Food and Agriculture Organization of the United Nations

STDF

NSP:MTF/INT/336/STF
Terminal Report

FAO/MULTILATERAL TRUST FUND

ROLLING OUT A SYSTEMS APPROACH GLOBALLY

INTERREGIONAL

PROJECT FINDINGS AND RECOMMENDATIONS

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

ROME, 2022

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Report prepared for
the participating governments
by
the Food and Agriculture Organization of the United Nations

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Rome, 2022

The Food and Agriculture Organization is greatly indebted to all those who assisted in the implementation of the project by providing information, advice and facilities.

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PROJECT INFORMATION

Beneficiary Developing countries or National Plant Protection Organizations (NPPOs), Regional Plant Protection Organizations (RPPOs) and regional plant health entities wishing to strengthen the pest risk management capacities of developing countries to improve market access in specific high-priority trade cases.
Project number and title **MTF/INT/366/STF** **ROLLING OUT A SYSTEMS APPROACH GLOBALLY**
Budget *Total project value: USD 771 186* *Approved STDF contribution: USD 568 966* *Funds disbursed during the project lifetime: USD 568 966*
Period of implementation 1 July 2018 to 30 June 2021
Implementing Agency International Plant Protection Convention (IPPC) and FAO
Partners Centre for Environmental Policy, Imperial College London

LIST OF ABBREVIATIONS

ALOP	Appropriate level of protection
BN	Bayesian Network
CABI	Centre for Agriculture and Bioscience International
COLEACP	*Comité de Liaison Europe-Afrique-Caraïbe-Pacifique (*Europe-Africa-Caribbean-Pacific Liaison Committee)
CPM	Commission on Phytosanitary Measures
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DSSA	Decision Support for Systems Approach, a tool of Beyond Compliance
EFSA	European Food Safety Authority
GAP	Good Agricultural Practice
IAEA	International Atomic Energy Agency
IC	Implementation and Capacity Development Committee of the CPM Subsidiary Body
ICL	Imperial College London
IPP	International Phytosanitary Portal
IPPC	International Plant Protection Convention
IRSS	Implementation Review and Support System of the IPPC
ISPM	International Standards for Phytosanitary Measures
LoA	Letter of Agreement
NAPPO	North American Plant Protection Organization
NEPPO	Near East Plant Protection Organization
NPPO	National Plant Protection Organization
PPG	STDF Project Preparation Grant
PPPO	Pacific Plant Protection Organization
QUT	Queensland University of Technology
PCE	Phytosanitary Capacity Evaluation
RPPO	Regional Plant Protection Organization
SADC	Southern African Development Community
SPS	Sanitary and Phytosanitary Measures
STDF	Standards and Trade Development Facility
UNICC	United Nations International Computing Centre
USDA	United States Department of Agriculture
WG	Working Group
WTO	World Trade Organization

KEY ISPMS AND MANUALS RELATED TO THIS PROJECT

ISPM 1. (2016a). *Phytosanitary principles for the protection of plants and the application of phytosanitary measures in international trade*. FAO, Rome.

ISPM 2. *(*2019a*). Framework for pest risk analysis.* FAO, Rome.

ISPM 4. (2017a). *Requirements for the establishment of Pest Free Areas*. FAO, Rome.

ISPM 5. (2021a). *Glossary of phytosanitary terms. International Standard for Phytosanitary Measures No. 5. Rome. FAO, on behalf of the Secretariat of the International Plant Protection Convention.*

Supplement 2. Guidelines on the understanding of "potential economic importance" and related terms including reference to environmental considerations.

ISPM 10. (2016b). *Requirements for the establishment of pest free places of production and pest free production sites*. FAO, Rome.

ISPM 11. (2019b). *Pest risk analysis for quarantine pests. International Standard for Phytosanitary Measures.* FAO, Rome.

ISPM 14. (2019c)*. The use of integrated measures in a systems approach for pest risk management.* FAO, Rome.

ISPM 22. (2016c). *Requirements for the establishment of areas of low pest prevalence*. FAO, Rome.

ISPM 24. (2021b*). Guidelines for the Determination and Recognition of Equivalence of Phytosanitary Measures.* FAO, Rome.

ISPM 26. (2018a). *Establishment of pest free areas for fruit flies (Tephritidae).* FAO, Rome*.*

ISPM 29. (2017b). *Recognition of Pest Free Areas and Areas of Low Pest Prevalence.* FAO, Rome.

ISPM 36. (2019d). *Integrated measures for plants for planting. FAO, Rome.*

ISPM 37. (2018b). *Determination of host status of fruit to fruit flies (Tephritidae).* FAO, Rome.

IRSS (2016) *Manual on Equivalence: A review of the Application of Equivalence between Phytosanitary Measures used to Manage Pest Risk in Trade.* FAO, Rome.

IPPC (2015) *Managing relationships with stakeholders.* FAO, Rome.

IPPC *(2013) Market access. FAO, Rome.*

1. EXECUTIVE SUMMARY

Project MTF/INT/336/STF, "Rolling out a Systems Approach globally", was a three-year project with the goal of expanding market opportunities for developing countries by improving their capacity to address phytosanitary issues during market access negotiations and by extending the options for managing pest risk, such as a combination of integrated measures described in the International Standard for Phytosanitary Measures (ISPM) no. 14 ("The use of integrated Measures in a Systems Approach for Pest Risk Management"). The resulting increase in capacity occurs through the use of decisional support tools and the availability of facilitators to lead in their application or explain their use. The approach was to encourage critical thinking and break down components of pest risk management in such a way as to support decision-making, particularly in the context of the Systems Approach, which can be more complex. This is a global project that focuses on developing country National Plant Protection Organizations (NPPOs), but also encompasses other government entities such as market access negotiation teams, research centres and other regulators. Because of the involvement of stakeholders, benefits are expected to extend to their production and trade sectors. The project was approved by the Standards and Trade Development Facility (STDF) Working Group in March 2017, with the Implementation Assignment of the project signed on 20 June 2018. The project was implemented from 1 July 2018 to 30 June 2021. Its total budget was USD 771 186, with the STDF contribution totalling USD 568 966. The project built upon the results of project STDF/PG/328, "Beyond Compliance: Integrated Systems Approach for Pest Risk Management in South East Asia", which was implemented between 2010 and 2014 by Queensland University of Technology (QUT), the Centre for Agriculture and Bioscience International (CABI) and Imperial College London (ICL).

The key outputs of this project were the revision of the tools developed under project STDF/PG/328, reflecting recent trends in plant health, instructions and other support materials presented in the six FAO languages, and the validation of a group of 12 facilitators (listed in Annex 7) to support them. The revision focused on the two tools that were most easily adopted by NPPOs in the earlier project. The facilitator trainees from other regions reviewed the tools and added questions on transit, intended use and terms in line with commodity standards. Other updates included the transfer by ICL to the widely available Excel platform once the original software used became less widely available. The planned trade cases, presented by NPPOs as priorities in their ongoing work, were envisioned as a means to validate facilitators and further embed the tools in new regions. Given the hurdles posed by the COVID-19 pandemic and subsequent lack of travel, these cases were developed at a slower pace were and not completed in time to demonstrate their impact within the project's time frame. This did not alter the key pathway to the outcomes of greater understanding of the Systems Approach and recognition of the Beyond Compliance tools. Posting these tools and related materials on the International Phytosanitary Portal (IPP) is expected to have a sustainable impact in terms of ongoing availability and dissemination, with the expectation that facilitators will be called upon for more complex cases or when a country or region seeks greater experience of this approach for pest risk management.

The technical experts who became facilitators, aided by the technical support of ICL, strengthened their understanding of Systems Approaches and identified common pitfalls in the application of this management approach and ways to overcome them. They each mastered the decisional support tools and continue to make presentations at national, regional and international meetings and in webinars to promote the tools and related concepts.

Four trade cases were developed within the project (see Annex 8), with facilitators concurrently developing others on an unofficial basis. These real-life cases demonstrated the drivers for use of a Systems Approach, including new trade opportunities, maintaining current trade in the face of phytosanitary challenges and equivalent measures for what an importing country has proposed or put in place. They also highlighted the complexity of the barriers faced by NPPOs and their country market access negotiation teams, which can often seem overwhelming. Unlike many Sanitary and Phytosanitary Measures (SPS) projects, which fund longer-term investments, the project offered a strategic intervention. NPPOs first needed to understand the nature and value of this support, before embracing the tools as complementary to their other efforts. These experiences reinforce the value of structured decision-making with the use of relevant tools, as well as the value of broad input from

stakeholders, such as smaller-scale producers, when selecting pest risk management options or evaluating proposals. The priorities of each country can be taken into account through this structured process, for instance an initiative to reduce pesticide use or focus on a region with fewer resources.

A further contribution of the project was to support the plant health community's progress in applying ISPM 14 by updating the IPP Phytosanitary Systems web page for the Systems Approach, together with the Secretariat's Implementation and Facilitation Unit and the Implementation and Capacity Development Committee (IC), which served as the project steering committee. The new materials, including a video infographic, further complement the work on the tools, trade cases and training of facilitators and are likely to constitute a noteworthy contribution to the application of ISPM 14 in the future.

The application of the tools will contribute to the development of trade proposals, enhancement of market negotiations, mapping out of phytosanitary risks and actions to be undertaken along the production chains to ensure high-quality production of plant products, the identification of the most feasible and efficient pest management options and the strengthening of collaboration at national level among stakeholders involved in international trade. By ensuring access for developing countries to a number of validated facilitators trained under the scope of this project, there is expected to be increased dissemination of knowledge and increased use of the Systems Approach and tools among NPPOs, Regional Plant Protection Organizations (RPPOs) and others involved in trade. In summary, the project established another way, proportionate to estimated risk, for these entities to design and evaluate phytosanitary measures for a range of pest risk management plans.

2. BACKGROUND

The SPS problem

In addition to the foundation of a right to food (United Nations General Assembly, 2017), most developing countries with any agricultural base identify the export of plants and plant products as a key to economic development and an inflow of hard currency. However, the status of the phytosanitary export sector is remains variable among the countries in question. International trade – as well as other unintended pathways such as the travelling public, postal deliveries and e-commerce, movement of vehicles and use of wood packing materials – can introduce regulated and invasive pests that pose a threat to both natural plant biodiversity and managed crops, including food, feed and forest production. This threat increases with new trade routes and greater volumes, as well as the impact of climate change (Suffert et al., 2018; Dehnen-Schmutz et al., 2010; MacLeod, Pautasso et al., 2010). The diversity of pests is also increasing (Caton et al., 2021).

Fortunately, the introduction of pests can be prevented when resources are focused on protecting priority crops or sectors (Poland and Rassati, 2018; Sikes et al., 2018). A major driver of an effective plant health scheme is to balance priorities to achieve the greatest impact – on pest risk, economic benefits or public welfare – with the available resources. An effective plant health scheme, operating under the NPPO in each country, can prevent the introduction of new plant pests while continuing to allow the movement of goods and people without undue restrictions.

The use of pest risk management measures that are justifiable and in proportion to the threat posed is a critical factor in the balance between preventing the introduction of regulated and invasive plant pests and allowing movement of goods and people. This relies on informed pest risk assessment, up-to-date surveillance and diagnostics and the availability of pest risk management technology and infrastructure, as well as adequate staffing, all of which may be lacking in many settings. The private sector, especially companies with more resources and influence, may not recognize the unique role of the NPPO in plant health and trade agreements. Combined with economic policies to encourage trade, this can lead to NPPOs directing resources towards trade promotion without the opportunity to take stock of whether the trade is feasible and economically advantageous. Furthermore, professional pressures may mean that a number of NPPOs and market access negotiation teams accept the proposed import requirements and aim for compliance without attempting to evaluate the suitability of the management plan either to their own country's conditions or to those of small-scale producers compared to large companies. This is where communication and a good working relationship between the NPPO and stakeholders becomes critical. The NPPO must communicate effectively with stakeholders, before negotiating effectively what the stakeholders believe to be a feasible pest risk management plan that continues to meet the appropriate level of protection.

Communication between the NPPO and other parts of the national government and research sectors is also needed in order to promote more effective management options and related trade agreements. Key import markets impose legitimate but challenging requirements in terms of pest risk, as well as acceptable pesticide residue levels, making it essential for coordination to take place, both between these authorities and between governments and producers in the exporting country. Transferring the problem from one authority to another is not a solution. Hard-earned market access can be lost overnight when a country's exports repeatedly fail to meet requirements for pest-free and residue-compliant products.

There is another challenge for countries that import products and serve as transport hubs or encounter other pathways. When the NPPO in this situation is presented with a high-risk pest or crop/pathway, it may be necessary to resort to a ban or emergency restrictions until a solution can be found that protects plant resources in a way proportionate to the risk. While these are legitimate options, they are intended as short-term solutions and do not advance trade. End-point treatments or inspection as a pest risk management option may not be adequate to this situation and can fail to protect the plant resources of the importing country. More complex management options may be required.

In view of the challenges described above, countries with fewer resources are at a disadvantage, in spite of their training and development opportunities. There is a general lack of confidence to

question and negotiate which measures are required by the target market NPPO. Policies in support of small growers may be at odds with the level of quality control, documentation of activities and traceability required to reach the more demanding markets, yet market access for larger or international companies that do meet the requirements may be perceived as preferential. A more strategic approach to understanding and managing pest risks is needed.

Despite these challenges in the SPS sector, this is an encouraging period for plant health. The International Year of Plant Health activities increased recognition of the importance of NPPOs and the phytosanitary sector. This, in turn, boosted morale amid the difficulties of the COVID-19 pandemic, which affected both staff and trade (World Trade Organization (WTO), 2020). Efforts made with regard to smarter pest risk management are coming to fruition, including the work by the North American Plant Protection Organization (NAPPO, 2021)[1], which has identified the need for a more holistic approach for management (Yoe et al., 2021). One such response is the work on risk-based sampling, which goes into even greater depth than the European reduced inspections based on trade data (European Commission, 2018). Meanwhile, the Europe-Africa-Caribbean-Pacific Liaison Committee (COLEACP) is developing new online training materials[2], complementing the ongoing updates of CABI on their Pest Risk Analysis tool. At the national level, NPPOs continue to develop a strategic approach by identifying gaps and weaknesses using the Phytosanitary Capacity Evaluation (PCE) tool. The tools provided through Beyond Compliance, which are available on the IPP[3] and described below, are also designed to support critical thinking, with a focus on designing or evaluating a combination of measures for managing pest risk in trade and other pathways.

The goal of this project was to increase opportunities for exports of plants and plant products from developing countries, while effectively managing pest risks. This was achieved through better capacity to communicate with key stakeholders while evaluating options for managing pest risk, and therefore to represent this informed perspective during market access negotiations.

The project's intended outcome was enhanced competency and confidence in applying a Systems Approach, as defined in ISPM 14 (see also the References and Terminology section of this report). The project aimed to achieve this by increasing understanding of ISPM 14 and the use of tools designed to support a Systems Approach. The project's unique contribution was a set of pest risk management decisional support tools. Beyond Compliance tools also support importing country NPPOs or those managing pathways to analyse pest risk management options, with visual displays of the differing views of those involved in the decision. As noted by the project: "The use of decision support tools is highlighted as one way to increase confidence in the efficacy of a system that may include very different types of measures with varying types of supportive evidence. Ultimately trust and confidence between trade partners is key to finding pest risk management that allows safe trade." (Quinlan et al., 2020). A Systems Approach can be employed to build this trust.

Background on Systems Approach for pest risk management

A number of NPPOs have employed Systems Approach for as much as four decades. This pest risk management option is part of a strategic biosecurity plan for a number of countries and regions[4] (e.g. Cowley et al., 1993; Jamieson, 2016). Historically, tropical fruit management against fruit flies is one of the most frequent applications (van Klinken et al., 2020; FAO/IAEA, 2011), but its use in forestry, nursery stock and other high-risk categories is increasing (Allen et al., 2017; Macquarrie et al., 2020). In recent years, the use of Systems Approach (as outlined in Quinlan and Ikin, 2009) has

[1] NAPPO was deemed to have had similar experiences, as demonstrated by the following quote: "Many NPPOs currently use inspection designs that result in data that is not as useful for risk management decisions as it could be. In many cases this is because the conceptual background for inspection is not well-understood by NPPOs. Historical thoughts on inspection were that its purpose was to find pests, establish or confirm their identification, determine their regulatory status, and then take the appropriate (risk management) action. This way of thinking resulted in countries focusing their inspection data gathering efforts on lists of pest interceptions and action records on those pests and not on the results of inspection that produced negative finds (where the data point for inspection = zero pests found)." NAPPO. 2021. RBS Manual Part 1. [Emphasis added.]

[2] As announced by the IPPC (see the following link: bit.ly/3GYHtgL)

[3] https://bit.ly/3GpisLC

[4] NAPPO included a seminar on the Systems Approach in the November 2021 annual meeting. The agenda will include discussion of the future use of the approach, as well as current case studies. There are regional standards for phytosanitary measures under NAPPO that explain uncertainty and consider the Systems Approach for forestry products, offering insights for the future revision of ISPM 14.

increased through regulatory drivers or key market countries and regions. The European Union, for example, has a new focus on this option[5], given the strain placed upon previous approaches (Suffert et al., 2018). In Australia, there are renewed efforts to make the process of Systems Approach more rigorous (van Klinken et al., 2020 and 2021; unpublished work by the Queensland Government applying Beyond Compliance tools to tomato production, 2013). The United States of America has streamlined the regulatory process while maintaining a strong engagement with Systems Approach (United States Department of Agriculture (USDA), 2018), while Canada recognizes the need for alternatives to those regulations for import that still require fumigation, with a number of trade cases having successfully switched to Systems Approach in the past five years in order to enter that market (European Commission, 2020).

Regardless of this renewed impetus to use Systems Approach, discussions throughout this time have continued to highlight a lack of understanding of and capacity for implementing ISPM 14. This is a global situation, documented by the IPPC Secretariat (IRSS, 2014) and more recently by the Commonwealth Scientific and Industrial Research Organisation (CSIRO, Fiedler, 2020). The STDF and World Bank identified this as an issue, leading to a recent collaboration[6]. According to an informal survey by CABI of participants from the Southern African Development Community (SADC) during training for the FAO project "*Support towards operationalization of the SADC Regional Agricultural Policy* (STOSAR)[7]", confidence in understanding pest risk management, including with additional training, was greater than that in using Systems Approach (75 percent vs 47 percent). Yoe et al. (2021) have laid out the concept that Systems Approach has allowed the evolution of plant health and pest risk management from "an importing NPPO-focused approach to a collaborative responsibility between the regulatory authorities of both trading partners". This future of greater collaboration for common objectives aligns with the use of Beyond Compliance tools, which can elicit and record a range of opinions and encourage discussion for more informed decision-making.

Background on this project

The concept of using tools to support the design and evaluation of integrated measures in a Systems Approach was developed over a number of years and in a range of fora, including a workshop in Malaysia supported by STDF Project Preparation Grant (PPG) 328. The original approach and tools were created under the STDF project PG 328 (2010-2014). The present project builds upon the results of the project "Beyond Compliance: Integrated Systems Approach for Pest Risk Management on South East Asia" (STDF/PG/328), which was implemented by QUT, CABI and ICL. Further background is provided in the workshop report (Whittle et al., 2010) and the final report for the project, which can be found on the Documents tab of PPG 328 and PG 328, along with other resources. The Beyond Compliance approach, tools and their application are described in a freely available eBook (Quinlan et al., 2016[8]).

Creating structures for decision-making can support both individual and institutional capacity with transparent records in the face of staff turnover (e.g., Danielsen et al., 2012 reports loss of 50 percent of trained staff for surveillance/diagnostics over five years). The evaluation of PG 328 concurred that the approach was successful, although it did not extend beyond the Southeast Asian region. At the time of completion of PPG 328, no agreement was in place between the STDF and IPPC Secretariat on sharing online tools or files, nor other methods for dissemination. Although the experiences and concepts developed under the project were widely shared and available, the tools themselves were posted or distributed only on an ad hoc basis. Over the ensuing years, there was

[5] For example, the European Commission has stated that Systems Approach is an option for a number of commodities (Commission Implementing Regulation (EU) 2019/2072 of 28 November 2019). The European Food Safety Authority (EFSA) has also documented the evolution of its decisions concerning what would be needed to evaluate submissions about trade (EFSA, 2012, 2014, 2018a and b; MacLeod, Anderson et al., 2010). The research community is also focused on this issue (e.g., via Euphresco: Giovani et al., 2019).

[6] This collaboration culminated in a side session of the SPS Committee (World Trade Organization, Sanitary and Phytosanitary Committee): Systems Approaches in Food Safety and Plant Health – SPS Committee Side Event, 14 July 2021.

[7] This topic for training in Systems Approach was initially selected through a survey of SADC member states participating in the STOSAR project (http://www.fao.org/in-action/stosar/en/). The poll of participants subsequently took place during the webinar, "Application of integrated phytosanitary measures to enhance export market compliance", which was held on 6 July 2021 and can be viewed at https://www.youtube.com/watch?v=JCJ4MtEIMAw.

[8] https://standardsfacility.org/sites/default/files/Beyond_Compliance_eBook.pdf.

interest in disseminating the approach and tools more widely. The IPPC Secretariat, NPPOs and RPPOs demonstrated a continued interest in extending training on the tools, as shown by the support for applications to the STDF for funding.

In the present project, the focus was on further dissemination and building a group to support use of tools in various regions. In order to achieve this, the project was led by the IPPC Secretariat, while ICL remained the key technical contributor. A description of the plans for the present project is available on the STDF project web site – Rolling out a Systems Approach Globally. The use of officially submitted trade cases was added to provide material to those seeking to be validated facilitators. The importance of using real cases rather than simple training materials led to this additional component. It was also thought that accepting trade cases would extend the dissemination to a greater number of countries. In this context, the key outputs became the refinement and update of tools, training and validation of facilitators and the application of the tools to official trade cases.

The overall approach and supporting materials are an important part of this process, however the key outputs were two primary tools, namely the Production or Pathway Chain and the Decision Support for Systems Approach (DSSA), which are essentially templates developed by Beyond Compliance with instructions for use. These are described further throughout the present report (for instance in Section 5.1) and defined in the List of Important Terms, but both are Excel-based tools providing structure for discussions around Systems Approach. The first of these tools – the Production or Pathway Chain – is a graphic representation showing the understanding of those using the tool, of action taken (primarily phytosanitary measures, but see the List of Important Terms) in relation to a featured crop (plant product) or pathway, showing the stage and place in which the actions took place, and with coding by objective in terms of risk or implementation of a Systems Approach. The DSSA supports the selection and evaluation of phytosanitary measures proposed for a Systems Approach, drawing from the Production or Pathway Chain. This highlights factors influencing the final decision on which combination of measures would best work with the conditions at hand, without providing a single automatic answer. The tool produces graphic representations of the evaluation results from elicitation and employs Visual Basic for Applications code to navigate the programme and automate some procedures.

