arranged with Agricultural workers who are working in the selected area. We identified the Wondo-Genet Agricultural Research Center of Ethiopian Institute Agricultural Research to address the training hall and others accommodations needed for training. We budgeted for a coffee break, lunch, and other training materials and allowance for training participants, while the training hall and transportation facilities were offered by the Wondogenet agricultural research center management system without a fee.



Fig 1: Training hall and materials at Wondogenet Agricultural Research Center, EIAR

Before the training, a poster entitled “Improving Post-Harvest Handling of Avocado Fruit” was developed and printed. But also, checklist-based questionnaires were developed to collect feedback from the trainees. The checklists were prepared to identify problems associated with post-harvest loss and recommendations to address the problems from farm practices to markets. The checklists were based on different groups of post-harvest stakeholders (model farmers, researchers, and agricultural extension workers). The detail of the checklists prepared for different respondents was attached as appendix I



Fig 2: Welcoming Speech by Center Director, Wondogenet Agricultural Research Center

3) Training Participants Selection Approaches

A total of 50 participants of the training were selected with the help of the local agricultural office with Agricultural extension workers. The model farmers of avocado growers were identified and communicated the day of training at the Wondo-genet agricultural research center. **But also, five researchers** from the research center who are working on post-harvest research area, Agricultural Extension, Food Science were included in the training. This was intended to collect the feedback from avocado growers to researchers to improve food security through reducing the post-harvest loss of perishable crops.

4) Training Delivering approaches

Due to some security issues, the modality of delivering approach was modified by representing the post-harvest specialist to delivering training at the training site. The post-harvest specialist (**Abdela Befu**) was trained online by the principal investigator (**Abdi Keba**) before training of the farmers began. We offered the training materials as they could take notes from the presentation. The presenter used different approaches to deliver the training. Namely, 1) the contents of the training like harvesting methods, transportation, cooling, storage practices were presented for all participants.





Fig 3: Presentation of post-harvest handling practices of the Avocado fruit

2) Group discussion after the contents of the training presented. 3) Lastly, individually, all of the participants were interviewed for future recommendations to reduce the post-harvest losses of fruit and vegetables.



Fig 4: Orientation and group discussion of trainees on improving avocado post-harvest handling

5) Training close up

The trainees were interviewed using prepared checklists and voice recorded. The participants from the researchers involved in the interview in addition to the farmers participated in the training. The interview was classified for researchers who are working on post-harvest agricultural extension and food science research programs. Additionally, we included agricultural workers who are working at agricultural offices for an interview. We used the sound recording system to record their response during interview time and recorded sound is now being written and taken as qualitative data. The data will be uploaded for statistical analysis using NVIVO software to generate outputs through statistical analysis, which will be used for publication. The closing up of the training was done by the Center Director of the Wondo-Genet Research center.

6) The Next Plan

During the interview, the sound from the respondents was recorded and stored. For next time, the recorded sound will be written in MS Word and inserted into NVIVO software for further statistical analysis to compile training participants' perceptions and recommendations.

Appendix I: Research questionnaires prepared for training participants

The research questions prepared for Post-harvest researchers

Your Opinions are valuable for the food and nutrition security of our country

1) What do you think, the reasons related to the low attention of post-harvest research for fruits and vegetables in our country? Hint, the research can be either science or technology-based which is expected useful for our local farmers?

1) በአገራችን ለአትክልትና ፍራፍሬ የሚደረገው ጥናት ከድህረ ምርት አያያዝ ዝቅተኛ ትኩረት ጋር የተያያዙ ምክንያቶች ምን ይመስልዎታል? ፍንጭ: ምርምሩ ሳይንስ ወይም ቴክኖሎጂ ላይ የተመሰረተ ሊሆን ይችላል ይህም ለአካባቢያችን አርሶ አደሮች ይጠቅማል ተብሎ ይጠበቃል....

2) What do you think, the solutions/improvements needed to address the weakness of the post-harvest research problems mentioned above?

2) ከላይ እንደተጠቀሰው የድህረ ምርት ጥናት ችግሮችን ለመቅረፍ የሚያስፈልጉ መፍትሄዎች/ማሻሻያዎች ምን ይመስላችኋል?

The research questions prepared for Agricultural Extension researchers

Your opinions are valuable for food and nutrition security of our Country

1) What do you think, the problems related to the weakness of Post-harvest Agricultural extension research in our country? Hint, linking science or technology-based research with rural fruit growers?

