



**USAID**  
FROM THE AMERICAN PEOPLE

# THE RELATIONSHIP OF THIRD-PARTY CERTIFICATION (TPC) TO SANITARY/ PHYTOSANITARY (SPS) MEASURES AND THE INTERNATIONAL AGRI-FOOD TRADE

## THE RELATIONSHIP BETWEEN U.S. FOOD RETAILERS AND TPC

RAISE SPS GLOBAL ANALYTICAL REPORT #5

AUGUST 2005

This publication was produced for review by the United States Agency for International Development. It was prepared by Development Alternatives, Inc.



Prepared for USAID under RAISE Task Order 14, “Assistance for Trade Capacity Building in Relation to the Application of Sanitary and Phytosanitary (SPS) Measures”, (Subcontract #4105-99S-006), under, USAID/DAI Prime Contract # PCE-I-00-99-00002-00, “Rural and Agricultural Incomes with a Sustainable Environment (RAISE),” by

**Carmen Bain**, Research Assistant, Sociology  
Michigan State University

**Deepa Thiagarajan**, Ph.D., Human Nutrition  
Michigan State University  
MSU Coordinator, RAISE SPS Project

**Lawrence Busch**, University Distinguished Professor, Sociology  
Michigan State University  
MSU Technical Director, RAISE SPS Project

Funded by USAID’s Bureau of Economic Growth, Agriculture and Trade (EGAT) and implemented by Development Alternatives Inc. (DAI), the RAISE SPS Project (“Assistance for Trade Capacity Building in Relation to the Application of Sanitary and Phytosanitary Measures”) is Task Order 14 under the RAISE (“Rural and Agricultural Incomes with a Sustainable Environment”) Indefinite Quantity Contract with DAI as Prime Contractor. Michigan State University, Abt Associates, Winrock International, and Fintrac Inc. are subcontractors. RAISE SPS assists farmers, processors, exporters, retailers and other participants in agribusiness supply chains enhance their competitiveness through achievement of international market standards. Concurrently, RAISE SPS assists regulatory, scientific, technical, and donor institutions better understand the effect of SPS issues and private sector-driven standards on economic growth and poverty reduction. USAID Missions and Bureaus can seek assistance from RAISE SPS by contacting David Soroko, USAID/EGAT Cognizant Technical Officer, at [dsoroko@usaid.gov](mailto:dsoroko@usaid.gov).

For further information and copies of RAISE SPS publications, contact:

Dr. John E. Bowman  
Chief of Party,  
RAISE SPS Project  
Development Alternatives Inc.  
[john\\_bowman@dai.com](mailto:john_bowman@dai.com)  
(301)-718-8699

# THE RELATIONSHIP OF THIRD-PARTY CERTIFICATION (TPC) TO SANITARY/PHYTOSANITARY (SPS) MEASURES AND THE INTERNATIONAL AGRI-FOOD TRADE

## THE RELATIONSHIP BETWEEN U.S. FOOD RETAILERS AND TPC

RAISE SPS GLOBAL ANALYTICAL REPORT #5

The authors' views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

# TABLE OF CONTENTS

<b>1. INTRODUCTION</b>	<b>1</b>
Background: The Growth of Fresh Produce Imports from Developing Countries .....	2
<b>2. STANDARDS FOR FOOD SAFETY</b>	<b>3</b>
2.1 Role of Public Standards.....	3
2.2 Role of Private Standards.....	4
2.2.1 Reliance on public guidelines.....	4
2.2.2 Public guidelines as private standards.....	4
2.2.3 Private standards.....	4
2.3 Standards and TPC for Labor, Environment, and ‘Fair Trade’ .....	5
<b>3. CONTRACTS</b>	<b>7</b>
<b>4. MECHANISMS FOR VERIFYING THAT PRODUCERS MEET BUYER STANDARDS</b>	<b>9</b>
4.1 Second Party Audits.....	9
4.2 Third Party Audits .....	9
4.2.1 Buyers require all of their suppliers to implement TPC.....	9
4.2.2 Buyers adopt a targeted approach towards TPC.....	9
4.2.3 TPC is recommended to suppliers.....	10
4.3 Why TPC?.....	10
4.3.1 The ability to monitor multiple suppliers .....	10
4.3.2 Third-party audits as an educational tool .....	10
4.3.3 TPC minimizes risks .....	11
4.3.4 TPC as an informational tool.....	11
4.4 Due Diligence .....	11
4.5 Why not TPC? .....	12
4.5.1 TPC is not scientific or reliable .....	12
4.5.2 Preference for personal relationships .....	12
4.5.3 The lack of standards and oversight for TPC .....	13
<b>5. CHOOSING TPC SERVICES</b>	<b>15</b>
<b>6. TRUST AND REPUTATION</b>	<b>17</b>
<b>7. CONSEQUENCES FOR SUPPLIERS</b>	<b>19</b>
7.1 Who pays?.....	19
7.2 How does it work? .....	19
<b>8. CONCLUSION</b>	<b>21</b>
<b>REFERENCES</b>	<b>23</b>



## **ACRONYMS**

BRC	British Retail Consortium
EFSS	European Food Safety Standard
EUREPGAP	Euro-Retailer Produce Working Group - Good Agricultural Practices
FDA	Food and Drug Administration
GAP	Good Agricultural Practices
GFSI	Global Food Safety Initiative
GMP	Good Manufacturing Practices
HACCP	Hazard Analysis and Critical Control Points
PMA	Produce Marketing Association
SPS	Sanitary/Phytosanitary
SQF	Safe Quality Food
SSOP	Sanitation Standard Operating Procedures
TPC	Third Party Certification
UK	United Kingdom
US	United States
USDA	United States Department of Agriculture



## EXECUTIVE SUMMARY

Telephone interviews were conducted with representatives of 10 major food retailers and 3 wholesale distributors of fresh produce in the United States between November, 2004 and February, 2005. The overall objective of this study was to (1) examine the role of third-party certification (TPC) in ensuring food safety in the production and sale of agrifood products from developing countries, (2) understand the relationship between private retailer standards and TPC, (3) clarify how supermarket chains identify and procure TPC services, and (4) develop strategies and make recommendations to resolve issues currently raised by TPC.

We found that many of the largest US wholesalers and retailers are now requiring some form of TPC from at least some of their suppliers. This requirement is a recent and ongoing phenomenon, as companies have begun implementing such programs over the past 2-3 years. Based on these interviews and the experience of TPC elsewhere, we can expect this trend to continue. While some retailers have developed their own food safety standards or use the Food and Drug Administration's (FDA) good agricultural practice (GAP) and good manufacturing practice (GMP) guidelines as their standards, third-party auditors generally use their own standards, which typically meet or exceed those standards set by retailers. Given the proliferation of auditing firms, the lack of widely accepted standards among them, and the absence of an accreditation body to approve auditors for fresh produce, retailers have adopted a list of "approved" auditing companies for their suppliers.

