

PROJECT GRANT APPLICATION FORM

1. Project title	A Southeast Asian Partnership to Build Trade Capacity for Fresh and Processed Fruit and Vegetable Products
2. Theme 1, 2 and/or 3	Theme 2: Capacity building for public and private organizations, notably with respect to market access.
3. Starting date	October 1, 2010
4. Completion date	September 30, 2012
5. Requesting organization(s)	<p>Michigan State University Contract and Grant Administration Attn: Evonne Pedawi (pedawi@cga.msu.edu) 301 Administration Bldg East Lansing, MI 48824 USA Phone +1-517-355-5040 Fax +1-517-353-9812</p> <p>Lead Technical Contacts: Daniel C. Clay (clay@msu.edu) Leslie D. Bourquin (bourqui1@msu.edu)</p>
6. Implementing organization(s)	<p>Michigan State University Contract and Grant Administration Attn: Evonne Pedawi (pedawi@cga.msu.edu) 301 Administration Bldg East Lansing, MI 48824 USA Phone +1-517-355-5040 Fax +1-517-353-9812</p> <p>Project Team: Daniel C. Clay (clay@msu.edu), Director – Institute of International Agriculture Leslie D. Bourquin (bourqui1@msu.edu), Associate Professor – Food Science and Human Nutrition Deepa Thiagarajan (thiagara@msu.edu), Assistant Professor – Institute of International Agriculture Christine Geith (geith@msu.edu), Executive Director – MSU Global Karen Vignare (vignare@msu.edu), Director – MSU Global John Whims (whimsj@msu.edu), External Relations Director – MSU Global Food & Agriculture Alliance</p>

	<p><u>Vietnam:</u> Can Tho University Can Tho City, Vietnam</p> <p>Binh Ly Nguyen (lnbinh@ctu.edu.vn), Department of Food Technology, Vice Dean - College of Agriculture & Applied Biology Ngo Thi Phuong Dung (ntpdung@ctu.edu.vn), Deputy Director of Biotechnology Research and Development Institute Ha Thanh Toan (httoan@ctu.edu.vn), Vice Rector</p> <p><u>Thailand:</u> Kasetsart University Bangkok, Thailand</p> <p>Siree Chaiseri, Dean – Faculty of Agro-Industry Roongnapa Korpraditskul, Director of Research and Development Institute at Kamphaengsaen Warapa Mahakarnchanakul (fagiwpm@ku.ac.th), Assistant Professor, Department of Food Science and Technology, Faculty of Agro-Industry Chitsiri Rachtanapun (chitsiri.t@ku.ac.th), Department of Food Science and Technology Faculty of Agro-Industry Parthana Parthanadee (parthana.p@ku.ac.th), Department of Agro-Industrial Technology, Faculty of Agro-Industry</p>
7. Project background and rationale	The Project Background and Rationale is appended as Appendix 3 .
8. Project management	The proposed Project Management Structure is appended as Appendix 4 .
9. Project objectives	<p><u>Overall Objectives:</u></p> <ol style="list-style-type: none"> 1. Improved compliance by fruit/vegetable producers and processors with international food safety and other SPS measures, thereby facilitating improved access to high value domestic/export markets and ultimately increasing incomes. 2. Improved human health through safer and higher quality food products for export and domestic consumption. 3. Greater public and private institutional capacity for training and application of food safety and other SPS standards, and enhanced public-private dialogue and cooperation in the effective implementation of these standards <p><u>Immediate Objectives:</u></p> <ol style="list-style-type: none"> 1. Increased capacity of fruit and vegetable producers, packers and processors to meet international food sanitary and phytosanitary (SPS) requirements

	<ol style="list-style-type: none"> 2. Enhanced access of producers and processors to high value domestic and export markets. 3. Greater institutional capacity (public and private) for training and application of food safety and other SPS standards throughout selected fruit and vegetable (fresh and processed) value chains. 4. Implement improved systems for learning, adaptation and dissemination of SPS management and practices.
10. Project outputs	<ol style="list-style-type: none"> 1. Harmonized, competency-based educational content for SPS management in fresh and processed horticulture products developed and validated in pilot countries. 2. Competency-based educational content on SPS management and GAPs established and offered by university and other training partner organizations in the region. 3. Trainers trained in the SPS and GAPs education curricula/modules and delivering instruction in their respective institutions (universities, training centers, NGOs, etc.) 4. SPS Focal Points in region adopt and use harmonized, competency-based educational content on SPS and GAPs. 5. Development of an internet-based platform for dissemination of SPS educational content as open educational resources with in-country implementing partners. 6. Food industry partners using the internet-based platform for building SPS capacity among their own suppliers, resulting in safer food and instilling greater confidence in their trading partners. 7. Reduced incidence of product rejection due to inadequate SPS management in targeted value chains. 8. Most effective and scalable approaches tested and established for implementation and dissemination of educational content (including use of internet, blended learning, other media like DVDs, and face to face workshops) in target countries in this region.
11. Project activities	The Project Logframe Matrix is appended as Appendix 5 . The proposed Project Work Plan is appended as Appendix 6 .
12. Timetable	The proposed Project Timetable is appended as Appendix 7), which includes the start and completion date of the project and provides an indication of when each of the project activities shall be implemented and outputs produced. Projects cannot normally be longer than <u>two years</u> in duration. The Timetable will serve as an instrument for monitoring project implementation and achievement.

<p>13. Private/public sector co-operation</p>	<p>This project will engage several public and private sector partners in a collaborative effort to improve the safety of fresh and processed fruit and vegetable products in Thailand and Vietnam. Key public sector partners will include the university partners – Kasetsart University and Can Tho University – as well as the Codex and IPPC focal points in each country.</p> <p>In addition, we will partner extensively with private sector partners throughout the value chain. These partners will include producers, packers and processors of the commodities and products of focus, as well as key retailers (e.g., METRO and others), exporters in Thailand and Vietnam, and importers in other countries.</p> <p>Terms of reference for cooperation with our key public sector partners will be completed within the first months of the project. Cooperative arrangements with private sector actors will be less formalized, but nonetheless will be vital to improving market access for producers and processors who participate in the project.</p>
<p>14. Budget</p>	<p>The requested STDF budget for this project is \$US 599,665, as detailed in Appendix 8. MSU will provide overall budget management of the project and will establish subcontracts and budgets with both Can Tho and Kasetsart Universities. The subcontract budgets will cover most of the direct in-country expenses while the MSU budget will be predominantly structured to provide technical assistance, training and other capacity building support for the in-country activities.</p> <p>No equipment is budgeted for this project. Thus, Appendix 10 is omitted from this application.</p>
<p>15. Non STDF contributions</p>	<p>Michigan State University will provide \$US 137,610 in in-kind cost share funds. This level of matching exceeds the STDF requirement of 10% for projects which include at least one LDC or OLIC.</p> <p>The main contributions from MSU will be in professional staff time, including:</p> <ul style="list-style-type: none"> • 10% Project Administrator, Dr. Dan Clay • 7.0% Project Technical Director, Dr. Les Bourquin (8.0% covered by STDF). 15% Total. • 85% of a half-time Research Assistant (a Vietnamese graduate student in Food Science) assigned to the project. (Remaining 15% to be covered by STDF). <p>We anticipate that actual matching funds and in-kind contributions from MSU and other project partners will far exceed this amount, but have for this proposal clearly identified sources of match that are easily auditable.</p>

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Appendix 5: Logframe Matrix

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Appendix 8: Budget (STDF Budget and MSU In-Kind Cost Share Budget)

Appendix 9: TORs of Key Project Staff

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Appendix 12: CVs of Key Project Personnel

Appendix 1

Supporting letters

Government of Vietnam

- Ministry of Agriculture and Rural Development (MARD)
- Can Tho City Government

Government of Thailand

- Support letter requested but not yet received from the Thailand government. Continuing tensions have been reported by Kasetsart University partners to have slowed government responsiveness.

Private Sector Partners

- Tran Dinh CUU Co., Ltd.
- TAPACK
- Advanced Global Sourcing
- JLZ Packaging Ltd, Co.

Vietnam Ministry of Agriculture and Rural Development (MARD)

From: Vu Van Minh [mailto:minhvv.htqt@mard.gov.vn]

Sent: Tuesday, May 18, 2010 5:24 AM

To: Hopper, Marlynn

Cc: Clay, Daniel; Bourquin, Leslie; 'Deepa Thiagarajan'; Hoang Thi Dung; hoalt.htqt@mard.gov.vn

Subject: Re: STDF project application for Vietnam and Thailand

Dear Ms. Marlynn Hopper,

Thank you very much for your email.

We support this project because its objectives are suitable with national priorities on the implementation of SPS Agreement in Viet Nam.

Please inform us progress of the project.

Best regards,
Vu Van Minh

Can Tho, May 21st 2010

LETTER OF SUPPORT

To Whom It May Concern,

Many thanks for your information regarding the submission of a joint proposal to the World Trade Organization for their standards and trade development facility (STDF) program.

As you might know, fruits and vegetables are two fresh produces popular in households from urban to rural areas in Vietnam. Positive economic growth of the country has led to shifts in consumer demand, technological change in marketing and strong retail purchasing power. Consumer preferences have changed with growing consumption of fruits and vegetables instead of meats. They are increasingly concerning about the origin, the quality, and the safety of produces.

In order to gain fresh and processed fruit and vegetable produces of the best quality, all steps involved in the horticultural supply chains starting from breeding, planting, growing, harvesting, packaging to distributing must be taken into consideration. Therefore, education of stakeholders involved in the supply chains is a clever way to increase their awareness, market access, and finally their income.

Can Tho University, a key state university, is a higher education institute of Mekong delta region of Vietnam responsible for training, researching and extension activities in the region in terms of agricultural production development. Their contributions to the development of the region are very much and highly appreciated so far.

Based on the aforementioned statements, we, the people committee of Can Tho city local governments strongly support them for a joint project with the international partners.

Sincerely,

PHÓ CHỦ TỊCH

Nguyễn Thanh Sơn



TRAN DINH CUU CO., LTD

163A-165 Bau Cat 1 Street, Ward 12, Tan Binh District, Ho Chi Minh City
Tel: 08.38492631 _ Fax: 08.38494638 _ HP: 091 391 8854 _ Email: trandinhcuu@tuvan999.com

May 11st, 2010

Tran Dinh Cuu

Director

Tran Dinh Cuu Consultant Company

163A Bau Cat 1, Tan Binh District, Ho Chi Minh City, Vietnam

Dr. Daniel C Clay

Director and Professor

Institute of International Agriculture

319 Agriculture Hall

Michigan State University

East Lansing, MI 48824

Subject: World Trade Organization (WTO)- Standards and Trade Development Facility (STDF) Proposal.

Dear Dr. Clay,

We are interested to learn that Michigan State University is pursuing this potential World Trade Organization project of food safety in Vietnam.

Tran Dinh Cuu Consultant Company are a Vietnamese owned consultant and training group, specializing in ISO 9001, ISO/TS 16949, TQM, TPM, 6 SIGMA, GMP, HACCP, ZD, Kaizen, IE, 5S, ISO 14001, SA 8000, OHSAS 18000, Risk Management, Wastage Reduction, Production Management and the Malcolm Baldrige Prize. We have been heavily involved in delivering services for many food safety manufacturers in Vietnam since 2001. We look forward with great expectations to partnering with the Institute of International Agriculture (IIA) and making a significant contribution in the consultant and training for safety food and agriculture value chains in Vietnam. We are confident that our expert services will achieve the objectives of this project.

The broad objectives for the proposed works are:

1. Improve market access and trade for producers and businesses in the region which will translate into higher incomes.
2. Improve human health through safer and higher quality food products for export and domestic consumption.
3. Enhance public-private dialogue and cooperation in the development and application of international public and private standards for food safety and plant health.
4. Increase institutional capacity (public and private) for the training and application of Sanitary – Phytosanitary Sanitary (SPS) and Good Agricultural Practices (GAP) standards throughout the fruit and vegetable (FV) value chains.
5. Improve efficiencies in the export and domestic FV value chains, and lower the risk of product rejections due to poor SPS management.
6. Improve systems for learning, adaptation and dissemination of SPS management practices.

We are look forward to this opportunity to collaborate with IIA for the successful implementation of this project.

Sincerely,



[Signature]
Tran Dinh Cuu
(Director)

May 11st, 2010

Bui Quang Thinh

Vice Chairman

Tan Tien Plastic Packaging Joint Stock Company (TAPACK)

117/2 Luy Ban Bich Street, Tan Phu District, Ho Chi Minh City, Vietnam

Dr. Daniel C Clay

Director and Professor

Institute of International Agriculture

319 Agriculture Hall

Michigan State University

East Lansing, MI 48824

Subject: World Trade Organization (WTO)- Standards and Trade Development Facility (STDF) Proposal.

Dear Dr. Clay,

We are very interested to learn that Michigan State University is pursuing this potential World Trade Organization project of food safety in Vietnam.

TAPACK is currently the biggest food safety packaging manufacturer in Vietnam. Our key customers are Unilever, Nestle, Dutch Lady, Coca Cola, Ajinomoto, Orion,...

We look forward very much to partnering with the Institute of International Agriculture (IIA) and making a significant contribution to the proposed packaging solutions for safety food and agriculture value chains in Vietnam. We are confident that our expert facilities and technologies will achieve the objectives of this project.

The broad objectives for the proposed works are:

1. Improve market access and trade for producers and businesses in the region which will translate into higher incomes.
2. Improve human health through safer and higher quality food products for export and domestic consumption.
3. Enhance public-private dialogue and cooperation in the development and application of international public and private standards for food safety and plant health.
4. Increase institutional capacity (public and private) for the training and application of Sanitary – Phytosanitary Sanitary (SPS) and Good Agricultural Practices (GAP) standards throughout the fruit and vegetable (FV) value chains.
5. Improve efficiencies in the export and domestic FV value chains, and lower the risk of product rejections due to poor SPS management.
6. Improve systems for learning, adaptation and dissemination of SPS management practices.

We are look forward to this opportunity to collaborate with IIA for the successful implementation of this project.

Sincerely,

Bui Quang Thinh
(TAPACK Vice Chairman)



May 17th, 2010

Dr. Daniel C Clay
Director and Professor
Institute of International Agriculture
319 Agriculture Hall
Michigan State University
East Lansing, MI 48824

Subject: World Trade Organization (WTO)-Standards and Trade Development Facility (STDF) Proposal.

