STDF PROJECT PREPARATION GRANT (PPG)

APPLICATION FORM

The Standards and Trade Development Facility (STDF) provides Project Preparation Grants (PPGs), up to a maximum of US$50,000, for the following purposes (or a combination thereof):
- application of SPS-related capacity evaluation and prioritization tools;
- preparation of feasibility studies that may precede project development to assess the potential impact and economic viability of proposals in terms of their expected costs and benefits; and/or
- preparation of projects proposals that promote compliance with international SPS requirements, for funding by the STDF or other donors.

Applications that meet the STDF's eligibility criteria are considered by the STDF Working Group, which makes the final decision on funding requests. Complete details on eligibility criteria and other requirements are available in the *Guidance Note for Applicants* on the STDF website (www.standardsfacility.org). Please read the *Guidance Note* before completing this form. Completed applications should be sent by email (as Word documents) to STDFSecretariat@wto.org.

PPG Title	**Information systems for surveillance and pest reporting**
Budget requested from STDF	**$US 49 990**
Full name and contact details of the requesting organization(s)	**Department of Agriculture, 3rd Floor, Wisma Tani, Jalan Sultan Salahuddin, 50632, Kuala Lumpur, Malaysia.**
Full name and contact details of contact person for follow-up	**Mr Ho Haw LENG; hawlengho@doa.gov.my ; hawlengho@yahoo.com; Phone 6 03 20301417 & 017 67 588 76.**

I.   BACKGROUND AND RATIONALE

1.   What is the purpose of this PPG? Explain whether it is requested to: (i) apply an SPS-related capacity evaluation or prioritization tool; (ii) prepare a feasibility study (prior to project development) to assess the potential impact and economic viability of proposals in terms of their expected costs and benefits; and/or (iii) prepare a project proposal for consideration by the STDF or other donors?

Purpose: To prepare a project proposal for consideration by the STDF or other donors.

STDF funding would be required for a small workshop to determine the scope and high-level design of a multi-country, demonstration project. The project would demonstrate implementation of pest information systems and compile a manual documenting best practice. The workshop would be the most efficient means of

developing multi-lateral consensus on scope and design and assembling a project consortium. Consensus and a committed consortium will be essential for a successful, multi-country, demonstration project.

The workshop would consider matters such as how to design a set of integrated activities to demonstrate both best practice for aggregating primary, surveillance records and for streamlining the reporting of summary pest information by countries in a manner consistent with IPPC guidelines and standards. The workshop would also assess whether a demonstration project would be most effective if implemented on a sub-regional scale (e.g. including a subset of Asia Pacific Plant Protection Commission, i.e. APPPC countries), a regional scale (e.g. across all APPPC countries) or a global scale (e.g. including representatives from each FAO region). The design workshop and the ensuing project proposal would emphasise the adoption, adaptation and integration of existing information tools and strategies, and would not promote the development of new database systems.

2.   Explain the key SPS problems and/or opportunities to be addressed. Clarify why these issues are important, with attention to market access and poverty reduction. Describe, if relevant, how these issues relate to SPS priorities in the Enhanced Integrated Framework's Diagnostic Trade Integration Studies (DTIS), the findings of SPS-related capacity evaluations, national poverty reduction strategies, sector development strategies or policies, etc. See Qn. 7. (b) – (d) of the Guidance Note.

This proposal has the objective of making the recording of pest surveillance data more efficient, the national aggregation of pest data more systematic, and regional and global reporting of pest status more timely and less costly.

The proposal addresses findings of an Implementation Review and Support System Review conducted by the IPPC of the implementation of International Phytosanitary Standard 6 (Guidelines for Surveillance) (IRRS, March 2012). The IRRS analysis noted that "well-developed and compatible data systems to collect, store and report pest information [existed] in only 50% of ... countries". The analysis also highlighted that computerised information systems for retrieval of surveillance information were present in only 51% of countries, that only 56% of countries utilised geo-coding for pest records, that National Plant Protection Organisations (NPPOs) were easily able to gain access to national databases of pests, and that, in general, the approach to surveillance lacked coordination. Poor information management is one of the major impediments to implementation of ISPM 6 by developing countries.

In the context of trade, both exporting and importing countries require plant health systems to document pest status as endorsed by the NPPO. Would-be exporting countries require credible pest lists to support their market access applications and importing countries require pest lists so that their NPPOs can determine scientifically justifiable quarantine policy. Plant health information systems must be maintained as part of the enduring, plant health infrastructure of a country. Maintaining the currency of information in the systems is a core responsibility for an NPPO. For example, trade may be approved by an importing country on the condition that the exporting country commits to specified surveillance — either general surveillance or targeted surveillance. An information management system is indispensible if the NPPO is to provide evidence of such surveillance. Systems are required to support other, international obligations, such as reporting on pest outbreaks. It is essential that

NPPOs put in place information systems that permit effective aggregation of records, retention of these records and ongoing assessment of pest status.

