Mid-Term Impact Assessment of the Ghana Private-Public Partnerships for Food Industry Development Program

Peter Achuonjei¹, 416 Agriculture Hall, East Lansing, MI 48824, Ph: (517) 432-2214, Fax: (517) 353-5149, email: achuonjei@msu.edu

Samuel Sefa-Dedeh²,

Doe Adovor¹

¹Michigan State University, ²University of Ghana

Abstract

The Ghana Private-Public Partnerships Program (GHPPP) funded by USAID through Michigan State University (MSU) Partnerships for Food Industry Development Program - Fruits & Vegetables (PFID-F&V) under the MSU Institute of International Agriculture seeks to: a) Develop an efficient logistical supply chain in Ghana capable of achieving products of specified consistency, quality and safety, (b) Develop skills and capabilities of all participants in the horticulture supply chain, (c) Support the establishment of a Ghanaian NGO with the capability to lead the horticultural industry in sustainable and profitable development, (d) Provide technical assistance where needed to entities in all segments of Ghana’s horticultural supply chain. In order to achieve program objectives, GHPPP used a collaborative partnership approach that involved key players within the private sector as well as nongovernmental organizations (NGOs). GHPPP through collaboration with all partners helped establish a flourishing horticultural industry beneficial to small, medium and large-scale producers in Ghana. This paper presents a mid-term impact assessment of the GHPPP program. The results of the impact assessment indicate that: 1) More than three-quarters of all participants in GHPPP sponsored training programs view these programs as having positively impacted their production. 2) Lessons learned from visits to other successful models such as Kenya have helped farmers in Ghana improve on their horticultural supply and cold chain management techniques. 3) The mid-term evaluation has helped project implementers to adjust their implementation process to include more women beneficiaries. 4) Overall, almost all participants of GHPPP sponsored programs strongly agreed that these programs have the potential to increase their export share in global and domestic markets and that they are satisfied with implementation process.
INTRODUCTION AND DESCRIPTION OF THE PROJECT

Agriculture is the main driving force behind Ghana’s economy, contributing approximately 35% towards its GDP and employing over 60% of the total work force (CIA Fact Book, 2004). Fruits and vegetables production for exports occurs mostly in the Southern parts of Ghana. With most production for export concentrated around 50 miles of Accra, Ghana’s capital, producers and exporters may be said to be strategically positioned close to Ghana’s ports of export. GHPPP has been extremely instrumental especially in Ghana’s pineapple industry. FAOSTAT, (2004) records indicate that Ghana’s pineapple industry has grown significantly over the past 10 years from producing 11,000 tons/year in 1990 to 62,000 tons/year in 2002. Irrespective of extraordinarily favorable conditions for agricultural production in Ghana, fruits and vegetables export does not match total production due to lack of quality control within the entire logistic chain, poor methods of production and lack of good post-harvest handling techniques.

The Ghana Private Public Partnership (GHPPP) for Food Industry Development Program was launched in October 2002 with the goal of revitalizing the Ghanaian horticultural sector and to assist medium and small-scale producers in enhancing their income. The project was funded by the United States Agency for International Development (USAID) under its Cooperative Agreement Strategy. Partnerships include highly capable None Governmental Organizations (NGOs) such as Technoserve, Care, Amex, and Agribusiness in Sustainable Natural African Processed Products (ASNAPP). Royal Ahold, one of the leading global food distributors, is a valued partner. The objectives of the program was to: (a) Develop an efficient logistical supply chain to achieve products of specified consistency, quality and safety, (b) Develop skills and capabilities of all participants in the horticulture supply chain, (c) Support the establishment of a Ghanaian NGO with the capability to lead the horticultural industry in sustainable and profitable development, (d) Provide technical assistance where needed to entities in all segments of the horticultural supply chain.

In order to enter into regional and international markets, small and medium scale Ghanaian fruits and vegetables producers had to unlearn old traditional production techniques that otherwise contribute to high post harvest loses. Post harvest practices that ignore appropriate washing and handling, cold chain management techniques including immediate refrigeration or cooling, appropriate packaging had to be addressed by the GHPPP program. While these practices that ignore, cold chain techniques may be considered acceptable for domestic fruit and vegetable consumption, these trends (that involve hipping large stock pile of produce on farm after harvest without any protection from the direct sun) have been found to unacceptable for regional and international exports. High rejection rates of Ghanaian fruits and vegetables products at European ports have sent signals indicating the need for change.

