

**INTERAGENCY AGREEMENT
BETWEEN THE UNITED STATES AGENCY FOR INTERNATIONAL
DEVELOPMENT
AND
THE UNITED STATES DEPARTMENT OF AGRICULTURE
(AFR-P-00-01-00008-00)**

**PERFORMANCE REPORT
FOR THE PROJECT**

JUNE – SEPTEMBER 2003

**“TRAINING AND ANALYSIS IN BUILDING CAPACITY FOR
AGRICULTURAL MARKETING AND EXPORTING IN GHANA”
GHANA – UNITED STATES CONSULTATIVE COMMITTEE
ON
AGRICULTURE AND RURAL DEVELOPMENT
(CCARD)**

Submitted to USAID by:

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International Cooperation and Development
Food Industries Division**

Attachment 2

- **Financial Report**
- **UNECE Fact Sheet**

Preface

This report covers activities undertaken by the USDA Technical Assistance Team and is provided in IAW the provisions of the USDA/USAID Interagency Agreement (AFR-P-00-01-00008-00).

1.0 BACKGROUND

The Government of the Republic of Ghana recognizes that in order for it to achieve middle income status within the next twenty years, it must dedicate a significant proportion of its national resources to sustainable development in six categories: (1) human development; (2) economic development; (3) economic growth; (4) rural development; (5) urban development; and (6) an enabling environment.

The nations agricultural goals have been significantly strengthened by the substantive deliberations of the U.S. - Ghana Consultative Committee on Agriculture and Rural Development (CCARD). On June 29, 2000, the U.S. Department of Agriculture (USDA) and the Republic of Ghana's Ministry of Food and Agriculture (MOFA) entered into a bilateral agreement, through a Memorandum of Understanding (MOU), to promote joint collaboration on the restructuring of Ghana's agricultural infrastructure. The CCARD has "facilitated discussion and cooperation on agricultural programs, projects, and exchanges between the two countries in, but not limited to, the areas of natural resource conservation, and management; agricultural technology development for income generation; institutional development and capacity building; agricultural trade and market access, investment, and development; regulation and safety of food products; food and nutrition; trade information, extension, and research."

This MOU established the working agenda for the U.S.-Ghana CCARD and has resulted in a number of joint U.S. and Ghanaian mechanisms to address key agriculture market access and infrastructure issues that are intended to be mutually beneficial to both countries. To operationalize this comprehensive approach, three Working Groups were constituted: (1) Market Access (MA); (2) Institutional, Human Resources and Rural Development (IHRRD); and (3) Natural Resources Management (NRM).

This overall strategy is designed to enhance the production, processing, and marketing of agricultural products, including livestock, by improving, market access; infrastructure; agricultural processing; sustainable power and water supplies for worker health, irrigation and food processing; and surface transportation improvements and options for maximum rural farm-to-distribution center connectivity.

2.0 GHANA AGRICULTURAL EXTENSION CAPACITY BUILDING PROJECT

2.1 Activity Objective

USDA's Cooperative State Research, Education and Extension Service (CSREES) is collaborating with the Ghanaian Ministry of Food and Agriculture (MOFA) to support agribusiness entrepreneurial development and extension development in Ghana. The goal of this project is to build capacity within the Ghanaian Extension System to enable agricultural agents to guide farmers in developing the ability to produce for the domestic market and to participate in world trade. The project will develop and implement a series of train-the-trainer workshops to be provided to agricultural extension personnel in Ghana in a variety of areas from production through post-harvest handling, value-added processing, export marketing, agribusiness development, farm entrepreneurship and the development of off-and-on farm human and institutional resources.

2.2 Progress Report

2.2.1 Train-the-Trainer Workshop on Pineapple Production (July 29 – August 1, 2003)

2.2.1.1 Introduction

As part of the implementation of Ghana Agricultural Extension Capacity Building Project (GAECBP), under the auspices of the Institutional, Human Resources and Rural Development Working Group (IHHRD-WG) of the US-Ghana Consultative Committee on Agriculture and Rural Development (CCARD), USDA in collaboration with MOFA conducted the third train-the-trainer workshop from July 29 to August 1, 2003 at the Erata Hotel in Accra. This workshop focused on the production, marketing, plant multiplication, post-harvest handling and value addition of pineapples.

The workshop covered a four-day period and included a one-day field trip to a 200-acre pineapple farm, Prudent Exports, outside Accra. A total of 35 participants attended the workshop. They included Agricultural Extension Agents (AEAs), farmers, and members of farmer-based organizations, exporters, agronomists and technical staff from pineapple farms.



Participants of the Training of Trainers Pineapple Workshop at Erata Hotel.

Mr. F. W. Aidoo, Director of the Human Resource Development and Management Directorate of MOFA and Co-convener of the IHRRD Working group, officially opened the workshop. It was officially closed by the Deputy Minister of Food and Agriculture in-charge-of Crops, the Hon. Clement Eledi.

The report also includes the following Appendices:

- Workshop Programme (Appendix 1)
- A list of participants (Appendix 2)

2.2.1.2 Purpose

The purpose of the workshop was to ‘establish a market oriented training’ for the extension agents and to provide them with training strategies and skills to advise farmers on production, post-harvest handling and value-addition of pineapple.

2.2.1.3 Workshop Methodology

A variety of training techniques were employed during the workshop. These included lectures, demonstrations, discussions and practical fieldwork. All the resource persons with the exception of one were drawn from local institutions. They included Mr. Mawuli Agboka of DAES, and, Mr. Chris Amedo, SRID, MOFA, Mr. Roland Aggor, Ghana Export Promotion Council (GEPC), Mrs. Milly Kyofa-Boamah, PPRSD, MOFA, and Mrs. Irene S. Egyir and Dr. George T. M. Kwadzo, University of Ghana, Legon. Dr. Chris Ramcharan, University of the Virgin Islands (UVI), United States, provided support to the local team.

