

**Submissions for topics for Standards and Implementation****1. General information**

Submission number	2023-005
Title of Proposal	Guidelines for the use of remote technology in inspection and auditing practices in phytosanitary systems
Submitted by (Country or Organization)	IPPC Contracting Party
IPPC Official Contact Point or RPPO	Egypt
Supported by	NPPO of Egypt

2. Contact information

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3. Summary of proposal

Summary of justification for the proposal	<p>The scope of the guidance is the use of remote auditing and inspection as an optional tool to support the effective delivery of official controls when performing a phytosanitary audit for an exporting country on an agriculture commodity. The global COVID-19 pandemic has led to an increased reliance on technology to assist communities affected by the virus. This includes the use of remote inspection and auditing, which has become more feasible with advances in technology. Remote inspections and audits can be conducted using video conferencing software and drones, allowing for real-time decision-making and accessibility in remote locations. However, it is important to evaluate the technological capabilities of the facility or authority involved to ensure the success of remote activities. Factors such as internet coverage, bandwidth, and building integrity should be</p>
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	assessed, and high-quality handling and presentation of information should be ensured. Prioritizing the assessment of technological capabilities is crucial to efficiently and effectively implement remote audit and inspection activities, saving time and resources while meeting necessary standards and regulations. This approach is particularly useful when travel is restricted or when physical presence is not possible.
Expected outcome of standard / implementation resource	This standard is particularly useful when travel is restricted due to pandemics or when physical presence is not possible, to perform a phytosanitary audit for an exporting country on an agriculture commodity to finally facilitate the trade, or monitoring the national facilities processing agriculture commodities.
Contribution to filling gaps in the Framework for Standards and Implementation	There is no guidelines are set clearly in a stand-alone standard of the currently adopted ISPMs, CPM recommendation or implementation material up to present.

4. Type of proposed material

Proposed material	Standards
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5. Standard/ Implementation

Type of standard	New ISPM or component to an existing ISPM
New ISPM or component to an existing ISPM	ISPM

6. Literature review

<p>Literature review</p>	<p>- Dhanaraju, M.; Chenniappan, P.; Ramalingam, K.; Pazhanivelan, S.; Kaliaperumal, R. Smart Farming: Internet of Things (IoT)-Based Sustainable Agriculture. Agriculture 2022, 12, 1745. https://doi.org/10.3390/agriculture12101745. - Litzenberg et al, Remote-Auditing-for-COVID-19-and-Beyond - Short-term and long-term implications. 2020. The Environmental, Health & Safety Audit Center (EHSAC), The Institute of Internal Auditors. - Patel KK, Kar A, Jha SN, Khan MA. Machine vision system: a tool for quality inspection of food and agricultural products. J Food Sci Technol. 2012; 49(2):123-41. doi: 10.1007/s13197-011-0321-4. Epub 2011 Apr 9. PMID: 23572836; PMCID: PMC3550871. - Potamitis et al. Automated Remote Insect Surveillance at a Global Scale and the Internet of Things. Robotics 2017, 6, 19; doi:10.3390/robotics6030019. - Principles for Food Import and Export Inspection and Certification (CAC/GL 20-1995) - Remote Audit Guidelines (Agricultural Products) (2023) Japan GAP Foundation. - Guidelines for inspection (ISPM 23) International standards for phytosanitary measures - ISSN 2521-7232. - Audit in the phytosanitary context (ISPM 47) International standards for phytosanitary measures - ISSN 2521-7232.</p>
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7. Criteria for justification and prioritization of proposed topics

7.1. Core criteria

Criteria	Information provided by Submitter
<p>1. Contribution to the purpose of the IPPC as described in article I.1</p>	<p>This standard can help to improve the capacity of NPPO or entities to implement harmonized measures to finally result in preventing pest introductions or spread from origin, and minimize the impacts of pests on food security, facilitate trade, while saving environment. It can reduce the risk of pests moving internationally with plants and plant parts.</p>
<p>2. Linkage to IPPC SOs and Organizational results demonstrated</p>	<p>In general, on-site phytosanitary auditing is an important step for trading contracting parties (countries) to take greater responsibility in managing the potential risk posed by pests when inspecting plants in farms, orchards or during the preparation of agricultural commodities in a packinghouse facilities. According to the Food and Agriculture Organization (FAO), pests cause an annual loss of between 20 to 40 percent of global crop production.</p>

