Abbreviated Proposal to WTO for "Model Arrangements for SPS Stakeholder Involvement at the National Level"

(Originally Presented 08/31/04; Revised 05/01/05)

1. Introduction

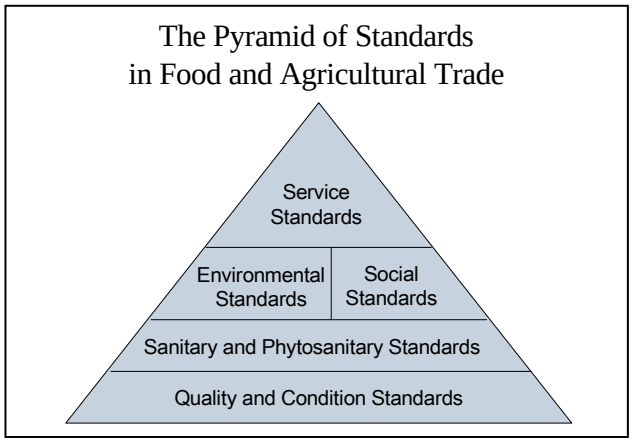
1.1 Overview of Role and Functions of Standards in International Agricultural Trade

Standards have long been used to protect plant and animal agriculture from invasive pests and diseases, and to protect humans from food-borne pathogens. Yet their more positive role in facilitating trade has emerged more recently, basically dating back to the post World War II period when U.S. and EU agriculture started generating huge surpluses that had to enter the global market.

When global agricultural trade consisted mostly of non-perishable bulk and semi-processed commodities, the main facilitating role of standards was to make it more feasible to conduct buy-sell transactions at arms-length by reducing risk and costs. More specifically, standards served to establish product identity, define technical specifications such as size or moisture levels, and set minimum levels of quality and condition of arrival. On the supply side, standards allowed exporters to offer clearly understood products, to customize some products to match customer preferences, to accept orders, to make shipment and to have reasonable certainty of payment. On the demand side, standards allowed traders sufficient confidence to place or receive orders without seeing the product, to judge good arrival, and to make payment. And both sides benefited from more effective price discovery and monitoring over time.

Yet both the protective and facilitating roles and functions of standards inevitably changed as trade accelerated and expanded, as new source-market combinations emerged, and as the composition of agricultural trade shifted away from undifferentiated raw commodities toward differentiated consumer-oriented items. Various factors have been at play: long distance trade in perishables can entail much greater risk to human safety and to plant or animal agriculture; the unit value of containerized, refrigerated agricultural cargo is much higher than for bulk-shipped commodities; new diseases are emerging; and the risk of invasive species is now better understood. For all of the above reasons, the importance of SPS-related standards has been growing rapidly in the last quarter century, alongside the growth in share of higher-value food products in global agricultural trade.

Starting in the early Nineties, other kinds of standards have become more prominent as well. Mostly they concern the processes used to grow, pack, store, handle, transform and distribute food and agricultural items, and the externalities that agriculture can produce. Social and environmental standards, embodied in Fair Trade designation and Eco-label Certification, are gaining momentum for some end-markets and some product categories. So are private umbrella schemes such as BRC, EUREPGAP, and SQF 1000 & 2000, which are built on widely accepted generic approaches such as GAP, GMP, GHP, and GLP.



Over the last decade, changes in the structure and conduct of the food industry, such as consolidation and technological innovation, have quietly spawned yet another category of standards. The new "standards of service" in agricultural marketing and trade cover competitive business practices such as: private-label packaging; slotting allowances; volume and non-volume rebates; promotional and merchandising support; Electronic Data Interchange (EDI); shared responsibility for category management; compliance with private codes of practice; third-party certification; and traceability systems. Standards of service are private, commercial, amorphous, unregulated, and sometimes known only to preferred partners.
The hierarchy implicit in this discussion is presented in the box on the right. New entrants in global food trade still have to deal effectively with core quality/condition and SPS standards in order to gain access to markets and satisfy the basic requirements of buyers. Some more adventurous players have elected to deal with social and environmental standards, in order to differentiate their products and capture niche markets that are willing to pay a premium for such attributes.

Yet the largest, most capable players have all mastered the other four types of standards to the extent they need to, and are now competing mainly in terms of the "service standards". Such rapidly evolving commercial standards represent uncharted territory for development agencies, foreign governments, and most suppliers from developing countries. And not much has been researched or written about them, at least in the literature of international economic and agricultural development. Nevertheless, as consolidation, global sourcing and supply chain management continue to progress, the capacity to provide top-notch service to the food industry giants may well become the most defensible and sustainable competitive advantage of all.

Thus while official market access is always important because it can open up new opportunities or close off old ones, competitiveness in agricultural trade depends on much more than gaining the right to access a market and complying with official SPS regulations. What used to be a "black-white" environment dominated by public regulators has developed many shades of gray, where more stringent SPS standards are now expected by major buyers, and where some private standards are taking on an involuntary character that almost makes them mandatory.

Such is the context within which the Model Arrangements for SPS Stakeholder Involvement at the National Level must be identified and tested. The entire field demands more commercial savvy from the public sector, a more cooperative attitude toward government from the private sector, and more flexibility and investment from both sides, than was true in the past.

1.2 The Development Challenge

The original design of the WTO project entitled “Model Arrangements for SPS Stakeholder Involvement highlighted certain requirements.

With respect to the broad objective, …

- The implementer was expected to **improve institutional capacity** to work in an **international trading system** that applies demanding **standards in food safety as well as animal and plant health.**

- The intended beneficiaries should include **both public and private sector stakeholders;**…and

- The improved capacity should **translate into improved export performance**.

Specific objectives were defined as follows--

⇒ To **identify parameters for best practice…**in order **to improve the co-ordination of SPS activities…**in **government departments** and in **the private sector** at a national level; and

⇒ To **improve the technical capacity of government bodies**…to **assimilate and respond to flows of SPS related information**; and

⇒ To **improve the technical capacity of government bodies**…to **assess the implications for national exports**…of **new SPS measures or international standards**…**developed by Codex, IPPC, and OIE**; and

⇒ To **establish consultative mechanisms…between government and the non-governmental actors…**particularly **in the private sector**.

The goal is--

- To **improve SPS-related information flow** as well as **information sharing…**
- **between the public and private sector**…with **positive spin-offs for market access**

Results expected at the end of the project should include:

….a **marked improvement in the co-ordination of SPS activities** in the two selected developing countries (Sri Lanka and Paraguay) as demonstrated by the establishment of a national SPS coordinating body (including public and private sector stakeholders);

…**better communication between stakeholders (including NEPs, national notification authorities, OIE, IPPC and Codex contact points, government departments, the private sector and consumer groups)**, as demonstrated by the submission of comments on notifications of particular interest to the private sector and increased participation in the development of international standards of interest;

…**making NEPs operational in these countries** (e.g. able to screen notifications and identify potential problems, in consultation with stakeholders);

…an **improvement in the quality of "hard" infrastructure** for the NEPs;

…provision of a **manual and training material on best practice parameters for improving SPS co-ordination**.

