REPORT OF THE ASIA AND PACIFIC PLANT PROTECTION COMMISSION (APPPC) REGIONAL WORKSHOP ON METHODOLOGIES FOR SAMPLING OF CONSIGNMENTS (ISPM No. 31)

22 – 26 August, 2016

Applied Research Institute of Agriculture Quarantine (ARIAQ), Bekasi, Indonesia

Summary

The APPPC Regional Workshop on Methodologies for Sampling of Consignments (ISPM No. 31) was convened in Bekasi, Indonesia from 22-26 August 2016 in collaboration with the Indonesian Agricultural Quarantine Agency (IAQA), Ministry of Agriculture, with participation of more than 35 delegates from 20 countries (including 11 local participants). The main objective of the workshop is to strengthen capacity of participating NPPOs in selecting the appropriate sampling methodologies for inspecting or testing of consignments. Country reports updated participants with current status of implementation of ISPM31 in respective countries, it enabled participants to better understand a number of practical sampling methodologies applying by countries at present, as well as identification of the similarity and the difference together with some gaps and constraints existing in the implementation of ISPM31. This workshop created the awareness and increased the knowledge of sampling methodologies with its important roles in phytosanitary regulatory system to the participants with the expectation of them becoming potential master trainers for ISPM 31 in their respective country. Participants are encouraged to share the information with their country fellows/colleagues since the understanding of this ISPM by all plant quarantine officers will greatly reduce the non-compliance of the export commodities for the country and facilitate the trade. The importing countries will also benefit from this knowledge, when there will be a reduction in pest incursion that contributes to the overall food security. The workshop also exposed the participants to various operational constraints that probably need to be addressed by each country to ensure that this ISPM could be fully implemented.

Focus group discussion sessions on the specific subjects initiated by 6 countries highlighting respective practical sampling methodologies and experiences in depth followed by extensive discussions. It provided participants a platform to gather information from participants' experiences in their respective countries on specific methodologies for sampling of consignments, particularly for seed and plant propagating materials, fresh fruits and vegetables, grain for food/feed in container and non-container, cut flowers and heterogeneous consignment, and also sampling method for inspection in packing facilities/site area production. Meanwhile the discussions identified their main elements in appropriate methodologies for sampling of consignments for potential harmonization. Some suggestions were proposed for further follow-up actions at country and regional levels. It was expected that the APPPC working group on ISPM31 may consider further action plan based on the suggestions and bring it to the 30th Session

Report

I. Opening of the session and organizational matters

1.1 Attendance

Participants of the APPPC Regional Workshop on Methodologies for Sampling of Consignments (ISPM No. 31) consisted of 26 delegates from 20 member countries of APPPC, 1 delegate from FAO, 25 plant quarantine officers from 20 quarantine stations from all over Indonesia, and 3 observers from NPPO Indonesia were present at the workshop.

1.2 Introductory remarks by the Director of Centre for Plant Quarantine and Biosafety, IAQA

Dr. Antarjo Dikin, opened the meeting and welcomed all participants to Applied Research Institute of Agriculture Quarantine (ARIAQ) in Bekasi, Indonesia. He promoted ARIAQ as one of IAQA's facility as a contribution from Indonesia for APPPC activities to support trade facilitation, protect the environment and plant health mission in this region.

He introduced the importance of conducting this workshop for the Asia Pacific region and emphasized that quarantine inspection conducted by quarantine inspectors will be based on sampling which may cause the refusal to issue a phytosanitary certificate, refusal of entry, or treatment or destruction of a consignment or part of a consignment. Moreover, there is also a mandatory to quarantine institution as mentioned on ISPM No. 31 (2008) that sampling procedures have to be documented and transparent, and take into account the principle of minimum impact. Sampling methodologies used by NPPOs will depend on the sampling objectives (for example, sampling for testing). Within operational constraints, NPPOs may develop sampling methods which adjusted to field condition. It may not give the same statistical confidence levels in the results as fully statistically based methods, but such methods may still give valid results depending on the desired sampling objective. The sampling methodologies used by NPPOs in selecting samples for the inspection of consignments moving in international trade are based on a number of sampling concepts. Hence, in order to meet the principle of minimum impact to international trade, it is important to harmonize the sampling methods used by NPPOs in the Asia Pacific countries as members of APPPC.

He mentioned about the overall objective of the workshop was to encourage and strengthen capacity of NPPOs in selecting appropriate sampling methodologies for inspection or testing of consignments to verify compliance with phytosanitary requirements. Outputs expected from the workshop were basic information which will be collected for possible development of a regional standard or manual/guidelines and better understanding on the role of sampling in the phytosanitary regulatory system.

He explained about sources of budgeting for the workshop were from Indonesian government (IAQA, MoA), FAO-RAP/APPPC and also self-funded from participant's institution. Regarding the 5-days workshop programme, including one day field trip to introduce phytosanitary certification system in Indonesia, he explained about country report which had to be presented by each country to give an overview on the implementation of ISPM No. 31 in their respective countries. An explanation about a focus group discussion (FGD) session which will be preceded by the presentation on specific topics of sampling method of consignments and followed by a reciprocal discussion to get important point of views to be agreed for possible development of a regional standard or manual/guidelines also delivered, i.e. seed and plant propagating material consignment presented by China, fresh fruit and vegetables consignment presented by Pakistan, consignment of grain for food/feed in containers presented by Indonesia, consignment of grain for food/feed in bulk/non containers/cargo hold/stowage presented by Australia, consignment of cut flowers and mixed/heterogeneous consignment presented by

Thailand, and inspection in packing facilities/in grower's site or area of production by the Philippines. Each discussion session will be guided by a facilitator which will be elected from participants prior the session started or directly guided by the presenter and accompanied by him. A guideline to implement FGD will be provided by the organizer to each facilitator whereas participants will be equipped by FGD survey sheet to put their general comments or remarks on the FGD topics. A discussion on the further activities for the development of sampling technique for APPPC region will also be held as an important final session of this workshop.

At the end of his speech, he wished the workshop to provide fruitful results and outcomes in the context of regional plant protection for the benefit of agricultural development in the region.

1.3 Opening remarks by Executive Secretary of APPPC, FAO-RAP

Dr. Piao Yongfan, welcomed all participants to the Quarantine Training Institute of Bekasi, Indonesia. At the same time, on behalf of the Assistant Director-General (ADG) and Regional Representative for Asia and Pacific, he expressed his gratitude to the government of Indonesia especially Indonesia Agriculture Quarantine Agency (IAQA) for hosting this highly important workshop and also congratulated the organizing committee for the successful organization of this regional workshop.

He emphasized that the presence of all participants in this workshop was a clear indication that the workshop was an important programme that justifies our support in order to find the best approach in implementing ISPM No. 31 methodologies for sampling of consignments. The ISPM 31 provides guidance to National Plant Protection Organizations (NPPOs) in selecting appropriate sampling methodologies for inspection or testing of consignments to verify compliance to the phytosanitary requirements. In implementing the sampling procedures, each country needs to consider the operational constraints of the inspecting officers and facilities before they could decide to approve the release of consignments at port of entry or issuance of phytosanitary certificate.

He mentioned that the main objective of the workshop was to strengthen capacity of participating NPPOs in selecting the appropriate sampling methodologies for inspecting or testing of consignments. He fully supported the workshop and was confident that the objective would be achieved with the presentation from various experts on plant quarantine and crop protection. Most countries have vast experiences in conducting inspection at entry points and also the issuance of phytosanitary certificate. He hoped that, through this workshop, participating countries could share their experiences and build the network to better understanding this ISPM in providing biologically safe trade activities.

He also explained that prior to this workshop a survey has been conducted on the implementation of ISPM No. 31 by NPPO of Indonesia and this gathering of information, which could provide basic information for potential development of regional standard (RSPM) or manual for the implementation of ISPM 31 in the region. With this basic background, he again hoped that all participants could formulate recommendations on the way forward activities to implement this ISPM at the end of this workshop

Finally, he wished all participants, once again, a most stimulating and successful workshop, and for those from overseas, have a pleasant stay in Indonesia. He was confident that the workshop will provide opportunities to exchange ideas and information, and also to establish contacts and networking.

1.4 Inaugural address by Director General of Indonesian Agricultural Quarantine Agency (IAQA), Ministry of Agriculture, Indonesia

Mrs. Banun Harpini, delivered the address by extended her honour for joining in the opening ceremony of important workshop for the Asia and Pacific countries, the APPPC Regional

Workshop on Methodologies for Sampling of Consignments (ISPM No. 31). On behalf of the Government of Indonesia and the Ministry of Agriculture, she also extended high appreciation to APPPC Secretariat, FAO Regional Office for Asia and the Pacific in Bangkok and all APPPC members, for giving their trust and support to IAQA, to organize this Workshop. Furthermore, she also appreciated Centre for Plant Quarantine and Biosafety for organizing this valuable workshop.

She emphasized a big issue in trade globalization which are facing by all countries is how to strengthening food security without any destruction to generate a surrounded environment for food supply and at the same time to protect biodiversity in the balance for plant health. The complexity of life with limiting factors such as issues on climate change, incursion of pests and plant diseases, open competition in global economic situation, bursting of population, people urbanization, lands shortage for agricultural practices, forest conservation, food security, market access and promotion of agricultural products, become a major challenge that must be faced in realizing food security and also securing environment in the Asia Pacific region.

She supported the workshop on sampling methodologies refer to the ISPM No. 31 and expected the result of this valuable workshop may support Phytosanitary actions being taken for issuance the Phytosanitary Certificate, laboratory tests, status of plant or plant products consignment to be shipped back to original country or may allow to enter the country territory and destruction. Capacity building for each member country has to be conducted to fulfil the requirement of the importing country in the phytosanitary measures, particularly on appropriate sampling methodologies for inspection or testing of consignments to verify compliance with phytosanitary requirements.

She mentioned about the application of phytosanitary measures by IPPC contracting parties which aims to assure the movement of regulated articles, such as plants or plant products free from exotic pests categorized as regulated pests either quarantine pests or regulated non-quarantine pests. Each country with its knowledge and scientific capacity must approve importation of regulated articles without any infestation or contamination by regulated pests as required by importing country.

She also mentioned that based on ISPM No. 23 (Guidelines for inspection) NPPOs may determine that consignments should be sampled during inspection. The sampling methodology used should depend on the specific inspection target. Consignments may consist of one or more commodities or lots. Where a consignment comprises more than one commodity or lot, the inspection to determine compliance may have to consist of several separate visual examinations. Therefore, the inspection of big volume of consignment for assurance free from pests requires the right sampling technique and sampling design characteristics. In order to complete with the right procedure in the inspection, it may record technique being applied and transparent result, and should be taken into account the principle of minimum impact, according to the ISPM No. 31.

She agreed that sampling methodologies used by NPPOs will depend on the sampling objectives (for example, sampling for testing). Within operational constraints, NPPOs may develop sampling methods which adjusted to field condition. It may not give the same statistical confidence levels in the results as fully statistically based methods, but such methods may still give valid results depending on the desired sampling objective. Thus, the sampling methodologies used by NPPOs in selecting samples for the inspection of consignments moving in international trade are based on a number of sampling concepts. However, to meet the principle of minimum impact to international trade, she encouraged the harmonization of the sampling methods used by NPPOs of Asia Pacific countries as members of APPPC.

