Project Completion Report on

Phytosanitary Capacity Evaluation of Bangladesh Plant Quarantine System

Submitted by

Dr. Ravinder Kumar Khetarpal*

(Consultant, USDA)

CABI Associate

CABI, Nosworthy Way, Wallingford

Oxfordshire, OX10 8DE, UK

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Abbreviations

APAARI	Asia Pacific Association of Agricultural Research Institutions
APHIS	Animal and Plant Health Inspection Service
BARI	Bangladesh Agricultural Research Institute
BARC	Bangladesh Agricultural Research Council
BFSA	Bangladesh Food Safety Authority
CA	Control Agents
CABI	Centre for Agriculture and Bioscience International
Codex	Codex Alimentarius Commission
DAE	Department of Agricultural Extension
FAS	Foreign Advisory Service
FAO	Food and Agriculture Organization of the United Nations
FAW	Fall Armyworm
GDP	Gross Domestic Product
GMO	Genetically Modified Organism
GoB	Government of Bangladesh
IAS	Invasive Alien species
IFPRI	International Food Policy Research Institute
IPPC	International Plant Protection Commission
ISPM	International Standard for Phytosanitary Measures
LMOs	Living Modified Organisms
MoA	Ministry of Agriculture
MoC	Ministry of Commerce
NPPO	National Plant Protection Organization
NPQA	National Plant Quarantine Authority
PASA	Participating Agency Service Agreement
PCE	Phytosanitary Capacity Evaluation
PFA	Pest Free Areas
PQW	Plant Quarantine Wing
PRA	Pest Risk Analysis
RNQP	Regulated Non-Quarantine Pests
RPPO	Regional Plant Protection Organizations
SAARC	South Asian Association for Regional Cooperation
SAC	SAARC Agriculture Centre
SMART	Specific, Measurable, Achievable, Relevant and Time Bound
SME	A small to mid-size enterprise
SOPs	Standard Operating Procedures
SPS	Sanitary and Phytosanitary
STDF	Standards and Trade Development Facility
ToR	Terms of References
TFA	Trade Facilitation Agreement
UN	United Nations
USDA	United States Department of Agriculture
USAID	Unites States Agency for International Development
WB	World Bank
WTO	World Trade Organization

Executive Summary

Since 2012 USAID and FAS/USDA in its efforts for agricultural trade facilitation for Bangladesh supported the country to improve its SPS compliances through training programs. In 2017 it initiated a holistic Phytosanitary Capacity Evaluation (PCE) of Bangladesh by using the tools (modules) developed by the International Plant Protection Commission of FAO. The 13 PCE modules that were conducted pertained to Country profile, National Phytosanitary legislation, Environmental forces assessment, NPPO's mission and strategy, NPPO's structure and process, NPPO's resources, Pest diagnostic capacity, Pest surveillance and pest reporting capacity, Pest eradication capacity, Pest risk analysis, Phytosanitary import regulation, Pest free areas, places and sites, low pest prevalence areas, and Export certification, re-export and transit.

The findings of PCE has highlighted various domains of the phytosanitary system where in there are some strengths but huge gaps in complying with the SPS Agreement of WTO by Bangladesh. In order to be able to re-engage in improving phytosanitary capacity of PQW and based on gaps or weaknesses observed, after due discussions with relevant stakeholders it was considered important to focus on four key priority areas for capacity building. These included strengthening of pest risk analysis system, NPPO's structure and processes, export certification system and import inspection system. The gaps in legislative, technical, structural, organizational and human resource aspects of these four technical areas were identified and recommendations made for capacity building to plug the gaps on priority. Besides, the DAE/PQW has initiated the process in a limited way to finalize the establishment of the proposed National Plant Quarantine Authority on priority. This would also bring in a governance model where NPPO shall acquire autonomy and will have freedom for financial management of its activities, administrative powers for appointments of its own technical staff, to retain the capacity that is being built and also to take decisions on technical matters with a scientific rationale. This is in fact a challenging task and lot will depend upon the political commitments and the in-depth exercise and knowledge to achieve the same.

It was also considered important to invest more on developing human resources and the processes than on infra-structure development. Also awareness on SPS, developing a knowledge management system, linkages with various stakeholders and risk communication strategy and legislative amendments by PQW/DAE would go a long away to support the capacity that will be developed for the PQW.

A roadmap for improving the phytosanitary capacity of Bangladesh is proposed and the need for a clear strategy plan has been highlighted.

Project Completion Report

Phytosanitary Capacity Evaluation: Plant Quarantine System

I. Background

USDA/FAS has been working with Bangladesh since 2012 to increase the country's ability to comply with international phytosanitary and food safety trade standards and to develop into a productive trading partner for the U.S. and internationally. In 2018, Bangladesh was the United States' 23rd largest agricultural export market with a value of $1.1 billion of U.S. agricultural exports. The establishment of a national phytosanitary regulatory system that applies a scientific approach to pest risk analysis and risk assessment for both domestic production and imports can greatly benefit Bangladesh, and ultimately ensure that U.S. exports are not impeded by arbitrary phytosanitary regulations. Bangladesh exporters will also benefit when their phytosanitary regulatory officials understand international plant protection standards.