Exporting countries recognize the reputational damage that high interception rates can create, while NPPOs are more likely to impose voluntary or self-bans to stop trade until the pest situation can be better addressed. This situation was encountered in three trade cases in East Africa (one of which was not completed). Global industries such as the seed sector have recognized the need for streamlining and improving management in a coordinated way. One trade case for seeds began at a national level with a single crop seed and specific pathogen, but the sector is now able to share this approach to support the application of Beyond Compliance tools to other seed/disease challenges. Finally, increased demand for Systems Approach is attributed to concern among NPPOs and growers over the spread of new pest species that are difficult to control or virtually impossible to manage following their entry to a new territory, given limited resources and, at times, uncertainty in science. The trade cases under this project illustrated these situations with *Xylella fastidiosa* and the false codling moth (*Thaumatotibia (Cryptophlebia) leucotreta*). In summary, the trade cases presented to the project covered the most pressing issues for trade with the range of cases selected or used in training.

The present project was approved by the STDF Working Group (WG) in March 2017, after comments and feedback provided by STDF WG members at previous meetings of the WG were addressed. In March 2017, the WG further requested the STDF Secretariat to work with the IPPC Secretariat to finalize the logical framework and address other minor outstanding issues prior to contracting the project. At the request of the IPPC Secretariat, the STDF Secretariat agreed to transfer the project document into FAO format in order to comply with FAO rules and streamline project management and oversight. The STDF Secretariat continued to work with the IPPC Secretariat on the revision of the logical framework, the revision of certain budget lines and the transfer of the project document into the FAO format, incurring some delays in the process. The STDF Secretariat subsequently requested from the WG a three-month extension for the contracting of the project. The WG agreed to grant an extension, with the implementation agreement between the STDF and FAO signed on 20 June 2018.

The first Letter of Agreement (LoA) between FAO and ICL, focusing on the provision of technical support, received final signature on 18 October 2018, although work on the project began prior to this date. The project team and staff involved from FAO/IPPC and the ICL technical team decided not to alter the dates and deadlines outlined in the project document with the starting date of July 2018. This meant that intensive efforts were required from the project management team in order to "catch up" with the original timeline. This LoA ended December 2019, due to the nature of the instrument. A second LoA was subsequently required and signed between FAO and ICL on 25 March 2020, leaving a three-month gap for ICL to proceed with work. The LoA and associated funding ended on 31 May 2021, although ICL supported the project through the following months in order to complete the additional communications pieces and return to the reporting requirements.

The involvement of the IPPC Secretariat allowed the IC to work as the project steering committee, while also ensuring extensive support from the FAO system. The IPPC Secretariat's implementation facilitation officers also contributed valuable oversight from their many years of experience. Working with the IPPC Secretariat as the implementation agency supports sustainability and dissemination. The results featured on the IPP provide visual confirmation of these accomplishments.

3. PROJECT GOAL

The desired impact of Beyond Compliance Global is to expand the export market opportunities for developing countries, allowing them to participate fully in the trade of plant products and enjoy the related economic benefits. With a structure for critical thinking that is understood by many types of stakeholders, it becomes easier to develop and defend alternative approaches. This is particularly important for the use of Systems Approach, ensuring that it is in fact a robust system, rather than a duplicative waste of resources. The plant health community has produced and engaged with a number of activities, conferences, and publications related to Systems Approach over the four years between the completion of PG 328 and the approval of the present project. A number of these included inputs from the Beyond Compliance project (Annex 1). As noted above, however, the need for deeper understanding of risk management options, proportional management and equivalence is still noted. Initiatives such as this project join efforts to build a foundation for further application of ISPM 14 and more strategic and effective pest risk management.

When planning for the desired project impact, the logical framework (Table 1) proposes indicators that depended on the general conditions for facilitating trade to remain stable. This assumption (Assumption 1) was clearly not met, as the COVID-19 pandemic interrupted both the project plans and global transport and trade. The FAO project document cited the possibility of political instability, the lack of political priority for agricultural exports and other sources of reduced commitment from NPPO. The conclusion within the document was that some of this risk would need to be tolerated, although it was likely to delay trade cases. The scale of the disruption stemming from the pandemic, however, was not anticipated.

Meanwhile, Assumption 2 – that the plant health situation in the trade cases was broadly agreed between trade countries or regions – was maintained, and Assumption 3, centring on the relevant external collaboration, was met, albeit at a slower pace than planned. The lack of stability (Assumption 1) and the slowed pace (Assumptions 2 and 3) hampered delivery of the project impact, as well as its outputs. Delays resulted in some cases remaining ongoing as the project formally ended. The fact that some cases were work in progress further discouraged NPPOs from sharing information. As a result, the trade case reports do not include evaluations by the NPPOs involved, as originally planned.

The mechanism for receiving reports on trade was included as an assumption (Assumption 4) because trade is likely to result after the end of the formal project. The desire for confidentiality regarding trade negotiations and trade status is an ongoing barrier to obtaining this type of data. The IPPC Secretariat has, however, made headway regarding Assumption 4 by actively promoting the submission of additional materials regarding Systems Approach in a concerted push to update the Phytosanitary Systems page on Systems Approach, as well as through the preparation of an October 2021 webinar, an infographic video and news items to highlight that page. The full impact of the project will therefore be determined over time by NPPOs, RPPOs and other parties interacting with

the IPP[9]. This was to be encouraged by the posting in early 2022 of stories from facilitators, which were developed with support from the communications expert prior to the end of the project.

Table 1: The impact component of the project logical framework

Results chain	Assumptions	Indicator	Means of verification
Impact: Increase in opportunities for exports of plant products from developing countries through better capacity to deal with phytosanitary issues during market access negotiations and more options for managing pest risk.	1. General conditions for facilitating trade (e.g. political stability, national commitment to trade, government support and allocation of resources, participation of the NPPO in regional and international plant health fora, sufficient production for export etc.) 2. Plant health situation is sufficiently clear and agreed between trade partners to apply tools and progress negotiations (e.g. identification of pests and/or diagnostics, pest status of country, etc.) 3. Collaboration of external stakeholders obtained by NPPOs (e.g. industry, other sectors of government, importing country NPPO). 4. Mechanism to receive reports of trade proposals is in place (countries will share information).	1. Over 75% of NPPOs directly involved in supported trade cases have a higher confidence in proposing pest risk management options due to use of tools. 2. Increased awareness about the types of barriers to market access leads to specific broad actions or funding to address them. This may include addressing these barriers in future strategic planning. 3. A classification of priority trade is developed and validated by the broader phytosanitary community, in order to distinguish when market access is not reliant on phytosanitary issues, but rather prevented by other barriers.	Results from evaluation by NPPOs that have facilitated support and apply tools. Report on results from a survey by facilitator trainees to determine the current barriers to market access, which can orient further refinement of indicators. Case study reports (in project template). Progress reports regarding trade over time, extending beyond the project. Included in a routine project report, the uptake of such a classification of priority trade to evaluate potential trade cases worth supporting will be documented.

The first indicator for the desired impact relied on trade case completion so that evaluations could be carried out. Delays in the cases prevented a formal evaluation, although, as reported below, a subsequent internal evaluation by FAO (conducted by Lois Ransom) drew on interviews with some of the beneficiaries. There was also verbal feedback on overall satisfaction. The intention to use the tools in the future was repeated in all cases, although some facilitation may be requested for stakeholder meetings at which opinion and ratings may be elicited when the DSSA is applied. The other indicators involve better understanding of barriers and when to pursue trade. An informal classification of priority trade was developed and is embedded in the trade case application template (see Box 1 and Annex 5.4 for the information requested for trade cases). Section A of the DSSA calls for factors that influence the choice of pest risk management measures. This was updated by the facilitators during their training.

[9] At the time of writing, there were over 300 participants from 77 countries attending the IPPC webinar that introduced the Beyond Compliance Tools. The infographic video produced under the auspices of this project had been viewed almost 500 times (in addition to the views during the webinar), while interest in tools was beginning to become apparent, with around 25 downloads in the first month. Further use of the tools was expected as a result of the news items.

Box 1: Evaluation of cases to determine their suitability for support

The Beyond Compliance project considered it unwise to use cases for facilitator validation during the project when there are fundamental disagreements between the NPPOs, for instance regarding:

- Pest status in the country – is the pest of concern present or not? If there is no agreement, this will need to be resolved.
- Basic taxonomy or biological identity of the target pest – if there is a difference of opinion on naming, it is acceptable, but resolution is needed if countries do not agree on taxonomic division or identity.
- Diagnostic method – if there is disagreement about the correct way to identify the species in question, this is unlikely to be resolved in this process.
- The spillover of politics into plant health discussions.

Some of these issues may be resolved through use of Systems Approach, but this will be time-consuming and require additional consultations. While it may be a challenge to collect hard data on many points in a system, the tools can help to clarify the level of risk reduction and certainty for some measures and for the system overall, focusing on where additional resources could answer remaining questions or provide useful additional data.

Further examples in which a case may be worth supporting, even though additional considerations are needed, include:

- A lack of clear commitment from the production sector – requests for market access lead to considerable investment of resources. Involving stakeholders early in the thought process, for example by sharing a first run through using the tools, will make them aware that requests should not proceed if there is insufficient production, or if the sector is not willing to cover costs associated with the export plan.
- Other factors hamper successful export – there are many settings in which appropriate packing house, cold chain infrastructure, international transport or other factors are not in place for the successful exports of perishable agricultural products. Costs imposed by the importing country NPPO, such as inspections, treatments after import, holding in bond etc. should be factored in.

The challenges listed here should not end the discussion on how to achieve the desired trade but instead signal that it may be premature to expect trade. In these instances, engaging with the Beyond Compliance process is only recommended if there is a plan for overcoming these factors or if the tools are being used to seek solutions to the challenges, before investment in negotiations and building the system for export.

The outcomes of Beyond Compliance (Table 2) are for NPPOs to achieve enhanced competency and confidence in applying Systems Approach through the use of innovative decision support tools, which were refined throughout this project. While the project team considers the first indicator to have been achieved, further documented evidence is needed. The other two indicators were delivered.

Table 2: The outcome component of the project logical framework

Outcome: Uptake of Systems Approach tools (based on Beyond Compliance) is increased beyond Southeast Asia, resulting in increased understanding of measures related to pest risk management. The advantages, appropriateness, and components of ISPM 14 are better understood.	1. Potential role of Systems Approach tools based on "Beyond Compliance" recognized by export trade negotiation teams, which may extend beyond the NPPO staff involved in the project. 2. Acceptance of concepts by trade partners encourages uptake. 3. Any disagreement on basic concepts relating to pest risk, risk management and phytosanitary measures will be taken up by the IPPC or CPM in order to reach an agreement.	1. At least four selected cases, from at least two developing countries of proposed or disrupted trade or proposals for new risk management options for existing trade (equivalence) reach submission to targeted market country NPPOs. 2. At least 75% of the participating NPPOs use Systems Approach after involvement in the project. 3. At least four regional facilitators are trained in the use of the Beyond Compliance Tools.	Case study reports (in project template). Survey of beneficiaries that have used Beyond Compliance tools in the design of pest risk management plans/proposals or trade negotiations on selected cases. Project reports and records.

Representatives from a number of contracting parties to the IPPC were involved in the oversight of the project, through the IC, for instance by providing trainees to become validated facilitators, by working through a trade case of importance to their country or through participation in meetings at which the concepts and tools were presented and discussed (see Annex 1). The involvement of all of these parties, in addition to ongoing communication between ICL and an ad hoc informal group working on Systems Approach globally, demonstrates the assumptions that Beyond Compliance tools are recognized and accepted as aligning with the key concepts of the IPPC and plant health communities (Assumptions 1 and 2). The assumption that any disagreement on these concepts would be taken up by the IPPC or CPM was not supported, with these informal opportunities for discussion among different groups working on Systems Approach instead proving effective for identifying and understanding different perspectives.

The indicators for achieving the outcome through the planned pathway included delivery of four trade cases. Although they were delayed due to the general challenges presented by the pandemic, each of the four official cases that remained in the project were aiming for completion and progress. Further details on these cases are given in Section 5.1.3 of the present report.

All of the NPPOs participating in the project through trade cases, or in other ways, have indicated their intention to use Systems Approach as a pest risk management option beyond the implementation of the project and, in some cases, are beginning to apply it to cases that were not part of the project. In Mexico, for example, the Director-General of the national SPS agency, Senasica, has asked for the use of tools on additional cases. In Bolivia, the approach was applied to a border area where undocumented trade can easily occur. The participants in this unofficial case clearly saw that the use of Systems Approach could increase many times over the quality and value of production.

The most significant achievement towards the outcomes was the successful validation of 12 facilitators in the concepts and use of the tools. This resource group is described above, while the learning process is described in Section 5.1.2. It is important to note that this was not a one-way training process. The trainees immediately began contributing as well as honing their skills, for instance by reviewing and providing feedback on the tools prepared in the previous project, described in Section 5.1.1. This feeds directly into the successful delivery of the outputs, which is outlined in Table 3 below.

4. PROJECT IMPLEMENTATION AND MANAGEMENT

The IPPC Secretariat was the implementing agency, while ICL provided the technical service. The IPPC Secretariat had three different staff members in charge of the project over the course of its implementation and the follow-up reporting – Ketevan Lomsadze, Denis Allex and Natsumi Yamada. While Ketevan oversaw most of the project period, changes in staffing led to a reliance upon ICL for significant input on reporting. A list of the required reports can be found in Table 4. Lessons learned in regard to the significant amount of reporting required are noted in the same section.

Table 3: Roles in carrying out the project

IPPC Secretariat	Project oversight	Linkage to IC, CPM etc. Assurance to align with IPPC and FAO standards, terminology and strategy. Official calls for applications to be trained as facilitators, for trade cases, IPP posting and design.
Technical advisors	Imperial College London, Centre for Environmental Policy Project management	Tool developers who refined the tools based on inputs from participating NPPOs and facilitators. During the in-person training in June 2019, IPPC/FAO was responsible for travel and visa arrangements, while ICL was in charge of local logistics and the delivery of the training itself. Management of outputs and outcomes and reporting.
Facilitators	Selected by the management team with IC advice, through a rigorous application process	To ma will interact directly with the IPPC Secretariat and ICL to work on tool application for cases, especially when requiring languages other than English.
Steering committee and project guidance	IC members, as well as other individuals from existing bodies such as the IPPC Secretariat, RPPOs or regional offices	The project drew upon expertise and ongoing efforts in the area of trade support, market access negotiation, pest risk management and pest risk analysis. Input was through existing bodies or offices already tasked with support for these objectives. Therefore, while valuable, the requirements for comment, advice and support were not onerous or additional to existing mandates.
Country NPPOs	As selected for this project through the trade case application process	NPPOs had to allocate the time of one or more employees in order to successfully participate in this project. However, the cases in question were priority trade cases, which should already be anticipated under the staffing structure and resources.

Table 4: Summary of required reporting for this project

Prior to the project start: Application for funding from the STDF, response to STDF WG comments. Transition to a FAO project format and documentation. Throughout the project: IC meetings – verbal report to introduce project and subsequent updates and review of materials.		
Inception report.	Covering pre-inception preparations from July to September 2018 (following the delay of the project inception)	Summarizing project planning and a revised logical framework, presenting templates for project applications and reporting. First LoA between FAO and ICL. (This was a short report complemented by the report on in-person training in mid-2019.)
First progress report to STDF and fact sheet. Report from ICL to FAO.	Covering the first six months (note: project did not fully begin until October but was in motion from July 2018). October 2018 until March 2019.	Summarizing update on identifying trainees for facilitator, update on decisions about translation of materials, initial call for cases. Start of online meetings and assignments with the facilitator group.
Report on the in-person training. June 2019.	Covering the agenda, materials used, logistics and two-way evaluation.	Summarizing the training process, learning objectives and methods for achieving them, evaluation criteria, lessons learned and successes from that week.
Second progress report. Report from ICL to FAO.	Covering the next six-month period (April to September 2019)	Completion of in-person facilitator training, assignment of first cases. Stakeholder identification for cases and initial set-up of cases.
Third progress report. Report from ICL to FAO.	Covering the next six-month period (October 2019 to March 2020).	Progress on cases, including call for additional cases. Summary of any new challenges for the tools, technical response and lessons learned for facilitating. Delay to the new LoA between FAO and ICL.
Impact of COVID-19.	April 2020	A new report to assess the impact of the pandemic on the progress of the project.
Fourth progress report. Report from ICL to FAO.	Covering the next six-month period (April to August 2020).	Progress on remaining cases, selection of any new cases. Summary of uptake of tools through dissemination activities other than direct cases, comments on challenges for applying the tools, response on any technical challenges and lessons learned. Decisions on materials to be translated and adjustments due to travel restrictions.
Fifth progress report. Report from ICL to FAO.	Covering six-month period. (October 2020 to March 2021).	Development of user manuals for finalized tools. Extensive exploration of the option for travel funds to be used for a more embedded online adaptation of the tools, preparation of a specification and decision to hold off on this option. Decision to contract communications support with unused travel funds. Report on validation of facilitators, communications outputs. Anticipation of posting materials on the IPP and consultations with the IC.
Update on impact of COVID-19.	15 December 2020	Requested by STDF as part of impact monitoring.
Update on impact of COVID-19.	24 June 2021	Requested by STDF as part of impact monitoring.
Final report. Report from ICL to FAO.	Comprehensive report 01 July 2018 to 30 July 2021+ programmed plans immediately after (covering 3 years of project)	Work with cases could continue, particularly to develop trade proposals. However, only cases with limited requirements would be taken up in the final months of the project. Report on evaluation of the overall success of the approach. Preparation of any final materials for dissemination.
FAO evaluation of project report.	Contracted consultant prepared October 2021	Project reviewed in line with the FAO implementation document and overall project success assessed, based on initial objectives and expected outputs.

The ICL team featured contracted support (FAO used a LoA to contract the ICL team, all of whom were employees of the university) and in-kind support, as described below. Dr Megan Quinlan was the project manager and was responsible for report preparation, planning and delivering of training, organization of online meeting content and the provision of content support in communication. She held consultations with practitioners in other countries to check the technical direction of the work, as well as consulting Prof John Mumford. Dr Adrian Leach revised the tools, prepared the instruction manuals, supported the trade cases in terms of use of tools and questions and tested and fixed the tools after their translation. Valentina Cimaroli organized the on-site logistics for training, assisted in the preparation of materials and reports, managed the file versions and Dropbox structure and supported the finance officer in delivering reports. Odette Usabiaga provided support on translations during the final month. Professor Emeritus Michael Jeger, an expert in *Xylella* and a former participant in the Plant Health Panel for EFSA, contributed his time to the Tunisia case. The training was delivered by Megan, John, Adrian and Michael and supported by Valentina, all of whom were part of the ICL team. In-kind support from ICL comprised what would normally be covered by overheads, namely the provision of offices, computer and phone hardware and Internet services, financial and IT support and similar. For this project, additional direct costs from individual research funds were used to pay the publication costs of published articles. The overwhelming in-kind support from ICL, however, was the time provided by Prof Mumford and Prof Jeger, with no funding. The time provided by those contracted, particularly the project manager, far exceeded the allocation, largely as a result of the adjustments made for the FAO budget and activities, which required support from ICL without removing other activities stated in the LoA.

The IC was the project steering committee and was active at varying levels according to the time frame and the request in question. The membership of the IC is noted in each of the meeting minutes[10]. The IC had transitioned from a capacity development committee to one considering implementation of all ISPMs a few months before taking on the role of steering committee. Individuals from the IC made suggestions and promoted the calls for trade cases, in addition to suggestions made during meetings and recorded in those reports. During the February 2021 meeting, the IC took decisions regarding the completion of the project and posting of materials (see the meeting report on the IPPC Secretariat, 2021).

The monitoring and evaluation of activities were supported by the ICL project manager, who submitted periodic reports (including financial reports) to the IPPC Secretariat Lead Technical Officer for approval by FAO, as outlined in the LoAs, on the dates set forth therein, and drafted reports for the STDF including this final narrative report within 15 days of the completion of the services (which was later revised). She also provided regular reports to the IC. These provided opportunities for the review of the alignment with the logical framework and planned progress. The IPPC Secretariat was the driver in setting a work plan in terms of adjusting to the COVID-19 situation by considering alternative ways to achieve the objectives, first by exploring the feasibility of adapting the tools to an interactive online platform and then by contracting a communications specialist. The two check-ins through the COVID-19 risk review set by the STDF provided further opportunities to communicate adjustments with adaptive management. The intended results of this project are well identified and outlined in the logical framework, making results-based management easier. Table 4 offers a summary of each role in the project.

Within each trade case, the official contact point of a country was required to sign off on the initial submission and be copied on key communications throughout. In some cases, the chief plant protection officer was another person who wished to be copied in. A different individual, however, was named as a national coordinator. This was to be someone familiar with the case and already working towards its successful conclusion, if possible.

Overall, the participating NPPOs committed significant time and some resources to advance their priority case studies, thereby participating in the project despite the challenges imposed by the COVID-19 pandemic. Although barriers to travel made in-person meetings impossible, activities continued online.

[10] Meeting minutes found here for the period of project implementation can be found at the following address: bit.ly/3qoSGBv.

See Annex 4 for a list of key personnel involved in the project implementation and management, and Annexes 7 and 8 for a list of the facilitators who successfully completed the training and key contacts for trade cases.

5. PROJECT OBJECTIVE, OUTPUTS AND ACTIVITIES

5.1 Project objective

The project advanced along three parallel tracks in order to deliver the objective: refinement of tools, training of future facilitators and support of trade cases to demonstrate and embed the use of the tools and validate the trainees as facilitators. Table 5 lists categories of activities.

Each output was achieved, in line with the assumptions in Table 6. The target indicators were reached.