2.2.1.4 Training

The four-day workshop included one full day of practical fieldwork. The training commenced at 8:30 am and ended at 5:00 pm each day. The training was organized into 4 modules:

- Marketing and Agribusiness
- Agronomy and Plant Protection
- Post-Harvest Handling and Value Addition
- Field Visit and Practical Demonstration

A. Marketing and Agribusiness

1. Marketing

The participants were taken through the concept of marketing. The resource person gave a general perspective of marketing and highlighted factors affecting the choice of marketing strategies and how an appropriate marketing strategy for pineapple could be developed. In-depth discussions were held on developing a marketing plan. The development of appropriate marketing strategies for pineapples, with emphasis on strategy for a small pineapple firm was given prominence.

2. Agribusiness - Preparing Business Plan

The participants were presented with the basic principles of preparing a business plan. The six (6) main components of a business plan as indicated below preceded by executive summary were outlined and discussed.

- Business description
- Marketing plan
- Operational plan
- Organizational plan
- Financial plan
- Appendices (i.e. relevant documents and tables)

In addition, participants were led through the stages of preparing an enterprise budget.

Participants used practical situations to expound the above listed components for easy comprehension. The need was stressed for the involvement of the Agricultural Development Bank (there were no representatives of the ADB present) and/or Small Business Development Agency (SBDA).

3. World Trade Organization (WTO) Agreement in Agriculture

The participants learned about the World Trade Organization (WTO) - its main functions, membership, and principles. Mention was also made of the organization's agreements on agriculture including market access, which featured mainly tariff and non-tariff barriers, domestic support and export subsidy. The lecture also highlighted opportunities that exist for developing countries including Ghana and the challenges that Ghana has to contend with to make her competitive under WTO.

4. International Standards and Regulations

Topics on international standards and regulations (EUREPGAP) and other market requirements were treated. Consumer demand, food safety, industry standards, certification and documentation were also elaborately presented.

5. Overview of Marketing and Exports of Ghana's Pineapple

The presenter provided data on pineapple production in Ghana and the world in general. The participants were provided a breakdown of major suppliers (countries) of pineapple in the world and their respective market shares. The presenter also provided a list of countries that import Ghana's pineapples and also provided time series data on value of exports obtained by Ghana over the years. Regulatory and other conditions for market access and the future of the pineapple industry in Ghana were also subjects of the resource person's presentation.

B. Agronomy and Plant Protection

1. Pineapple Production

Topics included botany of the pineapple, ecology, site selection, land preparation, mulching and selection and preparation of planting materials before planting. The resource person pointed out that the use of healthy, vigorous planting materials was one of the most crucial factors in determining the success of a pineapple plantation. The need

for proper grading of planting materials, use of plant spacing and plant population density to achieve homogeneity, increase yields and optimize returns on investment were also emphasized as key components. Participants were presented with a list of fertilizers that were readily available on the local market and how they should be applied to improve efficiency of plant utilization whilst reducing the risk to soil acidification. The resource person also took the participants through artificial flower induction (forcing), where various forcing techniques and chemicals used and the advantages of artificial flower induction were discussed.

2. Weed, Pest and Disease Control

Participants were presented with well-labeled specimen of weeds commonly found on most pineapple fields and their characteristics including mode of infestation and spread, and how they can be controlled especially using both agronomic practices as well as agrochemicals.

Pests and diseases management on pineapples was adequately discussed. It was emphasized that the wilt disease, which is transmitted by the mealy-bug, is the most devastating disease in Ghana. It was singled out as the greatest threat to the industry. Participants were therefore encouraged to wage a war on the disease by educating farmers, field workers and everybody associated with the pineapple industry to institute management practices to limit the spread of the disease particularly the use of disease and insect-free planting materials.

C. Post-Harvest Handling and Value Addition

The participants were provided information about the determination of maturity indices for both sea and airfreight pineapples, and some common problems relating to post-harvest handling which negatively impact on the shelf life and quality of the produce were highlighted. Some of the problems identified were:

- Improper handling, collecting and packing of fruits
- Improper sanitary and cooling conditions at the packing house
- Injury due to physical, physiological as well as pathological causes

Participants were also taken through the preparation of fruits for export such as cleaning, sorting, grading, packaging, precooling and cold storage. A good discussion was held on packing house operations. Relevant information on value added products such as canned pineapple products (e.g. slices, chunks, etc) was provided. Simple equipment such as slicers, peelers, decoders, which could be used for processing pineapples and information were made available to participants.

D. Field Visit and Practical Demonstration

A field visit was undertaken to Prudent Exports, a pineapple producing and exporting company located near Bawjiase in the Awutu Efutu-Senya district in the Central region. The practical activities, involved demonstration of good land preparation, ridging, fertilizer application, mulching, sorting, grading planting, pests and diseases identification and pack

house operations. The field visit generated a lot of excitement among the participants as the information gathered from the lectures was given practical meaning on the field.

2.2.1.5 Action Plan

Participants developed individual action plans at the end of the workshop. Some of the subject areas selected by participants included: selection and trimming of suckers, erosion control measures, soil testing, weed control, education of farmers on mealy bug wilt disease management etc. The various action plans described how the information and skills acquired at the workshop would be used to improve pineapple farming in Ghana. The participants were informed that the action plans would be used partly for evaluation in the future.