Information systems enable countries to meet several formal obligations under the International Plant Protection Convention and the SPS Agreement. Pest surveillance is called for explicitly by Article IV/2 (b) of the Convention and Article VIII of the Convention obliges contracting parties to exchange information on pest status. Pest lists and surveillance largely underpin Articles 5 of the SPS Agreement (assessment of risk) and Article 6 of the Agreement (adaptation to regional conditions).

Pest records are compiled from the outcomes of surveillance, from unpublished records and from published sources. Ideally, pest lists are based on verifiable, surveillance records, especially records linked to specimens or samples.

Commonly, pest surveillance in developing countries is constrained by limited capability to design surveillance activities in the first place, by inadequate diagnostic support, by shortfalls in operational funding and by the *ad hoc* nature of systems for recording the results of surveillance. Often, pest information that is available does not go beyond the laboratory or office of the collector because the information is not digitised or, if the information is digitised, it does not reach the NPPO because of poorly developed, national, aggregation systems. Negative records (i.e. reliable records of the absence of a particular pest from a site or host) are rarely documented. Robust, low-cost information technology solutions are required to ensure that pest information, including negative records, from surveys, plant clinics and other sources: (a) is recorded in a digital form consistent with international standards, (b) is recorded as efficiently as possible and (c) is made available to NPPOs. In turn, NPPOs require national, regional or global systems that facilitate timely pest reporting. Ideally, contributing records to the regional or global systems will not be a time-consuming (and thereby costly) burden on NPPOs.

It is anticipated that the project will have its gestation in the South-East Asia / Pacific region. There is abundant evidence that pest surveillance, information systems and international reporting are unevenly implemented across countries in this region. The evidence includes the evaluation of AusAID-funded Sanitary and Phytosanitary Capacity Building Program (SPS CBP) workshops on pest information systems; analyses of Lao PDR and Cambodia by Asian Development Bank (ADB); analysis of pest reports to the IPPC and the APPPC; and the long-running exercise within the ASEAN region to harmonise phytosanitary measures. This unevenness in implementing pest information systems exists despite numerous efforts to develop or deploy databases across the region. Some of these efforts have been driven domestically; other efforts have been supported by international donors. Some of the resulting information systems have fallen into disuse. Others perform well enough, but in isolation and consequently they contribute little to the overall picture of plant health within a country.

3.   Which government agencies, private sector, academic or other organizations support this PPG request?   Letters of support from each of these organizations would be advantageous (Appendix 1). See Qn. 7. (e) of the Guidance Note.

None have been approached formally, although representatives of the Philippines Departments of Agriculture have provided in-principle support. Malaysia, Thailand, Lao PDR, Cambodia, Indonesia, Vietnam and the Philippines all have trade agendas for which pest lists and effective national information systems are essential. All also have participated recently in collaborative or capacity building initiatives that have

exposed the lack of national information systems. Many of these countries have little-used or disjointed, local systems. Several countries (e.g. Lao PDR and Cambodia) are about to embark on fresh, donor-supported projects that will require effective pest information systems. NPPOs in each country, universities in each country and several research agencies (e.g. Indonesia's national science agency, LIPI) would potentially be involved and/or supportive. Information management is a key element of a national strategy (National Pest, Disease and Weed Information Systems in Indonesia) developed recently by LIPI, Indonesia's Horticulture and Quarantine Directorates, and major agricultural universities. The Secretariat of the Pacific Community (SPC) manages the Pacific Islands Pest List Database (PIPLD, http://pld.spc.int/pld/) on behalf of Pacific island countries; the SPC may support the proposal in the interest of rejuvenating the addition of records to this database.

4.   How does this PPG complement and/or build on past, ongoing and/or planned national programmes and/or donor-supported projects? See Qn. 7. (f) of the Guidance Note.

The PPG builds upon a series of donor-supported and national programmes in the Asia-Pacific region.