Table 5: Summary of activities in relation to outputs

Output 1 Trade cases selected from at least two regions or subregions
Activity 1.1: Project team established. Trade case templates complete (application form, reporting form, stakeholder meeting questions, questionnaires, etc.).
Activity 1.2: Supporting and collecting applications for trade support
Activity 1.3: Selection of cases and memorandum of understanding or other mechanism for working with cases
Output 2: Selected cases initiated and facilitators trained
Activity 2.1: Identify facilitators; contract or make institutional arrangements
Activity 2.2: Train facilitators
Activity 2.3: Translation and publishing or posting of materials contracted and complete
Output 3: Selected cases developed
Activity 3.1: Development of the case concepts (problem formulation and stakeholder relations)
Activity 3.2: Country-specific verification of case material
Activity 3.3: Tools applied to cases
Activity 3.4: Case reports and evaluations
Output 4: Implementation of cases
Activity 4.1: Case submissions to market partner NPPO are prepared and reported to project

5.1.1 Output 1: Refinement of tools

The Beyond Compliance Global tools, represented by production chain and DSSA, had been produced in the earlier STDF project grant, PG 328 "Beyond Compliance: Integrated Systems Approach for Pest Risk Management in South East Asia", implemented by QUT, CABI and ICL.

During the course of the current Beyond Compliance Global project, the tools were first updated by ICL and subsequently by trainees in order to improve design, functionality and ease of use. The introductory section of the DSSA was updated to reflect global trends, issues arising in plant health and to easily reflect either the import or export perspective. Other emerging issues were reflected in the introductory section simply to record answers and provoke thought. Pages were added to record participating stakeholders, resources used and other notes.

The concept of a production chain is closely associated with Systems Approach in plant health. Phytosanitary measures are applied at particular stages associated with specific time periods/locations and often by specific types of people in order to reduce the pest risk. The method for reducing pest risk shown by the Beyond Compliance Global Tool is to reduce the probability of any consignment being shipped with a regulated pest. This directly reduces the probability of an introduction of that pest, although other factors such as the volume of trade and proper implementation of measures also affect the final risk to the importing country.

Table 6: The outputs component of the project logical framework

Outputs: Practical tools for alternative plant health risks management measures produced for promising trade cases from developing countries. Beyond Compliance tools more broadly accessible, in particular to developing countries. Countries assisted in market access negotiations	1. Sufficient interactions with producer stakeholders occur and technical information on performance of measures exist to allow full descriptions of production systems and estimates of predicted efficacy. 2. Agreement with funder on the best way to ensure that IP or commercial confidentiality is respected when posting outputs on related web sites. 3. Candidates for facilitators are identified within the first months of the project and trained. Existing periodic meetings on plant health that provide opportunities for discussion proceed during the course of the project.	1. Existing tools will be adapted to any new conditions presented for all of the cases selected from participating NPPOs. 2. By the end of project, simpler tools made broadly available for use by any country. 3. By the end of the project, Beyond Compliance tools are used successfully in at least half of the selected cases (as a result of facilitators' guidance/assistance) and, where relevant, in languages other than English. 4. Market access experiences shared with additional countries in the region or subregion where exchange on plant health issues is already established.	Demonstration materials and report templates distributed to participating NPPOs. Case study reports (in project template). Evaluation of beneficiaries, using feedback collected by the relevant NPPOs, on ability to use Beyond Compliance tools. Refined tools and guidance are posted on widely accessible web site. Translation of materials in the chosen language is available at the end of the second year of the project if translation appears useful. Case study reports (in project template) acknowledge the role of facilitators. Reports from existing periodic meetings on plant health acknowledge sharing of these experiences.

This tool can be used by the exporter or importer country NPPO to show the trade partner the chain of production and measures selected against the pest risk, using an easily understandable diagram. Equally, it is an effective communication tool for an NPPO to use with domestic stakeholders who either need to carry out or document some of the activities or are interested in what will be required.

The DSSA tool was developed to allow users in importing or exporting countries to transparently identify and rate potential options for pest risk management that might help with the formulation of pest risk management plans. Specifically, the DSSA supports the evaluation and development of a Systems Approach to pest risk management, as defined in ISPM 14. The Excel-based DSSA generates graphs from the compilations of the inputted data or opinion to support discussion and decision-making. Users are asked for additional information to add to the compiled case data regarding efficacy and uncertainty, as well as more details on measures.

The purpose of DSSA is to highlight issues that may impact risk management, drawing from the pest risk analysis, and to show management options in a clear fashion. Users are asked for additional information to add to the compiled case data regarding efficacy and uncertainty, as well as more details on measures. Expert judgement will normally suffice to complete these questions. By representing expert judgment as a distribution for some key variables, new data is generated by the tool. This should make the selection of pest risk management options more transparent and could assist in filling in related questions in the importing country's pest risk analysis (section on risk). Equally, it can be used to organize data for a request from the exporting country for recognition of equivalence of alternative measures and to improve understanding of the cumulative effect of combined measures.

The DSSA allows users to consider the measures by objective, before selecting those worth evaluating. A user manual was developed to explain how to elicit ratings from a group of experts or stakeholders, although it is also possible for an individual to use the tools. In addition to the ratings shown graphically next to each measure as the rating is completed, a summary table at the end of the DSSA allows the user to see all of the ratings immediately below each measure, when proposing a system.

Minor revision of the tools was accomplished in conjunction with the training, which had been finalized in 2019. With the onset of the pandemic, it became impossible to organize a second training. Further refinement and changes to the tools were discussed and developed via monthly online meetings including all of the trainee facilitators, the project manager and the ICL modeller/trainer. The virtual meeting format meant that the work could continue when any individual facilitator was not available.

Annex 9 describes the exploration of a more embedded and interactive online adaptation of the tools, conducted by the IPPC and ICL, in consultation with the STDF. A specification was completed, however without a clear plan for ongoing funds for maintenance, it was determined that approval would be needed through the STDF WG process. By the time the specification was final, it appeared too late in the project to return to the WG. If feedback from the Excel-based tools indicates demand, this adaptation could be considered with other funding in the future.

Once the tools (Excel files and instructions) had been finalized, they were translated by FAO from English into the other official FAO languages (Arabic, Chinese, French, Russian and Spanish). The ICL project manager was in charge of managing the process of proofreading and checking the translations, along with candidate facilitators. The ICL modeller/trainer carried out further testing of the DSSA macro-opening to fix the broken links lost with the translation. Guidance on opening the tools from the range of country settings for some languages was provided by ICL. The final versions of the tools, together with the translation, have been available since 15 September 2021, at a dedicated location of the IPP relating to online tools (bit.ly/3GpisLC). The version in English was posted in June 2021. A method for tracking the number and origin of downloads was introduced to allow the IPPC Secretariat to evaluate usage of the tool, and therefore the eventual impact of the project on the use of Systems Approach.

Box 2: Indicators for varying criteria around pest risk management measures

The indicators to rate in the DSSA are as follows:

- **Contribution to pest risk reduction of infestation in exported consignment**
  This is the maximum achievable effect under ideal conditions (this should not be applied to measures aimed at monitoring or correcting the system).

- **Implementation standard**
  In practical use, the maximum contribution to risk reduction cannot always be achieved due to implementation constraints or natural variation under field conditions. This criterion is to express the likely performance under the conditions of the country or for the specific pest or host plant.

- **Ability to verify the effect of measures on that control point**
  This indicator concerns the ease/effectiveness with which the control point measure informs subsequent management actions.

- **Producer acceptability**
  Ease of use, direct cost, labour required, independence from possible free rider neighbours, etc.

- **Sector acceptability**
  This is an important representation of acceptance if producers need to work together, such as for area-wide control. This would also include industry, technology developers and policy/regulatory bodies. Industry includes packers, processors, wholesalers, retailers and commodity transporters.

- **Societal acceptability**
  Includes consumers, the general public, Non-governmental Organizations (NGOs) and other bodies not included in the "producer" or "sector" categories.

  It should be indicated whether the latter criteria represent the viewpoint of those in an importing or receiving country or those in the exporting country. The tools do not capture ratings for transit.

5.1.2 Output 2: Training of future facilitators

The first call for facilitators resulted in over 25 applications. After careful evaluation, these formed a pool of 16 trainees from 12 countries, aged 36 to 60 and covering all of the FAO official languages. Each signed a letter of commitment (see templates in Annex 5.1) and had a letter of support from their respective line manager. The process was handled via the country's official contact point, in order to ensure coordination. The group also included the two self-paying participants (from China and Latvia), as the implementation facilitation officer decided that they could participate in training to further expand the geographical and linguistic coverage. The information from all of the applicants made it clear that there would be varied levels of experience and knowledge. The aim was to cover a range of candidates in terms of gender, job seniority, age and years of experience.

ICL identified the type of knowledge needed to understand Systems Approach in depth and implement the tools. This is laid out in the learning objectives of the training, shown in Table 7. The dates for training were moved according to the availability of participants, which allowed for the first monthly calls to begin prior to the in-person meeting. The work carried out prior to the in-person training enhanced the experience and brought everyone into line on particular concepts and terminology.

The sole in-person training took place in June 2019 in Windsor, United Kingdom of Great Britain and Northern Ireland, and was organized by the ICL and IPPC/FAO teams, who handled all travel. A total of 13 individuals were trained during the week-long on-site session, with all participants achieving a "pass" to progress to the status of candidates to be facilitators. Two candidates who had been included in pre-training calls were unable to obtain travel visas and their participation therefore ended. An additional trainee was later invited to end their attendance due to a lack of participation in the project. The remaining 12 trainees comprised eight from NPPOs and two from RPPOs, as well as the two self-paying participants. The validated facilitators, four women and eight men, were from Asia, Africa, the Middle East, Europe, North America, South America and the Caribbean.

News on the training delivered can be found on the IPP (see link in the paragraph above) and on the STDF web site (bit.ly/3zY89vl). A detailed report on the training was attached as an annex to the Second STDF project progress report (1 April 2019 – 30 September 2019). The training was highly interactive and included a range of materials, which were not the key output. Instead, these were used to develop the user manuals and other materials featured in the final form on the IPP, with translation to all FAO languages.

At the onset of the pandemic, travel was gradually cancelled. As a consequence, online meetings became the norm, both for the delivery of training and for moving the project forward.

Monthly calls were organized by the project manager to engage trainees, to further motivate them during the challenging times resulting from the pandemic and to stimulate exchange and progress regarding trade cases, tools and training.

In addition to the monthly calls, the project manager arranged two online meetings with international speakers. The first was an interview with Eric Jang (retired, USDA Agricultural Research Service), one of the originators of concepts for Systems Approach on 1 May 2020 (as reported in Laville et al, 2020). The second was a talk on use of low pest prevalence for trade with Alies van Sauers-Muller (retired, coordinator of carambola fruit fly research) on 21 July 2020.

The original plan for validating candidates as facilitators required each participant to provide support for application of the tools for selected trade cases. The candidate facilitators would then be evaluated by the NPPO supported for implementation of selected trade cases, as well as by the ICL team. Only then would the IPPC Secretariat consider the evidence and declare an individual to be a validated facilitator for the Beyond Compliance tools.

Due to the obstacles to travel and in-person meetings resulting from the COVID-19 pandemic, a slightly revised pathway to validation needed to be finalized. This resulted in the presentation of information online about Systems Approach for trainees with an ongoing trade case. Revised

validation criteria were included for participation in monthly group calls, in addition to written feedback and contributions to discussions around specific issues, such as revision of the tools, use of the Tools on cases in their own work portfolio but not officially in the project, and the ability to explain key concepts in other fora.

For those who did not have a trade case to be completed, the implementation facilitation officer, together with the head of the IC and the ICL project manager, agreed to allow validation of those who continued to work with Beyond Compliance concepts and tools through an alternative path. The path in question was to allow the trainees to complete a production chain and DSSA for cases not among the official project cases, in which sufficient information was public or already known to them. This revised validation approach made it possible to include the two self-paying participants from China and Latvia.

Table 7: Learning objectives for training of facilitators

A. Market access for agricultural goods	**To understand the issues around gaining market access for agricultural goods (or other regulated material) that may present a pest risk** • Overview of different factors, beyond phytosanitary ones, that affect trade. • Ability to understand the negotiation environment and principles (what do we need to deliver to obtain trade?) • Knowledge of the key principles of WTO-SPS and the IPPC, including regionalization and justification. • Explain why most agricultural trade is still under bilateral agreements.
B. Phytosanitary principles, in particular pest risk and its management	**To master key phytosanitary concepts in order to easily interpret and apply them in your role as facilitator** • Master concepts of risk, appropriate level of protection (ALOP), equivalence and proportionality of measures. • Knowing how phytosanitary treatments have been used to manage pest risk. • Understanding a number of other phytosanitary measures, not treatments. • Knowing the components of risk and what determines pest risk. • Understanding the concept of residual risk, after measures have been applied. • Master the probability aspect of risk and how uncertainty affects risk. • Understanding what poses a low phytosanitary risk and what trade is allowed without a pest risk assessment. • Understanding of pathways and how movement of travellers, post, goods and other materials that may pose a phytosanitary risk fits in with the risk of spread of pests or disease via trade. • How do these principles relate to protection of domestic plant resources? Apply similar ideas to pathway risk management or import perspective. • When is pest risk management not compliant with the SPS and IPPC rules and standards? If time allows: • Regulated non-quarantine pests. • Pest-free areas. • Pest-free places of production or production sites. • Areas with low pest prevalence.
C. Role of the NPPO	**To know, respect and be able to defend the role of the NPPO in all relevant trade negotiations, or for review of compliance on measures required in such agreements** • Knowing the key responsibilities of an NPPO, especially with regard to trade negotiations. • Knowing the role of the private production sector in terms of proposed trade. • Understanding how Good Agricultural Practice (GAP) certification, commercial practices, requirements from a buyer, sustainability indicators etc. fit in with official requirements for trade.
D. Systems Approach and stakeholder relations	**To master key concepts regarding the use of Systems Approach in line with ISPM 14 and the practices established over decades of implementation** • Knowledge of independent and dependent measures, redundancy and examples in pest risk management. • Ability to describe and explain to an audience the combinations of measures and each measure's role in risk reduction. • Confidence in presentation of Systems Approach and its performance. • Ability to describe phytosanitary constraints and Systems Approach options. • Ability to describe risks in Systems Approach and effective mitigation.
E. Beyond Compliance-specific	**To gain confidence in the explanation and application of Beyond Compliance tools as a means to support market access in cases where Systems Approach is proposed** • Confidence in use of tools to achieve Systems Approach plan. • Ability to use and demonstrate key concepts with tools. • Master entry of information into tools.
F. Facilitation skills	**To strengthen facilitation skills**

One of the project indicators stated in the logical framework (Annex 2) was to have at least four regional facilitators trained in the use of Beyond Compliance tools. Despite the overall challenges imposed by the pandemic, the project delivered a pool of 12 validated facilitators (Annex 7), covering all FAO languages, who are now available to facilitate use of the tools. They have been listed on the dedicated project space on the IPP, together with the tools. The final facilitators comprise four women and eight men, hailing from South Africa, Kenya, Uganda, Iraq, China, Latvia, Belize, Mexico, Dominica and two RPPOs: Comunidad Andina and the Near East Plant Protection Organization (NEPPO). They were validated for a two-year period (as explained in the Follow-up section) and received a certificate from the IPPC Secretariat. The facilitators are presented on a world map below, with details on each member provided on the IPP (bit.ly/3GsGKEh).

Figure 1: Beyond Compliance facilitator map

The following quotes by the facilitators regarding the project were shared, with their consent, and included in the 2020 STDF Annual Report.

"Before, I had the assessment here and management there, but now I can bring these together more coherently along with the stakeholders. The tools help me manage the pest, which is the main objective, and also give confidence to the importing NPPO." Phyllis Githaiga, chief inspector and assistant coordinator of trade and standards, Kenya Plant Health Inspectorate Service.

"This has given me a different perspective for the stakeholder process. We have pre- and post-season meetings with stakeholders that cost a lot of money, but [these tools] could really help clarify what we are trying to get out of each meeting. Also so that we do not repeat the same conversations the next year." Theo Pongolo, Scientist Manager: Plant Quarantine Services, Department of Agriculture, Land Reform and Rural Development, South Africa.

"The Pest Risk Assessment and other documents have the information all spread out in different parts, and the Production Chain shows it all in front of you so that you can discuss it and convince partners." Mekki Chouibani, Executive Director of NEPPO, Morocco.

"I see this project as giving life to the Phytosanitary Standard (ISPM 14). Systems Approach, and the Beyond Compliance tools, allow you to have a participatory approach with all stakeholders within the entire export system involved in the process. You can clearly see along the whole production chain what is likely to impact the presence of plant pests and what alternative options you have. In 2020 we applied Systems Approach when exporting yams from Dominica to Guadeloupe, ensuring

produce arrived safely, without incurring exorbitant costs to anyone within the system." Nelson Laville, Head of Plant Protection and Quarantine, Ministry of Blue and Green Economy, Agriculture and National Food Security, Dominica.

5.1.3 Output 3: Support of trade cases

Specific trade cases were included in the project as a means to spread experience of, and therefore demand for, the tools, but also as a pathway to validate trainees as facilitators. Amid the challenges posed by the pandemic and in spite of the barriers to travel, the ICL team continued to make progress on cases remotely.

The first call for trade cases resulted in seven accepted cases: two from Kenya, two from Uganda and one each from Fiji, Tunisia and Peru. The countries presenting two cases were asked to complete one before beginning on the other. Unfortunately, the Fiji trade case was closed at the beginning of 2020, while the Uganda and Peru cases ended later, at the beginning of 2021.

The four remaining cases represent a range of perspectives: export for new trade, maintaining export trade that is facing interceptions, recognition of equivalence of alternative measures and import pathway protection from the introduction of a plant disease.

A second call for trade cases was issued at the end of November 2019, to examine if other types of cases might emerge, thereby allowing more trainees to be validated. The call resulted in a number of applications, though only one – Mexico's seed trade with the Netherlands – was accepted, beginning in 2020.

The project met the indicator outlined in the logical framework for development of at least four trade cases, to which the IPPC Secretariat and ICL agreed to add further trade cases that were not officially part of the project, allowing the validation of those facilitators who did not have a trade case (Annex 8).

Facilitators worked hard to finalize materials related to each trade case and completed the production or pathway chains for each case, as well as the DSSA, identifying who has used them and how they are used. ICL met with each team to support the material completion. Discussions were held with stakeholders (often only within the NPPO due to COVID-19 restrictions) to review and finalize the tools. Both tools were used successfully in the Tunisian trade case, as well as in a regional meeting organized by NEPPO relating to the pest of concern (as described further in the subsequent evaluation report). The tools were valuable in the unofficial trade cases taken up by those facilitator candidates who did not have an official case to complete the validation process. For example, proposed trade over land from Bolivia to Peru was laid out using both tools and was well received.

The evaluation of the use of the tools for the trade cases per se has not yet been achieved. The delay in case development caused delays in the evaluation of their experience by the NPPOs. Trade case reports were submitted to the IPPC Secretariat, under conditions of confidentiality, for all four remaining official trade cases. The use of the tools was evaluated sufficiently, however, through their ongoing use by the facilitators for their own country cases, rather than through the official application process. The production chain tool was easily applied by all trainees. The DSSA was refined with input from each of the facilitator trainees following discussion at the in-person training. Despite this, in some cases the application of the DSSA required further support, in particular Excel skills.

The initial statement of commitment outlined that the support was offered as a confidential service, although the IPPC Secretariat did seek permission to share the outcome of the some of the official trade cases.

6. CROSS-CUTTING ISSUES

6.1 Gender

The project promoted a positive impact on women by virtue of its focus on stakeholder participation and smallholders. Although the percentage of female smallholders is now thought to be less than initially estimated, the importance of productivity in the time available to work the land is considered to be an issue for women[11]. Over time, Systems Approach and the project's work will contribute to opportunities for all small-scale farmers and, as a result, indirectly to female smallholders, as the tools have a track record of revealing disparities in access to export markets and the bias of NPPOs to negotiate trade agreements that are more difficult for small farmers to achieve.

Completed tools were seen as a means to support the participation of stakeholders who might not otherwise influence decisions around international trade, including women. The tools present ratings of measures across a range of criteria extrapolated from ISPM 11 in a way that allows minority voices to be represented in the graphics, assuming group participation in completion of the tools. Dominant voices can be reassured that their input is also captured in the DSSA ratings. Everyone benefits from understanding if the ratings are consistent or if there is variation in perspectives.

The main effect of direct influence in balancing gender participation and impact from the project came during the review of the applicants for training. More than twice as many men as women applied for the training. To this end, a range of age/professional experience and the preferential inclusion of women in the group were two ways to provide opportunities. Four of the 12 validated facilitators are women, including one (from Latvia) who was funded through the European Union rather than by the STDF. It should be noted that two other women who would have been self-funded were accepted but were unable to attend.

Another form of influence was the support provided by the technical team to both genders to continue to engage the trainees who faced a range of challenges over the three years, such as health issues, bereavement, a change in jobs and a universally demanding work schedules. Within an NPPO, women are more likely to have time away from work and can benefit from the transparency and institutional memory of work on cases captured in iterative versions of the tools saved, as instructed, in the manuals.

6.2 Environmental aspects

When considering chemical use, market pressures focus on reducing pesticide residues. A number of NPPOs have mentioned the challenge of staying within those requirements, in particular for Europe, as their revision of residue acceptance is down to very low levels. This problem forms part of a continual balancing act with pest control, as pesticides are generally effective against the target pests they were developed to kill.

Besides consumers, those working in agriculture are more directly affected by pesticide application, drift and the presence of pesticides in water in ways that increase exposure over time. A recent update on accidental poisoning from agriculture pesticides found that out of approximately 860 million farm workers, around 44 percent are poisoned by pesticides every year (Boedeker et al., 2020). In 2017, the United Nations General Assembly identified protection against pesticide poisoning as a human rights issue and made the recommendation to "generate policies to reduce pesticide use worldwide and develop a framework for the banning and phasing-out of highly hazardous pesticides". Indeed, the loss of pesticides that do not retain registration or are not worth re-registering is one of the top drivers for use of Systems Approach. The ban on dimethoate is a prime example (Dominiak, 2009; Ikin and Quinlan, 2009). Before this, restrictions on post-harvest fumigants received scrutiny for their significant effect on options for management in the final steps towards export of plant products.

[11] This is supported by a number of studies (including bit.ly/33uIdM2, accessed in 2021).

Phytosanitary measures are intrinsically aimed at preventing damage to plant resources and associated biodiversity. The ISPMs offer a range of options for pest risk management (e.g. ISPMs 4, 10, 14, 22, 26, 29 and 36). Systems Approach, in particular, offers alternatives to pesticides, chemically-based commodity treatments and post-harvest fumigants, as well as any duplicative measures throughout the chain. Like integrated pest management, Systems Approach is not aimed at eliminating pesticide use, which can be an efficient measure to protect plant health. Instead, the aim is to use pesticides intelligently, which means using chemicals only when truly needed and, usually, in lower quantities or in a responsive rather than pre-programmed fashion. Combinations of measures in a Systems Approach are likely to discourage use of chemicals without some indication that they are needed in that time and place. This project therefore supports a broad environmental objective for reducing pesticide use, and use of fumigants in particular, by supporting Systems Approach.

