Report on the Round Table Discussion on indicators of implementation of the International Plant Protection Convention[1]

7–8 October 2013
Windsor, United Kingdom

Executive Summary

The IPPC implementation review and support system (IRSS) project convened a small group of results-based management experts to explore options for developing objective indicators of IPPC/ISPM implementation and assessing the impact of this implementation. The value of indicators for measuring the use and impact of activities and standards, as well as for informing planning of future work, was recognized by all.

The group discussed the IPPC (its objectives, activities and obligations, and operational structure), the availability and gaps of data in plant protection, and evaluations of the IPPC to date. The group built on this topic-specific information with general discussion on selection and overall characteristics of indicators, especially in cases where more than one factor is influencing the ultimate goal.

The group formulated a hierarchy of impacts, recognizing three areas of significant contribution by the IPPC: food security, agro-enterprise and ecosystems. By mapping the pathway of contribution – through prevention of the introduction of regulated pests – and the input activities, it became clear that indicators are needed at various levels. Risk-based indicators, shared from a country plant health review, are needed along with capacity indicators in order to satisfy a range of stakeholders who may be influenced by the information.

The consensus was that it is useful to continue with a stepwise approach, first analyzing existing information while working towards improving the quality and collection of more precise indicators. The group considered the challenge of collecting new information or asking other parties to provide information and discussed incentive-based options to strengthen feasibility and quality of reported information. Above all, the group highlighted the need for foundational work on meaningful indicators is key to later successful impact assessment. The group suggested that on-going input from an advisory group with a range of expertise in monitoring and evaluation would be valuable to design and review indicators. Further details of recommendations are outlined at the conclusion of this report.

1. Opening

The meeting was opened by Orlando Sosa of the IPPC. He introduced the proposed agenda (as in Appendix 1) and welcomed the diverse expertise and experiences of the participants (listed in Appendix 2). He noted that the broad experience in results-based monitoring from a range of sectors would add valuable expertise to the discussions. He set out the expectations for the meeting: to consider options and feasibility to develop indicators of implementation of the IPPC/ISPMs, and to explore modalities to assess the impact of IPPC implementation.

[1] Cite as: Quinlan, M.M., Sosa, O., Mumford, J., Hammons, S., Belton, D., Christodoulou, M., González, M.M., Fulponi, L., Holt, J., Lamb, J. and Murphy, R. (2013) Report on the Round Table Discussion on indicators of implementation of the International Plant Protection Convention, Windsor, UK, 7–8 October 2013. IPPC, Rome.

Round Table discussion participants in front of the Guildhall in Royal Windsor, United Kingdom.

2. Overview of the IPPC

An overview of the IPPC was provided including its strategic objectives, activities, and context within FAO and within regulatory frameworks (including plant health, trade and invasive species). The context of increased interest in implementation in the IPPC community and emphasis on results-based monitoring in FAO was shared. In advance of the meeting, discussion questions on objectives of indicators of IPPC implementation (presented in Appendix 3) had been shared with the IPPC Secretariat and several leaders in the IPPC community. The responses were discussed.

It was highlighted that further discussion on implementation of the Convention and its standards, including measuring the extent of and impact of implementation, was key to demonstrating the value of the IPPC as well as a logical next step in global plant health cooperation now that a strong basis of globally harmonized standards has been adopted.

Table 1 presents an overview of the current obligations and activities of the IPPC. The participants discussed these to clarify the range of themes whose implementation and impact would be discussed.

The context of the interest in indicators of implementation was discussed. It was highlighted that for several years the IPPC had explored a need for improved implementation and that this had been discussed in the context of a possible compliance mechanism, a need for strengthened emphasis on national reporting obligations, and the context of the IPPC and FAO strategic frameworks where shared. The results of a 2007 external review of the IPPC[2] were mentioned. Progress over recent years in defining national phytosanitary capacity and developing a more clear capacity development strategy was described.

[2] Brader, L., Mumford, J., Nalder, K., *et al.* (2007) Independent evaluation of the workings of the International Plant Protection Convention and its institutional arrangements. FAO, Rome. ftp://ftp.fao.org/docrep/fao/meeting/012/k0233e02.pdf

Table 1: Overview of the IPPC	
Purpose	"to secure common and effective action to prevent the spread and introduction of pests of plants and plant products, and to promote appropriate measures for their control"[a] (Article 1)
Activities	Development of standards Facilitation of national reporting obligations Phytosanitary capacity evaluation (PCE) – development and management of evaluation tool and implementation through capacity development projects Governance Review of the state of international plant protection in the world Dispute settlement Capacity development Communication Resource mobilization (liaison, trust funds) *Also:* Implementation Review and Support System – short-term project
Obligations for Contracting Parties *(see IPPC text for complete list)*	Set up and administer a National Plant Protection Organization (NPPO) Designate an official IPPC contact point Conduct surveillance and pest risk analysis Certify exports and regulate imports Develop and take into account phytosanitary standards Train and develop staff Meet reporting obligations: • IPPC Official Contact Point • Description of the National Plant Protection Organization • Points of entry • Phytosanitary restrictions, requirements and prohibitions • Official pest reports • List of regulated pests • Emergency actions
Operation	Operates by consensus and through support to NPPOs ("compliance mechanism" not supported) Some implementation is flexible ("to the best of their ability") NPPOs can delegate all but issuing phytosanitary certificates to other bodies
Stakeholders	Contracting Parties NPPOs RPPOs International organizations • WTO SPS Committee; STDF • CBD; Montreal Protocol; ICAO; IMO • FAO; IAEA • OIE, Codex Alimentarius Commission (sister organizations) Export/import interests, trade associations, shippers Consumers Environmental interests Development interests Technical equipment interests Donors Technical assistance providers
[a]Pest = "Any species, strain or biotype of plant, animal or pathogenic agent injurious to plants or plant products any organism that adversely affects plants" ['pests' but not pest products such as aflatoxins]. A 'regulated pest' is a quarantine pest or a regulated non-quarantine pest, as defined in ISPM 5 (2012), Glossary of Phytosanitary Terms.	

The context of the Implementation Review and Support System (IRSS) project was explained as a three-year donor-funded project to analyse the extent of implementation of the IPPC and provide

options to support improved implementation. Materials on the purpose of the IRSS, its origins and its outputs were circulated to participants in advance and referenced at the meeting. This meeting was not designed to evaluate or comment in depth on the IRSS efforts to date, although a few suggestions were made as noted later in this report. The activity to explore feasibility of implementation indicators is part of the IRSS project as one option to explore the extent and impact of IPPC implementation.

Issues that arose in the participants' discussion of the overview of the IPPC included:

- The paucity of data in the plant protection sector such as historic and present information on extent and impact of pest damage
- Limited fulfilment of Contracting Parties' reporting obligations
- The need to improve communication and awareness at all levels: between IPPC and NPPOs, between IPPC and external stakeholders, and between NPPOs and in-country stakeholders, in order to enhance engagement
- The need to understand the 'who benefits/who pays' nexus for the IPPC in relation to government/industry/donor/recipient relations and its potential role in Contracting Party disengagement/disconnection

It was apparent that the evaluation efforts to date have been considering indicators of plant protection systems (i.e. how are they operating?) more than indicators of their role in reduction in risk. The group discussed that it may be virtually impossible to determine if the IPPC has reduced the movement of pests (as reviewed further in section 8), but that the IPPC contributions to this broader outcome could be explored.