	<p>Plant diseases alone cost the global economy approximately USD \$220 billion, while invasive insects account for around USD \$70 billion annually. To combat this issue, innovative technology can play a pivotal role in reducing the global impact of pests, while simultaneously strengthening the means of implementation and revitalizing the global partnership for Sustainable Development. This may involve the utilization of high-tech methods and remote-inspection-related technologies to assess commodities during harvesting or packaging, thereby minimizing the risks associated with exporting plants. These inspections would be conducted by trained officers under the supervision of National Plant Protection Organizations (NPPOs). Ultimately, this standard aims to optimize resource utilization, maintain cost efficiency, and improve timing approaches to bolster biosecurity efforts, all while promoting sustainable agricultural practices in international trade on a global scale. By adhering to these measures, we can ensure that plants meet the required standards for pest control and reduce the chances of pests being spread through trade.</p>
<p>3. Feasibility of implementation at the global level</p>	<p>It is applicable at all levels of NPPOs with the minimum requirement of available technology tools (e.g. mobile computer device such as tablet devices, smart phones, computers..etc.) supporting any remote-meeting application (zoom, MS-Teams, webex, skype..etc.) and accommodated with internet connection. However, improving the quality of inspection would depend on specific hardware and software tools that enable agriculture officers to conduct inspections from remote locations effectively. Criteria may be categorized into two main categories; Essential requirements: - High-quality webcam or cameras for video conferencing and live streaming; - Microphone for clear audio; - Microsoft Office or similar productivity software for document creation and sharing; - Video conferencing tools such as Zoom or Teams for real-time communication; - Collaboration and sharing platforms such as Dropbox, Google Drive, SharePoint, or any secure and appropriate platform are essential for remote inspection officers to share and collaborate on documents, data, or reports in real-time. Additional tools: - In addition, remote inspectors should have a backup connection in case of internet or network failure, such as a secondary internet provider or mobile data hotspot; - Noise-cancelling headphones or earbuds for clear communication.</p>

4. Clear identification of the problems that need to be resolved through the development of the standard or implementation resource	<p>While remote inspections offer many benefits, there are also challenges and limitations that remote inspection officers must consider. This is in addition to lacking guidelines or defined criteria to perform such inspections. To address these issues, of the technical problems and limitations faced by different NPPOs, they can be categorized as follows: Technical and connectivity issues: Remote inspection officers must have reliable and secure internet connections, and may encounter technical issues during the inspection process. Proper preparation can help mitigate these issues, such as having a backup communication plan in place. Compliance and regulatory concerns. Remote inspections must comply to regulatory and compliance standards, which can push the limits of remote inspection capabilities. Remote inspection officers should remain up-to-date with these regulations, and work with stakeholders to ensure compliance. Remote inspections have limitations that must be considered, such as the inability to conduct physical inspections or the lack of personal interaction with stakeholders. Remote inspection officers must work within these limitations and incorporate alternative methods to address these limitations.</p>
5. Availability of, or possibility to collect, information in support of the proposed standard or implementation resource	<ul style="list-style-type: none"> • Documentary assessment (e.g. questionnaire). • Video records to illustrate a certain procedure (e.g. commodity processing and packaging, trapping installation..etc.). • Virtual conferences between competent authorities of importing and exporting countries. • Virtual inspections conducted by countries (through NPPOs).

7.2. Supporting criteria

Supporting Criteria	Information provided by Submitter
Practical	<p>The adopted ISPM 23 (Guidelines for inspection). In addition to the ISPM 47 (Audit in the phytosanitary context), but both adopted standards are not covering the guidelines when inspection is held in virtual means. Egyptian NPPO have experienced the utilization of remote-inspection with competent NPPO authorities.</p>
Economic	<p>This standard can be effectively applied in pandemic cases, such as COVID-19, when travel is restricted or banned for extended periods. In addition to reducing costs and time associated with traveling, it also allows for</p>

	<p>audits to be conducted in multiple facilities simultaneously. Also, this encourages the opportunity for more participants to be involved in the audit/inspection site. However, it is important to note that remote-inspection is not intended to replace physical on-site audits. It is considered as an alternative method of inspection that is utilized under necessary circumstances. During a pandemic, international trade may be negatively affected and significantly reduced. The implementation of remote-inspection standards can help minimize the negative consequences of such disruptions. By adopting remote-inspection practices, organizations can ensure that audits and inspections continue to take place even when physical visits are not possible. This not only maintains the integrity of the auditing process but also allows for timely identification and resolution of any issues or non-compliance. Furthermore, remote-inspection offers the opportunity for a broader range of experts and stakeholders to participate, enhancing the overall effectiveness and credibility of the audit. In conclusion, while remote-inspection is not a substitute for on-site audits, it serves as a valuable tool during times of crisis, such as a pandemic. By embracing this standard, organizations can mitigate the impact of travel restrictions and ensure the continuity of auditing and inspection activities</p>
Environmental	<p>As the remote on-site inspection is one of environmental friendly pest risk management options, there is no negative environmental impacts can be detected through the implementation of this option. Even this action can reduce related-costs due to auditors traveling between countries to perform the on-site audit, which indirectly can reduce the emission of CO₂ by saving the transportation issues</p>
Strategic	<p>Several IPPC contracting parties may have been practicing mutual remote-inspection for auditing agricultural production and packing facilities. One notable case is the Egypt-Chinese partnership, where both countries successfully conducted remote inspections during the COVID-19 pandemic when travel restrictions were in place. Specifically, they utilized remote-inspection techniques to audit Citrus farms and packing facilities. Through video conferencing and the sharing of remote alternative tools, both countries were able to maintain the continuity of trade, rather than hinder bilateral trade. This innovative approach effectively utilized information,</p>

	communication, and technology, enabling efficient video conferencing and file sharing as remote alternatives to on-site audits during the challenging times of the pandemic
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8. Financial/in-kind resources

Commitment for financial/in-kind resources to support the development of the proposed standards or implementation resource	Egypt is willing to provide the experts to contribute to the discussion in the experts working group in developing the draft standard.
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