<u>Asia-Pacific regional projects</u>: **The AusAID-funded Sanitary and Phytosanitary Capacity Building Program (SPS CBP) and ASEAN Australia Development Cooperation Program (AADCP) Plant Health Project both supported workshops on plant pest information management. Standards and strategies for sharing pest records were developed but neither the SPS CBP nor the AADCP Project had the scope or resources to drive implementation of these standards or strategies. The ASEAN Regional Network Project supported by the ASEAN-Australia-New Zealand Free Trade Agreement Economic cooperation Work Program (AANZFTA ECWP) is supporting development of diagnostic capabilities and incidentally creating digital records, but does not address information systems *per se*. A recent NZAID project deployed phytosanitary databases in Cambodia, Lao PDR, Myanmar and Vietnam and these have recently been upgraded; however, the pest-record components of these databases have been discontinued. The ASEAN Experts Working Group for the Harmonisation of Phytosanitary Measures oversees an ongoing project to compile pest lists for an agreed set of high priority crops and commodities, and use these lists to develop harmonised phytosanitary measures for the ASEAN region. Essentially, this project relies on countries manually providing pest lists to the NPPO of the country identified as the lead for a particular crop or commodity. It would be significant advantage if the project were supported by an on-line database which could be viewed and updated by NPPOs of each ASEAN country.**

The Pacific Islands Pest List Database (PIPLD) is a collaborative enterprise managed by country administrators in a set of Pacific Island nations and the South Pacific Community (SPC). The database stores records of pests known to affect agriculture, forestry and the environment in Pacific island countries and territories, and provides a model for making pest information available on a regional basis. While the PIPLD system has proved relatively practical, inexpensive and durable for over a decade, it has become difficult to maintain the currency of the data for all countries.

<u>Asia-Pacific national projects</u>: **AusAID-funded projects have deployed Biolink (http://code.google.com/p/biolink/wiki/BioLink) and MS Access databases to NPPOs in Thailand and the Philippines. Recent ACIAR projects have promoted use of databases associated with PaDIL (http://www.padil.gov.au/). Indonesia has a national database for biodiversity records and recently developed a national strategy for aggregating pest data. AusAID has assisted the development in Vietnam of skills for performing**

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surveillance for forest pests and for managing the data deriving from forest surveillance. AusAID Public Sector Linkages Program Activities in Indonesia, Thailand and the Philippines have included projects to develop skills in designing and performing surveillance. Numerous agencies maintain MS Excel systems for primary records. In general, these systems are not integrated on a national basis. The Asian Development Bank will provide funding for targeted surveillance in Lao PDR and Cambodia over coming years, but little consideration has been given to the systematic and long-term management of data resulting from this surveillance initiatives.

Australia has invested in the development of the Australian Plant Pest Database (http://www.planthealthaustralia.com.au/go/phau/capacity-and-capability/information-support-systems/appd), BioSIRT standards and systems (http://www.daff.gov.au/animal-plant-health/emergency/biosirt) and in the Atlas of Living Australia (http://www.ala.org.au/). The Plant Biosecurity Cooperative Research Centre has developed PDA and smartphone applications for collection of field survey data and for providing diagnostic support, and systems for coordinating these with laboratory systems (http://legacy.crcplantbiosecurity.com.au/project/crc30014-pda-assisted-surveillance). The Australia-based PaDIL has grown from an image library to a multifunction system supporting images, a diagnostic work flow and various biosecurity functions. Recently, DAFF has trialled a system linking a smartphone surveillance app and laboratory-based Excel spreadsheets. This system has proved robust, effective and efficient during surveys in Papua New Guinea and the Solomon Islands, and demonstrates an inexpensive and flexible approach to capturing geo-coded, digital data during pest surveys.

In summary, in the Asia-Pacific region there are numerous information management systems either currently used for pest information or fit for this purpose. On the other hand, there are very few examples of successful integration of these systems at the national or regional level. The IPPC has recently facilitated a global review of constraints to pest surveillance and this review has underlined the need for robust information management systems for surveillance data. At the same time, several new technologies, including smartphone applications, have emerged. It is timely to examine whether these technologies can be integrated with existing systems in novel, practicable ways to address the needs of pest surveillance and pest reporting.

Several global initiatives are relevant to the PPG.

<u>Global initiatives</u>: The Global Biodiversity Information Facility (GBIF, http://www.gbif.org/), based in Denmark and funded by a global consortium, has established or adopted standards, applications and systems to aggregate primary records of organisms from databases throughout the world. GBIF also has systems to check names against nomenclatural databases and perform various routines to enhance data quality. Few developing countries contribute records to GBIF, although most have reference collections and many have digitised at least some records. GBIF provides technological options for making primary pest data more widely available, but, thus far, these options have not been preferred by NPPOs in the Asia-Pacific region.

CAB International scans published pest records and other sources, and compiles pest information into a series of global compendia. These compendia are widely used and are of immense value. However, it is widely acknowledged that the veracity of some records is questionable and that the pest information for many countries is far from complete. There are many other global compilations which include pest

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information. Some have an "all-taxon" scope (e.g. the Encyclopaedia of Life, http://eol.org/). Others are restricted to a particular taxonomic group (e.g. Scalenet, http://www.sel.barc.usda.gov/scalenet/scalenet.htm). Few of these secondary sources have formal endorsement by an NPPO. In principle, there is nothing to prevent NPPOs working more closely with the compilers of these secondary resources to create more comprehensive and reliable pest information. However, for the present, lack of resources within NPPOs and genuine gaps in available pest information, together have curtailed this kind of collaboration.