For example the experts considered that direct indicators of success of the IPPC could include markets opened or maintained for plant products, a positive change in pest status such as the recognition of a pest free area, improvement in capacity of the NPPOs to address the threat of an introduced pest, etc. – data which are feasible to obtain and which the IPPC traditionally has not used to show success of the convention.

It was felt that progress in national/bilateral trade represents success for the IPPC based on the system for common language and regulatory processes that the IPPC has harmonized, and it would be valuable to capture this information.

3. A framework for indicators of implementation of the IPPC

The discussion led to identification of features of the IPPC and its activities that are pertinent to assessing its impact and to the use of indicators. In terms of assessment, the group suggested that it may be useful to think in terms of impact on *beneficiaries.* The group identified the various sectors affected by the IPPC and, following from this, the points at which impacts could be discovered.

Potential benefits of successful implementation of the IPPC would be expected to fall in three categories, identified in line with the IPPC strategic objectives:

- Food security (maintain national plant resources)
- Agro-enterprise (facilitate trade)
- Ecosystems (protect environment)

It was noted that the focus of the IPPC seemed to have been more on protecting domestic production (food security) in early years; then it shifted to trade facilitation with the influence of the

WTO Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement); and most recently the importance of the IPPC for protection of the environment was highlighted with the elaboration of the CBD. The development of a monitoring and assessment plan is a good opportunity to integrate all three categories of impact as valuable outcomes from the implementation of the IPPC. A conceptual framework or hierarchy of where impacts of the IPPC might occur has these three highest level categories for impact at the top (see Fig. 1).

Although the IPPC is, of course, not solely responsible, the three top-level benefits are facilitated by prevention of the introduction of regulated pests, which is dependent on the implementation of the IPPC. The group considered it to be very valuable to specify the IPPC's role in contributing to these categories of benefits. This then enables the IPPC, NPPOs and RPPOs to demonstrate the wider value of their work.

The implementation of the IPPC was seen as dependent on activities such as knowledge management, development of harmonized approaches such as ISPMs, developing country-level capacity, cooperation, and monitoring implementation. This hierarchy was captured by the group as Fig. 1, which informed much of the subsequent discussion.

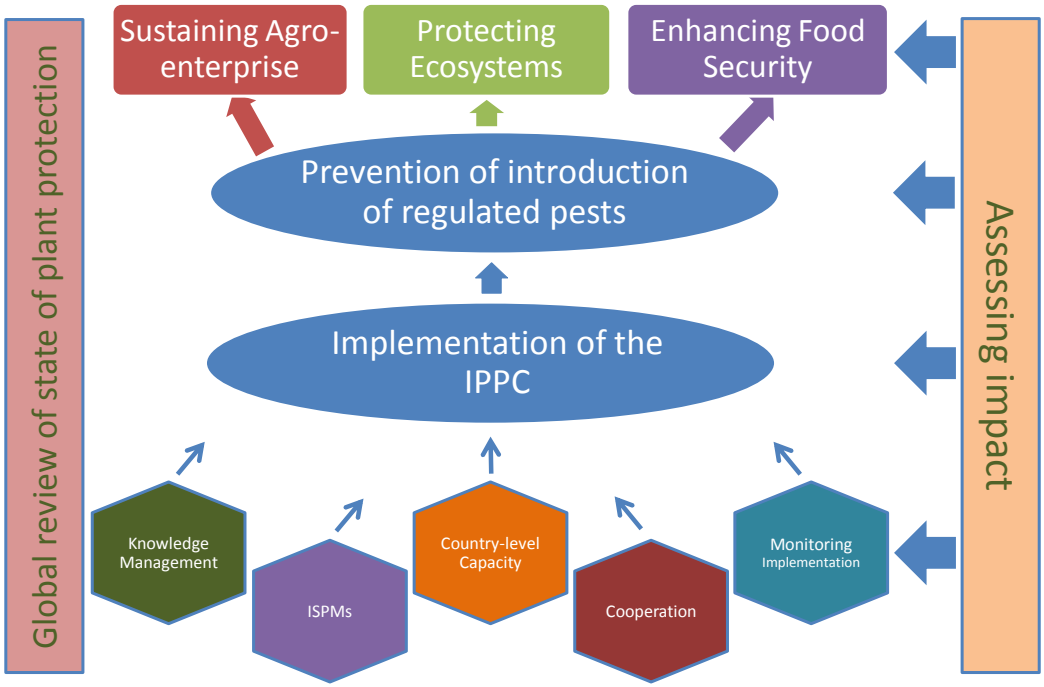

Fig. 1: Hierarchy of actions and impacts for the IPPC.

Assessing impact requires appropriate indicators for each of the four levels to be identified. Simultaneously, the bars along the sides of Fig. 1 indicate activities in and of themselves. Monitoring the implementation of the IPPC activities will comprise an activity within the IPPC work plan, but impacts should be assessed at each level of the hierarchy to capture the full picture. While a global review of plant protection by the IPPC – akin to the FAO reviews for agriculture and forestry – might be desirable when resources permit, it remains a potential future activity and is thus included in Fig. 1 but is deliberately not connected – i.e. 'arrowed' – to other elements.

The hierarchy, as shown in Fig. 1, was converted into a simple model to map causal and dependency relationships. This could also allow analysis of partial fulfilment of purposes through probabilistic estimates of implementation. This is an approach that has proven very useful in the STDF project 'Beyond Compliance'[3]. When more detailed discussions on available data and indicators take place, it may be worth returning to that structure to examine where data collected can play multiple roles in expressing impacts.

The experts encouraged the IPPC to continue to measure the supporting activities of the IPPC with some lower-level, but more direct indicators (e.g. measurement of country-level capacity), while also including possibly coarse and not-directly attributable higher-level indicators. The group also discussed that, in addition to preventing the introduction and spread of pests, an important goal of the IPPC is "to secure common and effective action". It would be interesting to assess the extent to which the efforts to harmonize approaches, build capacity and share information result in the coordinated approach which is the foundation of the convention. This is shown as a contributing activity at the lowest level within the framework, but could supplement other levels of the framework by being translated into terms of effectiveness of implementation or efficiency in achieving objectives at any level shown.

Finally, the value of even coarse indicators reflecting both the impact and the challenge was noted. For example, data are easily available to make such statements as: *the value of international trade in horticultural products has doubled in less than ten years*, or, *pesticide resistance has led to an increase in interceptions on this trade*, or, *the number of inspectors for the volume of vulnerable imports has dropped*. While these statements do not reveal much about the impact of the IPPC, they highlight the increasing challenge to achieving impact and, with additional information, can be directly related to risk-based indicators which take into account the challenge, effort and results.

4. Issues with indicators

Once in agreement on the overall framework for examining impacts, the experts identified features of the IPPC relevant to how its implementation can be assessed in terms of: (i) improved effectiveness and (ii) increased efficiency. This required more detailed consideration of how appropriate indicators can be identified.

The hierarchy in Fig. 1 (or its more detailed representation in a model that maps causal/dependency relationships) can be used as a guide for consideration of where impacts might be measured and what indicators will be most appropriate. There will need to be indicators appropriate for each audience for the information or stakeholder. For example, standards are viewed differently by different sectors (legal protection, public good, barrier to trade, etc.). Therefore, there may be multiple indicators at different points. There may also be indicators for implementation at the global level as well as at a country or regional level for the same point in the hierarchy. Table 2 expresses some of the possible issues brought up during the Round Table when considering indicators in more detail.

[3] "Beyond Compliance: Integrated systems approach for pest risks management in Southeast Asia" (STDF/PG/328).