The GHPPP program from the onset recognized that to be successful in its program activities/efforts will require tapping into local knowledge of producers in the region through participation and collaboration. For this reason, a Strengths Weaknesses Opportunities and Threats (SWOT) analysis of current fruits and vegetables logistical chain including marketing and consumer studies was conducted by a team from MSU, University of Ghana, representatives of farmer groups, Royal Ahold and all collaborators including the NGO’s. The SWOT analysis involved field studies and interaction with several producers (small,
medium and large), cold storage analysis at ports and production and packaging facilities. The mission report findings and recommendations were shared with individual producers and Government of Ghana (GoG) officials through series of organized meetings and workshops. It is expected that by exploiting opportunities and providing remedies for weaknesses and threats uncovered in the SWOT analysis through training and workshops, GHPPP will increase international market share of fruits and vegetable exports, raise producers’ income and ultimately affect quality of life of Ghanaian producers and exporters.

**THEORITICAL BASE**

*Collaboration and Participation*

In order to bring about development in Ghana’s fruits and vegetables industry GHPPP’s model of development involves national and international collaboration and participation amongst outsiders and insiders. According to Axinn and Axinn (1997:17), an international development project such as GHPPP depends for its success on collaboration between outsiders and insiders. Outsiders in the context of the GHPPP program comprise of groups of individuals usually with different levels of competence, drawn from different disciplines, nations and cultures. Insiders on the other hand usually comprise of groups of people or individuals having enormous local knowledge usually drawn from a homogenous socio-cultural and economic background.

The collaborative structure employed by GHPPP is built on the understanding that all stakeholders including producers and exporters in the partnership are in agreement to work jointly with one another towards achieving a common goal. According to Axinn and Axinn (1997), international development collaboration such as depicted by the GHPPP program designed to improve livelihood among rural people must rely upon the understanding each collaborator has of the others for it to be effective.

Participation, like collaboration is a major component of the GHPPP program. In a sense participation and collaboration are linked in that they complement each other. Participation may be fostered through genuine collaboration. The issue of participation is not new to the international development field. In fact, due to the success of most public-private partnerships, this approach now tops the United Nation’s list of approaches used in carrying out effective and efficient international development projects (Richter, 2004). GHPPP for the past two years has recognized that to be effective in implementing its public-private partnerships will require acknowledging insiders’ potential, respecting and soliciting their local knowledge in program planning. By so doing stakeholders particularly insiders will be encouraged to participate in their own development. It is believed that “the most critical difference between success and failure is the extent to which the people who are supposed to benefit from the program have a voice in deciding the content, the objectives and the methods used by the system” (Axinn and Axinn, 1997, pg. 71).

*Horticultural exports in Africa*

The growing seasons for fruits and vegetables in most industrialized countries is very short due to temperate climatic conditions. As a result, this offers opportunities for farmers in tropical regions to fill certain niches with off-season production at low labor input and
attractive prices. Most countries in tropical regions have climatic conditions that allow for year round production. Currently, Kenya is one of those countries that is able to produce cool season vegetables (Singh, 2002). In recent years, many African countries have developed large programs for fresh fruits and vegetable production with the aim of exporting to EU markets (Singh, 2002). In 1994, for example, 92\% of EU imports of green beans from outside EU countries came from Africa; and Kenya was the largest supplier with 29\% (Singh, 2002). Between 1989 and 1997, Sub-Saharan Africa exports of fresh vegetables to industrialized countries increased by 150\% (Dolan and Humphrey, 2000). South Africa, Kenya, and Zambia are leading suppliers of fruits, vegetables, in the EU market (Barrientos et al., 2001). Most experts regard horticulture today as a Kenya export success story (Stevens and Kennan, 2001). It could be said that Kenya’s success in the production and marketing of fruits and vegetables is because it is an equatorial country, which allows it to produce crops year round. This success is closely related to many other factors including agro-climatic conditions and changes that occurred in the production systems over the last decades (McCulloch and Ota, 2002).