1.3 The Target Countries

Paraguay and Sri Lanka are quite different places in almost all respects. For starters, Sri Lanka has a population of about 19 million (2002), while Paraguay has just 5.5 million people. Sri Lanka's population density is one of the highest in the world, with about 289 persons per square kilometer—similar to Haiti—as compared to only 14 persons per square kilometer in Paraguay. Sri Lanka's ethnic mix is also more clearly divided: 75 % Singhalese and 18%Tamil. The two groups that have been at odds with one another since the 1980s, and the conflict has sometimes reached serious levels. Both of these major groups continue to speak their respective languages of Sinhala and Tamil, yet most government activities are conducted in English. By contrast, Paraguay has a more homogeneous population, with the 95 % mestizo population concentrated mostly in the south of the country. Like most other Latin American nations Paraguay's official language is Spanish, but Guarani is also recognized as an official language. As far as the people are concerned, the only real similarities between the two countries is with respect to incomes, in that the per capita GNI of Paraguay is $1,170, while that of Sri Lanka is $840.

The target countries also differ considerably in a geographic sense. Paraguay is a landlocked nation that borders Brazil, Argentina and Bolivia. Theoretically its location just below the 20th parallel (its capital is west of Sao Paulo) should allow for counter-seasonal production for Northern Country markets, yet distance and time to market largely offset that potential advantage. Paraguay's location between the two major economies in South America has made them its largest trading partners, with Paraguay sending almost 50% of its exports to these nations. On the other hand, Sri Lanka has a more strategic location, not too far from India, and lies in the midst of an ocean that a considerable number of ships pass through. Sri Lanka's lands are mostly flat plains, with some mountains in the south-central interior, and its climate is dominated by seasonal monsoons. Paraguay on the other hand has significant rainfall in the eastern parts of the country and is mostly arid in the westernmost part. A total of 13.5 % of Sri Lanka's land is arable, with more than 15% of its land being used for permanent crops, while only 5.5% of Paraguay's land is arable. Sri Lanka has about ten times more irrigated land area than Paraguay (6510 sq km versus 670 sq km).

Sri Lanka's economy experienced large gains in the 1990's, with growth around 5% per year, mostly due to textiles and apparel exports. However, the country experienced a notable (–1.4%) contraction in 2001 exports, presumably because of the EU and Asian recessions and then the events of 9/11. Sri Lanka's GDP reached $73.5 billion in 2003. By contrast, Paraguay has experienced relative economic stagnation since the 1980s, with growth rates near 1% for the last 4 years. Paraguay's GDP in 2003 was $28 billion, about a third of that of Sri Lanka.

Unfortunately, the December 2004 Tsunami disaster is likely to cause an economic contraction in the short-term followed by a rapid expansion as development assistance flows in and reconstruction begins.

As of 2003, Sri Lanka's agriculture generated about 19% of its GDP, and there had been a push since the 1970s to diversify the economy. In 1973 plantation crops were 93% of Sri Lanka's exports, yet three decades later they represented only 15%. Its most important agricultural products are tea, coconuts, rice, sugarcane and beef. For Paraguay the agricultural sector accounts for about 27% of GDP, with production mainly consisting of beef, pork, eggs, milk, soybeans, tobacco, cotton and maize. The soybean sector has been booming in recent years, and the meat sector as well, despite a serious blow several years back due to the appearance of hoof and mouth disease (HMD).

In terms of exports, Paraguay trades mostly with Brazil and Argentina, as well as other nearby South American countries, and has not really been able to access Northern and Far Eastern export markets. According to Banco Central data, Paraguay's agricultural exports totaled $826 million in 2002. Soybean and derivative products accounted for about $417 million of this, meat

and byproducts another $73 million, hides and skins about $53 million, and cereals about $38 million. Paraguay's main SPS issues have been foot and mouth disease in bovine cattle, and rust in soybeans.

In 2002, Sri Lanka exported a total of $971 million in agricultural goods. Exports from Sri Lanka went mostly to the United States and the United Kingdom. Tea alone accounted for $660 million worth of exports, the rest consisting of cinnamon, rubber, and coconut products.

Paraguay's imports consist mostly of finished products, which include vehicles, tobacco, distilled alcohol, beer, and prepared foods. In 2003 Paraguay imported $2.77 billion, mostly from Brazil, the United States, and Argentina (in descending order). It is important to note that Paraguay is still known as a center for drug trade and money laundering, and has a large informal sector, so official figures may not always represent an adequate description of imports and exports. Sri Lanka's imports totaled $6.6 billion in 2003, mostly consisting of textiles, wheat, sugar, mineral products, foodstuffs, lentils and petroleum.

Despite differences in the specific products, both countries do face technical challenges in the SPS area that are similar in some ways. Both Sri Lanka and Paraguay have flagship export crops for which SPS issues that might limit market access have been largely resolved (although pest and disease pressures arising from monoculture are a constant threat). Lesser export crops in both countries are more subject to industry-threatening SPS issues, for example HMD in Paraguay and filth in Sri Lankan spices. For the newer, non-traditional export crops, both countries have similar problems with inappropriate use of agrochemicals, especially in smallholder production. Both countries are also overshadowed by neighboring countries (Brazil and Argentina on the one hand, India and Pakistan on the other) that have very vibrant agricultural sectors that can produce many of the same products for export. Last but not least, both countries must improve their institutional and regulatory capacity to deal with commitments made under WTO and regional trade agreements, including the operation of National Enquiry Points.

2. Proposed Approach

2.1 General Approach

Key elements of Abt's overall approach to this scope of work include the following:

⇒ Treatment of this project and its companion ("Country-based Plans for SPS-Related Development") as interconnected WTO/STDF efforts to optimize approaches to trade-capacity building in the SPS area

⇒ Making sure that the two pilot projects within the "Model Arrangements…" project will not only respond to the specific concerns implicit in the NEP/NNA questionnaires submitted by Paraguay and Sri Lanka but also result in generalizable approaches and tools that can be used worldwide by the WTO and its other customers

⇒ Striving to ensure that government commitments made under the SPS Agreement are respected and to the extent resources allow, all satisfied. These include science-based rule-making, non-discrimination in application, avoidance of use of standards as NTBs, and the setting of national SPS standards consistent with international standards and guidelines established by the "Three Sisters"

⇒ Achieving greater industry, regulator and consumer awareness of the importance of SPS to international competitiveness, domestic productivity and sustainability (agricultural, commercial, and environmental)

⇒ Catalyzing involvement of all economic actors, consumers and other interest groups (e.g. environment and labor) in the consultative process required to define priorities, select strategies, and then implement them

⇒ Recognizing the growing importance of private standards as explained above, and using that reality to spark greater and more consistent private industry involvement in SPS policies and regulatory systems through dialogue and mechanisms that serve to upgrade the country's position vis-à-vis both types of standards

⇒ Striking a reasonable balance between the three main areas of SPS concern (human, animal and plant health and life) and between also the various host country institutions responsible for ensuring that each one is properly addressed.

