

MONITORING AND EVALUATION OF PRELIMINARY FINDINGS FROM HACCP CAPACITY BUILDING EFFORTS IN THE CARIBBEAN ¹

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2018 Jan



¹ Report prepared for a World Bank study on making the Case for Food Safety Investment in Developing Countries.

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Compliance with U.S. and European food safety standards is often a barrier for Caribbean exporters seeking to increase international market access and trade. This case study examines the impact of a recent effort to build capacity in Hazard Analysis Critical Control Point (HACCP) among public and private stakeholders in CARIFORUM² States. HACCP is an internationally accepted system for reducing the risk of food safety hazards. Implementing a HACCP system can increase international trade opportunities by increasing buyers' confidence. The capacity building project was part of the EU-funded 10th European Development Fund Programme on Sanitary and Phytosanitary (SPS) Measures. The Inter-American Institute for Cooperation on Agriculture (IICA) implemented the overall project and engaged with the Grocery Manufacturers Association Science and Educational Foundation (GMA SEF) to coordinate and deliver HACCP training targeted at processed food producers. GMA SEF worked with the Joint Institute for Food Safety and Applied Nutrition (JIFSAN) to implement a monitoring and evaluation (M&E) plan to measure the impact of the trainings.

The HACCP project took place in 2016 and was rolled out in two phases. Phase I was a train-the-trainer program for both public and private sector employees. 29 participants from all over the region completed three separate trainings as a cohort: an online introductory HACCP course, a two-day follow-up course in Barbados, and a four-day trainer-centered workshop at GMA SEF's headquarters in Washington, D.C. The program also included a practical component in which GMA SEF trainers reviewed mock HACCP plans developed by the participants and provided detailed feedback. The goal of this phase was to develop a cadre of qualified HACCP trainers that could subsequently deliver trainings region-wide, thereby creating a "multiplier effect" to promote increased HACCP compliance and implementation in the Caribbean.

Phase II was a practitioner-level training for the private sector. 56 participants completed the online introductory course and attended one of four two-day follow-up courses held in the region. The follow-up courses were led by trainers selected from the Phase I cohort, with GMA SEF trainers present to assist them and provide feedback. The goal of this phase was to increase HACCP compliance and implementation among the companies represented and provide a forum for Phase I trainers to practice delivering HACCP trainings.

The M&E plan comprised both immediate and intermediate indicators. Immediate data collection tools included pre- and post-training factual tests and a post-training evaluation. The factual tests provided a quantifiable measure on the knowledge gained during the training. The evaluation assessed participants' satisfaction with the training and confidence in being able to implement what was taught. Intermediate tools included a follow-up survey administered by email one year after the training. The follow-up survey measured the multiplier effect of the training (i.e. how many additional trainings occurred) and the change in HACCP implementation.

The M&E activities carried out under this project produced excellent data, not all of which can be summarized in this short case study. Instead, the focus here is on the intermediate impact indicators, as those correspond directly to the project's goals in terms of scaling up HACCP training resources in the Caribbean and increasing HACCP compliance and implementation in the private sector. Some limitations and lessons learned from the project are also discussed.

² The Caribbean Forum of the African, Caribbean and Pacific Group of States (CARIFORUM) comprises Antigua and Barbuda, The Bahamas, Barbados, Belize, Cuba, Dominica, Dominican Republic, Grenada, Guyana, Haiti, Jamaica, St. Kitts and Nevis, Saint Lucia, St. Vincent and the Grenadines, Suriname and Trinidad and Tobago. Its objectives are to coordinate policy dialogue with the EU and promote integration and cooperation in the Caribbean.

The Multiplier Effect

The multiplier effect was measured only in Phase I as this phase was specifically a train-the-trainer program. In addition to a one-year follow-up survey, a six-month follow-up survey was administered due to the reporting deadlines of the project. The results of the six-month survey showed that 18 of the respondents had conducted one or more HACCP trainings in the six months since completing the program. The average number of trainings conducted was two, with an average of 15 people per training. Thus, an approximate 540 additional people were trained in HACCP throughout the Caribbean within the first six months. The results of the one-year follow-up survey were fairly consistent, showing approximately 442 additional people trained since the six-month survey mark. In total, new Phase I HACCP trainers reported training nearly 1,000 additional people.

The consistency between the six-month and one-year follow-up surveys indicates that there has been a sustained impact from the project, lending confidence that the multiplier effect will continue growing. Many of the trainers have either achieved or started pursuing certification from the International HACCP Alliance, further showing that this project has produced a cadre of qualified trainers that is committed to promoting changes in food safety practices throughout the Caribbean. To be certified processors have to have taken an Alliance accredited train-the-trainer course, and to teach accredited courses independently, they need to complete the accreditation application (plus lead instructor part) for 150 USD.

HACCP Compliance and Implementation

The change in HACCP compliance and implementation was measured in both project phases. It should be noted that while the survey response rate for Phase I was good (86% for the six-month survey, 80% for the one-year survey), the response rate for Phase II was low (52% for the one-year survey³). Possible reasons for the lower response rate at the one-year mark are survey fatigue and the recent disruptive hurricane season in the Caribbean. A more speculative reason for the much lower response rate among Phase II participants is lack of interest. These participants only attended one in-person training and therefore had less interaction with the project collaborators and other participants. They may have felt less involved in the project and less inclined to complete the follow-up survey. Regardless of the reason, the Phase II follow-up data may not be as representative of the entire participant group.