Dear Dr. Clay,

We are very interested to learn that Michigan State University is pursuing this potential World Trade Organization project of food safety in Vietnam.

AGS Vietnam currently has very close relationships with the biggest food safety packaging manufacturers and related food industry consultants & training groups in Vietnam. We believe that your plan for such an initiative is excellent and the timing is exactly right for Vietnam. We look forward very much to partnering with the Institute of International Agriculture (IIA) and making a significant contribution for safety food and agriculture value chains in Vietnam. We are confident that our expert services will achieve the objectives of this project.

The broad objectives for the proposed works are:

1. Improve market access and trade for producers and businesses in the region which will translate into higher incomes.
2. Improve human health through safer and higher quality food products for export and domestic consumption.
3. Enhance public-private dialogue and cooperation in the development and application of international public and private standards for food safety and plant health.
4. Increase institutional capacity (public and private) for the training and application of Sanitary and Good Agricultural Practices (GAP) standards throughout the fruit and vegetable (FV) value chains.
5. Improve efficiencies in the export and domestic FV value chains, and lower the risk of product rejections due to poor SPS management.
6. Improve systems for learning, adaptation and dissemination of SPS management practices.

We look forward to this opportunity to collaborate with IIA for the successful implementation of this project.

Sincerely,



THANGUYEN

Tha Nguyen
AGS Vietnam – Country Manager

JLZ Packaging Ltd., Co.
Lot 38B, Linh Trung EPZ & IP III,
Trang Bang District, Tay Ninh Province, Vietnam.
Tel: 84.663899019 Fax: 84.663899018

May 18th, 2010

Dr. Daniel C Clay
Director and Professor
Institute of International Agriculture
319 Agriculture Hall
Michigan State University
East Lansing, MI 48824

Subject: World Trade Organization (WTO)-Standards and Trade Development Facility (STDF) Proposal.

Dear Dr. Clay,

We are very interested to learn that Michigan State University is pursuing this potential World Trade Organization project of food safety in Vietnam.

JLZ is currently the largest producer of laminated woven polypropylene bags for the food industry, and 100% of our production is for the export market (primarily North America). Our key customers are Commercial Packaging, Cargill and Tractor Supply.

We fully support your initiative, and we look forward to partnering with the Institute of International Agriculture (IIA) in any way necessary and making a significant contribution to the proposed packaging solutions for safety food and agriculture value chains in Vietnam. We are confident that our expert facilities and technologies will achieve the objectives of this project.

The broad objectives for the proposed works are:

1. Improve market access and trade for producers and businesses in the region which will translate into higher incomes.
2. Improve human health through safer and higher quality food products for export and domestic consumption.
3. Enhance public-private dialogue and cooperation in the development and application of international public and private standards for food safety and plant health.
4. Increase institutional capacity (public and private) for the training and application of Sanitary – Phytosanitary Sanitary (SPS) and Good Agricultural Practices (GAP) standards throughout the fruit and vegetable (FV) value chains.
5. Improve efficiencies in the export and domestic FV value chains, and lower the risk of product rejections due to poor SPS management.
6. Improve systems for learning, adaptation and dissemination of SPS management practices.

We are look forward to this opportunity to collaborate with IIA for the successful implementation of this project.

Sincerely,


Lu Zheng Liang
(JLZ General Manager)



Appendix 2

Endorsement of Implementing Organizations

- **Can Tho University (letter below)**
- **Kasetsart University (letter below)**



Ref No: 407/ĐHCT.HTQT.10

Cantho, March 29th, 2010

LETTER OF PARTNERSHIP

Dear Dr John F. Whims,

Many thanks for your information regarding the submission a joint proposal to the World Trade Organization for their standards and trade development facility (STDF) program.

As you may know, food safety has recently become a very hot issue in Vietnam and other South East Asian countries. To deal with this problem, to our mind, all related stakeholders including policy- makers from both central and local governments, farmers, scientists, traders, wholesalers, retailers, and consumers must be involved. This is our 'new' approach/model in the enhancement of market access and trade of producers.

Of course, we have to work with faculties and research institutes which have good expertise and experience in the areas of Sanitary, Global GAP, HACCP, GMP, supply chain management, and trade. So far, this model has been applied to provide the fresh produce supply chains in some provinces of Mekong river delta of Vietnam.

At the moment, we are joining a network of fresh produce horticultural supply chain management which includes Vietnam, Laos, Thailand, The Philippines, Indonesia, and Malaysia under the umbrella of FAO-RAP.


At Can Tho University, our College of Agriculture and Applied Biology, College of Fisheries and Aquaculture, Biotechnology Research and Development Institute, School of Economics and Business Administration, and School of Law are relevant partners being capable of involving in the project.

Both of our institutions have good starting points to complete and submit the proposal. We would suggest having a teleconference with you at your convenience. Please advise us of your choice.

In common interests of all partners and with big needs from the Mekong Delta in particular and in Vietnam as general, Cantho University would like to express our willingness in participating in this proposal to WTO for better food safety in future.

Kind regards,




Ha Thanh Toan, PhD
Vice-Rector (email: httoan@ctu.edu.vn)

Campus II, 3/2 Street
Xuan Khanh Ward
Ninh Kieu District
Can Tho City
Viet Nam
Tel : 0710. 3838 262
Fax : 0710. 3838 474

<http://www.ctu.edu.vn>



Project proposal coordinated by Michigan State University
Input needed from the partners:

Aims & activities of the organization

- Can Tho University would like to take part in this program because it plays an important role in agriculture/ fisheries, especially the food safety and food security for the Mekong Delta of Vietnam, where produces more than 60% of agricultural products for the whole nation. Food safety has become a hot issue in the Mekong Delta, in particular, and Vietnam, in general.
- Please describe the role of the organization in the project
 - Be an active partner in the consortium: attend consortium meetings, communicate with the coordinating institution on a regular basis, disseminate information about the program, encourage researchers and staff members to actively take part in research activities and scholarships.
 - Financial management: transparent accounting and reporting (lump sum is preferable)
- Skills and expertise of the key staff involved in the project management (*must include administrator & academics/staff*)
- Local institutional coordinator: A/Prof. Dr. Ha Thanh Toan, Vice-Rector (httoan@ctu.edu.vn), and A/Prof. Dr. Le Viet Dung, Vice-Rector (lvdung@ctu.edu.vn)
 - Person in charge of the daily communication: Dr. Dao Van Khanh (Deputy Director, International Relations Department, dvkhanh@ctu.edu.vn);
 - Academic staff involved in the project:
 - (i) A/Prof. Dr. Ha Thanh Toan, Vice-Rector for Research Affairs
 - (ii) Dr. Tran Nhan Dung (tndung@ctu.edu.vn), Director, Biotechnology Research and Development Institute
 - (iii) Dr. Ly Nguyen Binh, Vice-Dean (lnbinh@ctu.edu.vn), College of Agriculture and Applied Biology;
 - (iv) Dr. Nguyen Cong Ha (ncha@ctu.edu.vn), Vice-Head, Department of Food Science, College of Agriculture and Applied Biology
 - (v) A/Prof. Dr. Nguyen Thanh Phuong (ntphuong@ctu.edu.vn), Dean, College of Fisheries & Aquaculture
 - (vi) A/Prof. Dr. Mai Van Nam, Dean (mvnam@ctu.edu.vn), School of Economics and Business Administration
 - (vii) Dr. Le Thi Nguyet Chau (nguyetchau@ctu.edu.vn), Dean, School of

Law



February 11, 2010

Dr. Siree Chaiseri
Dean
Faculty of Agro-Industry
Kasetsart University
50 Phahonyothin Rd.
Bangkok 10900 Thailand

Dr. Deepa Thiagarajan
Institute of International Agriculture
319 Agriculture Hall
Michigan State University
East Lansing, MI 48824

Subject: WTO-STDF Project Grant

Dear Dr. Deepa Thiagarajan,

Kasetsart University is pleased to partner with the Institute of International Agriculture (IIA) at Michigan State University (MSU) in its application to the WTO-STDF Project Grant. We look forward to partnering with IIA and making a significant contribution in the proposed work to help build capacity in SPS measures in food and agriculture value chains in Southern Asian region, particularly in Thailand and Vietnam. We are confident that our ongoing programs, expert faculty, our established professional relationships, agriculture extension and communications systems, and complementary expertise will facilitate project coordination and implementation and ultimately can make a significant contribution in achieving the objectives of the program.

The broad objectives for the proposed work are:

1. *Increased incomes to producers and businesses* in the region through enhanced market access and trade.
2. Improved human health through safer and higher quality food products for export and domestic consumption.
3. Enhanced public-private dialogue and cooperation in the development and application of international public and private standards for food safety and plant health.
4. Greater institutional capacity (public and private) for training and application of SPS and GAP standards throughout the F&V value chains.
5. Efficient export and domestic value chains and a lowered risk of product rejections due to poor SPS management.
6. Improved systems for learning, adaptation and dissemination of SPS management and practices.

We look forward to this opportunity to collaborate with IIA at MSU for the successful implementation of this program.

Sincerely,

A handwritten signature in black ink that reads "Siree Chaiseri".

Siree Chaiseri, Ph.D.
Dean

Appendix 3

Description of the Project Background and Rationale

Project Overview

Michigan State University in partnership with academic, government and private partners proposes to implement a regional project focused on building trade capacity for fresh and processed fruit and vegetable products in two key Southeast Asian countries – Thailand and Vietnam. This project will focus on capacity building using a combination of traditional face-to-face instruction as well as highly-scalable internet-based eLearning. These technical assistance efforts will aim to improve food safety and SPS compliance of target producers and processors in each country in order to facilitate improved market access. Particular emphasis will be placed on improving the capacity of small-scale and less technically developed fruit and vegetable producers and processors in these countries, as well as on building the capacity of public (government and academia) and private sector organizations to support trade capacity building and market access initiatives for these producers and processors.

Key to these efforts will be the collaborative development and localization of a competency-based education and training platform (CETP) comprised by educational materials and assessment tools which are harmonized to meet international standards for food safety and other SPS measures. The CETP materials developed for this project will be standardized to meeting international requirements, and then customized (localized) to reflect the different languages, customs, cultural practices and other factors for these countries and the value chains of focus.

These efforts will build from lessons Michigan State University has learned from numerous previous food and agricultural market development projects (see Appendix 11 for a representative listing), as well as building on MSU's recently-launched Food Safety Knowledge Network (FSKN) project (<http://foodsafetyknowledgenetwork.org>). FSKN is an initiative of Michigan State University and the Global Food Safety Initiative, along with several other public and private sector partners, which is focused on building the capacity of food producers and processors in less developed countries to meet global food safety standards.

The materials developed for the CETP in this project will be collaboratively designed with key stakeholders in Thailand and Vietnam, and will consist of the following key elements:

- Competency frameworks representing the skills required for producers and processors of fruit and vegetable products. The competency frameworks will be closely aligned to international requirements as outlined in the Codex Alimentarius General Principles of Food Hygiene, other Codex standards, and other authoritative references on international best practice for food safety and other SPS measures.
- Educational materials and training programs created to specifically convey knowledge and skills relative to the competency frameworks that are designed. The preliminary educational materials developed will be generic in nature, and these generic materials will be localized to conditions present in Thailand and Vietnam.
- Assessment tools designed to test knowledge and skills of participants in training programs. These assessment tools will be constructed and administered in a manner that enables us to evaluate the efficacy of the educational materials and training programs, as well as provide tools to assess baseline knowledge of participants and knowledge change during the course of training programs.

Another critical element of our approach is the design of educational content such that it can be deployed via internet-based eLearning or other distance education approaches. Our content will be housed on the internet, so that clients can choose which training method will best work for their target audience. The options will include eLearning, blended learning, multimedia downloads like DVDs and workshops. Rather than relying on face-to-face education to provide technical training, eLearning approaches will enable us to reach significantly larger numbers of end-users with high quality, technically sound educational content. The eLearning platforms will be supported locally in partnership with our in-country collaborators (i.e., Kasetsart University and Can Tho University), and also will be designed to include social networking features such that communities of practice can coalesce to address specific SPS issues affecting particular value chains. Such approaches will be critical to effectively up-scaling delivery of training programs to the food industry.

Through this process, we aim to achieve the following overall objectives:

1. facilitate the production of safer food,
2. transfer knowledge throughout the supply chain,
3. enable career development, education and enhanced mobility for food safety professionals,
4. enhance the competitiveness of small growers and producers and enable access to high value markets,
5. achieve pragmatic cost reductions to the industry through the elimination of corrective actions and product rejections, and
6. secure the supplier base for retailers and exporters in terms of legality and food safety with improved product conformity.

The CETP assessment and training tools will, to the extent possible, be based on open educational resources and are intended to be provided at low or no cost to the end users via internet-based eLearning solutions or similar mechanisms which are highly scalable to reach large numbers of users. Collectively, it is anticipated these efforts will constitute a vital set of resources to build capacity of global food professionals and businesses, with the ultimate outcome being the facilitation of food trade, particularly for small and less developed businesses. With the assistance of STDF and in partnership with our collaborators in Thailand and Vietnam, we proposed to fully implement this approach for the fresh and processed fruit and vegetable sectors in these countries.

Sectoral Focus and Current Scenario

We propose to focus the activities of this project on fresh and processed fruit and vegetable value chains. The technical assistance and trade capacity building activities will be designed such that they can be generally applied to fruit and vegetable value chains in Thailand, Vietnam and surrounding countries. However, for the purposes of the project we aim to focus efforts on 2-3 value chains per country. These value chains (fresh and/or processed fruit and vegetable products) will be selected in consultation with in-country partners and stakeholders after a thorough analysis of current market opportunities and constraints for each country.

Focusing on fruit and vegetable value chains also enables MSU as an institution to build from an area of considerable strength, as we have led international development projects on fruit and vegetable value chains continuously since the late 1990s. This experience spans many countries in Latin America, Africa and Asia.