⇒ Achieving first a common understanding among stakeholders that the scarcity of resources implies a need for prioritization, identifying key export supply chains, then introducing cost-benefit analysis to define the most important points of intervention

⇒ Using WTO-provided resources exclusively for the technical assistance and training aspects of capacity-building, making sure that host country government and private sector fund SPS related investment and recurring costs—in this case, especially staff and computer/telecom equipment need to make the National Enquiry Points fully functional

⇒ In order to achieve as much harmonization in technical approach as possible, positioning the same Abt Associates senior expert in agricultural trade and competitiveness as director of both activities, and also using the same key consultants in food safety, animal protection and plant protection

⇒ In order to ensure continuity and dynamism on the ground, assigning as Country Coordinator for the contractor team a well-qualified professional from the same country who is known and recognized by both the public and private sector in agriculture.

⇒ Getting off to the right start by initially reviewing in detail all relevant WTO, ITC, IPPC, OIE and Codex documentation.

⇒ Completing the assessment, implementation and reassessment work during the first twelve months, in order to allow time for the NEP's to run on their own for a while before the evaluation is done, and then to do the final report within the specified two-year maximum life-of-project

⇒ Leaving behind a fully functioning National Enquiry Point as well as on-going mechanisms for stakeholder dialogue and joint decision-making, coupled with higher levels of local financial support than at the start of the project

2.2 Detailed Approach by Stages

This subsection summarizes what Abt Associates proposes to do in order to accomplish the objectives and intended results of the project. The steps to be taken for each stage, the deliverable that will be submitted, and their expected timing are shown in the form of a GANTT chart in Figure One, "Revised Work Plan for Model Arrangements for SPS Stakeholder Involvement at the National Level". The corresponding level of effort by proposed team members is shown in matrix form in Figure Two, entitled "Revised Staffing for Model Arrangements for SPS Stakeholder Involvement at the National Level". As reference points, these figures are presented immediately after this page.

Start-up (already in process)

Initial visits to the target countries will probably lead to further refinement of the proposed approach, schedule and work plan. **The first required deliverable—an Inception Report—will be prepared and submitted to the WTO task manager in May of 2005.**

Stage 1: Preliminary Assessment in the Pilot Countries

According to the tender document, the first stage of this project would consist of the "establishment of the project organization structure including the working framework and operational mechanisms to develop and strengthen links between stakeholders".

Many questions need to be explored before a proper structure can be identified or set up:

- *Should it concentrate on exports alone, or two-way trade?*
- *Should it be limited to SPS issues alone, or standards more broadly defined?*
- *Should it be advisory or seek formal power to make decisions?*
- *Should it focus on the whole range of agricultural sub-sectors broadly defined, or just key ones?*
- *Should it focus on themes, product clusters, industries, or target markets?*
  Should it be spearheaded and led by government, or the pure private sector, or a balanced mix of both?
- *What role should civil society organizations such as consumer or environmental advocacy groups play?*
- *Should it be attached to an existing organization or project, or start anew?*
- *Should it be formal or informal?*
- *Given all the choices above, what information sets and flows are critical?*
- *Who will cover costs of setting up or running a secretariat, of holding meetings, etc?*

During the second month, two weeks will be devoted to such questions in each country, in succession. The effort will be led by the Country Coordinators. But to achieve balance in all three of the core SPS areas, Abt will also send in high-level consultants—some external, others local. Since Dr. de Silva already has a strong food science and technology background, he will be complemented by the services of Dr. Joseph Karpaty in the field of plant health and of Dr. Percy Hawkes in animal health. In the case of Paraguay, since Jorge Gattini is expert in agricultural marketing and trade, he will be complemented by Dr. Karpaty in plant health and Paraguayan consultants in animal health and food safety/quality.

Together these teams will: (a) identify all relevant SPS issues—whether technical, institutional, regulatory, or political; (b) find and interview organizations that have a legitimate stake in SPS matters; (c) identify other kinds of stakeholders; (d) review the history of similar efforts to bring the public and private sectors together around SPS issues; and then (e) define alternative models of organization for this purpose. Next the resulting list will then be vetted with a representative sampling of stakeholder groups. Based on their input as well as the experts' own analysis, then the most appropriate model will be defined. The final choice will have to be ratified by the main stakeholder groups.

The preliminary assessment will be completed in month 2 (after start-up) for Paraguay and no later than month 4 (taking into account the Tsunami) for Sri Lanka.

Stage 2: Implementation

As the solicitation document stated, during this stage attention should be paid to initiatives to

strengthen the National Notification Agencies as well as the National Enquiry Points for OIE, IPPC, and Codex. After the preliminary assessment is done, the Country Coordinators will concentrate on defining a strategy for the NNAs and NEPs. What to do must reflect not only felt needs, but resources available from the government, as well as other donor-assisted projects in related areas. For example, FAO has an SPS capacity-building effort in the food safety and pesticide area going on in Paraguay, and the EU will start up a major project on norms, accreditation and certification during the second quarter of 2005. There are probably similar relevant projects in Sri Lanka, presumably supported by the EU, FAO and other donors. The team will do all that it can to avoid overlap and instead find synergy.

Establishment of a fully functional National Enquiry Point for human, plant and animal health and life (as per the WTO SPS Agreement) is a key deliverable. It should be in place and operating within the first six months of this project, first in Paraguay, then in Sri Lanka.

In support of this capacity-building activity, provision in the work plan and budget has been made for an additional technical 20 person-days of technical assistance by each of the subject matter experts named previously. (Although not specifically requested by the WTO, Abt Associates considered this important because otherwise the model SPS arrangement activity will not deliver much take-home value to participants in the pilot effort)

In the case of Sri Lanka, the team of subject matter experts will include: Dr. de Silva for food safety and quality assurance, Dr. Karpaty for plant health, and Dr. Hawkes for animal health. In the case of Paraguay, Dr. Karpaty will again handle plant health, Dr. Idoyaga will handle animal health, and another external or local consultant will be identified for food safety.

During Stage 2 the project is also expected to facilitate the formation or strengthening of an SPS coordination group within each country. In fact, most developing countries already have governmental or mixed organizations that work on this theme, so the contractor will be careful not to re-invent things when all that might be needed it some fresh thinking and fresh resources.

Quite correctly, the scope of work calls for a participatory approach that brings in expertise and viewpoints from both the public and private sector. The request for proposal for STDF 20 even said, "As a first step in implementation of the project, the consultants will work with key ministries to establish a national working group of key public and private actors". Abt Associates agrees with that approach, but in both countries of interest to STDF 19, it was important to recognize that organizational structures already exist that may serve the same purpose.

These nascent structures highlight another issue. National level conversations—even for countries of modest size such as these—tend to operate at too high a level of abstraction or agglomeration to effectively identify and solve many problems that impede competitiveness, productivity and/or sustainability. The issue is particularly serious in the SPS arena, which can be highly technical. Agricultural trade expands as the country moves up an invisible ladder of success that starts with discrete buy-sell transactions, then progresses to seasonal or annual trade deals, renewable programs, and ultimately to long-term commercial and personal relationships. Moving up that ladder requires in-depth know-how about products, markets and competition that public sector officials rarely possess. If a major economic objective of the country is expanded volume and value of agriculturally-derived exports, and SPS problems constrain those exports, it is crucial that private agro-enterprises that really understand the constraints play a significant role in prioritizing and resolving them.