2.2.1.6 Workshop Evaluation Results

Each participant completed a training evaluation form at the end of the training program. The overall response was very positive as participants rated the workshop highly (an average higher than 4 on a scale of 1 – 5) and the comments/answers to the questions were just as positive. The features of the workshop ranked highest by participants were: a well-organized workshop, relevance of educational materials and contents, training workshop was applicable to job responsibilities, objectives of workshop were clearly defined and overall quality of training was very good as indicated in the table below:

	Evaluation questions	Average ratings
1	The educational materials and contents were relevant	4.55
2	The objectives of the training were clearly defined	4.40
3	The overall quality of the training was very good	4.19
4	The training workshop was applicable to my job responsibilities/business	4.52
5	The workshop was well organized	5

Participants were generally satisfied with the overall output of the workshop and liked the following features:

- Program starting on time and strict adherence to time allotted to each resource person
- Very clear and concise presentations that were supported by handout notes and good illustrations
- Interaction and discussion among participants and resource persons was very cordial
- Field visit that actually exposed participants to hands-on demonstrations

The presentations that were cited as providing the most utility for their work included all the topics treated. The following were however rated as follows:

- Pineapple Production
- Pest and Disease Control
- Planting Material Multiplication
- Developing a Business Plan
- Post-harvest handling and value addition

In addition, participants indicated the most interesting topics as follows:

- Pineapple Production
- Pest and Disease Control
- Sucker Production
- Marketing and Business Plan Development

APPENDIX 1 WORKSHOP PROGRAMME

U.S.–GHANA CCARD TRAINING OF TRAINERS WORKSHOP ON PRODUCTION, POSTHARVEST HANDLING AND VALUE ADDITION OF PINEAPPLES, ERATA HOTEL JULY 29–AUG 1, 2003

Day/Time	Topic	Presenter
Day 1 July 29	Marketing and Agribusiness	
8.15-9.00am	Registration	
9.00-9.05am	Opening Prayer	
9.05-9.10am	Opening address	Mr. F.W. Aidoo, Director, HRDM
9.10-9.15am	Self introduction/Workshop Outline/ Expectations	
9.15-10.30am	Marketing	Mrs. Irene Egyir
10.30-10.45am	Snack	
10.45-11.45am	Marketing	Dr. Kwadzo
11.45am-12.30pm	Developing a business plan	Dr. Kwadzo
12.30-1.30pm	Lunch	
1.30-2.30pm	Developing a business plan	Dr. Kwadzo
2.30-3.30pm	International trade rules and Opportunities – WTO	Chris Amedo
3.30-3.45pm	Snack	
3.45-4.45pm	International Standards and regulations (EUREPGAP)	Milly Kyofa-Boamah
Day 2 July 30	Agronomy and Plant Protection	
8.30-9.30am	Marketing of Pineapples in the International Market	Roland Aggor
9.30-10.30am	Botany and Ecology	Mawuli Agboka
10.30-10.45am	Snack	
10.45-11.45am	Site selection, land preparation, mulching	Mawuli Agboka
11.45am-12.30pm	Planting material selection, grading, and planting, population density and planting	Mawuli Agboka
12.30-1.30pm	Lunch	
1.30-2.30pm	Weed Control	Milly Kyofa-Boamah
2.30-3.30pm	Fertilizer application/ Nutritional deficiencies	Mawuli Agboka/Chris Ramcharam
3.30-4.30pm	Pests and diseases control	Milly Kyofa-Boamah

Day/Time	Topic	Presenter
Day 3 July 31	Post harvest handling and Value Addition	
8.30-9.30am	Artificial Flower Induction	Mawuli Agboka
9.30-10.30am	De-greening and protection against sunburn	Milly Kyofa-Boamah
10.30-10.45am	Snack break	
10.45-11.45am	Harvesting tools and techniques	Chris Ramcharan
11.45am-12.30pm	Multiplication of planting materials	Chris Ramcharan
12.30-1.30pm	Lunch	
1.30-2.30pm	Preparing fruits for packing (brushing, cleaning, and disinfections)	Chris Ramcharan
2.30-3.30pm	Sorting and grading for both sea and air-freighting, packing and packing materials	Chris Ramcharan
3.30-3.45pm	Snack	
3.45-4.45pm	Pre-cooling and cooling	Chris Ramcharan
4.45-5.30pm	Developing individual Action plans	Mawuli Agboka
Day 4 August 1	Field visit	
7.00 am	Departure from Hotel	
8.30am –2.30pm	Practical field activities	Milly Kyofa- Boamah, Mawuli Agboka,
2.30 pm	Departure to Hotel	
4.00 pm	Presentation of Action plans	Participants
5.00-5.15 pm	Evaluation	Participants
5.30 pm	Presentation of certificates	Hon. Clement Eledi, Deputy Minister
6.00 pm	Closing dinner	All

APPENDIX 2 LIST OF PARTICIPANTS

LIST OF PARTICIPANTS OF TRAINING OF TRAINER
WORKSHOP ON PINEAPPLES

NAME	ORGANISATION	ADDRESS
1. S. Korang -Amoakoh	Silwood Farm Limited	Box 260, Nsawam, ER
2. George Y. Donkor	MOFA-Saltpond	Box 280, Saltpond, CR
3. Noah A. Sackey	Gannat Farms Ltd.	Box KT 330, Accra
4. Ahmed Mustapha	Gannat Farm Ltd.	Box KT 330 Accra
5. Daniel Asherow	Bomart Farm Ltd.	Box 124, Nsawam
6. Emmanuel Ayete Gyampoh	Horizon Farms Ltd.	Box 12669, Accra North
7. Dorothy A. Effa	MOFA	Box AM 84, Amasaman
8. Akyea Rolland	MOFA	Box 26, Nsawam
9. Daniel T. Nartey	MOFA	Box 26, Nsawam
10. Thomas K. Ocran	Farmapine Ghana Limited	Box NW 772, Nsawam
11. Michael Nortey Papafio	MOFA	Box 31 Dodowa
12. Mercy A. Opare	MOFA	Box 26, Nsawam
13. Seth Dumashie Deku	Kokobin Farms Company	Box 5146, Accra
14. Robert Mate	Family Growers (SIF)	Box DD 149, Dodowa
15. Samuel Tetteh	Power Pineapple Growers	Box 128, Dodowa
18. Okaikoi Danso	MOFA/DCS	Box M37, Accra
19. Samuel Mintah-Darko	Prudent Exports	Box 7273, Accra-North
20. Dr. E. T. Akumiah	MOFA	Box 140, Winneba
21. Mark Arko	MOFA	Box. 140 Winneba
22. Lydia Incoom	MOFA	Box 140, Winneba, CR
23. Georgina Kumah	MOFA	Box AM 84, Amasaman
24. Williams K. Moeli	MOFA	Box 15, Kpando
25. Prosper Agbodza	MOFA	Box 124 Hohoe
26. Idrisah Yusif Musah	MOFA	Box 26, Nsawam
27. Simon Addom	MOFA	Box M 82, Accra
28. Ellen Eyison	MOFA/DCS	Box M 37, Accra
29. Harry Bleppony	MOFA/DCS	Box M 37, Accra
30. Jake Fenning	WelGrace Group	Box BT-604Comm.2, Tema
31. A. J. A. Parry	PARRICO Farms	Box DS 178, Dansoman
32. Felicia Ali	ASSANT Farms&Food	Box 130, Accra
33. Chris Amedo	MOFA	Box M 37, Accra
34. Frank Baffour-Awuah	Georgefields Ltd	Osae Krodua
35. Shafie Aguada	Gannat Farm Ltd	Bo KT 330, Kotobabi

