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Successes and Challenges of Implementation of the Convention
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Successes and Challenges of Implementation of the Convention
Implementation of the International Plant Protection Convention (IPPC) and the International Standards for Phytosanitary Measures (ISPMs)[i]
The People's Republic of China

I. Well-organized and -administrated nationwide for promotion of the international standards

1. Establishing the Expert Group for ISPMs

After China joined the IPPC, the Research Center for Standard and Technical Regulation of the General Administration of Quality Supervision, Inspection and Quarantine of the Peoples Republic of China (AQSIQ) and the local inspection and quarantine bureaus （CIQ）jointly established the Expert Group for ISPMs in 2005, for promotion of the international standards, especially, the ISPMs.

2. Actively-reviewing and studying on the international standards

After IPPC released the draft ISPMs, we have convened a number of expert meetings each year to review the draft standards and make proposals. In addition, in order to gear the Chinese standards to the international standards, we made a comparative study on the international standards and China’s phytosanitary policy measures in 2014 and made a proposal to improve China’s phytosanitary policy measures. In the meanwhile, China has made an in-depth study on the key part of the ISPMs and introduced the ideas of international standard management into China’s quarantine practice. For example, according to the standard ISPM32, we have made a study, named The Study of China’s Import and Export Phytosanitary Risk Rating Management, putting forward the theory on entry and exit plant and plant product risk rating in China and adopted it in import and export quarantine.

3. Active promotion of the international standards

In order to promote the ISPMs in China, China has published all the 37 ISPMs that have come into effect on the website of AQSIQ (www.aqsiq.gov.cn). In the meanwhile, these ISPMs have been compiled into a book entitled *A Collection of International Standards for Phytosanitary Measures*. The book has been published and distributed to the 35 local entry-exit inspection and quarantine bureaus (CIQs) directly under AQSIQ as a work manual.

4. Converting the ISPMs into Chinese laws and regulations

In order to enhance the legal effect of international standards in China, a number of international standards have been converted into China's national standards.

5. Active publicity and implementation of the ISPMs

After the ISPMs have entered into force, we have made active publicity, implementation and training on the ISPMs for the inspection and quarantine officials and import and export enterprises nationwide. For example, we have convened the training on the ISPM15 for the export enterprises nationwide and on the ISPM7 (certificate system) for the plant quarantine officials nationwide. In addition, we have repeatedly invited the Secretariat of FAO/IPPC to give lectures on ISPMs.

II. Problems and challenges China has encountered in implementing of the international standards

1. The standard setting period is too long, procedures too complicated and standards approval too difficult.

It takes eight steps and several years from the initial of a standard to its final release. In the formulation process, due to different views of stakeholders, the release of a standard will often be delayed. Therefore, in the process from the initiation of a standard of its final release, quarantine and trade forms may change, resulting in the failure of ISPMs to meet the needs of the existing quarantine work. For example, with the rapid development of e-commerce and the increase in the activities of personnel entering and leaving the country, the risk that articles carried by passengers or sent by post spread and carry epidemic plant diseases is increasing rapidly, so it is urgent to formulate the standards for articles carried by passengers or sent by post.

2. The coordination work is yet to be improved

Due to various factors, coordination work will be an arduous take in the standard formulation process. Therefore it is suggested to establish a more effective coordination mechanism to speed up the process and facilitate the coordination and formulation of ISPMs.

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[i] Chinese translation of this document available https://www.ippc.int/static/media/files/publication/zh/2017/03/17-Successes_and_challenges_of_implementation_of_the_convention_of_China.pdf

Successes and Challenges of Implementation of the Convention

Project STDF/PG/502
Strengthening the Implementation of Phytosanitary Measures and Market Access
COSAVE

COSAVE is the RPPO from South American countries where the agricultural sector is very important for economic and social development. The member countries of COSAVE, Argentina, Bolivia, Brazil, Chile, Paraguay, Peru and Uruguay, who are concerned for improving agricultural production and trade, actively working to improve the implementation of the IPPC, in particular ISPMs, in the region.

The STDF/PG/502 project aims to strengthen the capacity to implement phytosanitary measures in order to maintain and improve phytosanitary status, thereby facilitating trade in agricultural goods in the region of the member countries of the Southern Cone Plant Health Committee (COSAVE) and helping to maintain or improve access to foreign markets. To that end, the goal is to build up a regional phytosanitary information system, to enhance the capacity for pest risk analysis, inspection and phytosanitary certification, and to create tools and build up the capacity to assess the impact of the implementation of phytosanitary measures.

The Project started on November 1st, 2015 and will end on October 31st, 2018.

