Review of the Implementation of ISPM6

Challenges and Suggested Actions

International Plant Protection Convention (IPPC)
Food and Agriculture Organization of the United Nations
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Rome, Italy

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Implementation Review and Support System (IRSS)

ISPM No. 6 (1997): Guidelines for Surveillance

Review of implementation challenges, compiled country feedback and suggested actions.

Background

Pest surveillance is a foundation activity of National Plant Protection Organizations (NPPOs). Outputs of a pest surveillance activity provide countries with the basis for listing regulated pests, determination of pest status in an area and pest categorization, all of which enable the conduct of pest risk analysis. In 1997 the IPPC approved ISPM No. 6: Guidelines for surveillance as a basis to guide NPPOs in implementing pest surveillance.

In 2011 the IPPC initiated the Implementation Review and Support System (IRSS) project focusing on ISPM 6 and also flagged the standard for review under the standard setting work programme.

As part of the activity under IRSS, and to contribute to the review of ISPM 6, the IPPC developed a questionnaire that was administered to 177 contact points in the 7 FAO regions and feedback was received from the following 106 contact points in different regions as follows:

i. Africa: Benin, Burkina Faso, Burundi, Cameroon, Comoros, Côte d'Ivoire, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea Bissau, Kenya, Malawi, Mali, Mauritania, Mozambique, Namibia, Niger, Nigeria, RDC, Senegal, Sierra Leone, South Africa, South Sudan, Togo, Uganda, Zambia
ii. Asia: China, India, Japan, Laos PDR, Malaysia, Myanmar, Nepal, Philippines, Republic of Korea, Singapore, Sri Lanka, Thailand, Vietnam
iii. The Caribbean: Dominica, Trinidad and Tobago, Belize, St. Kitts, Suriname , St. Lucia, Jamaica, Barbados, Grenada, Antigua and Barbuda
iv. Eastern Europe & Central Asia: Albania, Armenia, Azerbaijan, Belarus, Bosnia Herzegovina, Georgia, Kyrgyzstan, Macedonia, Moldova, Montenegro, Tajikistan, Uzbekistan
v. EU member states: Belgium, Estonia, France, Germany, Hungary, Greece, Ireland, Lithuania, Poland, Slovenia, UK
vi. Latin America: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Mexico, Nicaragua, Panama, Paraguay, Peru
vii. Near East: Iraq, Lebanon, Morocco, Oman, Palestine, Sudan, Syria, United Arab Emirates
viii. North America: Canada and United States
ix. South West Pacific: Australia, Cook Islands, Fiji, Papua New Guinea, New Zealand, Samoa, Tonga, Vanuatu

The questionnaires were also discussed by 96 Contracting Parties during 7 Regional Workshops on ISPM6 Pest Surveillance held in the period of January to February 2012. The questionnaire focused on the use, challenges in implementation and potential areas for improvement of ISPM6. This report presents global information from the data captured by the IRSS study on ISPM6 and well as comments made on the standard during the IRSS ISPM6 Pest Surveillance Workshops mentioned above. Data from the questionnaires are presented in Section 2. Reports of the Regional Workshops are available on the IPP IRSS webpage here: https://www.ippc.int/index.php?id=1111059&L=0#irssactivities.

The sections that follow present the analysis from a Global perspective, but regional differences may be significant and the EWG-CD may wish to review those responses when considering actions for improving implementation by NPPOs.

Section 1: General observations

Quality and Compatibility of Data Systems (Figure 1)

In regards to existing NPPO data systems, the responses were equally split with 50% of respondents indicated that their NPPO's pest surveillance programmes do not have well developed and compatible data systems to collect, store and report pest surveillance information and that other half of respondents indicating that such data systems are in place.

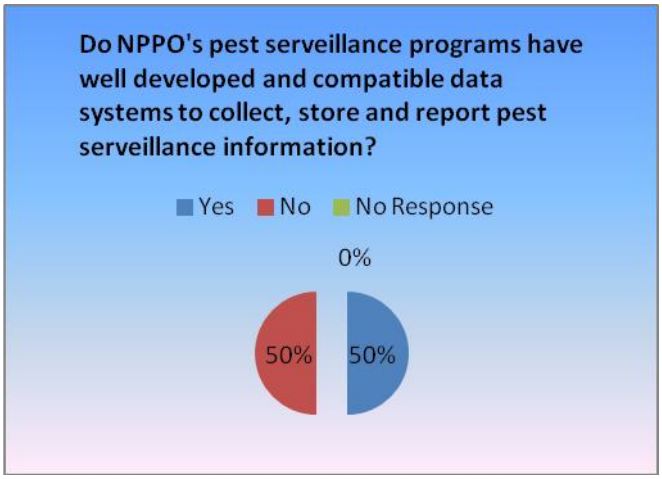

Figure 1

General Pest Surveillance Operational Manuals (Figure 2)

According the respondents, while 45% of respondents indicated that their NPPOs did have operational manuals in place for general pest surveillance, some 51% of respondents do not have operational manuals in place for conducting general pest surveillance.

