

STDF PROJECT GRANT APPLICATION FORM

Project Title	Beyond Compliance: Integrated Systems Approach for Pest Risk Management in Southeast Asia
Objective	To enhance competency and confidence in the SE Asian subregion in applying Systems Approach to trade opportunities through the use of innovative decision support tools.
Budget requested from STDF	USD 600,000
Total project budget	USD 904,686
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I. BACKGROUND

1. SPS situation and issues

Sanitary and Phytosanitary (SPS) capacity is a priority in all of the Southeast Asian countries and has been the subject of extensive study and development projects. In the area of plant health, Naumann and Lee (2009) suggest that success of SPS capacity-building programs can be measured by the number of bilateral quarantine agreements operational or under negotiation; and while these have remained static or tended to grow in number very slowly in some countries, in some (the Philippines, Thailand and Vietnam) they have risen significantly. These countries and others participate consistently in standard setting processes, through the International Plant Protection Convention (IPPC) and the relevant regional plant protection organisation (RPPO).

This project is focused on an aspect of SPS capacity – development of pest risk management plans using a combination of measures – in the Southeast Asian (SE Asia) subregion of the membership of the Asia and Pacific Plant Protection Commission (APPPC), one of the RPPOs under the International Plant Protection Convention (IPPC). National Plant Protection Organisations (NPPOs) from five of these countries – Indonesia, Malaysia, the Philippines, Thailand and Vietnam – are requesting and participating in the project, but the outputs are relevant to other countries in the subregion and to the region as a whole.

STDF provided a Project Preparation Grant for this project (PPG-328) to the NPPO of Malaysia, Jalan Sultan Sallahuddin, and technical advisors from Imperial College London (ICL) and Queensland University of Technology (QUT), under which a workshop was held in Kuala Lumpur in August 2010. Each participating country (those in this proposal plus the Philippines) made a presentation on its SPS capacity and needs in relation to the application of Systems Approach to pest risk management. The workshop made clear that many countries are employing or seeking to employ Systems Approach, but faced difficulties relating to lack of data and uncertainty about the risk mitigation measures and their application. They were seeking to use this approach more fully because of problems that were shared between countries, such as technical concerns about the food and occupational safety of some single treatments (generally chemical) and the high risk of trade disruption with single treatments when a failure occurs. There was also a perceived power imbalance in trade agreements in which risk mitigation measures were imposed, rather than developed bilaterally.

A base level of capacity is needed for this type of project for the early testing phase. Yet it also is fair to say that the countries participating cover a range of capacity and experience, not only in the application of ISPM no. 14, *The Use of Integrated Measures in a Systems Approach for Pest Risk Management* (FAO, 2002), but also in terms of engagement with private sector, quantitative analysis in Pest Risk Analysis (PRA), and consistent and verifiable application of risk management plans for trade. These SE Asian countries already engaged in systematic strengthening of phytosanitary capacity have stated interest in moving on to improved Pest Risk Management, both as exporters and importers.

References:

Food Chain Evaluation Consortium [FCEC] (2010). Evaluation of the Community Plant Health Regime. DG SANCO, European Commission, Brussels, Belgium. Report 386pp and Annexes 314pp http://ec.europa.eu/food/plant/strategy/docs/final_report_eval_en.pdf and http://ec.europa.eu/food/plant/strategy/docs/annexes_eval_en.pdf

Naumann I & Lee W 2009. Sanitary & Phytosanitary Capacity Building Program for ASEAN Member Countries. Australian Government Dept of Agriculture, Fisheries and Forestry, Canberra.

Van der Meer K 2007. Overview of SPS Capacity Building Needs Assessments and Compliance Studies for Cambodia, Lao PDR and Vietnam 2001-2006. Standards and Trade Development Facility, Geneva.

STDF. 2010. Mobilizing Aid for Trade for SPS-related technical cooperation in the Greater Mekong Sub-Region. STDF Briefing no. 5. Standards and Trade Development Facility, Geneva.

Whittle, P., Quinlan, M. & Bin Tahir, H. 2010. *Beyond Compliance: Report on workshop for STDF Project Preparation Grant 328. Developing trade opportunities: an integrated systems approach for pest risk management*. Report of workshop held in Kuala Lumpur, 16-19 August, 2010. 28pp

2. Links with national development strategies and policies

Developing countries in the subregion have a high dependence on agriculture and development of the agriculture sector is essential to obtain food security, a reduction in poverty and sustainable growth. This is also true in the more developed countries in the subregion. In recent years, Malaysia has reorganised its quarantine service and allocated major new resources to relevant technical areas. The Philippines has had a number of initiatives in the past decade, focusing on training using local expertise, and building technical capabilities in centres and ports. Thailand has revised its plant quarantine regulations and is integrating its quarantine research group with its regulatory and operational group. Also it is providing annual budget allocations for technical pest resources. Vietnam has drafted a new plant protection and quarantine law and has increased plant health staff.

Such individual national initiatives demonstrate an increasing commitment to SPS capacity. Entry to high-value markets in global trade is a priority in the subregion and the need for compliance with SPS requirements is clearly understood. Increased compliance with SPS requirements has been shown as a “key challenge to further unleash export potential” (STDF, 2010).

At the same time, countries are waking up to the impact of import policies in this sector. Imports without adequate risk management measures have introduced numerous pests to countries in the subregion over the past decade, with the opening of borders and increase in trade. Most find that detection of a new pest occurs only after it has become well established (Whittle et al 2010). The contiguous countries then face new introductions along unprotected borders, so that the subregion becomes harmonised – not in their phytosanitary protection, but in their phytosanitary problems.

For the subregion, the 2007 ASEAN (Association of Southeast Asian Nations) Charter envisages overcoming SPS barriers as providing a major contribution to economic integration and development. It identifies Food, Agriculture and Forestry as a ‘priority integration sector’ and requires ‘harmonisation’ of SPS measures. The Strategic Plan of Action on ASEAN Cooperation in Phytosanitary Measures (2005-2010) calls for harmonisation of phytosanitary measures, compliance with WTO/SPS requirements, strengthening of national pest risk analysis frameworks, and biosecurity planning. SPS issues are detailed in the draft ASEAN Trade in Goods Agreement (ATIGA) and the ASEAN Australia New Zealand Free Trade Agreement (AANZFTA).

The Asian Development Bank (ADB) draft Action Plan for improved SPS in cross border trade cites improvements in other components of a sound plant health system such as enhanced diagnostic capacity, improved laboratories, low cost disinfestation systems and improved quarantine treatments. This has been especially significant in Cambodia, Lao PDR, Myanmar and Vietnam. Vietnam participated in a preparatory survey to strengthen phytosanitary measures, with financial support from Japan International Cooperation Agency (JICA). This sets the stage for the NPPO’s cooperation with external resources to achieve national objectives in plant health.

Ongoing regional efforts have complemented national ones. For example, over the last five years workshops in ISPM awareness, pest surveillance, PRA, diagnosis and taxonomic identification of specific plant pests and diseases and management of pest and disease collections were supported by CABI SEA in benefit of the SE Asian region. All of these components could constitute phytosanitary measures and/or control points (model nodes). The CABI SEA regional project funded by Canada’s IDRC on “Knowledge Networks and Systems of Innovation to support Implementation of Sanitary and Phytosanitary Standards in the Developing Countries of Southeast Asia” identified the major constraints faced by developing countries in the region in their implementation of ISPMs. IDRC has since given support to the establishment of the ASEAN Regional Diagnostic Network (ARDN) for sharing plant pest diagnostic knowledge and resources.

Although significant PRA-training opportunities have been provided in SPS capacity building programs, improvement in PRA remains a key objective as noted in the ADB SPS Action Plan for

GMS countries. Each country in the PPG-328 workshop emphasised a lack of confidence in the development of pest risk management plans in line with the results of the PRA. The concepts of Systems Approach were particularly problematic. The strengthening of national capacity for PRA will benefit from including improved decision making in the Pest Risk Management phase.

This project additionally supports national and regional objectives to reduce pesticide use and employ Integrated Pest Management (IPM) practices. Some SE Asian exporters have suffered a high number of detentions for pesticide residues. Overuse of pesticides is often in reaction to related pest detections in trade. The highest number of interceptions for regulated plant pests on commodity trade into Europe has come from SE Asia: well over 60% in 2009 (FCEC, 2010). The US NPPO has noted the same situation in recent years. Other countries may be trying to expand or initiate new trade without availability of highly efficacious end point treatments suitable for the commodity in question.