Of the six criteria offered in the DSSA (see Box 2), the latter three in particular reflect environmental values and priorities for the three groups evaluated: producers, the sector and society at large. This means that if the environmental impact or feasibility of a measure, or system, is a top priority for these stakeholders, this can have significant influence on the selection of measures. Government policies supporting the reduction of pesticide use can also be factored in during the final selection step (see the user manual for the DSSA at bit.ly/3qyjM9d).

The implementation of the project itself had no discernible negative environmental impact.

7. SUSTAINABILITY

The project was designed for sustainability in terms of spreading knowledge to other regions, relying on empowered facilitators trained over the course of nearly three years, as well as easy access to tools and instructions for those ready to apply them without help. An infographic video and introductory video featuring the chair of the IC are additional ways to encourage uptake, while the presentation of all of these on the IPP provides full legitimacy as tested tools. All of these materials are available in the six FAO languages. In addition, news articles were to be released early in 2022, featuring individual facilitators from different regions discussing their experiences, and posted on the IPP home page and linked to the Phytosanitary Systems page on Systems Approach leading to tools.

The 12 facilitators already have extensive networks themselves and are applying what they have learned in their own countries and regions. Most of the facilitators are from NPPOs, however those who changed jobs or work with RPPOs have stated their availability and renewed their commitment to play other key roles such as market access negotiation or development of pest risk assessments.

Each of the facilitators remarked on their use of the tools as part of their own work, and introduced them to their immediate colleagues. There are plans to share the tools beyond these circles, in particular in Southern and East Africa, however these were not final at the time of writing. ICL has continued working with other research and training organizations to raise awareness of the tools (see Annex 1) and encourage their use in other initiatives. The IPPC Secretariat held a webinar in October 2021 that presents the tools and their location on the IPP to a global audience.

One way to ensure the sustainability of uptake of the tools, as well as their availability, is if funders supporting Systems Approach-related plant health work require use of the Beyond Compliance tools. The requirement for a completed PCE in order to receive funds from some sources is a precedent in how this supports the tool while the tool supports the work. (It should be noted that there is also a recommendation to include lessons learned from this project in the next version of the PCE, specifically for trade negotiation and pest risk management.) The STDF has already indicated to funding recipients that the Beyond Compliance tools should be a starting point for relevant projects. To encourage this beyond the STDF, a PowerPoint aimed at funders and donors was added to the online tools page, with supporting points (https://bit.ly/3GpisLC).

Considerable time was spent exploring the option of transferring travel funds from the project to the cost of adapting the tools to an online interactive platform, particularly during the third and fourth quarters of 2020. As reported in Annex 9, there were a number of ways to improve the user

experience with this move, however the final quote for the user requirements was high. The experiences from the ePhyto online platform, in terms of requirements for long-term maintenance funds, added food for thought. The quote was from the United Nations International Computing Centre (UNICC), which created the ePhyto platform. The move of this and other tools to a central hub with such features is a long-term, strategic decision that merits careful consideration (see further comments in Annex 9 and in the section entitled "Lessons learned" below).
Although the cost of creation was manageable, the sustainability of annual costs was not within the IPPC budget for the period immediately thereafter. The IPPC Secretariat has a complete draft of user requirements and potential costs, should these issues be resolved. As the project was entering its final stage, no effort was made to seek other quotes. The time dedicated to this exercise already the exceeded time contracted from the ICL technical team.

Risks to the envisioned sustainability include a lack of maintenance of the IPP if any changes arise, the loss of any of the facilitators to other work, illness or retirement, and the lack of funding to update or revise materials based on feedback. To mitigate this, the project relied upon existing IPPC funds for maintenance of the IPP. Facilitators were selected over a range of ages and locations, with some duplication of numbers in the NEPPO, East African and Caribbean regions. The other risk identified will be mitigated by the likelihood that additional funding would be forthcoming if significant demand for enhancement or integration of the tools with other initiatives were manifested.

8. FINANCIAL OVERVIEW

Due to the pandemic, which was officially declared in March 2020 and continued until the end of the project, budget funds foreseen for use in travel could not be used for the stated purpose. To adapt to this case of *force majeure*, the IPPC Secretariat and ICL considered using part of these funds for an alternative purpose, namely the support of a communications specialist and additional staff time. In particular, costs associated with Activity 3.3 for regional facilitators and the organization of meetings were incurred, which left this component largely unspent. Discussions during virtual meetings between the STDF and the IPPC Secretariat led to the conclusion that costs could be reallocated to other related activities. Communication and translation were already envisaged as part of activities for project management and preparation of cases, however these were significantly expanded with the addition of a communications specialist and the production and translation of an infographic video.

The LoA between FAO and ICL also specified that while FAO's budget would pay for the translation of documents, ICL would need to proofread and check all of the translations. Due to the use of Visual Basic for Applications macros in the Excel tool of the DSSA, it took a number of days to complete this task, which essentially constituted rebuilding all of the tools that had been decommissioned during translation. To help alleviate this, ICL contracted an external translation company and increased the time of an existing ICL staff member to manage some of these tasks (40 percent full-time equivalent for one month at an estimated cost of GBP 1 480) for the final month of the project under the LoA with ICL (May 2021).

Facilitators were offered financial support to hold virtual meetings, however this opportunity was not taken up. The provision of better laptops without links to specific meetings would have been possible and would have proven beneficial to facilitators, who, in some cases, were unable to connect or run simple programmes on their computers.

This project was heavily supported by the IPPC without any cost recovery for staff time. The support primarily included the project officers who served during the project, but also administrative support for travel arrangements for the trainees, support for a Dropbox licence and, for large stakeholder events, use of the FAO Zoom platform, FAO internal resources for legal and public relations review of documents, financial reports, procurement and contracting for the communications pieces. Although this supported the mission of the IPPC, it is not sustainable to for staff time to directly support a project without receiving funding. The contribution of the IC in terms time was also significant.

Similarly, with no overhead fees, ICL provided offices, equipment, Internet, meeting areas, internal budgeting arrangements and financial reporting and other services as in-kind contributions. In addition, Professor Mumford and Professor Emeritus Jeger provided support for training and trade cases with no cost recovery for their time. The Zoom licence used for all routine monthly calls and meetings on trade cases was supplied by ICL. Most significantly, the primary tool developer gave up over a month's additional unpaid time to the exploration of moving to an interactive online format and the issues with translations of the Excel documents. Three months of unpaid full-time equivalent was required from the project manager for the completion of the revised work plans and support for the addition of the communication pieces, although she was programmed for 20-30 percent time throughout this project. Despite this expenditure and personal sacrifice, the time under the LoA was insufficient to show expenditure of all funds, as adjustments to the approach occurred so late in the project. As a result, funds from the original budget remained unspent, while work continued well beyond the end of the LoA.

In summary, although the project budget was not insufficient, lessons learned for possible future actions dictate that resources will need to be allocated for staffing to ensure appropriate project management and support from the institutions delivering the work. The pandemic certainly exacerbated the situation, however this would also have been the case in normal circumstances. The opportunity to reallocate some of the funds intended for the travel of trainees alleviated this challenge somewhat, however further reallocation and a no-cost extension of four months would have better supported the unique situation faced under the challenges posed by the pandemic. Such an extension was not sought, however, owing to the other work commitments of ICL and the IPPC Secretariat.

9. LESSONS LEARNED

The application and funding process encountered challenges beyond the control of the applicants. The original application included the NEPPO, which provided support for the translation and review of documents throughout the project. However, during the lengthy negotiation process with the STDF, the NEPPO withdrew due to financial concerns. In addition, the organizations supporting the project application at the time of its submission (i.e. the Ministries of Agriculture of Burundi, Congo, Gabon, Cameroon, Sao Tome e Principe and Zambia, the Pacific Plant Protection Organization (PPPO), the International Regional Organization for Plant and Animal Health, etc.) did not apply for trade case support once this phase began, with the exception of one member of the PPPO. The primary issue appeared to be the period of time between the original application and the STDF WG's final approval and, subsequently, the contracting with the IPPC. The countries in question had moved on to other priorities, or did not have the resources to respond years after their initial interest.

The identity of STDF WG members appears to have changed over the course of multiyear discussions. The result was that each cohort had comments representing different views. Rather than keeping to the original comments and checking solutions to them, the WG required further changes at each meeting, which proved highly time-consuming for the applicants. Furthermore, the budget for the project was significantly reduced during the negotiation process, without proportionate changes in the work plan. The enthusiasm for the project by members of the IPPC Secretariat, since departed, led to agreements that would not be made in the present circumstances.

The implementation of the project was successful overall, in spite of some considerable challenges. Some areas could be improved upon for future projects aiming to disseminate tools. Key to the success of the project was the personal dedication of those who became validated facilitators. This opened up a professional network among the facilitators, perhaps similar to those arising from in-depth WTO-SPS training. The value of being able to discuss ideas or questions with plant health colleagues has been established in the past (Quinlan et al., 2016, pp. 77, 209), particularly when working in smaller countries. Each of the facilitators noted benefits in her or his own work setting from participation in this project in addition to both their formal and informal contributions, in response to regional or neighbouring country requests for support on Systems Approach.

Another major success was the accessibility of the tools and user instructions through the IPP, as discussed in the Sustainability section, making them readily accessible. All of the primary outputs are provided in the six FAO official languages. The infographic video is available with subtitles in all

languages on the IPP (bit.ly/3GGc3LV). The outputs direct users to the Beyond Compliance tools, while being sufficiently general and encompassing of other efforts to support Systems Approach, which is expected to support the impact long after the completion of the project. There are also a series of templates and documents, covered in Annex 5, which may be useful for other projects carried out in collaboration with NPPOs.

Group learning over a longer period

The training and learning process under this project was successful one. The week-long face-to-face training was critical to the success of the project. The almost monthly online meetings, however, were equally important. The first set of online meetings was designed to cover some of the learning objectives (see Table 7) in order to make the most of the in-person time. This proved to be an excellent practice, with all participants beginning "on the same page" in terms of basic concepts. It also established an early rapport among the participants, which has lasted to this day. A comprehensive confidential report on the in-person training was provided to the STDF.

The ongoing online meetings provided an opportunity to discover areas in which concepts or tricks for tool use had not been consolidated after the training. Regular logistical updates were shared in the forum, with those unable to attend provided with a link to the recordings. The meetings also allowed time for further presentations, including one on the development of Systems Approach from the 1980s onwards and on the use of area-wide approaches as part of Systems Approach. If the length of these regular meetings had been anticipated, a more conscious plan relating to the learning objectives would have been made. In the end, these objectives continued to seem relevant and comprehensive.

Ideally, the group of facilitators would have held one final meeting in order to prepare the communications materials and review the final version of the tools and instructions, as well as other outputs that needed to be managed entirely through virtual meetings. However, travel restrictions prevented this closing meeting.

The participants all stated that meeting people from other NPPOs and feeling able to discuss a plant health topic in depth was one of the best professional opportunities that they had experienced. This had also previously been noted by the Southeast Asian NPPO participants. A number of professionals may never attend the CPM meetings to meet others in this way. Once the network was formed, individuals met in other fora and were delighted to use the established camaraderie as a starting point when working on other issues.

Use of trade cases for development of trainee facilitators and embedding tools

Beyond Compliance relied on newly-identified, officially submitted trade cases to develop over the course of the project rather than being limited to publicly available existing trade cases or hypothetical cases created for training purposes. Cases with existing trade using Systems Approach were used during in-person training but were also brought in to illustrate specific points. At the start of the project, no detailed information was available on many of the current cases in the public domain. ICL received permission from the NPPOs to use cases from Belize and South Africa.

The project design relied on two hypotheses on these new trade cases, namely (a) that the NPPOs/RPPOs that applied to participate would be motivated to complete the development of Systems Approach on their chosen cases within the shortest time possible for their own benefit; and (b) that these real trade cases would thereby allow the project to complete the facilitator training and evaluation by revealing each person's ability to apply the tools and explain concepts in real world conditions. The process encountered a series of obstacles to its timely completion, making hypothesis (a) only partially successful. Hypothesis (b), meanwhile, was also only partially successful but was supplemented successfully with "unofficial" trade cases arising from participants' routine work or published articles, so that this did not affect the final outcome.

It became clear from follow-up conversations that in-person meetings, such as the CPM session, would give individuals confidence about what the project was about and whether to send in a case. Issues of confidentiality remain a key barrier to the participation of NPPOs where trade is involved.

After applying with a trade case, NPPOs continued to enquire about visits to their country. Without a doubt, meeting in person to work through cases would be more successful than the activities that took place online. The common wisdom that meetings are the deadline for starting on assigned work appears to hold true for many of the busy plant health staff. A date in the calendar for work on the case required the participation of the facilitator and/or the ICL trainers. While this is not best practice, it is the current situation for many plant health staff.

The limited response to the calls for cases posed a barrier to assigning one case to each trainee. Some of the cases submitted by an NPPO did not result in the required timely follow-up and were subsequently abandoned by the project. At least one was found to be less feasible financially following the initial review with the facilitator (which, in itself, was considered a success in terms of preventing waste of resources). In addition, the onset of the pandemic and the normal workload faced by NPPOs hampered responses from those who began with trade cases. The inability to travel for face-to-face meetings appeared to undermine at least one case, in which there had been a change in staff and where clarity on the scope of project support was low.

On the other hand, the realities of slow responses, staff changes, but also a range of problems in different sectors that clouded the purpose of developing a clear Systems Approach plan, all contributed to the facilitators' understanding of how future facilitation may play out. While this is not encouraging, it shows that serious commitment on the part of a requesting NPPO should be demonstrated before a facilitator is assigned to future cases. It is also likely that facilitators will be contacted to answer questions, give tips for use of tools and explain particular points, but not necessarily carry out a complete trade case support. A number of requests have already been made for presentations at regional meetings and training sessions, among other fora. It is important to note that time spent explaining the tools does not subtract from the time available to support their application, which is where the objectives of pest risk management and trade will be met.

The involvement of a national coordinator for each case also met varying degrees of success. Some countries assigned this role at too high a level, making it difficult to find time to engage, while others chose individuals at too low a level in terms of gaining agreement from superiors to take action leading to completion. While national coordinators were already familiar with the assigned facilitators, it appears that facilitators were taking on responsibilities beyond their defined role, perhaps due to the fact that facilitation, in contrast with consultation and the provision of services, is not well understood. This role of national coordinator should continue to be identified for any future work, however. When project funds are involved, it may be that the project manager, but also an individual with knowledge of the pest situation or crop sector, is also needed. Further understanding of the overall political will to make progress on a specific trade case may reveal more about the correct fit.

Platforms for tools

The software used in the first project, SMILE genie, was at the time a free shareware. Since then, it has transitioned to a licence fee-based software, although an educational licence remains free of cost. This change prompted a move to Excel for the production chain template, allowing it to grow as far as needed in different directions (unlike PowerPoint, for instance), and enabling the use of additional sheets to show details or particular components, if desired. Excel continued to be suitable for the enhanced DSSA. However, the translation of an Excel sheet with macros proved time-consuming and should have been contracted out to individuals with expertise in the software, as well as in the languages.

In this phase, the use of Bayesian networks (BN) was left aside, while additional features were added to the DSSA tool. This led to the loss of some of the precision of the impact of measures through what is known as sequential mortality (Jang, 1996), or the cumulative effect that measures have on the same pest population. (The ICL team has prepared an article for publication explaining further what is lost from this decision and supporting use of BNs when practical. The report was pending publication at the time writing). While there was no inherent problem with the tools at the end of the first project, BNs were considered not to be as user-friendly to the typical NPPO staff and less amenable to generic templates. Most cases required additional refinement, with cases addressing both insect pests and plant diseases, in one case an insect-vectored disease. Templates by topic, however, such as for a commodity or pathway with associated pests of high concern, could be

developed. This would be more useful for those situations with higher trade or higher risk. An ad hoc group involving a range of country experts may be the best way to ensure robust conclusions and acceptance of the outcome when building such a BN. While it is not proposed that a BN based on the Beyond Compliance guidance in the eBook (Quinlan et al., 2016) would have any regulatory status, it should be similar to a peer-reviewed article, worthy of consideration and citing for trade cases.

While presenting its own limitations, Excel is believed to be much more reliable than the earlier software employed in terms of accessibility to the number of people with Microsoft Office around the world, the different language options, the ability to use older versions of the tools even if without the latest updates and the experience of many users, meaning that the software does not require learning from scratch, even if the features appear new. The experience of preparing specifications for a more interactive online tool are reported in Annex 9. This proved to be beyond the resources available.

A lesson confirmed by this project is that, when designed using accessible software and with transparent instructions, tools could be developed and improved over the course of a series of projects, often approaching plant health risk issues from different perspectives. Beyond Compliance benefited greatly from the parallel development of similar integrated pest management assessment tools in the European Union projects, which, in turn, benefited from experience with Systems Approach tools from Beyond Compliance projects. Like capacity-building in general, however, coordination among all tool developers will take time and would benefit from a forum or host that initiates the conversations at the outset of the process. This should be carried out as a global initiative, which does not match all funders' criteria for achieving local buy-in and impact (STDF, 2018) but rather looks for maximum efficiencies.

The issue of changes in cost and availability of software or other support for online tools will continue to arise and should be anticipated with a potential refresh of tools every three to five years, a cost not easily covered for project-based outputs. Emphasis should be placed on the lesson from the European H2020 plant health projects (DROPSA, EMPHASIS, EUCLID), namely that valuable tools can be lost due to the time limit of projects and the lack of follow-up funding, while a plant health hub is needed to maintain these for ongoing use. The time spent exploring the possibility of more interactive Beyond Compliance tools underlined the high cost of maintaining a secure platform, including annual costs for maintenance. Regional and individual country tools are being abandoned due to costs and limits on potential funding (e.g., Suffert, personal communication 15 June 2020). If tools were evaluated against some agreed criteria to determine their utility and current demand, a coordinated approach to all plant health tools would result in significant synergies. For instance, the creation of a separate area on the same server supporting ePhyto certificates is one way to diversify and gain additional support for the ongoing costs of that structure (see comments in Annex 9). Another option is to allow commercialization of tools created under STDF funding, to ensure their sustainability. For instance, the Beyond Compliance tools could be linked with the CABI tool for pest risk assessment (bit.ly/3rrm49A) and become part of its business model of project and subscription financing. A two-year period of open access, or special licences for developing countries, could be negotiated to support the intention of accessibility, while recognizing the need for ongoing resources to maintain such tools.

10. RECOMMENDATIONS AND FOLLOW-UP ACTIONS

Follow-up actions

In many ways, the intention of the project only begins now that its implementation has come to an end. This intention is to provide easily accessible tools to support Systems Approach for sustainable use over time, with facilitators based in different regions who are able to provide support in the different FAO languages. It is hoped that sufficient materials and context are provided on the Phytosanitary Systems page to give life to the project outcomes for some years.

The IC chair, IPPC Officer and project manager agreed to award validation of each of the 12 facilitators for a period of two years. This limited period was agreed by the project steering committee to ensure that the individuals remain engaged and maintain their knowledge of the tools, rather than being promoted as de facto experts. The simple criteria of involvement and positive feedback from those who received assistance are the necessary requirements for their period as facilitators to be

extended. (The length of the next validation would be set by the IC, with advice from the facilitators themselves, but is likely to be a further two-year period). If there were significant demand, the possibility of adapting the tools to a more interactive online format could be pursued with additional funding. Annex 9 lays out some options for this enhancement.

Facilitators contributed a significant amount of time over the course of the project. Some NPPOs will not be able to donate the time of their staff person without them taking leave from work or potentially seeking funding for the employer. The overall business plan for managing any requests for facilitation is not fully developed until the level of demand is better understood. Regardless of any support given to facilitators for their time, full cost recovery for travel or other direct costs is expected. It is hoped that countries with a major case would seek funding for implementing the tools in order to finance travel, meetings and, potentially, additional case-specific input from ICL over this initial period, as well as from the facilitator (such as a linking with a library or database of measures), until a critical core of NPPOs becomes accustomed to working with the tools. For this reason, the group of facilitators decided to coordinate via an ICL-hosted email (Beyond.Compliance@Imperial.ac.uk) and to coordinate with each other as requests arrived directly to them.

The project overall was designed as an example for those taking decisions regarding pest risk management to allow time for critical thinking and evaluation using a structured approach, in turn ensuring that choices were proportional to the estimated risk, scientifically justifiable, transparent and documented, in order to support negotiation and improved implementation. With climate change and other changes to biodiversity in our environments, the Beyond Compliance team would like to reiterate the need for further support to building capacity for the implementation of ISPM 14. Revision of the standard is long overdue and could constitute a good starting point.

In broad terms, the use of combined integrated measures, or Systems Approach, is encouraged as a way to achieve the following:

- Reduce more environmentally harmful measures.
- Align management with local resources and infrastructure.
- Find the most suitable approach for priority sectors, such as smallholders or those with less access to infrastructure.
- Define appropriate biological indicators and thresholds along the production chain or pathway for early indication of failure to achieve the ALOP.
- Include control points to not only verify the system in real time, but allow for corrective action that will facilitate continuation of trade, whether for the current consignments or for the next ones, or even for the next production season, without returning to negotiation.
- Include traceability so that any individual farms, production sites, packing houses or areas that do not meet the ALOP can be held back without penalizing those achieving the standards required.

The additional requirements for managing Systems Approach (and other risk-based approaches, see Kruger, 2017) will be more worthwhile if all the advantages of the approach are mastered and employed. In situations in which a high-risk pathway is under review, the project encourages use of multiple measures to avoid bans or emergency actions if a well thought out plan could safely facilitate trade, travel, e-commerce, food aid or other beneficial movement of goods.

The introductory section of the DSSA structures a review of the factors affecting management choices and their likely success. Working with stakeholders is a test of feasibility and a way of capturing wider experience and knowledge, including aspects of acceptability of measures, which is key to their successful application. When one can summarize all actions along a pathway or production chain, the elegant and simple process shows clear understanding. Graphic illustrations of such processes are well suited to communication across a variety of groups, such as market negotiation teams, grower meetings, cooperative planning between regulators and researchers, etc.

Recommendations

Other specific recommendations arising from this project are outlined below.