Finally, in the spirit of APPPC and through this workshop, she hoped that members of APPPC can share all information and experiences to get better understanding on the role of sampling in

the phytosanitary regulatory system, create harmonized regional standard or manual which related to the policy of plant health in the region of Asia and Pacific, and increasing food supply and trade facilitation in the Asia Pacific region. She also wished the APPPC Regional Workshop on Methodologies for Sampling of Consignments (ISPM No. 31) can provide fruitful results and outcomes in the context of regional plant protection for the benefit of agricultural development in the region.

By saying a prayer BISMILLAHIRRAHMANIR RAHIM, the APPPC Regional Workshop on Methodologies for Sampling of Consignments (ISPM No. 31) was officially opened.

1.5 Overview of Applied Research Institute of Agriculture Quarantine ARIAQ

An overview of Applied Research Institute of Agriculture Quarantine was held by showing a video contain of activities conducted in ARIAQ, including trainings, workshops, and meetings, both nationally and internationally events. All supporting facilities in ARIAQ were also introduced, such as dormitory, class rooms, auditorium, treatments facilities (fumigation chambers), laboratories, microscopes, karaoke room, and gymnasium, etc.

II. Update of the 29th Session of APPPC meeting and training programme, incl. purpose and scope of the Workshop on Methodologies for Sampling of Consignments (ISPM No. 31)

Dr. Piao Yongfan, explained the activities under APPPC programme year 2016 which was agreed at the 29th Session of APPPC in Bali, Indonesia, last year, as follows: (i) Workshop on ISPM No.6: Plant Health Surveillance, Bangkok, Thailand, 6-10 June; (ii) Workshop on Fruit Fly Management, Tien Giang, Viet Nam, 20 – 25 June; (iii) Workshop on Review of Draft ISPM, Suwon, Rep. of Korea, 25 – 29 July; (iv) Training Workshop on Registration of Bio-Pesticides, Wuhan, China, 15 – 19 August; (v) Workshop on ISPM No. 31, Bekasi, Indonesia, 22 – 26 August; (vi) Workshop on IPP/NRO, Beijing, China, 5 – 9 September; and (vii) Workshop on SALB, Kuala Lumpur, Malaysia, 17 – 21 October. He also informed about activity on the development of draft RSPMs led by Pakistan.

He reiterated the introduction of the APPPC Regional Workshop on Methodologies for Sampling of Consignments (ISPM No. 31) and overall objectives and agenda of the workshop. He also expressed his appreciation for the participation and contributions from member countries of APPPC.

III. Overview of ISPM No. 31 and trade facilitation issues by Dr. Antarjo Dikin

During his presentation, Dr. Antarjo Dikin explained about the content of ISPM No. 31 as overview and as initiate prior to further discussion about sampling during the workshop. He emphasized that sampling is an essential tool to manage the pest risks. Sampling of plant, plant product and other regulated articles may occur prior to export at the points as determined by NPPOs. Sampling procedure established and used by NPPOs must be transparent and documented. It also should have a minimum impact to the international trade.

He also emphasized that sampling method will depend on sampling objective and ISPM No. 31 is as guidance to NPPO in selecting appropriate sampling methodologies for inspection or testing of consignments. The implementation of sampling should consider acceptance number, how much level may be implemented according to appropriate level of protection (ALOP) of each country, level of detection/tolerance level, minimum percentage or proportion of infestation that the NPPOs intend to detect the consignment, and NPPO may also establish a tolerance level for certain pests (i.e. regulated non quarantine pests).

Regarding confidence level term, he questioned about how effective NPPOs work at their respective countries with sampling procedures, do they need to evaluate each technique with different targets? Does the sampling being done properly by each sampling officer? Regarding sample size, he

emphasized that a confidence level of 95% is commonly used and a very high confidence level values quickly become difficult to achieve, and on the other hand a lower values become less meaningful for decision-making. Therefore, NPPOs may choose and require the different confidence level depending on the intended use of commodity and pest target. Regarding the efficacy of detection, he explained about the probability that an inspection or test of interest unit will detect a pest. Again, he concluded that NPPOs may choose the best sampling method based on its need.

He also explained about sampling method which mentioned in ISPM No. 31, i.e. non-statistical sampling method, convenience sampling, haphazard sampling, selective or targeted sampling, statistical sampling method, and simple random sampling. Those methods involve drawing the sample units in accordance with the tools, i.e. random numbers table. Moreover, he explained about systematic sampling, stratified sampling, sequential sampling, fixed proportion sampling, and cluster sampling.

He reminded the participants again of the importance outcome of sampling which may result phytosanitary action being taken e.g. issuances of Phytosanitary Certificate, lab tests, refusal of entry, destruction or shipment back to origin and that sampling consignment has to be done for inspection and/or testing. Regarding the requirements of sampling, he emphasized that lot identification is also important. A consignment may be consisting of one or more lots and it may differ from original of product. Commonly, for target pests except insects, NPPOs might use non-statistical sampling method to detect the pests. In selecting appropriate sampling method, NPPOs should consider all the information of consignments and target pests and the aim of sampling.

IV. Country reports on the implementation of ISPM No. 31

4.1. Indonesia (lead country)

In terms of sampling, IAQA has been implementing specific guidelines of methodologies based on consignments i.e. Guidelines for Sampling Methodologies for Seeds (true seed), Guidelines for Sampling Methodologies for Plant Products, and Guidelines for Sampling Methodologies for Food Safety. Methodologies of sampling used by IAQA are statistical and non-statistical sampling. On implementing appropriate sampling method, IAQA considers the target pests, consignments/products, and conveyance/shipment.

4.2. Thailand (supporting country)

Thailand informed about quarantine handling on citrus fruits imported from some countries as an example of the implementation of ISPM No. 31 for import consignment. Phytosanitary requirements for importation citrus fruits to Thailand, i.e.: produce from Pest Free Area (PFA) or treated by cold treatment/fumigated with methyl bromide (MBr). When the consignments arrive at the point of entry in the Kingdom of Thailand, the import inspection must be conducted after all respective documents accompanying the consignments concerned have been confirmed.

Regarding sampling consignment, for < 1000 units will be taken samples 450 units or 100%, and for > 1,000 units will be taken sample 600 units. Important note, this sampling will be conducted at confidence level of 95%, and not more than 0.5% of the units in the consignment are infested. A representative sample of citrus fruits from each cultivar or orchard or block in a consignment will be randomly selected and the sample size is indicated in the slide presentation. If non-compliance occurs on one orchard or block, the entire consignment will be considered as non-compliance. DOA will only publish registration number of orchards or blocks which imported citrus fruits were non-compliance. Regarding target pests found on consignment which cannot be cleaned or treated or for other prohibited contaminants, the entire lots or part of consignments may be refused to entry, or become subject for treatment or destruction. Treatment in common used MBr fumigation with dose 24 g/m3 at 21 0C for a minimum 60

minutes. Quarantine inspection takes about 2 days for documents and consignment checking for imported fresh fruits.

Thailand informed about Seed Certification Procedure as an example of the implementation of ISPM No. 31 for export consignment. Exported seed certified by responsible institutions before issuing Phytosanitary Certificate. Tolerance level of infested consignments for export applied is 0.05%. If the pathogen founded, product/seed will reject and will inspect the farmer, then farmer will check the pathogen (in-line inspection).

4.3. Pakistan (supporting country)

Pakistan talked about treatment used for fruit fly i.e. hot water treatment (HWT), irradiation, VHT, and cold treatment, and for Khapra beetle i.e. fumigation with MBr or Aluminium phosphide. Pakistan also reported that cold treatment is a very successful method to kill fruit fly.

Regarding seed sampling, Pakistan is following ISTA procedure. One bag of seeds from every 5 bags will be segregated and 100 g will be taken for laboratory test. Different samples would be drawn for different crops. Total 120 g seeds, means 3,500 seeds would be drawn for laboratory test. For cereal crops, wheat, rice and maize 1 kg sample is the set standard of Pakistan. Seed lots shall be well mixed and homogenous. Regarding sampling seed in bulk, Pakistan considered size of lot to determine numbers of position. For size of lot up to 50 kg, 51 to 1,500 kg, and 1,501 to 3,000 kg then numbers of position respectively not less than 3, and at least 1 for each 300 kg. Sampling positions must be selected at random both vertical and horizontal.

4.4. Philippines (supporting country)

In Philippines, sampling for quarantine inspection will consider the phytosanitary risks, bilateral agreement or work plan with importing country, pests concern, practicability, and degree of error. Regarding export inspection, currently it conducted mostly at the border and sampling is conducting to containers. For export and domestic consignments, inspection conducted for at least 5% of lots. Regarding imports, the condition puts specific to the product and Philippines has a zero tolerance for quarantine pest and have an acceptable tolerance to non-regulated quarantine pests. Treatment for consignment is also applicable. Philippines hoped to summarize guidelines for export and import procedures during this workshop.

4.5. Australia

In Australia, post entry quarantine is an important way by which they manage the biosecurity risk of imported animals and plants and to ensure that they do not harbour pathogens of biosecurity concern. Moreover, Australia informed that they have improved their regulation as follows: (i) on 19 October 2015, the department launched the new Biosecurity Import Conditions (BICON) import regulation system that has been built to replace ICON, Australia's previous import conditions and permit application system (ICON ceased functioning in November 2015). BICON makes it easier for clients to find information about Australia's import conditions and permits; and (ii) from 1st July 2015, the department introduced a new approach to delivering services across Australia.

Australia has also made some regulatory changes. Implementation of emergency measures for *X. fastidiosa* began on 19 November 2015 for host plant material from high risk countries. The following measures apply to plant tissue cultures and nursery stock that are hosts of *X. fastidiosa* and exported from countries where *X. fastidiosa* occurs and are applied in addition to current import requirements. Host material is tested offshore and certified as being free from *X. fastidiosa* by the government (NPPO) of the exporting country. An exporting NPPO-approved arrangement is in place to ensure the health of plants for export to Australia including off-shore testing and certification requirements are met. Material that does not meet the above requirements may be held and tested in an approved post entry quarantine facility for 12 months or nursery stock material may be hot water treated, followed by standard post entry quarantine

screening arrangements. The department also has revised measures to manage the risk of brown marmorated stink bugs (BMSB) based on current understanding of the pest's biology, and interception data and learning from last season's emergency measures.

Australia will explain sampling methodologies in the focus group discussion session.

4.6. Bangladesh

In Bangladesh, random sampling methods is the methodologies of sampling consignments which now implementing in the country, specifically for seed for showing or propagation; cereals, pulses and other seed for consumption; fresh fruit, berries and vegetables for consumption; and cut flower, branches and foliage for decorative purpose.