2.2.2 Train-The-Trainer Workshop on Sweet Potato Production (September 15-17, 2003)

2.2.2.1 Introduction

This workshop was the final in the series of four train the trainer workshops being implemented as part of the Ghana Agricultural Extension Capacity Building Project (GAECBP), under the auspices of the Institutional, Human Resources and Rural Development Working Group (IHHRD-WG) of the U.S.-Ghana Consultative Committee on Agriculture and Rural Development (CCARD) - a MOFA and USDA collaboration.

A total of twenty (20) participants benefited from the 3-day workshop, which included a full day of practical field training. The participants included MOFA staff, members of the Vegetable Producers and Exporters Association of Ghana (VEPEAG), farmers and farm managers.

2.2.2.2 Purpose

The objective of the workshop was to provide a market oriented training for the participants and also equip them with the relevant strategies and skills to offer technical assistance to farmers on all aspects of market production ranging from the development of a business plan, agronomy crop protection, and post harvest handling to marketing.

2.2.2.3 Workshop Methodology

The methodology employed consisted mainly of lectures using overheads, Power Point presentations complete with pictures and graphics, and discussions as well as practical on-field training. Resource persons included Dr. Otoo, former Director of Crops Research Institute, Dr.G.T.M Kwadzo and Mrs. Irene Egyir, Department of Economics and Agri-business, University of Ghana and Dr. David Picha, Professor of Post-Harvest Physiology, Louisiana State University, USA.



Dr. Picha making a presentation

2.2.2.4 Training

The training commenced at 8.30 am and ended at 6.00 pm each day. The training was organized into 4 modules:

- Marketing and Agribusiness
- Agronomy and Plant Protection
- Post-Harvest Handling
- Field visit and Practical demonstration

A. Marketing and Agribusiness

The session was devoted to discussions on the basic principles of marketing, development of market plans and strategizing for market penetration, and the consolidation of market shares. Additionally, participants were guided through the development of a business plan and enterprise budgeting.

Participants were offered a detailed presentation on marketing of sweet potatoes in Britain. It emerged from this presentation that, sweet potato consumption which had been limited to ethnic groups from Asia, Caribbean and Africa, was now becoming a mainstream vegetable,

which is being offered in the supermarkets. The increasing demand has been fueled by the fact that it is considered as a health food. The ethnic market favours the drier white to yellow flesh types whereas the mainstream European market (supermarkets) prefers the orange skin orange flesh moist types. It was made clear to participants that the future growth of the market lies in the marketing of the orange flesh orange varieties. Centennial, Jewel and Beauregard are some of the popular orange skin orange flesh varieties. The principal suppliers of sweet potatoes to the market were revealed and included the U.S., Israel, South Africa and Egypt.



Orange skin - orange flesh type



Red skin - white flesh type

The resource person indicated that there is a big opportunity for Ghana to take advantage of this market, because this was a growing market with an all year round demand. However, efforts should be made to address constraints such as poor arrival quality (root shrivelling, and decay), improper packaging, and poor transportation practices (temperature abuse, low relative humidity and poor ventilation.)

B. Agronomy and Plant Protection

Participants benefited immensely from practical production practices of both the U.S. and Ghana as Drs. Otoo and Picha provided insight to sweet potato production in their respective countries. According to Dr. Otoo, there was little or no use of fertilizers - either organic or inorganic on sweet potatoes in Ghana. However, from the presentations, it emerged that yields could be boosted tremendously with the use of manures (organic or inorganic). Land preparation was cited as having profound effect on the shape of the roots. Proper land preparation with a fine tilth was suggested. However, the prepared land should not be too deep because this would lead to production of carrot-like long thin roots, a shape which is undesirable on the international market.



Root shapes preferred on the International Market

The need to optimize yields by adopting the right planting distances was highlighted by the presenters. A planting distance of 1 meter centre to centre of ridge and 30cm between plants on the ridge that would provide the optimum plant population was suggested. One of the greatest constraints facing the industry was the availability of planting materials. To address this problem, participants were taken through a rapid propagation technique using single and two-node cuttings.

The sweet potato weevil was identified as the most serious pest of the plant. The insect attacks all parts of the plant causing the most damage to the root, rendering it unmarketable. Participants were advised to use clean uninfested material when starting a new field. The vines to be used should never be pulled but cut as pulling the vines inevitably brings along with them the weevils. Crop rotation and hilling up were also identified as part of the control strategies. Sweet potato Virus Complex was the most important disease affecting the plant. The use of resistant varieties, planting of disease free materials and the practice of good field hygiene were some of the control measures suggested by the presenters.