Encourage NPPOs, RPPOs, other regional bodies, researchers and regulators, the private sector and other interested parties to carry out the following:

- Review the Systems Approach page on the Phytosanitary Systems section of the IPP (bit.ly/3FJ64oh).
- Review the context and parameters of the Beyond Compliance tools on the online tools page (bit.ly/3qFptCC).
- Download the tools and instruction manuals in the language of choice.
- Organize support from a validated facilitator, which entails submitting a request to Beyond Compliance, completing a trade case form and organizing any necessary financial support, depending on the extent of support required (bit.ly/3GsGKEh).
- Report back to the IPPC Secretariat or the IC on experiences and suggestions for enhanced application of Systems Approach.
- Contribute related resources through the contribution process for those pages (bit.ly/3nwomTJ)
- Share work plans, protocols or bilateral agreements that include Systems Approach through that mechanism, so that colleagues may learn from each other.
- Publish technical results where possible and join networks that feature them (e.g. send a note within the ResearchGate project page on ISPM 14 to be added – this page is for any researcher to post such work).

Encourage the IC to carry out the following:

- Review the experience of serving as a project steering committee and clarify the role they wish to play, the criteria for taking on a project and best practices for both sides.
- Become the point of contact for development of all new tools, literature reviews or similar for plant health, with arrangement of the IPPC Secretariat so that a few key principles and a comprehensive road map for users can be elaborated and updated. Alternatively, identify a different entity to play this role and promote them for this purpose.
- Work closely with the Standards Committee on the upcoming commodity-based standards, so that the tools and experiences from Beyond Compliance are incorporated into that work. For instance, a coordinated database of commonly used phytosanitary measures (actions and procedures), similar to the current searchable listing of endorsed treatments (found at bit.ly/32arhtR), could link with a number of tools and trainings and provide a reference for these standards. There are many publications summarizing available measures (e.g. Allen et al., 2017; Hallman, 2007). A prototype database of measures developed by the CSIRO (van Klinken, personal communication, 2021) could serve as the basis for one that links to the Beyond Compliance or other tools, going so far as to provide the addition of drop-down menus based on crop/pest or pathway/pest. Once this is established, duplication and minor variations would be avoided, saving significant time among NPPOs.

Encourage the Standards Committee to carry out the following:

- Draw on the expertise developed through this project for upcoming ad hoc or expert working groups on issues under their purview, such as Audit and Commodity Standards (IPPC, 2017 and 2018), including at the stage of developing new specifications.
- Consider the value of using the production chain template for all commodity or pathway standards as a user-friendly visual to illustrate the contents of the main text (or send this to the CPM, if broader endorsement is needed).

Request that the CPM carries out the following:

- Endorse the use of Beyond Compliance tools and other contributed resources to improve efficiency of pest risk management through improved communication and documentation about agreed measures.
- Encourage donors to include use of these tools (along with others developed within the IPPC or recognized by the CPM) as a first step in development projects relating to trade in plant products or prevention of pest introductions affecting future trade or biodiversity in the environment.
- Request that indicators for capacity to design and implement effective pest risk management, including Systems Approach, be added in any revision of the PCE, with possible links to Beyond Compliance tools.

Recommend that the STDF carry out the following:

- Add the Beyond Compliance tools to the example list of SPS tools that may be applied through a PPG if a country or group is awarded such support. The use of a validated facilitator for complex or first-use cases will greatly enhance later use of the tools in most instances. This is in large part due to the need to consolidate the underlying principles and concepts for Systems Approach, before the development of proposed plans, evaluation of proposed systems or proposals for equivalence. It should therefore not be seen as support simply for application of a tool, but also as capacity-building in the process of using the tools to enhance understanding and critical thinking.
- Collect information about the need for a hub to host all of the tools developed for plant health objectives, and consider supporting the creation of one.
- Continue to allow future projects to move some funds among budget items so that the project can strategically adjust and continue to deliver as and when new circumstances arise.

Recommend that other funders/trainers carry out the following:

- Consider including a validated facilitator or ICL trainer from this project for training in their own tools and processes or encourage their own experts to learn about the Beyond Compliance tools. The aim is for the plant health community to have a cadre of experts able to recommend different tools for each situation.
- Consider proposing the production or pathway chain template as a way to coordinate among donors working on different aspects of a production sector or on strengthening SPS capacity, as a way to map the roles and points within which additional information, funding or work are needed. This group could become mentors or "coaches" providing confidential support to NPPOs. Frequently, NPPOs begin from a point of complex and collapsed sets of barriers and issues. This can appear overwhelming, instead of leading to strategic planning. NPPOs need to be tease out such issues before progress can be made using short interventions, project length funding and private partnerships, which are not designed for fundamental barriers or routine running of the government authority.

As pointed out in the Beyond Compliance training, facilitators are there to provide a map or clear directions for an NPPO requesting assistance on the journey of protecting plant resources. Therefore, it is also recommended that anyone seeking support for use of the project outcomes and tools take an active role as the interested party and consider this opportunity as a way to improve use of Systems Approach, rather than relying on external parties to lead the way. A "can do" attitude is the only way to go "beyond compliance", to a more empowered position of deep understanding of options for pest risk management and the readiness to achieve the appropriate level of plant protection – but on one's own terms.

11. REFERENCES AND TERMINOLOGY

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LIST OF IMPORTANT TERMS

Terms not defined in the official glossary (ISPM 5) that are used in this project include the following:

Term	Definition
Activity	An action carried out along the production chain which is not a phytosanitary measure but was identified by one or more stakeholders.
Audit	Periodic official review to verify that a procedure or system of procedures is being carried out according to plan, based on documentation.
Beyond Compliance	Having the confidence and competence to negotiate phytosanitary requirements in a Systems Approach that achieve an appropriate level of protection set by a trade partner for specified trade, or by one's own NPPO, regional or international agreements to protect plant resources, in order to employ the phytosanitary measures that are most suitable to the conditions of one's country and proportional to the risk, ensuring smooth implementation of the system.
Competence	Demonstrated ability to deliver an outcome relying on skills, knowledge and experience, under varying conditions.
Compliance	Meeting the official phytosanitary requirements imposed bilaterally by a trade partner as import requirements, or by a regional or international agreement, in order to proceed with trade or prevent the spread of regulated pests through other pathways.
Control point [formerly an official definition, later removed from ISPM 5]	A step in a system in which specific procedures can be applied to achieve a defined effect and can be measured, monitored, controlled and corrected (ISPM 14, 2002). [Because it was an official definition, this is assumed to refer to "A step *under official control…"*]
Decision Support for Systems Approach (DSSA)	An Excel-based tool providing structure for selection and evaluation of phytosanitary measures proposed for a Systems Approach, and for factors influencing the final decision regarding which combination of measures would best work with the conditions at hand. This tool produces graphic representations of the inputted information from the elicitation and employs Visual Basic for Applications code to navigate the programme and automate some procedures.
Efficacy (of a phytosanitary measure)	A defined, measurable, and reproducible effect by a specified phytosanitary action when carried out in accordance with a prescribed protocol, schedule or procedures.
Elicitation	A method for collecting information from stakeholders, in this instance aimed at design or evaluation of Systems Approach. The information may be knowledge and opinion.
Beyond Compliance facilitator	A qualified plant health staff person who has been trained and validated by the IPPC as able to support the use of the Beyond Compliance tools and explain the related concepts of Systems Approach.
Infestation	Infestation of the host plant of interest by the target pest species, or infection by the target regulated plant disease, during the production or growing period of the host. [See Re-infestation].
Pest challenge	The level of a population of a pest or presence of the pest, for instance in terms of exposure to a pathogen, at a given time and place. For Beyond Compliance, this refers to the situation in the field or area under production and is fairly localized, although it may expand further for Pest Free Areas or Areas of Low Pest Prevalence. This may also be referred to as the pest threat, the remaining pest risk, or in other ways, as it is not formally defined by the IPPC.
Post-harvest infestation	Infestation of the host of interest by the target pest species (or infection by the target regulated plant disease) after harvest of the host (in the field, packing house or during transport). Also called "Re-infestation".

Term	Definition
Pathway chain	A graphic representation developed by Beyond Compliance of actions taken in relation to a featured pathway, shown at the stage where and when taken, and coded by objective in terms of risk or implementation of a Systems Approach (see Quinlan et al., 2021), and by legal status of the action (phytosanitary measure, commercial activity, etc.). This may cover more than one regulated pest species if they are managed by the measures shown.
Production chain	A graphic representation developed by Beyond Compliance of actions taken in relation to a featured crop (plant product), shown at the stage where and when taken, and coded by objective in terms of risk or implementation of a Systems Approach (see Quinlan et al., 2021), and by legal status of the action (phytosanitary measure, commercial activity not official, etc.). This will generally cover only one regulated pest species, although species with similar biology that are managed by the same measures may be included.
Realised efficacy	The level of efficacy achieved in relation to the potential efficacy, at a specific time and place, and by specific people, given the prevailing conditions. Sometimes referred to as "performance".
Safeguard	A method to achieve phytosanitary security, by preventing re-infestation or contamination post-harvest [others may use this term differently].
Stage (in a production chain)	A step during production of a plant product (e.g. prior to planting, during the growing period or at harvest) or an activity related to preparation for the production or harvest and export, which occurs within a limited time in a specific place (e.g. nursery, glasshouse, field, orchard, packing house, port). While this is generally shown in a time sequence, area- or farm-level actions may be shown as a step, albeit persisting for a longer period along the chain.
Stage (in a pathway chain)	A step in the management or movement of a pathway for potential pest introduction which occurs within a limited time in a specific place (e.g. nursery, glasshouse, field, orchard, packing house, port). While this is generally shown in a time sequence, some actions may take place over a longer period along the chain.
Stakeholder	Any person or group of people directly affected by the trade in a specified plant product or pathway for introduction of a regulated pest. This can be in the exporting or importing country. [See also *Managing relationships with stakeholders.* IPPC, 2015.]
Uncertainty	The level of confidence, or lack thereof, in information provided during elicitation. The uncertainty may be due to the lack of information, natural variability or observation of variation in outcomes of a measure, for example. Part of a stakeholder's rating of measures in the DSSA.
Verification [Systems verification is similar but for a group of measures, and only up to the point of the verification]	A procedure to quantify (within the limits of the method) the actual effect (or a mathematically related proxy for the effect, derived from methods research) of one or more risk management measures, to ascertain how close the outcome is to the expected, defined effect. A way to quantify the effectiveness of a measure in achieving its potential efficacy. More simply, did the measure perform as expected?
Verification of system	A planned sequence of monitoring or observations (a verification) at a predetermined point to ascertain whether the required response to measures has been achieved up to that point in the system. This requires a predetermined indicator of what the pest challenge should be at that stage (potentially including a simple yes or no) and a planned response, such as rejection of the lot or a corrective measure, if the threshold is surpassed. This generally refers to a biological indicator, but could also be related to requirements for evidence of implementation of measures, without which the export is stopped.

The project strove to match use of terms and concepts defined by the IPPC and appearing in ISPM 5 (2021), as illustrated below. In addition, note the explanation of ALOP in the IRSS *Manual on Equivalence: A review of the Application of Equivalence between Phytosanitary Measures used to Manage Pest Risk in Trade.* (2016).

Term	Definition
Area	An officially defined country, part of a country or all or parts of several countries [FAO, 1990; revised ISPM 2, 1995; CEPM, 1999; based on the WTO Agreement on the Application of Sanitary and Phytosanitary Measures (1994)].
Area of low pest prevalence	An area, whether all of a country, part of a country, or all or parts of several countries, as identified by the competent authorities, in which a specific pest is present at low levels and which is subject to effective surveillance or control measures [IPPC, 1997; revised CPM, 2015].
Commodity	A type of plant, plant product or other article being moved for trade or other purpose [FAO, 1990; revised ICPM, 2001].
Compliance procedure (for a consignment)	Official procedure used to verify that a consignment complies with phytosanitary import requirements or phytosanitary measures related to transit [CEPM, 1999; revised CPM, 2009].
Consignment	A quantity of plants, plant products or other articles being moved from one country to another and covered, when required, by a single phytosanitary certificate (a consignment may be composed of one or more commodities or a number of these) [FAO, 1990; revised ICPM, 2001].
Contaminating pest	A pest that is carried by a commodity, packaging, conveyance or container, or present in a storage place and that, in the case of plants and plant products, does not infest them [CEPM, 1996; revised CEPM, 1999; CPM, 2018].
Corrective action plan (in an area)	Documented plan of phytosanitary actions to be implemented in an area officially delimited for phytosanitary purposes if a pest is detected or a tolerance level is exceeded, or in the case of faulty implementation of officially established procedures [CPM, 2009].
Efficacy (of a treatment)	A defined, measurable and reproducible effect by a prescribed treatment [ISPM 18, 2003].
Entry (of a pest)	Movement of a pest into an area where it is not yet present, or present but not widely distributed and being officially controlled [FAO, 1995].
Equivalence (of a phytosanitary measure)	The situation where, for a specified pest risk, different phytosanitary measures achieve a contracting party's appropriate level of protection [FAO, 1995; revised CEPM, 1999; based on the WTO Agreement on the Application of Sanitary and Phytosanitary Measures (1994); ISPM 24, 2005].
Free from (of a consignment, field or place of production)	Without pests (or a specific pest) in numbers or quantities that can be detected by the application of phytosanitary procedures [FAO, 1990; revised FAO, 1995; CEPM, 1999].
Growing period	Period when a plant species actively grows in an area, place of production or production site [ICPM, 2003; revised CPM, 2019].
Inactivation	Rendering micro-organisms incapable of development [ISPM 18, 2003].
Inspection*	Official visual examination of plants, plant products or other regulated articles to determine if pests are present or to determine compliance with phytosanitary regulations [FAO, 1990; revised FAO, 1995; formerly "inspect"].
Introduction (of a pest)	The entry of a pest resulting in its establishment [FAO, 1990; revised ISPM 2, 1995; IPPC, 1997].
Monitoring	An official ongoing process to verify phytosanitary situations [CEPM, 1996].

Term	Definition
Pathway	Any means that allows the entry or spread of a pest [FAO, 1990; revised FAO, 1995].
Pest	Any species, strain or biotype of plant, animal or pathogenic agent injurious to plants or plant products. Note: In the IPPC, "plant pest" is sometimes used for the term "pest" [FAO, 1990; revised FAO, 1995; IPPC, 1997; revised CPM, 2012].
Pest-free area	An area in which a specific pest is absent, as demonstrated by scientific evidence and in which, where appropriate, this condition is being officially maintained [FAO, 1995; revised CPM, 2015].
Pest-free place of production	Place of production in which a specific pest is absent, as demonstrated by scientific evidence and in which, where appropriate, this condition is being officially maintained for a defined period [ISPM 10, 1999; revised CPM, 2015].
Pest-free production site	A production site in which a specific pest is absent, as demonstrated by scientific evidence, and in which, where appropriate, this condition is being officially maintained for a defined period [ISPM 10, 1999; revised CPM, 2015].
Pest risk (for quarantine pests)	The probability of introduction and spread of a pest and the magnitude of the associated potential economic consequences [ISPM 2, 2007].
Pest risk analysis (agreed interpretation)	The process of evaluating biological or other scientific and economic evidence to determine whether an organism is a pest, whether it should be regulated, and the strength of any phytosanitary measures to be taken against it [FAO, 1995; revised IPPC, 1997; ISPM 2, 2007].
Pest risk management (for quarantine pests)	Evaluation and selection of options to reduce the risk of introduction and spread of a pest [ISPM 2, 1995; revised ISPM 11, 2001].
Phytosanitary action	An official operation, such as inspection, testing, surveillance or treatment, undertaken to implement phytosanitary measures [ICPM, 2001; revised ICPM, 2005].
Phytosanitary certificate	An official paper document or its official electronic equivalent, consistent with the model certificates of the IPPC, attesting that a consignment meets phytosanitary import requirements [FAO, 1990; revised CPM, 2012].
Phytosanitary measure (agreed interpretation)	Any legislation, regulation or official procedure having the purpose to prevent the introduction or spread of quarantine pests, or to limit the economic impact of regulated non-quarantine pests [ISPM 4, 1995; revised IPPC, 1997; ICPM, 2002].
Phytosanitary procedure	Any official method for implementing phytosanitary measures, including the performance of inspections, tests, surveillance or treatments in connection with regulated pests [FAO, 1990; revised FAO, 1995; CEPM, 1999; ICPM, 2001; ICPM, 2005].
Phytosanitary security (of a consignment)*	Maintenance of the integrity of a consignment and prevention of its infestation and contamination by regulated pests, through the application of appropriate phytosanitary measures [CPM, 2009].
Plants for planting	Plants intended to remain planted, to be planted or replanted [FAO, 1990].
Regulated pest	A quarantine pest or a regulated non-quarantine pest [IPPC, 1997].
Required response	A specified level of effect for a treatment [ISPM 18, 2003].
Surveillance	An official process which collects and records data on pest presence or absence by survey, monitoring or other procedures [CEPM, 1996; revised CPM, 2015].
Survey (of pests)	An official procedure conducted over a defined period to determine the presence or absence of pests, or the boundaries or characteristics of a pest population, in an area, place of production or production site [FAO, 1990; revised CEPM, 1996; CPM, 2015; CPM, 2019].
Systems approach	A pest risk management option that integrates different measures, at least two of which act independently, with cumulative effect [ISPM 14, 2002; revised ICPM, 2005; revised CPM 2015].
Test	Official examination of plants, plant products or other regulated articles, other than visual, to determine if pests are present, identify

Term	Definition
	pests or determine compliance with specific phytosanitary requirements [FAO, 1990; revised CPM, 2018].
Tolerance level (of a pest)	Incidence of a pest specified as a threshold for action to control that pest or to prevent its spread or introduction [CPM, 2009].
Transparency	The principle of making available, at the international level, phytosanitary measures and their rationale [FAO, 1995; revised CEPM, 1999; based on the WTO Agreement on the Application of Sanitary and Phytosanitary Measures (1994)].
Treatment (as a phytosanitary measure)	Official procedure for the killing, inactivation or removal of pests, or for rendering pests infertile or for devitalization [FAO, 1990, revised FAO, 1995; ISPM 15, 2002; ISPM 18, 2003; ICPM, 2005; CPM, 2021].
Visual examination	Examination using the unaided eye, lens, stereoscope or other optical microscope [ISPM 23, 2005; revised CPM, 2018].

12. ANNEXES

ANNEX 1 PRESENTATIONS, PUBLICATIONS AND COLLABORATIONS

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ANNEX 6 COMMUNICATIONS

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ANNEX 1: PRESENTATIONS, PUBLICATIONS AND COLLABORATIONS

1.1 Presentations

The project supported participation in the following meetings, at the recommendation of the IC as project steering committee and with advance approval by FAO/IPPC:

- The International Forestry Quarantine Research Group, held in Rome, Italy in October 2018, at which the project manager was invited to present the project at their annual meeting. bit.ly/3rPSNpp
- WTO-SPS Committee's Thematic Session on Equivalence, held in Geneva, Switzerland, March 2019, at which the project manager, Megan Quinlan of the ICL, spoke about the plant health approach. In this instance, the support from the STDF was highlighted in the presentation, which addressed how the project was to support equivalence determinations in the plant health arena. bit.ly/3AfT48U
- 14th CPM, held in Rome, Italy, from 1 to 5 April 2019, at which the project manager presented the project.
- Implementation and Capacity Development Committee (IC), FAO Headquarters, Rome, Italy, 18-22 November 2019. The project manager presented "Beyond Compliance Global, Rolling out Systems Approach Globally: Sharing tools for enhanced application of Systems Approach and market negotiation on plant pest risk (MTF/INT/336/STF STDF/PG/503)'"
- Later meetings (August 2020 and February 2021), at which the project manager reported to the IC, were held online.

The following meetings provided extensive communication of project activities and the outputs of Beyond Compliance Global to other audiences. Although none of the costs for areas such as time and travel for these meetings were supported by Beyond Compliance, a wide range of coverage can be reported, in particular through the following meetings, symposia and conferences.

- 12th meeting of the Caribbean Plant Health Directors forum and the annual regional partnership steering committee meeting. Bahamas, 17-19 July 2019. Nelson Laville (Plant Protection and Quarantine Service, Dominica) presented 'Beyond Compliance Global, update for the Caribbean Plant Health Directors Forum'. bit.ly/3KMWxQY.
- 2019 IPPC Regional Workshop for Africa. Nairobi, Kenya, 2-6 September 2019. Phyllis Githaiga (Kephis, Kenya) presented "Beyond Compliance Tools and Systems Approach". bit.ly/35c7Bad.
- Phytosanitary Measures Research Group Meeting. Cairns, Australia, 24-27 September 2019. Xubin Pan (Chinese Academy of Inspection and Quarantine) presented "Using Beyond Compliance Tools to support discussions on the objective and effectiveness of measures and combined measures". bit.ly/3tOeHvP.
- IPPC International Symposium for Pest-Free Areas and Surveillance. Shizuoka, Japan, 28 October to 1 November 2019. The project manager presented "The Beyond Compliance Tools for Systems Approach: Could They Apply to Pest-Free Areas?". This symposium was attended by 91 representatives from 47 different countries. The world's phytosanitary community was represented by IPPC contracting parties, RPPOs, FAO regional and subregional offices, international intergovernmental, educational and scientific organizations and private sector/service providers involved in phytosanitary activities and trade. bit.ly/3tMVVES
- Multistakeholder Regional Workshop on Innovations for Smallholder Farmers for Sustainable Management of Fall Armyworm in Africa. Praia, Cabo Verde, 21-24 October 2019. Sadek Abbas (Plant Protection Directorate, Ministry of Agriculture of Iraq) included information about the project in his presentation. bit.ly/33ODpB5
- International Seminar on Plant Health for Sustainable Agriculture. 19 November 2020, hosted by the International Office Universitas Muslim Indonesia, in collaboration with the Faculty of Agriculture UMI, Bogor Agriculture Development Polytechnic, The Indonesian Phytopathological Society for South Sulawesi Centre for Plant Quarantine and Biosafety, Ministry of Agriculture, Indonesia. The project manager presented a keynote address entitled "Plant Health for Sustainable Agriculture: Global Perspective" during the online seminar.