We chose to focus this proposal on Thailand and Vietnam for several reasons, including the fact that both countries:

1. are rapidly growing economies in the region and increasingly are engaged in agricultural trade with regional and more distant markets,
2. are significant producers of fruits and vegetables and have excellent potential as and exporters of high-value fruit and vegetable products,
3. have rapid development of organized retail and other high-value domestic markets which typically demand higher quality and safety standards than traditional wet markets,
4. have excellent agricultural universities who work closely with government agencies responsible for SPS measures and are focused on providing technical assistance and market development for their producers and processors,
5. have agricultural and food processing sectors that still are typified by fragmented land-holdings and small-scale production and processing, meaning that agricultural production and processing represents the activities of a relatively large share of each country's work force, and
6. despite making significant progress in terms of agricultural exports, particularly with regional trade partners, still have experienced significant problems with rejections of fruit and vegetable products due to a variety of food safety and phytosanitary issues.

Despite these similarities, Thailand and Vietnam clearly are at different levels of agricultural market development as it pertains to fruit and vegetables. Thailand has been steadily growing its share of agricultural exports, and particularly fruits and vegetables, for the past two decades. By contrast, Vietnam has only recently begun to demonstrate significant increases in trade of these commodities. However, both countries have experienced (and continue to experience) significant problems with rejections of agricultural products by importing nations.

Importance of Vietnam and Thailand Fruit and Vegetable Production

Thailand has become one of the world's largest and most advanced producers and exporters of processed food products (such as seafood and poultry). Its rich agricultural roots and resources, combined with its investments in international quality standards, technology, and research and development for food safety, have helped make Thailand the sole net food exporter in Asia and one of the top five net food exporters in the world. Thailand fruit and vegetable production has grown in parallel with the rest of the food system. Similarly, Vietnam is a major producer of fruits and vegetables in Asia, ranking 5th in the region in 2009 in total volume of production. One of the strongest horticulture production areas in Vietnam is the Mekong Delta, where our partner institution, Can Tho University, is located. Vietnam produces an incredibly rich and diverse portfolio of fruits and vegetables, including mangos, pineapples, dragon fruit, rambutan, persimmon, avocado, feijoas, physalis, tomatillo, passion fruit, mangosteen, pomelo, asparagus, fine bean, runner bean, Snow pea, mange tout pea, baby corn, okra, baby carrot, chilli, ginger, onion, garlic and taro. The production of high-value and perishable fresh fruits and vegetables in Thailand and Vietnam play an integral and vital role in their emerging economies. Continued growth and access to foreign markets for their products will be of significant importance.

Vietnam and Thailand Fruit and Vegetable Export Highlights

- Not surprisingly, the strategic position of Vietnam and Thailand relative to large population centers, provide significant opportunities for expanding trade in their fruit and vegetable sectors. The data, in fact, show that fruit and vegetable trade has grown dramatically for specific commodities.

- Since 1995, Vietnam exports of fruit have increased from 0.02 mmt to 0.55 mmt in 2007. Vietnam vegetable exports also grew significantly over the same time period rising from 0.14 mmt in 1995 to 1.5 mmt in 2007.
- Since 1985, Thailand exports of fruit have increased from 0.30 mmt to 1.9 mmt in 2007. Thailand vegetable exports actually contracted significantly over the same time period falling from 7.4 mmt in 1985 to 5.1 mmt in 2007. This was largely a function of a reduction in the exportation of cassava flour. Other categories such as “vegetables fresh nes” actually showed large export increases, rising by 148% from 1985 to 2007.
- A significant volume of the fruit and vegetables that are exported by Vietnam and Thailand are shipped to other developing countries which are nearby, such and Indonesia, Malaysia, Cambodia and China. Improved SPS capacity in the region (Vietnam/Thailand) would extend their trading opportunities into higher value added markets in more mature economies where food safety regulations are stricter.

SPS Notifications for Fruit and Vegetable Products from Thailand and Vietnam

The World Bank estimates that total losses to the Vietnamese economy from SPS problems surpass US \$1 billion per year. These losses are concentrated in three main areas – public health, agricultural health and lost market access. Food-borne pathogens and high levels of toxins in foodstuffs, plant pests and animal diseases are the main problems faced. Overall, the total cost to the economy caused by food-borne disease is estimated to surpass US \$450 million per year. Another issue of concern is, despite high rates of agricultural export growth (about 14% per year), SPS issues are a significant impediment to further growth, in particular in the context of diversification and penetration of higher income markets (which typically have more stringent SPS import regimes). In the fruit and vegetable sector, the World Bank has estimated that the fruit fly situation in the country deprives Vietnam of access to a potential market for tropical fruit estimated at over US \$250 million.

The European Union’s Rapid Alert System for Food and Feed (RASFF) also provides an enhanced understanding of the challenges that Thailand and Vietnam face regarding the exporting of their fruits and vegetables (including both fresh and processed) as it pertains to SPS issues. For example, in 2010 the RASFF has already received 21 notifications of border rejections of fruits and vegetable exports from Thailand (see Table 1). The majority of the rejections focused on the shipment of eggplants and long beans to Germany, Belgium and the Netherlands and were associated with excessive pesticide residues. In 2009 and 2008, the final number of annual notifications/rejections by the EU regarding Thailand fruit and vegetable exports reached 38 and 36 cases, respectively. It is likely that notifications in 2010 will far exceed these levels since the year is not yet one-third over. A trend is emerging as shown in Figure 1, whereby the rejection rates of Thailand exports of fruits and vegetables by the EU is increasing year-over-year.

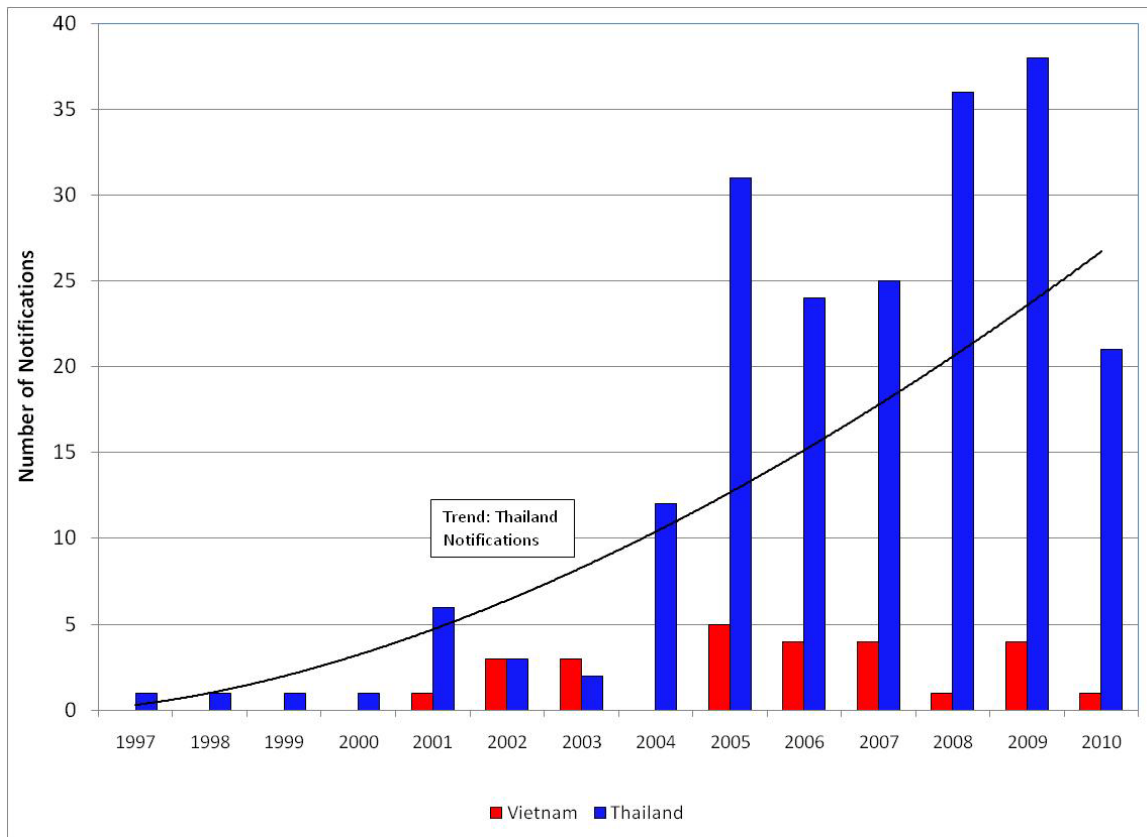
Although most of the rejections illustrated in Table 1 were associated with pesticide residues, it should be noted that Thailand has experience many rejections of fruit and vegetable products due to the presence of microbial pathogens such as *Salmonella*, unapproved uses of food additives, excessive use of sulfiting agents and other food additives, etc. Thus, Thailand’s problems with fruit and vegetable export rejections run the gamut of food safety and SPS concerns. Similarly, Vietnam has experience a large number of notifications due to the presence of *Bacillus cereus*, *Salmonella* and other pathogens in dried mushrooms and fruit and vegetable products.

Table 1: 2010, Rapid Alert System for Food and Feed, Notifications for Fruit and Vegetable Exports from Thailand to the European Union

date	control type	notified by	subject
15/02/2010	border rejection	ITALY	procymidone (0.69 mg/kg - ppm) and carbendazim (1.07 mg/kg - ppm) in fresh longan from Thailand
1/3/2010	border rejection	FINLAND	carbofuran (0.33 mg/kg - ppm) and metalaxyl (2.4 mg/kg - ppm) in fresh packed Chinese broccoli (Brassica alboglabra) from Thailand
2/3/2010	border rejection	UNITED KINGDOM	dimethoate (0.28 mg/kg - ppm) in yard long beans from Thailand
10/3/2010	border rejection	NETHERLANDS	carbofuran (0.078 mg/kg - ppm), acephate (0.046 mg/kg - ppm) and prophenophos (0.16 mg/kg - ppm) in long beans from Thailand
10/3/2010	border rejection	NETHERLANDS	dimethoate (0.74 mg/kg - ppm) in white eggplants from Thailand
10/3/2010	border rejection	NETHERLANDS	dimethoate (0.21 mg/kg - ppm) in white eggplants from Thailand
11/3/2010	border rejection	BELGIUM	omethoate (0.045 mg/kg - ppm) in egg plant (Solanum melongena) from Thailand
17/03/2010	border rejection	BELGIUM	indoxacarb (0.12 mg/kg - ppm) in yard long beans (Vigna sesquipedalis) from Thailand
18/03/2010	border rejection	UNITED KINGDOM	indoxacarb (0.15 mg/kg - ppm) in yard long beans from Thailand
22/03/2010	border rejection	BELGIUM	indoxacarb (0.13 mg/kg - ppm) in yard long beans (Vigna sesquipedalis) from Thailand
22/03/2010	border rejection	FINLAND	omethoate (0.19 mg/kg - ppm) in fresh eggplant from Thailand
25/03/2010	border rejection	BELGIUM	ethion (0.067 mg/kg - ppm) and tetradifon (0.051 mg/kg - ppm) in round egg plants (Solanum melongena) from Thailand
25/03/2010	border rejection	GERMANY	unauthorised substance dicotophos (0.14 mg/kg - ppm) in fresh broccoli from Thailand
25/03/2010	border rejection	GERMANY	indoxacarb (0.11 mg/kg - ppm) in yard long beans from Thailand
25/03/2010	border rejection	GERMANY	unauthorised substance dicotophos (0.037 mg/kg - ppm) in fresh eggplants from Thailand
26/03/2010	border rejection	GERMANY	indoxacarb (0.08 mg/kg - ppm) in yard long beans from Thailand
26/03/2010	border rejection	GERMANY	indoxacarb (0.37 mg/kg - ppm) in yard long beans from Thailand
26/03/2010	border rejection	GERMANY	acetamiprid (0.08 mg/kg - ppm) in fresh broccoli (Brassica alboglabra) from Thailand
1/4/2010	border rejection	GERMANY	unauthorised substances dicotophos (0.11 mg/kg - ppm) and diafenthiuron (0.12 mg/kg - ppm) in Chinese broccoli from Thailand
2/4/2010	border rejection	GERMANY	prophenophos (0.24 mg/kg - ppm) in Chinese broccoli from Thailand
6/4/2010	border rejection	BELGIUM	ethion (0.11 mg/kg - ppm) and tetradifon (0.05 mg/kg - ppm) in egg plants (Solanum melongena) from Thailand

Source: <https://webgate.ec.europa.eu/rasff-window/portal/>

Figure 1: Notifications, Rapid Alert System for Food and Feed, Fruit and Vegetable Exports from Thailand and Vietnam to the European Union



Source: <https://webgate.ec.europa.eu/rasff-window/portal/>

Accordingly, there is a justifiable need for intensified and customized SPS capacity building programs (along with strengthening the existing training and education system) of Vietnam and Thailand. One critical goal should be to provide a platform which is sustainable and builds on the progress that has previously been accomplished. For example, providing training on GAP (Good Agricultural Practice) and IPM (Integrated Pest Management) for agricultural products, in particular, fruit and vegetables, and quality management such as HACCP (Hazard Analysis & Critical Control Points) for food processing establishments is one of the top priority action areas with respect to any food safety initiative.

A 2008 report published by Kees van der Meer and Laura L. Ignacio, for STDF highlights the following as priority needs for SPS capacity building in Vietnam:

1. Strengthen the institutional and legislative frameworks for food safety, animal health and plant health with necessary provisions for enforcement. *(Priority 1)*
2. Promote greater awareness of food safety issues for both trade and public health, especially for provincial government officials. *(Priority 1)*
3. Intensify information and education programs on good practices in food production, processing and preparation for farmers, processors and consumers. *(Priority 1)*
4. Develop more capacity for data collection on pests, diseases and food hazards (through surveillance) and risk assessments needed to better manage risks of food safety, plant and animal health. *(Priority 1)*
5. Provide training on IPM/GAP for agricultural products, in particular, fruit and vegetables, and quality management (such as HACCP) for food processing establishments. *(Priority 2)*

6. Design and implement more effective monitoring and control systems for agro-chemicals. (Priority 2)
7. Enhance capacity for diagnosis and enforcement. (Priority 3)

In addition, the need for concerted education and training for the existing staff involved in SPS activities for meeting the needs of increased skill levels in diverse areas, also is emphasized in the 2006 World Bank Vietnam Final SPS Report (by an independent evaluation team). The evaluators note that, for more efficient use of the scarce training resources, preparation and implementation of a consolidated training program should replace the currently fragmented training activities.