Table 2: Functioning of IPPC and NPPOs in relation to identifying assessment indicators		
Feature/Issue	**Points emerging**	**Take-forward messages, questions and comments**
IPPC aims to protect cultivated and wild plants by preventing the introduction and spread of pests	• Trade vs government perspective: agendas may differ, i.e. what importer/wholesaler/retailer will accept is not necessarily what will keep the pest out • IPPC is about securing borders, but not about entering products into commerce • Role of private standards in trade	• Engage with the private sector/industry • Recognition of the NPPO by other stakeholders (from agro-enterprise) as gatekeeper for trade is a possible indicator?
Funding/ resources	• As part of the FAO framework, there are constraints on where IPPC funds can be sought, particularly external fund-raising • Country resources limited, so competition between ministries (e.g. environment) and for different pests to be targeted	• Contracting Party government resource mobilization needs to be facilitated/improved • Now has International Partner Organization status so eligible for GEF funds directly
Stakeholder engagement	• Many and multi-levelled range of stakeholders, some more closely or distantly involved, and in different ways • In general, a narrow range of direct interactions of stakeholders with IPPC • Stakeholder engagement more distant than with some other organizations	• Categorize; recognize different roles • Be aware of who benefits/who pays • Engage with external as well as internal partners
Communication	• Is tightly linked with engagement (IPPC to NPPOs) • What gets reported in literature and website is 'information heavy' but analysis poor • Necessary as it is a repository for information for/from countries	• What different stakeholders want to know varies: may need to target messages for different groups • Craft messages for different purposes; use a range of media (e.g. video) • Keep messaging narrowly directed to create ownership/involvement • Need a communication officer
Operates via NPPOs, with a (donor-led) focus on developing countries	• NPPOs can delegate all but issuing phytosanitary certificates to other bodies within-country; paradoxically this can leave NPPOs marginalized owing to poor communication inter alia • The NPPO is the sole interface with IPPC. Although the IPPC advises NPPOs to set up in-country consultation, failure to understand the NPPO-IPPC process may lead to poor IPPC engagement with other stakeholders • Limited interaction with the private sector, a major limitation on creating greater/different impacts	• Assessing IPPC implementation means also assessing NPPOs • NPPOs need to improve communication with delegated bodies for enhancing performance and morale within the NPPO • NPPOs need to improve in-country awareness of the role of IPPC, particularly with industry
Obligations and optional actions for NPPOs	• Voluntary/support ethos of IPPC–NPPO relationship means pressure is not brought to bear on NPPOs, over compliance for example • Reporting by NPPOs is frequently poor, even for obligatory actions • Certification is widely implemented; trust is implicit in countries' acceptance that the phytosanitary certificate system is working • Resources are scarce: should NPPOs do a lot for a few key activities, or put a little effort into a broader range of actions? How do NPPOs compete for resources within their governments, and what can IPPC do to support this? • IPPC and NPPOs priorities may be different; should they be more in step? If so, who leads? Does the IPPC tell stakeholders or respond to needs/demands?	• Look for ways to make fulfilling IPPC obligations useful to the NPPO • Use of incentives to raise the profile/appeal of IPPC activities – to implement, to report – cf. other duties of NPPO staff • Potential of assessment data/indicators to be used by NPPOs for internal advocacy • Phytosanitary certificates are a data source

The comment was made that too much preoccupation with standards imposed by retailers ('voluntary' standards) misses the role of the NPPO and of the public good for importing countries, not to mention the value to the exporting country in terms of improved protection from pests, food safety, etc. Experts not greatly familiar with the IPPC and NPPOs early on in the meeting observed a 'humble' and 'underdog' attitude about their accomplishments. This issue was discussed further in terms of core financial support, size of staff and other parameters which will affect the development of a new stream of evaluation activities.

5. Other models: CPHR and ISEAL

Indicators used in two different situations provided input for considering options for establishing indicators for the IPPC: an evaluation by Agra-CEAS Consulting of the EC's Community Plant Health Regime (CPHR)[4], and as used by the ISEAL Alliance, a group of voluntary standards organizations[5], with their Code of Good Practice as an example.

The Agra-CEAS study for the EC began in 2009 and was the first evaluation of the EU Plant Health scheme, which was originally established in 1977. It provides a related example of a regional plant health regime. The review was conducted by surveying the Chief Plant Health Officers, as well as farmers, input/seed suppliers, food industry, shippers, consumers, NGOs, etc. in the then-27 EU member states and making recommendations which are now being incorporated in revised EC legislation. It used World Bank and OECD methodologies and spent a month coming up with indicators and related evidence bases for each of 28 evaluation questions in 12 themes.

The lack of data for performance measures was a significant issue. A major output was attracting increased interest from governments and the public on the benefits of the plant health policy.

With its members, ISEAL developed a Code of Good Practice for Assessing the Impacts of Social and Environmental Standards System based on a monitoring and evaluation (M&E) system. Members consult with stakeholders about what type of indicators and data they want. The integration of M&E involves a culture change in institutions and is a long-term process, and it is vital to make this a core activity.

The CPHR assessment and ISEAL presentations provided a pool of criteria for indicators that the IPPC could consider (Table 3).

Table 3: Criteria for indicators for evaluation

CPHR assessment	ISEAL Alliance standards
Relevance	Relevance, Credibility, Transparency
Effectiveness, Efficiency	Effectiveness, Efficiency
Utility, Added value	Accessibility, Adoption, Accountability
Coherence	
Sustainability	

The CPHR process has been followed three years later by an EC Draft Regulation, which drew much terminology from the report; e.g. 'robust', 'transparent', 'sustainable', 'fit for purpose', 'sharing', 'incentives', 'efficiency', 'intervention logic for financing' (+ accessibility – implicit but not specifically used).

[4] http://ec.europa.eu/food/plant/strategy/docs/final_report_eval_en.pdf
[5] www.isealalliance.org/

ISEAL had commissioned a review of M&E which showed alternatives to the approach of direct attribution. When multiple factors are contributing to the desired outcome (e.g. for poverty alleviation it could be supported by programmes in health, economic growth and education), the important question discussed in their paper was whether the intended outcomes and impacts, and the pathways to reaching these, were clearly identified and whether the standard setting or certification body's activities could be demonstrated as in alignment with these intentions. More information is available on the ISEAL website.

Both presentations covered ways of conducting assessments, with the ISEAL presentation covering this topic in detail. The key messages were:

- M&E of standards can both demonstrate impact and improve impact through corrective learning and realignment of activities
- Intended change needs to be defined (how will it occur?), monitored and periodically evaluated, leading to learning and improvement
- M&E entails engagement, resources and stakeholder inclusion
- Standards should be viewed as holistic systems, not just as the isolated text of the standards themselves

(The mechanism for learning and adjustment based on the results of M&E is perhaps in the nascent stage in the IPPC and relies on project supported activities.)

M&E uses a logic chain (Fig. 2), and at each step takes account of relationships with previous and subsequent steps.

Fig. 2: The logic chain.

Any activity would fit into this logic chain and, for the IPPC, it is also relevant to one or more levels in Fig. 1 (Hierarchy of actions and impacts for the IPPC). The logic chain concept became a key conceptual tool during discussions of how the IPPC might identify and apply indicators.

6. IPPC: available data on plant health

Kinds and sources of data which should be available to IPPC on plant health were identified (Table 4), based primarily on reporting obligations (listed in Table 1). There was also discussion of the gaps, reasons for them and how they might be filled. This included consideration of how NPPOs are structured, and how they operate to protect the production supply or production chain, secure exports and check imports, and interact with border authorities.