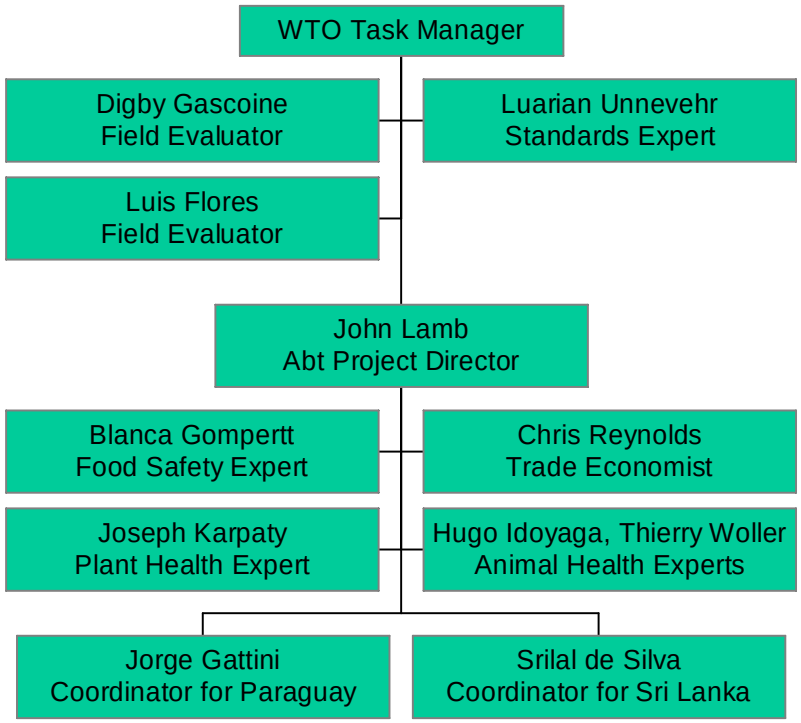
For those reasons, after prior consultation with the national SPS agencies, and hopefully with their active involvement, Abt Associates has proposed to concentrate first on mobilizing support for a new (or revitalized) SPS working group, working with leading economic actors in all key industry clusters and supply chains. This could be a single group for all SPS issues, or groups that aim to work on the three major areas: human/plant/animal health and life. Either way, by

engaging all stakeholders in vital issues, a vibrant, sustainable national SPS working group will be much easier to assemble. Minor actors will tend to follow, and the entire group will have much more drive and influence than it otherwise would have.

On the other hand, players engaged in supply chains are not the only stakeholders of concern. SPS measures are not only designed to facilitate trade but also to protect consumers and the environment, so the national SPS working group once formed should also encourage participation by representatives of other interest groups, especially environmentalists and consumer advocates.

Figure 3

Project Organization Chart



A major tactical challenge for the contractor selected to carry out this WTO activity is to work closely and fairly steadily not just with relevant public sector entities such as line ministries and their specialized units, but also with myriad private sector organizations. The latter include those that have economic purposes and also those that have social or environmental purposes. This is a complex requirement, because governmental entities and civil society organizations tend to think in terms of missions such as food safety or plant protection or consumer protection, while private industry thinks mostly in terms of products, markets and supply chains. Keeping those issues in mind, the successful contractor for this procurement opted not to designate any public officials as country coordinators (although there was great interest among them in both Paraguay and Sri Lanka), but instead to rely on independent consultants who are credible but not directly associated with or dependent on either camp.

For a year or so, the contractors has proposed to have the Country Coordinators work intermittently but steadily in each country in a participatory, consensus-oriented manner to achieve a strong SPS working group. In concert with SPS agency representatives, contractor representatives will approach the key industry clusters (most of which already have some form of organization) and relevant advocacy groups (usually consumer and environmental NGO's) to elicit their interest. Then they will organize a large stakeholder meeting (between months 3 and 6) in each country. After that, hopefully with good evidence of support by key industry and advocacy groups, the Country Coordinator will proceed either to rehabilitate what already exists or to form a National SPS Working Group, in which the contact persons for NEP, OIE, IPPC, and Codex will all participate actively. While desirable, the National Working Group structure was not proposed as a formal deliverable, because it might not fit each country's situation exactly.

Stage 3: Reassessment and Final Reporting

While it is important to support the National SPS Working Group and lower-level groups of stakeholders throughout the project, even after a National SPS Action Plan or equivalent has been completed, it is equally important that the countries themselves take full possession and control. To maintain that delicate balance, Abt Associates proposes to have the Country Coordinators provide continuity the entire first year, through phone and email contact, as well as intermittent meetings and visits by external consultants.

Abt Associates proposes that the reassessment process called for in Stage 3 begin in month 10, with the drafting by the Country Coordinators of a manual of best practices and other training materials, that will be tested as they continue working with their respective counterparts. Project Director John Lamb will finalize the documents, and **submit them no later than month 12.**

Stage 4: Ex-post Evaluation

In month 15, Dr. Laurian Unnevehr, a well-known agricultural economist from the United States who has done considerable work on standards for the World Bank, USDA and IFPRI, design an evaluation strategy and list of structured interview questions, both from her office. Then in month 16 the actual field evaluations will be carried out based on her approach, probably by Mr. Digby Gascoine who is well known to the SPS Committee.

The final report will be drafted jointly by Project Director John Lamb and the two Country Coordinators.

Both the evaluation and a final report for the entire project will be submitted in draft to WTO in month 17. Then, after comments are received back, **the final deliverable for Stage 4 will be submitted in month 18.**

3.0 Proposed Personnel

Abt Associates offered a uniquely qualified team for this project. They represented diverse nationalities, appropriate to a WTO-supported effort. Each person proposed presented a balanced mix of formal education and professional experience. Nearly all have played operational, advisory, research and teaching roles in multiple countries and for both public and private clients. Several have had long careers in the public service in well-known SPS regulatory agencies. Each person is well recognized by peers, because they are among the best in their fields. And most importantly, they are excited about this project. Although complete resumes are presented in a separate annex, summaries are provided below.

3.1 Composition and Organization of the Team

The project organizational chart implicit in earlier narrative is shown graphically below.

3.2 Technical and Organizational Skills of the Proposed Consultants

3.2.1 Project Director

For the role of Project Director, Abt proposed Mr. **John Lamb,** Principal Associate for Agribusiness since 2001. Since late 2004, he has served as Technical Director for the Southern Africa Global Competitiveness Trade Hub, a USAID-supported project for regional trade development in 11 SADC countries. Mr. Lamb is also known to some WTO staff and other members of the Standards Facility for his work on the recently completed World Bank Cost of Compliance Study for SPS Standards. He played the lead role in managing and carrying out the U.S. Buyer Survey for Fresh Produce and Frozen Shrimp, and recently co-authored part of the synthesis report as well. Back in mid-2004, he was chosen as the principal advisor in agricultural

markets and trade for a joint USAID-World Bank-IADB effort to support implementation of the Central American Free Trade Agreement. Mr. Lamb also manages Abt's subcontract for the USAID-financed RAISE SPS Support Program, which carried out competitiveness analysis for the EU and US markets for Moroccan produce, two country-specific SPS benchmarking surveys in Central America pursuant to the CAFTA negotiations, and an assessment of SPS capacity-building needs in Croatia.