Weeviled holes on sweet potato root



Cut Sweet potato root showing weeviled holes (dark patches) in the flesh

C. Post-Harvest Handling

The reduction of bruise damage, minimizing decay, extending shelf life and maintenance of desirable flavour was surmised by the resource person as the major post-harvest handling challenges that needed to be addressed. He provided participants with principles and practices, which if adopted could overcome the challenges. These included the adoption of careful harvesting methods and tools, the use of appropriate field containers, curing and appropriate storage conditions.

It was revealed that when sweet potatoes are properly cured they could be stored for between 8-10 months. Due to the importance of curing to the success of any meaningful sweet potato marketing, the resource person devoted a lot of time in providing information on the principles involved, the various methods that are used (high-tech as well as appro-tech), as well as the design of curing rooms and chambers. The basic conditions required for curing as indicated by the resource person were:

- High temperature (26.5-32°C)
- High relative humidity (90-98%)
- 4-7 days time duration.

He stated curing does not take place below temperatures of 23°C or 65% relative humidity. The subject of appropriate storage conditions was also discussed. The basic consideration here was to have a temperature of 13-15°C and relative humidity of 90-95%. At those environmental conditions the roots could store for 8-10 months provided they had been cured properly.

D. Field Visit and Practical Field Training

A field trip was undertaken to Tontoh farms on the last day of the workshop. The farm which is located at Gomoa Buduatta in the Central region belonged to a member of the Vegetable Producers and Exporters Association of Ghana (VEPEAG). The two main resource persons,

Drs. Otoo and Picha, provided a hands-on demonstration of production and post-harvest practices. Participants had the opportunity to try their hands at the selection and preparation of planting materials, planting and harvesting under the guidance of the resource persons.



Dr. Otoo demonstrating the correct planting technique to participants



Some participants harvesting roots



Bruised roots due to poor harvesting technique

Participants were also taken through the various pre-curing preparatory stages. A special curing pit had been constructed on the field for this purpose. The dimension of the pit was 2m X 2m by 1 m deep.



Curing chamber or pit



Curing chamber floor covered with straw



Roots in crates ready for curing in chamber

Participants were also assisted in identifying some pests and diseases on the field. The field activities came to a close at about 2 pm.

2.2.2.5 Action Plan

Individual action plans were developed by the participants at the end of the workshop. The action plan detailed how the information and skills acquired by the participants were going to be used to improve the production, post-harvest handling and marketing of sweet potatoes.

2.2.2.6 Recommendations

Efforts should be made to set up centers where farmers and other interested persons could easily and readily obtain quality disease-free planting materials.

A mechanism should be put in place that would quickly respond to the needs of the industry to source and systematically bring into the country new varieties that are in demand. This would discourage the practice where farmers evade the quarantine system and bring in materials of

dubious quality and thereby sometimes introducing potentially dangerous pests and diseases.

Participants were of the view that workshops of this quality should be conducted much more frequently to update knowledge of people in the industry and equip them with the necessary information to enhance their competitiveness.

The workshops should be extended to the regional and district levels in order to benefit more people.

2.2.2.7 Workshop Evaluation Results

Participants completed a training evaluation form at the end of the training programme. Analysis of the results revealed that participants were very impressed about the general quality and content of the workshop as indicated by the high ratings of 4 and above on a scale of 1-5. See table below for details:

Scale: 1 = poor: 5 = excellent

	Evaluation questions	Average ratings
1	The educational materials and contents were relevant	4.3
2	The objectives of the training were clearly defined	4.4
3	The overall quality of the training was very good	4.2
4	The training was applicable to my job and responsibilities	4.6
5	The workshop was well organised	4.0

Curing and post-harvest care, development of a business plan, as well as vine multiplication was cited as some of the new topics learned at the workshop. They were also mentioned as the most interesting topics. Virtually all the topics treated were alluded to as providing most utility for their work.

The practical field training, clarity of presentation spiced up with illustrations and the interactivity were pointed to, as some of the most interesting features of the workshop. The participants however regretted that given the quality displayed at the workshop only a few of them had the benefit of participation. They were in agreement that it should have been opened up to a lot more people to participate. It was the belief of some of the participants that more time should have been devoted to practical field training.

APPENDIX I WORKSHOP PROGRAMME

US-GHANA CCARD TRAINING OF TRAINERS WORKSHOP ON PRODUCTION AND POSTHARVEST HANDLING OF SWEET POTATOES, ERATA HOTEL SEPTEMBER 15-19, 2003

Day/Time	Topic	Presenter
Day 1 SEPT 15	Marketing and Agribusiness	
8.15-9.00 am	Registration	
9.00-9.05 am	Opening Prayer	
9.05-9.10 am	Opening address	Mr. F.W. Aidoo, Director, HRDM
9.10-9.15 am	Self introduction/Workshop Outline/ Expectations	
9.15-10.30	Marketing	Mrs Irene Egyir
10.30-10.45 am	Snack	
10.45-11.45 am	Developing a business plan	Dr. Kwadzo
11.45 am -12.30	Developing a business plan	Dr. Kwadzo
12.30-1.30 pm	Lunch	
1.30-2.30 pm	Developing a business plan	Dr. Kwadzo
2.30-3.30 pm	Sweet potato marketing in Britain	Dr. David Picha
3.30-3.45 pm	Snack	
3.45-5.00 pm	Sweet potato marketing in Britain	Dr. David Picha
Day 2 SEPT 16	Agromony and Plant Protection	
8.30-9.30 am	Biology, Ecology, Site selection, Planting material multiplication	Dr. Otoo
9.30-10.30 am	Land preparation, Planting materials and planting	Dr. Otoo
10.30-10.45 am	Snack	
10.45-11.45 am	Weed control, Fertiliser application, manuring	Dr. Otoo
11.45 am -12.30 pm	Pests and diseases control	Dr. Otoo
12.30-1.30 pm	Lunch	
1.30-2.30 pm	Production practices in the U.S.	Dr. David Picha
2.30-3.30 pm	Post harvest care of sweet potatoes Harvest maturity Harvest methods Field containers Curing Storage Postharvest diseases, disorders	Dr. David Picha
3.30-3.45 pm	Snack	
3.45-5.00 pm	Market preparation Cleaning, sorting/grading, packing Transportation Marine containers, airfreight	Dr. David Picha