What are the implications of this process for small- and medium-sized producers in developing countries? One implication is that a considerable portion of the US retail market now requires TPC. Furthermore, participants cited a number of factors that indicated why TPC will increasingly prove necessary for producers who wish to participate in the US marketplace. First, in a competitive market, with all else being equal, those without certification might find it harder to sell their product than those with certification. Second, retailers are concerned about minimizing the risk of food-borne illness/contamination incidents, as well as limiting their liability and demonstrating due diligence if such incidents were to occur. Products from developing countries are generally perceived to be of higher risk. TPC may prove to be an important mechanism for suppliers to provide assurances to potential buyers that suppliers are cognizant of the need for—and indeed are following—good agricultural practices to better ensure the safety of their products through risk management. Third, TPC may be an important tool for demonstrating trustworthiness. Relationships involving trust and reputation become increasingly problematic in a global agrifood system, where buyers need to deal with multiple suppliers in many countries. Where retailers insist that their suppliers use an "approved certifier," trust is displaced from the producer to the certifier. The need to demonstrate trustworthiness may be greater for smaller producers who do not have the global brand-name recognition and corresponding reputation of some of the multi-national produce companies.



# 1. INTRODUCTION

Between November, 2004 and February, 2005, telephone interviews were conducted with representatives of 10 major U.S. food retailers in the United States and 3 interviews were conducted with wholesale distributors of fresh produce to retailers. These interviews were conducted with a company representative who was familiar with his/her company's policy regarding food safety standards for fresh produce. The overall objective of this study was to (1) examine the role of TPC in ensuring food safety in the production and sale of agrifood products from developing countries, (2) understand the relationship between private retailer standards and TPC, (3) clarify how supermarket chains identify and procure TPC services, and (4) develop strategies and make recommendations to resolve or diminish issues currently raised by TPC. In order to accomplish these research objectives the focus of these interviews was to ascertain:

**1) *Strategies and rationale regarding public/private food safety standards.*** What food safety standards did the company use for products imported from developing countries and had the nature of these standards changed over the past 5 years? If a company set their own food safety standards, then what factors had led them to do so? Did the company's contract(s) with producers specify the required standards, and what mechanisms were used to ensure that the standards were being met?

**2) *The prevalence of third party audits. Was TPC required for their produce and if so was the requirement universal or targeted at particular products/suppliers?*** What factors led them to accept/reject using TPC? What were the perceived advantages of using TPC over other forms of certification, such as first or second party certification? Who paid for the cost of conducting TPC, and had the introduction of TPC led to a change in suppliers?

**3) *Criteria used to select a third-party auditing firm.*** On what basis were auditing companies selected? Did suppliers have a choice as to which auditing company they could use? Was the firm required to be accredited? What food safety standards did auditing firms follow?

**4) *Risk and Liability.*** What risks, if any, was the implementation of TPC perceived as mitigating? What liability issues, if any, were associated with TPC?

The selection of participants for this study was not random; instead, we targeted major food retailers who, with the exception of one, represented the top 25 supermarkets in the US. This was based on the assumption that collectively these companies, are the retail leaders and, arguably, set the industry standard for others. Each representative that we approached regarding our study agreed to participate in the project. However, due to the hectic nature of this industry, we agreed that each interview would last no longer than 30 minutes.

This study found that a number of the largest wholesalers and retailers in the US are now demanding that at least some—if not all—of their fresh produce suppliers implement TPC. The requirement for TPC has only been underway for the past 2-3 years, leaving many programs still in the process of implementation. Furthermore, several companies that have not instituted TPC are involved in internal discussions concerning whether or not to require TPC. Since TPC is a relatively new phenomenon, it is important to note that many of the benefits and/or disadvantages of TPC for stakeholders, and a understanding of the implications of TPC for these groups may not be apparent for some time. This study also found that while some retailers have developed their own standards or use the FDA's GAP and GMP guidelines as their standards, third-party auditors generally follow their own standards, which meet or exceed those set by retailers. With the lack of a set of commonly accepted standards among the increasing number of auditing firms, and no accreditation body to approve auditors for fresh produce, retailers have generally developed a list of "approved" auditing companies for their suppliers. However, in the case of developing countries, where access to auditing firms is far more

limited, only one prominent certifier is generally recommended. In all cases, suppliers must assume the financial burden of the costs associated with TPC.

What are the implications of this process for small- and medium-sized producers in developing countries? Based on our interviews, we concluded that market opportunities in the US remain limited for those small- and medium-sized producers who are not certified. However, from the perspective of US retailers, we can identify several factors as to how access to the major US retail market for these growers might be improved through implementation of TPC. First, in a competitive market, with all else being equal, those without certification might find it harder to sell their product than those with certification. Second, retailers are concerned about minimizing the risk of food-borne illness/contamination incidents, as well as limiting their liability and demonstrating due diligence if such incidents were to occur. Products from developing countries are generally perceived as carrying a higher risk. TPC may prove to be an important mechanism for suppliers to provide assurances to potential buyers that suppliers are cognizant of the need for—and indeed are following—good agricultural practices to better ensure the safety of their products through risk management. Third, TPC may be an important tool for demonstrating trustworthiness. Relationships involving trust and reputation become increasingly problematic in a global agrifood system where buyers need to deal with multiple suppliers in many countries. Where retailers insist that their suppliers use an “approved certifier,” trust is displaced from the producer to the certifier. The need to demonstrate trustworthiness may be greater for smaller producers who do not have the global brand-name recognition and corresponding reputation of some of the multi-national produce companies.

## **BACKGROUND: THE GROWTH OF FRESH PRODUCE IMPORTS FROM DEVELOPING COUNTRIES**

This study focuses on the implications of retailer required standards and certification measures for producers in developing countries. Few of the participants with whom we spoke knew the actual percentage of fresh produce that they purchased from developing countries. However, they explained that, as a percentage of their overall total, it had grown significantly over the past decade and was predicted to keep growing in the future. Fresh produce imports were identified as important for two reasons. First, they ensured that retailers could provide their customers with a continuous supply of “ordinary” fresh products, such as tomatoes or cantaloupes, which they argue consumers now expect to find 365 days of the year. Sourcing from various geographical locations allows retailers to fill in seasonal gaps. Second, imports facilitate the ability of retailers to expand their niche product market, thus improving their ability to offer consumers a range of exotic products ranging from Chilean chirimoyas to South African baby pineapples.