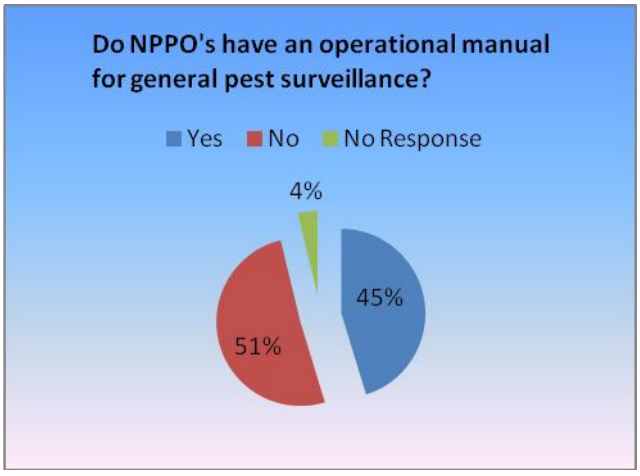

Figure 2

Record Verification (Figure 3)

Most respondents (37) indicated that approximately 1-25% of records can be verified from insect or culture collections. To a lesser degree (26) respondents indicated that approximately 26-50% of their records can be verified from insect or culture collections. At the other end, only 9 respondents indicated that 51-75% of their records can be verified from insect or culture collections and 6 respondents indicated that none of their records can be verified from insect or culture collections.

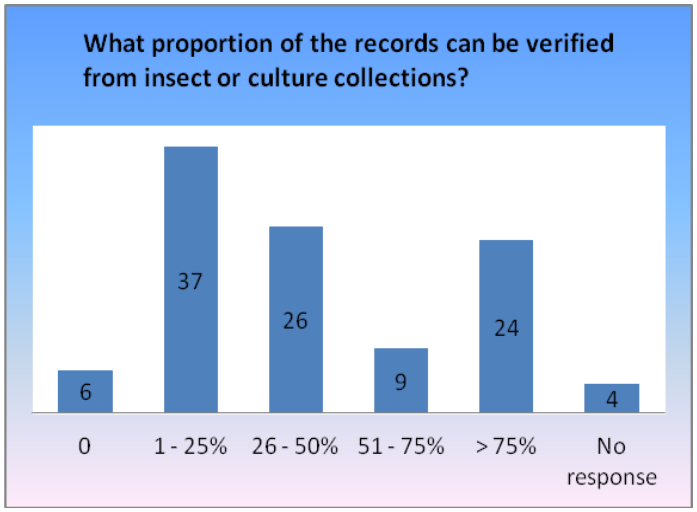

Figure 3

NPPO Use of Virtual Diagnostics (Figure 4)

While 40% of respondents indicated that their NPPOs are using virtual diagnostics such as the transmission of images of pests to a central diagnostics service either inside or outside of their country, half of the respondents indicated that their NPPOs are not using virtual diagnostics. Ten percent of respondents did not answer the question.

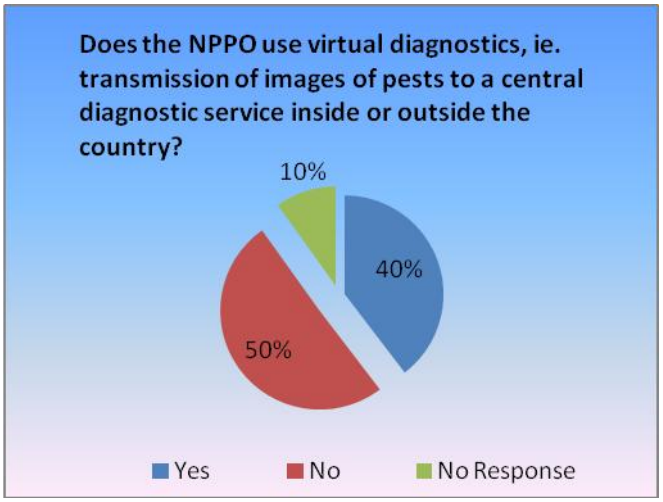

Figure 4

Documented Procedures (Figures 5 and 6)

22% of respondents indicated that there are no documented procedures in place for diagnostics, traceability and reporting etc. Some 18% of respondents indicated that such documented procedures exist within their NPPOs "To a certain extent" while 14% of respondents did not answer this question.

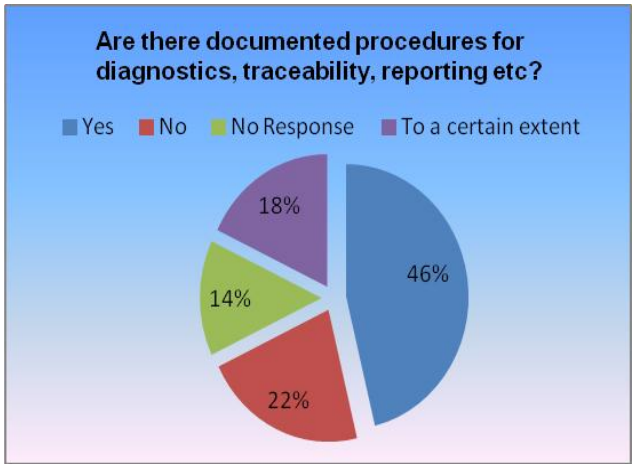

Figure 5

In regards to documented procedures for sampling, sample delivery, intermediation storage and disposal, 19% of respondents indicated that there those documented procedures for the above listed actions are not in existence. Some 17% responded that such documented procedures were in place "To a certain extent" while 16% of respondents did not respond to this question.