Day/Time	Topic	Presenter
4.45-5.45 pm	Developing Individual Action Plans	Mawuli Agboka
Day 3 SEPT 17	Field visit	
7.00 am	Departure from Hotel	
8.30am –2.30pm	Practical field activities	Dr. Picha, Dr. Otoo
2.30 pm	Departure to Hotel	
4.00-5.15 pm	Presentation of Action plans	Participants
5.15- 5.30 pm	Evaluation	Participants
5.30 pm	Presentation of certificates	
6.00 pm	Closing dinner	Participants

3.0 IMPROVING GHANA'S FARM-TO-MARKET TRANSPORTATION COSTS

3.1 Activity Objective

The primary objective of this activity was to design a series of activities to improve the Ghanaian System of transporting agricultural products and to strengthen the understanding of the Ghanaian extension and education system of effective marketing practices. USDA, in collaboration with Ghanaian transportation officials and extension agents, would train selected staff on improved transportation, post-harvest handling and marketing practices, and institute a train-the-trainer program covering agricultural and marketing practices for Ghanaian extension agents.

3.2 Progress Report

3.2.1 Mentoring Program in Post harvest Technology, September 2003

Mentoring services on the topics of postharvest handling of horticultural crops and small-scale postharvest technology will be made available on a weekly basis via e-mail (Kitinoja@redrivernet.com) and on an on-going basis via the internet website (www.postharvest.org). Mentoring will be provided for Postharvest Working Group members, CCARD postharvest trainees and other interested persons by Dr. Lisa Kitinoja, an experienced specialist in postharvest extension, and Principal Consultant of Extension Systems International, USA.

Mentoring is intended to provide resources (up-to-date handling information, additional training materials, new ideas for demonstrations, etc.) to persons who are currently involved in postharvest training activities in Ghana. On a designated day during each week, Dr. Kitinoja will communicate with Ghanaians via e-mail, answering any questions that arise, providing recommendations and suggestions to guide upcoming training efforts.

Example mentoring activities:

- Answering specific questions on recommended practices for reducing postharvest losses, maintaining quality and extending the marketing period for fruits or vegetables in Ghana.
- Assisting trainers with calculations of local costs and expected benefits for new handling practices (such as packing, packaging, cooling or transport methods).
- Assisting trainers to design appropriate demonstrations of new practices to use during their training programs. Demonstrations must be simple, easy to set up, and inexpensive, and result in immediate benefits such as reduced weight loss, less decay or longer shelf life.
- Assisting trainers to develop written training program outlines, identifying topics, suitable training materials and references. These outlines will allow repetition of training programs whenever they may be useful for other clientele groups.
- Assisting the Postharvest Working Group to identify causes and sources of postharvest problems for specific crops in order to identify future training needs.

Training materials (such as recommendations, outlines, illustrations, demonstration protocols and cost/benefit examples) will be provided free of charge either directly by e-mail or made available via download from the Internet. Dr. Kitinoja will provide mentoring services during a period of about 6 to 12 months, beginning Oct 2003 (actual time period to be determined by USDA/CCARD).

4.0 GHANA GRADES AND STANDARDS ASSESSMENT REPORT

4.1 Activity Objective

The Ghana Grades and Standard Assessment visit was a part of a wider U.S.-Ghana Public/Private Partnership and U.S.-Ghana Consultative Committee on Agriculture and Rural Development (CCARD) program of activities. The standardization activities are being developed to assist the Republic of Ghana to meet minimal Regional and Global requirements for fresh agricultural commodities. This assessment is the outcome of several meetings with relevant public and private sector stakeholders in Ghana during the period September 15 –19, 2003.

The Ghana Standards Board (GSB), a statutory body of the Ministry of Trade and Industry (MOTI), is the standardization authority in Ghana. The GSB has the mandate to develop and enforce all standards. Standards developed and/or adopted by the GSB are mandatory and the GSB is responsible for their enforcement.

The GSB uses “The Step Approach” for development and adoption of standards. Three different Committees, two (2) Technical Sub-Committees and a Technical Committee, will revise draft standards prior to adoption. This approach relies heavily on the technical expertise and product knowledge available in Ghana from both public and private sources. The Ministry of Food and Agriculture (MOFA), the Department of Food and Nutrition of the University of Ghana and the GSB are the lead public sector agencies. The main private sector agency is the Federation of Associations Ghanaian Exporters (FAGE), an umbrella organization comprising sixteen different commodity/product associations and forty corporate members.

Both public and private sectors are in support of standardization and are willing to participate in the process. There is agreement among all stakeholders that standards must: (1) focus on commodity for exports; (2) should be “Minimum Export Standards”; and (3) delay application to domestically traded commodities. Application of the proposed standards on the domestic market would almost be impractical and lead to undue hardship and possible economic chaos.

Financial and human capital resources to manage simultaneous standardization are absent. The primary weakness appears to be a secretariat within GSB to manage this effort from editing drafts, overseeing the process, and maintaining a smooth flow of information to committee members.