Mexico, Chile, and Central America were consistently identified as the leading sources for fresh produce imports from less-developed countries. However, there was considerable variation regarding participants’ perceptions of “developing” countries. For example, some participants argued that they would not buy produce from “Third World countries” (Africa as a whole was mentioned once) due to the inherent risks involved (with respect to food safety and quality). In general, countries in Latin America were not considered “Third World”. In part, it appeared that the type of supplier with whom a buyer had a relationship influenced their perception of whether a country was Third World (i.e., high risk) or not. For example, if a retailer bought from what they called “sophisticated growers and packers,” that is, large suppliers, especially multinational companies such as Chiquita or Dole, the country in which they were located was of little consequence. Thus, in terms of a supplier’s ability to produce safe products, the nature of the supplier was often considered more important than the origin of the product. This suggests that small producers from developing countries have a greater challenge in demonstrating their trustworthiness, which includes their ability to produce safe, quality produce in a consistent, timely manner.

## 2. STANDARDS FOR FOOD SAFETY

Beginning in the mid-1990s, growing concerns began to emerge regarding the safety of fresh produce in response to some high profile outbreaks of foodborne illness associated with both domestic and imported fresh fruits and vegetables. For example, in 1997, hundreds of children were diagnosed with hepatitis A after being served contaminated frozen strawberries in public school lunches in Michigan and Maine. The berries, originating from Mexico, had been processed in California (Centers for Disease Control and Prevention 1997). Similarly, in 1996, about 850 people were sickened after eating imported raspberries contaminated with *Cyclospora* (Centers for Disease Control and Prevention 1996). Furthermore, the potentially lethal *E.coli* O157:H7 has been connected with mesclun mix lettuce (USDHHS et al. 1998:3). These outbreaks raised concerns regarding the potential health hazards of fruits and vegetables that are not subsequently processed to reduce or eliminate pathogens (USDHHS et al. 1998:3).

### 2.1 ROLE OF PUBLIC STANDARDS

In 1997, the US government explained that it was launching a produce safety initiative in response to these rising incidents of foodborne illness in fresh produce. In 1998, as part of this initiative, the FDA published guidelines for minimizing microbial hazards on fruits and vegetables, so-called GAPs and GMPs. These GAPs provide “guidance” for addressing microbial food safety hazards common to the growing, harvesting, washing, sorting, packing, and transporting of most fruits and vegetables sold to consumers in an unprocessed or minimally processed (raw) form. It is important to recognize that these are food safety *guidelines*, not regulations, and are therefore not enforceable by law.<sup>1</sup>

The guide explains that it “cannot address all microbiological hazards potentially associated with fresh produce.” Thus, its goal is to “provide the framework for identifying and implementing appropriate measures most likely to minimize risk on the farm, in the packinghouse, and during transport” (USDHHS et al. 1998:4). It is important to note that this guide focuses exclusively on microbial hazards for fresh produce; it does not specifically address other areas of concern regarding food safety or food quality, such as pesticide residues or chemical contaminants. Rather, it encourages growers, packers, and shippers to strive towards establishing practices that minimize microbiological hazards, while at the same time not increasing other risks to the food supply or the environment, such as the “improper use...of antimicrobial chemicals” (USDHHS et al. 1998:4). The authors explain that the guide is flexible enough so that operators can “use the guide to help assess microbiological hazards within the context of the specific conditions (climatic, geographical, cultural, economic) that apply to their own operation and implement appropriate and cost effective risk reduction strategies” (USDHHS et al. 1998:4). Furthermore, producers are encouraged to reduce the risks of microbiological contamination without increasing the use of chemicals, or residue levels, which are often considered a concern to consumers but not necessarily a food safety issue.

In sum, the government has responded to concerns about food safety hazards related to fresh produce and the risk of illnesses associated with microbiological contaminants. However, it has not determined that legally-enforced standards are necessary. The lack of publicly enforceable standards for food safety might explain why some retailers are instituting their own standards.

---

<sup>1</sup> To clarify: A company cannot be shut down for failing to follow these procedures. However, in the case of a food safety problem, the courts may rule that failure to follow accepted GAP or GMP constitutes negligence.

## **2.2 ROLE OF PRIVATE STANDARDS**

From our interviews, it appeared that the degree to which retailers had implemented their own standards for food safety varied considerably. At the same time, all interviewees related to the government food safety guidelines in some way. For this report, we have attempted to classify the standards used by retailers into 3 broad categories: 1) *Reliance on public guidelines*. 2) *Public GAP guidelines as private standards*. 3) *Private food safety standards*.

### **2.2.1 RELIANCE ON PUBLIC GUIDELINES**

In this case, retailers had not yet developed their own standards for food safety nor did they require that suppliers implement GAP/GMP guidelines outlined in the FDA food guide. Rather, these retailers encouraged their suppliers to follow the GAP guidelines. Suppliers were relied upon to ensure the safety of the product since their ‘standards’ were neither monitored nor enforced by the retailer through any auditing, quality assurance, or certification programs.

### **2.2.2 PUBLIC GUIDELINES AS PRIVATE STANDARDS**

In this case, retailers had adopted the FDA guidelines for GAP/GMP as their required standard, which they monitored and enforced through either their own in-house audit system or a third party audit. For example, one company followed the FDA standards, but they conducted their own quality control for residues and hygiene of products, which included testing of residue levels. Another company explained that they use GAPs and GMPs as their production and packing standards, which are enforced through third-party audits to ensure that suppliers are complying.

These guidelines, if adequately enforced, were seen as an important mechanism for reducing risks associated with fresh produce if they were adequately enforced. One participant explained that the industry had been asking the government for general sanitation standards for a number of years before the guidelines were developed. The guidelines were seen as an important mechanism that retailers could use to demand that their suppliers demonstrate that they could — at a minimum — meet and comply with them.

### **2.2.3 PRIVATE STANDARDS**

Here retailers used the FDA’s GAP guidelines as their baseline standards and then incorporated their own food safety requirements in conjunction with them. The degree to which these companies had developed their own standards varied considerably and these standards might be monitored and enforced through an internal audit or a third-party audit. For example, one retailer developed its own standards for food safety, which it then used internally to audit its suppliers.