The specific goals are:

- ✓ to build up a regional phytosanitary information system,
- ✓ to enhance the capacity for pest risk analysis, inspection and phytosanitary certification, and
- ✓ to create tools and build up the capacity to assess the impact of the implementation of phytosanitary measures

For the tool development and capacity-building processes, a joint, participatory working methodology is applied, which will clearly contribute to the generation of best common practices, thus helping improve the implementation of phytosanitary measures with market access facilitation.

The project proposes to create resources and best practices replicable in other countries outside the region, which can serve as tools for STDF use to support IPPC implementation and build capacities in other regions.

The active participation of the NPPOs of the requesting countries during the project's preparation stage, determined that they felt as the truly owners of the project and this affected in positive manner their interest and participation in the implementation stage. This fact and an intensive communication and consultation way, between the NPPOs and IICA, as implementation agency, allowed the effective performance of the activities planned.

Because of the first year of the project implementation, it have succeeded in improving the NPPO capacities, and products like tools that directly support the implementation of specific ISPMs, eg for ISPM 6. Further work is being done with other ISPMs and with one Methodology to evaluate the impact and effectiveness of its application.

Successes and Challenges of Implementation of the Convention

European Union and its 28 Member States

Use of Next Generation Sequencing (NGS) technologies for phytosanitary purposes

The EU and its 28 Member States recognise the importance of pest diagnosis as a cross-cutting activity underpinning many activities under the Convention (CPM Recommendation 2016). The CPM should acknowledge the great progress made in the area of pest diagnosis, including the adoption of IPPC diagnostic protocols (DPs) for regulated pests and the facilitation of information sharing on pest diagnostics via the international phytosanitary portal.

In Europe, we have also made progress in pest diagnostics and have had many successes, particularly as a result of EPPO's initiatives to develop standards (laboratory procedures and DPs) and to create databases (e.g. of experts and validation data) amongst other initiatives. Many European countries have adopted quality assurance procedures and have shared expertise through research projects and training sessions. However, despite this, and in common with many other contracting parties, we still face challenges in undertaking pest diagnoses.

A particular challenge that we consider is of global relevance and therefore appropriate for discussion at CPM is the use of Next Generation Sequencing (NGS) technologies for pest diagnosis. This is a specific current issue that may have potential implications for phytosanitary actions and international trade. As such, it is relevant to raise it this year because the theme for 2017 is Plant Health and International Trade. The IPPC should be seen to take the lead in relation to the use of new technologies. We hope to initiate a discussion on how NGS technologies could be used for phytosanitary purposes.

NGS technologies allow the sequencing of the whole genomes of all organisms in a sample and these technologies have great potential for use in pest diagnostics, particularly for viruses. NGS technologies therefore have great potential to advance our knowledge of plant viruses, especially when combined with biological characterisation. Already a range of new viruses have been discovered in plants, not all of which are plant pathogens. The International Committee on Taxonomy of Viruses has recently produced a consensus statement allowing the description of new viruses based on sequence data derived from such technologies and have determined that biological data is not essential for classification of new viruses (Figure 3 in Simmonds *et al*., 2017).

It is possible that the use of NGS technologies could cause issues for international trade if for example the presence of a virus or novel yet undescribed virus is detected in imported consignments. Research is being undertaken in several regions including Australasia, Europe and North America to explore the potential of these technologies for detection and identification of regulated pests. There are also a number of scientific publications indicating both the potential of NGS technologies and challenges with their use and the interpretation of results (e.g. Martin *et al.,* 2016; Massart *et al.,* 2017). Such publications have called for international harmonisation of procedures for phytosanitary purposes.

In order to improve the understanding and establish possible regional approaches to NGS technologies for phytosanitary purposes, EPPO will hold a workshop in November 2017. We are also aware that the TPDP discussed this topic at their meetings in July 2016 and February 2017.

We would like to propose that there is a special topics session on the use of Next Generation Sequencing technologies for phytosanitary purposes at CPM-13 in 2018. We would be willing to help with the preparation of such a session.

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Successes and Challenges of Implementation of the Convention
Japan

Title: Eradication of Bactrocera dorsalis species complex (the Oriental fruit fly) in Amami Oshima Island, Japan based on ISPMs.