Table 4: Data potentially available in the field of plant health

Budget for entire plant health system
Budget for the NPPO alone*
NPPO structure
NPPO contact
Number of border inspectors/hours worked
Number of staff/hours worked on PRA (or other categories, such as on policy and regulatory; on diagnostics and taxonomy; etc)
Published legislation, regulations and notifications to SPS
Number, identity, source (country/commodity) of interceptions
Data on interceptions of pests in cargo
Data on interceptions of pests in the mail, luggage, or other pathways
Number, identity, area affected etc of outbreaks/eradications
Trade statistics on agricultural imports
Breakdown of imports of fruits and vegetables; cut flowers, nursery and plants for planting; forest products; other products susceptible to pests
Trade statistics on agricultural exports
Applications for permits (national)
Phytosanitary certificates issued
Fee schedule and statistics from export certification
Number and area of crops surveyed
GIS information on crops and areas surveyed
Technical assistance / funding received through projects
Roster of experts and breakdown
Pest lists (updated pest status)
Regulated pest lists
Registers of third party service providers
Annual reports
Import requirements register
Sampling and trapping information
Trace-back records
Treatment records
Import permits logs
Importing country interceptions
Audit information
Inventories
Terms of references / job descriptions
SOPs, protocols, etc.
Agreements (MoUs, cross border, etc.)
Customs information, etc.
Immigration data
Fees and fines
Results of PCE (PVS or similar)

The group considered that discussions on indicators opened a good opportunity for the IPPC to consider its data collection and reporting approaches and to consider an approach that would be valuable for both the IPPC/global perspective as well as for NPPOs. This need for some kind of incentive to participate in reporting exercises was discussed and explored.

Possible reasons for the failure by NPPOs to meet very basic reporting obligations were considered. Scarcity of data reporting is not easily explained, but may be related to the low profile of NPPOs in

general and the pervasive lack of political and material support for plant health. The IPPC has been striving to improve Contracting Party performance in meeting reporting obligations. It has recently implemented a new strategy to focus on one or two obligations a year, and will be assessing whether this leads to any improvement.

Previously, variation in availability of country-level data that could be used in simple analyses has been observed by region (see Appendix 4[6]). The strength or weakness of recording national data varies: some small developing country records are more complete than larger developed ones. The structure of the government, such as the relationship between federal and state or provincial governments, affects what data are collected, aggregated or left in more detail, available to the public, etc. This is based more on historic development than on logic and versatility. Bureaucracy generally equates to plentiful record keeping, if not data management and analysis.

Additional existing information, beyond that required by reporting obligations, may be useful to employ or to analyse and interpret as indicators, or components of indicators, of impact. Many data are unpublished, however, and/or on paper only, so accessing data in an efficient electronic format is often problematic. In addition, there is the issue of 'trade confidentiality', particularly when using data easily associated with particular private companies.

The group discussed the relative value of creating a robust system for gathering specific plant health information, versus investing in analysis of existing data from existing sources. The latter may be able to provide insight on general trends in risk and impact.

One possible source of data is the Phytosanitary Capacity Evaluations (PCEs) carried out by Contracting Parties, or other FAO member countries upon request (Box 1).

Box 1: Expert Group comments on Phytosanitary Capacity Evaluation information

The experts were very interested in identifying mechanisms already collecting information, such as the PCE. They saw the information as a potential source of useful indicators for the future. There are pros and cons to this idea. The characteristics of the current PCE and potential uses and changes were discussed.

The PCE is a self-initiated and self-administered evaluation of national plant health capacity. It is a tool developed and managed by the IPPC Secretariat and its use is not imposed or required by trading partners. It is frequently used as the basis for a national phytosanitary action plan. There is often a change in legislation after a PCE, but the request for a PCE indicates that there is already a predisposition for change, rather than the PCE being the direct cause for change. The PCE is part of a change process that is already in train. The PCE also acts as a learning exercise for the NPPO in terms of information sharing and awareness-raising, two important components of cooperation and knowledge management (Fig. 1).

It has been developed and revised significantly by the IPPC, either through funding or directly, and is available to all. The IPPC supports countries to conduct PCEs through provision of the tool itself (with the necessary maintenance and updates), guidance on its application and in many cases a facilitator.

PCE results are a rich source of comprehensive information on national phytosanitary systems that is collected in a consistent way and therefore well-suited for compilation and analysis. However, these results are confidential unless released to the IPPC by the Contracting Party's authorities therefore it has not been used even for anonymous aggregate analysis. Even when the IPPC provides a facilitator and, therefore, is aware of the results, the information may not be used without express permission. In addition, a few

[6] Day, R., Quinlan, M. and Ogutu, W. (2006) Analysis of the application of the Phytosanitary Capacity Evaluation Tool. Report to the Secretariat of the International Plant Protection Convention, November 2006. www.ippc.int/sites/default/files/documents/1173096427927_PCE_Assessment_Final_Report_1.pdf

countries are known to be employing the PCE with no IPPC support and the results are not being shared with the IPPC.

Limitations in terms of use for indicators:

- Focuses on NPPO functions, not the uptake of IPPC outputs or the broader impacts of the convention
- Produces confidential data; permission must be sought by the IPPC and provided by the Contracting Party, in order to use the data
- Quality of follow-up information provided to the IPPC is variable and questionable
- Not currently feeding into country comparisons or global trends
- Use is currently limited to around ten countries per year due to limits on IPPC facilitator time
- Results from different versions of the PCE can be difficult to compare
- The Secretariat provides the facilitator in many instances, but there is no cost recovery for his or her time when already on staff of the FAO

Opportunities:

- Designed to be of relevance to all Contracting Parties, from countries at all levels of development
- Can be administered in part or whole, and saved for future use and comparisons over time
- Contributes to awareness-raising, especially with domestic stakeholders
- Has increasingly resulted in development of a national strategy
- Has been the basis for application for donor funding to enhance capacity
- Represents a global view of the capacity needed for carrying out plant health roles and responsibilities
- Compiles a robust source of information and is intended to be repeated on a regular (five year) basis
- Demand for facilitated application exceeds current capacity, implying the possibility for cost recovery (from donors or NPPOs)

Based on this, the group suggested exploring options to strengthen the PCE's usefulness to the monitoring and evaluation such as:

- Enhance the PCE tool to provide more, and by preference automated, analysis of the results to the NPPO, for example quantitative or semi-quantitative responses which could be reviewed for improvement over time
- Propose that confidential information be pre-approved by the country for use in aggregated form, where no countries are identified (this could be collected through the above automated tool)
- Propose that specific sections of the PCE without significant sensitivities be made publicly available unless otherwise requested by the country
- Introduce specific 'public-access' questions so that those results can be used without additional permission
- Introduce questions relating to the three high-level categories of impact: food security, agro-enterprise and ecosystems
    - This will raise awareness of the higher-level impacts of the NPPO as part of the other awareness-raising
    - This could serve as a country-level evaluation of the implementation of the IPPC, either in its role of support to the NPPO or in and of itself

The PCE was one example of an existing information collection mechanism which is not being used effectively to provide data for the IPPC to more effectively do its own work. At the same time, the PCE also could provide indicators of the successful implementation of the IPPC.