Most systems in Southeast Asia including Vietnam and Thailand typically face challenges in strengthening the following key components such as food legislation, food control management, inspection services, laboratory services, and information, education, communication and training. Although Thailand is home for many food safety related programs, experts are limited in some specific areas especially in food safety management in the fruit and vegetable sector. The fully developed food safety control system and training programs require national, regional and international cooperation. Therefore, specialized training and education programs at the national, regional and international levels, with the support from WTO would be beneficial to Thailand.

The promotion of food safety is one of the government's priorities under the Healthy Thailand campaign. Food safety is relevant not only for export but also for domestic consumption. The government currently assigns food safety responsibility to several agencies. In the Ministry of Public Health these include the Food and Drug Administration, the Bureau of Health Promotion, and the Bureau of Environmental Health. In the Ministry of Agriculture, the agencies concerned are the National Bureau of Agriculture Commodities and Food Standards, the Department of Livestock Development, and the Department of Fisheries. Good coordination and collaboration among these concerned agencies still need to be strengthened.

Strengthening the food safety system requires considerable capacity-building, including the development and strengthening of infrastructure. However, countries such as Vietnam and Thailand can vary in their levels of development and capacity to build the required infrastructure. Capacity-building in food safety requires not only the continuous strengthening of infrastructure but also the periodic reorientation of stakeholders to keep up with new issues on food safety, advances in science and technology, global trade, trends and developments, legislation, and food crises. Where education and training programs have been implemented it has not resulted in measurable positive changes in food inspection, analysis, production, processing and consumption practices. Generally, training programs are evaluated simply by the production of materials and their breadth of distribution. There is an urgent need to evaluate the effectiveness of this education and training and incorporate participatory food safety knowledge dissemination.

Relationship of Project to National Development Strategies

In Vietnam, 77% of the population and 90% of the poor lived in rural areas in 2003. Thus, the Vietnamese government's Comprehensive Poverty Reduction and Growth Strategy included a particular emphasis on development of agriculture and the rural economy. Among the key strategies outlined in the Strategy included diversification of production to emphasize high value commodities, active participation of farmers in processing and marketing of produce, promotion of exports, and increased adoption of science and technology to improve agriculture production and management. Likewise, Thailand's agricultural sector development is key to poverty alleviation. In 2005, 38% of Thailand's population of 65 million was engaged in farming, often on very small land-

holdings. In particular, Thailand has focused on increasing agricultural productivity and trade as primary strategies to improve rural employment and incomes, and thereby improve the livelihood of farming families.

The specific importance of food safety as it pertains to the country of Vietnam is also highlighted and is mentioned multiple times as being an important concern regarding their advancements to alleviate poverty. Food safety is described as being pivotal to Vietnam's country strategy in two important domains: (1) the need for improved food safety in order to generate higher economic returns for the country and (2) the need for improved food safety in order to raise the population's standard of health.

Relationship of Project to Other Development Efforts

Several previous and current donor-funded projects have focused on building trade capacity of the agricultural sectors of Thailand and Vietnam. For example, the Food and Agricultural Organization (FAO) of the United Nations has led a number of projects focused on food safety for fresh produce and has generated several publications and training resources in this area: (http://www.fao.org/ag/agn/agns/foodproducts_fresh_en.asp), and particularly the FAO work on the fresh produce sector in Thailand. For example: ftp://ftp.fao.org/es/esn/food/meetings/2005/thailand_report.pdf).

We also are aware that STDF recently funded an FAO-led project "Strengthening Vietnamese SPS Capacities for Trade - Improving safety and quality of fresh vegetables through the value chain approach." The Canadian International Development Agency has sponsored a multi-year project in Vietnam which has focused on food and agricultural products quality and safety. The most recent report from this project indicates that the assistance has been used in part to enhance Good Agricultural Practices protocols for fresh fruits and vegetables and pilot these practices in two provinces (<http://www.acdi-cida.gc.ca/>). We also are cognizant of the fact that the Asian Development Bank has a project focused on Quality and Safety Improvement of Agricultural Products currently ongoing in Vietnam: <http://www.adb.org/Documents/Reports/Consultant/39421-VIE/39421-VIE-TACR.pdf>.

We strongly believe that the activities outlined in this proposal are uniquely positioned to complement and amplify ongoing development efforts targeted for the fruit and vegetable sectors in Thailand, Vietnam, and other Southeast Asian countries. Specifically, the competency-based education and training platform approach described in this proposal will provide a systematic framework whereby education and training programs on food safety and other SPS measures can be designed, localized, implemented and amplified through the use of internet-based eLearning and blended training techniques and open educational resources. We believe these characteristics of this proposed work are unique and well-suited to complement existing market development efforts in the region. The MSU team and its partners already have completed several pilot training programs using the CETP approach in neighbouring Asian countries, specifically China and India. Additional information on these programs is available online at: <http://www.foodsafetyknowledgenetwork.org/>, <http://fsknttraining.org/training/basiclevelchennai>, and <http://fsknttraining.org/training/coca-colafafoodsafety09>.

Further, we believe that effective application of this approach in Thailand and Vietnam will serve as a springboard which enables the implementation of similar approaches in other, less-developed countries in the region (e.g., Cambodia, Lao PDR, Nepal, etc.). To foster this expansion, we aim to invite participants from *neighbouring* countries to participate in capacity building activities in this project provided that funding is made available for its implementation.

Specifically with regard to the other STDF-approved project in Vietnam on food safety and trade of vegetables and other related projects currently supported by international donors, we firmly believe that these projects can work synergistically to have a profound and lasting impact on fruit and vegetable SPS compliance and market development for Vietnamese producers and processors. To that end, we already have initiated discussions with representatives from the Fruit and Vegetable Research Institute (FAVRI) in Vietnam, which is the lead in-country partner for the current STDF-funded project on fresh produce sector development in Vietnam. We also will capitalize on the wealth of publications on fruit and vegetable food safety and SPS measures that already have been published during the course of previous and ongoing development projects in these countries.

One final consideration is that the current project proposes to focus not only on fresh fruits and vegetables, but also on the processed sector. Processing technologies, including fresh-cut and other minimal processing, are well-suited to adaptation in developing economies and can be very effective value-addition strategies. This proposed project will increase the capacity of food processors in Thailand and Vietnam to meet international food safety standards and thereby increase the potential for trade in value-added processed fruit and vegetable products.

Cost-Benefit and Sustainability of Approach

This program addresses one of the most critical determinants of a food producer or processor's capacity to effectively comply with food safety and other SPS requirements for global trade, building the knowledge and skills of the persons (food industry professionals) who are responsible for managing food safety and quality. The program is designed to address the need for knowledge and skills of food professionals in all sectors of the food supply chain and is highly scalable through the use of internet-based eLearning and blended learning technologies. Structured as a world-wide community of food safety practitioners and experts, CETP offers a platform to openly share, develop and exchange food safety research and training materials based on internationally recognized standards.

The sustainability of this effort will be ensured by the integration of CETP elements into the core curricula and extension programs of our lead university partners, Kasetsart University in Thailand and Can Tho University in Vietnam. Both institutions have a strong record of providing education and technical assistance for food producers and processors in their countries, and both institutions also have a history of effective cooperation with faculty and staff at MSU. Critically, both of these leading institutions of higher learning also are well-connected with the SPS contact points in the governments of Thailand and Vietnam and can work collaboratively with these organizations to ensure sustainability and continued growth of these efforts.

Creation and effective implementation of a comprehensive, integrated food safety and quality system for the fresh and processed fruit and vegetable sectors in Vietnam and Thailand will require a significant investment in human resources, system development and management, training, monitoring and associated activities. If implemented well, these investments should more than pay for themselves through more effective provision of safe and high-quality foods, improved supply chain management and associated reductions in wastage, and reduction in the numbers of non-conformities and rejections related to food safety and quality indices.

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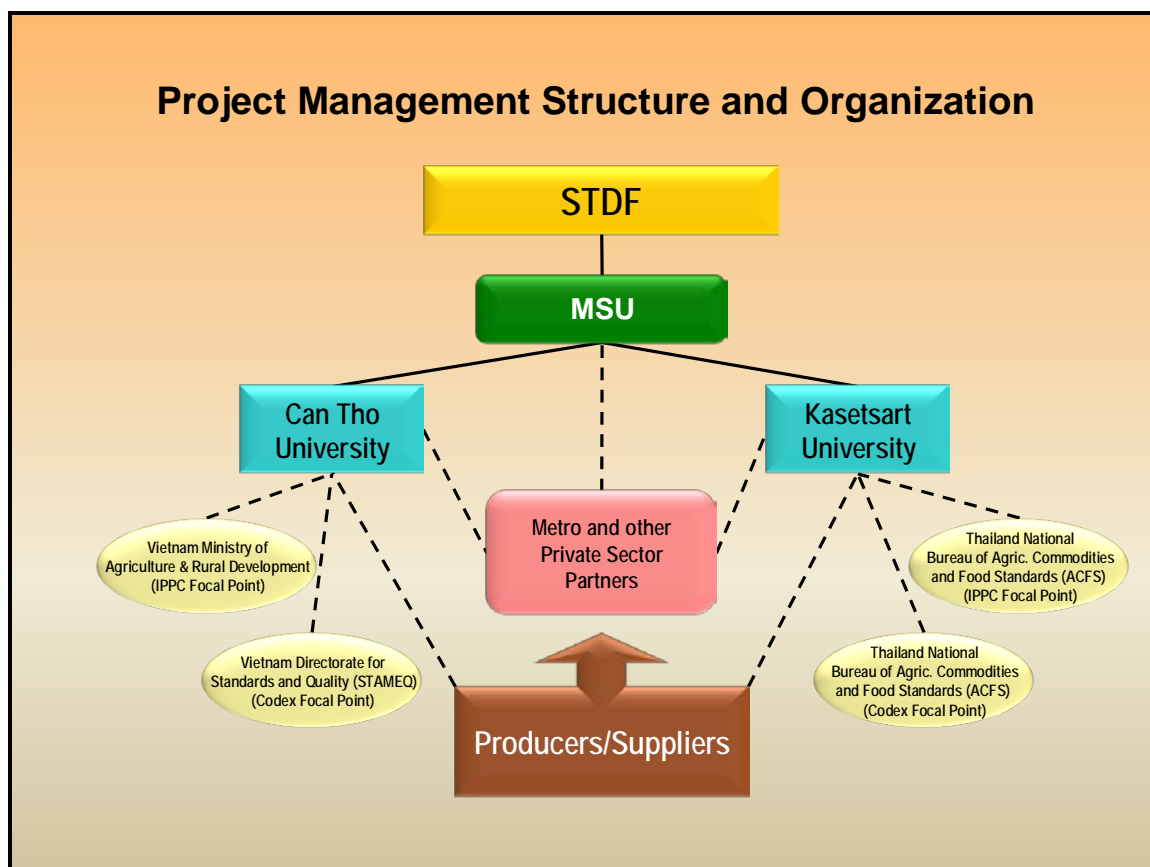
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Appendix 4

Project Management Structure

Michigan State University (MSU) through the Institute of International Agriculture (IIA) will serve as the lead technical and administrative institution for the project (see graphic below). MSU is internationally recognized for its accomplishments and program management in SPS capacity building, plant and food safety, international food laws and food laws and regulations, risk assessment, and horticulture and food supply chain development. A very recent example can be found in the STDF-funded RHESI project in Rwanda. A selective summary of 20+ related programs and capacities at MSU can be found in Appendix 11. Nearly all of these programs have been managed through IIA.

MSU will provide technical, financial and administrative oversight to the project through the US-based Project Administrator (Dr. Dan Clay, 10% LOE, MSU cost share) and a project Technical Director (Dr. Les Bourquin, 15% LOE, 1/2 MSU cost share). Day-to-day project management will be provided by the MSU-based Project Manager (Dr. Deepa Thiagarajan, 20% LOE). The MSU Project Technical Director will serve as the point of contact for STDF and will ensure that all project results are achieved and reports are submitted according to the STDF timeline and specifications.



MSU will work closely with two longstanding public partner institutions in Southeast Asia: Can Tho University in Vietnam and Kasetsart University in Thailand. Subcontracts will be established with these partners for the implementation of all in-country activities in the work plan. MSU will provide operating funds through a partial advance to the partner institutions and will reimburse expenses on

a monthly basis. All costs and compliance with travel and other regulations will be monitored and approved by MSU.

Partner institutions in Vietnam and Thailand will each appoint a full-time local Program Coordinator. The Program Coordinators will report to the Project Manager for all technical and administrative issues concerning project implementation. Specific TORs for all of these key management positions are described in *Appendix 9: TORs of Key Project Staff*.

Extended Project Structure. Can Tho and Kasetsart will in turn serve as the initial country hub for CETP training, as shown in the graphic. Immediate beneficiaries of this training and access to the CETP open educational resource will be a variety of key stakeholders including the IPPC and Codex focal points, Metro and other private sector partners and their suppliers.