- 4th International Conference on Global Change and Biological Invasion. Jiangsu University, Zhenjiang, China, 16-19 November 2020. Xubin Pan presented an introduction to the Beyond Compliance Global project in "Pest Risk Analysis: Past, Present, and Future". bit.ly/3AoLitm

Some of the presentations that were still anticipated at the time of writing included:

- Symposium on Systems Approach, hosted by STDF on 14 July 2021 (Phyllis Githaiga). bit.ly/3FMdibo
- "Application of integrated phytosanitary measures to enhance export market compliance", as part of a FAO training programme, July 2021. Convened by CABI for the SADC (Theo Pongolo and Megan Quinlan). bit.ly/3qR6CV8
- NEPPO regional meeting, hosted by Iraq in August 2021 (Sadek Abbas and Mekki Choubani). bit.ly/3nCv4HR

1.2 Publications

Further outreach came as part of the International Year of Plant Health. Although not official publications by the project, due to the quick turnaround deadlines that did not allow for FAO official clearance, the following publications were prepared as a project in a special edition of the following journals:

- Laville, N., Witty, K. and Garcia, U. 2020. The Birth, Growth and Future of Systems Approach. An interview with Dr Eric Jang, (USDA/ARS retired). *Outlooks on Pest Management*, 31 (3), pp. 113-114. bit.ly/3fEsY5W
- Quinlan, M. M., Leach, A., Jeger, M., Mumford, J. 2020. Pest Risk Management in Trade: The Opportunity from Using Integrated Combined Measures in a Systems Approach (ISPM 14). *Outlooks on Pest Management,* 31 (3):106-112. bit.ly/3GU0QHG.

Further publications are in preparation, with the following tentative titles:

- Market access challenges that persist for the plant health community. Beyond Compliance team authors.
- Beyond Compliance – Changes in tools for enhanced application of Systems Approach and market negotiation on plant pest risk. Quinlan, Leach, Jeger, Mumford and Holt.

See below for the publication by ICL in *Crop Protection*, to clarify earlier work under Beyond Compliance. The preparation of publications for peer-review journals is highly time-consuming and also incurs costs for open access or, at times, for tables and figures. Given that these costs were not approved by the project, to date none of the materials are open access.

1.3 Collaborations with other plant health initiatives

As far as communications with external colleagues, an informal global group has developed around the use of Systems Approach. The group crystallized from the Phytosanitary Measures Research Group, which met in Cairns, Australia in September 2019, where Xubin Pan presented the Beyond Compliance work (as reported above).

This informal group has decided to remain external to the IPPC framework for now. The plan was to hold their first meeting just prior to the Phytosanitary Measures Research Group meeting in Rome in September 2020. However, as the latter meeting was postponed, the ad hoc group did not meet in person. The ICL team and Dr Pan are in continuing communication regarding this initiative. ICL convened an online meeting in 2021 to discuss a number of key concepts seeking harmonization before the final materials were posted on the IPPC web site.

As part of a more intensive outreach, the ICL team met virtually with a CSIRO team on a monthly basis for a period of six months, with Phyllis Githaiga and Ephrance Tumuboine presenting at one session. The CSIRO group is working on an Australian framework for evaluating Systems Approach for interstate trade, in anticipation of international applications. A significant contribution of the CSIRO team was the collation and review of approximately 60 protocols for Systems Approach, both interstate and international. This adds to the resources that may be useful for moving the tools online. Their approach focused on risk-reducing measures, whereas Beyond Compliance has included

measures that are important for implementation. This exchange is documented, to varying degrees, in the following publications:

- van Klinken R. D., Fiedler, K., Kingham, L., Collins, K., Barbour, D. 2020. A risk framework for using systems approaches to manage horticultural biosecurity risks for market access. *Crop Protection* 129: 104994. bit.ly/3KmhiCN

- Quinlan, M., Leach, A., Mumford, J. 2021. Classification of objectives in Systems Approaches to manage horticultural biosecurity risks for market access. *Crop Protection*: 139, p.105286. bit.ly/3tzlhGi

- van Klinken R. D., Fiedler, K., Kingham, L., Collins, K., Barbour, D. (2021) The importance of distinguishing between demonstrating the efficacy and implementation of phytosanitary systems approaches. *Crop Protection*, 139, p.105287. bit.ly/3nFBsOp

This exchange led to a minor revision of Beyond Compliance tools, meaning that the grouping by objective in the DSSA could begin earlier in the process. The objectives identified by van Klinken et al. (2020) coincided with those used by Beyond Compliance conceptually, with slightly different wording.

The Beyond Compliance Global project provided a Figure from an article by Quinlan, M. M., Leach, A., Jeger, M., Mumford, J. (2020), which was used with permission, translated by Mr Pan and cited in the following publication:

- Pan, X. 2020. Pest Risk Analysis. Science China Press, Beijing.

图 9-4　系统方法信息图（Quinlan 等，2020）

ICL supported a Figure related to an earlier Beyond Compliance case, for the manual prepared by NAPPO, both in English and in Spanish translation. The section of the manual was developed by Mike Ormsby, NZ, an active observer in the earlier Beyond Compliance project centred on Southeast Asia:

- NAPPO. 2020. Risk-based samplings (RBS) manual – Part I, International multi-authored manual on the what, why and how of RBS. Deliverable from the first ever International Symposium for Risk-Based Sampling held in mid-2017 in Baltimore, United States of America. Available at bit.ly/33UWCkN.

The Spanish version of the figure, reproduced below, appears at the following address (p. 100): bit.ly/3fI76Xi

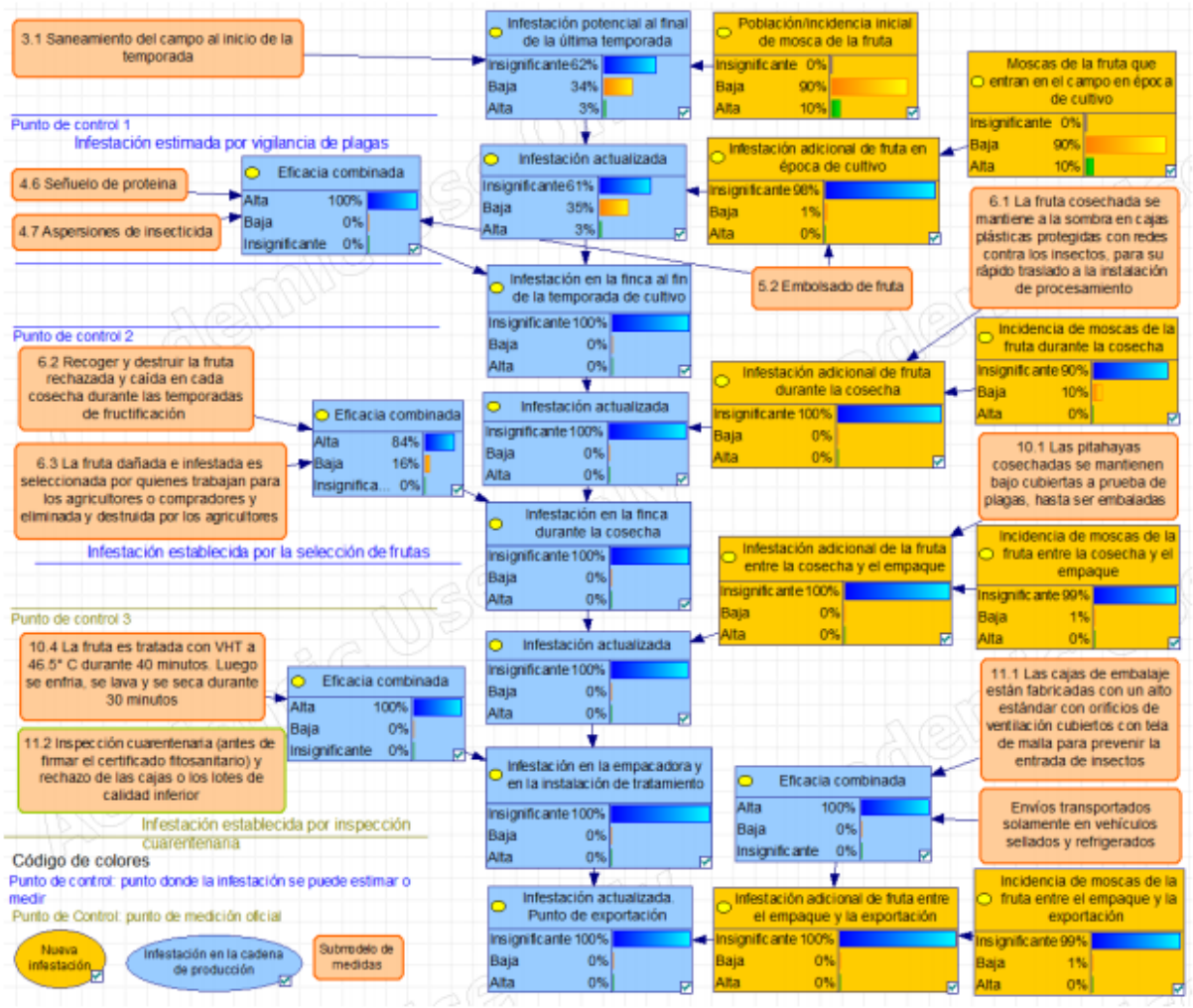

Figure: Beyond Compliance Bayesian Network showing measures used, resulting in an acceptable result at the point of export (last box in the production chain, blue box in the centre at the bottom) (from Quinlan et al. 2016) (VHT = Vapour Heat Treatment). Figure generated using the software "Genie Modeler", "SMILE Engine" or "QGeNIe Modeler", together with the licensors' name ("BayesFusion, LLC"), available free of charge for academic teaching and research use at http://www.bayesfusion.com/.

ANNEX 2: LOGICAL FRAMEWORK

Further details and discussion of the delivery of results appear under Section 5 of the main report.

Results chain	Assumptions	Indicator	Means of Verification
Impact Increase in opportunities for exports of plant products from developing countries through better capacity to deal with phytosanitary issues during market access negotiations and more options for managing pest risk.	General conditions for facilitating trade (e.g. political stability, national commitment to trade, government support and allocation of resources, participation of the NPPO in regional and international plant health fora, sufficient production for export, etc.) Plant health situation is sufficiently clear and agreed between trade partners to apply tools and progress negotiations (e.g. identification of pests and/or diagnostics, pest status of country, etc.) Collaboration of external stakeholders obtained by NPPOs (e.g. industry, other sectors of government, importing country NPPO). Mechanism to receive reports of trade proposals is in place (countries will share information).	Over 75% of NPPOs directly involved in supported trade cases report higher confidence in proposing pest risk management options due to their use of tools. Increased awareness about the types of barriers to market access leads to specific broad actions or funding to address them. This may include addressing them in future strategic planning. A classification of priority trade is developed and validated by the broader phytosanitary community, to distinguish when market access is not reliant on phytosanitary issues, but rather prevented by other barriers.	Results from evaluation by NPPOs that have facilitated support and application of the tools. Report on results from a survey by facilitator trainees to determine the current barriers to market access, which can orient further refinement of indicators. Case study reports (in project template). Progress reports regarding trade over time, extending beyond the project. Included in a routine project report, the uptake of such a classification of priority trade to evaluate potential trade cases worth supporting will be documented.
Outcome Uptake of Systems Approach tools (based on Beyond Compliance) is increased beyond Southeast Asia, resulting in increased understanding of measures related to pest risk management. The advantages, appropriateness, and components of ISPM 14 are better understood	Potential role of Systems Approach tools based on "Beyond Compliance" recognized by export trade negotiation teams, which may extend beyond the NPPO staff involved in project. Acceptance of concepts by trade partners encourages uptake. Any disagreement on basic concepts relating to pest risk, risk management and phytosanitary measures will be taken up by the IPPC or CPM to reach agreement.	At least four selected cases, from at least two developing countries, of proposed trade or disrupted trade or proposals for new risk management options for existing trade (equivalence), reaching submission to targeted market country NPPOs. At least 75% of the participating NPPOs use Systems Approach after involvement in the project. At least four regional facilitators are trained in the use of Beyond Compliance tools.	Case study reports (in project template). Survey of beneficiaries that have used Beyond Compliance tools in the design of pest risk management plans/proposals or trade negotiations on selected cases. Project reports and records.

Results chain	Assumptions	Indicator	Means of Verification
Outputs Practical tools for alternative plant health risk management measures produced for promising trade cases from developing countries. Beyond Compliance tools more broadly accessible, in particular to developing countries. Countries assisted in market access negotiations	Sufficient interaction with producer stakeholders occurs and technical information on performance of measures exists to allow full descriptions of production systems and estimates of predicted efficacy. Agreement with funder on best way to ensure IP or commercial confidentiality respected when posting outputs on related web sites. Candidates for facilitators are identified within the first months of the project and trained. Existing periodic meetings on plant health that provide opportunities for discussion proceed during the course of the project.	Existing tools will be adapted to any new conditions presented for all of the cases selected from participating NPPOs. By the end of project, simpler tools made broadly available for use by any country. By the end of the project, Beyond Compliance tools are used successfully in at least half of the selected cases (as a result of facilitators' guidance/assistance) and, where relevant, in languages other than English. Market access experiences shared with additional countries in the region or subregion where exchange on plant health issues is already established.	Demonstration materials and report templates distributed to participating NPPOs. Case study reports (in project template). Evaluation of beneficiaries, using feedback collected by the relevant NPPOs, on ability to use Beyond Compliance tools. Refined tools and guidance are posted on widely accessible web site. Translation of materials into the chosen language is available at the end of the second year of the project, if this appears useful. Case study reports (in project template) acknowledge role of facilitators. Reports from existing periodic meetings on plant health acknowledge sharing of these experiences.

ANNEX 3: PROVISIONAL FINANCIAL REPORT

Financial overview

	STDF	In kind/Other	Total
Total project budget (USD)	568 966	202 220	771 186
Total amount received to date (USD)	568 966	202 220	771 186
Total expenditure to date (USD)*	399 308	202 220	601 528
Unspent funds (USD)**	169 658	0	169 658

* As some expenditure (for evaluation) was incurred as agreed in the funding agreement after the project closure, this is yet to be fully recorded in the FAO financial system. A final financial report will be sent separately once the update is finally processed.

** Unspent balance excludes cumulative interest earned of USD 11 823.

Project status report

Food and Agriculture Organization of the United Nations

PROVISIONAL

TF Project Status Report (Aggregate Values)

Up to Period: '2021-11'

FAO Total FAO Organizations (Total)

TF5B97AA18302 647279 MTF /INT/336/STF Beyond Compliance Global ? sharing tools for enhanced application of Systems Approach and market neg (Project)

	Prior Years			Current Year: 2021 up to 2021-11			Cumulative up to 2021-11			Future Years			Project Total		
	Budget	Expenses	Balance	Budget	Expenses	Balance	Budget	Expenses	Balance	Budget	Expenses	Balance	Budget	Expenses	Balance
Funds Received															
3051 TF Contributions Received (Child)	0	(568,966)	568,966	0	0	0	0	(568,966)	568,966	0	0	0	0	(568,966)	568,966
3052 TF Interest Earned (Child)	0	(7,791)	7,791	0	0	0	0	(7,791)	7,791	0	0	0	0	(7,791)	7,791
Total Funds Received	**0**	**(576,757)**	**576,757**	**0**	**0**	**0**	**0**	**(576,757)**	**576,757**	**0**	**0**	**0**	**0**	**(576,757)**	**576,757**
Expenditure															
5012 Salaries General Service (Parent)	9,634	9,634	0	5,000	0	5,000	14,634	9,634	5,000	(5,634)	0	(5,634)	9,000	9,634	(634)
5013 Consultants (Parent)	0	0	0	0	41,842	(41,842)	0	41,842	(41,842)	40,600	0	40,600	40,600	41,842	(1,242)
5014 Contracts (Parent)	214,750	214,750	0	58,899	0	58,899	273,649	214,750	58,899	(57,732)	0	(57,732)	215,917	214,750	1,167
5021 Travel (Parent)	25,847	25,847	0	15,000	0	15,000	40,847	25,847	15,000	53,853	0	53,853	94,700	25,847	68,853
5023 Training (Parent)	0	0	0	35,720	0	35,720	35,720	0	35,720	70,000	0	70,000	105,720	0	105,720
5027 Technical Support Services (Parent)	0	0	0	8,827	6,550	2,277	8,827	6,550	2,277	6,027	0	6,027	14,854	6,550	8,304
5028 General Operating Expenses (Parent)	26,436	26,436	(0)	7,000	10,549	(3,549)	33,436	36,985	(3,549)	(6,222)	0	(6,222)	27,214	36,985	(9,771)
5029 Support Costs (Parent)	33,200	33,200	0	15,654	8,316	7,337	48,854	41,516	7,337	12,107	0	12,107	60,961	41,516	19,444
5050 Internal Common Services and Support (Parent)	0	0	0	0	22,184	(22,184)	0	22,184	(22,184)	0	0	0	0	22,184	(22,184)
Total Expenditure	**309,867**	**309,867**	**(0)**	**146,100**	**89,441**	**56,659**	**455,966**	**399,308**	**56,658**	**112,999**	**0**	**112,999**	**568,966**	**399,308**	**169,658**
Balance		**(266,890)**			**89,441**			**(177,449)**			**0**			**(177,449)**	

Irina Sharashkina
Finance Officer, CSF

Food and Agriculture Organization of the United Nations

TF Project Status Report (Aggregate Values)

Up to Period: '2021-11'

TF5B97AA18302 647279 MTF /INT/336/STF Beyond Compliance Global ? sharing tools for enhanced application of Systems Approach and market neg (Project)

	Prior Years			Current Year: 2021 up to 2021-11			Cumulative up to 2021-11			Future Years			Project Total		
	Budget	Expenses	Balance	Budget	Expenses	Balance	Budget	Expenses	Balance	Budget	Expenses	Balance	Budget	Expenses	Balance
Funds Received															
3001 Contributions Received In Advance (Parent)	0	(576,757)	576,757	0	0	0	0	(576,757)	576,757	0	0	0	0	(576,757)	576,757
Total Funds Received	**0**	**(576,757)**	**576,757**	**0**	**0**	**0**	**0**	**(576,757)**	**576,757**	**0**	**0**	**0**	**0**	**(576,757)**	**576,757**
Expenditure															
5012 Salaries General Service (Parent)	9,634	9,634	0	5,000	0	5,000	14,634	9,634	5,000	(5,634)	0	(5,634)	9,000	9,634	(634)
5013 Consultants (Parent)	0	0	0	0	41,842	(41,842)	0	41,842	(41,842)	40,600	0	40,600	40,600	41,842	(1,242)
5014 Contracts (Parent)	214,750	214,750	0	58,899	0	58,899	273,649	214,750	58,899	(57,732)	0	(57,732)	215,917	214,750	1,167
5021 Travel (Parent)	25,847	25,847	0	15,000	0	15,000	40,847	25,847	15,000	53,853	0	53,853	94,700	25,847	68,853
5023 Training (Parent)	0	0	0	35,720	0	35,720	35,720	0	35,720	70,000	0	70,000	105,720	0	105,720
5027 Technical Support Services (Parent)	0	0	0	8,827	6,550	2,277	8,827	6,550	2,277	6,027	0	6,027	14,854	6,550	8,304
5028 General Operating Expenses (Parent)	26,436	26,436	(0)	7,000	10,549	(3,549)	33,436	36,985	(3,549)	(6,222)	0	(6,222)	27,214	36,985	(9,771)
5029 Support Costs (Parent)	33,200	33,200	0	15,654	8,316	7,337	48,854	41,516	7,337	12,107	0	12,107	60,961	41,516	19,444
5050 Internal Common Services and Support (Parent)	0	0	0	0	22,184	(22,184)	0	22,184	(22,184)	0	0	0	0	22,184	(22,184)
Total Expenditure	**309,867**	**309,867**	**(0)**	**146,100**	**89,441**	**56,659**	**455,966**	**399,308**	**56,658**	**112,999**	**0**	**112,999**	**568,966**	**399,308**	**169,658**
Balance		**(266,890)**			**89,441**			**(177,449)**			**0**			**(177,449)**	

ANNEX 4: CONTACT LIST

Provide a comprehensive list of contacts of beneficiaries and implementing agencies.

Implementing agencies

Institution	Name	Role
IPPC	Natsumi Yamada	Agricultural officer
ICL	Megan Quinlan	Project manager
STDF	Roshan Khan	Economic affairs officer
IC	Dominique Pelletier (Previously through 11/2020 Olga Lavrentjeva)	IC chairperson

Beneficiaries

The top-level beneficiaries from trade cases are listed as the contact points and national coordinators (see Annex 8). Beneficiaries from the trade cases are reported in the confidential trade reports that appear as Annex 9, which is not visible in the public version of this report.

ANNEX 5: OTHER DOCUMENTS

Provide a list of documents (e.g. mission reports, training materials, workshop reports, etc.) produced during the project. Copies of these documents should be provided to the STDF Secretariat.

Documents prepared by the project that were reviewed by the FAO legal office include:

- Statement of commitment and confidentiality undertaking for trainees.
- Statement of commitment and confidentiality undertaking for ICL.
- Statement of commitment for NPPO.
- NPPO case application.
- Facilitator application.

These documents have been shared with STDF, while the IPPC Secretariat has organized folders of each document in the back-up archive. In addition to potential future use for cases supported by facilitators, these may prove useful as examples for similar projects that require confidentiality and commitment of time.

Other templates include:

- Trade case report

The key resources, of course, are the tools themselves. These were provided in Excel in all of the FAO languages. Furthermore, manuals were prepared to give instructions on use of the DSSA and the production chain templates. These were reviewed in line with FAO requirements and are now available on the web site, as described further in the main report.

5.1 Statement of commitment and confidentiality undertaking for trainees

IPPC – Training of Beyond Compliance Facilitators.

