



EVALUATION REPORT
June 2003

Six month follow-up on the
Postharvest Handling and Transportation Training of Trainers Workshop
September 2 - 4, 2002, Accra, Ghana

Submitted to:
Market Access Working Group
U.S.–Ghana CCARD

Submitted by:
U.S. Postharvest Training Team
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Summary

The postharvest handling “train the trainers” workshop, funded through the Market Access Working Group of CCARD, was successfully held from September 2-4, 2002 in Accra, Ghana. Through effective collaboration between employees of the U.S. Department of Agriculture, Ghana’s Ministry of Food and Agriculture, AMEX International, the University of California in Davis, and Extension Systems International, the program met its goals by providing detailed information specific to 34 growers and exporters of fresh fruits and vegetables in Ghana. The workshop’s success was enhanced by the selection and participation of eager, knowledgeable, and willing participants.



A follow-up evaluation survey was administered approximately 6 months after the training was completed. The objective was to identify if and how the postharvest/transportation practices training has been utilized in Ghana by the participants and to determine the most effective ways to maintain the enthusiasm of the trainees and assist these new trainers in passing on the information and skills they have gained to horticultural producers in Ghana.

Background

During the week long pre-training postharvest assessment by Dr. Kitinoja and Mrs. Reichert in March 2002, three topic areas emerged as key problems and the source of bottlenecks and high costs during the movement of fresh produce from farm to market or port in Ghana:

- Preparation for market.
- Cooling practices.
- Transportation practices.

These three topic areas are closely related to one another, and a study of one reinforces the others. The overall training goal of the September 2002 program was to introduce an integrated post-harvest handling system that will assist exporters to:

- Reduce physical losses.
- Protect produce quality.
- Ensure food safety.
- Maintain economic value.
- Reduce handling costs.
- Increase profits.

The key commodities chosen for focus during the training seminar were:

- Pineapple
- Papaya
- Mangoes
- Yams
- Chilies
- Sweet potato
- Eggplant
- Okra
- Ginger
- Avocado
- Green beans
- Watermelon

The training was designed to “train the trainers” so that the information could be extended throughout the greater Accra farming region. The training team consisted of four postharvest and transportation specialists (Kitinoja, Reichert, Adel A. Kader and Brian McGregor), along with an in-country specialist on food safety (Emmanuel Owusu). The Market Access Working Group for CCARD chose the participants and training venue (La Palm Hotel) and handled the in-country logistics. Participants were current growers and exporters of the key commodities, key trade association representatives, administrators of farmer organizations and MOFA employees who work directly with the above growers, exporters, and associations.



In order to provide as much practical information as possible during the three days of training, various training methods were used, including lectures, audio-visual presentations, hands-on demonstrations, and site visits. The training was organized into three modules:

Module 1: Harvesting and Preparation of Fruits and Vegetables for Market

Module 2: Cooling Practices and Relative Humidity Management for Fresh Produce

Module 3: Improving the Transportation of Fruits and Vegetables in Ghana

Each participant received a copy of each of the major training references, an inexpensive calculator and a digital thermometer as well as a copy of the Training CDROM. A Training Materials Kit, including tools such a thermometer, refractometer, penetrometer and sizing devices plus additional reference materials such as a Postharvest Textbook, the Training CDROM and color charts, was left in the keeping of the MOFA Postharvest Management Division, to be made available on a “check-out” basis to those trainees who were ready to conduct their own postharvest/transportation training programs for local clientele.

Evaluation Methods

Dr. Kitinoja and Mrs. Reichert prepared a draft version of the evaluation survey in February 2003 and submitted it to the CCARD Market Access Working Group for their review and input during March 2003. When the draft was finalized, the survey was prepared and printed and sent to Ghana for collection of data from the participants.

Data collection was performed using a “drop-off, pick-up” method by MOFA personnel. Results were collected in Ghana during March and April and the surveys were returned to the USDA Washington office in May 2003. See Appendix A for the survey questions and Appendix B for the instructions for administering the survey.