3. Past, Ongoing or Planned Assistance

The project has strong potential for linking into the Enhanced Integrated Framework (EIF) and Aid for Trade, because it will form the basis for maintaining trade and supporting new trade opportunities based on System Approach for pest risk management. Agricultural and trade systems that are developed and/or identified in the project will provide opportunities for investment in the establishment of good agricultural and trade practices through the supply chain. This overall approach of following a chain of production has been proven in terms of food safety in the processed food sector. This is relatively new and unsupported in the plant health sector of Southeast Asia.

In fact, in general support for SPS capacity in plant health in the region has been minor compared to animal health and food safety, against a backdrop of relatively poor plant health infrastructure, at least in CLMV (Cambodia, Lao PDR, Myanmar and Vietnam) countries. However, recent support has been given to build human capability and technical resources in plant health surveillance, border quarantine and treatments, and pre- and post-border activities including risk mitigation, biosecurity planning, pest risk analysis, plant pest and disease diagnostics and pest and disease reference collections. The Standards and Trade Development Facility (STDF) has facilitated support of SPS capacity evaluation and building, including through several sub-regional projects. Such projects strengthen specific components of SPS management systems that are crucial for success.

SPS-capacity-building programs are provided regionally or multi-country into ASEAN or APEC (Asia-Pacific Economic Cooperation) members, countries of the Greater Mekong Subregion (GMS) or the CLMV countries or bilaterally to country NPPOs or other agencies. SPS-related assistance has been provided in the region by Australia, Canada, Japan, USA, Norway and the European Community in particular, with different foci from these sources on regional or country issues, and particular areas of SPS such as plant and animal health and food safety.

Partners in this project are either participating in or are cognisant of essentially all plant health development programs in the subregion. There is no duplication with the proposed project and other initiatives. Instead, this project enhances the PRA framework already supported through other training and the international standards, by applying probabilistic modelling to manage uncertainty. Early technical training in the project will cover the basic concepts of Systems Approach and of the type of tools emerging in Europe, Australia and New Zealand to more easily design, evaluate and monitor Systems Approach-based pest risk management plans.

Coordination, in terms of information and participation as observers as desired, will be sought with all ongoing externally funded projects and programmes on PRA and general capacity building in the SE Asian region. Bilateral development agencies including JICA, NZAID and AusAID, were also contacted during this pre-funding period and may participate in the launch meeting at their own expense. New ties with environmentally focused projects can be forged for stakeholder involvement,

once the project is underway. This includes Integrated Pest Management programmes and even private Good Agricultural Practice registration schemes, as well as groups supporting reduction in pesticide use and protection from invasive species. Representatives of the most relevant of these groups have been kept abreast of the project proposal by individual correspondence. The most important new linkages will be with agricultural industry in locations or topics in which consultation has been minimal to date.

External to the SE Asian region, the European PRATIQUE project for enhanced PRA is in its final stage and outcomes are being monitored. ICL is a partner in PRATIQUE and has kept the Management Committee of that regional project informed of the link to this proposed project. Meetings were held with World Bank to discuss the PPG and with USDA/APHIS after the PPG Workshop. Great effort is being made to coordinate with the Australian NPPO in particular, but also other important importers in the region. QUT has attended meetings on Systems Approach and use of Bayesian Networks (BNs) convened by the Australian NPPO over the past two years. The Australian NPPO's internal work on this tool should be closely tracked by the future project team.

Australia's Cooperative Research Centres programme for National Plant Biosecurity (CRC NPB), of which QUT is a Core Participant, committed extensively to observing and participating in PRATIQUE in the past three years. In 2011 the CRC will make a bid for a further 7-year term from mid-2012, and it wishes to participate in implementation of PRATIQUE outputs if successful. The Beyond Compliance project is of great interest to the CRC in two regards: 1. Systems Approaches are a key strategy for developing biosecurity market access and the project takes advantage of relevant CRC expertise; 2. Collaboration with ICL is strategic and the CRC wishes to extend its current extensive engagement in SE Asian projects. External funding for this project, if based in the CRC NPB, will draw substantial in kind and cash funding for more expanded Australian participation.

Direct ties with delegates to the Commission for Phytosanitary Measures (CPM), the IPPC Secretariat, and the participants in the International Advisory Group on PRA (IAGPRA) will continue so that everyone is informed of the progress made and in agreement with the objectives and planned activities. We will articulate and share the potential contribution of this project to the ADB SPS Action Plan for GMS countries and, through reports to the Expert Working Group on Phytosanitary Capacity Building or by posting on the Technical Resources portion of the IPPC website. This appears in line with the recently adopted IPPC Capacity Building Strategy.

II. RATIONALE, JUSTIFICATION & OBJECTIVE

4. Specific problem to be addressed

International trade and travel can introduce exotic pests that pose a threat to both natural plant resources and managed crop and forest production. An effective plant biosecurity scheme, operating in each country and region, can prevent the introduction of exotic plant pests while still allowing movement of goods and people without undue restriction.

A critical factor in this system of balances is the use of pest management measures that are justifiable and in proportion to the threat posed. Beyond this point measures may be considered to be non-tariff trade barriers. Under the harmonised regimes of the International Plant Protection Convention (IPPC) and the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS), the National Plant Protection Organisations (NPPOs) use Pest Risk Analysis (PRA) to estimate the risk from specific trade or other pathways and to propose phytosanitary measures to reduce that risk to a level acceptable to the importing country.

The *raison d'être* for the PRA process, however, is to find the management options that will keep free trade “safe”. The IAGPRA recognizes that the Pest Risk Management phase is often the weakest. This phase consists of evaluation of management options and selection of the best phytosanitary measure, or combination of measures, to apply to trade or other pathways to achieve an appropriate level of protection (ALOP). There has been relatively little support for capacity building in the decision-making process for the Pest Risk Management phase of PRA since the advent of the harmonised PRA approach.

Historically, guidance on Pest Risk Management has been general, as in the International Standard on Phytosanitary Measures (ISPM) nos. 2 and 11 on the overall PRA process, or more focused as in the ISPM no. 4 on pest free areas (FAO, 1995) or ISPM no. 14 (FAO, 2002) on the use of Systems Approach. Although more detailed, ISPM no. 14 in particular has proved challenging to implement. This is largely due to the perceived complexity of calculating a combined impact of measures when the efficacy of each measure is not well known. Importing country NPPOs therefore have been more likely to select the highly documented, end-point treatments (e.g. commodity treatments) that were developed under laboratory conditions to achieve a measurable impact on the described risk, even when such treatments have other disadvantages.

Now, the days of relying on such end-point treatments to “clean up” infested products are past. Importing countries’ national objectives and consumer demands align more closely with Good Agricultural Practices (GAP) in the field, confirmatory targeted pest trapping, controlled handling along the chain from farm to fork and non-chemical interventions. Yet the challenge remains for the importing NPPO to justify a requirement for such combined measures.

Exporting countries also may prefer these combined measures over sole reliance on pesticides and fumigants. Currently when the exporting country’s NPPO proposes equivalent options, many times there are years of delays before the importing NPPO reaches some decision. The opaque process is due largely to the lack of clarity on how to determine efficacy of measures. An internationally agreed framework for evaluating the impact or efficacy of phytosanitary measures (especially those other than end-point treatments) will support increased trade, while maintaining evidence-based pest management measures.

Using a BN offers a range of benefits to developing, negotiating and managing Systems Approaches agreements, compared to conventional systems:

- using modelling based on a control point approach to risk management, as opposed to ad hoc consideration of the effects of phytosanitary measures, allows a more structured and objective decision-making process;
- a Bayesian approach accommodates uncertainty in the model, which in most situations will be substantial due to a lack of quantitative data. Bayesian statistics can use expert estimates, which are often well-founded even where there is no published information. The sensitivity of the system to uncertainty in these estimates can then be tested, so that further data can be sought, or it can be demonstrated that additional data is not essential;
- developing a BN and populating it with node estimates can be a highly cooperative activity among stakeholders, which will potentially simplify agreement on jointly developed solutions;
- a BN is a learning system, so as data becomes available during trade or during a test period, the model can be updated. This also could provide a mechanism for monitoring and review of the trade and its phytosanitary security. It may also create opportunities for trade that is seasonal or otherwise restricted and thus requires monitoring of changes in key factors.