Other models of how to collect information were discussed, including the OIE Performance of Veterinary Services and the IICA plant health 'performance, vision and strategy' (both commonly using the acronym PVS). These models also are limited in terms of the availability for global analysis, with similar causes of limitations as those noted in plant health. The success of the ISEAL Alliance in

engaging its members in incorporating M&E into their activities may be worth considering. Additional financial support was secured by ISEAL for this initiative.

7. IPPC: data for future indicators

The greater part of the second day was spent in open discussion and 'brainstorming'. Discussion centred on

(i) what information would be useful to use for indicators and how to decide this,

(ii) how to elicit the information from countries, and

(iii) what methods for information gathering from countries might be more productive than the present ones based on support and encouragement.

A summary of these discussions appears as Table 5. While it was acknowledged that the quality of data is key, it was agreed that coarse data could be used in the short term while better quality data collection and analysis is put into practice.

Two distinct categories of indicators had been identified:

- targeted risk (i.e. has implementation of the IPPC reduced the movement of pests?), as described in Appendix 5, and
- plant protection systems (i.e. how are they operating?).

The table in Appendix 5 was developed in the context of an individual country strategic plan, but is applicable to many. It demonstrates a risk-based, versus effort-based set of indicators. This reflects more closely the ethos of risk-based decision making and proportionality of effort and measures to risk.

Reference was also made to previous presentations and discussions, and to the system used by the OIE in developing standards and indicators. System modelling was used to demonstrate how probability models of different levels of complexity can be used to assess the contribution of different actions and indicators – with the caveat that the model you use affects what you find. The group offered ideas, but suggested some preliminary actions to take before settling on specific indicators and/or a plan for monitoring and analysis (see conclusions).

The group discussed the great value that a strengthened body of data/information on both IPPC and NPPO implementation could have. Better data to draw from would provide better evidence for decision making to the internal IPPC community, but also allow for a stronger profile among external stakeholders, including donors. The close link between information, communication and engagement and with funding was agreed. Specific suggestions were given on future funding.

Furthermore, as noted in the advance survey (Appendix 3), measuring outcomes related to the IPPC strategic objectives can identify where there may be gaps in international harmonization of phytosanitary measures, and thus the potential for ISPMs to be developed to address these. These discussions would strengthen the methodology for evaluation of implementation of the IPPC and ISPMs. This strengthened implementation review methodology would:

- Improve targeting of capacity development assistance to directly impact the areas that would benefit from assistance
- Assist with long-term evaluation of effectiveness of capacity development assistance
- Provide clearer information on the relevance and impact of the IPPC and its ISPMs on phytosanitary systems and impact of pests of plants at a national and regional level

- Strengthen the evidence base on implementation of the IPPC and its ISPMs to lay a foundation for analyses of improved implementation and cost-benefit analyses

Table 5: Summary of issues regarding data related to future IPPC assessment indicators

Feature	Points emerging	Take-forward messages and questions
Data collection	• Countries slow to report	• If reporting is poor, is the wrong information being sought? Make reporting more relevant by realizing what indicators/dimensions also mean something to the countries • Incentivize: –Introduce element of competition –Highlight success stories –Highlight good/timely reporting: indicates capability –Focus on a few key pests to make manageable –Donor/travel funding contingent on timely reporting? • Make it easier to report (email/electronic form?) • What results are useful for the country, e.g. for advocacy, funding, awareness? i.e. Create a demand for them
	• What data are available already?	• Categorize in terms of utility: what allows the overall mission to be assessed? • What information is useful in terms of indicators and assessment?
	• What additional data could be gathered?	• Doing everything = overload • Focus: on priority pests, key commodities, pathways, receptor systems • Use trade associations as data sources; may need funding to gather data for minor crops
Data quality	• Variable, often poor; affects what analysis can be done and the reliability/usefulness of results	• Guidance to NPPOs on recording information, e.g. inspection-hours; where inspectors are and what they are doing, not just how many there are • Information systems can become onerous, review periodically; focus on relative priorities/priority pests, pathways, etc.; use country priority lists where available
Categorization/ priority lists	• Devising meaningful priority lists: what to target? Do you go for high risk/low impact, or vice versa? Do you categorize by pest or crop/commodity group? • Focus in PCE is the plant health system rather than crop/pest	• Easier to measure inputs than outputs, but outputs are better indicators • Draw on risk assessment methodology; e.g. from PRATIQUE project[7] • Not just an IPPC challenge; draw on categorizing activities by other bodies • National quarantine plant health risk registers: can monitor increase/decrease in specific or overall status; use of key species or subsets of the registers as indicators • Priority is not just politically determined, also relates to trade and market access, need to reach consensus; interests will converge, e.g. impacts on trade also affect livelihoods, which will push it up the government agenda • Consider economic implications: can any effective and efficient actions be taken to control pests? • Use of sensitivity analysis to assess impact on a range of major criteria

A number of ideas for facilitating data collection were put forth. The challenge of so many pests, and pest/pathway combinations, in plant health is appreciated. The idea of a focus – perhaps by region –

[7] PRATIQUE, https://secure.fera.defra.gov.uk/pratique/, is described in: Baker, R.H.A., Battisti, A., Bremmer, J., Kenis, M., Mumford, J., Petter, F., Schrader, G., Bacher, S., De Barro, P. Hulme, P.E., Karadjova, O., Lansink, A.O., Pruvost, O., Pyšek, P., Roques, A., Baranchikov Y. and Sun, J.-H. (2009) PRATIQUE: a research project to enhance pest risk analysis techniques in the European Union. Bulletin OEPP/EPPO Bulletin 39(1), 87–93.

on a limited number of key pests, significant pathways and priority hosts or endangered areas (e.g. crops, ecosystems, protected areas) was welcomed.

The group discussed the challenge of prioritizing risks and multiple criteria analysis. Various attempts to do this were discussed, without a specific recommendation.

There was also agreement that there needs to be a shift away from the perception that the information Contracting Parties are required to supply is solely for the benefit of the IPPC. There should be an effort to create incentives for data sharing by also making them relevant to the NPPO and other national needs. Information that is valued for learning, awareness-raising, advocacy, etc., will be useful information.

Several participants suggested that, based on their experience in other sectors, if information is not reported, it may not be the appropriate information to request for the comparative and information-exchange activity. It is worth determining what is preventing the Contracting Parties from meeting their basic reporting obligations.

8. Next steps to IPPC indicators

The remainder of the second day was devoted to discussion about how the IPPC might move towards using indicators to assess the implementation of the overall convention and of plant health systems. Participants used Fig. 1 (Hierarchy of actions and impacts of the IPPC) to facilitate discussion of some potential positive and negative indicators (pest-free areas, number of incursions, trade blockages, market access actions) to allow them to explore the challenges to finding robust indicators. It was felt that any progress in national/bilateral trade represents success for the IPPC and should be captured as such.

A significant issue throughout the meeting was recognition of the need to enhance stakeholder engagement with and from the IPPC. In terms of the form an assessment of the overarching IPPC role could take, it was recognized that including NPPOs as active partners in the process could make the activity more relevant and therefore more attractive to them. Suggestions included involving them in the process of devising the assessment: consulting about questions they would like answered, selecting from a range of possible indicators according to their interests.

The group discussed the option of putting assessment of the IPPC implementation into the hands of the NPPOs by providing them with the means or tool to conduct it, in addition to having input into its design. It was envisaged that this could be achieved by designing an electronic tool (Box 2). This would put control with the people who generate the data and facilitate some standardized analysis and interpretation.