Appendix 5: Logframe Matrix

	Project description	Measurable indicators	Sources of verification	Assumptions and risks
Overall objectives (Impact / goals)	<p>1. Improved compliance by fruit and vegetable producers and processors with international food safety and other SPS measures, thereby facilitating improved access to high value domestic and export markets and ultimately increasing incomes..</p> <p>2. Improved human health through safer and higher quality food products for export and domestic consumption.</p> <p>3. Greater public and private institutional capacity for training and application of food safety and other SPS standards, and enhanced public-private dialogue and cooperation in the effective implementation of these standards.</p>	<p>1. Numbers of producers and processors participating in program, meeting food safety and SPS requirements, and engaging in contracts with local retailers and exporters. Reduced rejections of products at receipt by domestic buyers and importers. Basic economic impact analysis of participating firms.</p> <p>2. Reduced rejections of food products by domestic buyers and importers. Fewer outbreaks of foodborne illness associated with target commodities.</p> <p>3. Participation by public and private sector actors on project planning and training events. Ongoing collaboration between public and private sector partners at project conclusion.</p>	<p>Project surveys and data from government departments, UN Agencies, NGOs and other reliable sources.</p>	<p>Project partners, including representatives from SPS Focal Points, Academia, and the food industry, will actively participate in the program.</p>

<p>Immediate objectives (purpose)</p>	<p>1. Increased capacity of fruit and vegetable producers, packers and processors to meet international food sanitary and phytosanitary (SPS) requirements</p> <p>2. Enhanced access of producers and processors to high value domestic and export markets.</p> <p>3. Greater institutional capacity (public and private) for training and application of food safety and other SPS standards throughout selected fruit and vegetable (fresh and processed) value chains.</p> <p>4. Implement improved systems for learning, adaptation and dissemination of SPS management and practices.</p>	<p>1. Numbers of producers and processors participating in program and demonstrating compliance with food safety and SPS requirements as evidenced by government or third-party evaluations.</p> <p>2. Numbers of producers and processors engaging in contracts with local retailers and exporters. Reduced rejections of products at receipt by domestic buyers and importers.</p> <p>3. Participation by public and private sector actors on project planning and training events. Ongoing collaboration between public and private sector partners at project conclusion.</p> <p>4. Development / enhancement of information portals on management of food safety and other SPS issues in participating countries.</p>	<p>1. Participation lists for programs. Data from government and private partners. Primary data collection under project monitoring and evaluation plan.</p> <p>2. Primary data from producers and processors participating in program. Verification from domestic buyers and exporters. Secondary data from other government data sources. Government statistics (when available) and data from secondary sources (e.g., import notification systems).</p> <p>3. Project partners. Formal summative evaluation with project participants and partners.</p> <p>4. Development and launch of information portals by project partners. Use of improved data management systems by producers and industry.</p>	<p>Project partners, including representatives from SPS Focal Points, Academia, and the food industry, will actively participate in the program.</p> <p>Project partners will identify appropriate trainers, will collaborate in development of localized resources, and will coordinate and sponsor training programs.</p> <p>Producers, processors, retailers and exporters will participate in project capacity building and market development activities.</p> <p>Project partners will assist in effective monitoring and evaluation of project outputs and impacts.</p>
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<p>Expected results</p>	<p>1. Harmonized, competency-based educational content for SPS management in fresh and processed horticulture products developed and validated in pilot countries.</p> <p>2. Competency-based educational content on SPS management and GAPs established and offered by university and other training partner organizations in the region.</p> <p>3. Trainers trained in the SPS and GAPs education curricula/modules and delivering instruction in their respective institutions (universities, training centers, NGOs, etc.)</p> <p>4. SPS Focal Points in region adopt and use harmonized, competency-based educational content on SPS and GAPs.</p>	<p>1. Development and validation (via in-country training programs) of SPS educational materials (competency frameworks, training modules, assessment tools) for primary production and processing of fruits and vegetables.</p> <p>2. Training programs based on co-created SPS educational content delivered by partner universities and other training partners. [Numbers and scope of programs and numbers of anticipated trainees will be developed in collaboration with partners.]</p> <p>3. Trained trainers engaged in delivering programs based on harmonized competency-based educational content developed under the program.</p> <p>4. Personnel associated with SPS Focal Points in the focus countries are trained via the program and sharing content with end-users.</p>	<p>1. Project partners.</p> <p>2. Project partners.</p> <p>3. Project partners.</p> <p>4. SPS Focal Points partnering in the program.</p>	<p>Project partners, including representatives from SPS Focal Points, Academia, and the food industry, will actively participate in the program.</p> <p>Project partners will identify appropriate trainers, will collaborate in development of localized resources, and will coordinate and sponsor training programs.</p> <p>Producers, processors, retailers and exporters will participate in project capacity building and market development activities.</p> <p>Project partners will assist in effective monitoring and evaluation of project outputs and impacts.</p>
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	<p>5. Development of an internet-based platform for dissemination of SPS educational content as open educational resources with in-country implementing partners.</p> <p>6. Food industry partners using the internet-based platform for building SPS capacity among their own suppliers, resulting in safer food and instilling greater confidence in their trading partners.</p> <p>7. Reduced incidence of product rejection due to inadequate SPS management in targeted value chains.</p> <p>8. Most effective and scalable approaches tested and established for implementation and dissemination of educational content (including use of internet, blended learning, other media like DVDs, and face to face workshops) in target countries in this region.</p>	<p>5. Project partners collaborate in developing and maintaining internet-based resources.</p> <p>6. Food industry partners (producer groups, processors, retailers, exporters) are using the platform and training programs to build capacity in their value chains.</p> <p>7. Producers and processors have fewer food products rejected by local buyers and importers.</p> <p>8. Evaluate effectiveness of training materials and modalities of delivery by conducting summative evaluation with program participants, assessing knowledge change of participants, and using indicators of behaviour change (e.g., food safety certifications) by participating producers and companies.</p>	<p>5. Project partners.</p> <p>6. Food industry partners associated with the program.</p> <p>7. Baseline and end-of-project data collected from government, industry, and destination country sources (e.g., EU RASFF system).</p> <p>8. Summative evaluation and knowledge assessments conducted during training programs. Supporting information on behaviour change obtained from project participants, SPS Focal Points and other project partners.</p>	
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<p>Activities</p>	<p>Design</p> <p>Together with industry partners, SPS Focal Points and private sector suppliers develop and test key components of the harmonized, competency-based educational platform on SPS measures for fruits and vegetables value chains targeted at supplier, manufacturer and primary production levels.</p> <p><u>Activities:</u></p> <p>Complete project start-up activities, including hiring and placement of in country staff and holding first project planning meetings with implementing organizations and other partners.</p> <p>Conduct initial assessments of fruit and vegetable value chains of focus and available educational content on SPS measures localized for the regions and value chains. Design formal project evaluation procedures and research aims at this stage.</p> <p>Develop educational materials (competency frameworks, training modules, assessment</p>	<p>Terms of Reference for partners, formalized work plans, and responsibilities agreed between MSU and key implementing organizations in each country.</p> <p>Staff hired and offices established in each country.</p> <p>Project kick-off workshops executed.</p> <p>Assessment reports on trade patterns and product rejections completed.</p> <p>Mutual identification of 2-3 commodities or processed products of focus in each country.</p> <p>Assessment reports completed for each commodity and product of focus in Thailand and Vietnam.</p> <p>Key areas of intervention for each commodity and product identified.</p> <p>Assessment of current educational content, technical assistance capacity, eLearning technology capacity, and</p>	<p>Project team and partners.</p>	<p>Partner organizations collaborate effectively in project design.</p> <p>Stakeholder input enables effective prioritization of commodities of focus in each country.</p>
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	tools) for primary production and processing of fruits and vegetables.	utilization capacity completed. Competency frameworks, generic training modules and assessment tools developed. eLearning infrastructure designed and implemented.		
	<p>Localize In partnership with local experts, adapt generic educational content and learning materials to make them available in local languages and more appropriate for local cultural norms and practices. All localized materials will be pilot tested and refined prior to formal launch of training programs in Thailand and Vietnam.</p> <p><u>Activity:</u> Localized materials developed using generic competency-based materials as the core. Localized materials pilot tested in both Thailand and Vietnam.</p>	Localized materials developed, pilot tested and finalized in each country.	Project team and partners.	Partner organizations collaborate effectively to develop localized materials.
	<p>Deploy Launch materials for improvement of food safety and</p>	Lead trainers identified in Thailand and Vietnam, and	Project team and partners.	Partner organizations identify lead trainers who are

	<p>SPS compliance for trainers and the industry in both Thailand and Vietnam. Foster cooperation between food industry (producers, processors, suppliers, retailers, exporters, etc.), institutional partners, and SPS Focal Points in the application of the materials to bolster capacity of value chain actors to meet applicable standards. Deploy internet-based eLearning solutions to provide a scalable platform for reaching thousands of stakeholders. Strategically link participants in capacity building programs to high-value market opportunities within the project countries and export destinations.</p> <p><u>Activities:</u> Conduct train-the-trainer programs in Thailand and Vietnam to train a cadre of lead trained trainers who will lead industry training efforts.</p> <p>Capture content from training programs in electronic formats for distribution by internet-based eLearning or other distance education techniques to foster scalable delivery of the</p>	<p>train-the-trainer programs executed.</p> <p>Training content captured, produced for eLearning or other distance education, and made broadly available for use by industry or other stakeholders.</p> <p>Numbers of training programs delivered for producers and processors of targeted commodities using a combination of face-to-face and eLearning techniques.</p> <p>Numbers of participants in training programs.</p> <p>Numbers and scope of linkages established between program participants and domestic and foreign markets.</p>		<p>committed to execution of the project goals.</p> <p>Partner organizations and stakeholders participate effectively in capacity building programs.</p> <p>Producers and processors effectively implement lessons from capacity building and can access higher value markets as a consequence.</p>
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	<p>capacity building materials.</p> <p>Conduct training programs in Thailand and Vietnam for the targeted segments of the fresh and processed fruit and vegetable industry.</p> <p>For producers and processors of targeted commodities in Thailand and Vietnam, facilitate linkages with markets within each country and in export destinations.</p>			
	<p>Institutionalize Harmonized, competency-based curricula/learning modules and materials adapted for local conditions are institutionalized through implementing partners (universities and other training organizations). Lead trainers are identified and trained in use of materials for improved food safety and SPS management. Internet-based eLearning platforms are made available to institutional partners for sustainability of capacity building efforts.</p>	<p>Lead trainers identified in Thailand and Vietnam, and train-the-trainer programs executed.</p> <p>eLearning platforms launched with partners in Thailand and Vietnam.</p> <p>eLearning platforms sustained and continued after project conclusion.</p> <p>Workshop on eLearning pedagogies including blended learning and use of technology completed with project partners.</p>	<p>Project team and partners.</p>	<p>Project partners are committed to institutionalizing the program and extending it beyond the duration of this project.</p>

	<p>Activity: Institutionalize capacity building programs by developing a cadre of trained trainers and supporting the development, maintenance and dissemination of localized content by partner institutions using direct training and internet-based eLearning platforms.</p>			
	<p>Learn Learn from the regional program what works and what does not work in how the SPS education platform is designed, localized, institutionalized and deployed. Conduct an end-of-project lessons learned workshop to disseminate key findings. This goal will enable replication and expansion into other countries and regions more effective and efficient.</p> <p>Activities: Conduct formal summative evaluation with all project partners and program participants. Collect objective data on indicators of participant success (knowledge change following program participation, reduced product rejections, etc).</p>	<p>Reports based on formative and summative assessments completed.</p> <p>Assessment of efficacy of training programs and modes of delivery completed.</p> <p>Reports and scholarly articles prepared and submitted for publication.</p> <p>Lessons Learned Workshop conducted and conference report completed.</p> <p>Final report by external evaluator completed.</p>	<p>Primary data generated during training programs organized by project managers and partners. Additional data obtained from producers and processors participating in program. Verification from domestic buyers and exporters.</p>	<p>Project partners and stakeholders actively participate and provide accurate feedback for evaluations.</p> <p>Participation by representative project stakeholders in lessons learned workshop.</p>

	Conduct a final project workshop to present and share the results of the project with all the stakeholders in the fruit and vegetable sector in Thailand and Vietnam.			
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Appendix 6: Project Work Plan

COMPONENT 1 – DESIGN

Together with industry partners, SPS Focal Points and private sector suppliers develop and test key components of the harmonized, competency-based educational platform on SPS measures for fruits and vegetables value chains targeted at supplier, manufacturer and primary production levels.

Activity 1.1 – Start-Up Activities

Activity	Complete project start-up activities, including hiring and placement of in country staff and holding first project planning meetings with implementing organizations and other partners.		
Sub-Activities	Formalize relationships with project partners by establishing agreed-upon terms of reference for division of responsibilities and execution of project deliverables.	Hire in-country staff and place them in offices associated with in-country implementing organizations (Kasetsart and Can Tho Universities). Provide initial training to Can Tho and Kasetsart administrative and financial staff in project requirements for financial management and reporting.	Conduct initial project planning meetings with implementing organizations and other project partners. Additional workshops conducted with other project partners in Thailand and Vietnam (e.g., producer groups, processors, exporters, retailers, etc.) to communicate project goals and plan cooperative efforts.
Outputs	<ul style="list-style-type: none"> • Terms of Reference agreed upon between MSU and key implementing organizations in each country. • Formalized work plans and responsibilities of partners. 	<ul style="list-style-type: none"> • In-country project coordinator hired in both Thailand and Vietnam. • Project offices established in each country. • Partner institution administrative and financial staff 	<ul style="list-style-type: none"> • Project start-up workshop planned and executed with implementing organizations. • Detailed work streams developed with other implementing organizations. • Partner workshops conducted in

		trained and functional in project requirements for financial management and reporting.	Thailand and Vietnam. <ul style="list-style-type: none"> Initial areas of cooperation with other project partners determined.
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Activity 1.2 – Assessment Activities

Activity	Conduct initial assessments of fruit and vegetable value chains of focus and available educational content on SPS measures localized for the regions and value chains. Design formal project evaluation procedures and research aims at this stage.		
Sub-Activities	<p>Desk Study and Collaborative Determination of Value Chains for Focused Intervention</p> <p>Conduct desk study to determine:</p> <ol style="list-style-type: none"> Current and historical trade patterns for fresh and processed fruit and vegetable products and destination countries. Rejections of fruit and vegetable products of Thai and Vietnamese origin by importing countries and analysis of reasons for rejections. <p>In collaboration with project partners, determine specific fresh and processed fruit and vegetable</p>	<p>In-Country Assessment of Selected Value Chains</p> <p>In partnership with in-country implementing organizations, conduct interviews and site visits to assess the current situation and develop linkages between key value chain actors for the commodities and processed products of focus. These activities will focus on:</p> <ul style="list-style-type: none"> Producer groups Packing and processing facilities Retailers Exporters Key importers in neighboring countries (e.g., Japan, Korea, etc.) and more distant markets (e.g., EU, US). <p>Assessments of producers,</p>	<p>Assess Availability of Educational Content and Delivery Capacity</p> <p>Conduct a thorough assessment of currently available educational content on food safety practices and other relevant SPS issues available in each country. This will include an assessment of generic educational content applicable to the fruit and vegetable sector in general, and commodity-specific content for the commodities and products of focus in each country. Assess capacity of implementing organizations (government, academia) and other organizations in Thailand and Vietnam to provide training and other forms of technical assistance on food safety and</p>

	<p>value chains for intervention in this project.</p>	<p>packers and processors will focus on key practices that can influence compliance with food safety or other SPS measures. This will include farm production practices, transportation, traceability, packing and processing practices, etc.</p> <p>Assessments of in-country retailers and exporters and importers in other countries will focus on purchasing specifications for the various markets, previous constraints and other deficiencies noted concerning the commodities and processed products of focus, and other information which could impact market opportunities.</p>	<p>other SPS issues affecting fresh and processed fruit and vegetable products.</p> <p>Assess infrastructure and other resources available for implementing organizations to support eLearning platforms and other mechanisms to facilitate scalable electronic delivery of training and technical assistance. Assess potential for end-users of educational content to utilize internet-based eLearning or other distance education solutions.</p>
<p>Outputs</p>	<ul style="list-style-type: none"> • Assessment report on historical and current trade in fresh and processed fruit and vegetable products. • Assessment report on product rejections by importing countries. • Identification of 2-3 crops or processed products of focus in each country. 	<ul style="list-style-type: none"> • Assessment reports completed for each commodity and product of focus in Thailand and Vietnam. • Key areas of intervention for each commodity and product identified. 	<ul style="list-style-type: none"> • Assessment of current educational content. • Assessment of technical assistance capacity. • Assessment of eLearning technology capacity. • Assessment of end-user capacity to utilize technology-based learning platforms.