The project will directly support implementation of ISPM no. 14, *'The use of integrated measures in a systems approach for pest risk management'*, which gives guidance on the use of a combination of measures that, when integrated, provide effective mitigation of pest risk in a way that is the least trade restrictive. (It also will apply to single measures, but these have been less problematic in the past). Systems Approaches are of increasing interest to NPPOs in the region for addressing emerging phytosanitary trade issues outlined elsewhere in this proposal.

A similar initiative has been taking place in Australia in light of the likely loss of an important post harvest pesticide. While this has been focused on domestic interstate trade, it follows international standards (ISPMs). Both Australia and New Zealand are in initial phases of developing BNs for supporting import and other strategic decisions in plant health and biosecurity. Australia has developed a new policy on using Systems Approach under consultation with private and public stakeholders.

A notable advantage of Systems Approach is that additional measures may be applied initially (when technical certainty or the statistical confidence level is low), then (after sufficient trade has taken place and data is available to increase the confidence level) may be removed. By the same token, if a system is designed that has unacceptable failure rates, additional measures may be added in an evidence-based manner. Both cases occur while trade is ongoing, often without requiring further regulatory or normative changes.

The system is simply a choice of how to manage and express the already ongoing use of data and lack of data. Decisions are being made without such a harmonised framework or tool. There are instances, such as the draft ISPM on Systems Approach for control of citrus canker, in which years of expert consultation have led to no final agreement. The expensive conclusion has been that no decision has been reached and no final draft ISPM has been submitted for national consultation and adoption by the CPM.

Finally, the project outcome will speed up consideration of proposals for equivalence (ISPM no. 24). Presently, while the guidance provided for equivalence is useful, the lack of agreement on how to determine efficacy results in challenges in implementation of ISPM no. 24 because each importing country or region may have different data requirements, or even inconsistent requirements, for analysis of efficacy. Originally it was understood that one cannot implement the ISPM on equivalence until a common understanding of efficacy and some ways to measure it had been achieved. This view was abandoned when a series of Expert Working Group meetings and consultations had not yet produced a satisfactory conclusion. Although the tool described in this project will not take the place of an ISPM on efficacy, it could very well enhance clarity on the concept and provide some useful examples for further discussion from a common perspective that was not held at the beginning of discussions regarding a proposed ISPM on efficacy.

All of these outcomes are related to the IPPC Strategy for Developing National Phytosanitary Capacity (Strategic Area 1, 2b and 6) in terms of enhanced implementation of ISPMs and the ability to monitor and evaluate performance, and the use of tools for phytosanitary systems that are fit for purpose and adapted to national and regional conditions. The process of stakeholder involvement in design of Systems Approach and the use of an agreed framework for negotiating with trade partners indirectly support Strategic Areas 5 regarding advocacy/communication by NPPOs. A project to support this approach to Pest Risk Management will be highly cost effective.

5. Target Beneficiaries

This project works at the level of trade policy and developing and operating SPS-based trade in plant commodities to higher value markets. Thus, the indirect and final beneficiaries include small farmers and all participants in the value chain from farm to export market. The value chain will benefit from

new opportunities allowing sale of product into higher value markets than currently available. This should result in higher returns on current production, but would require participation in Good Agricultural Practices. It may also confer greater stability of trade, since trade under Systems Approach should be more robust than trade based on single measures.

A simple calculation of the economic impact of possible trade resulting from the Case Studies will be presented with reports. However, realistically, the time frame will not allow for in depth calculations. Furthermore, assignment of the full resulting trade to only this project may prove false, as all of the components of the management system as well as the NPPO trade negotiating teams would have played a part.

6. Ownership and stakeholder commitment

There is substantial interest in this project, from both the subregion and the main trading partners. The NPPOs attending the PPG-328 workshop as potential participants were Malaysia (host organisation), Indonesia, Thailand, Vietnam, and the Philippines. Other countries in the subregion had expressed interest, including Singapore. Further interest emerged at a subsequent meeting on the South American Leaf Blight (SALB) consultations in December 2010 in Malaysia.

Criteria for countries to participate included:

- clear interest of risk management experts and NPPO executives to engage in the project;
- existing exports that required the NPPO to negotiate a plan and to oversee or monitor application of phytosanitary measures;
- experience with using combined measures or Systems Approach for an export market, or the recognized need to enhance this capacity;
- membership in the APPPC and contracting party to the IPPC.

At the PPG workshop's conclusion, each of the five countries expressed a desire to participate in the full project. The budget is presented to cover four of these countries' participation. We are seeking funds for additional countries to "buy in" with external funding to the project, but will aim for 2 regional import case studies and 3 national export examples with funding from STDF.

The project concept was originally presented by Imperial College London (ICL) and Queensland University of Technology (QUT) in conjunction with the Malaysian Department of Agriculture, in consultation with the APPPC. The resulting project design has taken into account all comments by the SE Asian representatives in the PPG funded workshop, with participation as already noted. Administration will be led by CABI and the research components will be led by ICL and QUT. The project will be undertaken together with the National Plant Protection Organisations of Malaysia, Thailand, Vietnam and the Philippines participating in the Case Studies. Indonesia will participate in the launch and workshop meetings and conduct a Case Study only if additional funds are obtained.

The project taps into clear organisational/political priorities by having individuals work on trade opportunities that are of existing policy significance to their NPPOs. The project links together NPPOs by running case studies in several countries at once; country-based case studies that will be of interest in other countries, as well as regional case studies. Inter-regional linkages will be further enhanced by joint training and reporting in the project, so that new individual capacity is supported collegially. Once the project is granted, candidates for graduate studies (PhD and MSc) will be identified as part of the Technical Framework and Case Studies WPs. One MSc student from ICL will participate under the Governance WP.

See **Appendix 4** for letters of support from the above organisations and other stakeholders.

7. Relevance for the STDF

The project directly supports two of the STDF themes:

Major - Theme 2: Capacity building for public and private organizations, notably with respect to market access.

Minor - Theme 1: SPS capacity evaluation and planning tools, including the need for and implications of international standards and their application.

STDF supported development of this project via Project Preparation Grant 328 (see above) for a consultative workshop in Kuala Lumpur in August 2010. The workshop confirmed a high degree of stakeholder support and a resolution to continue development of a full project. A major outcome of the project will be a tool that assists in development of trade agreements when a combination of risk management measures is considered most appropriate.

The project objectives have been articulated against a backdrop of Phytosanitary Capacity Evaluation (PCE) results that emerged from previous FAO work. Because of limited capacities, developing economies in the region have approached international standards, particularly those related to pest risk management, from the perspective of meeting importing country requirements. Application of Systems Approach allows phytosanitary and market access personnel to understand contributions of each individual management measure to the reduction of risk. Greater confidence in the Pest Risk Management component will potentially enable faster negotiation of trade and a greater openness to new phytosanitary trade agreements based on Systems Approach.

8. Development Objective

SE Asian NPPOs have acknowledged the importance of capacity in PRA and the Pest Risk Assessment phase through ongoing training, projects and programmes. This project in the Pest Risk Management component will potentially enable faster negotiation and a greater openness to new phytosanitary trade agreements based on Systems Approaches.

At the PPG-328 workshop in Kuala Lumpur in August 2010, there was a high level of agreement on the importance of finding new ways to develop trade agreements based on Systems Approach, in order to solve problems with single-measure agreements. NPPOs were enthusiastic to participate in a future project applying the Control Point/Bayesian Network template in Southeast Asian case studies in order to develop the approach, to develop new trade opportunities, and to improve country and regional capacity.

The workshop decided the project should be named “*Beyond Compliance*”, recognising that it will lead to more sustainable trade opportunities in plant products/commodities by implementing a new, versatile and effective method to map out and model pest risk management in trade. Such a transparent, mutually agreed framework for understanding how much each phytosanitary measure – or measures in combination – reduces the estimated risk could open new trade and present alternatives to prohibition for existing trade that has encountered problems.