Before joining Abt Associates, Mr. Lamb was a fresh produce importer and broker in South Florida. While sourcing fresh mangos, asparagus, sweet onions and specialty vegetables from all over the LAC region, his firm provided consulting services to U.S and foreign associations and companies involved in horticultural trade. For example, he did an export marketing study for Satsuma oranges from Peru, and with an expert consultant provided HACCP/LACF training for a major Peruvian food company involved in canning asparagus for export.

From the mid-Eighties to the early Nineties, while serving as Team Leader for the Central America-wide Non-traditional Agricultural Export Support and Export Industry Technology Support Projects, Mr. Lamb became known as one of the earliest and most forceful proponents of diversification into high-value crops and markets. In 1992 in Guatemala he spearheaded the creation of PIPA'A (Integrated Program for Agricultural and Environmental Protection), which later gained prominence as the lead organization dealing with the problem of the emergent disease Cyclospora in red raspberries, as well more routine but still troublesome problems with pesticide residues in snow peas and French beans. During that period, he formed close and lasting relationships with many prominent agricultural associations at home and abroad, including the Produce Marketing Association, UFFVA, Texas Citrus & Vegetable, FFVA and FMI. He is currently working on a new agreement with EUREPGAP.

Mr. Lamb offered WTO more than thirty years of operational and consulting experience in international agriculture, with specialization in high-value perishables. He has worked in more than 25 countries, which range from South America to the Asian Subcontinent. He speaks, reads and writes Spanish fluently, and has lived and worked many years in Latin America.

3.2.2 Country Project Coordinator for Sri Lanka

For this position, Ant Associates proposed Sri Lankan national **Dr. Srilal de Silva**. Dr. de Silva holds a first degree from the University of Ceylon in Colombo, Masters and Doctoral degrees from the University of Technology in the UK, and a post-graduate Diploma in Industrial Quality Control from Bouwcentrum International Education in Rotterdam. A Chartered Chemist within Sri Lanka, he is a recognized expert in food technology and quality assurance. Dr. de Silva offers more than 30 years of experience at the national and international levels, culminating in the role of Deputy Director of the Sri Lanka Standards Institute. Dr. de Silva was the first ISO 9000 registered lead auditor for Sri Lanka, and at SRSI he was directly responsible for developing an ISO 9000 certification scheme for the whole country, which received RVA accreditation in 1996. Separately he developed the system now used in Sri Lanka to issue certification based on ISO 14000 standards, and he also designed a HACCP certification program that is now in the process of getting international certification. Earlier, in the mid-Nineties, Dr. de Silva developed and maintained the Sri Lankan scheme for inspection of processed seafood products based on EU Directive EU/94/943. This activity involved the development of physical and institutional infrastructure, policies and legislation.

Since retiring from the government, Dr. de Silva established and now manages a consulting firm that specializes in quality assurance and certification. His firm operates training and certification programs based on ISO 9000 and ISO 14000 certification; HACCP, EU Directives; product Certification, CE mark and various accreditation systems.

He has served as Vice President and President of the Sri Lankan Association for Quality, and is a member of many prestigious associations concerned with quality management. In total he has

carried out:

> More than 500 audits of fish processing operations, 50 compliance audits and 200 surveillance audits under the EU Directive;
> Over 50 compliance audits and 200 surveillance audits under the Product Certification scheme;
> More than 30 compliance audits and 150 surveillance audits for ISO 9000 Certification; plus
>One compliance audit for ISO 14000 Certification.

His training experience includes serving as Lead Tutor for the IRCA (UK) approved Lead Audtor training course in ISO 9001 and the Food Safety Management System.

Finally, he has more than 50 publications **on Quality Management and related topics in national and international journals.**

3.2.3 Country Project Coordinator for Paraguay

For this position Abt proposes **Mr. Jorge Gattini**, a Paraguayan agricultural and environmental economist with fifteen years of broad experience in production, agricultural marketing and trade. He is very familiar with the whole range of crop and livestock products produced in Paraguay, and also with all of its domestic, regional and international markets. Mr. Gattini has strong analytical, design and negotiating skills. He enjoys the respect of a wide range of Paraguayan agricultural stakeholders. As a private consultant, he has done work for private clients, FAO, the EU, IDB and the World Bank. While with the Ministry of Agriculture for a decade, he held a series of increasingly responsible positions, focused on agricultural market and trade.

3.2.4 Plant Health Specialist

For this position Abt proposed **Dr. Joseph Karpaty**, who offers some 30 years of international experience in all aspects of plant protection and quarantine, acquired during a long career at USDA/APHIS and later made available to foreign governments, exporter organizations, and international agencies. He has managed phytosanitary issues for a wide variety of fruits, vegetables, cut flowers, ornamental plants, planting materials and wood products. Dr. Karpaty has developed PPQ policies, designed plant quarantine regulations, carried out pest and other risk assessments, designed surveillance and inspection systems, developed certification programs, and regulated germplasm exchange in many different countries. He has worked extensively in Latin America, Central and Eastern Europe, Turkey, the Philippines and several African countries. While working for Abt Associates, Dr. Karpaty co-authored in 2003 SPS Benchmarking Surveys for Nicaragua and Guatemala on a USAID-financed project, and along with John Lamb and other team members helped write the Central American Regional SPS Benchmarking Report used by all sides to inform CAFTA negotiations. For the last five years he has assisted Clementine growers and exporters in Spain, initially to obtain market access using a systems approach to risk mitigation, then to reopen the market after alleged Medfly problems. Dr. Karpaty has also consulted repeatedly with UN FAO, building on his previous experience as resident representative there for the USG. His skills range from the development of phytosanitary systems and controls to training government and private sector personnel in regulatory enforcement. He has written numerous technical publications, manuals and guidelines, and is often invited to speak, serve on expert panels, or act as delegate at numerous international conferences and workshops. He has a working knowledge of written and spoken Spanish.