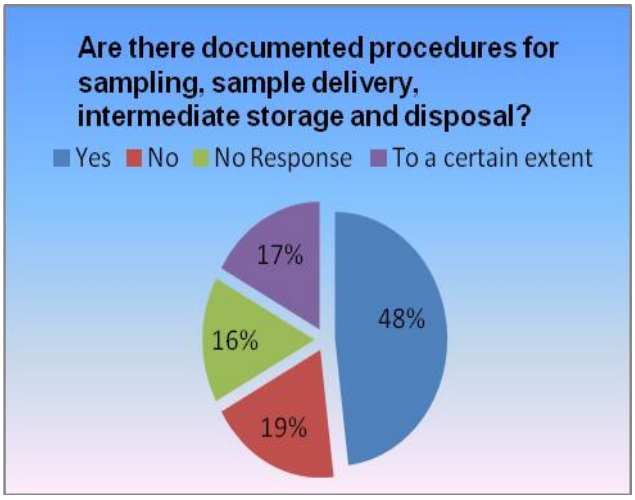

Figure 6

Management of Sample Submissions (Figure 7)

In regards to the management of sample submission, respondents indicated that while 46% of NPPOs are managing their submitted samples in accordance with procedures for diagnostics, traceability and reporting, etc., 54% of respondents indicated that samples submitted are either not managed in accordance with those procedures listed above, that they are managed in accordance with procedures "To a certain extent" or were not in a position to respond to the question (21%).

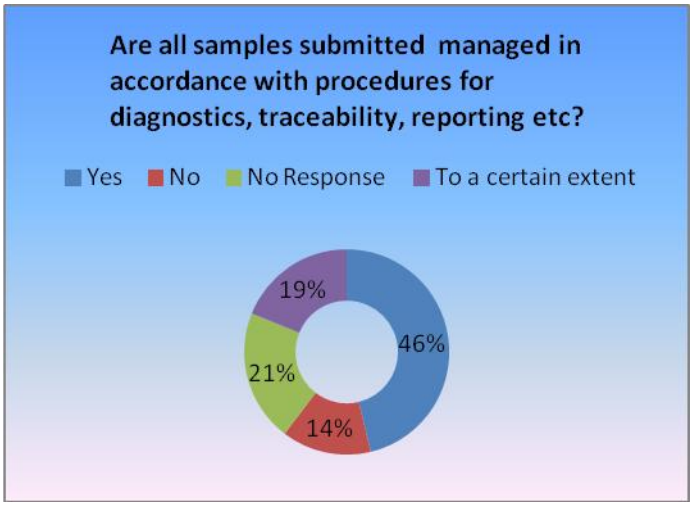

Figure 7

Specific Pest Survey Procedures (Figure 8)

While 59% of respondents indicated that specific pest survey procedures are described in operational manuals or plans, some 39% of respondents indicated that specific pest survey procedures are not described in their operational manuals or plans.

Figure 8

Staff Training (Figure 9)

According to responses, the majority of NPPOs (33%) indicated that only 25% of their staff regularly assigned to carry out pest surveillance have been specifically trained to do so. Conversely 23% of respondents indicated that "All" their staff assigned to carry out pest surveillance have been specifically trained to do so.

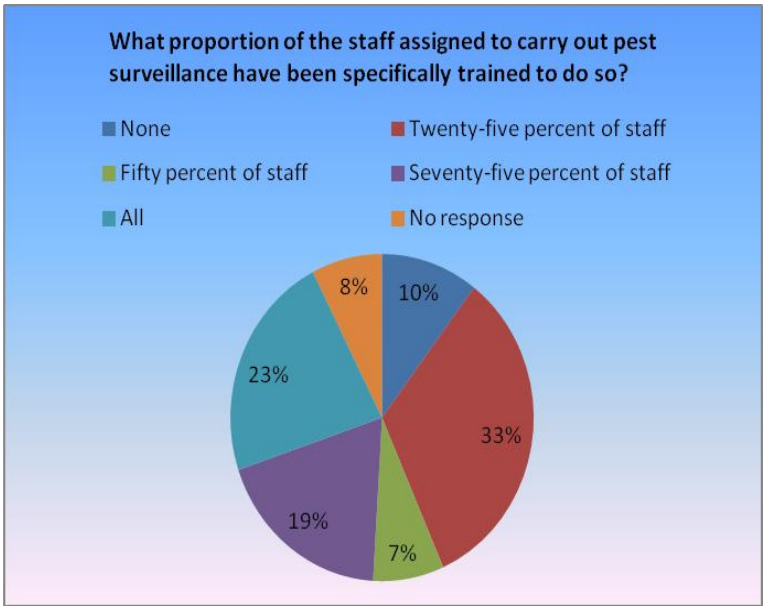

Figure 9

Performance Review Procedures (Figure 10)

While 46% of respondents indicated that their pest surveillance programmes or services do have procedures in place to review their performance, 50% of respondents indicated a lack of procedures in place to review performance.

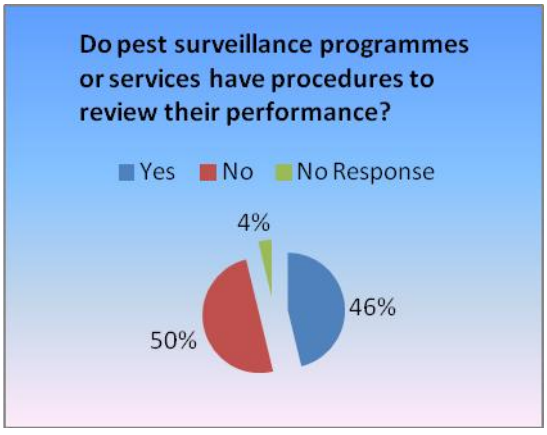

Figure 10

Surveillance Responsibilities (Figure 11)

The majority of respondents (80%) indicated that the surveillance responsibilities of their NPPO include quarantine pests, regulated non-quarantine pests, regulated pests, and non-regulated pests (of national concern). Some 14% of respondents indicated that surveillance responsibilities are limited exclusively to Non-regulated pests (pests of national concern) and Regulated pests.