9. Expected End-of-project Situation and Sustainability of Project Results

At the end of the project, we expect to have a tested tool that can be applied without specialised knowledge in modelling. There will be competency in each participating country, in the form of at least one resource person who can share the approach with colleagues within his or her NPPO, and at

the regional level. If the opportunities for MSc or PhD training are taken up, the competency in the tool will be highly developed so that the country resource person might provide South-South training, or training to other sectors in his or her own country.

The beauty of the type of tool proposed is that it is easy to subsequently improve it, develop “plug in” enhancements and share it. For example, a database of estimated costs or efficacy of internationally recognised treatments (e.g. those included in ISPMs) could be developed in some future project, to provide more precise input to nodes in the existing tool. The tool will either be based on free share ware, or inexpensive software that is readily available. There will be no intellectual property barriers for its application, although there may be some advantage to licensing to facilitate creating a registered continued learning group of users.

The project is timely in engaging the Southeast Asian subregion in developing this method for Systems Approach pest risk management, since it is under consideration simultaneously in the European Community and Australia and New Zealand. This will enable the Southeast Asian subregion to participate in new opportunities rapidly. To the contrary, if not involved at this stage, the participating countries may face the need to use an already completed tool that might not encompass their own contextual concerns and insights.

The PPG workshop participants decided the project should be named “*Beyond Compliance*”, recognising that it will lead to more sustainable trade opportunities in plant products/commodities by implementing a new, versatile and effective method to map out and model pest risk management in trade. Such a transparent, mutually agreed framework for understanding how much each phytosanitary measure – or measures in combination – reduces the estimated risk could open new trade and present alternatives to prohibition for existing trade that has encountered problems. Agreeing on a harmonised framework requires less investment of resources and time by each individual country, avoids prolonged delays in decision making and clarifies criteria for decisions.

III. IMMEDIATE OBJECTIVES, OUTPUTS & ACTIVITIES

10. Objectives, outputs and activities, including logframe and work plan

The project addresses a range of common issues in trade agreements for plant commodities based on single risk-mitigation measures. Systems Approaches may help solve these issues, but can be complex to develop and negotiate due to structural and quantitative uncertainty about the system. Uncertainty can be managed using probabilistic modelling and the project will implement a Control Point/Bayesian Network modelling approach to develop Systems Approaches for a set of case studies in Southeast Asia. It is not necessary to have such a tool to develop a Systems Approach; experience and a recent global review conclude, however, that many NPPOs are either lacking in experience with Systems Approach or lacking in confidence in its application. This tool will clarify thinking around proposed independent, dependent and verification measures and ease comparisons of similar pest risks.

I. PROJECT OBJECTIVES

1. To enhance competency and confidence in the SE Asian sub-region in applying Systems Approach to trade opportunities through the use of innovative decision support tools
2. To provide and test decision tool(s)
3. To implement the BN/control point approach to Systems Approaches
 - Evaluation of method

- Potential trade opportunities progressed
- Distillation of experience into a guidance document and/or software based tool
- Facilitate adoption and use of method globally.

II. PROJECT OUTPUTS

1. A review that describes pest risk management for imports and exports in the region, including design and evaluation of these measures
2. Case studies of priority trade opportunities using Systems Approach for pest risk management (three export and two import cases have been identified for study; the tool can be demonstrated with fewer, should any barrier arise to completion on any one of them)
3. Demonstration and evaluation of quantification and analytical tools (specifically Control Point and Bayesian Networks [CP-BN]) to support use of Systems Approach
4. Establishment of a competency base with the methodology in the Southeast Asian subregion
5. A plan for a harmonised framework for Systems Approach.

Outcomes of the application of Systems Approach include more robust pest risk management in the region, greater inclusion of stakeholders in the process, more confidence in trade negotiations and new opportunities for trade in a phytosanitary context.

III. PROJECT ACTIVITIES

Activities are outlined in the Work Plan (Appendix 2), which also shows the allocation of funds by activity. The activities are aligned with project objectives in the logical framework in Appendix 1. The participating experts for management, technical support and implementation are presented in Appendix 3, along with a brief description of responsibilities. Below is an outline of the Work Package activities.

A. WORK PACKAGE: TECHNICAL FRAMEWORK

Objective: To provide technical support for application of CP-BNs to Systems Approach case studies and develop the underlying decision support tools for a harmonised framework

WP Leader(s): Technical Framework WP Leader – QUT

Activities:

- Establish additional data requirements for PRA approach – what is needed to move from PRA to CP-BN
 - Uncertainty/probability
 - Risk management options
 - Identifying independent/dependent measures
- Software choices
- BN concept and theory
- Best practice eliciting expert opinion
- Validation of the CP-BN approach
 - Evaluation of case studies

- Sensitivity Analysis
- Simulations
- Technical development of decision support tools
- Support MSc or PhD students involved in the project

Technical support will be led by QUT with input from ICL for user enhancements and computer model support.

B. WORK PACKAGE: CASE STUDIES

Objective: To demonstrate the control point BN (CP-BN) method for Systems Approaches

- Apply the method to case studies in the SE Asian sub-region
- Progress priority trade opportunities
- Establish a regional base of competency with the methodology
- Evaluate and make recommendations for harmonised policy

WP Leader(s): Technical WP Leader plus Country Project Leaders

Activities:

- Final choice of case study
- Obtain or prepare PRAs for case studies
- Develop Control Point Bayesian Nets (CP-BN) for each example
 - Proposed 3 National (export) and 2 Regional (import) Case Studies
- Identify gaps/request additional data
- Sensitivity analyses
- Revise guidance on going from a PRA to this model and modify CP- BN
- Individual case study reports
- Merged report of case studies
 - Lessons learned/evaluation

Funding to support three national (export) and two regional (import) Case Studies is contemplated in the budget. Final case study selection will be done by the end of the launch meeting of the project.

Case Studies proposed during the PPG Workshop

Commodity	Exporting country	Importing country
Fresh produce (not rubber plants) that may carry South American leaf blight of rubber	Countries with SALB	Regional
Oil palm planting material	Countries outside the region	Regional
Dragon fruit	Vietnam	South Korea, Taiwan
Jackfruit	Malaysia	China, Australia
Orchid cut flowers	Thailand	Europe
Mangosteen, avocado	Philippines	USA

C. WORK PACKAGE: GOVERNANCE

Objective: To increase confidence in the use of Systems Approach within the government's role; harmonised policy framework, linked with decision support tools

WP Leader(s): ICL

Activities:

- Institutional approaches to Pest Risk Management
 - Existing approach
 - Documentation and support for audits
 - Concepts of Systems Approach
- Enhanced stakeholder engagement
 - Review current situation
 - Share best practice for collaboration with stakeholders, specific to Systems Approach (e.g. case studies)
- Translation of project results to international plant health framework
 - Create strategies for negotiating on Systems Approach
 - Issues of equivalence
 - Interact with IPPC initiatives such as Implementation Review for related ISPMs
- Validate project approach and outputs
 - Refinement of milestones and measure of project impact
 - Reaction of trading partners

D. WORK PACKAGE: COMMUNICATIONS

Objective: To maintain communication within the project and disseminate results to stakeholders

WP Leader(s): CABI SEA

Activities:

- Manage monthly project calls
- Organise project workshops and training
- Monthly reporting on status of milestones
- Coordinate with the APPPC and the IPPC activities
- Liaise with other regional bodies (e.g. ASEAN)
- Prepare dissemination materials (e.g. posters, brochures, articles, subject reports, press releases)
- Manage website or other platform for work space for project
- Any procurement of computer equipment or internet services

E. WORK PACKAGE: ADMINISTRATION

Objective: To ensure the smooth and successful achievement of project objectives

WP Leader(s): Project Manager, CABI SEA

Activities:

To provide all aspects of administrative support to WP leaders and staff, including:

- Liaise with funder
- Contracting
- IP management and project branding
- Financial records and reporting (in conjunction with individual budget lines)
- Monitoring milestones
- Progress reports and final report

11. Public-public or public-private cooperation

The NPPOs of four or five countries will be interacting with each other, their RPPO, and with NPPOs of target market countries, some of which are exploring how to participate in the project itself.

The project involves the review and modelling of potential trade opportunities for export of plant commodities to biosecurity-sensitive importing countries. Clearly this involves intimately the market supply chain and it is logical to involve the private sector in the project from the outset. This was discussed at the PPG 328 supported workshop and accepted as a principle, even though most countries have little experience in this open engagement during the PRA phase.