In attempting to categorize retailers’ approaches to standards it became apparent that food safety standards could not always be easily distinguished from quality standards. Retailers are often concerned with the ‘whole package’. One participant explained that his company developed its own standards not because they viewed government standards as inadequate but rather because they wanted to add additional requirements for quality purposes. For example, their standard for temperature control was lower than what the government recommended because they were concerned about quality features, such as shelf-life. Furthermore, the market for niche and specialty products has expanded rapidly, leaving private sector retailers to develop their own quality standards in the absence of government standards. In these cases, retailers might be motivated to utilize both FDA/USDA standards as well as their own.

Some participants explained that they had developed their own standards in response to the development and growth of products and produce that carried their own in-house label.<sup>2</sup> For example, it is generally perceived that manufacturers and suppliers stand behind their label; however, once a retailer put its name on a product, it is now their reputation that is at stake if a problem emerges. Thus, private standards can provide a retailer with a higher level of assurance about which they feel confident. Furthermore, retailers can develop their own product specifications and particular requirements with their own brand, an approach that is not possible with other products.

### **2.3 STANDARDS AND TPC FOR LABOR, ENVIRONMENT, AND 'FAIR TRADE'**

In contrast to UK and European retailers, standards for labor, the environment or 'fair-trade' were not a factor for the retailers we interviewed. Consequently, they were not taken into consideration when discussing their own standards or TPC (in contrast to EUREPGAP standards/certification, for example).

---

<sup>2</sup> The growth of retailer labels rather than the label of a manufacturer is becoming significant in the US, although the US still lags behind the UK and Europe.



### 3. CONTRACTS

There was no uniformity among wholesalers or retailers regarding their contracts with suppliers. Written and/or verbal contracts were used. Some retailers directly contracted with producers, while others relied on brokers. Furthermore, there was considerable variation in the degree to which standards might be specified in a contract.

Slightly more than half of our participants explained that they had written contracts with their suppliers. In general, these contracts would make general reference to the retailer's food safety program or standards, state that the supplier must comply with all legal requirements, applicable safety standards, trade rules, etc. Some agreements with suppliers might include a 'Continuing Commodity Guarantee and Indemnity Agreement.'<sup>3</sup> In these contracts the supplier warrants their products against all defects. Furthermore, the contract is the mechanism for holding the vendor liable for its products, condition, and safety.

Some interviewees explained that their written contracts were very detailed on their requirements regarding standards. However, it appears that it is more common that the details regarding standards were not dealt with in the contract. Rather, food safety standards and how they would be monitored were left to discussion and negotiation. Some participants explained that they only worked with growers with whom they had longstanding relationships. If there was a dispute, for example, regarding pesticide residues, then a federal inspector from the USDA could be brought in to resolve it.

While some participants said that they were increasingly relying on direct contracts, in general brokers still play a crucial role. In some cases, standards were not specified in a contract because the retailer relied on the relationships with their brokers, who did the buying, to ensure the safety of the product.

---

<sup>3</sup> In these agreements the Seller warrants and guarantees that the product was produced in compliance with the Buyer's purchase specifications, that the product is of good quality, free from defects, not adulterated, misbranded, or mislabeled, and that it complies with all local and federal food and trade laws and regulations. These agreements also hold that the Seller—not the Buyer—is responsible for any claims, charges, actions, or legal proceedings brought against the product and/or Buyer due to alleged adulteration, misbranding, or law violation pertaining to the product. The Seller is also responsible for all claims and demands against the Buyer that result from any injury, illness/and or death allegedly caused by the product.



## **4. MECHANISMS FOR VERIFYING THAT PRODUCERS MEET BUYER STANDARDS**

Our interviews revealed that there exists considerable variation among retailers regarding the regulation and enforcement of food safety standards. Clearly, by simply encouraging their suppliers to follow FDA food safety guidelines, retailers have no enforcement mechanism. Instead the supplier is relied upon for self-enforcement of good practices. However, the adoption of either FDA guidelines as standards or the development of retailers' own standards has stimulated the need for a mechanism to ensure that these standards are in fact being met. In general, there are three options open to retailers: second-party audits, third-party audits or some combination of the two.

### **4.1 SECOND PARTY AUDITS**

Several of the individuals with whom we spoke explained that they use their own system of internal (second party) audits to verify their suppliers' food safety compliance. For example, a company might have a team of quality assurance auditors who conduct in-house inspection and testing (e.g., for residue levels), or they might conduct these inspections and certify an individual shipper on-site. However, these audits were not always conducted in a uniform manner. In some cases they would only conduct them if the retailer/wholesaler had a concern about a particular product. In other cases, second-party audits were in place because the company had developed them well before the recent phenomenon of TPC took hold.

### **4.2 THIRD PARTY AUDITS**

Only a small number of the people we interviewed require that their suppliers use third-party audits. Certainly, there are several concerns regarding TPC (see below), such as the lack of standards for auditing firms, which must generate some caution from buyers concerning the value of such audits. At the same time, it is important to note that TPC is a fairly recent phenomenon. Among some companies that do not have TPC, participants explained that they are involved in discussions concerning whether their company should move in that direction and if so, in what way. Finally, it is important to recognize that the manner in which companies use TPC can vary considerably. Buyers may 1) require all of their suppliers to implement TPC; 2) adopt a targeted approach regarding TPC; or 3) recommend that their suppliers use TPC.

#### **4.2.1 BUYERS REQUIRE ALL OF THEIR SUPPLIERS TO IMPLEMENT TPC**

Some companies, regardless of whether a product is considered low, medium or high risk, have established the goal of having all of their products third-party certified.

One participant explained that the largest national retailers are requiring evidence of a food safety auditing program and, while they do not necessarily require TPC, this wholesaler is moving towards making it mandatory for all of its suppliers. They believe that this will raise the level of confidence in their company permitting them to use it as a marketing tool.

#### **4.2.2 BUYERS ADOPT A TARGETED APPROACH TOWARDS TPC**

In this case, a buyer might require that particular products, suppliers, or countries be audited by a third party. Here, a company might only require that suppliers have TPC for products associated with higher levels of risks regarding food safety. For example, items such as bean sprouts, lettuce, and berries are widely considered higher risk since they are raw fruits and vegetables and because

foodborne illnesses have been identified with them in the past. On the other hand, cooked items such as brussels sprouts or peeled items such as bananas are widely considered low risk. Consequently, a company might insist on TPC for all their berry suppliers but not for their citrus suppliers.

Similarly, certain growing areas and certain countries are perceived as higher risk, perhaps because of low or non-existent government regulations concerning water quality. Consequently, some participants felt that it made sense to have suppliers in higher-risk geographical zones institute TPC, while refraining from imposing this costly program on products or suppliers that demonstrate little risk.