Twenty six of 34 surveys were returned for a response rate of 76 percent. An additional six surveys were promised during June but were not received in time to be included in the analysis. Hand written responses were compiled by Heidi Reichert and the quantitative data was coded and entered into a simple MSExcel spreadsheet and analyzed by Dr. Kitinoja.

Results/ Demographics

The trainees represented a wide range of horticultural clientele. Each respondent to the evaluation survey for the training program reported themselves to be involved in horticultural activities, most as either an extension professional (6 individuals), a farm manager (5 individuals) or a farm organization administrator (8 individuals). The others indicated they were either grower/exporters (4), involved in horticultural transport (1) or in various consulting

activities. Several individuals described themselves as having specialties related to horticulture such as crop protection, trade promotion, cold storage, or worked on the Standards Board or in agricultural technology training.

Most of the respondents (85%) reported that they were involved with multiple horticultural crops, about half with fruits and the other half with vegetables. The remaining 15 % were mostly working with



pineapples. Most respondents were male (73%), the average age was 39 years old (range 26 to 62), and most had either college (12 individuals) or graduate level education (9 individuals). Overall, the 26 respondents were representative of the original 34 participants in their general demographics, affiliations and characteristics.

Results/ Reactions to Training and Practice Changes

Respondents reported that they felt the training had been “very useful to me” (rated 4.6 out of a possible 5.0, where 5.0 = strongly agree). When asked whether they needed more training before they could consider themselves a “Postharvest Trainer” the answer was generally neutral (3.4), since most respondents felt they had gained a lot from the training and were ready to use it in their work.

Across the board, respondents felt that the training provided useful knowledge (rated 4.4) and skills (rated 4.6). They felt it was important for Ghana to develop local postharvest trainers (4.6) and agreed that “becoming a postharvest trainer is a good opportunity for my future career” (4.3).

When asked whether they had used the training aids or demonstration materials provided as part of the September 2002 training, 22 of 26 (85%) reported that they had done so. All the training materials were reportedly used, including the manuals, postharvest textbook, produce fact sheets, EUREPGAP manual, training CDROM, Internet links and cost/benefit worksheets. The most used training aids reportedly were:

- EUREPGAP Standards Manual (61%)
- Small Scale Postharvest Handling Practices Manual (58%)
- Training CDROM (50%)



When asked which of the training aids were the most useful, 85% indicated the Small-Scale Postharvest Handling Practices Manual (developed at UC Davis), and 38% indicated the Training CDROM. Both these training aids were specifically designed for this training program (the USDA sponsored the update and reprinting of the existing UC Davis Small-Scale Manual in July 2002, and the CDROM is a collection of non-copyrighted postharvest and transportation reference materials, the presentations given by Drs. Kader, Kitinoja, Owusu, Mr. McGregor and Ms. Reichert, a variety of UC Davis reference works, USDA Agricultural Handbooks, demonstration examples, internet links and much more.

Several respondents indicated that their current work dictated that they focus upon EUREPGAP activities, and they anticipated having more time to devote to general postharvest/transportation training once this was completed.

Growers, Transporters and Marketers

Of the 10 respondents who indicated that they considered themselves primarily to be either growers, transporters or marketers, 90% reported that as a result of the postharvest training they had made changes in production, handling, storing, transportation or other related practices for the commodities they handle and had already started seeing benefits.

Some examples of changes in practices:

- Using Field Packing to reduce handling steps and reduce damage.
- Early harvesting before sunrise (during cooler temperatures)
- Use of shade after harvest (construct using poles and cloth)
- Use of thermometer to demonstrate need for use of shade, and using a shed for packing instead of leaving produce in the sun
- Harvested fruits are not allowed to stay in the sun but immediately transported to the packing house. At the packing house, fruits are not thrown about and are carefully handled.
- Set up customer's use of instruments such as thermometers
- Checking brix of fruits before harvest
- Checking temperature of fruits at farm and ports
- Using good hygiene
- Doing Cost/ Benefit analysis
- Improving our packing in our trucks.
- Make staff frequently aware of careful loading, brix, color, shade, sun, temperature, etc. We attracted more specialized export managers from Ivory Coast.