Activity 1.3 – Materials Development

Activity	Develop educational materials (competency frameworks, training modules, assessment tools) for primary production and processing of fruits and vegetables. To the extent practicable, these materials will incorporate and build on existing materials pertinent to production and processing of fruits and vegetables.			
Sub-Activities	<p>Development of competency frameworks. In partnership with implementing organizations and other project partners, develop competency frameworks which identify the core competencies required for individuals responsible for managing food safety or other SPS compliance in each of the following sectors:</p> <ul style="list-style-type: none"> • Primary production • Packing • Processing 	<p>Development of harmonized training modules. For each of the competency frameworks, develop generic training resources (PowerPoint presentations, story boards, manuals, etc.) which are specifically designed to convey education against each of the competencies. Generic content will be developed in English initially but will be localized into other languages (under Component 2)</p>	<p>Development of assessment tools. For each of the competency frameworks and training modules, develop assessment tools (multiple-choice questions, short exercises, etc.) which are specifically designed to evaluate the baseline knowledge and change in knowledge against each of the competencies for participants in training programs.</p>	<p>Development of eLearning infrastructure. Design and implement platforms for providing eLearning and blended learning solutions based on the harmonized competency frameworks, training modules and assessment tools. This infrastructure will be designed such that it can be maintained and expanded by implementing organizations in Thailand and Vietnam after the conclusion of the project.</p>
Outputs	<ul style="list-style-type: none"> • Competency frameworks developed. 	<ul style="list-style-type: none"> • Generic training modules developed for each competency area. 	<ul style="list-style-type: none"> • Assessment tools developed for each competency area and training module. 	<ul style="list-style-type: none"> • eLearning infrastructure designed and implemented.

COMPONENT 2 – LOCALIZE

In partnership with local experts, adapt generic educational content and learning materials to make them available in local languages and more appropriate for local cultural norms and practices. All localized materials will be pilot tested and refined prior to formal launch of training programs in Thailand and Vietnam.

Activity 2.1 – Localization of Materials

Activity	Localized materials developed using generic competency-based materials as the core. Localized materials pilot tested in both Thailand and Vietnam.		
Sub-Activities	Identify experts from implementing organizations and other local partners to collaborate on adaptation of generic materials (identify experts in both Thailand and Vietnam).	In partnership with local experts and implementing organizations, adapt generic materials (competencies, training modules, assessment tools) to local languages, conditions and commodities of focus (conduct parallel exercises in Thailand and Vietnam).	Pilot test localized materials with a small cohort of producers and processors of the target commodities in each country. Refine localized materials based on feedback from this pilot test.
Outputs	<ul style="list-style-type: none"> Local experts identified and work teams formed. 	<ul style="list-style-type: none"> Localized materials developed. 	<ul style="list-style-type: none"> Localized materials pilot tested and amended.

COMPONENT 3 – DEPLOY

Launch materials for improvement of food safety and SPS compliance for trainers and the industry in both Thailand and Vietnam. Foster cooperation between food industry (producers, processors, suppliers, retailers, exporters, etc.), institutional partners, and SPS Focal Points in the application of the materials to bolster capacity of value chain actors to meet applicable standards. Deploy internet-based eLearning solutions to provide a scalable platform for reaching thousands of stakeholders. Strategically link participants in capacity building programs to high-value market opportunities within the project countries and export destinations.

Activity 3.1 – Conduct Train-the-Trainer Programs (cross-reference with Activity 4.1 – Institutionalization)

Activity	Conduct train-the-trainer programs in Thailand and Vietnam to train a cadre of lead trained trainers who will lead industry training efforts.		
Sub-Activities	Identify Lead Trainers from Partner Institutions.	Conduct Train-the-Trainer Programs for Lead Trainers using generic and localized training materials.	Support the participation by lead trainers from neighboring countries (e.g., Cambodia, Lao PDR, China, etc.) to amplify the effects of the program to surrounding regions. Open participation in train-the-trainer programs to educators from NGOs and industry.
Outputs	<ul style="list-style-type: none"> • Cadre of lead trainers identified in Thailand and Vietnam. 	<ul style="list-style-type: none"> • Train-the-trainer programs executed. 	<ul style="list-style-type: none"> • Lead trainers from neighboring countries, NGOs and industry participate in training programs.

Activity 3.2 – Capture Training Content and Deploy as eLearning Solution (create and pilot test)

Activity	Capture content from training programs in electronic formats for distribution by internet-based eLearning or other distance education techniques to foster scalable delivery of the capacity building materials.		
Sub-Activities	Training program content captured, produced and made available as internet-based eLearning or other distance education formats.	Conduct structured pilot tests of eLearning materials with a select group of participants. Refine eLearning materials based on pilot test results.	Formally launch eLearning platform with content based on the localized training materials.
Outputs	<ul style="list-style-type: none"> • Training content captured and produced for eLearning or other distance education. 	<ul style="list-style-type: none"> • Pilot tests completed with industry participants. • eLearning materials refined and finalized 	<ul style="list-style-type: none"> • eLearning solutions completed and broadly available for use by industry or other stakeholders.

Activity 3.3 – Conduct Industry Training Programs

Activity	Conduct training programs in Thailand and Vietnam for the targeted segments of the fresh and processed fruit and vegetable industry.	
Sub-Activities	Face to face training programs taught by project staff, partners and lead trainers.	Training programs delivered by internet-based eLearning or other distance education methodologies (e.g., CD-ROM).
Outputs	<ul style="list-style-type: none"> • Training programs delivered for producers and processors of targeted commodities. 	<ul style="list-style-type: none"> • Training programs delivered for producers and processors of targeted commodities.

Activity 3.4 – Foster Market Linkages

Activity	For producers and processors of targeted commodities in Thailand and Vietnam, facilitate linkages with markets within each country and in export destinations.		
Sub-Activities	Provide training on market orientation for participating producers and processors. Support development of marketing materials for program participants.	Facilitate linkages of participating producers and processors to retail markets within Thailand and Vietnam. Note: We anticipate active support from retail partners such as METRO.	In partnership with in-country exporters and importers in destination countries, facilitate linkages of participating producers and processors to export markets.
Outputs	<ul style="list-style-type: none"> • Delivery of market orientation training programs. • Marketing and promotion materials developed for participating producers and processors. 	<ul style="list-style-type: none"> • Domestic market linkages facilitated. 	<ul style="list-style-type: none"> • Export market linkages facilitated.

COMPONENT 4 – INSTITUTIONALIZE

Harmonized, competency-based curricula/learning modules and materials adapted for local conditions are institutionalized through implementing partners (universities and other training organizations). Lead trainers are identified and trained in use of materials for improved food safety and SPS management. Internet-based eLearning platforms are made available to institutional partners for sustainability of capacity building efforts.

Activity 4.1 – Institutionalization and sustainability of materials

Activity	Institutionalize capacity building programs by developing a cadre of trained trainers and supporting the development, maintenance and dissemination of localized content by partner institutions using direct training and internet-based eLearning platforms.		
Sub-Activities	Identify Lead Trainers from Partner Institutions.	Conduct Train-the-Trainer Programs for Lead Trainers using generic and localized training materials.	Make internet-based eLearning platforms available to nodal training organizations in Thailand and Vietnam for maintenance and continued development. Conduct a workshop with project partners to transfer necessary skills and technologies for maintenance and continued development of internet eLearning platforms.
Outputs	<ul style="list-style-type: none"> • Cadre of lead trainers identified in Thailand and Vietnam. 	<ul style="list-style-type: none"> • Train-the-trainer programs executed. 	<ul style="list-style-type: none"> • eLearning platforms launched with partners in Thailand and Vietnam. • eLearning platforms sustained and continued after project conclusion. • Workshop on eLearning pedagogies including blended learning and use of technologies with project partners.

COMPONENT 5 – LEARN

Learn from the regional program what works and what does not work in how the SPS education platform is designed, localized, institutionalized and deployed. Conduct an end-of-project lessons learned workshop to disseminate key findings. This goal will enable replication and expansion into other countries and regions more effective and efficient.

Activity 5.1 – Design and Conduct Project Assessments

Activity	Conduct formal summative evaluation with all project partners and program participants. Collect objective data on indicators of participant success (knowledge change following program participation, reduced product rejections, etc).	
Sub-Activities	<p>Project Evaluation</p> <p>At all stages of project implementation, conduct formal assessments with project partners and participants to determine if project activities and approaches require refinement and assess the effectiveness of development and implementation of project events.</p> <p>Using assessment tools created for the project, conduct a quantitative statistical evaluation of knowledge change of participants in capacity-building programs. Where possible, the overall efficacy of face-to-face training and eLearning solutions will be evaluated.</p> <p>To the extent feasible, incorporate project evaluation methodologies into a formal research project to evaluate the efficacy of the overall approach and its component parts, and impacts on project stakeholders. [Note that we will engage an MSU-based Vietnamese graduate student in this project.]</p>	<p>External Review</p> <p>WTO-STDF identifies an evaluation specialist to conduct external review of project activities, deliverables and impacts. [Funding held back from the project budget will be used to support the external evaluator contract.]</p> <p>All partners support the external evaluator in conducting the evaluation.</p>
Outputs	<ul style="list-style-type: none"> • Reports based on formative and summative assessments. • Analysis of baseline knowledge and knowledge change by participants in capacity building programs, and other indicators of project success. • Reports and scientific publications prepared and submitted. 	<ul style="list-style-type: none"> • Final report by external evaluator within six months of project completion.

Activity 5.2 – Conduct End-of-Project Lessons Learned Workshop

Activity	Conduct a final project workshop to present and share the results of the project with all the stakeholders in the fruit and vegetable sector in Thailand and Vietnam.
Sub-Activities	In conjunction with in-country implementing organizations and other partners, plan and conduct a formal end-of-project lessons learned workshop.
Outputs	<ul style="list-style-type: none">• Lessons Learned Workshop conducted• Conference report completed

Activity 5.3 – Project Reporting

Activity	In compliance with STDF requirements, complete required project reports which accurately reflect progress on project objectives.
Sub-Activities	A project inception report, six-month progress reports, and a project completion report will be completed.
Outputs	<ul style="list-style-type: none">• Project Inception Report completed after the first three months of the project.• Six-month progress reports completed after months 6, 12 and 18 of the project.• Project Completion Report completed at end of project.

Appendix 7 Project Timeline

Component/Activity	Year →	Year 1												Year 2											
	Month →	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S
Contracting and Start-up																									
<i>Contracting with partner institutions</i>																									
MSU contract with STDF completed		■																							
Can Tho University subcontract completed		■																							
Kasetsart University subcontract completed		■																							
<i>Start-up Activities</i>																									
Project start-up workshops completed			■	■																					
Project personnel hired in Vietnam and Thailand		■	■																						
Year 1 Work Plan developed and agreed to by all partners			■																						
Component 1 - Design																									
<i>Activity 1.2 - Assessment</i>																									
Assessment and selection of target value chains			■																						
Value chain specific assessments and key interventions determined					■																				
Educational content and eLearning capacity assessments complete					■																				
<i>Activity 1.3 - Materials Development</i>																									
Competency frameworks developed						■																			
Standardized training modules completed							■																		
Assessment tools developed									■																
eLearning infrastructure developed									■																
Component 2 - Localize																									
<i>Activity 2.1 - Localization of Materials</i>																									
Local experts identified and work teams formed							■																		
Localized materials developed											■														
Pilot testing and completion of localized materials												■													
Component 3 - Deploy																									
<i>Activity 3.1 - Conduct Train-the-Trainer Programs</i>																									
Lead trainers identified																									
Train-the-trainer programs executed																									
<i>Activity - 3.2 Capture Trainer Content and Deploy eLearning</i>																									
Training content captured and produced for eLearning																									
Pilot testing and completion of eLearning materials																									
eLearning solutions completed and broadly available																									
<i>Activity - 3.3 Conduct Industry Training Programs</i>																									
Training programs delivered face-to-face																									
Training programs delivered via eLearning or other distance education																									
<i>Activity - 3.4 Foster Market Linkages</i>																									
Market orientation training completed																									
Marketing and promotion materials developed																									
Domestic market linkages facilitated																									
Export market linkages facilitated																									
Component 4 - Institutionalize																									
<i>Activity 4.1 - Institutionalization of Materials</i>																									
Lead trainers identified																									
Train-the-trainer programs executed																									
Workshop on eLearning technologies with partners																									
eLearning platforms launched with partners in Thailand and Vietnam																									
Component 5 - Learn																									
<i>Activity 5.1 - Design and Conduct Project Assessments</i>																									
Project impact evaluation (learning component) designed																									
Post-training competency evaluation & analysis																									
Reports and scientific publications prepared																									
External evaluation conducted and report completed																									
External evaluation to be conducted within 6 after project completion. →																									
<i>Activity 5.2 - Conduct End-of-Project Lessons Learned Workshop</i>																									
Workshop completed																									
Final workshop report completed																									
<i>Activity 5.3 - Project Reporting</i>																									
STDF Inception Report																									
STDF 6-Month progress reporting																									
STDF End of Project Report completed																									