#### **4.2.3 TPC IS RECOMMENDED TO SUPPLIERS**

One company had implemented a food safety program that encouraged their suppliers to implement a range of programs, such as GAP or HACCP (Hazard Analysis and Critical Control Points), supported by internal audits and/or TPC. While this company did not require third party audits, they scaled their relationships with their suppliers depending on how well they conform to or meet the various aspects of the retailer's food safety program. In this way, suppliers are selected based on their food safety record, the documentation of their programs, and whether they have TPC in place. For some suppliers, this might mean that TPC is really not an option; that if they want to be considered as a supplier, then they must implement TPC. On the other hand, such a food safety program perhaps provides the retailer with buying flexibility. For example, if a supplier can provide them with a product that they cannot obtain elsewhere, and they are confident that the product is safe, then the fact that there is no TPC in place is not as important.

### **4.3 WHY TPC?**

So why have some retailers adopted or are considering adopting TPC? In our interviews, participants discussed several reasons why they believed that TPC was beneficial: 1) *The ability to monitor multiple suppliers.* 2) *Third-party audits as an educational tool.* 3) *TPC minimizes risks,* and 4) *TPC as an informational tool.*

#### **4.3.1 THE ABILITY TO MONITOR MULTIPLE SUPPLIERS**

In contrast to an individual wholesaler or retailer, TPC has the ability to cover thousands of suppliers, irrespective of their location. The ability to monitor individual suppliers has become more important as supply chains continue to expand geographically. In some cases too, the number of suppliers has expanded as retailers seek to expand the range of products available to consumers, such as niche or exotic fruits and vegetables, which often involve small-scale production. An individual company simply does not have the personnel or resources to send inspectors to where suppliers are located. However, some third-party auditors (such as SGS) are expanding their operations in developing countries; where in-country based inspectors do not exist, it is possible for a supplier to fly them in. Furthermore, if retailers require new products or produce from growing areas with which they are unfamiliar, then third-party auditors might be perceived as having more expertise and knowledge in this regard. While no participants mentioned this specifically, it was implied that second party audits involve costs for the retailer whereas third-party audits put the burden of cost entirely on the supplier.

#### **4.3.2 THIRD-PARTY AUDITS AS AN EDUCATIONAL TOOL**

Third-party audits were viewed as an important educational tool, especially for smaller producers. As mentioned above, retailers are increasingly seeking to supply niche and specialty products, which are often produced by small vendors. Small growers and vendors face bigger challenges in ensuring food

safety; besides the cost factor they are often not as familiar with existing food safety programs, such as GAP/GMP or food safety production tools, such as HACCP and SSOPs (Sanitation Standard Operating Procedures). TPC is viewed as an important mechanism for educating producers about food safety practices and programs.

#### **4.3.3 TPC MINIMIZES RISKS**

Some participants explained that TPC was a useful mechanism for minimizing risks to food safety by ensuring that *risk-reducing programs*, such as GAP, GMP, HACCP, and SSOPs were in place. In other words, it is not TPC itself that reduces risks. Rather it is the implementation of programs that lead to improved food safety practices on the farm and in the factory which might move a product from being medium to low risk. For example, programs that ensure that packers wash their hands after using the toilet reduce the risk of microbial contamination on produce, while TPC does not. Thus, TPC is viewed as an indicator of broader food safety practices; its purpose is to describe what is taking place at a particular point in time. TPC does not certify that a particular food product is safe but rather acts as a claim that certain products, growers, or packers have been inspected and that they have been verified as having particular risk-reducing programs in place, and have met the required standards.

In general, the value of TPC is rarely viewed in isolation by wholesalers and retailers but rather as part of their overall food safety program. Participants were cognizant that an audit was “a snapshot of a given day” and that auditors could not be there to regularly monitor a process. However, this was not viewed as problematic by those in favor of TPC. Instead, some argued that the value of an audit and what it said about a supplier had to be considered together with their overall relationship with their supplier – their service, consistency, level of communication, quality performance, and so forth. Nevertheless, buyers believe that an audit —especially one conducted by suppliers in other countries— goes a long way in demonstrating that the supplier has done everything he can to ensure that they have processes in place and are meeting – or attempting to meet – the appropriate standards to ensure food safety.

#### **4.3.4 TPC AS AN INFORMATIONAL TOOL**

The preceding point ties in with another benefit highlighted by participants – that TPC allows retailers to gain more information about their suppliers and their food safety policies and practices.

### **4.4 DUE DILIGENCE**

What role have concerns regarding legal liability and due diligence played in encouraging retailers to implement TPC? Retailers are very mindful of the potential for national scandal, loss of business reputation, and liability issues that can result from a food safety problem related to produce. Participants pointed to examples of high profile food poisoning outbreaks, such as those associated with fresh berries (discussed above) and the outbreak of hepatitis A from green onions served in restaurants in 2003, when hundreds became seriously ill and several others died.<sup>4</sup> Furthermore, liability issues concerning food are not solely related to food safety but also food quality, such as, for example, if a customer found a maggot in an apple.

---

<sup>4</sup> Green onions grown in Mexico and served at restaurants in Tennessee, North Carolina, Georgia and Pennsylvania during November, 2003 resulted in one of the largest outbreaks of hepatitis A in US history. More than 500 people were sickened and three patrons of a Chi-Chi's restaurant died.

While TPC does not protect a company from being sued over a food safety or quality issue, it is viewed as having considerable value. For example, if a company is sued, their requirement for suppliers to implement TPC can be used to demonstrate due diligence, thus helping to protect the retailer by potentially limiting the liability they might face. This might be considered more important if a company is buying products from developing countries, or from small producers. In these cases, retailers might face more pressure to prove that they were not acting irresponsibly by buying products from the cheapest source regardless of the risks involved. If one can demonstrate in a court of law that, regardless of who you buy from, they must have in place a stringent food safety program that is independently audited, then it is harder to argue that a retailer has not demonstrated due diligence. In other words, from their end, they have done everything reasonably possible to ensure the safety or quality of the product. Furthermore, TPC documentation coupled with HACCP and traceability programs allows retailers and wholesalers to pass responsibility for a problem back up the supply chain to the grower.

#### **4.5 WHY NOT TPC?**

So, considering the benefits outlined above, why are some companies choosing not to require TPC for their suppliers? In several cases, TPC has not been adopted because it is a fairly recent phenomenon in the retail produce industry—emerging on the retail landscape only two to three years ago (it has existed considerably longer in the food manufacturing sector). Consequently, some participants explained that their companies were still debating the pros and cons of whether to implement TPC or not, and if so, in what manner. In other cases, retailers had already developed their own internal food safety programs that they considered adequate, although they were not closed to the idea of TPC. The main justifications that emerged from our interviews for consciously *not* adopting TPC were: 1) TPC is not scientific or reliable, 2) preference for personal relationships, and 3) the lack of standards and oversight for TPC.