NPPOs would then have the results for their own use (self-evaluation, communication with domestic stakeholders, awareness-raising, advocacy, fund-raising) and hopefully share the information with the IPPC, possibly as part of an anonymous compilation collected online. The idea was that direct involvement of and benefit to NPPOs could strengthen their buy-in to such a process. Similar tools have been designed by the Imperial College London team in Environmental Policy (e.g. for the Atlantic Tuna Commission, British Invasive Species Risk Panel, etc.).

Box 2: Proposed tool for NPPOs to evaluate the IPPC

A user friendly tool may be developed in widely accessible software, such as Microsoft Excel ™. Characteristics of such a tool should include:

- Contracting Party-relevant IPPC indicators selected from a menu in the tool
- The tool formulated with carefully defined dimensions and scores to ensure credibility
- IPPC delivery rated on a range of relevant dimensions
- Simple electronic selection and scoring
- Subjective scoring, allows uncertainty scoring and calibration
- Free-form entries for examples and documentation to be given
- Inclusion of measures that consider how the IPPC meets high-level aims (see Fig. 1), as well as Contracting Party needs
- Feed-back score to the IPPC (with dimensions used)

NPPOs could also use it or similar tools for an exercise in self-analysis:

- For internal use, for general reporting (an added service from the IPPC)
- For credibility-raising and advocacy for in-country leverage of broader IPPC actions

Additional 'brainstorming' ideas included the possibility of producing 'key topics' templates for flyers/brochures on topics of common concern (e.g. high levels of incursions, surveillance–actions–trade protected) into which NPPOs could enter their own results from country-level assessment to produce country-tailored products for advocacy purposes with relevant Ministers, donors, etc. – an example cited was the statements of accomplishments shown attractively in the lobby of the New Zealand Primary Industries headquarters. If such templates provide a user friendly output for the NPPO, it is more motivating to collect the data. The IPPC then would benefit from collecting these highly relevant data from NPPOs taking advantage of the programme.

This is a cultural as well as practical shift in the approach to assessment, and it was recognized that it will therefore require a good deal of groundwork to develop and implement. It was suggested that the tool would need to be developed and trialled in a few countries, refining it from lessons learned, before rolling it out more widely.

The IPPC Secretariat and governing bodies could, using a separate tool or framework designed for the purpose, be able to conduct an analysis of their own performance – i.e. what they do for Contracting Parties – by integrating these results, with appropriate weighting (such as volume or value of trade, etc.) given to data from different countries.

Bearing all of this in mind, choice of indicators is actually a complicated decision. Two types of indicators were identified:

Primary indicators apply to all the primary objectives (in the IPPC case, supporting agro-enterprise, food security and ecosystem protection). They need to be identified for the main IPPC functions:

- Delivery and maintenance of standards
- Information exchange
- Cooperation/Compliance/Implementation/Capacity
- Dispute settlement

Primary indicators should address (i) how the needs within each objective are articulated, (ii) whether that need has been met and the rate of delivery by the IPPC, (iii) whether it has been adopted by NPPOs or other stakeholders and who is using it, and (iv) what the outcomes are. This can be visualized using a matrix of these four categories for each of the four principal IPPC functions noted in the previous bullets.

Secondary indicators relate more to *how* an objective is being met:

- Relevance; Effectiveness; Efficiency
- Priorities (set and meet each priority, but also the balance of activity)
- Participation; Engagement; Sustainability
- Cost-effectiveness; Additional funding to activity
- Evolution/change in response to conditions/needs
- Added value
- Transparency; Coherence
- Credibility; Accessibility; Utility; Accountability
- Logic chain (see Fig. 2): inputs/actions/outputs/outcomes/impacts

In considering measurement options, it is important to bear in mind how potential indicators relate to the high-level aims (facilitating agro-enterprise, protecting ecosystems, and food security), whether primary or secondary, and the sources and practicality of the indicators. To do this, it is helpful to list and rank potential indicators by characteristics. A valuable tool at this stage is the logic chain (Fig. 2): it should be clear how each indicator fits into the process (inputs through to outcomes) and if it is not clear, it is probably not an appropriate indicator.

It is a cultural change to build the indicator concept into activities and planning, and incorporate a logic chain to plan and check performance. In such a system, though, indicators provide not just feedback but help to plan for a purpose.

9. Conclusions from the Round Table

It was recognized that there is still some way to go, but the meeting has advanced understanding of the characteristics of indicators and how they are used. The two-day meeting was considered by all to be a valuable use of time. The fact that most of the participants were not previously well versed in the intricacies of the IPPC brought new perspectives to the challenge of assessing implementation of the IPPC and of NPPOs.

The key messages of the Round Table were:

1. Engage with a broader range of stakeholders, reflecting the three categories of beneficiaries.

The recognition of the three categories of beneficiaries where impact from successful implementation of the IPPC can be felt – food security, agro-enterprise and ecosystems, will lead to a broader informed constituency and encourage broader funding. Funding follows engagement. In addition to financial resources, the stakeholders are an important source of information and the key to uptake of the lessons gleaned from this information. Indicators should be drawn where possible from already available information. Some of this information may be held by a range of internal and external stakeholders, and there may need to be appropriate incentives to engage these stakeholders sufficiently to encourage them to provide the information to the IPPC. A process to demonstrate how indicators are of mutual benefit should help.

The constituents for protection of ecosystems, in particular, need to understand the IPPC and have an entry point for engagement, or the contributions to this area are likely to be ignored. Consider seeking GEF funding to develop this area.

2. Ensure that indicators mean something to the target audiences.

The meaning of indicators needs to be absolutely clear so they are used consistently and data are comparable across assessments that have used them (other topic areas can provide examples[8] of shared terminology for and examples of indicators). For this reason it is important to know who will use the indicators, and when and how. Understand who will be motivated to provide information and to learn from the discoveries provided by the indicators.

Ideally, proposed indicators should be tested with prospective users. A survey of stakeholders to find out which indicators have meaning for them is desirable and should precede work on development of data collection, analysis and so forth. Remember external stakeholders, as well as the internal ones.

3. Make the information valuable to those providing and collecting it.

Sharing of information requires an incentive for the NPPO or other groups putting in this effort, especially when the quality of data must be improved or new data collection is required. Their low response on reporting obligations implies a lack of incentive.

The development of indicators should be piloted with a small number of NPPOs as a short-term project, before presenting them to the broader IPPC community. Explore whether countries would be willing to allow PCE confidential information to be used in aggregated country/Contracting Party information where no countries are identified; alternatively, consider introducing specific 'public-Access' questions in the PCE (Box 1).

Innovative ways of increasing the value of the information, such as automated analysis of PCE results, or development of glossy templates for presenting persuasive facts to the NPPO's domestic stakeholders so that providing the information would yield something useful to the NPPO, may lead to increased data sharing with the IPPC.

4. Choose indicators from existing data and plan for better data in the future.

Find indicators at various parts of the hierarchy (Fig. 1) and always relate to the logic chain (Fig. 2). Start with coarse data available now, build towards enhanced data possibly not even collected currently.

It will take some changes in culture, additional funding, and some debate and discussion, before knowing where data collection and analysis should be improved for future use.

5. Plan a review process to evaluate the indicators and learn from what they are saying

Indicators are not set in stone and their use should be reviewed: annual feedback from NPPOs (possibly via electronic means – Table 5) provides an external measure while periodic or continuous self-indicator analysis by the IPPC provides internal measures.