4.2 Standardization Work Plan

The work plan focuses on the GSB and its Technical Committee and Sub-Committees adopting or adapting eight of the nine standards for commodities identified by the Republic of Ghana as priority, and developing a new standard for chili pepper. To complete the standards by the proposed deadline, the following activities are recommended:

1. The GSB is the sole authority to undertake development of standards for national use in Ghana. The GSB and its Technical Committee must initiate the standardization process.
 - Set the priority of crops for standardization from among cassava, ginger, mango, papaya, pineapples, sweet peppers, chili pepper and sweet potatoes
 - Set the standardization procedure: adoption, adaptation, or development

Actions: MOFA/MOTI to initiate the following meetings:

1. Arrange meeting with GSB Manager
2. Arrange meeting with Chair of GSB Tech. Committee, OR
3. Joint meeting of GSB Manager & Chair Tech. Committee

Output:

1. Agreement on Standardization
2. Commitment to the Process
3. Resources Allocated
4. Secretariat Established
5. Contact Person for USAID and Private Sector Partners within the GSB

Deadline: December 31, 2003

2. GSB and the Technical Committee will establish a special Secretariat solely for this project. The Secretariat must be experienced with the standardization process and work independently, but closely with the GSB and the chair of the Technical Committee and Technical Sub-Committees.

Responsibilities of the Secretariat include:

- Prepare and disseminate the draft standards in advance of meetings
- Remind all committee members of time and location of meetings
- Record changes to the draft text of all standards
- Manage the standardization process with the GSB and Technical Committee
- Conduct literature research on behalf of the Committees
- Communicate with relevant bodies to facilitate the process

Deadline for the establishment of the Special Secretariat: Dec. 31, 2003

3. Technical Committees Meetings

- The Technical Sub-Committees will meet monthly to review, research, and edit the text of the proposed standard for practical application.

Composition of Technical Committees:

GSB, MOFA, MOTI, FAGE, SPEG, APDF, GEPC, CCARD, Univ. of Ghana, Post Harvest Specialist, ATRIP, Farmer Organizations, Exporters, Ghana Private Sector Partners and other NGOs involved in Agricultural export development process.

- Review three proposed standards at each Technical Sub-Committee meeting.

Output: *The Technical Sub-Committees approve the draft standards text and forward them to the Technical Committee for adoption.*

- The Technical Committee meets every 2 months/or at shorter intervals to review the draft standard text forwarded by the Technical Sub-Committee.

Output: *Approve the standards presented by Technical Sub-Committees and establish Ghana Minimum Export Standards for that commodity.*

4. MOFA, MOTI, GSB, FAGE and other relevant stakeholders must decide/clarify enforcement mechanisms, and decide which agency will have the responsibility to enforce the standards.
5. A Train-the-Trainer (TOT) program will be developed to train inspectors and selected personnel in new procedural guidelines and to build capacity and promote sustainability in the program. Training will focus on each standard after adoption. This promotes immediate implementation of the standard and provides adequate time for evaluation and correction in the standardization process/text.

Output:

- *Have inspectors enforce the Minimum Export Standard through the identification of defects, and other grading requirements.*
- *Institute inspection procedures and develop produce inspection manuals for each standardized commodity.*
- *Immediate field trials of the standards.*

6. Training of exporter and their staff in support of standards.

- Standardization personnel to visit pack houses to train staff on standard requirements of the selected commodities.
- Develop brochures and other training aids.

Output:

- *Exporters and their staff will pack produce based on standard requirements thus reducing the workload at the shipping point.*

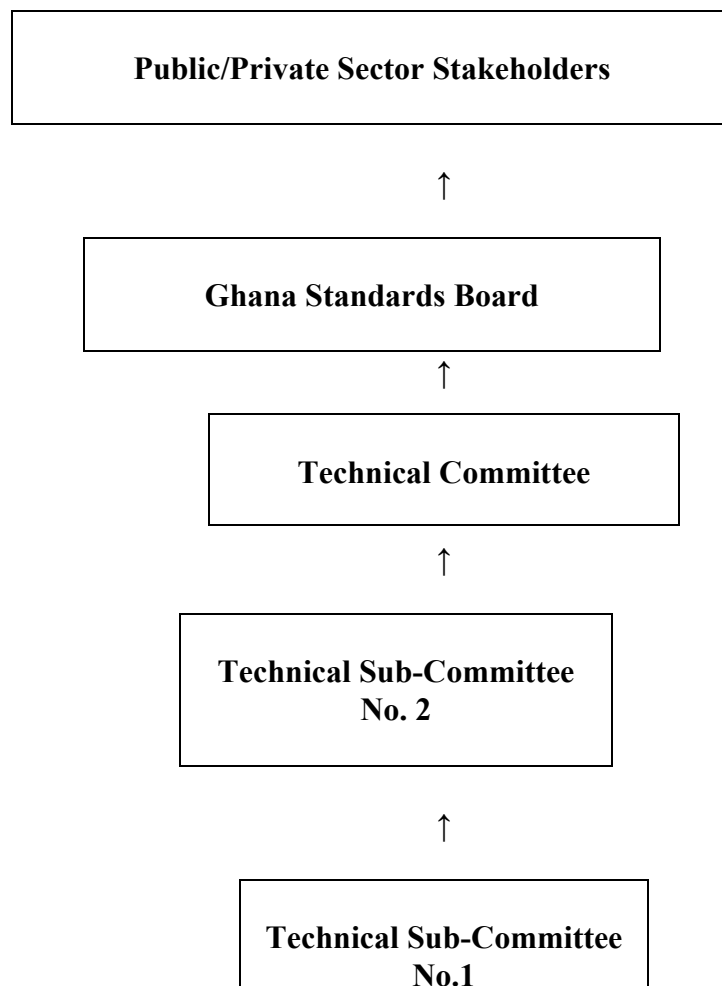
- *Literature to facilitate utilization of the standards and local training needs.*
7. Participation in the proceedings of selected standardization bodies (e.g., United Nations Economic Commission for Europe (UNECE), Codex Sub Committee for Africa, COLEACP, etc.) by selected public sector representatives.
 8. Dorian LaFond, USDA/AMS, is responsible for collecting existing standards and inspection procedure handbooks on the commodities identified by the GOG for standardization and forwarding them to the Standardization Secretariat for distribution. This process will continue until the project completion date. Examples of U.S. standards are attached. UNECE standards can be reviewed by accessing the organization's website (www.unece.org)