##### **4.5.1 TPC IS NOT SCIENTIFIC OR RELIABLE**

Some participants disagreed with the claim that TPC is scientific and that it helps to ensure a safer food supply. The point was raised that there is no guarantee that in-between visits by auditing companies suppliers are abiding by the required standards. From this perspective, TPC does not eliminate the need for trust in ones' suppliers. One participant explained that they prefer to rely on reputable growers, as well as relying on their buyers in the area to make sure that their suppliers are meeting the appropriate standards. Some concerns were also raised that TPC is simply a marketing ploy by auditing firms who are putting pressure on retailers to implement it. This is viewed as problematic if it is adding costs on to suppliers or consumers when there is perceived to be little evidence that third-party audits are effective and there is little or no evidence that consumers do not have confidence in the supply chain.

Finally, there is the related matter of the free-rider problem. Retailers recognize that if there is an incident, then it has the potential to affect all of them and not just the company where the problem occurred. For example, if strawberries in one location are found to be contaminated with the hepatitis A virus, then all vendors might be negatively affected if consumers decide to stop buying strawberries. Therefore, even if TPC really does improve food safety, it has little value unless it is implemented by all vendors.

##### **4.5.2 PREFERENCE FOR PERSONAL RELATIONSHIPS**

Personal relationships continue to be extremely valuable for some wholesalers and retailers. Some of our participants explained that they did not have a problem with TPC – and even believed that it had

some value – but that they preferred to work directly with their suppliers. For example, one participant explained that his company personally visits all of their first time growers to inspect the farm and the growers’ practices regarding hygiene, sanitation, equipment use, water quality, and so forth. If they feel that there is a problem, then they work with the grower to resolve it. Another participant likewise said that they try to visit all first time suppliers to inspect the grower’s food safety and quality practices. These buyers emphasized the importance of establishing trust with the vendor through a direct relationship with them.

#### **4.5.3 THE LACK OF STANDARDS AND OVERSIGHT FOR TPC**

The lack of consistent standards among US third party auditors was seen as problematic by many—although not all—of our interviewees. For example, ISO 9000 (which may include HACCP) is widely used as one of the principal standards by certifiers in Europe, and it is widely viewed by the industry there as a rigorous standard. However, in the US there is no “American standard”, but rather many different standards are used. Consequently, one concern that some suppliers and buyers have regarding TPC is what standard are they auditing against? One consequence of the lack of consistent standards among auditing companies is that a supplier may be subjected to different audits. In other words, a supplier may have to face an audit by Company A to sell to Retailer A, and then a face *different* audit by Company B to sell to Retailer B. Even retailers have raised concern about the expense that this can incur for suppliers.

There is also some concern about the lack of oversight for auditing bodies. That is, firms that audit produce do not have to be accredited; in fact, there is no accrediting body for produce audits in the US. This has led to the argument that ‘anybody can be an auditor.’ While perhaps an exaggeration, the point reflects a concern among some stakeholders about the lack of oversight.

With so many auditing companies and so many international programs to choose from, such as the Global Food Safety Initiative (GFSI), EUREPGAP, and Safe Quality Food (SQF), some companies are finding that it is very challenging to work through them all and try to determine which auditing system and set of standards are most appropriate. Some participants explained that there is a desire by a number of retailer groups to move towards adopting a single industry standard. For example, the Produce Marketing Association (PMA) is encouraging the adoption of SQF as the industry standard. However, there is a sense that a general lack of consensus regarding this issue will make a US standard unlikely. Furthermore, some participants argued that a single standard would be problematic. In order to appease everyone, the standard might have to be so broad that it would have little worth. Hence, flexibility in standards is valuable because it gives retailers the option to emphasize particular issues of concern to them.

Finally, since retailers increasingly source produce globally, it was argued that a global food safety standard would be preferable to a US standard and then different companies could audit to these standards. One example of such a standard is the CIES GFSI, which focuses on developing consistent food safety programs and GAPS. GFSI’s motto is “Certified once, accepted everywhere”. The five standards that GFSI has endorsed are the BRC (British Retail Consortium) Technical Standard, the Dutch HACCP Code, the EFSS (European Food Safety Standard), the International Standard for Auditing Food Suppliers (International Food Standard), and the US’s SQF standard. Suppliers can then choose which standard they wish to follow.



## 5. CHOOSING TPC SERVICES

As we explained above, many retailers and presumably suppliers see the lack of consistent, uniform standards among certifiers as very problematic. This is problematic for suppliers since it is not unusual for them to be required to implement more than one audit (since they sell to various buyers) and the standards and requirements for each audit may vary considerably. For retailers, the challenge is choosing a TPC, and then working with them in determining the appropriate standards. Two questions are pertinent: If there is no uniformity among auditing companies regarding standards, what standards should they actually use to audit against? And, how should retailers choose which auditing company to use? Based on our interviews, it appears that certifiers use both their own standards and standards developed in collaboration with retailers (or whoever is demanding the audit). Without a nationally-recognized standard, choosing an appropriate auditing company can require considerable work from wholesalers and retailers to research an individual company's standards and procedures. In other cases, however, a good auditor reflects an individual company's reputation in the industry.

Some participants explained that auditors use their own standards for their audit. This is considered by some as preferable to having auditors use a retailer's standards because 1) the certifiers are more comfortable with their audit tool; and 2) the audit tool and standards of a certifier are more widely acceptable than one that has been created entirely for an individual retailer. In other words, if a vendor used Retailer A's standards for their audit, then the audit would be titled as a "Retailer A" audit. If the supplier was then asked by another retailer whether they had an audit and they said, "Yes, we have a "Retailer A" audit, then it would not have the same value as, for example, an audit from a prominent auditing company, such as Primus Labs. Besides, a "Retailer A" audit may not even be accepted by other buyers, thus forcing a vendor to have multiple audits to satisfy their various customers. Furthermore, participants explained that the standards of their preferred auditors meet or exceed their own standards. For example, one company explained that all of their requirements that they had developed themselves for their own internal audits were included in each of the audits of the auditing companies that they had approved for use.