4.7. Cambodia

Cambodia reported the 9 mandates of PPSPSD; plant quarantine activities in Cambodia i.e. (i) interception of pest and progress of PRA; (ii) establishment of PFA; (iii) issued import and export certificate (in headquarter). Constraints for development of SPS in Cambodia i.e. (i) lack of adequate information on SPS measure; (ii) Cambodia needs to set up an appropriate database that could be assessed by stakeholders to enhance the implementation of SPS measures; (iii) legislative framework is still developing; (iv) limited trade facilitation between regional and world's markets. Issues for Cambodia to be addresses in the future i.e. (i) set up strong technical team with trained personnel equipped and adequate laboratory facilities; (ii) strengthen Plant Quarantine Inspection Officers; (iv) upgrade of existing NPD (Automation of Cambodia Phytosanitary Certificate is developing).

4.8. China

AQSIQ in China is the competent authority responsible for inspection and quarantine of international trade of goods. Implementation of post qualification management to the inspector i.e.: (i) 1st class post: plant propagative material, fresh fruit, cereal, wood, etc. and (ii) 2nd class post: cotton, ramie, frozen fruit, bamboo, wood and grass. Regarding lot identification, China implements standard of lot on similar good is uniformity. AQSIQ has a zero tolerance for all quarantine pests, but for seed and plant propagating material the tolerance level of regulated non quarantine pests are set according to the bilateral protocol.

China implements sampling methods for 5 main consignments, i.e.:

(1) Fresh fruit

Lot: inspection and quarantine batch.

Sample unit: carton.

Sampling method: cluster sampling + haphazard sampling.

Sampling proportion as follows:

Total number (carton)	Sample number (item)	Sampling amount (kg)
≤ 500	10, the goods would be totally inspected if less than 10	0.5-5
501-1000	11-15	6-10
1001-3000	16-20	11-15
3001-5000	21-25	16-20
5001-50000	26-100	21-50
＞50000	100	50

(2) Bulking cereal

Lot: one cabin/palka

Sample Unit: kg

Sampling method: stratified sampling + haphazard sampling + selective or targeted sampling.

Sampling procedure as follows: (i) samples taken at about 20 cm depth, (ii) select 30 – 50 points randomly in checkerboard pattern in each cabin, (iii) use the three-hole double pipe sampling device to take about 2-4 kg quarantine samples. For each cabin, there should be 1 quarantine sample, the undersize of the sifting, and the sampling bags and thimble tubes with pests, which should be sent to the laboratory of CIQ the first time for pest and weed identification.

(3) Trade bulbs, root tuber, tuber
Lot: goods with the same name from the same country or region, the same transport means and the same consignee or consignee.
Sample unit: granule (one sample contains 20 granules).
Sampling method: fixed proportion sampling + haphazard sampling.

(4) Trade plant
Lot: quarantine unit which comprised by a number plant of seedlings with the same name, shipment, consignee, transportation tools a quarantine unit.
Sample unit: bunch.
Sampling quantity i.e.: (i) the whole plant, rootstock, cutting stem: no less than10 bunch, and no less than 500 plants; (ii) the scion, bud, leaf: no less than10 bunch, and no less than 500 pieces; and (iii) test tube seedling: no less than10 bunch, and no less than 500 branches.
Sampling method: cluster sampling + haphazard sampling.

(5) Trade seed
Lot: lots unit of the entry and exit plant seeds is the batch number of the goods, or use the variety as the lot unit if without the batch number.
Sample unit: kg for the general packing, bag for the small packing.
Sampling method according to the different packing:
a. General packing: Fixed proportion sampling+ Haphazard sampling

Seeds	Example	Amount for one sample(kg)
Big size seed	corn, bean	2.5
Middle size seed	wheat, mung bean	2
Small size seed	millet,cabbage	1.5
Other	tobacco	1

b. Small packing: Cluster sampling + Haphazard sampling
- For indoor inspection, take 1 inspection sample from 10 bags (cans).

China (Hong Kong) explained about plant quarantine control the importation of plants, plant pests and soil preventing the entry and spread of injurious pests in Hong Kong. Hong Kong informed their activities related to import and export plants and plant products in Hong Kong, including the phytosanitary measures and inspecting of plants and plant products.

Some information regarding importation to Hong Kong: (i) Exemptions on plant import in Hong Kong: Cut flowers, fruit and vegetables for consumption; grains, pulses, seeds and spices for human or animal consumption or for industrial use; timber and timber products including rattan and bamboo; dried tobacco and manufactured articles incorporating dried leaves; plants produced in and imported from any place in China outside Hong Kong; (ii) Neither Plant Import License nor Phytosanitary Certificate is required during import for items listed above; (iii) Importation of seeds other than grains, pulses, seeds and spices for human or for animal consumption or for industrial use requires a valid phytosanitary certificate from exporting place only; (iv) Import of plant pest or soil (including earth, sand, clay and peat) is prohibited except under authorization issued by the Director of Agriculture, Fisheries and Conservation.

About the exportation, Fisheries and Conservation Department (AFCD) is the designated authority to issue phytosanitary certificates. Phytosanitary inspection will be conducted to inspect the exporting consignments. Phytosanitary Certificate will only be issued if inspection result is satisfactory. AFCD also issued Phytosanitary Certificate for re-export consignments.

Specifically on inspection of plants and plant products, Hong Kong explained about detecting symptoms of diseases, presence of insects and mites or signs of their infestations, soil contaminant, snails and slugs, fungal fruiting bodies, etc., establishing compliance to import conditions and other entry plant quarantine requirements of importing countries, and degree of inspection must be sufficient to provide a sound appraisal of the pest risk. The actual degree is to some extent based on the estimated pest risk, and the nature of the commodity and past track record. Units to be inspected will be selected from the consignment on arbitrary basis.

4.9. DPR Korea

The sampling implemented in DPR Korea is a fixed proportion sampling specific for consignments, as follows: (i) seeds consignment less than 4,000 kg will be taken samples about 5 – 10% and more than 4000 kg will be taken samples of 2 – 5%; (ii) seedling consignment 100 to 10,000 pcs will be taken samples 6 – 10% and more than 10,000 pcs will be taken samples 3-5%; (iii) tuberous root consignment will be taken samples 200 – 2500%; (iv) groundnut, maize, soybean consignment will be taken samples 1000 – 1500 g; (v) rice, barley, wheat, sorghum consignment will be taken samples 1000 g.

4.10. Fiji

The aim of Fiji's biosecurity is to protect country from high risk commodities. Pests risk in Fiji is divided into two (2) categories i.e. high risk and low risk based on the risk assessment conducted by Fiji using standard requirements. Fiji also has applied random inspection system to minimize the pest risks. ISPM No. 31 is not fully implemented in Fiji.

4.11. India

Some SOPs that have been issued by Indian government were: (i) SOP for export inspection and phytosanitary certification of plants/plant products and other regulated articles; (ii) SOP for export of peanuts; (iii) SOP for export of rice to USA; (iv) SOP for export of rice to China; (v) SOP on export inspection and certification of fresh vegetables and fruits exported to EU-2015; (vi) SOP for Post Entry Quarantine Inspection.

Regarding sampling methods, India implemented sampling based on the product, i.e.: consumption materials; timber/wood materials; assorted cargo; flowers, fruits, and vegetables; propagative plant materials; seeds in bulk for propagation; seeds in cargo containers; seeds in airtight sealed tins; seeds in small packets; and tissue culture (a minimum of 5% of flasks/containers shall be selected for on the spot inspection).

Related to the workshop, India has some hopes among others i.e.: (i) workshop is to improve NPPO officers; (ii) some contracting parties have implemented methods of sampling consignment, but ISPM No. 31 is not fully implemented yet; (iii) sampling technique can be modified in accordance with the policy and the need of each country, and (iv) after the discussion, countries would know what region should do to improve capacity of NPPOs in Asia Pacific region, particularly for sampling consignment.

4.12. Korea Rep. of

Sampling of consignments in Rep. of Korea was carried out through the following stages: (i) On-site inspection, sampling is conducted for bulk samples, samples in container and non-container; (ii) Laboratory test on samples taken from the fields. Furthermore, Korea also explained their research activities on sampling of consignments "A Statistical Research on the Quantity of Quarantine Inspection in the Field and Sampling for Thorough Laboratory Quarantine" conducted during year 2014 – 2015 in order to compare the international standard

and Korean method. Comparison has made between the international standard and Korean method in samplings showed as follows: (1) Sample size would be appropriate for most plants, showing proper confidence level of detection; (2) Confidence level for seeds, mushrooms and tissue culture seems lower than standard sample size. This result implies that current sampling methods need to be improved in the ways that apply different detection level using disposal rate across plants.

4.13. Lao, PDR

The Plant Quarantine Division is under the Department of Agriculture (NPPO of Lao, PDR), which consists of 22 international Plant Quarantine checkpoints. Lao, PDR is a land-lock country bordered by Thailand, China, Myanmar, Viet Nam and Cambodia. Quarantine inspection (including sampling) for import and export of products carried out at the land border between the two countries. Bilateral agreement which has developed between Lao, PDR and other countries on technical market access i.e.: (1) Lao, PDR – China (Bilateral agreement for corn, cassava, banana, water melon and rice); (2) Lao, PDR – Thailand (Bilateral agreement for corn, cassava, banana, tobacco, tomato, potato, chili, papaya and citrus); (3) Lao, PDR – Viet Nam (Bilateral agreement for corn, cabbages, lettuce and rice).

4.14. Malaysia

Malaysia has an official sampling technique depend on purposes. Sampling for import on entry point, pest screening, phytosanitary certification issued, for inspection of plant, procedure and regulated article, agro-based product, and laboratory analysis. Simplify sample size should be taken with table for standard. Sampling for inspection of plants, plant products and regulated articles for export implemented by Malaysia, as follows:

(1) Plant materials for breeding

Plant materials consist of seeds, seedling, tissue culture, rhizome, tubers, bulbs, cutting, stolon, budded stump, potted plants and tendrils.

No	Types of Commodities/Packaging	Export Quantity	Quantity Sampling for Inspection*
1	Trees (>2m height)	1-200 trees	All trees or min. 15 trees
		> 200 trees	Min. 20 trees or 10% of consignments
2	Trees (<2m height)	1-200 trees	All trees or min. 30 trees
		> 200 trees	Min. 30 trees or 10% of consignments
3	Boxes / Gunny sacks	1-50 boxes/gunny sacks	All or min. 5 boxes/gunny sacks
		> 50 boxes/gunny sacks	Min. 10 boxes/gunny sacks or 10% of consignments

* = 100% inspection

(2) Human food and animal feed

Human food and animal feed including flour (wheat, rice, turmeric powder, spices, dhal, rice), whole grains and legumes (rice, corn, soybeans in re-exports), fruits and fresh vegetables, ginger and bulbs, cocoa, coffee, cooking oil/palm and coconut.

No	Types of Packaging	Export Quantity	Quantity Sampling for Inspection
1	Boxes / bottle	<5	1
		6-10	2
		11-20	3
		21 – 50	4
		>50	Min.10 boxes or 10% sampling

2	Bulk	< 300 MT	1 kg X 3 point
		301-1000 MT	1 kg X 5 point
		> 1001 MT	1 kg X 10 point
3	Bags / Basket	< 100 bags	20 bags
		101 -300 bags	32 bags
		301 -500 bags	50 bags
		501 – 1000 bags	80 bags
		> 1001 bags	125 bags

(3) Cut flowers and foliage

Cut flowers and foliage consists of orchid cuttings, flower cuttings, leaf cuttings and other decorations.