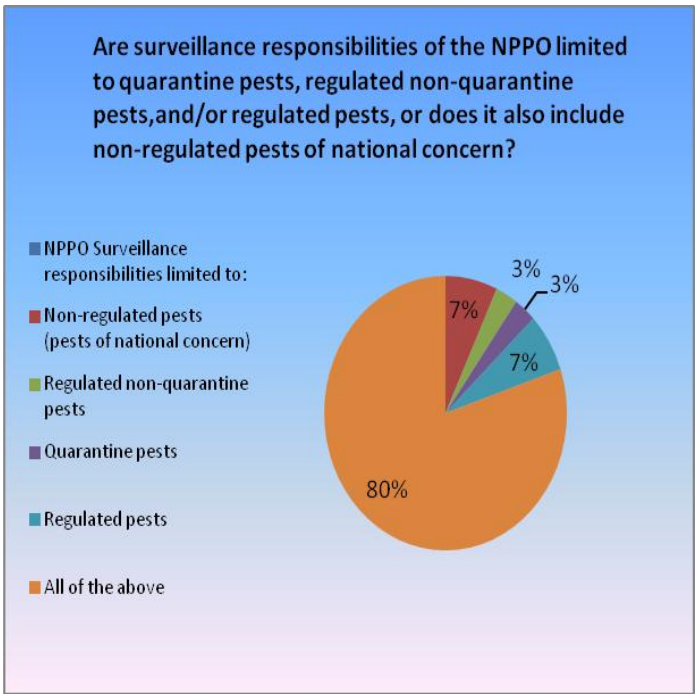

Figure 11

Policy and Legislative Environment (Figure 12)

According to respondents, the top three policy issues that shaped countries' surveillance programmes relate to trade policy, trade agreements and phytosanitary policy.