In some cases, retailers are able to ask an auditor to add some particular requirement to their audit, or negotiate with an auditor to handle the audit in a manner that meets the standards already established by a buyer with their suppliers. For example, the standards for one audit company include grading a supplier on whether they have in place a fully functioning HACCP program. However, since many smaller suppliers have never heard of HACCP, the retailer has agreed to give their suppliers a year to put a HACCP program in place. Under these conditions, the retailer believed that it was unreasonable for a supplier to be penalized in their audits for not having a HACCP program. In other cases, retailers might be concerned with receiving a different type of scoring system than that used by the auditing firms in their audits. Thus, it appears that while auditors have their standards, they are, in some instances, willing to tailor their audits to meet the needs of their clients.

While some buyers would accept an audit from the majority of the major certifying companies, most of the participants who required TPC had developed a list of "approved auditors" from which their suppliers could choose. For example, suppliers might be allowed to use any one of six auditing companies that were considered acceptable by the buyer (often these lists include both US and international auditing firms). However, in relation to fresh produce, some buyers had a strong preference for a single auditing firm. In these cases it was because they held that Auditor A was focused on auditing fresh produce and had the most experience in this area, whereas the general emphasis of Auditor B was in auditing some other type of products. In this case, they might have a general approved list for auditors that they will accept if a supplier already has an audit completed. But if the supplier has not yet conducted an audit, then they would only recommend their one preferred auditor. Clearly, options for producers in developing countries to select auditors are more

constrained than they are in the US, and in fact, many buyers expressed a strong preference for one auditing company for their international suppliers.

While trust and reputation for selecting an auditing company remains important (see below), several participants from companies with “approved” auditor lists explained that they had spent considerable time and effort to identify those auditing firms that they believed provided the type of audits that they believed best fit with their needs. This often involved a close examination of each auditor’s audit tool to determine which ones they found more appropriate. For example, this might mean a preference for Auditor A’s scoring system that divides the audit up into definitive sections, e.g., a section for “Pest Control” and scores for each area separately with points for each individual component of that section, together with comments under each area on why the supplier was found deficient (if that was the case). An advantage is that the reader (i.e., buyer/supplier) can go through the audit and see exactly what the producer scored in each area, e.g., 4/5 for “pest control” and why, especially what standards they failed to meet. In contrast, some audits tend to be more general with less scoring, rather than focusing clearly on particular areas. Some find that with this method it is harder to see what the actual problem areas are and then to move forward in improving them.

## 6. TRUST AND REPUTATION

All of our participants argued that trust and reputation remain crucial to relationships between retailers/wholesalers and their growers, brokers, shippers, as well as with auditing companies. Consequently, regardless of standards and certification programs, values such as consistency, reliability, and a good reputation are critical in a hyper-competitive market.

Many participants who did not use TPC argued that trustworthy relationships with their suppliers or brokers were the basis for ensuring food safety and quality. Interviewees would explain that they only deal with growers/brokers/shippers that they trust. This trust is developed over time as suppliers prove that they are reliable or consistent, etc. Often, however, trust does not need to evolve through direct relationships but is a reflection of a company's known reputation and practices. For example, participants explained that they would buy from big suppliers, such as Chiquita, Dole, Del Monte or Sunkist, because they were considered trustworthy. This reputation developed because they were widely known (and thus, so was their reputation), and the view that the value of their name-brand was something these companies would make considerable efforts to protect<sup>5</sup>. For example, many of these larger suppliers have in place their own food safety programs and standards and many of them will include a certificate of liability (the Continuing Commodity Guarantee and Indemnity Agreement discussed above). Thus, determining what trust means is complicated and clearly cannot always be separated from other factors, such as food safety standards and certification systems.

---

<sup>5</sup> The need to minimize risk is seen as more critical for companies with well-known brand names. One example of this highlighted in the interviews was the Dole salad plant in California. It was argued that since Dole cannot risk any tarnish to its brand name, which is worth millions of dollars, they have invested enormous resources over the past 15 years in food safety programs and TPC to reduce their risks and hazards to an acceptable level.



## **7. CONSEQUENCES FOR SUPPLIERS**

From these interviews what can we say about what TPC will mean for suppliers, in particular for suppliers from developing nations? Two questions are especially important: How does TPC work for suppliers and where does the burden of cost fall?

### **7.1 WHO PAYS?**

The question of who pays for TPC is easy to answer: the supplier. All participants explained that suppliers are expected to pay the entire cost of implementing TPC and the subsequent follow-up costs for annual audits. It was noted that normally such costs would be passed on down the supply chain, but that in such a competitive environment where there are so many suppliers and so few buyers, it is very difficult for suppliers to pass on such costs. Retailers were aware that it is not unusual for suppliers in developing countries to be required to fly in auditors to places where no local third-party auditing company exists. Realizing that TPC could be exorbitantly expensive and that this placed an enormous burden on suppliers, some participants were trying to find ways that did not burden suppliers with any more unnecessary costs. This was one of the main reasons for encouraging the development of standards for auditing, and for using an auditor's standard rather than those of an individual retailer—so that suppliers would only have to have in place one audit, rather than multiple audits, which would satisfy all of their buyers in a cost effective manner.

In general, however, participants believed that the benefits of TPC outweigh the costs. First, TPC could be used as a marketing device to promote their products (although none of the participants had said that they respond to such marketing campaigns). Second, TPC grants buyers access to the largest retail chains. Hence, if buyers want to participate in these markets, they will have no choice but to implement TPC.

### **7.2 HOW DOES IT WORK?**

Since standards among auditing companies and standards and certification requirements among retailers can vary considerably, it is perhaps unsurprising that the impact of TPC on suppliers will vary. It goes without saying, that if a retailer requires TPC, then suppliers must provide one. However, the degree to which a retailer is willing to work with suppliers on gaining TPC and how a retailer uses a third-party audit is not uniform.

For example, retailers vary in their willingness to help work with suppliers to improve their ability to pass an audit. Some buyers explained that they do not work with suppliers. They simply have a standard in place: a supplier must successfully meet a third-party audit or they cannot do business with them. In these cases, a buyer might simply require to see a pass/fail certification. Either the supplier meets the standard and passes or they do not meet the standard and they fail. The consequences of failing are potentially huge; a lost contract with a buyer can be extremely difficult to regain.

On the other hand, based on the audit reports, a retailer might develop a list of “approved suppliers,” “conditionally approved suppliers,” and “failed suppliers.” The first category reflects an excellent operation. However, the second “conditional” category does not mean that a supplier will be dropped; in many cases the essential standards being met are perfectly adequate for the product involved. Finally, the suppliers who have “failed” might be told to come back in a year when they have had time to improve their operations and have demonstrated their ability to pass an audit.