Respondents reported that their produce “looks much fresher at the time of shipment” and there is increased use of shade, temperature measurement and gentler handling. There is even evidence that buyers are taking more interest in Ghana’s fresh products—90% of these respondents report that the number of complaints from buyers have been going down, and that there is much less wasted product.

Additional examples of specific benefits include (as listed by respondents in no specific order): Higher demands from customers, positive feedback from buyers (4), higher returns (2), increase in production, less damage (bruising), higher quality products, save time in loading and load trucks better, reduced cost of production, higher yields and quality product for which buyer are ready to pay a higher price.

When this sub-group was asked about the types of obstacles they faced when trying to implement postharvest/transportation training changes, only a few obstacles were reported. Three people (30%) indicated that there were no funds for making changes, two people could not obtain the needed tools or equipment and one person reported that he had not yet had the chance to try out any of the recommended practices for himself.

Extension officers, Farm Organization Administrators and Farm Managers

Twenty two (22) respondents indicated that they were either employed as extension officers, farm organization administrators or farm managers. (There was some overlap between this group and the grower/transporter/marketers, as a few people serve multiple roles). Of these 22 people, 20 (91%) indicated that they had used what they learned during the September 2002 training program to train others in how to make changes in farming, postharvest handling, storage, transportation or other related practices.

Since the post-harvest training session in September 2002 was designed to train trainers, it can therefore be reported to have been a resounding success. Examples of training efforts are listed below, as reported by the respondents. Survey respondents indicated that they had actively trained others involved in SPEG, VEPEAG, MOFA and many other groups. The following is a list of the specific groups with which trainees have since shared this knowledge and information, either formally or informally.

Name or type of group	Dates (if known)	Topics of training
Workers of growing fields	November 2002	Post harvest losses
Workers of Ghana Fresh Produce	almost everyday during working	Plant Protections, harvesting time, storage sanitation measures, good hygiene practices, removal of field heat, testing of sugar level, etc.
Workers of perishable air cargo handling	almost everyday during working	“ “
Queen Farm Staff & Workers	Continuously	All
Private farmer	December 2002	Sustaining quality of harvested fruits
Private farmer	February 2003	Stage of harvesting to obtain optimum quality
University Students	February 2003	Post harvest handling of horticultural crops
Pineapple Section	October 2002	Plastic crates for harvesting Early harvesting fruit packaging and transporting
Vegetable Section	November 2002	Post harvest treatments and packaging, Personal & field hygiene
Vegetable Producer	December 2002	Packing under shade
Chili Producers	On-going	Methods & hygiene of drying chilies
Export Team of our Company	3/10/02	Good handling of fruits at the field and in the packing house
Fruits & Vegetable Sellers	10/2/02 4/19/02	The need to keep produce for sale under shade
Harvesting Gang		Peduncle cut to size