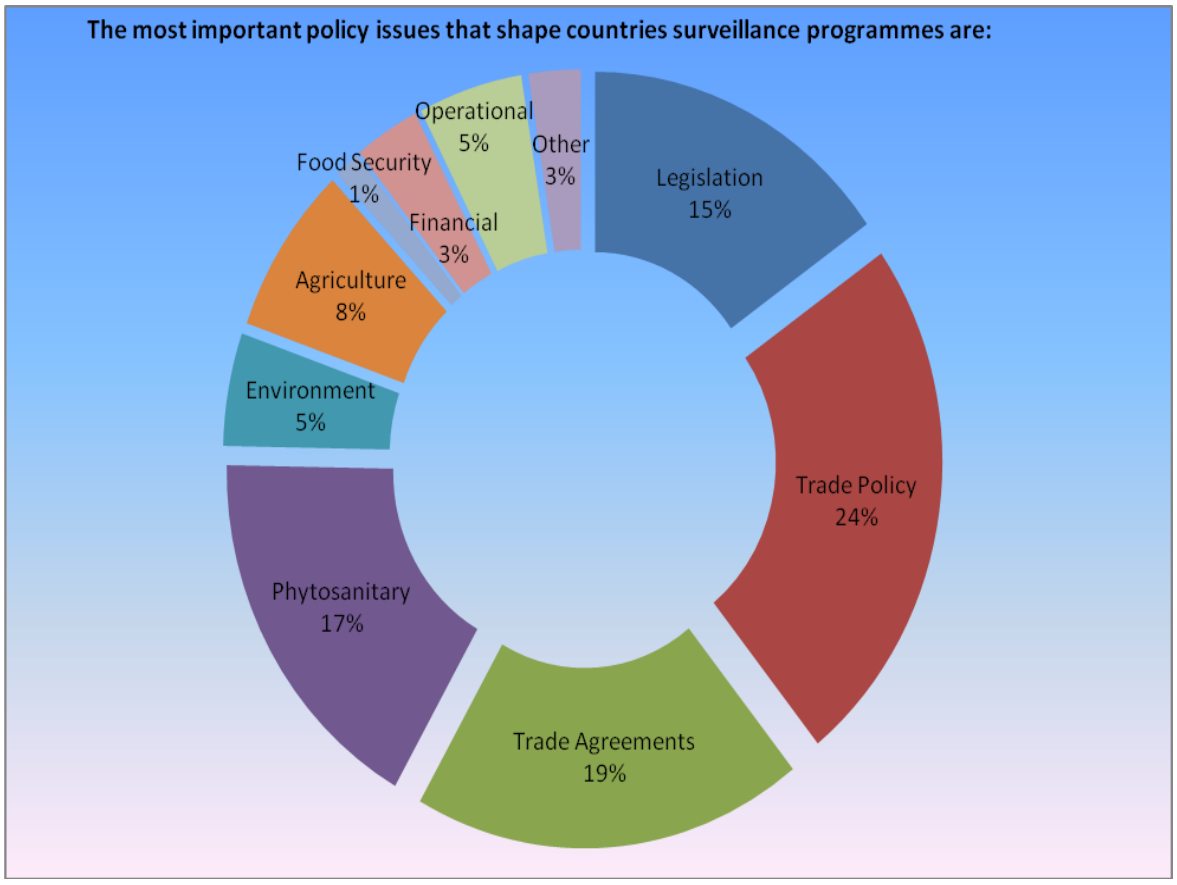

Figure 12

Open-ended Feedback: Conducting effective pest surveillance

Compiled suggested improvements in ISPM6

Administrative

- Remove Bayer codes from ISPM6 due to current inexistence – replace with EPPO codes
- Update terms and acronyms according to the latest version of the Glossary (ISPM5)
- Set up of communication network-information sharing mechanism at national and international levels
- Stress importance of surveillance by noting ISPM6 serves as a basis for other standards, links with food security, links with market access and trade facilitation, links with protection of the environment
- Advice on the content of surveillance legislation could be considered
- Section to be added on auditing
- Recommended system, including a range of elements could be proposed to assist with priority setting that considers aspects of food security, trade facilitation, environmental protection, financial support and cost benefits
- Review the Spanish translation of ISPM6 to improve upon its interpretation
- Revise the ISPM6 text in view of the fact that in each country, a single surveillance system is comprised of general and specific surveillance
- Increase the reach of ISPM6 for further detail stating that phytosanitary surveillance is a permanent and dynamic component of plant health for further development of preventative programmes and the management of pests and biodiversity preservation
- Under section 2, remove redundancy, improve logical flow of text to allow NPPOs to use a standardized framework for surveys – to improve consistency and recognize potential equivalence of survey documentation during negotiations
- Review the concept of “Specific Survey” which, in the context of Pest Surveillance is technically incorrect; “Specific Surveillance” would be more suitable and this concept should be included in ISPM5

Operational

- Promotion of the establishment of plant protection clinics
- Encourage countries to establish crop pest list database to facilitate information exchange and trade within the region
- List accredited laboratories and institutes for pest identification
- Further information to be added on the requirement for the coordination of the agencies involved in surveillance programmes
- Inclusion of guidance on how to implement a pest surveillance system during its different stages including planning, operation, verification, and monitoring and evaluation

- Inclusion of a section on recommendations for good reporting practices related to phytosanitary alert systems
- Harmonize different types of cost saving laboratories for pest diagnostics
- Guidance on the management of surveillance programmes and the quality (particularly statistical) of such programmes

Technical

- Impact of pest surveillance on biodiversity could be included in the standard
- Detail of GIS technology (promoting a proactive approach) and tools such as data logger systems plus, rapid test kits, field identification materials, pheromones for field traps
- Inclusion of an appendix of references for standard procedures for pest preservation
- Manuals and guidelines to assist with the interpretation of the standard
- Inclusion of Annexes on how to develop survey plans/how to design a surveillance programme including more guidance on specific pests, insects and pathogens
- Inclusion of sample surveillance protocol, sampling plans, and sample surveillance – inclusion of case studies, examples
- Include detailed specific guidelines, and simple, more detailed terminology
- Greater information on survey methodologies leading to a greater understanding of three different kinds of specific surveys mentioned, for example delimiting, detection, and monitoring
- Detail a clearer link between ISPM4, ISPM8 and ISPM6
- Add a fourth type of survey titled “Complex Survey” that accounts for checking for all pests in an area under “Specific Surveys” *This was common practice in the USSR and is still used in several countries
- Support in the review and design of legislation and technical guidance in developing manuals and standard operating procedures
- Preparation of pictorial manuals on existing pests within the region
- Include in ISPM6 Appendices on diagnostic directories, accredited laboratories and manuals on pest surveillance etc.
- On-line diagnostic services

Figure 13: Priority areas from compiled country feedback.

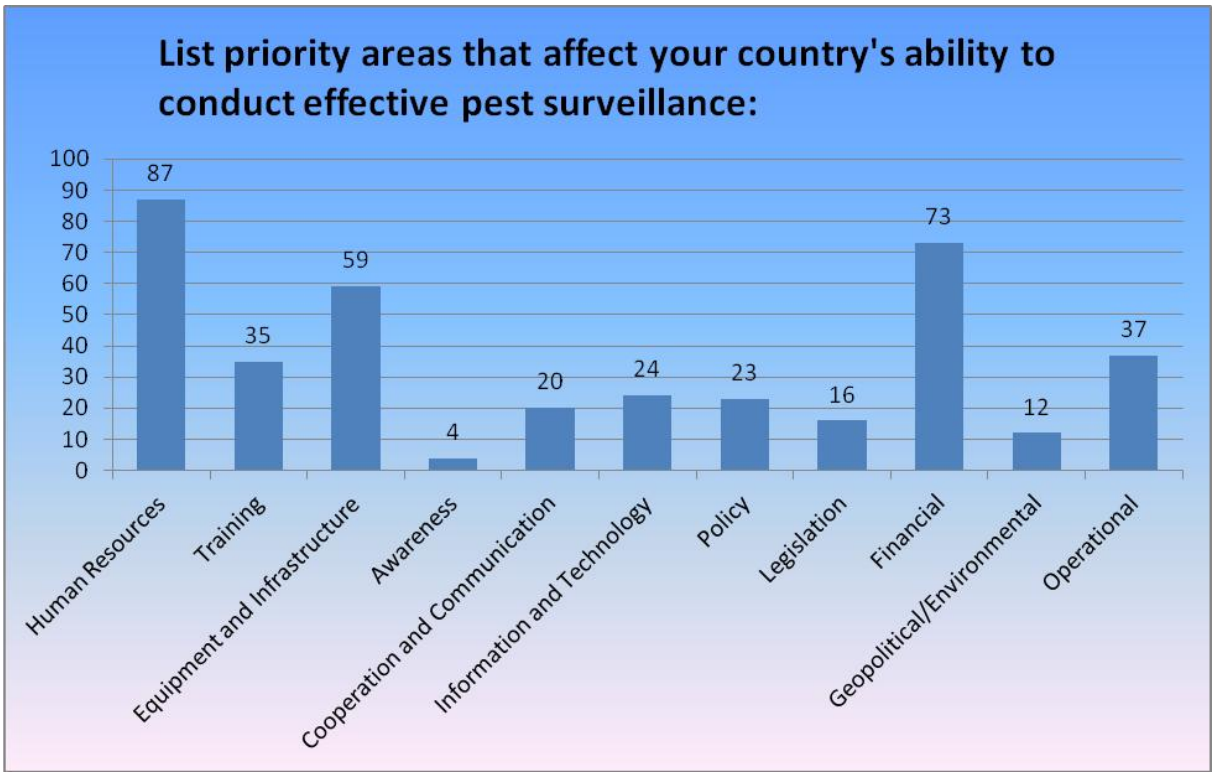

Table 1 below provides detailed country feedback categorized into thematic areas, in addition to suggested actions by the IPPC Secretariat.