Ghana, like Kenya, is an equatorial country which relies on small-scale farmers for agricultural production and the climatic conditions and farm structures are similar to the situation in Kenya. The level of mechanization is minimal and farm size is limited by the availability of labor. In recent years, Ghanaian horticultural crops targeting global markets have emerged as a potential source of income (Achuonjei et al., 2003); however, the fruit and vegetable industry appears fragmented in its approach to develop production and marketing strategies. Kenya’s success has encouraged other African countries to enter the export market for horticultural products (Singh, 2002). As more African countries enter the market, competition for fruits and vegetables market shares in Europe and other developed countries will intensify (Singh, 2002). It thus follows that for Ghana to expand its market share and remain competitive will require serious considerations of supply and cold chain management and food safety issues discussed in this paper.

OBJECTIVES AND METHODS USED IN CONDUCTING THE EVALUATION

The GHPPP program during the summer of 2004 completed a mid-term review using a survey method. The data generated from the survey was analyzed using SPSS version 11.5. Rough estimates show that at the time the survey, about 180 individuals had participated in one way or the other in GHPPP program activities. However only 44 questionnaires were adequately completed and analyzed. When the project was designed, a mid-term evaluation report was built into it as an integral part of the program. It is believed that this report will provide a means of determining the progress of the performance indicators of the project in terms of meeting the stated objectives. The assessment is also important in identifying areas of program weaknesses if any and to find ways by which improvements can be incorporated into future project activities so as to meet stated objectives. The midterm review otherwise considered a program monitoring exercise provided a means by which the GHPPP program was able to monitor the extent to which inputs are converted to program outputs.

Following one year of operation of the GHPPP, a survey of stakeholders was conducted from March to June 2004. USAID Ghana Mission requested Michigan State University (MSU) to coordinate the survey and evaluation. The method used to conduct this survey was the selection of a number of respondents from a population of project...
beneficiaries. The criterion used for the selection of survey participants was based on those willing to participate and those for whom the project had contact information. To accomplish this activity, an interviewer was recruited and trained to administer the questionnaire. The following steps were taken to conduct the mid-term evaluation:

1. **Questionnaire Development**

   A five-stage/section questionnaire was designed to solicit responses from those who had participated in GHPPP core project activities. The five sections covered by the questionnaire were: training/workshop, technical assistance, impact assessment of indicators, producer associations and GHPPP sponsored study tours. Respondents were asked to rank the impact of the program’s activities using a five point likert-like scale (strongly agree, agree, disagree and strongly disagree).

2. **Sample Selection**

   The survey was intended for all previous participants of GHPPP sponsored programs however only 44 participants expressed a willingness to participate in the survey; and all were included in the survey. Therefore, the survey does not claim to be based on a random sample of all participants. It is reasonable to assume, however, that the findings of the survey are useful in gauging the progress of the project. It is intended that a random survey of participants will be taken at the conclusion of the project.

3. **Dealing with non-response rate**

   Non-respondent rate was exceptionally high (about 40%) in some sections of the instrument. In order to cater for the non-response error, 10 of the non-respondents were selected to determine why they did not respond to some of the sections. The general reason given for their not responding to the questions in some of the sections was that they did not participate in the activities of the section e.g., only 10 participants were sent to World Food Logistics Organization (WFLO) and in that section only the 10 responded leaving a large number of non-respondents. The non-response rate was therefore left out from the analysis so as to present a clear picture of which sections the survey respondent participated in.

**SURVEY RESULTS**

**Demographics**

More than 75% of survey respondents were males. Majority (65%) depicted in Figure 1, performed a dual role of farming and exporting (farmer/exporters) fresh fruits and vegetables. Figure 2 shows that of all respondents, 95% belong to at least one local organization however 80% indicated that they actively participated in organizational activities as a result of GHPPP involvement.
Certification and GHPPP Efforts in Ensuring Safe Food and High Sanitation

As illustrated in Figure 3, more than 50% of all farmers, processors and exporters interviewed said they have at least one certification and nearly 40% of all farmers, processors and exporters are European Good Agricultural Practices (EUREPGAP) certified. Of the nineteen respondents, results from Figure 4 show that more than 25% strongly agreed while more than 40% simply agreed that GHPPP technical assistance in Food Safety truly helped improve their respective organizations in terms of their understanding of food safety and sanitation related issues. Less than 30% of all participants disagreed while only 5% strongly disagreed that GHPPP technical assistance did really improve their respective organizations.