12. Risks

Assumptions and risks

A number of risks to the completion of the project have been identified during its formulation. These are summarised in Appendix 1. In order to reduce and manage these risks, a number of actions have been incorporated into the project. In those instances where some risk is outside the control of the project partners, measures have been taken to minimize the impact of any such events.

Actions are described under each opportunity/risk identified.

Recruitment of supplementary funds

Description: The project is substantial in scope: activities have been designed to match the funding from STDF's preferred limit of USD 600,000 plus the considerable sum of in kind contribution already secured. Further Case Studies may be introduced to the project as additional funding arises, in particular with the Philippines since that NPPO participated in the initial planning and can attend the project launch meeting and final workshop. However, at this level of funding, the administrative and technical support could not accommodate more than one buy in. Activities related to governance are very minimal in this project. Additional funding in that area would allow for broader scope in the translation of the technical tool to actual trade agreements.

Upon disbursement of funds, QUT will receive an additional, proportional contribution through an Australian government program that will provide overheads for that group's participation and possibly additional staff support. (This aspect has a high likelihood and an important impact, which is why the funding will all be directed through this institution to the managing institution.) This source and other supplementary funds will enable QUT to participate more fully in Year 2. Additional funds would enhance workshop participation and allow for further training activities and dissemination of results, possibly beyond the two year period.

Likelihood of risk: *Moderate*

Impact: *Moderate*

Mitigation: After submission of the main project, seek to obtain supplementary funds.

i. Collaboration of necessary stakeholders obtained e.g. industry

Description: For the project to succeed fully, the collaboration and involvement of commercial and industrial stakeholders is important as they will provide details about production chains for the target agricultural product, bring insights to what measures will work in reality and what could affect their impact, and drive the need for trade agreements as import and export markets are developed.

Likelihood of risk: *Low*

Impact: *Moderate*

Mitigation: Ensure early involvement of industry stakeholders through invitations to workshops and discussions groups and through publicity of project in suitable media

ii. Other necessary conditions exist (e.g. political stability, national commitment to address SPS constraints, government support and allocation of resources, etc.)

Description: The project assumes that the broader arena in which the project takes place remains suitable for the implementation of the project i.e. collaboration between countries within the region and continued good access to all countries and stakeholders within them. Disruptions from natural disasters or political events are likely to cause delay rather than failure of the project. Travel insurance may help mitigate some of these impacts. Foreign exchange fluctuation would be likely to be favourable rather than costly to the project in such instances. (USD to GBP and to AUD rate changes would have greater impact.)

Likelihood of risk: Low
Impact: Moderate/High
Mitigation: The involvement of at least 4 countries within the project reduces this risk since it is unlikely that political or other events beyond the control of the project group will impact on all countries. It should therefore be possible to continue development of the approach and associated tools in the event of the situation in one country becoming unworkable.

iii. Collaboration of partners is successful

Description: The project is reliant on the cooperation and collaboration of partners in the project. If cooperation is not possible then the development of the ideas will be affected and it will be harder to ensure that the resulting tool is applicable across a range of countries and situations. The NPPOs are participating because ultimate decision making in this field lies with them.

Likelihood of risk: Low
Impact: High
Mitigation: The pre-project meeting has established good working relationships between the partners and a good level of understanding of what is required over the course of the project minimising this risk. The Chief Plant Protection Officer selected the individual counterpart, if not him or herself.

iv. National bodies and industry can be persuaded to use the new tool(s) and approach

Description: It may be possible to develop the tool(s) but they may not be taken up by some parties, thus lowering the project impact.

Likelihood of risk: Moderate in short term
Impact: Low
Mitigation: The tool supports decision making on the part of the party using it. It facilitates negotiation if the other trading partner also uses and understands the tool, but ultimately it is the management plan not the tool that will be approved in each agreement. The close involvement of industry and other relevant stakeholders from an early stage should ensure that the needs and views of the industry can be incorporated into the approach or any doubts addressed.

v. Tool is produced and is successful

Description: Production of the tool is reliant on the successful execution of the project within budget and on time. Success will depend upon the correct analysis of the situation and subsequent inclusion of this information in the approach and tool.

Likelihood of risk: Low
Impact: High
Mitigation: Good project management, the expertise of the partners and the understanding gained from the pre-project meeting will all ensure that this does not occur. Both QUT and ICL have been working with this tool prototype, in consultation with other experts, for plant health issues. In QUT, the Bayesian Research and Applications Group (BRAG) has in depth experience of communicating the modelling approach. ICL has provided user friendly, computer based representation of matrices and BN for decision makers in plant health and control of invasive species.

vi. Adoption rates of tool(s) and results of project are both good enough to justify development of harmonised guidance for regional application of tool

Description: The approach and tool developed must be shown to be successful and appropriate for use in the region and sufficiently flexible to be used on the wide range of agricultural goods traded by all the countries within the region. The assumption is that all parties will recognise the cost effectiveness of using a harmonised approach rather than developing alternative approaches to supporting clear thinking in design and evaluation of Systems Approach.

Likelihood of risk: Low
Impact: Moderate
Mitigation: The inclusion of a number of countries both within the region and outside and a broad range of commodity types should ensure that the approach and tool(s) are appropriate for use in wide variety of situations. Lack of data is not an obstacle to application of such a tool. The expertise of the partner will also help to ensure that other scenarios are examined that are not covered by the case studies. Therefore the most likely source of this risk is if NPPO personnel change and the knowledge and confidence are not passed on.

vii. *Harmonised guidance is applicable globally*

Description: The harmonised guidance for application of the tool that is developed is appropriate for implementation at the global level, which is recognised by the CPM.

Likelihood of risk: Moderate
Impact: Low
Mitigation: The experience and expertise within the group should ensure that any harmonised guidance is drafted and produced in such a way that it can be understood globally. This guidance will be proposed to the CPM at the global body for plant health, for consideration. The factor beyond this project is the adoption of the guidance. The tool may be successful without becoming an ISPM, for example. The CPM may recognise its use without formal endorsement or indeed fail to consider the issue if other agenda items take precedence.

viii. *Methodology can be applied successfully to Systems Approach*

Description: The Bayes-Net approach is one way of quantifying efficacy associated with plant risk management measures and its use has been explored in other projects (e.g. PRATIQUE) with success. This method has already been shown to be supportive of the application of Systems Approaches without full development of the method as a ready to use tool.

Likelihood of risk: Low
Impact: High
Mitigation: The experience of the group in the use of this approach in this specific area and in other related areas should mitigate against failure. At the PPG workshop the project partners found, with little exposure, they could manage a prototype of such a tool. The objectives of the project could be met with simpler versions of support tools should this methodology appear to be too demanding in some way. Project technical resources and steering committee members have decades experience with Systems Approach, to ensure the tool matches the needs of its application.

ix. *Project proceeds as planned*

Description: The day to day running of the project and communication among partners is a critical foundation for timely delivery of project outputs.

Likelihood of Risk: Low
Impact: High
Mitigation: The dedication of a highly experienced individual within CABI to specifically manage the project will ensure that clear lines of communication are established, deadlines are met and deliverables arrive on time. Regular meetings both face to face and virtual (on-line) will ensure that all partners are aware of progress and their responsibilities for delivering items at specific times.

IV. INPUTS & BUDGET

13. Inputs and estimated budget

Below is a detailed breakdown of the total budget (in US\$) required to implement the project. A matching budget expressed in terms of the Work Packages is shown in Appendix 3.

Expenditure (describe in detail below)	Budget requested from STDF (US\$)	Applicant's contribution (US\$)	Budget requested from other donors*	Total
Personnel services (CABI, QUT, ICL, NPPOs and one expert consultant)	USD 365,231	USD 232,193		USD 597,424
Travel (MSc students, Steering Comm)	USD 32,744	USD 0		USD 32,744
Training (all costs of launch mtg and final workshop, <i>including travel</i> for invited participants)	USD 77,520	USD 45,900		USD 123,420
Other meetings & workshops (all costs of meetings within region on case studies, incl local transport, travel, related consumables and meeting facilities)	USD 27,000	USD 4,800		USD 31,800
IT Equipment (lap top computers, webcams and headphones, and software)	USD 5,100	USD 5,000		USD 10,100
Project management (CABI: 35% time executive manager and 50% time administrative)	USD 59,976	USD 16,793		USD 76,769
General operating expenses (local transport, courier, postage, consumables for all other Work Packages plus reserve for foreign exchange fluctuations)	USD 11,513	USD 0		USD 11,513
Other expenditures (promotional website or materials; and external evaluation)	USD 20,961	USD 0		USD 20,961
TOTAL	USD 600,000	USD 304,686		USD 904,686
* Some funding is anticipated from other donors, however, the exact sums are not known and it will not be secured before the project application. While this would enhance the project, it is not imperative for success (Refer to Section 12).				