3.2.5 Animal Health Specialist

For this role in Sri Lanka Abt proposed **Dr. Percy Hawkes**. He offers 20 years of responsible management and hands-on technical experience in USDA's Animal and Plant Health and Inspection Service, and also the Pan American Health Organization (PAHO). Dr. Hawkes began his career as a clinical veterinarian, then worked as epidemiologist on Brucellosis in cattle and

swine fever, establishing an eradication and surveillance program that has worked well in Puerto Rico for 20 years. He spent three years as Veterinary Attaché with APHIS in Honduras, covering Belize, and later worked another two years as Agriculturist for APHIS, conducting inspections at the McAllen, Philadelphia, and New York City ports of entry, and also doing fruit fly trapping, pest identification, fumigations, and quarantine treatments in/for Mexico and Chile. Then while serving as Assistant Regional Director for APHIS in South America, he supervised the renowned Chilean Pre-clearance Program, and significantly raised the competitiveness of Chilean table grapes, stone fruit, and other fruit and vegetable exports. Later he became Area Director for Mexico, responsible for $3.5 million program of intergovernmental cooperation that helped set the foundation for NAFTA implementation. Because of his veterinary background, Dr. Hawkes was then asked to coordinate the disease surveillance, detection and information activities for the screwworm eradication program in Mexico and Central America. Between 1995 and 1998, he was assigned to Colombia, where he designed an effective pre-clearance program for cut flowers, and turned around a hoof-and-mouth disease eradication program. This led to a two-year secundment to the PANAFTOSA program of PAHO, where he designed and set up a $10 million regional FMD program for Bolivia. Dr. Hawkes culminated his APHIS career working on special assignments, including management of the $4.5 million mango export program for Ecuador, where he oversaw application of the hot-water treatment protocol. Consulting assignments undertaken recently include institutional strengthening of the Bolivian equivalent of APHIS (i.e. SENASAG).

For the position of animal health specialist in Paraguay, Abt proposed **Dr. Hugo Idoyaga**. A veterinary doctor with twenty years of varied public sector experience in animal production and health, with particular emphasis on control of residues of veterinary medicines and pesticides in food for human consumption. After a progression of increasingly responsible positions in the livestock vice-ministry of the Paraguayan Ministry of Agriculture and Livestock, he served as Acting Director of the Office of Control Standards for Foodstuffs of Animal Origin. He has also served on various technical committees concerned with animal health standards, including one of the National Level Codex subcommittees, and has represented Paraguay before the WTO SPS Committee.

3.2.6 Field Evaluator for Sri Lanka

Mr. Digby Gascoine, who is well-known to WTO's SPS Committee and beyond, is now a private consultant in the fields of food control policy and practice, export/import inspection, biosecurity (quarantine) policy, Codex Alimentarius standards, negotiation of bilateral and multilateral trade agreements, and dealing with the WTO SPS and TBT Agreements. In recent years he has consulted with the WTO, World Bank, UNITC, and the governments of Sweden, Bangladesh and Ghana on SPS issues. Under a USAID-funded trade facilitation project, last year Mr. Gascoine co-authored a major paper on SPS measures. Earlier, while still working with the Australian Government, he participated very extensively in dealings between Australia and trading partner countries on sanitary/phytosanitary issues. He managed the formulation and implementation of policy, chaired bilateral meetings, and conducted negotiations, particularly with the European Commission, member states of the European Community, United States, Canada, New Zealand, Asian and Latin American countries. Experience with multilateral organizations included:

- World Trade Organization (WTO): led the Australian Delegation and played a leading role in the drafting of the WTO Agreement on the Application of Sanitary and Phytosanitary Measures (1988-1994); led the Australian delegation to the Committee on Sanitary and Phytosanitary Measures 1995-2000; contributed papers and proposals in relation to specific SPS issues including consistency in risk management, import risk analysis, etc.; high level participation in Australia's defense of Canada/USA WTO dispute settlement actions concerning salmon imports to Australia;

- Codex Alimentarius Commission: led the Australian delegation to Commission meetings 1989-1997; member of the Australian Delegation to the 2001 meeting as consultant to AQIS;

Vice-chairman of the Commission for two 2-year terms; member of the Codex Executive Committee as Vice-chairman, Regional Representative and Chair of the Codex Co-ordinating Committee for North America and the Southwest Pacific; Chair of the Codex Committee for Export and Import Food Inspection and Certification Systems 1993-2000; leader of the

- Australian delegation to the FAO food conference 1991; participant in many other Codex meetings;

- Organization for Economic Co-operation and Development: led Australian delegations to activities of the OECD Environment program, in particular the Chemicals Program, 1979-1987; Vice-chairman of the Chemicals Group;

- Quadrilateral meetings: participated in a number of the regular meetings held between Australia, New Zealand, Canada and the United States to discuss food safety, animal quarantine and plant quarantine issues.

In sum, Mr. Gascoine is particularly well qualified to advise any foreign government in the area of SPS capacity building, and at the same time offers the WTO a strong mix of operational practical experience relevant to the work of the Standards Facility.

4. Corporate Capabilities

4.1 Overview of Abt Associates Inc.

Over a period of 40 years, Abt Associates has become one of the leading government and business professional services firms in the United States. It is an employee-owned and operated firm, with more than 1100 staff members. About one-third are located abroad and the rest in major offices in the Boston, Chicago and Washington DC area. Especially within the international area, which employs almost half of the staff now and is growing quickly, there is considerable diversity of nationality and language capability.

In addition to its substantial domestic consulting, which spans almost all USG agencies and many States, Abt has completed projects in more than 85 countries for U.S. and foreign government agencies, multilateral financial institutions, multinational corporations, and trade associations seeking to open new markets. The firm has fielded many long-term international advisors as well as short-term teams. Projects have ranged from as small as US$5,000 to more than $90 million. We do a lot of research work, but also implementation.

In the international arena, the work of Abt Associates' work has concentrated in the agricultural, environmental, health, institutional reform, trade, and private sector development fields. Poverty alleviation, elimination of hunger, and HIV/AIDS are major thrusts within Abt that cut across sectors. In all sectors, and in nearly all projects, we provide technical assistance and training in support of human and institutional capacity building.

4.2 Experience in International Agriculture

Abt's work in international agriculture dates back more than 25 years, and it involves an estimated 50 developing countries. Activities in this sector have tended to concentrate on policy analysis and reform, industry development, export promotion, standards, market information and intelligence, marketing institutions, agribusiness, private associations, and input systems.

Over a period of more than a decade Abt held a succession of large, USAID-financed global support projects in agricultural trade and marketing (Agricultural Marketing Improvement Strategies I, II and III) and another succession in agricultural policy (Agricultural Policy Analysis Project I and II, then Agricultural Policy Development). Under these so-called Indefinite Quantity contracts, the firm fielded multi-disciplinary teams on topics as diverse as sector strategies,

export market assessments, industry structure-conduct-performance (S-C-P) studies, rapid appraisals, food security assessments, agro-industrial feasibility studies, competitiveness analyses, post-harvest loss assessments, restructuring of research-extension-education institutions, and product/market profiles.

The Agriculture-Led Export Businesses (ALEB) Project in Egypt, which we are carrying out with the Rutgers University Center for Advanced Food Technology (CAFT) as partner, is a good example of an on-going long-term project relevant to this WTO activity. Now in its fourth year, the ALEB project provides technical assistance and training to Egyptian food processing companies to help them increase their export of product to Europe and other markets. The Project is organized around five primary tasks: (1) market information systems and product reports; (2) processing technologies and product improvement services; (3) marketing and management skills improvement; (4) associations and business development services firm assistance; and (5) facilitating strategic alliances.