Audits do not have to be punitive. Recognizing that they are a mere snapshot in time, one participant is using them as an indicator of the strength or weakness of a supplier's food safety system. Thus,

rather than dropping a supplier who fails an audit, the emphasis is on working with suppliers to improve their grade. Suppliers then have the opportunity to undergo another audit in two or three months time and try to bring their score up to the passing grade. The goal is to have suppliers showing continued improvement each time. In these cases, unless there is a serious problem, such as product adulteration or contamination, suppliers are not dropped because of an audit.

## 8. CONCLUSION

Some of the largest wholesalers and retailers in the US are beginning to require that fresh produce suppliers implement TPC. This requirement is a recent and ongoing phenomenon; our interview participants had only begun to implement such programs over the past 2-3 years and some companies' suppliers were still in the transition phase of implementation. In contrast, those companies with internal audits for food safety and quality had been in place far longer. More broadly, companies are involved in internal discussions concerning whether to require TPC or not. Consequently, while participants were able to comment on what they perceived as some of the benefits and disadvantages of TPC for themselves, for suppliers, and for consumers, a broader appreciation of these issues and the implications for various stakeholders may not be apparent for some time. What we can conclude is that an important segment of US wholesalers and retailers are now requiring some form of TPC for at least some of their suppliers and products. Based on these interviews and the experience of TPC we have observed elsewhere (i.e., Europe), this trend is likely to continue.

Furthermore, we found that while some retailers have developed their own standards or use the FDA's GAP and GMP guidelines as their standards, third-party auditors generally follow their own standards, which meet or exceed those standards set by retailers. With the proliferation of auditing firms and no clear standards among them, and no accreditation body to approve auditors for fresh produce, retailers have generally developed a list of "approved" auditing companies for their suppliers. However, in the case of developing countries where access to auditing firms is far more limited, only one prominent certifier is generally recommended. In all cases, the burden of paying for the cost of TPC lies with suppliers.

What are the implications of this process for small- and medium-sized producers in developing countries? Clearly there remains access to a considerable portion of the US retail market that does not require TPC. However, in saying that participants raised a number of factors that indicated why TPC might prove beneficial—if not increasingly necessary—for producers who wish to participate in the US marketplace, especially those who wish to have trade relationships with the larger buyers. First, while participants asserted that they do not respond to TPC marketing campaigns by suppliers (that is, those suppliers with TPC who use their certification as a marketing device for why a retailer should buy their product), it seems likely that in a competitive market, all else being equal, those without certification will find it harder to sell their product than those with certification. Why? The retailer stands to gain added assurances at no cost to them.

Second, retailers are concerned about minimizing the risk of food-borne illness or contamination incidents, which could have devastating economic consequences not only for the company involved but for the industry more generally. As well, retailers are interested in limiting their liability and demonstrating due diligence, if such incidents were to occur. Such risks are seen as increasing with imported produce. While not necessarily true, suppliers in developing countries are often perceived as having higher risks due to factors such as lack of government regulations for food safety, environmental pollutants (that can contaminate water and soil), inadequate water sanitation, low educational levels, and so forth. Again, these factors are less of a concern when dealing with major companies that have the resources to overcome such problems (see Bain et al. 2004). Under such conditions, TPC may prove to be an important mechanism that allows suppliers to provide assurances to potential buyers about their produce by a) demonstrating that they are cognizant of current market trends regarding food safety practices and, b) demonstrating their initiative and capacity to learn and implement current food safety and quality practices, etc. (This seems particularly important with respect to fruits and vegetables that are not cooked or peeled, i.e., sprouts, green onions, berries which many small growers are involved in producing, but that have been associated with contaminants that have caused outbreaks of food-borne illness).

Third, TPC may be an important tool for demonstrating trustworthiness. All of the interviewed participants emphasized the importance of trust and reputation in their relationships with other stakeholders. In situations marked by personal relations between buyer and seller, trust is provided in part by the expectations of future exchanges and by the unmediated character of the relationship. However, such relationships become increasingly problematic in a global agrifood system, where retailers and wholesalers must to act at a distance, i.e., they need to make purchases of products from thousands of suppliers located in many countries. Given the length of food supply chains and a growing preference for direct contracts (rather than dealing with a trusted broker), it is impossible to maintain personal relations among all parties. Consequently, TPC can function as a means for maintaining relationships of trust over considerable distances. Where retailers insist that their suppliers use their “approved certifier” with whom they work from year to year, then trust is displaced from the producer to the certifier. Furthermore, the need to demonstrate trustworthiness may be greater for smaller producers. As participants here explained, they often prefer, whenever possible, to deal with large companies, since they are considered trustworthy and reputable in terms of food safety and quality. This is because major companies often have developed their own sophisticated internal food safety programs because they are perceived as having a valuable brand-name that they are eager to protect. Neither factor is generally true for small growers.

This report reflects the perceptions and concerns of US wholesalers and retailers regarding TPC and its benefits and disadvantages. In concluding from these interviews that small producers in developing countries may be in a stronger position to access and/or maintain access to important US markets if they have TPC, or may find themselves in the future with few options but to implement TPC, it is important to note that this is only one part of the picture. In this report, we have not addressed the very real and significant constraints, limitations and concerns raised by producers in developing countries regarding their ability to implement TPC. These issues are elaborated in the in-country reports that we conducted on TPC implementation in Ghana, Guatemala, and Indonesia. For a broader, more comprehensive depiction of the significance of TPC and the challenges it poses to producers, the conclusions reached in this report should be considered along with those outlined in the country case-studies.

## REFERENCES

Bain, C., D. Thiagarajan and L. Busch (2004). The Relationship of Third-Party Certification (TPC) to Sanitary/Phytosanitary (SPS) Measures and the International Agri-Food Trade Case Study: Ghana. Lansing, MI. Institute of International Agriculture RAISE: Rural and Agricultural Incomes with a Sustainable Environment. Assistance for Trade Capacity Building in Relation to the Application of Sanitary and Phytosanitary Measures (SPS). Michigan State University: pp. 26.

Centers for Disease Control and Prevention (1996). Update: Outbreaks of *Cyclospora cayentanensis* Infection—United States and Canada, 1996. *Morbidity and mortality weekly report*. 45: 611-612.

Centers for Disease Control and Prevention (1997). "Hepatitis A Associated with Consumption of Frozen Strawberries—Michigan, March 1997." *Morbidity and mortality weekly report* 46(13): 288, 295.

USDHHS, FDA and CFSAN (1998). Guide to Minimize Microbial Food Safety Hazards for Fresh Fruits and Vegetables. Washington, Food and Drug Administration: pp. 43.