Note that the salary for time of the two of the Steering Committee (Peralta as member, and Piao as Advisor) is not included in these calculations, but is an important contribution from FAO.

Areas where additional funding is particularly needed are for full participation of QUT staff in Year 2, broader participation in the launch meeting and final workshop and for additional support on the Governance WP, for translation of results to the IPPC and world trade context. Verbal commitments to cover costs of a relevant expert to the launch meeting, which will include sessions on Systems Approach fundamentals, have been obtained from the PRA sections of the American and Japanese NPPOs.

Further, the fifth NPPO that participated in the PPG Workshop process, or another one from the subregion, could carry out a Case Study, if additional funding is obtained. However, the proposed number of Case Studies are sufficient to demonstrate the tool and these other NPPOs may participate as Observers, without conducting separate Case Studies.

In kind inputs consist of:

- For “Personnel”, salary and associated indirect costs (e.g. infrastructure, operational, etc) for John Mumford of ICL in proportion to the expected time he will devote to project work as head of the team from the Centre for Environmental Policy; salary and associated costs for Kerrie Mengersen of QUT for time in supervision of project staff and students, and indirect costs for Peter Whittle of QUT (which will be recovered in part through some funding from the Australian government); 25% of the salary cost of the counterpart in each NPPO, except in Vietnam which is giving 10%). Additional costs for infrastructure for all personnel (not noted already) are also contributed by each entity but not calculated here. A substantial contribution from all parties, in particular the Malaysian NPPO, QUT, ICL and CABI, for project planning and preparation of applications for funding is still ongoing until funding commences. In addition to the USD 30,000 provided by the STDF PPG 328 and USD 30,200 estimated as in kind contributions at that time, this amounts to an additional USD 15,000 not included in the budget above or the PPG application.
- Under “Training”, the contribution is for tuition and other costs associated with two MSc students, who can be carrying out a degree program remotely (probably in Plant Biosecurity). Provision is made for travel to Australia for a short visit for each candidate. Supervision would be provided by the parties as noted above.
- “Other meeting costs” is estimated to be a contribution of USD 800 per Case Study meeting held that is not charged to the project. An expected 6 meetings are shown. This will be provided by the hosting country NPPO or industry sector.
- All parties are providing an existing infrastructure of IT equipment, valued here at USD 5,000. New equipment is only needed if the software requires a higher specification or the Case Study leader does not have a lap top computer to use in various locations.
- An estimated 28% overhead for office space and other infrastructure is provided in kind by CABI SEA.

This brings the total of in kind contributions to USD 304,686, which is over a third of the total cost of the project as presented, USD 904,686.

13. Cost-effectiveness

This project approach is to trial a tool using real, priority trade opportunities in one subregion. If the results are as successful as expected, the harmonisation of a such a tool will be far more cost effective than the current approach, which has not only each country in the subregion using different approaches, but all of their trading partners using different approaches for decisions regarding risk management as well. Although an ISPM exists to direct consideration of equivalence of proposed management plans, which often will employ Systems Approach, this tool would provide a more detailed mechanism for discussion between trading partners, focusing on a common method for estimating efficacy of measures.

The tool allows flexibility to have little or considerable data on the pest in question, so that it does not force the NPPO to fully complete the information in order to benefit from the insights provided. Even if the tool seems too difficult to any individual NPPO, or the arising case does not seem to justify its use, then the concepts behind it will support clear thinking for application of Systems Approaches.

A BN template can be applied to specific case studies of phytosanitary trade. The BN models a commodity pathway with which a regulated pest may be associated, such that estimates of the probability of the effect of a phytosanitary measure can be integrated to calculate the overall conditional probability of infestation/freedom from the target pest. This provides an estimated total efficacy of combined measures based on data along with expert opinion where data is lacking.

Furthermore, the BN enables node (control point) estimates to be varied, so that the impact of uncertainty can be evaluated. In other words, this tool can inform which missing data is most important, so that resources can be focused on research or data collection to address the “weakest link” of a System. This saves investment of resources on obtaining more data where the information will not alter the action taken – and bypasses the tendency to delay decisions due to uncertainty on particular issues.

The possibility of using an equivalent risk management plan for a plant pest risk could save significant resources when the option given by a trading partner does not fit with the realities of the exporting country. The PPG 328 Workshop revealed a lack of confidence in the application of this ISPM (no. 14, FAO 2002), so that enhanced confidence will facilitate improved application of an international approach. It has been demonstrated that use of harmonised approaches or rules can reduce costs to all parties involved in trade.

V. PROJECT IMPLEMENTATION & MANAGEMENT

14. Implementing / supervising organization

The project will be implemented by four to five Southeast Asian National Plant Protection Organisations (NPPOs) for application and testing on real trade opportunities already in the process of a PRA. CABI SEA will provide supervision and management of the project in terms of administration; for example, managing finances, organising travel, workshops, publications etc. QUT and ICL will lead the Work Packages on Technical Framework and Governance and provide the supervision for the entire project in terms of technical capacity. The Case Studies will be undertaken by the NPPOs of Malaysia, Thailand, Vietnam, and Philippines with the dedicated support of the other Work Packages (Administration, Communications, Technical Framework and Governance). See comments above on the possibility of Indonesia implementing a Case Study as well.

The activities related to PRA, design and evaluation of risk management plans and trade negotiation already comprise responsibilities of the NPPO and the nominated staff counterpart. The project support is to ensure that the NPPO personnel can dedicate some additional hours each week to communicating with the project team, participating in project meetings and ultimately using and reporting on the decision tool. Curriculum Vitae of project staff and proposed NPPO counterparts appear in Appendix 3. A capability statement for CABI SEA and consent to participate by QUT and ICL appear in Appendix 5.

15. Project management

To clarify responsibilities, management and administration, the project is divided into five ‘work packages’ (WP):

- Technical Framework
- Case Studies
- Governance
- Communications
- Administration.

The management structure has been agreed as follows:

A Project Manager (Dr A. Sivapragasam, of CABI SEA) will report to the project participants at large, to STDF and to the Project Steering Committee, as agreed in the discussions on reporting with the entire project team (see timing in the Work Plan, Appendix 2). The Project Manager leads the Administration Work Package (WP), including overseeing an administrative support staff person

supported by the project at 50% time. The Communications WP is also within CABI SEA and directly under the Project Leader's supervision.

The remaining three work packages will report to the Project Manager through each WP leader for the Technical Framework WP and Governance WP. The Case Studies WP will have a leader for each Case Study (i.e. 5 proposed). The structure and activities of the WPs was outlined above.

The project direction and milestones will also be reviewed by a Project Steering Committee (PSC). This will be done through meeting in conjunction with the CPM in Rome each year, either in person or virtual meeting for those not already attending, at the launch meeting and at the final workshop. Participation in the monthly project call may be necessary at some times. The role of the PSC is to maintain the direction of the project from the broad perspective, whilst the Project Manager maintains the project integrity. Any issues that arise that may affect the project's success such as completion of outputs on schedule, would be discussed between the management and the PSC as soon as identified.

The PSC will assist in definition of the milestones and measures of success for the project, with support from the Governance WP and management, and feedback from all parties.

VI. REPORTING, MONITORING & EVALUATION

16. Project reporting

Project reporting activities will be coordinated by the Administration WP, to provide an update to STDF and other interested parties covering: report of the launch meeting and inception; interim reports related to milestones (see below); report on the final workshop; and final project report.

However, several activities will be reported discretely as noted in the Work Plan. These reports will be shared as drafts to the project as a whole, with opportunity for comment and corrections within specified time frames. When final, those reports flowing from the other WPs through the Administration WP (Project Manager) will be submitted to STDF and others.

17. Monitoring and evaluation, including performance indicators

Specific outputs for each WP are already noted in the Work Plan (Appendix 2).