Section 2: Detailed Country Feedback

Table 1: Responses given by NPPO Contact Points on the areas that affect each country's ability to conduct effective pest surveillance (clustered into thematic area):

Thematic Area	Country feedback		IPPC Secretariat Suggested Actions
Human Resources	• Availabilities and amount of human resources; • Availability of qualified NPPO; • Capacity constrains (budgetary, staff); • Capacity of the personal; • Diagnostic capability needs improvement • Failure of qualified personnel; • Human capacity; human capacity; • Human resource (field, lab); • Human resource capacity; • Human resources; human resources; human resource; human resources; human resources; human resources; human resources; human resources; human resource; human resource; • Humans resources in quality and quantity; • Inadequate expertise in various discipline relevant to pest identification; • Inadequate national expertise; • Inadequate staff; • Instability of trained staff due to insufficient motivation;	• Low number of trained and experienced staff in most crop protection disciplines, • More human resources, • Need of more staff to cover more area; • Numerous field staff are multi-commodity inspectors which has an impact in delivering effective pest surveillance programs; • Personal deficiency in quantity and quality; • Shortage of manpower for structured pest surveillance; • Shortage of recruits for these positions to meet demand; • Shortage of trained man power for pest surveillance; • Staff dedicated to the plant health program; • Staff member; • Staff resources	• Prepare advocacy materials for governments to recognize the need for: ○ improved staffing levels ○ training

	• Institutional capacity; • Insufficient expertise at the delivery level; • Insufficient human resources; • Insufficient manpower to carry out surveillance; • Insufficient number of experts in this area; no programmed training; • Insufficient staff members; • Lack of expert in pest identification/ diagnostic; • Lack of human resources (qualification, competence, • Lack of human resources in terms of numbers of specialists; • Lack of human resources; • Lack of personnel; • Lack of quality staff; • Lack of specialists in the fields of plant protection; • Lack of specialists; • Lack of specialized qualifications such as entomologist, pathologist etc; • Lack of staff specialized; • Lack of staff; lack of staff; • Lack of technical human resources; • Lack of technical surveillance; • Limited number of human resources specialized in different areas, such, mycology, bacteriology, virology; • Limited personnel assigned to surveillance;	required for improved surveillance; • Staff resources; • Staffing; • Stronger capacity at borders; • Technical provision; • Technician; • The number of staff members NPPO does not give the full meridian to perform the tasks; • Well trained human resources and number; • Workforce; • Workload by other official tasks;	

Training	• Continuing education programs insufficient; • Field visit; • Inadequate training of NPPO staff; • Inadequate training in surveillance; • Insufficient trained human resource; • Irregular training; lack of continuous training; lack of in-service training; limited trainings; • Lack of frequent training programme for staff involved in surveillance; • Lack of trained man power in pest surveillance; • Lack of regular training; • Lack of trained personnel; • Lack of trained staff; • Lack of trained taxonomist; • Lack of training in surveillance and pest identification; • lack of training in this area; • No enough training; • Poor or inadequate in-country training courses in crop protection and quarantine; • Skills training; • Staffs involved in pest surveillance do not have adequate training in crop protection, survey methodology, pests identification, data management; • No qualified personnel in the field monitoring; • Proper training and	• Technical capacity is limited; • The lack of technical expertise in the field of entomology, bacteriology, mycology, virology to get the pests identified within the country; • There are not enough qualified; • Trained human resource; • Training courses, Workshops, The Expert, Helping the Organization; • Training for laboratory staff; • Training for NPPO employees; • Training of all actors; • Training of all stakeholders involved in surveillance (e agents, producers, village brigades; • Training personnel involved in pest surveillance do not have adequate training in crop protection, survey methodology, pests identification, data management, etc; • Training of young staff	• Consider development of specific training courses including appropriate course content; • Seek partners and funding to develop these

	representative sampling; • Skilled and trained personnel for the field (collecting data) and administration (analyzing and processing and storage of data);	(generational overlap); • Training;	
Equipment and Infrastructure	• Accredited fully staffed Laboratory; • Analytical capacity; • Availability and amount of technical resources; • Availability of technology (e.g. Pest specific lures); • Diagnostic capacity is not standardized; • Diagnostics facility/infrastructure; Inadequate infrastructural support; • Electricity; • Equipment, materials; • Equipment; Equipment; • Equipped lab; • Failing to provide means of transport and machinery for the transfer of samples ; • Inadequacy of material resources (logistics, etc.).]; • Inadequacy of transport equipment, computer control; • Inadequate diagnostic capacity including reference collection,; • Inadequate facilities and equipments for surveillance and pest identification; • Inadequate transport i.e. Vehicles; Lack of survey equipment;	• Lack of Diagnostic Capabilities; • Lack of equipment and vehicles; • Lack of equipment laboratory equipment to perform the examinations]; • Lack of equipment; • Lack of equipment; • Lack of identification equipment in the laboratory; • Lack of laboratory facilities and field (diagnostic kits, etc..)]; • Lack of rolling stock (vehicles, motorcycles, etc..); • Lack of surveillance equipment; • Limited number of means of transport, kit for inspection, and other material; • Logistics; • Maintenance of diagnostic facilities, including for food safety, nutritional analysis;	• Preparation of guidance on priority lists of equipment, materials, supplies and other resources needed for surveillance • Prepare advocacy materials for governments to recognize the need for resourcing of surveillance activities