No	Types of Packaging	Export Quantity	Quantity Sampling for Inspection
1	Boxes	1-50 boxes	All boxes or min. 5 boxes
		> 50 boxes	Min. 10 boxes or 10% of consignments

(4) Regulated articles

Regulated articles consist of soil, plant media, organic fertilizers, research materials and worms.

No	Types of Packaging	Export Quantity	Quantity Sampling for Inspection
1	Boxes / bottle	<5	1
		6-10	2
		11-20	3
		21 – 50	4
		>50	Min. 10 boxes or 10% sampling
2	Bulk	< 300 MT	1 kg X 3 point
		301-1000 MT	1 kg X 5 point
		> 1001 MT	1 kg X 10 point
3	Bags	< 100 bags	20 bags
		101 -300 bags	32 bags
		301 -500 bags	50 bags
		501 – 1000 bags	80 bags
		> 1001 bags	125 bags

(5) Timber

The timber consists of sawn timber, furniture, plywood, wood chips, powder/sawdust and chip board.

No	Types of Packaging	Export Quantity	Quantity Sampling for Inspection
1	Bulk / Container	< 300 MT	3 points
		301 – 1000 MT	5 points
		> 1001 MT	10 points
2	Bunch / bundle	< 5 bunch / bundle	3 points
		6 – 10 bunch/bundle	4 points
		11 – 20 bunch/bundle	5 points
		21 – 50 bunch/bundle	6 points
		> 50 bunch/bundle	8 points

3	Bags	< 100 bags	20 bags
		101 – 300 bags	32 bags
		301 – 500 bags	50 bags
		501 – 1000 bags	80 bags

(6) Agro-based products
Agro-based products consist of paddy straw, tobacco, coconut husks, oil palm waste, pieces of rubber, latex and others.

No	Types of Packaging	Export Quantity	Quantity Sampling for Inspection
1	Boxes / barrels	<5	1
		6-10	2
		11-20	3
		21-50	4
		>50	Min 10 boxes/ barrels or 10 % sampling
2	Bags	< 100 bags	20 bags
		101 – 300 bags	32 bags
		301 – 500 bags	50 bags
		501 – 1000 bags	80 bags
		> 1001 bags	125 bags
3	Bulk	< 300 MT	1 kg X 3 point
		301 – 1000 MT	1 kg X 5 point
		> 1001 MT	1 kg X 10 point

Related to sample for laboratory analysis purposes for export, Malaysia explained about the import permit requirements of the importing country and Malaysia terms for exports. Sampling quantity according to the consignments:

No	Export Consignments	Sampling	Purpose of Analysis	Related Agencies
1	Regulated article – Organic fertilizer and plant media	4 set sample (250 gm @250 ml each)	Bacteria Heavy metal Fish pathogen Animal pathogen	DOA DOA Dept. of Fishery Dept. of Veterinary
2	Human food/Animal feed	250 gm	GMO Analysis	Dept. of Chemistry

Some issues in inspection and sampling faced by Malaysia are: lack of manpower, the loss of consignment, inspection on time, checkpoint, environmental factors, and human factors.

The Malaysian Phytosanitary Certification Assurance Scheme (MPCA) duties are: (i) to certify farms, collecting centres, packing houses and factories which require phytosanitary certification for the produce before exportation; and (ii) to ensure that the product from the farm/premise certified under this scheme is in compliance with the importing country phytosanitary requirement, the farm and premises shall be subjected to auditing by DOA and joint monitoring visit by official from importing countries. MPCA scheme procedures are as follows: (1) Farm must be pest-free places production or pest-free production sites or low pest prevalence; (2) Packing house and factories must be insect-proof or insect-free; (3) Consignment of produce or product ready for shipment must be sampled based on quarantine inspection, 7%-30% of the consignment; (4) Farm produce or products must be separated / isolated based on lots or farms and country of destination; (5) Packing boxes must be insect-proof and ventilation holes in boxes must be covered with wire netting.

4.15. Myanmar

An inspection of lots will normally consist of the total number of units making up the consignment. Exporters can decide to divide the consignment into a number of lots. Reasons for Myanmar to sub-divide may include different growers, different post-harvest treatments including chemical treatments, problem with particular species, climate or seasonal conditions which may encourage pest or disease development, and different species or varieties. Each lot must be sampled and recorded on separate Phytosanitary Inspection Records. An authorised of Myanmar officer to conduct inspections on protocol products to provide the officer with sufficient information to complete the inspection.

To obtain a statistically valid estimate of the level of infestation in the consignment or lot, samples should be taken at random. Inspections that only target the accessible part of the consignment (tailgate inspection) should be avoided. For quarantine pests, it is important to maximize the chance of detection by targeting the sampling or units which are most likely to be carrying the organism (e.g. by focusing on wet patches of potato bags or on wet sawn wood).

Myanmar mentioned some issues to be addressed for the future i.e.: (i) to expand activities within the country as well as other nations in the region; (ii) to set-up a strong technical team with well-trained personnel equipped with adequate laboratory facilities; (iii) to strengthen Plant Quarantine Inspection offices at border areas as well as Head office; and (iv) strengthening capacity building by conducting short/long term training on identification of plant pests and diseases and also on plant inspection and quarantine techniques; knowledge exchange regarding plant quarantine and laboratory equipment (digital camera attached compound microscope, dissecting microscope, molecular laboratory equipment).

4.16. Nepal

The National Standard for Phytosanitary Measure (NSPM) on Methodologies for Sampling of Consignment in Nepal is available in English and Nepali (national language). The NSPM has included Standard Operation Procedures for Import and Export Certification (Inspection for health testing and sampling, and sampling for laboratory analysis).

The main constraints or challenges on implementation of NSPM on Methodologies for Sampling of Consignment in Nepal are as follows: (i) lack of a high degree of quality control equipment, trained human resources and necessary laboratory facilities; (ii) lack of technical standards and its understanding among producers and exporters; (iii) there are no accredited laboratories; (iv) lack of trained manpower for laboratory work, describing the minimum acceptable physical and operational requirements of standard and facilities to work with plant pests, weeds, soil, genetically modified plants and arthropod control agents; (v) there is lack of awareness about plant quarantine system among different stakeholders (at policy level, high officials, businessmen and mass people level); and also (vi) lack of inter-relationships between Research Institutions, Regulatory Agencies and PQ.

Nepal has made recommendations to deal with the constraints or challenges, i.e.: (i) a mechanism to strengthen the capacity of plant quarantine check posts and their diagnostic capacity, measures taken prior to entry and at entry point related to inspection, testing, treatment, checking documents, verification of consignment integrity, where required detention etc.; (ii) issues related to strengthening and upgrading the existing laboratories, developing a system to provide regular training for quarantine officials in sampling and testing of the samples and laboratory equipment handling; (iii) mechanism to maintain transparency on the testing, sampling and issuance of certificate; (iv) educating the general public through mass communication activities (MCA).

4.17. Samoa

Samoa Quarantine Service (SQS) which is part of the Ministry of Agriculture and Fisheries. SQS supported by Quarantine Section which consists of:

(1) Airport section, with information as follows: (i) Samoa has three (3) international airports i.e. two (2) in Upolu and one (1) in Savaii; (ii) one of services that continue to provide is the inspection and certifying of foods to be exported to New Zealand such as coconuts. Only after we have ensured that the coconuts are clean and in good condition will then issue permits to facilitate entry to another country; (iii) another one of our services provided is the collection of waste/rubbish from aircrafts to ensure of proper disposal. We ensure that the rubbish are properly sealed in preparation for incineration;

(2) Seaport section, with information as follows: (i) Samoa has three (3) international wharfs i.e. two (2) in Upolu and one (1) in Savaii; (ii) another one of our responsibilities is the clearance of cargo vessels, visiting passengers, and the clearance of mail items; and (iii) Samoa also have Quarantine Officer present at the International Mail Centre in Apia. All incoming parcels and packages are screened for risk items and some mail items require further inspection to determine the extent of the quarantine risk of contents;

(3) Technical Policy Section, with information as follows: (i) this section conducts IRA (Import Permits) with its main aim of an import risk analysis is to assess the biosecurity risks associated with importing goods or animals into Samoa; (ii) biosecurity risks are usually pests and diseases which we do not want to get established in Samoa because of the harm they might cause to our environment, agricultural production, or human health; (iii) this section is responsible for the issuance of permits for goods (live plants, live animals, or plant products and animals products etc.) being imported from other countries; (iv) Samoa ensure that the goods meet the import Health Standards before issued permits to counter the increase in different diseases that are in Samoa. Quarantine is responsible for facilitation safe trade for our primary agricultural exports; (iv) the main area of responsibility is to assist exporters by exploring the market access opportunities for targeted produce (such as our taro and Tahitian lime).

4.18. Sri Lanka

The National Plant Quarantine Service (NPQS) is under the Seed Certification and Plant Protection Center, Department of Agriculture as the NPPO of Sri Lanka. The sampling procedures was arranged to be well established, documented, transparent, minimum impact on the consignment, need to be regular and consistent. The appropriate units of sampling determined and depend: (i) on commodity (phytosanitary risk associated with the commodity (e.g. cut flowers/foliage, vegetables, food or feed, a container, plants for planting) and type of commodity (seeds, *in-vitro* cultures); (ii) on pests (for low-mobility pests, sample unit will be, for example, one bunch of roses and for mobile pests, sample unit will be, one carton containing cut orchids).

The sampling size for commodity will be divided into 3 categories (small to medium size, big size and leafy vegetables), as follows:

Number of boxes	Commodity category 01	Commodity category 02	Commodity category 03
1 – 10	(03) – 80 pieces	(03) – all	(03) – 05 bunches
11 – 50	(10) – 100 pieces	(10) – min.of 20 pieces – All	(10) –15 bunches
50 – 500	(30) – 300 pieces	(30) – 100 pieces	(30) – 30 bunches
500 – 2000	(50) – 300 pieces	(50) – 300 pieces	(50) – 50 bunches
2000 – 5000	(100) – 500 pieces	(100) – 500 pieces	(100) – 100 bunches

Destructive sampling may be necessary for certain items (e.g. fruits and vegetables). Mixed consignments inspect by one inspector per commodity, and shared inspection with agreement of sample size for single commodity.

4.19. Timor-Leste

The eastern half of the island of Timor is located between two countries i.e. Indonesia and Australia. Department of Plant Quarantine is under the National Directorate of Quarantine and Biosecurity, Ministry of Agriculture and Fisheries (MAF) of Timor-Leste. The NPPO of Timor-Leste consists of National Directorate of Quarantine and Biosecurity (in charge of Plant Quarantine Department) and National Directorate of Agriculture Horticulture and Extension (in charge of Plant Protection Department). There are 14 quarantine entry points in Timor-Leste.