The Work Plan and Log Frame establish a set of discrete milestones and outputs that can be evaluated as partially or wholly complete at the nominated dates. We propose this list should be refined as the more detailed project plan is negotiated at the launch meeting. This allows broader discussion and agreement for achieving the outputs. The detailed schedule of milestones should be negotiated by 30 Sept 2011.

The Project Steering Committee will have input in to this discussion to introduce their expectations and insights from the beginning. Near the end of the project, an external evaluation will take place. Qualified experts have expressed interest from the NPPO of New Zealand and Ghana (both members of the IAGPRA). Selection will be done in consultation with STDF.

18. Dissemination of the projects results

The application of Systems Approaches is a common issue for countries around the world and the anticipated project outcomes are of very wide interest – not only in plant health but also in other SPS sectors. The results of the project therefore may be of interest to a wide group, beyond the project participants.

The Communications WP will support dissemination of results within the project and with immediate stakeholders. For this target audience, project results will be disseminated in workshops, written reports and articles. These are identified in the Work Plan. Milestones for dissemination may be specified in the milestone list as the detailed project plan is negotiated. Dissemination of results is considered an integral part of the project.

In this sense, SE Asia seems the perfect site for testing a new risk management approach and tool. Regional dissemination of the results of the country demonstrations will be through existing regional meetings including the biennial APPPC meeting (approximately August 2011 and 2013), regionally based workshops and meetings to review draft ISPMs, as relevant. The interest and collaboration of the APPPC Director and the former FAO project staff person, now returned to the Japanese NPPO's PRA Section, will facilitate this regional dissemination from the subregion level. From the perspective of importing countries, the advanced work in the region, principally by Australia, and the recent enhancement of plant health systems in some of the least developed countries indicates a high level of interest.

If the project is successful, it is anticipated that other regions will be interested in gaining experience in this risk management approach. For the global level, this can be done through the presentation of results to the CPM in the form of a proposal to add to the work plan (either for a new ISPM or for inclusion in capacity building activities), and/or through inclusion of the tool and some form of a user's manual in the unofficial portion of the IPPC website, the recently approved Technical Resources section of the portal. A more in depth approach could be based on a series of regionally based projects, a global project addressing only this topic, individual training courses or other means. A larger project will include some South-South training, with the demonstration countries becoming the training sites and those NPPOs becoming the regional experts.

For further pay back from this investment, we have opened discussions with ACIAR, the Australian Government Department of Agriculture, Fisheries and Forestry (DAFF) and the Crawford Fund. Agencies in the USA, Canada and the European Community may also be supportive. These agencies will be asked to fund ancillary postgraduate studies and workshops, as well as further participation of the core staff and possibly a third year of the project to extend the work and to develop new case studies. (Also the Australian Cooperative Research Centre for National Plant Biosecurity has always intended to be a key partner in this project, but is presently in limbo while it prepares a bid for renewed funding in the coming year.)

Plans to reach out to stakeholders outside the immediate participants and through the plant health channels would require additional resources but provision of concise reports will inform those stakeholders of the opportunity and potential for application.

ATTACHMENTS

Appendix 1: Logical framework

Appendix 2: Work Plan (Appendix 1 and 2 comprise a single document)

Appendix 3: Terms of Reference for key staff involved in project implementation

Appendix 4: Letters of support from each organization to be involved in project implementation

Appendix 5: Evidence of the technical and professional capacity of the applicant to implement the project and letters of support from the supervising organization.

ACRONYMS

AANZFTA	ASEAN Australia New Zealand Free Trade Agreement
AAQ	Agency for Agricultural Quarantine
ACIAR	Australian Centre for International Agricultural Research
ADB	Asian Development Bank
ALOP	Appropriate Level of Protection
APEC	Asia-Pacific Economic Cooperation
APPPC	Asia and Pacific Plant Protection Commission
ARDN	ASEAN Regional Diagnostic Network
ASEAN	Association of Southeast Asian Nations
ATIGA	ASEAN Trade in Goods Agreement
AusAID	Australian Government Overseas Aid Programme
BN	Bayesian Net
BRAG	Bayesian Research and Applications Group
CABI SEA	CABI Southeast and East Asia
CLMV	Cambodia, Lao PDR, Myanmar and Vietnam
CP-BN	Control Point and Bayesian Networks
CPM	Commission for Phytosanitary Measures
CRC-NPB	Cooperative Research Centres programme for National Plant Biosecurity
DAFF	Australian Government Department of Agriculture, Fisheries and Forestry
EIF	Enhanced Integrated Framework
FAO	Food and Agriculture Organisation of the United Nations
FCEC	Food Chain Evaluation Consortium
GAP	Good Agricultural Practice
GMS	Greater Mekong Subregion
IAGPRA	International Advisory Group on PRA
ICL	Imperial College London
IPM	Integrated Pest Management
IPPC	International Plant Protection Convention
ISPM	International Standards For Phytosanitary Measures
JICA	Japan International Cooperation Agency
NPPO	National Plant Protection Organisation
NZAID	New Zealand Aid Programme
PCE	Phytosanitary Capacity Evaluation
PPG	Project Preparation Grant
PRA	Pest Risk Analysis
PSC	Project Steering Committee
QUT	Queensland University of Technology
RPPO	Regional Plant Protection Organisation
SALB	South American Leaf Blight
SPS	Sanitary and Phytosanitary
STDF	Standards and Trade Development Facility
USDA-APHIS	US Department of Agriculture – Animal and Plant Health Inspection Service
WP	Work Package
WTO	World Trade Organisation

APPENDIX 1: Logical Framework

	Project description	Measurable indicators	Sources of verification	Assumptions and risks
Overall objectives (goals)	1. To enhance competency and confidence in the SE Asian sub-region in applying Systems Approach to trade opportunities through the use of innovative decision support tools	<p>1.1 A review describing design and evaluation of pest risk management measures in SE Asia (participating countries), with lessons learned from project.</p> <p>1.2 Case studies of priority trade opportunities using Systems Approach for pest risk management</p> <p>1.3 Existence of workable trade agreements based on Systems Approaches</p> <p>1.4 Increased trade in food and agricultural products facilitated by Systems Approach</p>	<p>1.1.1 Review produced</p> <p>1.2.1 Case studies documented and participants surveyed</p> <p>1.3.1. Trade agreements exist and trade results (medium term)</p> <p>1.4.1. Reported by NPPOs, trade associations or industry, and national statistics (longer term)</p>	<p>1.1.1.1/1.2.1.1 Collaboration of external stakeholders obtained by NPPOs, e.g. industry, other sectors of government.</p> <p>(Note: the lack of information about the pest risk will NOT constitute a risk using this approach.)</p> <p>1.3.1.1/1.4.1.1 Other necessary conditions exist (e.g. political stability, national commitment to address SPS constraints, government support and allocation of resources, etc.)</p>
Immediate objectives (purpose)	<p>1 To provide and test decision tool(s)</p> <p>2 To implement the Bayes Net /control point approach to Systems Approaches</p>	<p>1.1 Production of decision tool(s) for quantification of risk using Systems Approach produced</p> <p>2.1 Implementation of above tool(s) is achieved</p>	<p>1.1.1 Tools exist and can be applied by country counterpart in each Case Study.</p> <p>2.1.1 Use of systems approach designed using Bayes Nets is evident in trade agreements</p>	<p>1.1.1.1 Collaboration of partners is successful.</p> <p>1.1.1.2. NPPO counterparts remain same throughout project.</p> <p>2.1.1.1 Any other issue (e.g. additional pest identified) does not prevent the trading partners from accepting proposed trade</p>