At the start of the project, ALEB staff conducted industry/market analyses to determine the premium industries with opportunities and potential for increased export, their constraints, and the market criterion they needed to meet to respond to the market demand. The studies determined the structure of the markets from field to end-consumer in Europe and other markets. The ALEB team then provided technical assistance and facilitated buyer linkages for more than 130 processing companies to help them better use market information and product reports, to improve their processing technologies and products to meet market demand, consumer preferences and import regulatory requirements in target markets, and to improve their marketing and business management skills. The team has been advising clients on new product development, packaging, export logistics, marketing, and many other topics crucial to an export-oriented food processing operation.

In-plant and on-the-job training and technical assistance has been provided on a continuing basis to most of the major food processing operations in Egypt. So far ALEB has trained more than 3800 agribusiness and trade association personnel. Workshops have been carried out on a wide variety of standards-related topics: The Role of Quality Assurance in International Trade; Quality of Fruits and Vegetables: Grading & Understanding Quality Issues; Statistical Process Control; 4-part HACCP series; Better Process Control; GMP, GAP, ISO 9000 for the Food Processing Industry; Cleaning and Sanitizing; Packaging and Shelf Life; Sanitation & Hygiene for the Plant Worker; Pest Control for Food Processors; Pest Control as a Pre-Requisite to HACCP; Auditing Your Plant for Safety and Sanitation; and Purchasing Equipment: Technical and Economic Considerations. We have had 24 foreign study tours to date as well with 235 participants

Institutional-strengthening support was also provided to industry associations such as the Horticultural Exports Improvement Association (HEIA), the Cold Chain Association, the Egyptian Agribusiness Association (EAGA) and the Egyptian Seed Association (ESAS). Several of the trade associations with which we have worked have experienced 50 to 100% increase in their membership during the period that our project has worked with them.

During the first three years of ALEB, export volume for the target processed fruits and vegetables went from 54,378 metric tons to 136,434 metric tons, a more than 150% increase (compared to the goal of 63,974 tons). Export value has risen dramatically as well, converting Egypt into a major supplier of processed fruits and vegetables for the Gulf States, and preparing it well for the onslaught of EU product that is occurring as tariffs fall.

4.3 Experience in International Environmental Protection

Abt Associates has done substantial work on both the “brown” and “green” sides of the environmental spectrum, but is best known for environmental impact studies, regulatory impact analysis, and work on watershed management, pollution control, environmental health and toxicology. Many such activities connect to the SPS concerns of WTO and the Three Sisters

insofar as SPS regulations and codes of practice aim to avoid or minimize harm to the natural environment through problems such as pesticide run-off from farmers' fields, effluent discharge from agro-processing plants, or the spreading of pests and diseases through inappropriate disposal of harvest and processing waste. Relevant project examples are given below.

Comparative Risk Assessment: Comparison of U.S. and European Methods

At the request of the USG, Abt Associates defined, assessed and evaluated how environmental risk assessment is undertaken and used in Europe, beginning with a survey of international organizations, the European Community and national programs. The analysis showed key differences between methodologies related to determining carcinogenicity, human health risk profiling and regulation setting. The results were incorporated into training courses for use in Eastern Europe.

Program Environmental Assessment, Regional Agricultural Development Project

Abt Associates is conducting an environmental assessment of a proposed set of grant-financed agricultural and agribusiness activities under the Ukraine Regional Agricultural Development Project for the U.S. Agency for International Development. This assessment will evaluate the potential environmental effects of these activities focusing particularly on impacts from the use of agricultural chemicals, fertilizers, and pesticides, from the processing of agricultural commodities, and from the provision of tractors and farm equipment. Abt Associates will design a set of guidelines and specific procedures to be applied in the screening of grant proposals to be funded under the Regional Agricultural Development Project.

4.4 Experience in International SPS and Other Agri-food Standards

Sample projects involving SPS and other standards include the following:

The Challenge of Compliance with SPS and Other Standards Associated with the Export of Shrimp and Selected Fresh Produce Items to the United States Market

As part of a large set of World Bank studies on emerging standards for food and agricultural trade, Abt's John Lamb and two consultants completed in May of 2004 a survey of U.S. buyers and other informed observers, concerning costs and difficulties that they faced as they procured and imported selected fresh produce (mangos, snow peas, cantaloupes, asparagus, red raspberries) and frozen shrimp. Certain findings are worthy of mention. In the case of shrimp, filth, mislabeling (as to weight, because of glaze) and misuse of antibiotics (Chloramphenicol) were the main problems cited. In the case of fresh produce, depending on the particular product, the most important SPS issues tended to be either inappropriate pesticide use and residues (for snow peas), Salmonella (in cantaloupes), Lepidoptera eggs or Erwinia rot (in asparagus), Cyclospora (on red raspberries) or Medflies (in mangos). Increased demand for, and application of Good Agricultural Practices was having a mitigative effect, but not many offshore suppliers had gone to the trouble and expense of getting EUREPGAP or SF 1000 certification. The expectations of receivers in the United States, as well as their chain store customers, were rising, but they were increasingly relying on third-party certification and audits rather than direct investigation or back-up testing in their distribution facilities.

Synthesis Report for the Global Cost of Compliance Study

Abt's John Lamb also contributed recently to two overview chapters for the World Bank's global research program on SPS: one on major trends in the food industry and their impact on application of SPS and other standards, and the other on implications of the study findings for World Bank lending or other donor activities in the SPS field. The "pyramid of standards" mentioned briefly at the beginning of this proposal will also figure in that World Bank report.

Central American SPS Benchmarking Survey

During the second quarter of 2003, USAID commissioned SPS capacity analyses for the five countries that were actively negotiating the Central American Free Trade Agreement. These included Guatemala, Honduras, El Salvador, Costa Rica and Nicaragua. Through its subcontract on the RAISE SPS Global Indefinite Quantity Contract, Abt Associates participated in this benchmarking effort, taking primary responsibility for the Country Reports on Nicaragua and Guatemala, and shared responsibility for the regional overview. Dr. Joseph Karpaty, whom we have proposed for this WTO activity, was one of the two Abt experts tasked with this job. In the end, Abt Associates Principal John Lamb was also asked to contribute to and technically edit the final regional report, which he did. The methodology used in this exercise has some relevance to the work now requested by WTO, in that the assessment looked first at market relevance, then functional capacities (international representation, legislation, diagnostic capabilities, risk analysis, surveillance, emergency response, inspection, export certification), then felt needs for external support, and finally at strategic options for capacity-building in the SPS area.

Pesticide Regulation and Application Processes in Jamaica

Abt Associates worked with the Pesticide Control Authority of Jamaica to improve the effectiveness of pesticide regulations and to assist firms to adopt international standards. The objectives included shortening the time required for receipt, analysis, and approval of facility and product licenses by the Authority, increasing the transparency of the system for applicants, and identifying firm-level quality assurance and compliance alternatives. Abt Associates analyzed current compliance practices, regulatory procedures, and resource gaps, and helped identify problem areas that delay review and approvals.