1) ከግብርና ኤክስቴንሽን ጥናትና ምርምር ጋር ተያይዞ የአትክልትና ፍራፍሬ ችግሮችን ድህረ ምርት አያያዝ ምን ይመስላችኋል? ፍንጭ: ሳይንስን ወይም ቴክኖሎጂን መሰረት ያደረጉ ምርምሮችን ከገበሬዎች ጋር ማገናኘት.....

2) What are your main opinions to improve the problems or difficulties of post-harvest agricultural extension research mentioned as per the first research question?

2) የድህረ ምርት የግብርና ኤክስቴንሽን ምርምር ችግሮችን ለማሻሻል ዋና አስተያየቶቻዎ ምንድን ናቸው?

The research questions prepared for developmental agent workers

Your opinions are valuable for food and nutrition security of our Country

1) What do you think the extent of fruit or vegetables post-harvest management works is being practised by DA with the farmers? Hint, the practices can be introduced from

Universities, Research Institutions, Non-government organizations, or local agricultural bureaus.

- 1) የአትክልትና ፍራፍሬ ድህረ ምርት አያያዝ ስራዎች በዲኤ እና አርሶ አደሩ ጋር ምን ያህል እየተሰራ ነው ብለው ያስባሉ? ፍንጭ፣ ልምዶችን ከዩኒቨርሲቲዎች፣ ምርምር ተቋማት፣ ሙንግሥታዊ ካልሆኑ ድርጅቶች፣ ወይም ከአካባቢው የግብርና ቢሮዎች ሊሆኑ ይቻላሉ.....
- 2) What are your main opinions to improve the practices of the fruit or vegetables post-harvest management with local farmers?
- 2) የአትክልትና ፍራፍሬ ድህረ ምርት አያያዝን በገበሬ ደረጃ ለማሻሻል ዋና አስተያየቶችዎ ምንድናቸው?

The research questions prepared for the selected model farmers

Your Opinions are valuable for the food and nutrition security of our country

- 1) Do you think a post-harvest loss of fruit and vegetables is affecting your household income? Hint, imbalance of cost and labour needed for fruit production vs cost of fruit sold annually
- 1) የአትክልትና ፍራፍሬ ድህረ-ምርት ብክነት የቤተሰብዎን ገቢ እየጎዳ ነው ብለው ያስባሉ? ፍንጭ፣ ለፍራፍሬ ምርት የሚያስፈልገው ወጪ እና ጉልበት አለመመጣጠን በየዓመቱ ከሚሸጠው የፍራፍሬ ዋጋ ጋር.....
- 2) What do you think, the main reasons for post-harvest losses of fruit and vegetables at your farm? Hint, your reasons can be lack of awareness, harvesting, transportation, or storage/ cold chain problems.
- 2) ከተሰበሰበ በኋላ የፍራፍሬ እና የአትክልት መጥፋት ወይም ብክነት ዋና ምክንያቶች ምን ይመስላችኋል? ፍንጭ፣ የእርስዎ ምክንያቶች የግንዛቤ እጥረት፣ የመሰብሰብ፣ የመጓጓዣ፣ ወይም የማከማቻ/የቀዝቃዛ ሰንሰለት ችግሮች ሊሆኑ ይችላሉ.....

The research questions prepared for the group one selected model farmers

Your Opinions are valuable for the food and nutrition security of our country

- 1) Do you think the fruit and vegetable market is well addressed to take over farmers' products for processors or consumers? Hint, the existence of an opportunity for farmers to sell their products.

- 1) የአትክልትና ፍራፍሬ ገበያ የገበሬዎችን ምርት ለአቀነባባሪዎች ወይም ለሽማቾች ለመውሰድ ጥሩ መፍትሄ የተደረገ ይመስልዎታል? ፍንጭ፣ ገበሬዎች ምርቶቻቸውን የሚሸጡበት ዕድል መኖሩ.....
- 2) What kinds of support do farmers need to reduce the fruit and vegetables post-harvest loss and increase household income from their products?
- 2) አርሶ አደሩ የአትክልትና ፍራፍሬ ድህር ምርት ብክነት ለመቀነስ እና ከምርታቸው የሚገኘውን የቤተሰብ ገቢ ለማሳደግ ምን አይነት ድጋፍ ያስፈልጋቸዋል?