	<p>2a Evaluation of method</p> <p>2b Potential trade opportunities progressed</p> <p>2c Distillation of experience into a draft Guidance document or other means of harmonisation</p> <p>2d Adoption and use of method in other subregions, regions or globally facilitated</p>	<p>2a.1 Report on application of Systems Approach tool using case study data, and feedback from NPPO counterparts on competency and confidence</p> <p>2b.2 Existence of trade agreements based on Systems Approaches</p> <p>2c.1 Draft Guidance document or other means of harmonised approach produced and presented for decision in region (through the RPPO)</p> <p>2d.1 Tool accessed and evaluated by another subregion, region or globally.</p>	<p>2a.1.1 Report produced</p> <p>2b.1.1 Trade agreements in evidence</p> <p>2c.1.1 Presentation to Regional Plant Protection Organisation (RPPO) forum</p> <p>2d.1.1 Report on this activity in appropriate forum (e.g. RPPO Technical Consultation, CPM, etc); possible adoption</p>	<p>2a.1.1.1 Tool is considered successful by target users</p> <p>2a.1.1.2 Collaboration of partners is successful</p> <p>2b.1.1.1 Industry and national governments adopt scheme</p> <p>2c.1.1.1 Adoption and results are both considered sufficiently successful to justify formalising harmonisation rather than leaving choice to use tool as ad hoc</p> <p>2d.1.1.1 Results of applying tool warrants continued and broader application.</p>
Expected results	<p>1. Decision tool for implementing System Approach produced using Bayes Nets methodology</p> <p>2. Tool used to implement Systems Approach in trade agreements</p>	<p>1.1 Tool produced; target users surveyed</p> <p>2.1 Evidence of use of tool in trade agreements</p>	<p>1.1.1 Tool exists and target users conclude it as of value to the design and evaluation of Systems Approach</p> <p>2.1.1 Trade agreements based on Systems Approach include output from/reference to this tool</p>	<p>1.1.1.1 Collaboration of partners is successful</p> <p>1.1.1.2 Methodology can be applied successfully to Systems Approach</p> <p>2.1.1.1 Tool is adopted and used by national and industry stakeholders</p>

Activities	1. Organise launch meeting.	1.1 Meeting organised	1.1.1 Project partners, steering committee and stakeholders attend launch meeting	1.1.1.1 Project contracting, selection of case studies and confirmation of staff as counterparts proceeds as planned
	2. Establish website for project if required, or other means of sharing documents with entire project	2.1 Website or document share created (Public and Private sections)	2.1.1 Website (“Docshare”) accessible	As above
	3. Final selection of Case Study examples & obtain or prepare PRA and other supporting materials for the country Case Studies	3.1 List of Case studies produced with PRA material	3.1.1 Chosen Case studies reported to STDF	As above
	4. Prepare report on existing approach to risk management in the region	4.1 Report on existing risk management in region produced	4.1.1 Report submitted	As above
	5. Establish additional data requirements to move from a PRA to a Control Point – Bayesian Network	5.1 List of requirements produced	5.1.1 List published to project, included in final reports	As above
	6. Identify gaps/request additional data for CP-BN for each country case studies	6.1 List of gaps and required data created for each country case study	6.1.1 As above	As above

Activities	7. Review stakeholder engagement in SE Asian subregion and systems for reporting and documentation of practices (private sector and official)	7.1 Report on stakeholder engagement in SE Asian subregion and systems for reporting and documentation of practices (private sector and official) produced	7.1.1 Report available publicly	As above
	8. Revise final Case Study CP-BN and prepare reports on each	8.1 Case study reports produced for CP-BN	8.1.1 Reports submitted, available publicly	As above
	9. Analysis of effectiveness of approach to application of Systems Approach	9.1 Report on analysis produced	9.1.1 Report published	As above
	10. Workshop on final results and discussion of trade application	10.1 Workshop organised	10.1.1 Workshop held	As above
	11. Recommend adoption of CP-BN as subregional, regional or international policy	11.1 Recommendation produced	11.1.1 Recommendation discussed in official forum (e.g. RPPO meeting)	As above
	12. Validate approach to project, internal evaluation. Preparation of lessons learned report	12.1 Report prepared	12.1.1 Report produced	As above
	13. Validate results of project, external evaluation.	13.1 Report prepared	13.1.1 Report produced	As above

APPENDIX 2: Work Plan¹

Activity PREPARATION ACTIVITIES PRIOR TO START DATE	Responsibility	Pre-start activities – Jan-Jun 2011 (Start Date: July 1, 2011)					
		Jan	Feb	Mar	Apr	May	June
Selection of final dates for launch meeting, confirmation of Steering Committee and agreement on reporting procedures (including financial reporting requirements).	Chief Plant Protection Officers from relevant NPPOs, and advisors at the CPM in Rome (led by Governance WP)			X			
Contracting between STDF/WTO and CABI SEA. MOUs with all other implementing agencies.	All parties				X	X	X
Final selection of counterparts for case study work in countries, and regional.	NPPOs				X	X	X
Formalising “interested parties” group for communications (e.g. regional development groups, IAGPRA, other RPPOs, etc) that want to be informed of subject and project meetings.	All parties					X	
Selection of software for proposed decision support tool(s).	QUT and ICL (Technical Framework WP)						X

¹ The Administration WP will be in charge of collecting materials for interim and final financial and progress reports to the STDF. The timing of these will be reflected in a more detailed work plan prepared after funding is confirmed.

Activity	Responsibility	Year 1 (2011-2012)											
		Start Date: July 1, 2011											
		July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
Organise launch meeting.	CABI SEA (Communications WP)	X	X										
Preparation and collection of technical input for launch meeting, including best practice for stakeholder engagement and for expert judgement elicitation.	ICL and QUT (Governance and Technical Framework)	X	X										
Launch Meeting: for detailed planning of Case Studies and also providing technical input for increased understanding and knowledge of Systems Approach	All parties to participate in 4 day meeting (exact dates TBD)		X	X									
Final selection of Case Study examples (no changes to regional examples)	NPPOs (Case Studies WP)	X	X										
Obtain or prepare PRA and other supporting materials for the country Case Studies (these draw from active trade concerns and are not “new” to the NPPO work load)	NPPOs (Case Studies WP)	X	X	X	X								
Refine indicators of success of project and gain agreement on milestones.	CABI SEA and ICL (Admin and Governance WPs)	X	X	X									
Regional Case Studies initial collection of materials and contact with private sector groups.	NPPO with CABI SEA and Malaysia NPPO (Case Studies WP)	X	X	X	X	X	X						

Activity	Responsibility	Year 1 (2011-2012) <i>Continued</i> Start Date: July 1, 2011											
		July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
Procurement of any necessary computers and software.	CABI SEA (Administraion WP)	X	X										
Inform all parties of IP agreements and develop any project branding.	CABI SEA (Administration WP)		X	X									
Manage monthly progress calls and milestones.	CABI SEA (Administration WP)				X	X	X	X	X	X	X	X	X
Establish website for project if required, or other means of sharing documents with entire project.	CABI SEA (Communications WP)				X	X	X						
Prepare report on existing approach to risk management in the region (starting from materials presented in PPG workshop)	Governance WP									X	X	X	X
Establish additional data requirements to move from a PRA to a Control Point – Bayesian Network [initial ideas, then validated in practice]	Technical Framework WP (drawing on discussion at launch)			X	X							X	X
Develop Control Point Bayesian Net for each country Case Study (X) and for regional case studies (Z)	Technical Framework with Case Study WPs					X	X	X	X	X Z	Z	Z	Z

Activity	Responsibility	Year 2 (2012-2013)											
		End Date: June 30, 2013											
		July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
Identify gaps/request additional data for CP-BN for each country case studies.	Technical Framework WP	X	X	X									
Sensitivity Analysis to determine key points of each Case Study, e.g. where more information is helpful.	Technical Framework and Case Studies WPs				X	X							
Review stakeholder engagement in SE Asian subregion and systems for reporting and documentation of practices (private sector and official).	Governance WP (MSc student from ICL)	X	X	X	X								
Revise final Case Study CP-BN and prepare reports on each.	Case Studies WPs and Technical Framework WPs					X	X	X	X				
Analysis of effectiveness of approach to application of Systems Approach.	All Parties, led by ICL.									X			
Organise workshop on results.	CABI SEA (Communications WP)								X	X	X		
Workshop on final results and discussion of trade application.	All parties (3 day meeting)											X	
Validate approach to project, internal evaluation. Preparation of lessons learned report.	Governance WP											X	
Manage monthly progress calls and milestones.	CABI SEA (Administration WP)	X	X	X	X	X	X	X	X				

Activity	Responsibility	Year 2 (2012-2013) <i>Continued</i> End Date: June 30, 2013											
		July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
Support presentation of results and tool to the CPM, through internal IPPC process	Governance WP										X	X	X
Validate results of project, external evaluation.	External Evaluation Team										X	X	X