Timor-Leste has not yet issued Phytosanitary Certificate because lack of facilities, laboratory equipment and material as well as specific regulations to support the implementation of the issuance of Phytosanitary Certificate. Isolation, observation and treatment of imported goods are not yet implemented because lack of infrastructure. Quarantine inspection is conducting at exit and entry point at land border.

Based on the respond of questionnaire, National Directorate of Quarantine and Biosecurity of Timor-Leste, so far, is not using observations of a sample of pests, diseases, and weeds that are imported through the import of plants and plant products. But in the future, Timor-Leste intends that inspection imported consignments of plants and plants products must be guided by the ISPM No. 31 and checks or inspection should have the target pests, diseases, and weeds are categorized list of quarantine pests. Currently, Timor-Leste is not using any protocols apart from ISPM No. 31 and other standard sampling protocols aside from ISPM No. 31. However, Timor-Leste agreed that all countries should use the same sample standard protocols as mention on ISPM No. 31 so that the harmonization of the same methods in collecting samples is needed without any discrimination. Timor-Leste has opinion that every item at risk could carry pests, diseases, and weeds from one State to another State, should be made with checks or inspection, but for the passengers should use a disinfectant spray that usually are used inside airline (the baggage room and passenger's room). So, people do not need to do random sampling checks of passengers. National Directorate of Quarantine and Biosecurity of Timor-Leste were asking support on technical assistance for the training of detection, diagnostic, and identification of pests, diseases, and weeds by PCR and ELISA as well as the necessary basic training for quarantine officers to conduct sampling of shipments of full container loading.

4.20. Viet Nam

The standard for sampling methods in Viet Nam are: (i) TCVN 4751: 89 Viet Nam standard for phytosanitary sampling methods: applied from 1989 to 1993 and replaced by QCVN 01 – 141: 2013/BNNPTNT; and (ii) QCVN 01 – 141: 2013/BNNPTNT National technical regulation on phytosanitary sampling methods: applied from 1993.

Sampling procedures performed by Viet Nam are as follows: (i) maximum unit consignment per lot is 500 MT; (ii) unit consignment more than 500 MT should be divided into several lot units; (iii) sampling is conducted randomly and numbers of sample to be taken based on the size of the lots.

V. Focus Group Discussion

5.1. Election of the facilitator for discussion session (Chaired by Dr. Antarjo Dikin)

Dr. Antarjo Dikin explained briefly about the mechanism to run the discussion as mentioned on the guidelines for FGD. A proposal for chairperson to be elected has been made and agreed by all participants, as follows:

Topic for FGD	Presenter/ Initiator	Facilitator/ Chairperson	Reporter
seed and plant propagating material	China	China/China (Hong Kong)	Maman

fresh fruit and vegetables	Pakistan	Pakistan	Yuli, Arif
grain for food/feed in containers	Indonesia	Indonesia	Kemas, Syarron
grain for food/feed in bulk/non containers/cargo hold/stowage	Australia	Australia	Arif, Nurrohman
cut flowers and mixed/heterogeneous consignment	Thailand	Thailand/ Malaysia	Uwie, Ratih
inspection in packing facilities/in grower's site or area of production	Philippines	Philippines	Herti, Kemas

5.2. Presentation on sampling method for consignment of seed and plant propagating material by China and discussion (will be soon complemented)

Some points had been discussed and agreed as follows:

- NPPO has a zero tolerance level for all quarantine pests
- level of tolerance might be established for regulated non quarantine pest
- every country has to develop SOP for specific commodity as well as level of tolerance for each target pests
- determination of level of tolerance of each pest would be based on adequate research, risk analysis and bilateral agreement between exporting and importing countries to minimize risks in the importing countries
- the duration for negotiation to determine level of tolerance for each pest will be different for certain commodities
- NPPO may choose either a statistical based or non-statistical based sampling methodology depend on kind of products, target pest, kind of package, etc.
- qualified officers and specific tools should be required to fix proportion sampling
- capacity building on conducting sampling for plant quarantine officer has to be conducted to improve their skill or manage their competence
- post-entry quarantine is required for lot sampling to observe and detect some symptomless pathogen or latent diseases through determination of growing consignment in the green house to see whether the symptoms appear or not

5.3. Presentation on sampling method for consignment of fresh fruit and vegetables by Pakistan and discussion

Some points had been discussed and agreed as follows:

- sample size and confidence level were important things to be considered in conducting sampling of consignments
- non-statistical and statistical sampling method usually used in sampling consignments, but non-statistical sampling method the very common method used in quarantine inspection
- statistical sampling method usually used i.e. simple random sampling, systematic sampling, stratified sampling, sequential sampling, fixed proportion sampling, and cluster sampling
- in Pakistan, samples of 10% of consignment taken for random sampling
- mango and citrus as major fruits produced in Pakistan and its inspection for export consignments focusing on fruit fly
- sampling has outcome to intercept plant pests and diseases on commodity
- sampling on fruit consignments conducted not only for products inspection but also for the packaging
- for fresh fruit products, sampling usually conducted since from orchards and packing house, and also the transportation

- export and import agreement between both countries in international trade is important to implement the SOP of sampling that agreed by both countries
- different sampling technique will depend on the commodity
- in Australia, sampling for fresh fruits is conducted in farm, storage, and check the compliance with importing country
- in Philippines, sampling based on document that continued by physical check or container check
- for fresh products, export inspection at border is as a confirmation, and inspection focusing more on orchards/farms
- Pakistan proposed to develop SOPs for sampling procedure that guide or give standard for conducting sampling on each member country

5.4. Recap FGD Session Day-2 (Presented by Dr. Antarjo Dikin)

Based on the discussion in FGD session day-2 on the topics of sampling method for consignment of seed and plant propagating material and fresh fruit and vegetables, the following points came up as conclusion:

1. SOP of sampling for commodity based on target pests is required and sampling techniques for phytosanitary certification purpose should also be referred to the supply chains which determined potential critical point of pest evidence.

2. Technical information from the exporting country regarding integrated management measure to mitigate risk would be very useful in the appropriate pest approaches for sampling method and inspection at border.

3. A zero level of tolerance for quarantine pests of member country, while non-quarantine pests may depend on ALOP. The fact for deciding level of tolerance of quarantine pests may have scientific bases such as pest status, resistance variety of host, epidemiological pest and host including seed health testing study.

4. Trade facilitation of plants or plant products should be without any delay clearance at border through harmonization to assurance of phytosanitary measures such as SOP for sampling, target pests, level of tolerance for pests. Standard of sampling technique for the consignment may be arranged in part of bilateral agreement of Phytosanitary Certification for both countries.

5. Sampling technique for seed and plant propagation is more complex parameter approaches than fresh fruit and vegetables. The officers who are responsible for sampling should have adequate acknowledge and skills, supported by adequate tools in sampling. The capacity need to be maintained and improved regularly through training, workshop or by sharing knowledge among the APPPC member countries.

6. Sampling technique may not be needed for seed and plant propagating material in a small quantity. However, for further detection and identification of target pest associated with small consignment can be conducted by growing-on test in quarantine facility premises.

7. By sampling technique, the post entry quarantine for detection of pest of food crops may conduct with part of sampled lots to observe and detect some symptomless pathogen or latent disease through growing-on test or advance detection techniques.

8. For fresh fruits and vegetables, sampling and physical inspection can be done in the quarantine facility premises to avoid damage of the products due to temperature extreme.

Provided pallet in fruit/vegetable boxes inside container can help to optimize the application of sampling techniques at border.

5.5. Presentation on sampling method for consignment of grain for food/feed in containers by Indonesia and discussion

Some points had been discussed and agreed as follows:

- Indonesian presentation based on the study about sampling container in two seaport (Tanjung Priok and Tanjung Perak)
- sampling in container can be conducted by providing a man hole to easy reach the samples
- sampling in India conducted by targeted sampling based on target pests
- Australia using approval methods to sampling, conduct sampling as system on handling facility with SOPs
- gas clearance need to guarantee the cargo or container free from poisons gas that will be dangerous to worker
- number of samples should be fulfill a minimum sample size requirement
- for flour products, sampling will depend on target pests, sampling may not always be conducted
- for non-container seaport, do not follow this standard and sampling conducted based on result of pest risk analysis
- Australia emphasized the needs of system for sampling to check the contamination on products

5.6. Presentation on sampling method for consignment of grain for food/feed in bulk/non containers/cargo hold/stowage by Australia and discussion

Some points had been discussed and agreed as follows:

- sampling system is part of export certification system, Australia using the SOP that give guidance to the process, step by step
- sampling consider the target pests on product and products will be rejected if any target pests found in the products or products not comply with the requirement
- sampling conducted before loading to the container and by system on handling facility
- container inspection conducted before commodity loading for shipment
- if any pests or contamination of pests found in export commodity in the country storage then commodity will be rejected and send back to the farmer storage
- Australia conducting sampling manually and automatically in grain handling facility
- Australia using 95% of confidence level in sampling, if sampling can detect one or more insects per tons at 95% confidence level will cause a rejection to the consignment for export
- Australia conducting sampling in the registered handling facility as part of the Australia export certification system and also at vehicle unit which transport the products, and sampling focusing more on the inspection of goods/products for export
- management database of sampling supported by information system and technology
- Australian sampling inspection on the products only focusing on the insects, but inspection can also be done for other pests as required by importing country
- export system in Australia allow to trace back the products if any notification of non-compliance received from importing country
- safety is the most important thing when taking samples of grain consignments, if too dangerous, sampling shall not be conducted

5.7. Presentation on sampling method for consignment of cut flowers and mixed/heterogeneous consignment by Thailand and discussion

Some points had been discussed and agreed as follows:

- Thailand has standard packing house applies good manufacturing practices
- procedures of sampling conducted to the products according to the importing country requirement (e.g. EU)
- sample size and inspection is focused on target pests of importing country (e.g. thrips and mites on cut flower)

- Phytosanitary Certificate only issued to the commodity free from pests of concern and meet the requirement of importing country
- treatment and sampling of products based on EU notification and agreement between EU and Thailand
- MBr fumigation usually applied to cut flowers in Thailand, but it is not 100% effective killing eggs and may give negative effect to the quality of products because of MBr is sensitive to fresh fruit and cut flower and Thailand has no other options for cut flower treatment
- In Thailand, orchid flowers for export fumigated with MBr at 20-24 g/m^3 at 21°C for 90 minutes
- Indonesia informed liquid phosphine with CO2 (Eco2 Fume) effective for scale insects (egg, larva and imago) based on the applied research of IAQA
- consideration for mixed product that shipping at the same container and at the same time, even though in same shipping but products must be separated by kinds of commodity and not absolutely mixed
- sampling method for cut flowers can be different depend on target pests or other factors such as contamination that will be harmful to human

5.8. Presentation on sampling method for inspection in packing facilities/in grower's site or area of production by the Philippines and discussion

Some points had been discussed and agreed as follows:

- sampling must be considered of the country of origin, quarantine, pest of concern, commodity and based on PRA
- simple random sampling and quadrant technique are used in sampling for inspection in packing facilities/in grower's site or area of production
- hot water treatment is used for planting material
- implementation of post entry quarantine conducted for the importation of seed
- sampling for production site by simple random sampling and Z or X pattern and depend on type of the commodity
- Thailand has specific export protocol for several commodity such as banana, mango, pineapple, okra and asparagus and Thailand conducting sampling inspection on packages as well. Based on Thailand experience, sampling and collect samples much better if conducting on packing facilities because it is easier to access and near to the airport. If packing facilities far from the production area, it would bring higher risk in recontamination, damage to the product as long as transportation and Thailand prefers to conduct sampling on packing facilities to minimize and avoid that risks
- sampling conducting on packing facility and farms for confirmation and monitoring purposes
- fruit maturity and size of fruit are important aspects to consider for export

5.9. Recap FGD Session Day-3 (Presented by Dr. Antarjo Dikin)

Based on the discussion in FGD session day-3 on the topics of sampling method for consignment of grain for food/feed in containers, grain for food/feed in bulk/non containers/cargo hold/stowage, cut flowers and mixed/heterogeneous consignment, inspection in packing facilities/in grower's site or area of production, the following points came up as conclusion:

1. Sampling method have specific objectives including to meet import requirements prior issuing phytosanitary certificate. Phytosanitary certification process supported by effective and efficient standard procedure sampling of consignment in container, bulk, air and ship cargo as well as mail consignment that may improve performance to remove any notification of non-compliance by supporting regular pest monitoring and transparent implementation of integrate pest management practice.