1. Background and issue:

In Japan, the Ministry of Agriculture, Forestry and Fisheries of Japan (MAFF) confirmed eradication of *Bactrocera dorsalis* species complex across the country in 1986, however, it is confirmed "Jump-in" from neighboring countries by the wind into part of Japan, Nansei islands (chain of islands extending from southwestern Kyushu to northern Taiwan, see Attachment) . Therefore, detection survey is being conducted with the Steiner traps with reference to Appendix 1 of ISPM 26; *Establishment of pest free areas for fruit flies (Tephritidae)* to pay intensive attention to the entry of the fly. From the summer of 2015, the continuous detection of the fly were confirmed at several points in Amami Oshima Island (Kagoshima prefecture in Kyusyu region) which was known as production area of citrus fruits. Accordingly MAFF conducted phytosanitary measures based on relevant ISPMs, including:

- Trap survey as regular detection survey
- Survey after the fly were detected at several points
- Establishment of the control area
- Restricting movement of host fruits
- Placing the Celotex plates impregnated with lure/insecticide mixture
- Lifting the emergency measures
- Detection survey after eradication

2. Analysis:

At the first stage, the detection survey for *Bactrocera dorsalis* species complex was enhanced in Amami Oshima Island according to Appendix 1 of ISPM 26 and initial control started in summer 2015. However, the number of detection of the fly was not decreased. Therefore, according to ISPM 9; *Guidelines for pest eradication programmes*, MAFF started official control (emergency measures) based on the Plant Protection Act on December 2015. In the emergency measures, the control area was established as well as movement restriction of the host fruits according to Annex 2 of ISPM 26. Additionally, intensive control measures including deploying the Celotex plates, spraying of protein baits with insecticide and removing of the host fruits from the area were implemented according to Annex 3 of ISPM 26.

In the result, the official control was lifted on July 2016 because no outbreak of the fly was confirmed during a period equivalent to three life cycles which was calculated based on accumulated temperature of the area according to Annex 2 of ISPM 26; between December 2015 and July 2016.

In preparation for re-entry of the fly, detection survey is being continuously conducted by placing traps such as the Steiner traps by reference to Appendix 1 of ISPM 26. In addition, MAFF has developed new procedure manual on controlling the fly for this area based on this experience (see 1.2 Contingency plans of ISPM 9).

3. Conclusion:

ISPMs greatly served as a guideline that is the basis of discussion by domestic experts at planning and implementing control for the eradication of *Bactrocera dorsalis* species complex in Amami Oshima Island. They also contributed to the persuasion as a scientific basis for dispelling of concerns and anxiety of producers. It is greatly beneficial for contracting parties to implement international standards on the control activities of high profile pest species. MAFF strongly supports the activities of development and implementation of ISPMs.

Successes and Challenges of Implementation of the Convention
New Zealand

Introduction to The New Zealand Sea Container Hygiene System

Prior to 2006, New Zealand's biosecurity system was repeatedly challenged by the importation of empty and fully loaded sea containers (containers) from Pacific islands that were contaminated with regulated pests. This was an unsustainable situation and the New Zealand Ministry for Primary Industries (MPI) solved the problem by developing a Sea Container Hygiene System (SCHS) in cooperation with the container importers (shipping companies), their Pacific Island-based service providers and with Pacific Island National Plant Protection Organisations (NPPOs) in 2006.

Contaminants and Pests and Responses

Before 2006, gross contaminants included cargo residue, seeds, soil, trash and vegetation with approximately 50% of all containers being grossly contaminated. Invasive pests contaminating containers included invasive ant species, cane toads, geckos, Giant African Snails (GAS), and other insects/snails. MPI was particularly concerned with invasive ants which were attracted to containers as a source of food and shelter resulting in a 20% infestation level. Container inspections revealed that 90% of contaminants and pests found associated with containers were on the underside. Invasive ants were also found to have established large colonies at several New Zealand container facilities which required eradication. Before the SCHS was started MPI increased inspections, ran mandatory container cleaning, and fumigated infested containers from countries where contaminant and pest loading was high. The invasive ants that had established at New Zealand container facilities were eradicated after months of work and at a cost of $500,000 per year. This was considered to be unsustainable and avoidance of similar situations supported the development of the SCHS as an innovative approach to reduce biosecurity risk levels.

Operation of the SCHS Programme

The SCHS was first established in Papua New Guinea (PNG) and the Solomon Islands in 2006. The SCHS was extended to Samoa in 2008, Tonga in 2012 and to facilities in Fiji in 2016. Interest has also been received from the Cook Islands, Kiribati and Vanuatu. The SCHS was also recognised by the Australian Department of Agriculture and Water Resources (DAWR) in 2010. Since that time MPI and DAWR have worked cooperatively to jointly manage the SCHS in all the countries in which it operates. The SCHS standard operating procedures and operating agreements were developed by MPI in association with the shipping industry. MPI and the shipping industry also agreed to SCHS contaminant and pest thresholds. The maximum tolerated thresholds per voyage (by % of containers imported) were set at:

- 5% for general contaminants and non-specific pests (geckos, insects other than regulated ants, seeds, snails other than GAS, soil, toads and vegetation).
- 0.5% for regulated ants.
- Nil tolerance for GAS.