5.   Have you discussed this PPG request – or funding for the project proposal which would result from it – with any potential donors (bilateral, multilateral, Enhanced Integrated Framework, etc.)? If so, provide details below and indicate potential sources of funding for the resulting project. See Qn. 7. (g) of the Guidance Note.

The PPG has been discussed with Ms Kenza Le Mentec, STDF, during a meeting of the IPPC Capacity Development Committee, Rome, December 2012.

II.   IMPLEMENTATION & BUDGET

6.   Who will take the lead in implementing this PPG? If particular national experts and/or international consultants are proposed, attach a copy of their Curriculum Vitae and record of achievements (Appendix 2). If no names are provided, the STDF will provide a shortlist of consultants if the PPG request is approved.

It is anticipated that the Department of Agriculture, Malaysia will invite Australia's Department of Agriculture Fisheries and Forestry (DAFF) and the regional, non-government organisation, ASEANET to coordinate the workshop. Malaysia will invite presentations from experts familiar with candidate components and systems, e.g. the Pacific Islands Pest List Database, smartphone surveillance applications, the ASEAN Regional Diagnostic Network, scientists and managers responsible for surveillance, reporting, risk analysis, market access etc. Four consultants will be engaged on short-term basis: two specialists from DAFF with expertise in smartphone technologies and distributed databases, a specialist from one of Australia's State agriculture agencies with expertise in local databases, and a specialist from ASEANET, with experience in logistics and regional networking of diagnostic expertise.

7.   In the table below, briefly describe the main activities to be carried out under this PPG and specify who would be responsible. Provide an estimate of the budget required (e.g. for national/international expertise, travel and DSA of consultants, stakeholder meetings or workshops, general operating expenses, etc.).

Activity	Responsible	Estimated Budget (US$)
Email survey (scope could be APPPC countries, ASEAN members or a cross-section of economies) to identify needs, existing systems, perceived constraints. In addition,	**Department of Agriculture, Malaysia**	**Nil**

collaborators would be invited to facilitate informal, structured discussion sessions in their own workplaces to obtain at least 6 "focus group" responses to the survey.		
Sub-regional workshop In Kuala Lumpur, Malaysia. Representatives of invited ASEAN countries and specialists will: (a) identify and discuss information management needs, existing systems and perceived constraints; (b) present on available applications, systems and strategies; and (c) develop outline of a proposal for a project to implement recommended information management solutions, systems and strategies in a selection of countries.	DAFF, Australia and ASEANET to coordinate in consultation with Department of Agriculture, Malaysia. Presenters, facilitators and other participants to be identified in consultation with IPPC, APPPC, SPC, ASEAN EWGHPM, etc. Workshop to identify small group to draft project proposal.	$US 49 990. [15 Airfares, $26 000 (10 within SE Asia, 3 Australia-SE Asia, 1 Pacific-SE Asia); Accommodation, $5850 (19 persons, Kuala Lumpur, 3 nights & Brisbane 1 night transit); local transportation, $1500 (19 persons); daily allowance, $1400 (14 persons, 2 days); official dinner, $1000 (20 persons); workshop catering, $1140 (19 persons); venue hire, $1600; consultancy fees, $11500 (7 x $500, 8 x $1000).]
Develop detailed proposal The project proposal will be completed by a drafting group nominated by the workshop. It is anticipated that the project proposal will emphasise adoption of IPPC and other global standards (e.g. ISPM 8 pest status categories; Darwin Core standards for surveillance records), simple routines for exporting and importing data, the use of existing databases, and the development of flow charts for data and information within countries. Flow charts would link ongoing surveillance, published resources such as the CABI Compendia, national experts and NPPOs. The proposal is also likely to emphasise the incorporation of tools such as existing smartphone apps, MS Excel and MS Access	Drafting group.	Nil

databases into national systems, and the adoption of PIPLD-like systems on a regional basis, rather than the development of new, database systems.		

Appendixes

Appendix 1: Letters of support from each of the organizations supporting this proposal.

Currently being sought.

Appendix 2: Curriculum Vitae and record of achievements for any consultants proposed to implement this PPG.

To be provided. It is anticipated that experts with current, active roles in surveillance, strong information management skills, and recent experience in developing countries will be engaged. A Malaysian-based consultant or agent would be engaged to undertake travel arrangements for workshop participants.