Name or type of group	Dates (if known)	Topics of training
Packing House Handler		Proper ways to handle fruits, no bruising
Palletizing Gang		Stacking of boxes accordingly
Outgrowers	3/24/03	Storage, post harvest handling
Vegetable Growers	2/18-21/03	Chili Pepper, okra, international standards (PHH)
Extension Agents	4/8-10/03	EUREPGAP & other international standards/Post harvest requirements
Exporters	03/27/03	Post harvest handling of vegetables
Purchasing Agents	3/25/03	Post harvest handling of vegetables
Prudent Farm	11/25-29/02	Packing, testing BRIX
Grand Hill Farms	3/12/03	Cost benefit analysis
Outgrowers	3/10-14/03	Production Skills
Ghana Assorted Foodstuffs Exporters Association (GAFEA)	February 2003	Transportation Post Harvest handling, Cost benefit analysis
Shalon Vegetable Producer Association	3/12/03	Field packing, cost benefit analysis
Citrus Growers	5/15/00	Field packing, cost benefit analysis
Purchasing Agents	03/25/03	Post harvest handling of vegetables
Exporters	3/27/03	
Quality Control Inspectors	Feb-April 2003	Quality Evaluations at Arrival of packaged fruits
Packers at Pack house	October 2002	Fruit and Crown Preservation
Harvesting Crew	October 2002	Proper Fruit handling
Workers on Export Management Team	11/30/02	Small-scale handling on post harvest practices
Exporters, Farmers	All the time	Good harvesting practices transportation of produce for export
Importers and Exporters	February 5-14, 2003	Handling of agricultural produce to reduce pest risk
Farmers/MOFA Staff	All the time	Good Agricultural Practices (GAP)
Yam Exporters (informal training given during a meeting)	January 15, 2003	Proper handling and storage of yams

The training materials and aids reported to be most useful for these training efforts included the manuals (especially the Small-Scale Postharvest Practices manual) and a variety of postharvest

tools (digital thermometer, refractometer, penetrometer, weighing scale, calculator) and the Training CDRom. Most respondents indicated that they often used the calculators provided during the training in their everyday work activities and had used the postharvest tools provided in the Training Materials Kit in their training efforts.

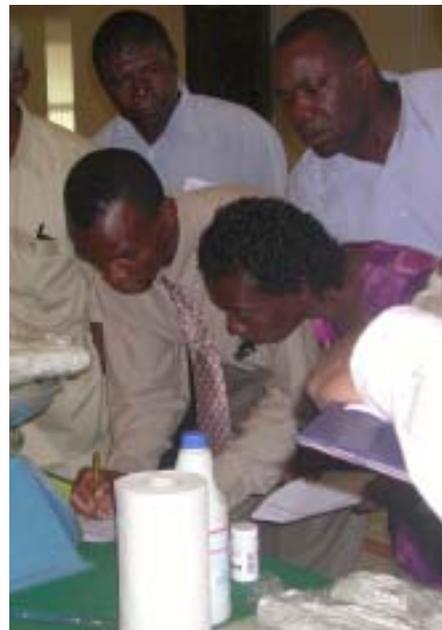
Eighty two percent (82%) of the respondents indicated that their trainees had seen immediate benefits in terms of reduced produce losses and better quality. The following are examples of the types of benefits achieved by both the trainers and their clients, as reported directly by those who have served as trainers of others in Ghana.

Trainers reported:

- Understand things better
- It has actually encouraged and enhanced my knowledge of post harvest handlings and simple agriculture tools
- Has set higher standard in our export quality goals
- I have a lot of information to share with farmer and students
- More confidence in my approach to advising farmers on post harvest handling techniques
- I am enjoying work because of the training they have received
- I realized the need to control respiration of post harvest produce
- Farmers are improving their post harvest handling of fruits

Trainees in Ghana have seen:

- Enhanced good agricultural practices
- Improved production and returns
- Reduced post harvest loss through reducing water loss
- Improvements to meet international standards
- Higher sales
- Less complaints
- The handling of fruits packaging is now done with care and transportation also with care
- It has changed the way they harvest and handle agricultural produce, and it is far better now. They are happy.
- Losses due to handling problems minimized.



When this sub-group of 22 people was asked about the types of obstacles they faced when trying to implement postharvest/transportation training programs for others, only a few obstacles were reported. Two people (9%) indicated that there were no funds for training, three people could not obtain the needed tools or equipment and one person reported that he did not know how to teach others.