STATEMENT OF COMMITMENT AND CONFIDENTIALITY UNDERTAKING

1) In the framework of the International Plant Protection Convention (IPPC), the Food and Agriculture Organization of the United Nations (FAO), acting through the IPPC Secretariat, organizes training for the Beyond Compliance Tools Facilitators under the Project "Rolling out Systems Approach Globally: sharing tools for enhanced application of Systems Approach and market negotiation on plant pest risk" (MTF/INT/336/STF STDF/PG/503) in collaboration with the Centre for Environmental Policy, Imperial College London (ICL). The Beyond Compliance Tools are developed by the ICL. The ICL is providing technical services to the IPPC Secretariat to train Facilitators on the use of the Beyond Compliance Tools through the project "Rolling out Systems Approach Globally: sharing tools for enhanced application of Systems Approach and market negotiation on plant pest risk" (MTF/INT/336/STF STDF/PG/503).
2) Both, Beyond Compliance Tools associated training materials and the information resulting from the implementation of the Beyond Compliance Tools are hereinafter referred to as ("the Information").
3) The Undersigned has agreed to participate in the training program for the Beyond Compliance Tools Facilitators ("the training"), that implies participation in pre-training and training activities. The Undersigned will be assessed throughout the training in role-play and hands-on exercises. The training will integrate evaluation exercise(s). Only the training participants that successfully pass the evaluation exercise will be considered to have been trained as Facilitators. Successful Facilitators (that passed the evaluation from the training), will be coached and validated by the ICL on the practical use of Beyond Compliance Tools and Systems Approach. Only the trained Facilitators that successfully complete this phase will be considered to have been "validated". After the completion of the training, validated Facilitators will be requested to facilitate the implementation of the Beyond Compliance Tools in regions as needed, and pass on their knowledge
4) Validated Facilitators may participate in field projects where Beyond Compliance Tools are implemented including the "Rolling out Systems Approach Globally: sharing tools for enhanced application of Systems Approach and market negotiation on plant pest risk" (MTF/INT/336/STF STDF/PG/503) ("the Projects"). The implementation of the Beyond Compliance Tools in targeted IPPC member countries gives the validated Facilitator access to the Information on their phytosanitary status and regulatory capacity, which is considered the sensitive Information.
5) The IPPC Secretariat will provide to the Undersigned the Information for the purpose of performing his/her responsibilities in connection with the training and/or the Projects.
6) The Undersigned undertakes to regard the Information as confidential and agrees to take all reasonable measures to ensure that the Information is not used, disclosed or copied, in whole or in part, other than as provided in this Undertaking, except that the Undersigned shall not be bound by any such obligations if he/she is clearly able to demonstrate that the Information:
   a) was in the public domain at the time of disclosure by FAO to the Undersigned; or
   b) becomes part of the public domain through no fault of the Undersigned; or

c) becomes available to the Undersigned from a third party not in breach of any legal obligations of confidentiality.

7) The Undersigned also undertakes not to communicate the outcome and/or deliberations and recommendations resulting from the Projects, except as agreed by FAO and the IPPC Secretariat.

8) The obligations of the Undersigned shall survive the termination of his/her participation in the training and/or Projects.

9) The Undersigned agrees to return any and all copies of the Information, promptly following the completion of the training and/or the Projects.

10) This Undertaking is subject to general principles of law to the exclusion of any single national system.

11) Any dispute relating to the interpretation or application of this Undertaking shall, unless amicably settled, be subject, at the request of either FAO or the Undersigned, to one conciliator. Should FAO and the Undersigned fail to reach agreement on the name of a sole conciliator, each of them shall appoint one conciliator. The conciliation shall be carried out in accordance with the Conciliation Rules of the United Nations Commission on International Trade Law, as at present in force. In the event of failure of the latter, the dispute shall be settled by arbitration. The arbitration shall be conducted in accordance with the Arbitration Rules of the Arbitration Rules of the United Nations Commission on International Trade Law as at present in force. FAO and the Undersigned shall accept the arbitral award as final.

12) The Undersigned acknowledges that he/she has read and understood this Confidentiality Undertaking and voluntarily accept the duties and obligations set forth herein.

Full Name: Signature:

Passport number: Date:

Country of nationality:

Please sign and scan to return. Please bring the original version with you.

5.2 Statement of commitment and confidentiality undertaking for ICL

IPPC –Beyond Compliance Global Technical Support

STATEMENT OF COMMITMENT AND CONFIDENTIALITY UNDERTAKING

1) In the framework of the International Plant Protection Convention (IPPC), the Food and Agriculture Organization of the United Nations (FAO), acting through the IPPC Secretariat, organizes training for the Beyond Compliance Tools Facilitators under the Project "Rolling out Systems Approach Globally: sharing tools for enhanced application of Systems Approach and market negotiation on plant pest risk" (MTF/INT/336/STF STDF/PG/503) in collaboration with the Centre for Environmental Policy, Imperial College London (ICL). The Beyond Compliance Tools are developed by the ICL. The ICL is providing technical services to the IPPC Secretariat to train Facilitators on the use of the Beyond Compliance Tools through the project "Rolling out Systems Approach Globally: sharing tools for enhanced application of Systems Approach and market negotiation on plant pest risk" (MTF/INT/336/STF STDF/PG/503).
2) Beyond Compliance Tools associated training materials, the documents and information provided by the National Plant Protection Organizations and the information resulting from the implementation of the Beyond Compliance Tools are hereinafter referred to as ("the Information").
3) The Undersigned has agreed to participate in the training program for the Beyond Compliance Tools Facilitators ("the training") and/or to support trade cases selected through the same Project as part of the ICL technical team.
4) Members of the ICL technical team may participate in field projects where Beyond Compliance Tools are implemented including the "Rolling out Systems Approach Globally: sharing tools for enhanced application of Systems Approach and market negotiation on plant pest risk" (MTF/INT/336/STF STDF/PG/503) ("the Projects"). The implementation of the Beyond Compliance Tools in targeted IPPC member countries gives the ICL technical team access to the information on their phytosanitary status and regulatory capacity, which is considered to be of a sensitive nature and shall be considered as part of the Information.
5) The IPPC Secretariat will provide to the Undersigned the Information for the purpose of performing his/her responsibilities in connection with the training, trade cases and/or the Projects.
6) The Undersigned undertakes to regard the Information as confidential and agrees to take all reasonable measures to ensure that the Information is not used, disclosed or copied, in whole or in part, other than as provided in this Undertaking, except that the Undersigned shall not be bound by any such obligations if he/she is clearly able to demonstrate that the Information:
   a) was in the public domain at the time of disclosure by FAO to the Undersigned; or
   b) becomes part of the public domain through no fault of the Undersigned; or
   c) becomes available to the Undersigned from a third party not in breach of any legal obligations of confidentiality.
7) The Undersigned also undertakes not to communicate the outcome and/or deliberations and recommendations resulting from the Projects, except as agreed by the IPPC Secretariat in

writing.

8) The obligations of the Undersigned shall survive the termination of his/her participation in the training, trade cases and/or Project.

9) The Undersigned agrees to return or destroy all copies of the Information on the date and with the modalities that will be communicated by the IPPC Secretariat following the completion of the training, trade cases and/or the Project.

10) Nothing in or relating to this Undertaking or in any document or arrangement relating thereto shall be construed i) as a waiver, express or implied, of any of the privileges and immunities of FAO, nor as extending any privileges or immunities of FAO to the Undersigned, ii) as the acceptance by FAO of the applicability of the laws of any country to FAO, or iii) as the acceptance by FAO of the jurisdiction of the courts of any country.

11) This Undertaking is subject to general principles of law to the exclusion of any single national system.

12) Any dispute relating to the interpretation or application of this Undertaking shall, unless amicably settled, be subject, at the request of either FAO or the Undersigned, to one conciliator. Should FAO and the Undersigned fail to reach agreement on the name of a sole conciliator, each of them shall appoint one conciliator. The conciliation shall be carried out in accordance with the Conciliation Rules of the United Nations Commission on International Trade Law, as at present in force. In the event of failure of the latter, the dispute shall be settled by arbitration. The arbitration shall be conducted in accordance with the Arbitration Rules of the Arbitration Rules of the United Nations Commission on International Trade Law as at present in force. FAO and the Undersigned shall accept the arbitral award as final.

13) The Undersigned acknowledges that he/she has read and understood this Confidentiality Undertaking and voluntarily accept the duties and obligations set forth herein.

Full Name: Signature:

Passport number: Date:

Country of nationality:

Please sign and scan to return. Please bring the original version with you.

5.3 Statement of commitment for NPPO

STATEMENT OF COMMITMENT

by the National Plant Protection Organization of [State] (NPPO) For the Implementation of Trade Cases Submitted under the Project
"Rolling out Systems Approach Globally: sharing tools for enhanced application of Systems Approach and market negotiation on plant pest risk" (MTF/INT/336/STF STDF/PG/503)

1) In the framework of the International Plant Protection Convention (IPPC), the Food and Agriculture Organization of the United Nations (FAO), acting through the IPPC Secretariat is implementing the Project "Rolling out Systems Approach Globally: sharing tools for enhanced application of Systems Approach and market negotiation on plant pest risk" (MTF/INT/336/STF STDF/PG/503) (Project) with the technical support provided by the Centre for Environmental Policy, Imperial College London (ICL).
2) The goal of the Project is to increase opportunities for export trade in plant products by developing countries through developing capacity to deal with phytosanitary issues during market access negotiations and implementing more options for managing pest risk. This will be achieved by enhancing competency and confidence in applying Systems Approach through the use of Beyond Compliance Tools (Tools), innovative decision support tools, which were developed by the ICL and will be applied to real Trade Case(s) submitted by national plant protection organizations (NPPOs) in response to the call[1] issued by the IPPC Secretariat on 25 September, 2018 within the framework of the Project.
3) The implementation of the Trade Case(s) will be conducted with the involvement of individuals appointed by the IPPC Secretariat who are trained on the use of the Tools under the Project (Facilitators).
4) The overall application of the Tools will be performed with the technical support provided by the ICL under the general supervision of the IPPC Secretariat.
5) At the national level the process will be led by a National Coordinator appointed by the NPPO, that will inform and maintain in copy the IPPC Official Contact Point (OCP) if she/he is not the same person, and consult with the Facilitator(s), NPPOs and other national designated experts and stakeholders, as appropriate.
6) The NPPO has submitted and agreed to participate in the implementation of the Trade Case (s) *(please name the trade case/s)* as attached to this Statement of Commitment and described in ANNEX 1.
7) The responsibilities and roles of the NPPO, key persons or entities to be involved in the application of the Tools during the period of the project and main stages are described in the ANNEX 2 of this Statement.
8) Nothing in or relating to this Statement of Commitment or in any document or arrangement relating thereto shall be construed i) as a waiver, express or implied, of any of the privileges and immunities of FAO, nor as extending any privileges or immunities of FAO to the NPPO, or to its personnel, ii) as the acceptance by FAO of the applicability of the laws of any country to FAO, or iii) as the acceptance by FAO of the jurisdiction of the courts of any country.
9) This Statement of Commitment is subject to general principles of law to the exclusion of any single

[1] Call for trade cases - https://www.ippc.int/en/calls/call-for-trade-cases-to-receive-support-from-the-project-rolling-out-systems-approach-globally-sharing-tools-for-enhanced-application-of-systems-approach-and-market-negotiation-on-plant-pest-risk-mtfint336stf-stdfpg503/

national system.

10) Any dispute relating to the interpretation or execution of this Statement of Commitment shall, unless amicably settled, be subject, at the request of either FAO or the NPPO, to one conciliator. Should FAO and the NPPO fail to reach agreement on the name of a sole conciliator, each of them shall appoint one conciliator. The conciliation shall be carried out in accordance with the Conciliation Rules of the United Nations Commission on International Trade Law, as at present in force. In the event of failure of the latter, the dispute shall be settled by arbitration. The arbitration shall be conducted in accordance with the Arbitration Rules of the Arbitration Rules of the United Nations Commission on International Trade Law as at present in force. FAO and the NPPO shall accept the arbitral award as final.

On behalf of the NPPO
Full Name (NPPO Director)

Signature:

Date:

ANNEX 1: Trade Case (s)

ANNEX 1 – Trade Case (s)
(Please attach all submitted Trade Cases in the application template provided in the call)

ANNEX 2 - Responsibilities and roles of the NPPO, key persons or entities to be involved in the application of Tools for the Trade Case(s) *(please name the trade case)* during the period of the project:

Stage I - Preparatory Stage

The NPPO :

- To appoint a National Coordinator to manage the Trade Case(s) and inform the IPPC Secretariat through the OCP and ICL of the appointment. Ideally this should be an individual who is already involved with the trade topic and offers expertise in the phytosanitary issues related to that case.

The National Coordinator in collaboration with the IPPC OCP:

- To review the original Trade Case(s) to ensure that all the information is accurate and up to date at the time this Statement is signed.
- If the Trade Case(s) information needs updating, to do so and submit along with the signed Statement.
- To ensure that confidential information shared over the course of the Trade Case development is clearly marked as confidential.
- To establish an NPPO Team[2] to be involved in the implementation of the Trade Case(s) and communicate names and contact details to the IPPC Secretariat and ICL.
- To identify persons who should be copied into correspondence between the IPPC Secretariat, ICL and the NPPO Team. The IPPC OCP is to be copied in the email exchange. All internal communications beyond this step are the NPPO's responsibility.
- To clarify the membership of the market negotiation team and meet with them, ensure full briefing if not the same technical staff who worked with the tools.
- To ensure that the Facilitators and ICL personnel signed the Statement of Commitment and Confidentiality Undertaking and address any questions or concerns to the IPPC Secretariat and ICL[3].
- To Create an initial Trade Case(s) dossier(s) to form a basis for the further development of the Trade case(s) including:
    - All information that is publicly available on the Trade Case(s) as per template to be provided. This information will be used for open discussions and sharing across the development of the Trade Case(s).
    - A preliminary list of stakeholders to be involved (producers, representatives of the export sector, suppliers, treatment or services providers, brokers, etc.) in the implementation of the Trade Case.
    - Existing pest risk analysis (PRA) or dossier submitted to a trade partner NPPO, and the list of potentially regulated pests and proposed measures.

Stage II – The development of the trade case(s)

Step I – The Development of the Trade case(s) by the NPPO:

The NPPO Team:

- To review with the ICL Team and the Facilitator(s) all the details of the Trade Case(s), including taxonomic identity of the potential pests identified and details of the production sector, based on the form to be provided by the ICL.
- To provide the ICL Team and the Facilitator(s) with all the relevant documents exchanged (e.g. a dossier, a PRA) and summaries of correspondence with the partner trade country NPPO.
- To work with the Facilitator(s) to prepare a Production Chain in the Beyond Compliance format, to identify all measures and the objective of each (this will probably be done with stakeholders – see next step, depending on the case).

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[2] Please note: NPPO Team will be asked to review the final report to FAO to ensure agreement on all points and that no confidential information has been inadvertently included.

[3] Both the Facilitator and the ICL Team will sign Confidentiality Undertakings so that your Trade Case information will not be shared without written express permission, although the fact that you are participating and the commodity and pest concerns will be included in reports by the IPPC or the funder, the Standards and Trade Development Facility (STDF).

- To work with the Facilitator(s) to complete the elicitation tool regarding efficacy and other features of these measures (this may be done through expert elicitation with others outside the NPPO, such as researchers, international quarantine experts, or inspectors – see next step).
- If any significant change occurs in the Trade Case(s) at any time while participating in the Project to inform as soon as possible and in any event not later than 5 working days the IPPC Secretariat, the ICL Team through the National Coordinator and copying the IPPC OCP. Such changes could include: the decision of the relevant company not to pursue proposed trade; response is received from the NPPO of the target market or supplier country of an import Trade Case; choice of trade measures significantly alters; etc.

The Facilitator:

- To act as a resource for the NPPO staff in applying the Tools and a resource for other meetings (e.g. with stakeholders) in explaining the Tools and their use in the market access process.
- To provide facilitation for the meetings and help to achieve clarity on how best to use the Tools and support documentation of responses to the questions presented at the stakeholder or expert elicitation meetings.
- Work with the NPPO staff in completing the information indicated by the Tools and relating to presentation of a trade case to the trading partner country NPPO.

Step II– Stakeholders Input:

- The National Coordinator, NPPO Team and the Facilitator(s) to involve stakeholders, for the discussions of Trade Case(s), interested in the trade proposed or closely involved in services in that production sector. This should include small farmer groups as well as large producers, and any larger consolidators or international distribution companies. Other relevant stakeholders along the production, packing and shipping chain should be invited to participate as well.
- The National Coordinator, NPPO Team and the Facilitator(s) to organize one or more meetings, according to the appropriate grouping of stakeholders. The purpose of the meeting to be clearly set and communicated to the stakeholders.
- The National Coordinator, NPPO Team and the Facilitator(s) to involve relevant stakeholders in the preparation of their case. Identify other issues that could prevent trade and consider the impact of these or how to remediate. Stakeholders input should be properly recorded for further actions.
- The National Coordinator, NPPO Team and the Facilitator(s) to involve relevant stakeholders such as researchers, international quarantine experts, and others outside the NPPO in the work on the elicitation tool regarding efficacy and other features of these measures.
- The National Coordinator, NPPO Team and the Facilitator(s) to review the responses received and consolidate them. Consolidated information to be shared with stakeholders. Consider other criteria in the elicitation tool, or as requested by the trade partner country NPPO, if not covered in the meetings.
- Document the meeting and consider any lessons learned for future stakeholder meetings. Organize any follow up to clarify comments or share conclusions. Clarify willingness of the stakeholders to carry out the proposed system. Identify any additional administrative or technical schemes such as traceability that will be required for the proposed Systems Approach. (Note: implementing a Systems Approach may involve additional costs earlier in the production chain, but then possibly save costs later.)

Stage 3 – Progress to market negotiation:

The National Coordinator and NPPO Team with the technical advice provided by the ICL Team and the Facilitator(s) to:

- Conclude on the preferred Systems Approach to be proposed to the trade partner country NPPO and the representations of the system in terms of pest risk management.
- Proceed to market negotiation.
- Share the outcomes with the Facilitator and ICL team over the course of the discussions.

- Evaluate the Facilitator, using a form provided, and the overall use of the Tools.

The Responsibilities of the Facilitator:

- Carry out an evaluation of the experience of the NPPO in using the Tools and give feedback to the ICL Team on the status of the case.
- Prepare a technical report with the ICL Team and IPPC/FAO and the funder on activities conducted, while avoiding the use of any confidential or sensitive information.
- Liaise with the NPPO Management and others on the case to ensure the accuracy and acceptability of the report.

Estimated time line (note: Facilitator and ICL participation to be completed by end of Project, June 2021):

Task	Timing
Stage I - Preparatory Stage	dependent upon NPPO
Stage II – The development of the trade case(s)	
Step I – The Development of the Trade case(s) by the NPPO:	approx. 2 months, depending on the status of the case
Step II– Stakeholders Input:	approx. 4 – 6 months, depending on the nature and status of the case
Stage 3 – Progress to market negotiation:	
Prepare proposal	approx. 2 months
Technical report to ICL and the IPPC; report on outcomes	approx. 1 month after involvement of Facilitator is complete; as outcomes are finalised
Present proposal to target market country's NPPO	dependent upon applicant and recipient NPPOs

Facilities and Equipment Required:

- A personal computer (PC) system with Microsoft Office for Windows 2010 version or more recent
- Up to 200 MB available hard drive
- Reliable internet for remote meetings, a microphone and a camera if possible (although dial in options will be available)
- Facilities to hold expert or stakeholder meetings will also be required.

5.4 NPPO trade case application

Beyond Compliance Global
Case Information Template

Your country:

Main contact for the Case (name, email and job title):

IPPC Official Contact Point (name, email and job title):

General Information

Commodity (common name and scientific name; include variety and/or part of the plant if important to pest risk): Or Pathway of interest:	
Regulated pest(s) associated with the commodity or pathway (in other words, the pest of interest for this case): You may list primary and secondary pests, or possible pests if not yet defined by a Pest Risk Assessment (PRA).	
Target market (for this case): Or If the case is to review proposed imports or a pathway, please note here that you are the importing NPPO.	
Type of market access issue (new trade not yet open; existing market, proposing alternative equivalent measures; previous market closed or restricted; disagreement on host status or efficacy of measures) or reason for pathway concern – add any details that will help define the case.	

Status of market access negotiation

Describe the status of discussions between the production sector and the NPPO about exporting this commodity (or opening new trade).	
Has the exporting NPPO prepared a dossier of information about this case? Has the NPPO advised the target market country NPPO about the desire for trade?	
Has the importing NPPO prepared a Pest Risk Assessment about this commodity and pest(s) of concern or a Pest Risk Assessment for a source with a similar pest status? If yes, please indicate the approximate date, author/authority. If possible, attach the document or provide a link. Was this prepared expressly for the trade in question in this case?	
Existing pest risk management practices used by the exporters when exporting to other markets, or phytosanitary measures required by the NPPO's target market for existing trade or trade with other sources.	

Commodity production information

Amount of the commodity currently produced in exporting country (approximate amount in tonnes): Amount expected to be exported: Will the export likely lead to or require any changes in the volume or methods of production?	
How well organized is the export sector in the exporting country? Describe any variations, e.g. in size of farms, in local vs international buyers and shippers, etc.	

Or - Pathway information

Describe the pathway. Current volume or other features: Expected changes in this pathway (e.g. higher volume, new routes, climate change):	

What is important about this case for your country?	

I affirm that the NPPO has set this case as a priority, has resources, including human resources, dedicated to advancing this case, and will participate fully with Beyond Compliance Global to further support the case (with mutually clear agreements on confidentiality)

_____

Main contact for the case (signature):

IPPC official contact point (signature):

Sign and scan to return

5.5 Facilitator application

Beyond Compliance Global
Application to be trained as a Beyond Compliance Facilitator

Applicants wishing to be trained to become Beyond Compliance facilitators are required to complete the application form, including the facilitation skill assessment below. This form includes questions on technical experience and facilitation skills, and requires the inclusion of an up-to-date Curriculum Vitae (CV). The CV must be in English and in Microsoft Word or PDF format.

Application Form Part One

1. Surname:
2. Personal Name(s):
3. Gender:
4. Date of birth:
5. Nationality (passport):
6. Country of residence:
7. Phone number (including country code):
8. Email address:
9. Current position, title and department or division:

10. Contact details for employer, including email address for line manager:

11. Current/previous employer type relevant to Beyond Compliance (mark with X if relevant):

NPPOs	Private sector
RPPOs	Other government agency
Academic/research institution	Other (please describe blow)

If you selected Other, please describe:

12. Working-level language proficiency:

Select with X as many as appropriate. Please note that only languages in which you have a working-level of written and spoken proficiency should be selected. This means that you feel comfortable participating actively and speaking publicly in that language. Candidates must also be comfortable working and presenting to groups in at least one of these languages, and able to work with the trainers in English.

English	Russian
French	Arabic
Spanish	Chinese
Other _____	

13. How many years have you been involved in phytosanitary related work (e.g. plant health inspections, pest management advisory roles, pest risk analysis, trade negotiations, etc.)? Please note that we are seeking both junior and experienced staff as applicants (mark with X).

None	6-10 years
Less than 1 year	11-15 year
1-2 years	16-20 years
3-5 years	More than 20 years

14. What positions and topic areas have you worked on? (mark with X as many as appropriate)

Institutional management	Pest risk analysis
Policy-making	Strategic planning
Trade negotiation	Stakeholder management
Research operations	Import/Export certification
Field operations	Other (please describe below)

15. In which specific topic(s) do you have the most experience?
16. Email a CV with this application (three to five pages maximum).

Please ensure that the CV clearly presents your knowledge, experience in work related to phytosanitary issues in export trade (at national, regional and international levels) and your experience related to training and facilitation.