Review and Analysis of West African SPS Harmonization Studies (Part 1)

Through its work as subcontractor on the West Africa Trade Hub (WATH) established under the U.S. Presidential TRADE Initiative, an Abt consultant provided short-term technical assistance in 2003 to UEMOA to review three regional reports (on food safety, animal health and phytosanitary control) and to provide a wider regional context of the SPS situation in non-UEMOA countries of the Economic Community of West African States (ECOWAS[1]). The outside review was designed to allow UEMOA to check whether, in addition to developing a harmonized SPS regime, it was making policy that would improve its member countries' competitiveness with respect to global markets.

Review and Analysis of West African SPS Harmonization Studies (Part 2)

As follow-up to the previous assignment, another Abt consultant was sent recently to West Africa to asses the viability, adequacy and cost of proposed future investments that aim to implement the SPS regional harmonization treaty. The consultant is reviewing the part of a forthcoming draft UEMOA document on the *Programme d'Investissement pour la Sécurité Alimentaire* relating to UEMOA's proposed five-year SPS-related investment plan for the period after the ratification of UEMOA's SPS treaty and the implementation of its provisions. The investment plan will lay out the range of plant, equipment and training, as well as supporting investments and services, for a full and efficient implementation of the treaty. The consultant's review will: (1) evaluate the relevance of the proposed investments to the goals of UEMOA's harmonization of SPS regulations and standards and UEMOA member-states' competitiveness in global trade; (2) estimate the accuracy of the costs given for each; (3) indicate the cost-effectiveness of the different investments proposed; (4) suggest alternatives (where appropriate); (5) prioritize the investments; and (6) suggest a phasing for their execution (with cost estimates).

[1] Non-UEMOA ECOWAS countries comprise: Cape Verde, The Gambia, Ghana, Guinea, Liberia, Nigeria and Sierra Leone.

Diagnostic Assessment of SPS for Horticulture in Croatia

Croatia is well on its way to EU accession, and has made great strides in introducing a competitive and open market environment. However, the country needs to improve its capacity in export commodity sectors to meet official EU quality and SPS standards as well as EUREPGAP. Moreover, supermarket growth in Croatia over the past several years has been exceptional. Local producers hoping to sell fresh produce in domestic markets have to learn to work within the procurement systems established by the supermarket chains, proactively engage with the supermarket buyers to meet market demand and reduce production costs, and importantly, meet the supermarket requirements of improved quality, phytosanitary conditions, quantity and consistency of supply. Finally, the tourism industry on the Dalmatian coast also requires higher quality produce meeting certain SPS targets, and is currently importing large quantities of fresh produce from Italy and Spain to meet this need.

Through the RAISE SPS project, Abt Associates was asked to carry out an assessment that would first identify and describe the sanitary and phytosanitary challenges facing the major horticultural subsectors for export to the EU and for domestic supply to supermarkets and the tourism industry, and then provide recommendations for addressing these issues.

Now in country, the Abt team is investigating three areas, in sequence:

- Market Demand Analysis for Horticultural Products. This includes: the extent to which supermarkets in Croatia are currently stocking horticultural products from outside that could be produced locally; an analysis of the reasons (particularly any Certification, EUREPGAP or SPS reasons) why Croatian products are not competitive; Croatian laws that may be impeding the ability of Croatia's growers to meet certification requirements under EUREPGAP, and recommendations for improving SPS and EUREPGAP compliance, particularly focusing on horticultural crops that have high demand potential

- SPS Analysis at the Subsector Level: This includes an in-depth analysis for the top four priority product groups, focusing on the sanitary, phytosanitary, grading and standards issues surrounding the product for the target segment.

    1) What are the EUREPGAP parameters for certification that affect each subsector?
    2) What are Croatia's own regulatory and governmental policies and procedures around these items, and how do they interface with international norms? Describe the interactions of the Government with private industry on these issues.
    3) Describe the main hazards for each value chain of potential importance to Croatian high-value agriculture, including but not limited to such areas as:

    - Water microbial hazards in agricultural water, processing water, wash water, cooling water;
    - Pesticide and fertilizer treatments, their handling and application rates and processes;
    - Manure and municipal biosolids hazards in applications to crops, treatments and their efficacy (passive and active), handling and application, untreated and treated manure;
    - Worker health and hygiene hazards, including personal health and hygiene practices at the farm-level and during post-harvest handling, and in distribution sites (customer pick-up operations, markets, road-side produce stands, distribution to wholesalers, etc.), training available/required for subsector participants.
    - Sanitary facility hazards, including toilet facilities and handwashing stations, sewage disposal;
    - Field sanitation, including general harvest considerations and equipment maintenance;
    - Packaging facility sanitation, including packaging considerations such as cleaning of cutting tables, facility maintenance, receiving areas, chemical washing, and pest control;

- Transportation hazards, including cleanliness and maintenance of transport vehicles (trucks, train, other), temperature control for quality and safety of the fresh produce, and loading processes that minimize damage to packaging; and
- Traceback system for the subsector (ability to track food items back to the source), to prevent the spread of food safety problems and to identify the source(s) of problems, helping to identify and eliminate a dangerous pathway; to what extent is supply within these subsectors traceable?

➢ Key Hurdles by Subsector at the Level of Industry and Firm: These may impede either export to the EU, or penetration of other high-end markets within Croatia (i.e. supermarket and tourist market segments)

4.5 Domestic Work in SPS with the United States Environmental Protection Agency

For more than 15 years, Abt Associates Inc has been one of the main technical support contractors to the United States Environmental Protection Agency. Abt holds multiple umbrella service contracts with EPA, through which job orders are placed and carried out on a quick response basis. Several hundred such assignments have occurred, of which a sample is presented below:

Exposure and Risk from EBDCs Used on 12 Crops. In conjunction with the re-registration process mandated under FIFRA legislation, Abt Associates developed a model to predict residues of Ethylenebisdithiocarbamates (EBDCs) and ethylene thiourea (ETU) on celery, collard greens, green beans, kale, lettuce, lima beans, mustard greens, peaches, spinach, and turnip greens. Results were provided to EPA to inform their special regulatory decisions.

Benefits and Costs: Corn Pesticide Cluster Analysis. Abt Associates evaluated a cluster of 25 pesticides used on corn, including the baseline human health and ecological risks associated with such use.

Childhood Exposure to Food Contaminants. Abt Associates worked estimate distributions (using Monte Carlo simulation) of dietary exposure to environmental contaminants in fruits, vegetables, and grains in the U.S. The exposure assessment focused on the entire at-risk population, with emphasis placed on exposure estimates for children.

Development and Use of a Trade and Environment Assessment Model: The Trade and Environment Assessment Model (TEAM) developed in this project will enable the U.S. Environmental Protection Agency to assess the implications of trade liberalization on U.S. pollutant releases and natural resource use at a county level of geographic detail, with releases and resource use attributed to commodities at the highest level of detail possible (6 digits) within the North American Industry Classification System (NAICS). TEAM helps implement a recent Executive Order of the U.S. President requiring environmental reviews of all new major trade agreements but can also be used to analyze environmental changes caused by any structural shifts or growth in economic activity.