Follow up Activities in Postharvest/Transportation Training

All of the respondents were asked whether they would like to see any follow-up activities offered by USDA/CCARD, and overall interest was high in a variety of suggested activities. The

highest ranking request was for more materials and resources, such as manuals, handbooks and post-harvest tools such as color charts, and not simply better access to the MOFA-housed Training Kit. In addition to the materials in the existing Kit, requests were made for including a weighing scale, equipment for determining acidity and Manuals on specific quality checks to carry out during harvesting and post harvest handling. It is recommended that three or four additional Postharvest Training Kits be supplied to the trainees, to be housed in appropriate (and accessible) locations.

Of interest to me	RANK	Follow-up activity
77%	3	Postharvest training opportunities in the United States
73%	#1	More materials and resources, such as manuals, handbooks and postharvest tools such as color charts.
54%	#2	One-on-one guidance/mentoring services from U.S. postharvest trainers (via email, fax and phone)
35%	5	Better access to existing training and demonstration materials (currently housed at the Postharvest Dept./MOFA)
54%	#2	MOFA-sponsored training events, where participants from the September session act as trainers
46%	4	An organized competition with incentives for those who provide training to others. (<i>Incentives could be postharvest tools, such as a refractometer, penetrometer, digital camera, etc.</i>)
77%	#2	The creation of an active Postharvest Working Group in Ghana that would facilitate collaboration and cooperation among all participants.

While postharvest training opportunities in the United States and the creation of an active Postharvest Working Group in Ghana that would facilitate collaboration and cooperation among all participants were both of very high interest to respondents (77% each), the rankings placed the **Working Group** higher at #2, tied with one-on-one **guidance/mentoring services** from U.S. postharvest trainers (via email, fax and phone) and **MOFA-sponsored training events**, where participants from the September session act as trainers.

Since the cost of a single Postharvest Study Tour can be quite high (estimated at \$50,000 for 10 people on a ten day long tour in the United States), it is recommended that a long-distance mentoring approach be implemented to provide cost-effective follow-up postharvest training assistance to those trained during September 2002. In addition, to build upon the training that has taken place so successfully, it is recommended that MOFA be funded to sponsor follow-up postharvest/ transportation training program in commodity specific topics.

An active Postharvest Working Group (PWG) could facilitate many of these follow-up activities. It is recommended that a PWG in Ghana be established under CCARD and convened, comprised of horticultural researchers, extension personnel, representatives of farmer organizations and the transportation industry. Two co-conveners should be selected (one from the public sector, one from the private sector, who would be paid for their services) who would be responsible for the management of the PWG. The PWG would initially organize industry meetings with a wide range of representatives to discuss postharvest/transportation issues as a way to help determine what is next most needed regarding training in Ghana. Meetings once per month at the beginning and then later on, once per quarter, should be sufficient to provide the guidance required for future postharvest training efforts.

Based on those meetings, the PWG should:

- Determine specific training tools/materials/equipment needs for trainers (Ranked #1). It will be important to provide CCARD with written justification for purchasing items.
- Identify, discuss and prioritize specific local postharvest training needs of selected clientele groups (more groups can be added as time goes on if funding permits).
- Identify which local trainers (from those trained during September 2002) are best suited to provide the MOFA/CCARD sponsored program to clientele (co-Ranked #2).
- Organize, set up facilities, and advertise for the above training.

The PWG would also be the direct contact for the mentoring services provided via CCARD, intended to respond directly to training needs via internet mentoring and satellite communication (co-Ranked #2). The co-conveners would take responsibility for getting the word out to local horticulture trainers that mentoring is available, collecting information on training needs from the hinterlands, and assisting in the dissemination to end-users of postharvest/transportation information obtained from the United States based mentor. One of the best possible uses of this mentoring service would be for trainers to first identify their target group for training, assess their specific needs, then to approach the mentor for ideas of how to provide postharvest training and create appropriate demonstrations for this group.