2. Sampling methode related with import requirements need to be reliable supported by appropiate inspection of commodities including inspection of production site, packing facilities, and container check contamination based on pest risk.

3. Development of standard operational procedures (SOP) of sampling should be applicable for specific kind of commodities, target pest, PRA area, intended use of commodity, country of origin, size of consignment, capacity of member country such as tools, human resources, knowledge, level of risk, number of sampling, hygienist of media carrier and how the commodity loaded to avoid any potential re-infestation of pest.

4. Bilateral arrangement between two countries conducted to harmonize the requirements of importing country may establish including phytosanitary certification system, audit system, management risk of target pest, sampling system, appropiate inspection, post entry quarantine, adequate packing house, post-harvest treatment and correction action procedures related to notification of non compliance.

VI. Field trip

Field trip conducted by visiting quarantine station/office in Bogor which is a branch office of quarantine services of Tanjung Priok Seaport. During the field trip, participants had received further information about quarantine works conducted by Tanjung Priok seaport and that quarantine works handled by Bogor quarantine station particularly on export and domestic quarantine. This station also acts as a collection house for commodities gathered from import, export, and domestic inspection and also for common pests in Indonesia and quarantine pest specimens under the quarantine services of Tanjung Priok Seaport. The participants also had a chance to visit the Historical of Botanical Garden.

VII. Discussion on further activities for the development of sampling technique for APPPC region

In general, participants agreed with conducting further activities for the development of sampling technique for APPPC region as follows:

1. Most countries in the Asia Pacific region have been implementing ISPM No. 31 and agreed to develop national Standard Operational Procedure (SOP) on sampling for specific consignments in their respective countries.
2. A common practice of sampling for specific consignment need to be developed as SOP and to be proposed as Annex of ISPM No. 31.
3. A common practice of sampling method for consignment of seeds and plant propagating materials can be started to develop as SOP in the region to initiate the establishment of regional standards.
4. Workshops on the establishment and harmonization of sampling method for specific consignments should be started in the Asia Pacific region.
5. Technical trainings on sampling method for specific consignments for plant quarantine officers should be started in the Asia Pacific region.

Participants encouraged Dr. Antarjo Dikin (lead country) and Dr. Piao Yongfan (FAO-RAP/APPPC) to bring this proposal to the 30th Session of the APPPC in New Zealand in 2017.

VIII. Closure of the workshop

Dr. Antarjo Dikin and Dr. Piao Yongfan expressed their appreciation to the organizing committee for having effectively organized this workshop and also to all participants who had joined and followed all sessions and came up with good recommendations and ideas during the workshop discussions, particularly in sampling area as well as ISPM No. 31.

Dr. Dikin and Dr. Piao emphasized that in implementing ISPM No. 31, APPPC member countries need to share experiences and knowledge in order to get information about the appropriate sampling methods, especially for feed, fruit and vegetables. After this workshop, each country is encouraged to develop and improve their national standard on sampling methodologies.

On behalf of DG of IAQA, Dr. Dikin conveyed his best regards to all participants who had strongly supported IAQA for the APPPC Regional Workshop on Methodologies for Sampling of Consignments (ISPM No. 31) and officially closed the workshop.

Annex 1

List of Participants

No	Country	No	Name
1.	**Australia**	1)	**Dr. Abdul Rashid Qaisrani** Senior Technical and Policy Officer Department of Agriculture and Water Resources Grain & Seed Exports Programme Department of Agriculture and Water Resources 7 London Cct, Canberra ACT 2601 AUSTRALIA Tel: +61-2-62724191 Email: abdul.qaisrani@agriculture.gov.au
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3.	**Cambodia**	3)	**Mr. LY Sereivuth** Chief of Plant Quarantine Office Department of Plant Protection Sanitary and Phytosanitary General Directorate of Agriculture CAMBODIA Email: lysereivuth@gmail.com
4.	**China**	4)	**Ms. Dong Chunhua** Bureau Director Liaoning Entry-Exit Inspection and Quarantine Bureau CHINA Tel: 13998652756 Email: seven-26@163.com
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Annex 4

Workshop Programme

Day/Date	Time	Activities
Day-0 Sunday 21 August 2016	am - pm	Arrival of participants and pre-registration; OC Technical Meeting*
	12.00 – 13.00	Lunch
	15.00 – 15.30	Coffee break
	18.30 – 20.30	Dinner
Day-1 Monday 22 August 2016	06.00 – 08.00	Breakfast
	08.00 – 09.00	Registration
	09.00 – 10.30	Opening session: 1. Introductory remarks by Director for Plant Quarantine and Biosafety (Dr. Antarjo Dikin) 2. Opening remarks by Executive Secretary APPPC (Dr. Piao Yongfan) 3. Inaugural address by the Director General of IAQA (Mrs. Banun Harpini) 4. Overview of ARIAQ (Head of ARIAQ) 5. Group photo
	10.30 – 11.00	Coffee break
	11.00 – 11.30	Update of the 29th Session of APPPC meeting and training programme, including purpose and scope of the Workshop on Methodologies for Sampling of Consignments (ISPM No. 31) (by: Dr. Piao Yongfan)
	11.30 – 12.00	Overview of ISPM No. 31 and trade facilitation issues (by: Dr. Antarjo Dikin)
	12.00 – 13.00	Lunch
	13.00 – 14.30	Country report on the implementation of ISPM No. 31 (@15 minutes) 1. Indonesia (lead country) 2. Thailand (supporting country) 3. Pakistan (supporting country) 4. Philippines (supporting country) 5. Australia 6. Bangladesh
	14.30 – 15.00	Coffee break
	15.00 – 16.30	Country report on the implementation of ISPM No. 31 (@15 minutes) 7. Cambodia 8. China 9. China (Hong Kong) 10. DPR Korea 11. Fiji 12. India
	18.30 – 20.30	Welcome dinner by IAQA
Day-2 Tuesday 23 August 2016	06.00 – 08.00	Breakfast
	08.30 – 10.00	Country report on the implementation of ISPM No. 31 (@15 minutes) 13. Korea, Rep. of 14. Lao, PDR 15. Malaysia 16. Myanmar 17. Nepal 18. Samoa
	10.00 – 10.30	Coffee break
	10.30 – 11.15	Country report on the implementation of ISPM No. 31 (@15 minutes) 19. Sri Lanka 20. Timor Leste 21. Viet Nam
	11.15 – 12.00	Election of the facilitator for discussion session (Chaired by Dr. Antarjo Dikin)
	12.00 – 13.00	Lunch
	13.00 – 14.30	- Presentation on sampling method for consignment of **seed and plant propagating material** by China - Discussion (Guided by the elected facilitator)
	14.30 – 15.00	Coffee break
	15.00 – 16.30	- Presentation on sampling method for consignment of **fresh fruit and vegetables** by Pakistan - Discussion (Guided by the elected facilitator)
	18.30 – 20.30	Dinner

Day-3 Wednesday 24 August 2016	06.00 – 08.00	Breakfast
	08.30 – 09.00	Recap Day-2 (Presented by Dr. Antarjo Dikin)
Day/Date	**Time**	**Activities**
	09.00 – 10.15	- Presentation on sampling method for consignment of **grain for food/feed in containers** by Indonesia - Discussion (Guided by the elected facilitator)
	10.15 – 10.45	Coffee break
	10.45 – 12.00	- Presentation on sampling method for consignment of **grain for food/feed in bulk/non containers/cargo hold/stowage** by Australia - Discussion (Guided by the elected facilitator)
	12.00 – 13.00	Lunch
	13.00 – 14.15	- Presentation on sampling method for consignment of **cut flowers and mixed/heterogeneous consignment** by Thailand - Discussion (Guided by the elected facilitator)
	14.15 – 14.45	Coffee break
	14.45 – 16.00	- Presentation on sampling method for **inspection in packing facilities/in grower's site or area of production** by the Philippines - Discussion (Guided by the elected facilitator)
	16.00 – 16.30	Recap Day-3 (Presented by Dr. Antarjo Dikin)
	18.30 – 20.30	Dinner
Day-4 Thursday 25 August 2016	06.00 – 07.00	Breakfast
	07.00 – 20.00	Field trip
Day-5 Friday 26 August 2016	06.00 – 08.00	Breakfast
	08.30 – 10.30	Discussion on further activities for the development of sampling technique for APPPC region
	10.30 – 11.00	Coffee break
	11.00 – 12.00	Closure of the workshop
	12.00 – 14.00	Lunch
	14.00 – 15.30	OC: Evaluation*
	15.30 – 16.00	Coffee break
	16.00 – 17.00	OC: Evaluation*
	18.30 – 20.30	Dinner
Day-6 Saturday 27 August 2016	06.00 – 08.00	Breakfast
	08.00 – 09.30	OC: Report preparation*
	09.30 – 10.00	Coffee break
	10.00 – 11.30	OC: Report preparation*

**Only for organizing committee (OC) / IAQA*

Annex 5

Guidelines for Focus Group Discussion (FGD)

Focus group discussion (FGD) session on the specific subjects started on the 2nd day. The purpose of FGD are: (i) to gather information from participants' experiences in their respective countries on specific methodologies for sampling of consignments, particularly for seed and plant propagating materials, fresh fruits and vegetables, grain for food/feed in container and non-container, cut flowers and heterogeneous consignment, and also sampling method for inspection in packing facilities/site area production; and (ii) to identify their appropriate methodologies for sampling of consignments for the Asia Pacific region.

A chairperson or facilitator to guide each FGD session was selected from participants and a guidance sheet to each FGD was provided. A presentation regarding specific topic in each FGD was delivered by the participant who had been invited by IAQA to share their in-country experiences on the related topic and as an introduction to the discussion. Each presentation took about 15 – 20 minutes followed by discussion for 50 – 60 minutes and conclusion for 5 – 10 minutes.