Supply chain Food Safety and Online Food Law training

Figure 5 shows that over 80% of respondents who participated in supply chain-training workshop strongly agreed that it was beneficial and that the Ghana mission report analyses of the supply chain was useful. Nearly 90% rated as very beneficial the “Regional Food Safety Training” workshop. Similarly, 80% stated that the On-line Food Law training program was beneficial. Table 1 represents a breakdown of respondents’ representation in local organizations.
Professional Development Study Visits

Study tours were conducted in the U.S. where participants were sent to WFLO, Food Marketing Institute (FMI) and Produce Marketing Association (PMA). During these tours, participants attended workshops and short training courses on supply chain cold chain and logistics management, packaging, effective personnel management, new products with market potential etc. Nearly 70% of all WFLO, FMI and PMA participants interviewed said that they were satisfied with the benefits gained from these experiences. More than 75% of all WFLO participants strongly agreed that the training had impacted their understanding of cold chain management good practices.

Export Capacity-Building

One of the key findings of the supply chain Mission study by Achuonjei et al., (2003) was that the horticultural industry in Ghana was fragmented and lacked an organized export strategy. GHPPP activities were tailored towards organizing and providing a better export market access for Ghanaian produce. More than 80% of respondents stated that market access linkages provided valuable opportunities for increased profitable exports. Over 60% strongly agreed that GHPPP played a constructive role in supporting other NGOs through financial and technical assistance in establishing the Mango and Papaya association. More than 80% of the respondents strongly agreed that GHPPP financial assistance programs helped strengthen the Sea-freight Pineapples Exporters of Ghana (SPEG), Vegetables Producers and Exporters Association of Ghana (VEPEAG), and Horticultural Association of Ghana (HAG). As illustrated in Fig. 6, twenty-five (25) of the respondents stated that their organizations received some technical assistance from GHPPP. Forty percent (40%) of these respondents strongly agreed while 36% simply agreed that technical assistance offered by GHPPP truly contributed to the strengthening of their various organizations while 16% of the respondents disagreed and 8% strongly disagreed.

Respondents were asked to rate the potential of GHPPP to create opportunities for stakeholders in terms of assisting them understand various international food export standards and regulations such as Hazard Critical Control Points (HACCP), EUREPGAP, Good Agricultural Practices (GAP), Integrated Pets Management (IPM). Twenty-five respondents answered this question. As illustrated in Fig. 7, nearly 85% either strongly agreed or simply agreed that GHPPP programs truly created the opportunities for individual

Table 1: Membership in Local Organization

<table>
<thead>
<tr>
<th>Organization</th>
<th>Freq</th>
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<tbody>
<tr>
<td>Exporter/Mango Papaya Organization/VEPEAG</td>
<td>1</td>
</tr>
<tr>
<td>Mango Papaya Organization</td>
<td>1</td>
</tr>
<tr>
<td>FAGE</td>
<td>1</td>
</tr>
<tr>
<td>HAG</td>
<td>3</td>
</tr>
<tr>
<td>HAG/SPEG</td>
<td>2</td>
</tr>
<tr>
<td>VEPEAG</td>
<td>3</td>
</tr>
<tr>
<td>VEPEAG/HAG/SPEG/FAGE</td>
<td>1</td>
</tr>
<tr>
<td>VEPEAG/OFA</td>
<td>1</td>
</tr>
<tr>
<td>None</td>
<td>1</td>
</tr>
</tbody>
</table>

Figure 5: Supply Chain Workshop Participation

![Supply Chain Workshop Participation](image_url)
participants and stakeholder to understand international food export standards and other important regulations.

**Figure 6: Assistance to Local Organizations**

![Graph showing assistance to local organizations with ratings.]

**Figure 7: Assistance on Export Regulations**

![Graph showing assistance on export regulations with ratings.]

**DISCUSSION**

**Demographics**

For sustainable development to be achieved in developing countries Udoh (1998) asserts that it is important that governments, program planners, researchers and international organizations incorporate more women into the program activities. While it is absolutely important to incorporate women in development programs, it is important to note that in Ghana and most developing countries, the tradition has been that, women mostly produced food crops while men produced cash crops. Fruits and vegetables produced for exports are considered cash crops; therefore it is not surprising for more males than females to participate in GHPPP type projects in most developing countries. This in part may explain gender imbalance in GHPPP programs. To breach the gender gap, beginning July 2004, GHPPP incorporated more women into its programs by expanding its work to include tomato and specialty vegetable growers most of whom are females.