Time Table of Standardization Activities

Activity	Agency Responsible	Deadline
Meeting of GSB Technical Committee to initiate standardization process	CCARD Ghana contact	Dec. 2003
Joint meeting of all standardization Technical Committees	CCARD Ghana Contact	Dec. 2003
Standardization Secretariat (SS)	Technical Committee & CCARD	Dec.2003
Literature collection & dissemination*	D. LaFond, Standardization Secretariat (SS)	Dec. 2003→Jul. 2004
Meeting of all stakeholders	CCARD, MOTI, MOFA	Dec. 2003
Meeting of Technical Sub-Committee 1	GSB, CCARD, SS	Jan. 2004
Meeting of Technical Sub Committee 2	GSB, CCARD, SS	Feb. 2004
Meeting of Technical Committee	GSB, CCARD, SS	Mar. 2004
Training on New Standards	GSB / Stakeholders	Mar. 2004
Monitoring Visit by D. LaFond	FAS/ ICD	Mar. 2004
Evaluation of the process	CCARD, MOTI, MOFA	Mar. 2004
Meeting of Technical Sub-Committee 1	GSB, CCARD, SS	Apr. 2004
Meeting of Technical Sub Committee 2	GSB, CCARD, SS	May 2004
Meeting of Technical Committee	GSB, CCARD, SS	Jun. 2004
Training on New Standards	GSB / Stakeholders	Jun. 2004
Meeting of Technical Sub- Committee 1	GSB, CCARD, SS	Jun. 2004
Meeting of Technical Sub Committee 2	GSB, CCARD, SS	Jul. 2004
Evaluation of the process	CCARD, MOTI, MOFA	Jul. 2004
Monitoring Visit by D. LaFond	FAS/ICD	Jul. 2004
Meeting of Technical Committee	GSB, CCARD, SS	Jul. 2004
Meeting of all stakeholders	CCARD, SS, MOTI, MOFA	Jul. 2004
Train the Trainer	CCARD, GSB	Jul.2004
UNECE ¹ Meeting of the Specialized Section on Standardization of Fresh Fruit and Vegetables	FAS/ICD, CCARD	14-18 May 2004

Ghana's Standardization Process

¹ Schedule meeting of the UNECE Specialized Session on Standardization of Fresh Vegetables [Geneva, Switzerland].



- a. The text of the standards are introduced for revision by Technical Sub-Committee 1; after revision and amendments the text is then advanced to Technical Sub-Committee 2 for further revision and after which is submitted to the Technical Committee.
- b. The Technical Committee decides to adopt the text as a national standard. If the decision is to adopt, the Technical Committee informs the GSB of the decision, or may return the text to the Technical Sub- Committees.
- c. The GSB informs the Public/Private Sector Stakeholders of its decision to adopt the standard. The Public/Private Sector Stakeholders make the final decision and then publish the standard in the Official Gazette.

ATTACHMENT 1

FINANCIAL REPORT

ITEM	Budget Amount	Current Quarter Disbursements	Cumulative Disbursements	Remaining Budget Balance
MARKETING AND TRANSPORTATION TRAINING				
TOT Activities	\$125,000	\$32,610	\$117,769	\$7,231
Farm to Market Transportation	\$65,000	\$4,000	\$46,083	\$18,917
FOOD SAFETY/SPS TRAINING				
Post Workshop Peer to Peer Training Analysis	\$55,000	\$16,755	\$16,755	\$38,245
FSIS Meat and Poultry Seminar	\$15,000	\$0	\$12,952	\$2,048
OIE Biologics Course	\$15,000	\$0	\$5,142	\$9,858
Grades & Standards Development	\$10,000	\$4,635	\$4,635	\$5,365
FAS Coordinator	\$15,000	\$10,125	\$10,125	\$4,875
TOTAL	\$300,000	\$68,125	\$213,461	\$86,539

UNECE INTERNATIONAL LEGAL INSTRUMENTS, NORMS AND STANDARDS

FACT SHEET

AGRICULTURE

The standardization activities of the ECE include the harmonization of existing national standards into international commercial quality standards for a wide range of perishable products, including fresh fruit and vegetables, dry and dried product (fruit as well as vegetables), seed potatoes, eggs and egg products, meat (poultry, bovine and porcine) and cut flowers. The ECE Working Party on Standardization of Perishable Produce and Quality Development and its several meetings of expert have elaborated close to [100 standards](#) for the purpose of facilitating international trade between and among ECE member countries. The basis of this work is found in the Geneva Protocol on Standardization of Fresh Fruit and Vegetables and Dry and Dried Fruit. Worldwide Codex standards for fruit juices and quick frozen foods have also been elaborated by joining groups of experts of ECE and the FAO/WHO Codex Alimentarius Commission.

Many of the standards elaborated by the ECE for perishable produce have served as the basis of the quality standards of the European Union in Brussels. Explanatory brochures based on the ECE Standards are elaborated by the OECD Scheme for the Application of International Standards for Fruit and Vegetables. These brochures, which include color photographs illustrating specific defects and instructions for evaluating such defects, serve as a practical tool for interpreting the provisions of the standards as well as promoting their uniform application on an international basis. Explanatory brochures have also been elaborated for poultry meat and eggs-in-shell by ECE Meetings of Experts.

These commercial quality standards find a wide acceptance internationally, due to their practicality as concerns trade facilitation and the substantial role played in international trade of perishable produce by the region. Workshops on the harmonization of national standards with international commercial standards and quality control procedures have been organized in countries in transition as a means of trade facilitation.

These standards clearly affect all countries exporters of perishable produce, particularly those exporting to the European region.

For more information see our Web site on [Agricultural Standards](#).