Summary of Recommendations

Based upon the results of this evaluation study, it is recommended that:

- 1) Three or four additional Postharvest Training Kits should be supplied to the September 2002 trainees, to be housed in appropriate (and accessible) locations. The existing Kit should be replicated, with the addition of a small digital scale, equipment for measuring titratable acidity and information on specific quality checks to carry out during harvesting and post harvest handling for specific commodities.



2) A long-distance mentoring approach should be implemented to provide cost-effective follow-up postharvest training assistance to those trained during September 2002. A weekly schedule should be established during which questions can be e-mailed from Ghana to the US, and responses can be delivered via email or internet to Ghana.

3) MOFA should be funded to sponsor follow-up postharvest/ transportation training program in commodity specific topics. Trainers should be encouraged to collect information on local problems related to one or more key crops and design programs that offer options for solutions. Focusing on an individual commodity in great detail is an important part of postharvest training of trainers.

4) To coordinate each of these activities, a Postharvest Working Group (PWG) in Ghana should be established under CCARD and convened, comprised of horticultural researchers, extension personnel, representatives of farmer organizations and the transportation industry.

Budget for Follow-up Activities

Training Materials and Tools

Postharvest Training Kits (references and tools)

Estimated cost: 4 Kits @ \$500 to \$600 per Kit = \$2000 to \$2400

Postharvest Working Group

Two co-conveners (6 hours per person per month)

Funds for Postharvest Training Programs (10 per year)

Mentoring Services

As needed, recommended as a weekly communication exercise via e-mail between the co-conveners and trainers associated with the PWG and Dr. Lisa Kitinoja (small-scale postharvest training specialist). Dr. Kitinoja manages the website www.postharvest.org, a site for training of postharvest trainers, and questions/responses can be unloaded there as well.

Estimated cost: 10 days/year @ \$400/day = \$4000/year

Appendix A: Sample Evaluation

Post Harvest Handling Training Six Month Post-Training Evaluation

Dear Participant:

Thank you for participating in the CCARD Post-Harvest Handling Training in September of 2002. We hope this workshop has proven beneficial to you in your work and in training others. In order to best decide how to proceed with this project, the United States Department of Agriculture and the Ghana Ministry of Food Agriculture are conducting a post-training evaluation. The results of this evaluation will be used to determine which activities or programs should be implemented next to best assist you in putting into the practice the post-harvest skills taught to you. It is our desire that this training provides you with the tools and skills needed for you to confidently continue to train others.

Please check all of the following that apply to you:

<input type="checkbox"/> Extension officer	<input type="checkbox"/> Grower
<input type="checkbox"/> Farmer organization or association member	<input type="checkbox"/> Transporter
<input type="checkbox"/> Farmer organization or association administrator	<input type="checkbox"/> Exporter
<input type="checkbox"/> Farm manager	<input type="checkbox"/> Other (explain):

Please check the products that are relevant to your business or job:

<input type="checkbox"/> Pineapple	<input type="checkbox"/> Ginger	<input type="checkbox"/> Papaya
<input type="checkbox"/> Mangoes	<input type="checkbox"/> Green beans	<input type="checkbox"/> Yams
<input type="checkbox"/> Chilies	<input type="checkbox"/> Avocado	<input type="checkbox"/> Sweet potato
<input type="checkbox"/> Eggplant	<input type="checkbox"/> Watermelon	<input type="checkbox"/> Okra
<input type="checkbox"/> other Please specify:		

Demographic information (all responses will remain anonymous):

Please check the highest level of education you have attained:

<input type="checkbox"/> Secondary school
<input type="checkbox"/> Vocational training school
<input type="checkbox"/> College or university
<input type="checkbox"/> Graduate school – Masters degree
<input type="checkbox"/> Graduate school – Ph.D. degree
<input type="checkbox"/> Other (please specify)

Gender: Male

Female

Age: _____ years old.