**Certification and GHPPP Efforts in Ensuring Safe Food and High Sanitation**

In order for producers to export their products to Europe, their farms need to be EUREPGAP certified. When respondents were asked if they had received some certification for their products, a total of 20 respondents answered yes to this question. The increase from 10 to 20 number of certified horticultural producers may in part be due to efforts on the part of GHPPP and its partner organizations to educate individuals and organizations about the importance of product certifications. It is not surprising that most producers interviewed claim to be EUREPGAP certified. Jaffee and Spencer (2004) explain that for many high-value foods, especially fruits and vegetables, the challenge of international competitiveness have moved well beyond price and basic quality parameters to greater emphasis on food safety and agricultural health concerns. What matters, according to Jaffee and Spencer (2004) is the ability of developing countries to upgrade their capacity and incorporate necessary adjustments in the structure and operation of their supply chains. Since most Ghanaian
horticultural produce is targeted towards European markets, it is reasonable to believe that most producers will be EUREPGAP certified as depicted by Fig.3.

GHPPP food safety and cold chain management training programs represents what is referred to in international development circles as a positive sum game for all players regardless of size. Positive sum game used in this context is a strategy in which all players gain from GHPPP food safety programs without anyone losing. Considering food safety training programs as a component of GHPPP sponsored programs, it must be in the interest of all producer/exporters regardless of size to ensure that consumers - local or international are presented with safe produce. The consequences of unsafe food exports are usually deleterious not to one individual but to the exporting nation. Unsafe food instills negative perceptions amongst consumers, which in most cases takes generations to correct. Increased awareness amongst consumers in high-income developed countries in the wake of a series of highly publicized food scares and scandals has elevated concerns about food safety (Jaffee and Spencer 2004). For example, due to recent food safety scares originating from Peru, it has been said that “if the humble potato had not been discovered in Peru and taken home by the Spanish conquistadors five centuries ago, it could have a tough time entering the European market today” (Cable News Network (CNN), 2004).

To be sure GHPPP assistance had any impact in ensuring safe food and high sanitation on production activities, respondents were asked whether they received any technical assistance on food safety related issues. Respondents were also asked to rate the impact of any assistance they received in this area. Nineteen respondents, representing nearly half of those interviewed indicated that they had received some form of technical assistance in food safety and sanitation related issues. More than a quarter of these respondents strongly agreed while more than a third simply agreed that GHPPP technical assistance in food safety truly help improve their respective organizations in terms of their understanding of food safety and sanitation related issues. A little more than a third either disagreed or strongly disagreed that GHPPP technical assistance did improve their respective organizations. Jaffee and Spencer (2004), contend that the intrinsic risks associated with the production, transformation and sale of high-value and perishable food products, combined with different standards and institutional capabilities, often pose major challenges for international trade in fruits and vegetables. The situation according to Jaffee and Spencer (2004) is further exacerbated by the fact that the landscape for food safety and agricultural health standards is rapidly changing. It is encouraging to find that nearly 90% of those interviewed rated as very beneficial GHPPP sponsored “Regional Food Safety Training workshop”. In addition 80% stated that the On-line Food Law training program sponsored through Michigan State University’s National Food Safety and Toxicology Center was beneficial. These workshops and training programs are conducted in order to inform producers of current trends in food safety regulations and also help improve overall food quality, and safety standards among producers.

Professional Development Study Visits

Since 2002, Ghanaian horticultural stake holders have been introduced to successful models in other countries such as Kenya, Guatemala and the United States. Nearly three quarters of those who participated in GHPPP “Professional Development Study Visits” to Kenya, Guatemala and the U.S. -World Food Logistics Organization, Food Marketing
Institute and Produce Marketing Association said that they benefited tremendously from these visits. Respondents also added that study visits were extremely useful in exposing them to different production, packaging and cold chain management techniques.