[8] Cormier, R. *et al.* (eds) (2013) Marine and coastal ecosystem-based risk management handbook. ICES Cooperative Research Report No. 317, pp. 53–54. www.ices.dk/sites/pub/Publication Reports/Cooperative Research Report (CRR)/crr317/CRR317 Marine and coastal ecosystem based risk management handbook.pdf

The opportunity for monitoring and evaluation to be a source of learning should be anticipated and built into the plan.

6. An external advisory group should be established to comment on details of the IRSS over time, in order to involve a range of technical expertise in monitoring implementation and impact.

A time frame of three years, matching the funding stream, was proposed. Several of the experts at this Round Table indicated their willingness to serve in this capacity, which could be supported with minimal cost.

7. And finally, the IPPC has achieved a strong framework for cooperative action to prevent the movement of pests; it should promote a culture shift that helps to share responsibility for the implementation of this framework, and collecting success stories and sharing this information, with NPPOs, RPPOs and other partners.

Appendix 1: Proposed agenda

Monday, October 7		
9:00 am	Introductions and Purpose of the Discussion	Orlando Sosa, IPPC Secretariat
9:30 am	Purpose of the IPPC	Megan Quinlan, Imperial College London
10:00 am	Activities of the IPPC	Sonya Hammons, IPPC Secretariat
Coffee Break		
11:00 am	Stakeholders of the IPPC	John Mumford, Imperial College London
11:30 am	Benefits of the IPPC	Sonya Hammons
12 noon	Discussion	
12:30 pm	*Buffet Lunch in Hotel Restaurant*	
1:15 pm	Primer on the IPPC, Regional and National Authorities and Relationship to the World Trade Organization	Megan Quinlan
1:45 pm	The Evaluation of the European Plant Health Regime	Maria Christodoulou, Agra-CEAS
3:30 pm	The process of defining impacts and choosing indicators for voluntary standards: The ISEAL Code of Good Practice	Marta Maireles González, ISEAL
Coffee Break		
2:30 pm	Discussion on data available in the field of plant health	Orlando Sosa
Finishing by 5 pm	Conclusions from today's discussion	John Mumford

Optional Monday Evening Activities		
5:15 – 6 pm (also on Tuesday)	Evensong, Saint George's Chapel, Chapel of the Knights of the Garter	Windsor Castle (arrive to King Henry VIII Gate by 5:05 pm – across the street from hotel)
6 – 7:30 pm back at hotel	Public Lecture by Richard Howitt MEP on Business and Human Rights, as part of the Colloquium 'Innovative perspectives on business and human rights indicators'	Cumberland Lodge, Great Park (allow 20 min by taxi)
7:30 pm	Dinner at local pub	

Tuesday, October 8		
9:00 am	Experiences in monitoring impact of other programmes and international organizations (OECD, World Bank, OIE and others)	Sonya Hammons moderates
Coffee Break		
11:00 am	The IPPC Implementation Review & Support System (IRSS)	Orlando Sosa
11:30 am	Characteristics of possible IPPC indicators	John Mumford
12.15	Priority questions which can be answered for the IPPC	Megan Quinlan moderates
12:45 pm	*Working Lunch in Session*	
1:15 pm	Open discussion	John Lamb, Abt Associates; Linda Fulponi, OECD moderate discussion
Coffee Break		
Finishing by 4pm	Summary of discussions and conclusions regarding next steps for selecting indicators and developing an impact monitoring system	John Mumford

Appendix 2: Participants

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Appendix 3: Range of expectations for indicators

Questions in advance of the indicators meeting

The following discussion questions on objectives of indicators of IPPC implementation were shared with the IPPC Secretariat and several leaders in the IPPC community. Their responses were mentioned to the Round Table, but kept anonymous.

1. What are the questions you/IPPC/CPM want to answer?

Answers to this question elicited two types of response.

(i) Questions about an indicator-based assessment of implementation:

- Implementation links with indicators. Impact links with assessment – not indicators, i.e.:
  - Implementation indicators might involve questions regarding the existence of legislation relevant to the ISPM, the development of national standards on the subject, the construction of training programmes, the presence of related work programmes
  - An impact assessment would evaluate the effects of the ISPM on national programmes dealing with food security, trade facilitation, environmental protection, etc.

  Which is the IPPC interested in? Both?
- Is an objective measure of implementation (something other than a self-reported level of implementation) possible and useful? For all IPPC obligations/ISPMs? For some of them?
- What would measurable progress look like in the IPPC/CPM context? At IPPC/CPM level? At national level? Do other levels matter – perhaps regional?
- What information is needed to measure implementation of IPPC/ISPMs? *[see below]*
- What information would be needed to measure impact of IPPC/ISPM implementation (impact of harmonization, use of phytosanitary measures, etc. (impact on food security, environment, market access, cost savings through harmonization)? *[see question 2 below]*

(ii) Questions for indicators to answer:

- Which IPPC strategic objectives have been achieved or to what degree?
- Which particular IPPC process or system has facilitated this (e.g. ISPMs, IRSS, CDC)?
- Which IPPC strategic objectives have not been achieved or to what degree?
- From the point above, why not (e.g. no harmonized measures, ISPM gaps, capacity gaps)?

And at a higher level:

- Why invest in the IPPC?
- What value does its work have in the grand scheme of things?
- Does it make a difference?
- How can the IPPC know it is making a difference?

2. Do you/IPPC/CPM have the information sufficient to answer them (or do Contracting Parties have it? or would it take collection of new information?)?

- The IPPC currently does not know what it needs
- It needs to think about what could be collected from active contribution by contracting parties, and what could be passively collected and analysed by the IPPC (reporting in IPP, SPS, FAO stat, etc.), whether past and/or future PCE results can be used

- Some information is available and some could be collected, much of the information is not published

Information currently available from:

  - National reporting through the IPP
  - Survey responses from IRSS
  - Participation at meetings
  - Potentially have the info from PCE (where shared; currently the property of countries)

Information could be collected from:

  - IRSS questionnaire responses, in conjunction with PCE

- How to prove the value of 'preventing' pest damage? Difficult to prove the counterfactual: what would have happened had regulations not been put in place? (And to what extent those regulations are strengthened by the harmonization process)
- Questions would be needed which are specially directed at the ISPM being examined

3. Why do you/IPPC/CPM want to answer these questions now (the IPPC has run over 60 years, so why do this now)?

- New agreement was negotiated 15 years ago and entered into force eight years ago; long enough to have learned some lessons
- To demonstrate IPPC impact, how it achieves its strategic objectives
- Many standards have been developed on key phytosanitary issues. What's next? More detailed standards? Revise the standards?
- To find out what are the difficult areas within an ISPM, thus find out what assistance is needed to implement the standard, etc.
- Desirable in the general context of emphasis on evidence base to drive donor priorities and programme planning
- Funding is harder to come by so need to make sure the IPPC is doing the things that matter and that give best value for money
- To ensure the IPPC remains relevant, particularly since it operates in the larger framework of the FAO
- In view of changing expectations of the governing body (CPM)
- To ensure the IPPC can fulfil all of its mandate

4. Who is the 'user' for the indicators?

Internal: Standards Committee and CPM/Bureau for priorities for standards setting, SBDS, IRSS or TRG or implementation group, or CDC regarding priorities for areas of support

Contracting Parties/NPPOs for self-evaluation against meeting responsibilities (in conjunction with PCE); RPPOs

FAO for reporting and budgeting

Technical Assistance providers

Donors

5. What would you/IPPC/CPM expect to change as a result of developing the indicators?

- Development and prioritization of standard setting and capacity development work programmes through assessing the results of the indicator programme so that they are:
  - More closely aligned to real-world needs of Contracting Parties
  - Cost effective and have impact
- Increased targeting of support, e.g. inputting into ISPMs, IRSS, CDC, implementation, with clearer/stronger message to donors