17. Email a signed letter of support from your immediate supervisor (line manager) stating (a) that he or she recommends you as a good candidate for a facilitator role and (b) that the time commitment described for training is agreed with him or her. This letter may be in your national language, however its review will be faster if in English, Spanish or French.

Application Form Part Two

Facilitation skills

The purpose of this part of the application is to identify individuals with the experience and characteristics needed for the facilitator role. To answer these questions, please give examples wherever possible to illustrate your experience. You may use up to 4 pages to answer these questions.

Focus on your past experiences as a facilitator and how you dealt with them.

1. Describe your experience facilitating group discussions, consultations (e.g. with cross-ministerial groups or stakeholders) and workshops?

   Please provide specific examples.

2. What do you think are the most important skills for the facilitator role, in particular those relevant to phytosanitary issues in trade?

3. What is your approach for getting a group to interact effectively and to remain focused on the objectives of a training or meeting?

4. How have you dealt with groups that include members with different levels of experience, different objectives or different roles? How have you kept the group on track for the purpose of the meeting?

5. What recent experience have you gained that may improve your skills to serve in a facilitator role?

5.6 Trade case report template

BEYOND COMPLIANCE GLOBAL ROLLING OUT SYSTEMS APPROACH GLOBALLY

Food and Agriculture Organization of the United Nations

International Plant Protection Convention

TRADE CASE REPORT

Name of the Trade Case

The Trade Case report should be completed by Trainee Facilitator(s) in coordination with the National Coordinator and submitted to Project Manager and Leading Technical Officer of the project for initial review/CPPO and national contact point for final review. It is best to continually update this information within a week of each event or steps forward, for a final report within 30 days of completion of the case, or of the Trainee Facilitators' role in the case. Leave blank any portion that you are unable to answer.

Trainee Facilitator(s):	
Reporting date:	
Period covered by this report :	
NPPO/Applicant:	
Commodity:	
Primary regulated pests:	
Secondary pests, if included:	
Target market:	
NPPO(s)/Partner(s) :	
Type of case (thick the relevant box)	☐ Export: opening a new pathway ☐ Export: maintaining a current pathway ☐ Import: reviewing a current pathway ☐ Import: opening a new pathway
Main contact point for case application:	
National Coordinator:	
IPPC official contact point:	
Trade Case team:	
Importing NPPO:	
National regulation coordinator in the importing country:	

Imperial College London

STDF

Summary of the current status of the implementation of the Trade Case and use of the Tools:

Note: please include a very short statement of the Trade Case, drawing on the first table.
In particular, if it is an existing export or import pathway, detail the reason of the trade case (e.g. market under threat, need additional measures, new requirements, etc.), if available, figures are desirables (e.g. amount exported or imported in USD and/or quantity).
If the pathway does not exist, figures on the expected trade could be useful.

Brief overview of the Trade Case including the dates of commencement; what has been accomplished and what needs yet to be completed; list of identified stakeholders, has the NPPO used the systems approach before and, if so, what has been accomplished:

Work plan (this page may move to appendix when case is complete):

To be developed with the National Coordinator

No	Objective (describe what you hope to achieve, the desired result. Use the second table for the meetings)	Actions	Resources needed	Timeline/by when for each action	Responsible	Outcome/Performance Indicator

Actions undertaken:

Title of meeting and purpose (especially meetings between National Coordinator & Trainee Facilitator)	Date, time and location (or indicate if online)	People involved (and their roles if appropriate)	Issues discussed	Follow up actions	Key person responsible (transfer as well to the work plan)	Others to consult or inform

Challenges and opportunities arising from the implementation of the Trade Case:

Explain if the challenges were related to using Systems Approach or Tools, or were unrelated to that, or possibly related to plant health in general such as lack of the capacity of the NPPO, relations with stakeholders etc.

No	*Challenges*

No	*Opportunities*

Use of Tools:

Note: please specify the status of the use of Tools such as whether: (i) Tools were presented to stakeholders (specify stakeholders), (ii) a draft production chain has been developed and who was involved, (iii) a draft DSSA has been developed and who was involved

Other Observations / Comments:

- *Is the NPPO already familiar with Systems Approach? (If not covered below, in what context?) Can you rank the confidence of those staff whom you meet?*
- *Are there already bilateral agreements using Systems Approach?*
- *Is trade (export or import) occurring using Systems Approach? If so, for how long? Approx. annual volume? Trade partners? (add file names if other documents on these are available)*
- *Please capture any specific observations about how the facilitation and use of tools has affected the understanding or potential use of Systems Approach in as much detail as possible. Can you determine if the tools increased future use of Systems Approach? Or led to possible savings in resources, including staff time*

No	*Specific Observation*	*Details*
1		

2		
3		

- *Any feedback on NPPO's reaction to the tools, instructions or facilitation may also be included here, although an evaluation form will be sent to the NPPO when the case is complete*

NPPO Reactions	*Details*
On Tools	
On instructions	
On facilitation	
Other	

- *What are the needs to support the implementation of the case? (Requests for support must be made 60 days ahead as a minimum and pre-approved before mentioning to country counterparts)*

Progress and achievements since previous report:

Please be sure to include current date in the file name of this report.

Conclusions/Recommendations:

Conclusions:

Recommendations:

Appendices (list of meetings and calls, attendees and notes):

No	*Meetings/Calls*	*Attendees*	*Notes*

ANNEX 6: COMMUNICATIONS

The project carried out a number of presentations and published a range of materials throughout its three-year implementation period. These were conducted without the support of a professional graphic designer or communications expert.

From the beginning of March 2021, Lisa Ferraro, a communication consultant who collaborates with FAO, was assigned to Beyond Compliance to support the communication activities accompanying the completion of the project. This was covered by the project budget allocated for FAO, and no special changes in the project were needed.

The activities were consistent in elaborating a communications plan highlighting the overall communications objective, namely to drive awareness around Systems Approach and Beyond Compliance tools. The communications plan was developed around the following elements:

1. Dedicated Systems Approach component page (within the IPPC web site), featuring:
    - Introductory infographic video;
    - Launch interview featuring Dominique Pelletier, Chair of the IC;
    - Visual Power Point presentations, explaining key concepts;
    - Human-centric stories, featuring facilitators and case studies;
    - Contributed resources, including relevant material submitted by NPPOs;
    - Links to Beyond Compliance tools.

2. A specific Beyond Compliance tools page (within the IPPC web site), featuring:
    - Two Excel tools;
    - Manuals and instruction video;
    - Facilitator map with profiles and contact information;
    - Frequently Asked Questions.

A campaign approach is being developed to feature the materials cited above across the IPPC community's communication channels, to drive traffic to the two pages, in particular towards the news feature pages, in newsletters and social media channels. Further communication content, such as press releases and webinars, is being evaluated.

Key performance indicators are being put in place to measure the results of the communication plan, specifically awareness and engagement. More detailed metrics are also being evaluated to be able to track Beyond Compliance tools usage and results.

The addition of support from a communications expert was highly valuable in terms of the quality and sheer volume of dissemination materials. The late addition of this resource created significant pressure for all concerned, and, in particular, required extensive input from ICL at a time when other project completion activities were ongoing ahead of their contract end in May 2021. It is therefore recommended that this type of support be introduced earlier in similar projects, and supported at a lower monthly time level but for a longer duration. The availability of professional support in communications from the planning stages would without doubt have enabled a higher quality of output throughout the project.

ANNEX 7: LIST OF FACILITATORS

	Name	Preferred Name	Country	Role	Institute	Languages validated
Mr	Sadek ABBAS	Sadek	Iraq	Associate Chief Agronomist, IPPC/Country Page Editor, Fall Armyworm/Country Focal Point	Plant Protection Directorate, Ministry of Agriculture of Iraq. Baghdad, Iraq	Arabic and English
Mr	Ramon Ernesto CANIZARES AMOROS	Ramon	Peru (Bolivia during the pandemic)	Professional 1, General Direction 1 (Trade Issues), Phytosanitary Area	*Secretaría General de la Comunidad Andina* (General Secretariat of the Andean Community). San Isidro Lima, Peru	Spanish and Russian
Mr	Mekki CHOUIBANI	Mekki	Morocco	Executive Director of NEPPO	Near East Plant Protection Organization (NEPPO). Rabat, Morocco	French, Arabic and English
Mr	Jose Ulises GARCIA ROMERO	Ulises	Mexico	Director of National Mobilization	Mexican Phytozoosanitary Inspection Service, (SENASICA). Mexico City, Mexico	Spanish
Ms	Astra GARKAJE	Astra	Latvia	Head of the Working Group on the Restriction of Harmful Organisms	Latvian State Plant Protection Service. Riga, Latvia	Russian
Ms	Phyllis Wanjiru GITHAIGA	Phyllis	Kenya	Chief Inspector and Assistant Coordinator of Trade and Standards at the Trade and Standards Department, Phytosanitary Services Division	Kenya Plant Health Inspectorate Service. Nairobi, Kenya	English
Mr	Nelson LAVILLE	Nelson	Dominica	Head of Plant Protection and Quarantine, Division of Agriculture	Ministry of Blue and Green Economy, Agriculture and National Food Security. Roseau, Dominica	English and Spanish
Ms	Eunice Kagendo LINGEERA	Eunice	Kenya	Plant Health Inspector/Pest Risk Analyst	Kenya Plant Health Inspectorate Service (KEPHIS). Nairobi, Kenya	English
Mr	Xubin PAN	Xubin	China	Pest Risk Analysis expert	Institute of Plant Inspection and Quarantine, Chinese Academy of Inspection and Quarantine. Beijing, China	Chinese and English
Mr	Thembelani Theophilus PONGOLO	Theo	South Africa	Scientist Manager: Plant Quarantine Services	Directorate: Inspection Services, Department of Agriculture, Land Reform and Rural Development. Cape Town, South Africa	English
Ms	Ephrance TUMUBOINE	Ephrance	Uganda	Assistant Commissioner, Phytosanitary and Quarantine Services	Ministry of Agriculture Animal Industry and Fisheries of Uganda. Entebbe, Uganda	English
Mr	Kenrick Henry WITTY	Kenrick	Belize	Coordinator of the Import Regulation Unit	Plant Health Department, Belize Agricultural Health Authority. Cayo District, Belize	English and Spanish

ANNEX 8: LIST OF TRADE CASES AND CONTACTS

Hosting country	Trade partner	Plant material/Pest	Facilitator in training	Official contact point	National coordinator
Tunisia (import)	Europe – Italy, Spain, France	Grapes for planting/ *Xylella fastidiosa*	Mekki CHOUIBANI and Sadek ABBAS	Mohamed Lahbib BEN JAMAA	Jaouadi Imed
Mexico (import)	Netherlands	Tomato seeds	Ulises GARCIA ROMERO and Nelson LAVILLE	Francisco Javier TRUJILLO ARRIAGA	Israel Cueto
Kenya	China	Avocado/Black spot and *Thaumatotibia (Cryptophlebia) leucotreta*	Eunice LINGEERA and Kenrick WITTY	Theophilus Mwendwa MUTUI	Isaac Macharia
Kenya	Europe	Mango/Fruit flies	Ephrance TUMUBOINE and Phyllis GITHAIGA	Theophilus Mwendwa MUTUI	Isaac Macharia

Trade cases used for training and validation (not conducted as official cases)			
Bolivia	Chile	Lemon/Fruit flies	Ramon CANIZARES AMOROS
China	United States of America	Pummelo or sweet orange from China into continental ports in the United States of America/*Bactrocera dorsalis*	Xubin PAN
Tonga (using literature only)	New Zealand	Pumpkins from Tonga to New Zealand/Armoured scaled insect	Theo PONGOLO
Sea containers as a pathway	South Africa		Theo PONGOLO
Israel (using literature only)	Europe	*Citrus L./ Thaumatotibia leucotreta*	Astra GARKAJE

ANNEX 9: REPORT ON THE COSTS AND POTENTIAL TO CONVERT TO AN ONLINE INTERACTIVE VERSION OF THE EXCEL-BASED TOOLS

With travel restrictions continuing into the second half of 2020, the Beyond Compliance project officer from the IPPC Secretariat proposed using the unspent funds to convert the downloadable Excel-based tools into a more interactive, user-friendly format online.

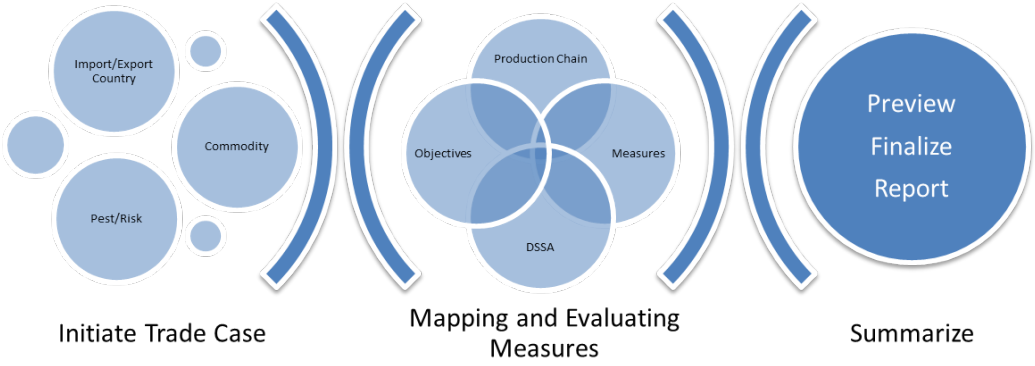
An online version holds a number of advantages over the current Excel versions, namely:

1. the capacity to save information to a centralized, secure database rather than in individual files on local computers, thereby helping support institutional memory in situations with staff turnover;
2. a hierarchy of the users will be specified so that not all users will have the right to access and edit the tools/information. For example, the national coordinator for a NPPO would hold all access rights and be enabled to give relevant permissions to other users;
3. the DSSA is currently constrained by the "geography" of Excel, namely the amount of space available to host large tables of information and graphics, requiring users to scroll around the worksheets in order to enter and review data;
4. the automatic use of duplicate information – once specific information is entered, the system will allow users to automatically generate/copy duplicate information across the different parts of the tools;
5. EPPO codes, automatically linked via dynamic dropdown boxes, will be used for pests and hosts to facilitate the harmonized use of the language across contracting parties;
6. a database repository of the potential phytosanitary measures will be created that grows with time – further discussions are needed to decide on the level of details to be recorded;
7. the system will allow the user to generate a summary report once data entry is complete. This will be an editable Word document to allow adjustments as per the needs of contracting parties. For instance, a report could be used by the exporting country to facilitate negotiations or to inform exporting stakeholders of their obligations under a proposed Systems Approach;
8. the tools and relevant instructions can be made available in multiple languages;
9. with advance approval, data supporting other work by the IPPC Secretariat and Bureau could be collected.

The UNICC was asked to develop the specification and provide a quote for this transition to an online system, with extensive consultations taking place with ICL and the IPPC Secretariat for discussion and approval by the IC. This choice was made as the UNICC had already developed the ePhyto platform and was familiar with the unique issues around confidentiality and trade sensitivities in plant health. The organization was also familiar with the vocabulary and had already interacted with many countries around the world. There was a possibility of savings costs, creating an additional space on the same platform, after consideration of security maintenance and similar costs. Existing sources for taxonomic names of plants and pests, country settings, etc. were already linked to the platform.

It was anticipated that the NPPOs and RPPOs would be the primary users, however universities, research organizations, trade associations or other non-governmental groups could also be invited to use them by their own country official authorities, using their unique code to enter their own work area.

The new computer application would have followed the same conceptual steps, beginning with the export or import of a specified commodity or pathway and the clear identification of an associated pest. The application would have generated a final report in a templated that could be edited in Word.



Conceptual system for an online version of Beyond Compliance tools (provided by UNICC)

While this plan was initially supported, it became clear with further exploration that the costs for development (originally estimated at USD 50 000) represented only a fraction of the eventual cost over five years (closer to USD 170 000), considering maintenance and platform costs. Even without no major revisions anticipated, this was a realistic quote and no mechanism was in place to finance the future years, even if a decision was made to proceed with development. If the costs represented a quote to produce and maintain the tools, as a single payment rather than a payment over future years, this would have required approval by the STDF WG for the reallocation of such a sum. As a result, the decision was taken to stop this initiative within the framework of the current project and to monitor any demand for more sophisticated tools. A high level of use of the current Excel-based tools and/or specific requests to enhance the tools would be considered by the STDF in the future. The final decision on using funds for this purpose is that greater evidence is needed for the STDF to consider supporting the costs.

The resulting proposal and user's document from the UNICC is held by the STDF and the IPPC Secretariat.

The appendix to this Annex addresses questions that arose from the possible collection of data. These questions (including those listed in Box 1) should be answered before the finalization of the proposal, if taken up in the future.

Appendix to Annex 9 – Additional uses of tools to collect data

Beyond the usefulness of converting the tools in terms of user experience, it was recognized that this process could provide an opportunity to collect data (if agreed) that is not easy to obtain, supporting information on use of the tools, possible information on trends – including use of Systems Approach – and the state of plant health and protection across the world. Trade sensitivities mean that NPPOs are often unwilling to share data. However, if tools collect sufficient data to ensure confidentiality, it is thought that this could represent significant value added that would support broader objectives.

It should be noted that the current Beyond Compliance tools do not collect any data.

Requirements to share information about pest status

Contracting parties to the Convention agree to share certain information about their country or territory's pest status for pest species of concern. This requirement is noted in Article VIII.1(a), which lays out the obligation to report the occurrence, outbreak and spread of pests that may be of "immediate or potential danger" (further elaborated in ISPM 17, "Pest Reporting", and ISPM 8, "Determination of Pest Status in an Area"[12]). It is an issue of ongoing concern that many countries delay this reporting or fail to report. This is particularly worrying when an emerging threat to neighbouring countries is not reported, with the consequence that countries are unable to prepare and take additional actions.

The pest status information submitted is available to all other NPPOs through the online portal of the IPPC[13]. There is also a common practice of sharing specific details bilaterally when entering into negotiations for trade[14].

Along with the requirements that refer to pest status as far as information on populations (detection, outbreaks) and distribution (delineation or location and spread) of the species, there are also requirements regarding pest risk management.

Areas of pest risk management that should be reported include:

- Establishment of or change of recognition of a pest-free area.
- Statement of monitoring and surveillance that leads to pest status conclusions.
- Details of treatment or other measures, for instance when a declaration on the phytosanitary certificate is required by the importing NPPO or an ISPM (e.g. ISPM 15).

Need for information on a global scale

Beyond the need for country authorities to act in the face of a new pest risk, change in the risk or when a particular consignment is non-compliant, there is a requirement within the IPPC (Article X1.2) for the report on the status of overall global plant health. The convention specifically states that the CPM should review the state of plant protection in the world and the need for action to control the international spread of pests and their introduction into endangered areas.

While the CPM may rely on the Secretariat to support such a review, information for this purpose is scarce and is generally not designed for the task. General trade data available using customs codes is not sufficiently detailed or categorized in a way that can, in conjunction with a Pest Risk Analysis, inform plant health officials of the potential risks[15]. Trade data can set a context, however, and be

[12] From ISPM 17 Pest Reporting:
"The International Plant Protection Convention requires contracting parties to report on the occurrence, outbreak and spread of pests with the purpose of communicating immediate or potential danger. National plant protection organizations (NPPOs) have the responsibility to collect pest information by surveillance and to verify the pest records thus collected. Occurrence, outbreak or spread of pests that are known (on the basis of observation, previous experience, or pest risk analysis (PRA)) to be of immediate or potential danger should be reported to other countries, in particular to NPPOs of neighbouring countries and of countries that are traded with. Pest reports should contain information on the identity of the pest, location, pest status, and nature of the immediate or potential danger. They should be provided without undue delay, preferably through electronic means, through direct communication, openly available publication or the International Phytosanitary Portal (IPP). Reports of successful eradication, the establishment of pest free areas and other information may also be provided utilizing the same reporting procedure."

[13] There are also requirements to report non-compliance incidences in relation to international movement of regulated articles (ISPM 13 Guidelines for the notification of non-compliance and emergency actions). This information is available only to NPPOs from countries involved in the trade, however. This would not provide information for a global database.

[14] Day, R.K., Quinlan, M.M. and Ogutu, W.O. 2006. Report to the Secretariat of the International Plant Protection Convention. Analysis of the application of the phytosanitary capacity evaluation tool. CABI Africa and CABI Europe-UK.

[15] Spence, N. and Grant, S. 2020. Using International Trade Data to Inform the Plant Health and Biosecurity Response in the UK. *Outlooks for Pest Management* 31 (3) 117-120.

combined with other sources (e.g. import inspection data, pest alert postings, regional databases, etc.) to at least imply any significant changes in trade related to pest outbreaks or introductions.

Questions about data collection to consider before deciding on this proposal

1. Will uptake of the tools be affected by the knowledge that some data will be collected?
    a. Is consent "given" once the CPM has approved this use?
    b. Is a consent page pop-up sufficient to obtain consent if data is collected?
    c. Will collecting data affect the user's interest in continuing to apply the tool? Will they stop using it or become suspicious and try to avoid certain data fields?

2. Is automatic or manual collection of specific data the better method for gaining information?
    a. Is an initial licensing (at no cost) the best way to gain insights regarding what type of person is using the tool and their opinion on some related questions, with a possible annual survey for renewal of the licence?
    b. Would an alternative such as an optional pop-up survey each time the tool is opened be a better source of information without collecting data from the tools?
    c. Would users contribute to a library of measures and/or add comments regarding their use of the tools for other users?
    d. Would users be interested in a list server or user group in which they can decide individually about sharing experiences and information, which might then be summarized in greater detail? Could this be sustainable?

3. Will the information collected be used and useful?
    a. Is the same or similar information available in some other way and is it easily accessible?
    b. Will it be accurate and reliable?
    c. Will there be enough data to draw any conclusions?
    d. Will it be valuable enough to risk the potential confusion about confidentiality and/or avoidance of the tools?
    e. Is there someone who will use the information, or will there be a reliance on ad hoc situations when staff are hired for that purpose?
    f. Would it replace a survey of NPPOs and what are the advantages of this?

How would this information be used?

In general, the information could be used for the following purposes:

A. To provide the CPM with the information that could potentially contribute to analysis of the state of plant health or aspects of plant health for a given period of time.
B. To discover trends, e.g. in use of Systems Approach for risk management.
C. To identify gaps or areas needing support for further capacity development.
D. For use in communication pieces to increase understanding of the Convention and plant health in general.
E. To demonstrate the value of the Convention and its standards, which, in turn, could attract funding from contracting parties or donors.