Participants were requested to fill up the FGD survey sheet and give it back to the organizer at the end of FGD session on Thursday afternoon.

Tentative agenda for FGD is as follows:

Day-2	1	13.00 – 13.20	Presentation on sampling method for consignment of seed and plant propagating materials by Rep. of Korea
		13.20 – 14.30	Discussion and conclusion
	2	15.00 – 15.20	Presentation on sampling method for consignment of fresh fruits and vegetables by Pakistan
		15.20 – 16.30	Discussion and conclusion
Day-3	3	09.00 – 09.15	Presentation on sampling method for consignment of grain for feed/food in container by Indonesia
		09.15 – 10.15	Discussion and conclusion
	4	10.45 – 11.00	Presentation on sampling method for consignment of grain for feed/food in bulk/non-container/cargo hold/stowage by Australia
		11.00 – 12.00	Discussion and conclusion
	5	13.00 – 13.15	Presentation on sampling method for consignment of cut flowers and mix/heterogeneous consignment by Thailand
		13.15 – 14.15	Discussion and conclusion
	6	14.45 – 15.00	Presentation on sampling method for inspection in packing facilities/in grower's site or area production by Philippines
		15.00 – 16.00	Discussion and conclusion

Annex 6

Recapitulation of FGD Survey Sheet

A. The use of ISPM 31 for specific consignment

No	Subject to be discussed	Countries										
		Bangladesh	Fiji	Sri Lanka	Cambodia	Thailand	Pakistan	Nepal	Lao PDR	Myanmar	India	Indonesia
1	What are used as NPPO consideration the application of sampling method for inspection purposes?	- Target pests Intended use of commodity	Not applicable	- Quarantine pests - Intended use of commodity - Country of origin - Treatment method	- Target pests - kind of commodity	- target pests - size of consignment - type of consignment - import purposes - Treatment method	- Target pests	- NPPO should be consider different sampling techniques for specific target pests	- Target pests	- target pests - intended use of commodity - testing for pesticide residue	NPPO should consider that different sampling techniques should be used for different target pests	- more consideration is better as long as based on scientific justification the NPPO use application of sampling method for inspection purpose are target pest, intended use of commodity, country of origin, size of consignment, mode of transportation
2	Whether statistical approach in the various kinds of consignments will be used and useful in the application of sampling method for inspection purposes?	yes	Not applicable	Simple random sampling is used. Sampling method is important or inspection purposes	-	-	Yes. Statistical approach for sampling to be followed	Statistical approach always good for sampling but sometime according to commodity other sampling techniques are also used	-	yes	Statistical approach always good for sampling but sometime according to commodity other sampling techniques are also used	Yes, Statistical method is one of important things to do, but it will be better if it is combined by several factors like potential hazard (risk), infection level, etc. Because in some cases the number of sample by statistical analysis seems to be a lot
3	Does NPPO need a manual/standard operating procedures to support the application of sampling method for inspection of consignment?	yes	Not applicable	Standard operating procedures are needed	Yes	Yes	Yes. NPPO should develop SOP's for sampling of consignments as per variety	Yes. NPPO should develop SOP's commodity and target pests	Yes. The SOP is very important to guidance for implementing method	Yes	Yes. NPPO should develop SOP's commodity and target pests	Yes
4	Does NPPO need	Yes	Not applicable	Yes	Yes	Yes	Yes. Always size of sample	Yes	Yes. Should be do,	Yes	Yes	Yes, of course. But should be supported

	to determine/calculate the sample size for inspection?						is very important for pest detection		because it can secure for decission of confidence level			by scientific justification or research. More standard (SOP) in detail will be better so every country can apply in the same way
5	Does NPPO take into consideration the sampling method appropriate for the analysis/detection of the target pest?	Yes	Not applicable	Yes	Yes	Yes	Yes. Appropriate sampling methodology will be helpfull in detection of pests	Sampling techniques always very important to detect targeted as well as other pests	Yes. They do	Yes	Sampling techniques always very important to detect targeted as well as other pests	Yes, of course. But should be supported by scientific justification or research. More standard (SOP) in detail will be better so every country can apply in the same way
6	Does NPPO need to determine level of detection to be followed for each consignment?	Yes	Not applicable	Yes	Yes	Yes	Yes. Determination level to be followed for pest detection	Yes. Pest detection is very important to determine	Depend on the propose of inspection	Yes	Yes. Pest detection is very important to determine	Yes, ofcourse. But should be supported by scientific justification or research. More standard (SOP) in detail will be better so every country can apply in the same way
7	Does NPPO need to set a tolerance level for pests detected in the consignment?	Yes	Not applicable	No tolerance level for quarantine pests	Yes	Yes	No. There should be zero tolerance level for detection	No. There should not be any tolerance level for quarantine purposes	Normally should be set a tolerance level for pest detection, cause for regulated non quarantine pest is important	Yes	No. There should not be any tolerance level for quarantine purposes	Yes, ofcourse. But should be supported by scientific justification or research. More standard (SOP) in detail will be better so every country can apply in the same way
8	Does NPPO need to set different tolerance level for each target pests?	Yes	Not applicable	Have to set different tolerance level for non-regulated quarantine pests	Yes	Yes	No	No. There is no tolerance level for target pests	Yes. Its better to intend use of the commodity and pest target	Yes	No. There is no tolerance level for target pests	Yes. To complete in standards in detail need more discussion among the members
9	At what level of infestation/infection will require a phytosanitary	Yes	Not applicable	Quarantine pest: 1 insect other pests: 1-2/sapmle	Medium infestation	-	Even one insect detection is required phytosanitary	Detection of one pest will require phytosanitary action	-	-	Detection of one pest will require phytosanitary action	At zero tolerance

	action/measure?						action					
10	What are the most important concerns/issues that the NPPO experience in the implementation of ISPM 31?	Methodology for sampling of consigment	Not applicable	To obtain the 95% confidence level have to inspect more samples. It is difficult and non practicable	Number and size sample to inspect	NPPO share their experience and exchange the sampling technique	- Location of consignment - Tyoe of consignment - Packing of consignment - Stuffing of consignment	Target pest is main concern of NPPO	-	Food safety (not only infestation of pests but also pesticide residue is important)	Target pest is main concern of NPPO	Determining number of sample, acceptance number thats possible applied in various commodity and target (pest and disease)
CONCLUSION		1. Every country should develop SOP 2. Should develop a harmonize/ common methodologies for sampling of consignment 3. ISPM 31 should be modified, be simple 4. should be some changes	-	-	-	The sampling applied to other phytosanitary procedure	NPPO of country require to target particular pest of the commodity and develop SOP for sampling methodology. There should not be any tolerance limit for quarantine pests	The concern NPPO of country should develop different commodities	-	-	The concern NPPO of country should develop different commodities	1. NPPO should be encouraged to complete the standards in detail as soon as possible in order to harmonize the implementation of ISPM 31 in every country member 2. Particularly for NPPO of Indonesia, ISPM 31 could be used depend on specific and target pest in a consignments

B. Description of Applied Sampling Method

No	Subject to be discussed	Countries										
		Bangladesh	**Fiji**	**Sri Lanka**	**Cambodia**	**Thailand**	**Pakistan**	**Nepal**	**Lao PDR**	**Myanmar**	**India**	**Indonesia**
1	How is the implementation of sampling method for:											
	- seed and plant propagating materials,	random, haphazard sampling, fixed sampling	Not applicable	5%		NPPO review of consignments import,	Fresh fruits and vegetables are very prone to insect pests.	Sampling grain for food/feed in container is	-	-	Sampling grain for food/feed in container is	It based on: - ISTA

		(2%), random sampling (10%)				document, inspection container, and then inspection commodity by take sampling under ISPM 31	Sampling should be done randomly. Probably pack houses to be develop for export purposes	difficult. In container sampling can not be done from middle or end. Bags/cartoon select from front. In other commodities same follow by ISPM 31 in Nepal.			difficult. In container sampling can not be done from middle or end. Bags/carton select from front. The bottom part should be free from insect	
	- Fresh fruit and vegetables	random, haphazard sampling, fixed sampling (2%), random sampling (10%)	Not applicable	20-30%	Sampling for fresh fruit consignments: < 10 cases take all to inspect 11-100 cases take 10% 101-1000 cases take 2% > 1000 take 1%				-	-		Regulation of Minister of Agriculture Number 12/2015
	- Grain for food/feed in non-container	SOP, three tick process, zero tolerance, double rule system, 90% confidence level	Not applicable	-	Sampling size for cereals in bag: < 10 bags take all to inspect 11-100 bages take 10 bags selected at random > 100 bags take 5% (at least 10 bags)				-	-		Use random sampling
	- Cut flowers and heterogeneous consignment	SOP, farm registered and follow GAP, both statistical and non-statistical	Not applicable	20-30%					-	-		Use random sampling
	- Inspection in packing facilities/site area production	Random, 50% sampling in the field	-	5%					-	-		Use random sampling
2	How is the implementation	Random, from bottom	Not applicable	5% of sample is taken	Confidence level of 95%	The lot is homogenous	Yes. Non-statistical	Statistical approach of	-	-	Statistical approach of	- The implementation of

	of sampling method during inspection using statistical approach for grain consignment?	to top		randomly	is commonly used	for pest distribution and using a statistical sampling method for grain consignment	approach used in a biased sample and sample can not reliably extrapolated to make statement	sampling is good but sometime we have to use other method also			sampling is good but sometime we have to use other method also	sampling method during inspection using statistical approach for grain consignment is only inspection in bulk - If the utility statistical approach for grain consignments is randomly sampling and minimal 5 samples/lot
3	Does NPPO also use non-tatistical approach for sampling? When the approach is being used?	Yes, for mixed consignment	Not applicable	No	Yes	Yes. Non-statistical approach used in a biased sample and sample can not reliably extrapolated to make statement	When required, it can be used	Yes. In bulk containers	-	-	Yes. In bulk containers	- The low risk commodities and not detection laboratory. - When the consignments have high risk and small size of consignments
4	Is there any other consideration for the implementation of sampling method based on a country's level of protection?	No	Not applicable	When importing planting materials in small quantitives inspect whole the consignments (visual inspection)	No	Yes. Non statistical approach used in a biased sample and sample can not reliably extrapolated to make statement	Yes. There is always need to follow proper sampling methodologies	Yes. It can be used other sampling techniques based on requirements	-	Nil	Yes. It can be used other sampling techniques based on requirements	Yes. Category of low risk, medium risk, and high risk pest, and depend on facility for inspections of
5	Are there any undetected pests in the consignment when using sampling method based on ISPM No.31?	Yes, for mixed consignment	Not applicable	yes	yes	no	Yes. Pest incidence can be happened	Yes. There is chance of escape of pest by using sampling method based on ISPM 31	-	Nil	Yes. There is chance of escape of pest by using sampling method based on ISPM 31	Yes. There are low risk pest from a country pest free area. Besides that, in ISPM 31 has completely procedures for sampling method. Undetected because of human error
6	How often does NPPO encounter	-	Not applicable	rarely	yes	-	If sampling procedures	Often it may happen	-	-	Often it may happen	Not often