**Lessons learned from the Kenyan Study visit**

Similar to the observations in Costa Rica, Kenyan producers have proven that there are relatively inexpensive steps growers/exporters can take to maintain an effective cold chain. It has also been proven that maintaining the cold chain at any stage in the supply chain can be very beneficial, especially immediately following harvesting. Lessons learned from Kenya that are applicable to any horticultural industry including Ghana includes; harvesting early in the day; providing shade at every opportunity; providing protection against damage in staging areas at shipping terminals; and cooling produce just before loading at ports.

The team that visited Kenya observed evaporative cooling chambers in two out of three small-scale producers’ farms visited. These simple, low cost cooling charcoal fueled devices represented in figure 8, function by lowering the temperature of the internal chamber by transferring heat to the water soaked charcoal walls for evaporation. These chambers allow fresh produce to stay in good condition for at least five days before pick up.

*Figure 8: Charcoal Coolers*

(Drawing by Dr. Mathieu Ngouajio who was a team member of the Kenya Study tour)

**(Export Capacity-Building and Establishment of the Mango and Papaya Association)**

GHPPP assisted in the establishment of the Mango and Papaya Association in an effort to create an organization that would provide market opportunity to Ghanaian producers and exporters. Some of the management executives were encouraged to develop relations with potential buyers. When asked if such efforts were beneficial, more than three quarters of all interviewees stated that market access linkages provided through GHPPP sponsored professional meetings and arranged in-country visits with international retailers provided them excellent opportunities to establish new market contacts. Even though some producers have benefited from GHPPP initiated contacts (through increased exports), further research is needed to confirm the exact number of long term relationships that have been created and how much sales have resulted from these relationships/contacts.

**GHPPP financial assistance**
GHPPP has provided some financial assistance to SPEG and other grower associations to attend and showcase Ghanaian products at Fruit Logistica 2004 in Germany. More than three-quarters of all respondents said they were satisfied with the financial assistance provided to SPEG, VEPEAG, and HAG. This confirms the approach taken by GHPPP, which does include direct financial infusion into businesses in addition to the financial costs of running training programs and workshops. It has been argued by many experts that international development work such as presented in the GHPPP model includes, among other, financial costs. Most importantly, the transaction costs of achieving international development collaboration are most often necessary to ensure program success. Besides financial investments, cost may also include investment of time and energy as well as travel and cash costs. Some costs while easy to dismiss as merely intangible are necessary in determining the success of an international development program such as the GHPPP under discussion. For example, regular monthly meetings amongst all collaborators and partners in the GHPPP program are organized to ensure all parties are on the same page in terms of project objectives. Regardless of tangible and intangible investments, the actual results of the GHPPP programs may become manifest in the long term through expanded export market shares for fruits and vegetable producers.

Educational importance

The educational importance of the study is that, mid-term evaluations of pilot models or projects are important because they provide program implementers with critical analysis of whether the project objectives are being met or not. If it is discovered at this early stage that certain bottlenecks or problems are impeding the smooth implementation of the program, corrective measures could be put in place to rectify the problems. For example, the Mid-term review revealed that there were few women beneficiaries as such the project moved quickly to address this shortcoming hence the number of women participants were increased dramatically so as to have a balanced gender distribution of project inputs and benefits.

Conclusion

There is no doubt that having reliable market access may be considered the single most significant factors that determine the success of national horticultural export ventures. Having a reliable market access however requires maintaining a smooth and efficient supply chain free of food safety hazards. For example, the analysis of Kenya and Costa Rica confirm this point. What was learned in Costa Rica and Kenya coupled with the findings from this impact assessment is instructive to the Ghanaian horticultural setting. In addition it is clear that Ghana should be able to take small steps of the kind observed in Kenya in order to ensure expanded market shares. To accomplish this goal, each member of the horticultural industry will need to cooperate as never before in building consensus on challenging issues and taking action to resolve problems. It has become a generally accepted precept that for any horticultural industry to prosper, all enterprises in the supply chain from farm to table must genuinely participate in the change process.

The analysis required in preparing this paper has made a valuable contribution to the GHPPP project. It has provided the project and USAID Mission in Ghana the opportunity to
review the project implementation process and make suggestions as to how the program might be improved. It has also permitted the review of this new program and suggested corrective measures needed to ensure that project objectives will fully realized by the end of the project cycle.

REFERENCE


Jaffee, S., and Spencer Henson, S., 2004. Standards and Agro-Food Exports from Developing Countries: Rebalancing the Debate