	• Infrastructure (Lab, equipment, vehicles); • Infrastructure like a well equipped and operating pest diagnostic laboratory with well trained personnel; • Insufficient capacity of sample processing; • Insufficient diagnostic services (laboratory not well equipped); • Insufficient equipment for surveillance; • Insufficient material ; • Laboratory accredited; • Laboratory equipment, prospecting and logistics]; • Laboratory Equipment; • Laboratory Resources; Laboratory resources; • Laboratory specialized in the areas of diagnosis of plant diseases as well as the processing of health inspection offices of the necessary equipment.; • Lack of adequate equipment and sufficient; • Lack of adequate Infrastructure (LAB); • Lack of appropriate equipments and materials to conduct pests surveys and diagnostics.; • Lack of developed Laboratory for pest diagnosis;	• Materials, logistics resources; • Need to construct infrastructure ; • No accredited laboratories accompanying the process; • No adequate infrastructure; • Poor laboratory and PEQ facilities,; • Space; • Technical equipment of diagnostic laboratories; • The lack of laboratory facilities (entomology, plant pathology laboratories) to carry out pests diagnostics. ; • Tools for inspectors; • Transportation facility, equipment, laboratory infrastructure; • Transportation problem; Transportation; • Vehicles and insufficient means of communication; • Vehicles; Vehicles;	
Awareness	• Insufficient public awareness to avoid risky behaviors and to report occurrences of emerging	• Low public awareness in plant health; • Public awareness;	• Develop advocacy material for improved support by policy makers and other stakeholders.

	pests; • Little interest in oversight issues on the part of makers		
Cooperation and Communication	• Collaboration of stakeholders • Commitment of stakeholders ; • Cooperative agreements with local government agencies; • Development of an appropriate system of information transfer from the sources to the NPPO and vice versa; • Farmer organization ; • Formal collaboration with other stakeholders (private and public) in providing pest survey data, and other related information; • Inadequate collaboration between the NPPO and information sources phytosanitary; • Insufficient cooperation between countries especially in case of emerging pests; • Insufficient effective communication between the NPPO and other stakeholders of the phytosanitary sector; • Insufficient involvement of stakeholders in avoiding risky behaviors, in carrying out self-controls and in notifying immediately occurrences of pests of national or collective interest]; • Lack of coordination between stakeholders; • Lack of formal arrangement with	• No formal linkage with other pest diagnostic laboratory within or outside the country'; • No involvement of other government and private; • No joint plans with the quarantine laboratory of the official surveys aimed; • Not able to fully collaborate with stakeholders such as some industries and other public units such as the Extension unit of the Min. Of Agric.; • Not improvement of the method of exchange between workers and workers in the laboratory; • Public participation; • Public private partnerships; • Strengthen and reinvigorate regional cooperation in areas of pest surveillance;	• Develop guidance instruments for better coordination mechanisms at national level • Design training materials for enhancing stakeholder engagement at national levels.

	external partners ex. Provinces;		
Information and Technology	• Availability of information material; • Available sufficient scientific information for develop pest risk analysis; • Constraints in the development and use of new technology (satellite surveillance, aerial surveillance, air and water sampling etc); • Data base available but not yet verified; • Data management; • Database organisms; • Database system; • Do not enter enough information system to process information and easily accessible in case of necessity; • Insufficient means of early warning;	• Lack of national/centralized pest data record; • Lack of reference laboratory in the country for identification; • Lack of well organized database etc; • Limited pest reference material; • Modernization of techniques of monitoring and survey; • No computerized database for collecting, storing and use of pest information • Pest listing/ obligatory monitoring EU survey's;	• Develop good practice manual that outlines how surveillance data is generated, stored, retrieved and used. • Design an improved mechanism for real time exchange of official information

	• Lack of a centralized storage/retrieval pest surveillance system • Lack of an efficient system of data collection and management of phytosanitary information; • Lack of knowledge in using GIS technique; • Lack of management tools and data retention (logiciels. Etc;	• Poor pest information management and accessibility; • System setup information exchange and data; • Technology, limitation of availability of information; • Technology;	
Policy	• Administrative policies of the government (long administrative procedures for obtaining new purchases as traps and other important materials; • Better administration of plant protection; • Central guidance in a federal state, specific national plan; • DPV nascent; • Economical and political pressures; • Emphasis; • Established NPPO; • Extension arm- RADA) • Financial security; • Institutional priorities; • It is an activity imbedded into the operations of three organizations/departments: Ministry of Agriculture & Fisheries	• Marginal government commitment - • No clarity national policy and priority arrangement; • Not having enough flexibility to contract 3rd parties for the delivery of surveys; • NPPO does not cover pest surveillance; • Policy support; • Poor Government funding due to lack of collaboration between Government agencies/institutions and the private sector; • Quarantine laboratory derived from the National Organization	• Develop a model phytosanitary policy to guide development of subsequent phytosanitary and associated legal frameworks. • Develop advocacy material for improved support by policy makers.