	undetected pests during inspection using sampling technique based on ISPM No.31?						not used statistically, it may occur several times	because it depends on commodity pests			because it depends on commodity pests	
7	What are the measures undertaken to improve sampling for undetected pests in the consignment?	SOP	Not applicable	Sophisticated instruments have to supply to identify pests in samples (eg. Bemisia tabaci)	Sanitation and phytosanitary treatment	- sampling distribution in the consignment - take sampling under sample size	Periodically training about sampling procedures for plant quarantine inspector must be given	Some unconventional methods of sampling may be used for undetected pests	-	-	Some unconventional methods of sampling may be used for undetected pests	Method of sampling and size of sampling. The measures under taken is additional sampling method
8	Does the sampling technique in ISPM No.31 can be applied for all kinds of pests (insect, fungi, bacteria, nematode and virus including contaminated weed seeds)?	yes	Not applicable	yes	yes	yes	Yes. It should be followed as ISPM 31. Including quarantine pests	Yes. It can be applied for all pests	-	yes	Yes. It can be applied for all pests	Yes, it does
9	How effective is the sampling method for interception of pests in consignments of small quantity?	with zero tolerance	Not applicable	Effective for small consignments	Difficult to take sample to the laboratorium	the consignments of small quantity are difficult to testing in laboratory	Equally effective	Small quantity commodity should be inspected 100%	-	-	Small quantity commodity should be inspected 100%	It's difficult to sampling method and depend on or high risk against quarantine pests
10	Does NPPO use ISPM No.31 for Phytosanitary Certification of consignments that have been rejected by the importing country due to the presence of live insect?	No	Not applicable	yes	No	No. NPPO rejected consignment that found quarantine pest or no treatment method to eliminate pest	Yes. Sampling should be done for rejected consignments also it may carry quarantine pests	Yes. It should be used some sampling methods	-	No	Yes. It should be used some sampling methods	-
11	What obstacle	To develop a common/harm	Not applicable	When there are mite,	-	The variety of consignments	-inspection of commodity	Different commodity	-	-	Different commodity	-

	does NPPO encounter during conducting sampling in a variety of consignments based on ISPM No.31? Any suggestion to improve the method?	onization sampling method for APPPC countries		consignments have to inspect lot of units/boxes		have small quantity	- size of commodity -sampling should be done as per commodity	different sampling techniques used			different sampling techniques used	
CONCLUSION		Different sampling methods should be developed for each and every item of commodition	-	-	-	NPPO can applied sampling method each consignments sampling distribution are probability distribution for interception of pest in consignments	Sampling of fresh fruits and vegetables is to be followed random selection of packages. Statistical approach to be followed for sampling. Sampling of fruits and vegetables are possibly done in pack house to against pest problem. For small quantity inspection is 100%	The cargo in container is steepped as bulk/in bags/in cartoons. Sampling is not possible as per ISPM 31. In my view from selected bags or cartoons. The bags or cartoons should be emptied completely. Shake the commodity, bottom position seived to detected pests	-	-	The cargo in container is steepped as bulk/in bags/in cartoons. Sampling is not possible as per ISPM 31. In my view from selected bags or cartoons. The bags or cartoons should be emptied completely. Shake the commodity, bottom position seived to detected pests	The methode of sampling very important for phytosanitary certificate. ISPM 31 is actually general requirement. The implementation depend on each country condition. The kind of sampling method do not depend on target pest but depend on specific kind of consignment

C. Content of ISPM No.31

No	Subject to be discussed	Countries										
		Bangladesh	**Fiji**	**Sri Lanka**	**Cambodia**	**Thailand**	**Pakistan**	**Nepal**	**Lao PDR**	**Myanmar**	**India**	**Indonesia**
1	Does NPPO agree that the application of sampling method may use modified	Yes	Not applicable	Yes	Yes	Yes	Yes	Yes, indeed	-	Yes	Yes, indeed	Yes

	techniques depending on the kinds of commodity and target pests?											
2	Does NPPO use the same sampling method for various target pests at the same time of inspection?	No	Not applicable	Yes	Yes	No	No	No. Because on commodities sampling techniques should be used	-	Yes	No. Because on commoditie s sampling techniques should be used	Yes
3	Does NPPO use sampling technique with the same method for the sampling of consignment in ship cargo or container?	No	Not applicable	No	Yes	No	No. Sampling technique will be performed separately	Sampling techniques are different from steped commodities	-	-	Sampling techniques are different from steped commoditie s	Yes
4	Does ISPM No.31 need SOP?	Yes	Not applicable	Yes	Yes	Yes	Yes	Yes. It should be developed by IPPC	-	Yes	Yes. It should be developed by IPPC	Yes
5	Does ISPM No.31 need amendment for each target pest (insect, fungi, bacteria, virus, nematodes, and weed)?	Yes	Not applicable	Yes	-	Yes	Yes. Amandment should be done time to time in SOP's	Yes	-	Yes	Yes	No
6	Does ISPM No.31 need revision for each purpose? (quarantine purpose, surveillance, PFA, establishment	Yes	Not applicable	Yes	-	Yes	Yes. Revision is required periodically in ISPM 31	Yes	-	Nil	Yes	No

	purpose, etc.)											
7	Does NPPO agree to utilize other standard sampling protocols aside from ISPM No.31?	Yes	Not applicable	Yes	No	Yes	Yes. There is need of time under the new scenario	Yes, agree	-	Nil	Yes, agree	No
8	Does NPPO consider monitoring non-regulated commodities by checking airline manifests and random sampling of passengers?	Yes	Not applicable	Yes	Yes	-	Yes. Air passengers and baggages should be screened for quarantine pests	Yes	-	-	Yes	No
Conclusion		NPPO should be independent and there should be independent quarantine department in each/every country	-	Should prepare a SOP for ISPM 31 for Asia Pacific region	-	-	NPPO of in country need to establish SOP's for sampling and target pests. There should be a revision of SOP's from time to time for better implementation of the standard	IPPC being governing body should develop SOP's for sampling of different commodities and target pests	-	-	IPPC being governing body should develop SOP's for sampling of different commodities and target pests	The ISPM No.31 no need revision

D. Improvement of the application of ISPM No.31

No	Subject to be discussed	Countries										
		Bangladesh	**Fiji**	**Sri Lanka**	**Cambodia**	**Thailand**	**Pakistan**	**Nepal**	**Lao PDR**	**Myanmar**	**India**	**Indonesia**
1	Does NPPO need a capacity building to enhance/improve the application of ISPM No.31?	Yes	Yes	Yes	Yes	Yes	Yes	Very much required	-	Yes	Very much required	Yes, at least once a year
2	What type of capability	Training, workshop	As mentioned	Training	Training	The type of capability	Periodically training of	Periodical training for	-	Training	Periodical training for	Training about not only theoritical of

	building activity (training, workshop, etc.) is needed to support the sampling method used by NPPO?		in the APPPC ISPM No.31 discussion, Fiji needs more training on sampling techniques for inspections			building activity is training the sampling method (ISPM No.31)	sampling as per ISPM 31	field official at interntional level is required			field official at interntional level is required	sampling but also how to formulate, modify or set sampling technique supported by influenced factors so that its applicable or possible to do
3	Does Asia Pacific need a regional standard for sampling method for specific consignment?	Yes	Following the training, Fiji will be developing SOP for sampling and alishing with other standards and requirements of the countries	Yes	No	Yes	Yes	Yes. In line with RSPM's sampling methods can be developed	-	Yes	Yes. In line with RSPM's sampling methods can be developed	Yes
Conclusion		Capacity building for quarantine people is very much essential through training, meeting, and workshop	Training on sampling is vital for Fiji	Asia Pacific region need to prepare a standard for sampling method for various types of consignments	-	-	There is a need to conduct periodecal training of personnels to enhance capacity in the field of sampling procedure. Which will be helpful in pest detection	Trainings to field officialy for capacity building to be given time to time to update knowledge and improvement in sampling techniques of different commodities	-	-	Trainings to field officialy for capacity building to be given time to time to update knowledge and improvement in sampling techniques of different commodities	For the implementation of ISPM 31 in Asia Pacific need to hold workshop/ training/capacity building for harmonization of sampling method

Annex 7

Discussion on further activities for the development of sampling technique

No	Country	Comments regarding further activities on ISPM No. 31
1.	Australia	- Sampling depends on the target pests - There are no specific SOP for sampling, the guidelines and systems used are flexible according to the situation
2.	Bangladesh	- Need a common methodologies sampling in region - Improve capacity by training or workshop
3.	Cambodia	- Workshop is important, but need a specific traning or workshop more related to specific topic, based on consignment and target pests
4.	China	- China has own standard on sampling - Need more specific regional sampling standard - Improve capacity building by organizing training on specific tehcnique sampling
5.	DPR Korea	- This workshop has given a lot of knowledge about sampling methods from all member countries. - Organize training for implementation on ISPM 31 which is more specific
6.	Fiji	- Proposed training for sampling method and treatment - Need specific SOP for sampling methods
7.	India	- Need specific and detail regional SOP and training on sampling (specific for consigment or target) - Information website link for regional
8.	Indonesia	- it is a valuable workshop to collect and sharing information to make regional standard. - Need more focus on the specific sampling based on risk and commodity in the next workshop (specific topic i.e. sampling for seed or propagating materials reference based ISTA for regional standard)
9.	Korea Rep. of	- Proposed a regional standard for sampling using statistical method - Organize workshop and training focusing on specific topic
10.	Lao PDR	- Need an SOP to support implementation of ISPM No. 31 - Need specific trainings for sampling
11.	Malaysia	- Organize workshop for specific sampling implementation
12.	Myanmar	- Organize workshop and training focusing on specific topic
13.	Nepal	- New pest should be reported
14.	Pakistan	- have learn a lot of information about sampling from another country. - Export visit should be continued to mutual recognition for sampling method among import and exporting country - Need to organize workshop and training for sampling
15.	Philippines	- Hope Indonesia can initiate the SOP for regional sampling to be discussed on further meeting and can be adopted for regional country - An SOP as annex to ISPM 31, sampling on seeds and planting materials is important
16.	Samoa	- Sampling and treatment procedure is important - Need workshop and training on sampling for specific topic, including treatment (fumigation)
17.	Sri Lanka	- Need workshop and training on sampling for specific topic
18.	Thailand	- Need SOP for sampling - Organize training and workshop sampling for specific topic, in order to exchange experiences among countries

19.	Timor-leste	- Timor-Leste has no SOP on sampling. Quarantine inspection only from document checking - Still need more information about sampling - Need training on methodologies on sampling consignment, especially on grain
20.	Viet Nam	- Need SOP for specific commodity. - This workshop is important to share knowledge, collect information for sampling to improve the sampling technique - Organize training or workshop on sampling for specific topic

Annex 8

Field trip activities

Figure 1. A visit to quarantine station in Bogor which is one of branches of quarantine services in Tanjung Priok Seaport with working area particularly for export and domestic quarantine and a collection house for commodities gathered from import, export, and domestic inspection and also for common pests in Indonesia and quarantine pests specimens.

Figure 2. A visit to Historical of Botanical Garden in Bogor