There are six basic industry-led processes conducted at SCHS facilities as follows:

- Facility scoping exercises are run at the facilities to determine any gaps in the existing cleaning and management processes.
- Effective cleaning of all internal and external container surfaces is done.
- Effective pest population suppression is done in relevant operational areas at facilities and ports.
- Storage of cleaned containers in specially managed areas that eliminate the likelihood of re-contamination.
- Quality management systems that are easy to follow and document the above processes.
- An accurate and effective notification procedure to declare all containers that are SCHS-managed through a vessel discharge list to MPI.

A detailed description of the SCHS cleaning, storage and transportation requirements is as follows:

- Decontamination: Containers are: inspected, contamination is removed, thorough cleaning occurs on all internal and external sides using water blasters, treated with a 30 day persistent insecticide and labelled with a sticker (strongly adhesive label) identifying/verifying that SCHS requirement has been conducted.
- Container storage: Containers are: dried off, then stored in designated areas at facilities/ports that have been sanitised with trash and vegetation removed. These areas also undergo continual monthly pesticide control for arthropods (insects, mites and spiders) and snails. Storage in these areas may occur up to 30 days without the need for re-treatment of the containers with insecticide. After 30 days, container re-treatment with the persistent insecticide is required
- On-vessel segregation: SCHS containers that have a compliant sticker are: loaded onto vessels for transportation to New Zealand, and segregated on board (as much as possible) from non-system containers to prevent cross-contamination with contaminants and pests. No containers that arrive at the SCHS facility within the 24 hour period prior to vessel departure may be loaded without being fully processed and those processes verified.

Assessment, Approval and Compliance with the SCHS Programme
MPI works with SCHS operators in the export country to ensure that all SCHS requirements are in place before the SCHS may begin. MPI conducts an assessment and the SCHS facility/operator are approved if compliant. Once SCHS operation begin, MPI monitors importation over three month periods. For the first three months, MPI looks at all containers and with compliance with the tolerance rates, inspection drops to 50% for the next three months. This is repeated for the next 3 months, and with compliance inspection drops to 20%; and finally after a year of compliance, inspection terminates at 5%. If the general tolerance is exceeded in a 3 month period, the inspection rate is raised to the next highest level for the next 3 months (for example from 20% to 50%). However, if the ant or GAS tolerance is exceeded during a three month period, then inspection rate is raised to 100% for the next three months. The inspection rate drops again with compliance.

Success factors for MPI and Shipping Industry
Since 2006, the SCHS has been very successful and has benefited MPI (and New Zealand in general) with a greater than 99% reduction in contaminants and pests. SCHS benefits to MPI also include: joint recognition and SCHS partnership with DAWR, less time required for container inspection and verification (a reduction of 900 – 1000 MPI inspection hours per annum), MPI Inspectors can do other crucial work, and improved MPI/stakeholder relationships. In addition, DAWR have taken over the main audit role for PNG and the Solomon Islands, and both DAWR and MPI have conducted joint audits in both countries and elsewhere. The SCHS has also shown to be economically successful with significant cost benefits for industry with major cost reductions linked to reduced regulatory requirements on arrival in NZ. In 2007, after a year of SCHS operation, a major shipping company reported a saving of approximately US$1 Million. Reasons for the cost reductions for shipping companies include: reduced MPI inspections, reduced time for container clearances and movement to customers, significantly reduced costs with a minimal need for container cleaning and/or fumigation, the ability to reduce the size of the container fleet (with increased efficiency in moving clean containers around the Pacific). For example, inspection at the 5% inspection level allows 95% of containers to be immediately trucked out of the New Zealand port to destination. Furthermore, it has facilitated local employment at the SCHS facilities in the Pacific ports where the SCHS operates.

Future Developments
MPI has supported the development of a Sea Container International Standard for Phytosanitary Measures. MPI has discussed adoption of an ISPM for Pacific container trade like the SCHS and has received widespread support at the Pacific Horticultural and Agricultural Market Access Heads of Quarantine Forum and the Pacific Plant Protection Organisation. MPI also supports the Sea Container Complementary Action Plan (Agenda Item 8.6, paper CPM 2017/34) with the intent of undertaking a biosecurity verification survey in mid-2017 (and repeated in 2 years' time) to determine the present level of contamination associated with sea containers that enter New Zealand. There are also plans to conduct further surveys in 3-4 years to investigate if there is any difference to the container

contamination levels (results can be compared directly with the MPI verification surveys) to see if the application of the CTU Code has had any effect on container contamination. New Zealand would be pleased to share the details of the biosecurity verification survey with any countries that are interested in also determining the level of associated biosecurity risk with imported containers (via the New Zealand Contact Point).