	(Plant Quarantine and Research & Development; • Lack of National Policy on Phytosanitary Surveillance; • Limited number and narrow scope of surveys;	for Plant Quarantine; • Support for the laboratory of analysis and pest management; • The outflow of specialists; • Weak policy;	
Legislation	• Activating the legal framework to grant full powers to quarantine clients employees of the plant in the country so they can freely apply the legal provisions in force in the field of health monitoring of the plants freely and transparently; • Frameworks; • Implementation of text on the application of laws for plant protection; • Inadequate regulatory framework; • Jurisdictional dispute; • Lack of legal power with NPPO to utilize the service of public/private organizations; • Legal; • Legislation; Legislation;	• National legislation; • No extension of regulations; • Not always clear or consistent legal provisions; • Outdated plant protection legislation; • Regulatory framework of Customs Union; • Revision and extension / dissemination of phytosanitary legislation; • The Act/Regulations provides for surveillance but implementation is almost zero;	• Develop a model phytosanitary policy to guide development of subsequent phytosanitary and associated legal frameworks.
Financial	• Availability and cost of diagnostic	• Lack of funds; lack of	• Develop advocacy material for

	resources; • Availability of resources; • Available financial and technical resources (including capabilities for pest diagnostic); • Budget constraint; budget problem; • Budget; budget; budget; • Budgetary resources required for instance for better training and for buying equipment ; • Capital investment on appropriate laboratories; • Competition for funds with other activities; • Do not have enough technical equipment due to lack of funding; • Failure of adequate financial resources; • Finance; finance; finances; finances; • Financial and technical resources (including capabilities for pest diagnostic) are not available; • Financial consequences to ensure efficient surveillance; • Financial recourses; financial resource; financial resource; financial resources; financial resources; financial resources; financial resources; financial resources; financial resources; financial resources; • Financing; • Funding; funding; funding;	money; • Lack of operating budget and motivating salary; • Late approval of funds; • Limited budget allocations for operations; • Limited budget; limited financial resources; • Money in a timely manner; • Money; money; money; money; • No budgetary allocations for surveillance; • No effective allocation of resources to the section carrying out NPPO responsibilities; • No funding; • No operational budget; • Not granting special allowances for those working in this area as well as the need to increase salaries to allocate them to the original as well as the responsibility of all employees in the area so etjrdoa to apply laws in a professional.; • Poor funding; • Resources - financial;	improved funding particularly from national (particularly the private sector) and other sources. • Develop advocacy material for improved funding particularly from national sources. • Develop advocacy material emphasizing the importance of public/private partnerships for successful implementation of the standard.

	funding; funding; funding; funds; • Inadequate budgetary allocation; • Inspection costs - travel; • Lack of budget for phytosanitary surveillance; • Lack of budget for trapping/surveillance in the country; • Lack of financial resources to conduct surveillance; • Lack of financial resources to ensure regular surveys; • Lack of financial resources; lack of financial resources; lack of financial resources; lack of financial resources; • Lack of financial support;	• Resources both material and financial; • Resources, both financial and human; • Resources; • Scarce resources (infrastructure and human); • Scarcity of inputs • Staff funding; • The lack of sufficient funds from the national government to conduct pests surveillance in the islands.;	
Geopolitical/Environmental	• Accessibility of areas ; • Country large extension Huge number of different crops; • Difficult access to forest stands and wild nature; • Difficulty of pest detection on a specific commodity; • Geographic location of the boundary points; • Insecurity • Number of pests	• Some pest/commodity interactions are very complex; • The nature of farmers which is mainly small owners and having cross crop farms; • Vast expanse of territory; • Weather conditions; Weather conditions;	• Develop materials that showcase how other countries implement the Standard under similar circumstances.
Operational	• Accredited laboratory procedures for diagnosing; • Administrative limitations which affect the activities; • All components of a surveillance programme are available but not organized as the ISPM dictated;	• Non-operational laboratory; • Presence of the relevant guidance; • Prioritization of the surveillance program • Procedures for specific	• Document best practices for a variety of surveillance programmes • Develop appropriate guidance documents and technical resources for practical implementation as appropriate. • Identify technical assistance for

	• Availability of staff outside NPPO; • Identify and develop diagnostic protocols for key pests, weeds, invasive, environmental, contaminate pests of priority trade commodities where not available and/or relevant; • Implementation of ISPM 6 in the practice of plant quarantine; • Lack of accredited and certified laboratory; • Lack of centrally organized surveillance system; • Lack of documented procedures for surveillance; • Lack of epidemiologic vigilance program; • Lack of formal pest diagnostic agreement; • Lack of laboratories; • Lack of organizational structure for conducting pest surveillance; • Lack of proper guideline for conducting surveillances; • Lack of standardized surveillance procedures; • Lack of strategic and operational plan; • Lack of strategic plan and operational procedures manuals; • No dedicated staff or unit for surveillance program; • No operational guidelines and instructions for carrying out surveillance for pets and the procedure;	pests, especially for disease organisms; • Risk targeting; • Structure; structure; structure; structure; • Techniques; • The absence of descriptions of procedures aimed at surveys; • The need to review pests surveillance systems and manual to get adapted to the current economic development of the country • There is no proper designated staff as comprising nppo - all staff is research staff with the core function: to conduct research; • There is no specific program to configure the workers in the field of pest control (in vitro) on the diagnostic techniques for diseases of plant; • Well conceived monitoring program; • Written procedures for implementing the procedures;	skills development in the identified areas. • Showcase how other countries implement the Standard.

	• No strategic and operational plan; • No surveillance planning and operational manual developed;		