Appendix 8 STDF Budget

Line Item				Year 1	Year 2	Total
			<u>LOE</u>			
	<u>Rate</u>	<u>Yr 1</u>	<u>Yr 2</u>			
<u>PROJECT COORDINATION/SUPPORT</u>						
Project Administrator (salary+fringe+overhead) (10% total LOE, 10% MSU Cost Share)	221,065	10%	10%	0	0	0
Project Technical Director (salary+fringe+overhead) (15% total LOE, 8% STDF, 7% MSU Cost Share)	151,004	8%	8%	12,081	12,534	24,615
Project Manager (salary+fringe+overhead)	140,838	20%	20%	28,167	29,237	57,404
Graduate Assistant, half-time salary+fringe+overhead) (15% STDF, 85% MSU Cost Share)	41,308	15%	15%	6,196	6,382	12,578
Home Office Administrator (salary+fringe+overhead)	125,618	15%	15%	18,843	19,558	38,401
TOTAL PROJECT COORDINATION/SUPPORT COSTS				65,287	67,710	132,999
<u>SUBGRANT WITH CAN THO UNIVERSITY</u>						
	<u>Rate</u>		<u># units/LOE</u>			
			<u>Yr 1</u>	<u>Yr 2</u>		
In-Country Operational Costs						
In-country Project Assistant/Accountant	12,000	100%	100%	12,000	12,360	24,360
In-country Coordinator (travel to US)	3,900	1	1	3,900	4,017	7,917
In-country travel (transportation, per diem, lodging)	150	12	12	1,800	1,854	3,654
Regional travel (transportation, per diem, lodging)	750	6	6	4,500	4,635	9,135
Communications	150	12	12	1,800	1,854	3,654
Materials and supplies	150	12	12	1,800	1,854	3,654
Training and Other Technical Activities Costs						
Food Safety Short Course (MSU)	3,250	3	3	9,750	10,043	19,793
Travel costs (airfare, travel per diem, misc.)	3,900	3	3	11,700	12,051	23,751
Workshop Expenses	2,500	3	3	7,500	7,725	15,225
TOTAL SUBGRANT WITH CAN THO UNIVERSITY				54,750	56,393	111,143
<u>SUBGRANT WITH KASETSART UNIVERSITY</u>						
In-Country Operational Costs						
In-country Project Assistant/Accountant	12,000	100%	100%	12,000	12,360	24,360
In-country Coordinator (travel to US)	3,900	1	1	3,900	4,017	7,917
In-country travel (transportation, per diem, lodging)	150	12	12	1,800	1,854	3,654
Regional travel (transportation, per diem, lodging)	750	6	6	4,500	4,635	9,135
Communications	150	12	12	1,800	1,854	3,654
Materials and supplies	150	12	12	1,800	1,854	3,654
Training and Other Technical Activities Costs						
Food Safety Short Course (MSU)	3,250	3	3	9,750	10,043	19,793
Travel costs (airfare, travel per diem, misc.)	3,900	3	3	11,700	12,051	23,751
Workshop Expenses	2,500	3	3	7,500	7,725	15,225
TOTAL SUBGRANT WITH KASETSART UNIVERSITY				54,750	56,393	111,143

TECHNICAL ASSISTANCE (all costs include overhead)

	<u>Rate</u>	<u># units/LOE</u>				
		<u>Yr 1</u>	<u>Yr 2</u>			
Development and Testing						
Technical Expert	639	30		19,166	0	19,166
Airfare (US-Hanoi-Bangkok-US)	3,461	3		10,382	0	10,382
Other Travel (lodging, per diem, local transp., misc.)	3,301	3		9,903	0	9,903
Communications	333	1	1	333	333	666
				39,784	333	40,116
Localize Content and Learning Material						
Technical Expert	639	20		12,778	0	12,778
Airfare (US-Hanoi-Bangkok-US)	3,461	2		6,921	0	6,921
Other Travel (lodging, per diem, local transp., misc.)	3,301	2		6,602	0	6,602
Communications	333	1	1	333	333	666
				26,633	333	26,966
CETP Deployment w/International Partners						
Technical Expert	639	20	10	12,778	6,389	19,166
Airfare (US-Hanoi-Bangkok-US)	3,461	2	1	6,921	3,564	10,486
Other Travel (lodging, per diem, local transp., misc.)	3,301	2	1	6,602	3,400	10,002
Communications	333	1	1	333	333	666
				26,633	13,686	40,319
Institutionalize Curricula/Learning Modules						
Technical Expert	639	10	20	6,389	12,778	19,166
Airfare (US-Hanoi-Bangkok-US)	3,461	1	2	3,461	7,129	10,589
Other Travel (lodging, per diem, local transp., misc.)	3,301	1	2	3,301	6,800	10,101
Communications	333	1	1	333	333	666
				13,483	27,039	40,522
Learning and Impact Evaluation						
Technical Expert	639	10	10	6,389	6,389	12,778
Airfare (US-Hanoi-Bangkok-US)	3,461	1	1	3,461	3,564	7,025
Other Travel (lodging, per diem, local transp., misc.)	3,301	1	1	3,301	3,400	6,701
Communications	631	1	1	631	631	1,262
End of Project Evaluation	18,000	0	1	0	18,000	18,000
				13,781	31,984	45,765
TOTAL TECHNICAL ASSISTANCE				120,314	73,374	193,689

	<u>Rate</u>	<u># units</u>				
		<u>Yr 1</u>	<u>Yr 2</u>			
<u>MSU TRAVEL (all costs included-airfare/lodging/per diem, etc.)</u>						
Coordinator (travel to Vietnam/Thailand)	6,761	1	1	6,761	6,964	13,726
Project Manager (travel to Vietnam/Thailand)	6,761	2	2	13,523	13,929	27,452
In-country office set-up	6,761	1	0	6,761	0	6,761
TOTAL MSU TRAVEL				27,046	20,893	47,939

	<u>Rate</u>	<u># units</u>				
		<u>Yr 1</u>	<u>Yr 2</u>			
<u>MSU MATERIALS & SERVICES</u>						
Office supplies	33	12	12	399	411	811
Communication (phone, express mail, fax, copying)	80	12	12	958	987	1,945
TOTAL MSU MATERIALS & SERVICES				1,358	1,398	2,756

GRAND TOTAL				323,206	276,459	599,665
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MSU In-Kind Cost-Share Budget

Line Item				Year 1	Year 2	Total
		<u>LOE</u>				
<u>PROJECT COORDINATION/SUPPORT</u>	<u>Rate</u>	<u>Yr 1</u>	<u>Yr 2</u>			
Project Administrator (salary+fringe+overhead) (10% total LOE, 10% MSU Cost Share)	221,065	10%	10%	22,107	22,769	44,876
Project Technical Director (salary+fringe+overhead) (15% total LOE, 8% STDF, 7% MSU Cost Share)	151,004	7%	7%	10,570	10,888	21,458
Project Manager (salary+fringe+overhead)	140,838	0%	0%	0	0	0
Graduate Assistant, half-time salary+fringe+overhead) (15% STDF, 85% MSU Cost Share)	41,308	85%	85%	35,111	36,165	71,276
Home Office Administrator (salary+fringe+overhead)	125,618	0%	0%	0	0	0
TOTAL PROJECT COORDINATION/SUPPORT COSTS				67,788	69,822	137,610

Appendix 9

TORs of Key Project Staff

There will be four key project staff charged with various aspects of the project management and coordination. These positions include an overall Project Director at MSU and a Project manager based at MSU but with significant presence in Vietnam and Thailand. There will also be two Project Coordinators, one at Can Tho University and the other at Kasetsart University. The TORs for these staff are summarized here below.

MSU Project Administrator (Terms of Reference)

MSU will provide financial and administrative oversight to the project (10% LOE) through the US-based Project Director (MSU cost share). Primary responsibilities:

- Provide oversight to project implementation and financial/administrative management in all areas.
- Serve as primary contact point for interaction with STDF.
- Provide administrative guidance to the project team on program implementation.
- Ensure compliance with STDF and MSU policy and regulations.
- Provide solutions and guidance through institutional disputes concerning project implementation.

MSU Technical Director (Terms of Reference)

MSU will provide technical direction to the project (15% LOE) through the US-based Project Technical Director (50% MSU cost share). It will be based at MSU but will require regular travel to Vietnam and Thailand in support of the field activities and partners. Primary responsibilities:

- Provide technical guidance and strategic direction in all domains of project implementation.
- Lead the project team in developing program strategy and industry partners.
- Maintain liaison with related projects and programs as well as with organizations sharing common technical goals in SPS management, food safety and value chain development.
- Identify expert consultants in critical areas where technical support is needed. These areas will include SPS management, food safety, value chain development, horticulture production and markets, and ICT and OER technology.
- Direct all operations on building technical competencies in the design phase of the project.
- Lead and oversee efforts to institutionalize CETP materials and modules with support of the field team.
- Direct the team in all aspects concerning the impact evaluation and other activities in the “learning” component of the project.

MSU Project Manager (Terms of Reference)

This is a 20% LOE position that will provide day-to-day management to the project. It will be based at MSU but will require regular travel to Vietnam and Thailand in support of the field activities and partners. Responsibilities include:

- Work closely with the IIA administrative staff in ensuring that all aspects of the project run smoothly, efficiently, within budget and according to established timelines.
- Lead technical and administrative staff in the development of planning documents such as annual work plans, and regular reporting such as quarterly/annual progress reports as well other reporting as specifically requested by STDF.
- Lead day-to-day internal administrative and management tasks such as staff meetings, project reviews, internal presentations and updates, and regular problem solving as needed.
- Communicate regularly with project technical and administrative staff at MSU, Can Tho and Kasetsart in project developments and provide advance warning to staff in the contributions they must make to program administration (reports, budgets, etc.).
- Regularly review budgets with financial support staff and provide Project Coordinators and leaders of technical components with regular updates to avoid over- or under-spending problems.
- Assist the administrative/financial support staff in meeting MSU and STDF contracting requirements and in building good working relationships with both.
- Supervise the consultants and review and approve all outputs and deliverables.

Can Tho and Kasetsart Project Coordinators (Terms of Reference)

Partner institutions in Vietnam and Thailand will each appoint a full-time local Program Coordinator. The Program Coordinators will report to the Project Manager for all technical and administrative issues concerning project implementation. Coordinator responsibilities will include the following:

- Provide in-country technical leadership and administrative oversight in all activities of the project.
- Facilitate collaboration among in-country project partners including IPPC and Codex focal points, Metro and other private sector partners.
- Work closely with the members of the Can Tho/Kasetsart team to ensure that all aspects of the project run smoothly, efficiently, within budget and according to established timelines.
- Provide technical leadership and coordination in key project areas such as:
 - Localization of CETP materials and modules.
 - Development of CETP curricula in short term and degree training with appropriate academic staff.
 - Coordination of training sessions.
 - Support as counterpart to technical consultants.
- Lead Can Tho/Kasetsart technical and administrative staff in the development of planning documents such as annual work plans, and regular reporting such as quarterly/annual progress reports as well other reporting as specifically requested by STDF.

- Lead Can Tho/Kasetsart day-to-day internal administrative and management tasks such as staff meetings, project reviews, internal presentations and updates, and regular problem solving as needed.
- Communicate regularly with project technical and administrative staff at Can Tho/Kasetsart and with the management and technical team at MSU in project developments and provide advance warning to staff in the contributions they must make to program administration (reports, budgets, etc.).
- Regularly review budgets with financial support staff at Can Tho/Kasetsart and provide the MSU Project Manager and Director regular updates to avoid over- or under-spending problems.
- Assist the administrative/financial support staff at Can Tho/Kasetsart in meeting MSU and STDF contracting requirements.
- Identify in-country expert consultants in critical areas where technical support is needed. These areas will include SPS management, food safety, value chain development, horticulture production and markets, and ICT and OER technology.
- Develop TORs for in-country expert consultants and facilitate their integration into the project with appropriate background, introductions and orientation.
- Supervise the in-country consultants and review and approve all outputs and deliverables.
- Submit regular progress and financial reports to the MSU Project Manager as requested and in response to the STDF reporting timeline.
- Provide leadership in project monitoring and evaluation

Appendix 10 Equipment

[No equipment requested]

Appendix 11

Michigan State University Capacity in SPS Management, Food Safety and Value Chain Development in Developing Countries

Michigan State University, through decades of experience and programmatic investment, has developed a reputation as a “center of excellence” in the intersecting domains of SPS management, food safety and value chain development in developing countries around the globe. Examples of MSU’s unique capacity for training, institution building, technical assistance, research, and extension in these domains include:

Institutes, Centers and Departments

- 1. The Institute of International Agriculture (IIA).** International food safety and food industry development together constitute one of IIA’s core thematic areas of interdisciplinary training, institution building, technical assistance, research, and extension. IIA is the home to dozens of international programs in these related areas; many are described in the “Projects” section below. [<http://www.iaa.msu.edu/>]
- 2. Institute for Food Laws and Regulations (IFLR)** is an Internet-based distance education program that consists of a series of region-specific food law courses taught by international food science academic and legal professionals who understand the legal complexities of the food laws and how they impact the flow of food and agricultural products across national boundaries. There are nine courses in all and three of the courses cover Codex Alimentarius - (The Food Code), OIE (World Organisation for Animal Health), and IPPC (International Plant Protection Convention). These organizations are responsible for international standards in the areas of food safety, animal health and plant protection, respectively, under the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) of the World Trade Organization (WTO). [<http://www.iflr.msu.edu/>]
- 3. Institute for Food and Agricultural Standards (IFAS)** is an interdisciplinary teaching, research, and policy analysis institute that focuses on the social, economic, political, and ethical aspects of Grades and Standards. It raises issues of equity, transparency, and fairness of national and international standards. IFAS works with industry groups to improve standards systems in the US and developing nations. The Institute offers a Certificate Program in Food Regulatory and Quality Standards as well as a Graduate Specialization in Food and Agricultural Standards. [<https://www.msu.edu/~ifas/>]
- 4. National Food Safety and Toxicology Center (NFSTC)** (1996-2009), conducted research on chemical and microbial hazards in foods and natural products and used this knowledge to develop a safer food supply in the U.S. and abroad, well-founded public policy, and a greater public understanding of food safety issues. Maintained programs in toxicology, microbial pathogens, analytical and food chemistry, epidemiology, and communication about food safety [<http://foodsafes.msu.edu/>]
- 5. Food & Society Alliance** is a partnership of universities, food companies, and foundations that come together to address complex issues facing food professionals. A primary focus of the Alliance is on policy policy, legislation, and a long-term vision for food safety and sustainability. [<http://www.foodplussociety.org/Home/tabid/38/Default.aspx>]
- 6. Research/Academic Units** include the Department of Food Science and Human Nutrition; Department of Horticulture; Department of Supply Chain Management; School of Packaging; Department of Entomology; Department of Agriculture, Food and Resource Economics.