(Thus) greater support for the IPPC's work, including better funding support

6. Would you/IPPC/CPM expect the changes to affect resources, either attracting more or spending more?

- Expect to be attracting more and spending more, but towards more meaningful actions
- More resources needed if programmes are established if none of the current ones stopped
- If information is targeted to donors, possibly more resources will come
- If no additional resources identified, more efficient use of existing funds (but possibly need additional resources if it increases the expected output from work plan)
- Demonstrating impact would attract more resources. However, more information on the current state of implementation may be needed before demonstrating this impact
- Funds expended on setting up monitoring system; monitoring would identify needs; those needs highlighted to mobilize resources
- Useful to attract talent in the IPPC Secretariat that can deliver on new programmes targeted long-term implementation and communications programmes

Appendix 4: Regional variation in information on plant health systems

Quick survey in 2006 of available information in various regions (E = EPPO countries, C = Caribbean region, A=APPPC countries, I=IAPSC countries)[a]

Availability of the information for countries by region*					
Information	No countries	Few countries	Some countries	Most countries	All countries
Budget for entire plant health system		A	E	C, I	
Budget for the NPPO alone*			A, I	E	
Number of border inspectors/hours worked		C		E	A, I
Number of staff/hours worked on PRA (or other categories, such as on policy and regulatory; on diagnostics and taxonomy; etc.)		E, I		C, A	
Number, identity, source (country/commodity) of interceptions		I	A	E, C	
Data on interceptions of pests in cargo		I	A	E, C	
Data on interceptions of pests in the mail, luggage, or other pathways		E, A	C, I		
Number, identity, area affected etc. of outbreaks/eradications		I	A	E, C	
Trade statistics on agricultural imports			I	E, A	C
Breakdown of imports of fruits and vegetables; cut flowers, nursery and plants for planting; forest products; other products susceptible to pests		I	A	E	C

* Unknown for Caribbean.

[a]Table 9 in: Day, R., Quinlan, M. and Ogutu, W. (2006) Analysis of the application of the Phytosanitary Capacity Evaluation Tool. Report to the Secretariat of the International Plant Protection Convention, November 2006. www.ippc.int/sites/default/files/documents/1173096427927_PCE_Assessment_Final_Report_1.pdf

Appendix 5: Potential risk-based indicators for a plant health system

Table 2 from: Mumford, J. (2002) Quarantine in international trade. *European Review of Agricultural Economics* 29(3), 329–348. This was adapted from: Mumford, J.D., Temple, M., Quinlan, M.M., Gladders, P., Blood-Smyth, J., Mourato, S., Makuch, Z. and Crabb, J. (2000) Economic evaluation of MAFF's Plant Health Programmme. Report to the Ministry of Agriculture, Fisheries and Food, London.

Objectives	**Potential performance indicators**
Protection of existing domestic agricultural, horticultural and forest producers from outbreaks of invasive species (including support for other government departments/agencies with related environmental protection roles)	Is the risk of invasion reduced? • *Hazard reduced in absolute terms (frequency element of risk)* • *Hazard reduced in relation to exposure (i.e. volume of trade, changes in risk pathways, establishment opportunities affected by climate, areas and types of crops, growing practices, etc.)* • *Consequences reduced in relation to market conditions, susceptibility to hazard, etc.* If 'key' invasive species are used as an indicator of overall performance are they representative of the general risk in the hazard and consequence analysis above? • *Entry and establishment pathways* • *Ecological types (success, dominance, impact)* • *Stakeholder groups/market sectors/risk acceptance conditions* • *Management (monitoring, prevention, diagnosis, control) options* Is an acceptable level of risk exceeded? • *What is an acceptable level of risk?* • *What alternative mitigating measures could be used? (compensation, insurance, etc.)* Are specific protection actions effective and efficient? • *General monitoring (statistical basis relevant to appropriately justified key species?)* • *High-risk monitoring (statistical basis relevant to named species?)* • *Prevention at entry (proportion of consignments/passengers inspected reflects acceptable risk?; detection rate is adequate?; disposal is effective?)* • *Diagnosis (speed and accuracy is adequate to allow practical responsive action?; precautionary principle applies to uncertain diagnoses?)* • *Eradication and containment (are there guiding principles on duration of containment, for example expected annual value of delayed spread>annual cost of containment?; willingness of stakeholders to contribute to containment?; prediction of likely success of eradication?; guiding principles on value of eradication, for example net present value over agreed timescale, willingness of stakeholders to share/cover eradication costs?; political pressure from trading partners, etc.?)* • *Licensing importers (records of any breaches of license agreements or resulting outbreaks?)* Does the quarantine agency have appropriate capacity and comparative advantage to contribute to reducing risk of non-agricultural invasive species?

continued…

Objectives	**Potential performance indicators**
Compliance with statutory requirements	Have the requirements been met as specified?
Compliance with international agreements	Have the agreements been met as specified?
Compliance with contractual obligations to provide quarantine services to the agricultural industry	Has industry participation been maintained or extended?
Sound technical and economic management • *Contribution to policy development* • *Contribution to scientific understanding* • *Contribution to economic assessment* • *Contribution to operational effectiveness* • *Contribution to trading partner ability to reduce risks*	Has the national position and capability been represented internationally? Are internationally accepted scientific bases for risk assessments complete for all organisms of concern? Is there R&D output that is demonstrating a contribution to policy development, scientific understanding, economic assessment, operational effectiveness, or trading partner capacity to reduce risks in trade?
Compliance with government administrative efficiency plans	Have any government-imposed targets been met within constraints of meeting operational objectives?

Appendix 6: Glossary of organizations, abbreviations and acronyms

APPPC	Asia and Pacific Plant Protection Commission
CBD	Convention on Biological Diversity
Codex	Codex Alimentarius Commission
CPM	Commission on Phytosanitary Measures
EC	European Commission
EPPO	European and Mediterranean Plant Protection Organization
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
Fera	Food and Environment Research Agency (UK)
GEF	Global Environment Facility
IAEA	International Atomic Energy Agency
IAPSC	Inter-African Phytosanitary Council
ICAO	International Civil Aviation Organization
ICES	International Council for the Exploration of the Sea
IICA	Inter-American Institute for Cooperation on Agriculture
IMO	International Maritime Organization
IPO	International Partner Organization of GEF
IPPC	International Plant Protection Convention
IRS	Implementation Review System
IRSS	Implementation Review and Support System
ISEAL Alliance	*formerly* International Social and Environmental Accreditation and Labelling Alliance
ISPM	International Standards for Phytosanitary Measures
ISS	Implementation Support System
M&E	Monitoring and evaluation
Montreal Protocol	Montreal Protocol on Substances that Deplete the Ozone Layer
NGO	Non-governmental organization
NPPO	National Plant Protection Organization
OECD	Organisation for Economic Co-operation and Development
OIE	World Organisation for Animal Health
PCE	Phytosanitary Capacity Evaluation Tool (IPPC)
PRATIQUE	Enhancement of Pest Risk Analysis Techniques (EC 7th Framework Programme project)
PVS	Performance of Veterinary Services (OIE) *or* Performance, vision and strategy (IICA)
RPPO	Regional Plant Protection Organization
SPS Agreement	WTO Agreement on the Application of Sanitary and Phytosanitary Measures
STDF	Standards and Trade Development Facility
WTO	World Trade Organization