For each of the following statements, please circle the number that best corresponds to your personal feelings:
 1= I strongly disagree, 3= neutral, 5= I strongly agree

Reactions to the Post-harvest training:

I found the training to be very useful to me:

1	2	3	4	5
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I do not see how I will ever be able to use what I learned during the training:

1	2	3	4	5
---	---	---	---	---

I need more training before I can consider myself to be a “Postharvest Trainer”:

1	2	3	4	5
---	---	---	---	---

Changes in Knowledge, Skills, Attitudes or Aspirations:

I feel I gained a lot of postharvest knowledge from the training program:

1	2	3	4	5
---	---	---	---	---

The skills I gained will be useful to me in my job or produce operation:

1	2	3	4	5
---	---	---	---	---

It is important for Ghana to develop our own local postharvest trainers:

1	2	3	4	5
---	---	---	---	---

I feel that becoming a postharvest trainer is a good opportunity for my future career:

1	2	3	4	5
---	---	---	---	---

The training changed the way I think about my work:

1	2	3	4	5
---	---	---	---	---

Have you used any of the training aids or demonstration materials provided to you for either personal use or for training?
 YES NO

If you answered yes, please list which materials you have used and how you used them. *(Be as specific as you can. For example, thermometer, calculator, demonstration aids such as the refractometer were used for doing a demonstration at the local market):*

Have you used the manuals and written materials provided during the training? (check those you have had the chance to read and/or those that you have actually used)

READ IT	USED IT	
		Small-Scale Postharvest Handling Practices: A Manual for Horticultural Crops
		Transportation of Tropical Products Handbook
		Postharvest Technology of Horticultural Crops textbook
		EUREPGAP standards
		Produce facts
		Training CD Rom
		Internet websites
		Cost/benefit worksheets
		other (please specify)

Which of the training and demonstration materials have been the most beneficial?

How have they been used by you or others you have trained?

What other equipment do you find that you still need?

*For each of the following statements, please circle the number that best corresponds to your personal feelings:
1= I strongly disagree, 3= neutral, 5= I strongly agree*

Personal application of knowledge gained:

As a result of the training, I have changed the way I perform my work now:

1	2	3	4	5
---	---	---	---	---

The following THREE questions are for growers, transporters or marketers:

1) If you are a grower, transporter or marketer, as a result of the post-harvest training have you made any changes in production, handling, storing, transportation or other practices for the commodities you handle?

YES NO

If yes, please provide specific examples. *For example: field packing, use of shade cloths during handling, use of thermometer to check temperature, use of cost-benefit analysis worksheets.*

2) As a result of the modified practices listed above, have you seen any immediate benefits?

YES NO

If yes, list the benefits you have experienced. *(Examples: less wasted product, higher returns, positive feedback from buyers.)*

3) If you have not been able to change any post-harvest practices, what types of obstacles do you face? (check all that apply)

<input type="checkbox"/> I don't know how to get started
<input type="checkbox"/> There are no funds for making changes
<input type="checkbox"/> I can not obtain needed tools or equipment
<input type="checkbox"/> There is no positive cost/benefit that can be demonstrated
<input type="checkbox"/> I have not had the chance to use any of the training
<input type="checkbox"/> other (please explain)

The following THREE questions are for extension officers, farm organization administrators or farm managers:

1) If you are an extension officer, farm organization administrator or farm manager, have you used what you learned in September 2002 to train anyone in how to make changes in farming, postharvest handling, storing, transportation or other practices?

YES NO

If yes, be specific. *For example: field packing, use of shade cloths during handling, use of thermometer to check temperature, use of cost-benefit analysis worksheets.*

2) As a result of the above modified practices listed above, have the trainees seen any immediate benefits?