Projects

- 1. Food Safety Knowledge Network (FSKN).** The Food Safety Knowledge Network is a joint initiative of Michigan State University and the Global Food Safety Initiative (GFSI), with the specific aims to: 1) develop internationally recognized competences in relation to food safety for individuals at all levels and in all sectors of the food supply chain, and 2) promote knowledge transfer within the food safety community. The FSKN is international in scope and offers a platform whereby food safety professionals can assess and improve their knowledge and skills relative to a multi-level food safety competency framework established by an expert panel of professionals drawn from both the private and public sectors. Collectively, it is anticipated the FSKN efforts will constitute a vital set of resources to build the capacity of global food professionals and businesses, with the ultimate outcome being the facilitation of food trade, particularly for small and less developed businesses. [<http://foodsafetyknowledgenetwork.org/>] [<http://www.fskntraining.org/>]
- 2. William and Flora Hewlett Foundation Project.** The William and Flora Hewlett Foundation has as one of its priority areas the support of projects which develop and make use of Open Educational Resources (OER). In an ongoing project funded by the Hewlett Foundation, they are supporting the development and dissemination of Food Safety Knowledge Network (FSKN) materials as OER. The project also supports the development of a community of practice of OER content providers who will contribute content to and participate in the broader FSKN initiative.
- 3. Rwanda Horticulture Export Standards Initiative (RHESI).** Funded by WTO/STDF, RHESI is a program whose overall objective was to establish sound SPS management systems to enable Rwandan government authorities to ensure the application of plant health management protocols that lead to expanded horticulture trade from Rwanda. RHESI activities targeted key regulatory and institutional capacity gaps to enable government agencies and the private sector to instill in domestic markets and trading partners confidence that fruits, vegetables and flowers from Rwanda are free of pests and diseases, safe for human health and safe for the environment.

Developing the new Plant Health and Agrochemicals Law(s) were among the foremost challenges addressed by RHESI. The development of a legal framework for the establishment of the National Plant Protection Service (NPPS), in line with requirements of the SPS Agreement and in particular with the IPPC, constituted one of the more important accomplishments of the project. The new legal and regulatory framework established for Rwanda was hailed as the “best in the region.” As a result, considerable interest has been generated among partners in the public and NGO sectors to provide further support in the related areas.
- 4. Trade Capacity Building in Relation to the Application of Sanitary and Phytosanitary Measures (RAISE/SPS).** The RAISE/SPS program assisted farmers, processors and exporters to enhance their competitiveness through achievement of international market standards for food safety and quality. Concurrently, RAISE/SPS also assisted developing country regulatory, scientific and technical institutions that ensure safe domestic food supplies, to protect agricultural plant and animal health, and preserve natural ecosystems. Countries and regions in which MSU has conducted RAISE/SPS activities include: Guatemala, Nicaragua, Ecuador, South Africa, Zambia, Kenya, Croatia, Philippines and Indonesia. Recent/current initiatives under the RAISE/SPS umbrella include the following:
 - **Third-party certification** – This study characterizes and clarifies the role of third party certifiers and their accreditors in developing nations. The overall objective of this analysis is to enhance the ability of smallholders, agribusinesses and government agencies to succeed in meeting the challenges of private standards imposed by the supermarket sector.

- **Traceability** – Due to new interest in tracing food products to their source, this study aims to evaluate the governmental regulations and industry standards related to traceability as they affect sectors of the supply chain from producers to retailers.
 - **SPS Short Course** – This training program addresses the strategic use of standards to promote agricultural development regarding SPS issues. It will also act as a tool for constant updating as standards are modified and new issues arise.
 - **Benchmarking SPS Management Capacity in Five Central American Countries** – This assessment identified critical needs for technical assistance in Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua and recommended strategies for USAID to meet those needs. Sanitary and Phytosanitary (SPS) measures may prevent these countries from capitalizing on current trade agreements. Three major areas affecting SPS measures were globalization, concern for human, animal and plant health along with the environment and increasing information technology.
 - **Supermarkets and Private Standards** – A study of private standards impacts on small farmers and global supermarkets in Africa, Latin America, Southeast Asia and Central/Eastern Europe.
- 5. Indian Horticulture Development Alliance.** The Indian Horticulture Development Alliance (IHDA) is a broad-based and inclusive coalition established to comprehensively address horticulture market development in India. IHDA is a USAID funded project that helps develop value chains for horticulture products that have high potential for expanded distribution and sales in India’s rapidly-evolving food retail sector and high value export markets. The overarching goal of this alliance is to sustainably increase profits of small and medium size producers and processors of selected Indian horticulture commodities. The IHDA aims to achieve this overall goal by building capacity of Indian producers and processors to meet market-driven international standards, e.g., good agriculture practices (GAP), food safety, quality, traceability and by linking these (often disadvantaged) producers and processors to high-value markets. Corporate partners include Reliance, ITC, Metro, Food Bazaar-Pantaloon, YES bank, the Confederation of Indian Industries and GlobalGAP.
- 6. Agribusiness Market and Support Activity (AMARTA - Indonesia).** MSU is a lead partner in this 4.5 year program funded by USAID to assist the Government Indonesia to promote a robust Indonesian agribusiness system, working with private businesses, farmers and other actors to improve efficiency and to meet international standards for product safety and quality in targeted value chains such as high-value export commodities, hypermarket quality horticulture products, cocoa and coffee.
- 7. Nicaragua Partnership for Food Industry Development – Fruits and Vegetables (PFID-F&V).** PFID-F&V/Nicaragua is a highly successful partnership of training institutions, NGOs and private sector companies in the food industry that has assisted over 4,000 small and medium producers in Nicaragua to become more competitive and to expand their exports of fruits, vegetables, and specialty coffee. Competitiveness is improved through enhanced market-led information and increased numbers of producer-buyer linkages, and capacity building among producers to meet grades and standards for food safety and quality throughout the value chain. Over 29 local, regional and multinational private sector and NGO alliances have helped drive the program and directly link producers to global markets. Among these alliances are: Chiquita, Wal-Mart Nicaragua, Wal-Mart Costa Rica, and other supermarkets and food processors in the region.

In addition to assisting over 4,000 small and medium producers during this 30-month period, more than 17,000 new permanent jobs have been created by the project in production, packing, processing and marketing activities along supported value chains of existing crops and 26 new fresh and processed products have been introduced. Total sales of \$41.7 million were achieved in the first 30 months of implementation, representing increased incomes, profits and jobs for the Nicaraguan agriculture sector. This project has maximized the ratio of sales to assistance

dollars invested with a ratio of \$4.80 dollars in farmers' sales for every dollar invested in market development.

- 8. Annual International Short Course in Food Safety.** Offered annually as an intensive one-week course to international professionals this course addresses the emerging needs of food safety with a focus on food safety policy development, risk analysis, and program implementation. Some components of this course are international food trade, regulatory issues, microbial/chemical hazards, food preservation, antibiotic resistance, HACCP and information and training resources in food safety.
- 9. Partnership to Enhance Agriculture in Rwanda through Linkages (PEARL).** PEARL is an exciting partnership led by MSU that worked with rural communities across Rwanda to generate income through value chain development and market linkages. The project worked with grower cooperatives to improve the production, processing and marketing of specialty coffee, horticultural, and cassava products. By focusing attention on standards for safety and quality control as well as consistency in production, product quality has risen and the customer base has expanded dramatically and now includes importers in the US, EU, and Africa. Key private sector partners include Intelligentsia Coffee, Sustainable Harvest, Stumptown Coffee, Paramount Coffee (of Lansing, MI), Green Mountain Coffee and over 50 other companies for whom high quality coffee based on environmentally and socioeconomically sustainable systems is a priority.
- 10. Burundi Agribusiness Project (BAP)** is a partnership of institutions focused on value chain development in coffee, horticulture and dairy. Through BAP, MSU has succeeded in helping Burundi to transform its coffee sector from a state-owned and operated sector to a privatized sector driven by product quality, efficient management and market access. This has occurred through training, capacity building, technology transfer and market development assistance with over 20 US and European coffee importers including industry leaders Intelligentsia Coffee, Paragon Coffee, Stumptown Coffee, Café Imports, and Paramount Coffee. The results of the BAP interventions have been far reaching in just two years of operation. The producers in over 23 washing stations now produce high quality coffees and receive direct sales contracts paying premium prices. The higher incomes have made a difference in the living standards of the Burundi's 800,000 coffee growers.
- 11. PFID/India Mango Market Development in Maharashtra, India.** This project (Sept 2004—Sept 2007) was supported by USAID/India to strengthen linkages of small- and medium-sized mango growers in India with markets by providing capacity building at all levels. Strategic partnerships and a series of targeted activities in the State of Maharashtra served to: 1) enhance the ability of growers and processors to meet international requirements for grades and standards; 2) enhance market linkages of growers with processors, and growers and processors with large domestic distributors and exporters; 3) improve market access for small and medium-scale growers; 4) promote Indian mango and mango products in targeted international markets; 5) provide capacity building (training in food safety standards) of small and medium scale growers and processors; and 6) enhance profitability and sustainability for small- and medium-sized farms in Maharashtra.
- 12. Ghana Partnerships for Food Industry Development – Fruits and Vegetables (PFID-F&V).** Leading a team of NGO, university, government and private sector (Royal Ahold) partners, MSU developed Ghana's export value chains for pineapples, papaya and assorted vegetables, including some organic lines. In addition to the market access efforts of this program, MSU established training programs for stakeholders in the horticulture industry in the areas of: supply chain management, cold chain and logistics management, food safety, grades and standards and food laws/regulations.
- 13. Serbian Agribusiness Project (SAP)** is a partnership of institutions designed to assist the Serbian agricultural sector to become increasingly efficient and competitive. SAP takes a dual approach

to increasing access to domestic and international markets, working directly with businesses, meeting technical food standards for product safety and quality, developing their marketing skills and knowledge of export and domestic markets and helping local producers to interact with supermarkets, identify their needs for safety, quality and volume and execute contracts.

- 14. Central America Regional PFID F&V.** This was a regional project designed to promote fruits and vegetables (F&V) exports (market development) from the demand-side by identifying sources of demand (supermarket chains, food service, processors, wholesalers) and facilitating contacts with and information about those firms and market demand. The project also built capacity to promote F&V exports from the supply-side by improving the supply chain, with general actions such as further development of PIPAA (applying to various product chains) and training in food laws and food safety and SPS standards, and product chain-specific actions such as improvements in the cold chain, processing, packaging, logistics and trade regulations.
- 15. Southern Africa Regional PFID F&V.** In Southern Africa MSU focused on developing marketing partnerships with Freshmark and others, some via implementation partners such as the Agribusiness in Sustainable Natural African Plant Products. In working with producer groups the program developed business linkages, provided technical assistance, built indigenous capacity, and developed/applied information technologies to improve value chains for fruits and vegetables.
- 16. India Higher Education Development Program** (Building University Capacity to Improve Fruit and Vegetable Supply Chain Development in India). MSU and Tamil Nadu Agricultural University (TNAU) worked together to strengthen TNAU's capacity to promote improved supply chain management related to fruits and vegetables. The project had three main objectives: 1) strengthen TNAU's capacity related to all aspects of supply chain development, particularly related to ensuring the inclusion of small and medium scale producers; 2) enhance relevant curricular and extracurricular learning opportunities; and 3) advance TNAU's ability to support supply chain management through partnerships with relevant actors in the private sector, government, NGOs, and farmer groups.
- 17. South Africa PFID-F&V.** Working with regional supermarket giant Pick 'N Pay, MSU succeeded in assisting historically disadvantaged, emerging farmers in South Africa's Eastern Cape to supply P'nP through horticulture value chain improvements. In partnership with the University of Fort Hare the program built sustainable capacity for market access. Other accomplishments include support for private sector upstream relationships with input and transportation suppliers and a public sector training and capacity building relationship with the South African Department of Agriculture.
- 18. Supermarkets and Agricultural Development in China—Opportunities and Challenges.** Conference held in Shanghai, May 2004, to bring together Chinese and foreign experts to assess the impact of the rapid rise in supermarkets, and their higher standards for food safety and quality, on agricultural development in China. The conference goal was to help China to examine and identify the development policy and strategies for the supermarket sector under Chinese conditions. The conference was organized by the Chinese Academy of Agricultural Sciences Shanghai Municipal Agricultural Commission Shanghai Municipal Economic Commission and MSU/IIA.
- 19. China Food Safety Programs.** In collaboration with the Chinese Academy of Agricultural Sciences (CAAS) and the Development Research Center (DRC) of the Chinese State Council, MSU co-sponsored the China Global Food Safety Forum in November 2004. This international conference brought together food safety experts from governments, NGOs, academia and the food industry to share information on emerging food safety issues, risk analysis, food safety management, and other topics. MSU also maintains a full-time office in China and conducts numerous project activities related to food safety and SPS issues. These projects include

research on Third-Party Certification and planning and delivery of the *Coca-Cola Food Safety Conference* in Shanghai in December 2009.

- 20. Albanian Agriculture Competitiveness (AAC) Program** is a partnership of institutions that builds producer capacity in targeted value chains. It strengthens the agricultural sector's ability to meet market standards for food safety and improving access to timely and reliable market information.
- 21. Armenia Food Traceability Initiative.** This initiative focused on building capacity for food traceability within Armenian agribusiness firms that export goods to the EU and US markets. Participating firms learned how to establish systems for internal documentation to track the products they ship from the raw material stage to the final product. Compliance with the US Bioterrorism Legislation and other international standards was the driving force behind the demand for this training. A handbook that details the requirements, forms and checklists of the US and EU regarding traceability was developed Armenian producers. Four agribusiness firms received one-on-one assistance in developing their traceability programs.