In Phase I, there were nine respondents from the private sector. All of the respondents who already had a HACCP system in place at their companies reported that they had reviewed their existing plans after the training and made changes if necessary. All of the remaining private sector respondents reported that their companies had implemented or started the process of implementing a HACCP system since the training. At the six-month survey mark, one respondent reported that their company had passed a third party HACCP audit after the training. At the one-year mark, however, no additional respondents reported having passed a third party audit. While third party audits are not required for companies to export, they do verify that companies are in compliance with minimum regulatory requirements. The remaining public sector respondents from regulatory agencies indicated that the training helped them to do their jobs better by improving their ability to conduct inspections and explain how to take corrective actions.

All Phase II participants were from the private sector. Most respondents who already had a HACCP system in place at their companies reported that they had reviewed their existing plans after the training and made changes if necessary. Of the remaining respondents, only about half reported that their

³ A six-month follow-up survey was not administered to Phase II participants.

companies had implemented or started the process of implementing a HACCP system since the training, though most planned to implement it within the next year. The top reasons given for delays in implementation were time constraints and difficulty meeting expectations associated with compliance. Three respondents reported that their companies had passed a third party HACCP audit after the training.

The results of both phases suggest that the project increased HACCP compliance and implementation within the private sector, though the magnitude may not be fully understood yet. Implementing a HACCP system takes time and requires planning, investment of resources, and commitment from management and other staff. It would be illuminating to follow up again with the participants in the future to see if additional companies implemented HACCP and achieved certification.

Further Research on Long-term Impacts

Ideally, impact evaluation associated with food safety capacity building would like to assess the long-term impacts of trainings and try to establish a link between improved food safety practices and improved economic and health outcomes. Examples of long-term impacts which this project could contribute to are increased trade, reduced numbers of rejected products, reduced foodborne outbreaks traced to imported foods, reduced domestic foodborne outbreaks, etc. Due to time constraints, these kinds of indicators were not included in the scope of the M&E work completed under this project.

Nonetheless, some preliminary data from the follow-up surveys suggest that the trainings have created the potential for better trade opportunities. Between Phase I and II, 14 survey respondents reported that the training helped them access additional markets in the region, two reported that it helped them access additional markets in the EU, and five reported that it helped them access additional markets in the U.S. 25 respondents indicated that their companies had increased or planned to increase their size of operation, and 28 respondents indicated that their companies had expanded or planned to expand the types of products they produce. Nine respondents reported that their company's export volume had increased. These respondents were mostly from small companies that produce niche products such as plantain and taro chips, candied fruits, cassava-based products, juices, and herbal teas. Several respondents were producers of sauces and condiments, for which there is a growing export market in the Caribbean. In 2016, Caribbean Community (CARICOM) sauces and mixed condiments exporters generated approximately \$45 million in international sales⁴.

The companies represented in this project are obviously a small subset of food producers in the region. To be able to assess the long-term trade impacts of scaled-up HACCP training in the Caribbean, secondary trade data would be needed. Even with such data, it would still be difficult to link country- or region-level data to a single intervention, and some type of counterfactual analysis would be needed.

Lessons Learned

The collaborators on this project hope that this case study will help justify and inform future food safety capacity building efforts. One of the most important factors that worked in the project's favor was the strong partnership among IICA, GMA SEF, and JIFSAN. IICA is a leader in supporting international technical cooperation through capacity building and has executed many projects in the Caribbean. GMA SEF has experience partnering with international organizations to deliver high-impact training programs on state-of-the-art technologies and processes (like HACCP). JIFSAN, through its partnership with FDA, has an established approach for measuring the effectiveness and impact of its international food safety capacity building training programs.

⁴ International Trade Centre. Trade Map: Trade Statistics for International Business Development. Retrieved November 21, 2017, from <http://www.trademap.org/http://www.trademap.org>.

The expertise and experience of the collaborators was necessary for ensuring that the project could be executed and that its impact could be reported. Particularly with the M&E work, collaboration was key to developing the evaluation tools, getting buy-in from GMA SEF's trainers (who were often the ones administering the surveys/tests), and communicating to the participants the value of completing the surveys. Achieving a perfect survey response rate is difficult, especially when surveys are administered long after the training, but multiple email reminders from the collaborators helped get the response rate as high as possible.

The unique design of Phase I was another factor that likely increased the impact of the project. The fact that there were two in-person follow-up trainings after the initial online training meant that the participants had more opportunities to ask the GMA SEF trainers questions and reinforce their understanding of HACCP, better preparing them to become future HACCP trainers. The four-day trainer-centered workshop also included an adult learning component that taught the participants how to adjust their teaching techniques to different adult learning styles. After the workshop, the trainers continued interacting remotely with the participants as they completed their mock HACCP plans. The Phase I participants chosen to lead the Phase II trainings received additional coaching from the GMA SEF trainers and practical teaching experience.

The cohort design of Phase I also made the trainings more effective because it helped facilitate professional networking and a sense of community and teamwork among the participants. The majority of participants reported that they stayed in touch with each other through social media (e.g. WhatsApp Messenger) after the trainings. Several participants even reported that they were trying to develop a formal association of HACCP trainers in the region. The cohort design maximized participant engagement and development throughout the train-the-trainer phase of the project, improving the project's likelihood of having a lasting impact in terms of scaling up HACCP training and technical capacity in the Caribbean.

With cohort training programs, it is especially important to select qualified participants so that limited project resources are not wasted on progressing unqualified participants through multiple trainings. IICA and GMA SEF greatly reduced this risk by using a competitive screening process to select the Phase I participants. Among other selection criteria, the candidates had to demonstrate that they were sincerely interested in becoming HACCP trainers and that they had clear plans for what they would do after the training. With this screening process, the project collaborators helped ensure that the project would produce the best possible cadre of HACCP trainers in the Caribbean.