YES NO

If yes, list the type of benefits experienced. (*Examples: less wasted product, higher profits, positive feedback from buyers, increased sales.*)

3) If you have not been able to provide training for others in how to change their post-harvest practices, what types of obstacles do you face? (check all that apply)

<input type="checkbox"/> I don't know how to get started
<input type="checkbox"/> There are no funds for training
<input type="checkbox"/> I can not obtain needed tools or equipment for demonstrations
<input type="checkbox"/> I don't know how to teach others
<input type="checkbox"/> There is no positive cost/benefit that can be demonstrated
<input type="checkbox"/> other (please explain)

Training others in Postharvest Handling and Transportation practices:

The post-harvest training session in September 2002 was designed to “train trainers.” List any groups you have since shared this knowledge and information with, either formally or informally:

Name or type of group	Date	Topics of training

Which resource materials and equipment did you find most useful during the training and why?

What benefits have you or those you have trained experienced since the training?

Which of these follow-up activities would best assist you in training others? *(In the first column, simply check all that would be of interest and use to you. In the second column, rank your choices in order of effectiveness. 1=most effective, 2 = next most effective, etc.)*

Of interest to me	RANK	Follow-up activity
		Postharvest training opportunities in the United States
		More materials and resources, such as manuals, handbooks and post-harvest tools such as color charts.
		One-on-one guidance/mentoring services from U.S. postharvest trainers (via email, fax and phone)
		Better access to existing training and demonstration materials (currently housed at the Postharvest Dept./MOFA)
		MOFA-sponsored training events, where participants from the September session act as trainers
		An organized competition with incentives for those who provide training to others. <i>(Incentives could be postharvest tools, such as a refractometer, penetrometer, digital camera, etc.)</i>
		The creation of an active Postharvest Working Group in Ghana that would facilitate collaboration and cooperation among all participants.
		Other (please specify)
		Other (please specify)

Thank you for participating in this evaluation. Please provide any other comments, suggestions, or information about your experiences since the post-harvest training session last September:

Feel free to contact us directly regarding this evaluation at any time:

Dr. Lisa Kitinoja: Kitinoja@hotmail.com

Ms. Heidi Reichert: heidi.reichert@usda.gov

Appendix B: Instructions for Carrying Out the Evaluation

February 14, 2003

Six Month Post-Training Evaluation Post-Harvest Handling “Train the Trainers” Workshop / September 2002

Instructions for Carrying Out the Evaluation

In order to make certain that each participant receives the evaluation and that it is returned, MOFA employees will need to physically deliver each evaluation to the actual workshop participant. (It should not be left with a secretary, co-worker, family member or other participant.)

Upon making actual contact with the participant, the MOFA employee will explain that they will be back to pick up the survey at a pre-determined time, such as one day or one week after delivery of the evaluation. The employee should keep record of when the survey was delivered, who it was delivered to, and the day/time pick up is scheduled. (A check list/inventory is attached.)

During that time, the MOFA employee who delivered the evaluation will call to check the status of the survey, to see if the participant has any questions or concerns, and to reconfirm the pick-up date and location. The participant may offer to drop it off upon completion, but if this happens, a note should be made of it.

If the evaluation is not completed by the pre-determined deadline, the MOFA employee will meet with the participant and conduct an interview in order to get the information, asking the participant each question from the evaluation and filling out the survey with the answers and the same wording provided by the participant. (Re-phrasing the answers must be avoided.) To save time and money, this interview may be conducted over the telephone.

Finally, MOFA is welcomed to make copies of the evaluations, but USDA requires that the original evaluations be sent back intact. Delivery can be done by Federal Express or other mail service that offers tracking or hand-delivered by a USDA or USAID employee that will be traveling to the United States shortly after the evaluations are completed, such as Darrell Upshaw or John Dunn.

All evaluations should be completed and returned to USDA no later than April 30. This is because May 30, 2003 is the deadline for determining future projects based on the funds remaining in this project. Without these evaluation results, it is likely that future activities in postharvest and transportation training will be deleted from the funding plan.

Participant Name and Affiliation	Date evaluation was delivered by/to whom	Date/time/location of pick-up (mutually agreed)	Date/Time of follow-up call & status of survey	Date evaluation was picked-up and by whom	<i>If needed:</i> Date Interview scheduled	Interview completed (by whom)