Keeping the above in view, USDA/FAS and the Plant Quarantine Wing (PWQ), Department of Extension Services (DAE), under the Ministry of Agriculture, have collaborated since 2014 to build institutional capacity for pest detection and surveillance through concerted training and technical assistance on, specifically: port inspections; biosecurity; pest identification, and an IPPC-sponsored phytosanitary diagnostic capacity evaluation of the national system (2018).

The USDA signed a Consultancy Agreement with CABI on Phytosanitary Capacity Evaluation (PCE) of Bangladesh on 8/20/2016 which was extended twice (due to administrative and other reasons beyond the control of USDA) to accomplish the task by to 05/31/2018. A report was submitted on Phytosanitary Capacity Evaluation (PCE) that was based on running the PCE modules in Bangladesh which helped in analyzing the gaps in the phytosanitary system in a holistic manner. Since no concrete action were taken to operationalize the recommended priority interventions as outlined USDA later intended to re-engage with government authorities to implement some of the top priority actions as outlined by the PCE evaluation and gain the government's commitment to the recommendations made.

The present report deals mainly with the USDA Agreement signed again with CABI on 08/20/2018 to 09/30/2019 which was extended to 12/31/2019.

II. Introduction

The Phytosanitary Capacity Evaluation (PCE) of Bangladesh had provided an excellent opportunity to know the status of phytosanitary system in Bangladesh and to identify gaps in regulatory, technical, financial and administrative components though an active stakeholder participation in a very comprehensive and structured manner. The PCE exercise was undertaken with all the 13 modules of International Plant protection Convention (IPPC). The exercise which did take time and energy was eventually very useful in giving a holistic view of the phytosanitary scenario. The process was implemented through consensus amongst concerned stakeholders (public and private) to identify the strengths and weaknesses of the phytosanitary system.

The PCE has clearly highlighted various domains of the phytosanitary system where in there are some strengths but huge gaps in complying with the SPS Agreement of WTO by Bangladesh. Based on the gaps or weaknesses observed the areas to be addressed are deduced at activity and generic level. The details were recorded in the project report submitted to FAS/USDA by the Consultant earlier on 10 May, 2018.

The PCE findings were duly shared with the senior officials in the Ministry of Agriculture for ensuring a political will to invest further in the field. This also involved emphasizing to the Government on the immediate need to finalize the establishment of the proposed National Plant Quarantine Authority. This was proposed to provide a governance model where NPPO has freedom for financial management of its activities and gets administrative powers for an effective governance for appointments of technical staff and to retain the capacity that is being built and for taking decisions on technical matters with a scientific rationale. Later a presentation was made to the various stakeholders on the findings of the PCE modules in conjunction with staff of USDA (Washington) and Foreign Agricultural Attaché of US in Bangladesh. Discussions were held on the roadmap and the need for a strategy plan to be developed by USDA/USAID for strengthening the phytosanitary capacity in Bangladesh. As an outcome of the meeting and also in subsequent discussions it was agreed upon that there is need for prioritizing the actions by addressing the gaps in some crucial technical areas viz., pest risk analysis, export certification system, import inspection system and NPPO's structure and processes including resources which are considered to be the core aspects of the compliances to SPS.

The present report deals in further discussions with various relevant stakeholders in Bangladesh to provide capacity building recommendations in prioritized core areas and to develop a roadmap for developing phytosanitary capacity of Bangladesh by highlighting the need for developing a strategy plan for the same.

III. Terms of References

1. Provide technical inputs in finalizing the agenda and briefing documentation for a High level Meeting with Government of Bangladesh (GoB) on the findings of the Phytosanitary Capacity Evaluation.

2. Travel to Bangladesh in early August for discussions with USDA and USAID staff to finalize the discussion points and presentations for a meeting with senior officials of the GoB.

3. Provide assistance to USDA/FAS leading up to the presentation to ensure a comprehensive and holistic presentation

4. Present the PCE tool evaluation findings to senior officials of the Department of Agricultural Extension and other officials from the Ministry of Agriculture.

5. Contribute to the dialogue on strengthening the national plant health system by providing capacity building recommendations to enable policy and regulatory changes.

*6. Attend a technical session following the PCE presentation as the SME team lead with expertise on the following topics: NPPO structure and regulatory reform; pest risk analysis; export certification systems; pest surveillance; facilitation and diagnostic analysis.

7. Discuss a Roadmap for developing phytosanitary capacity of Bangladesh in association with USAID senior officials and highlight the need for developing a strategy plan for executing the same.

8. Provide a final report of the assignment undertaken as above.

***Regarding this item 6 of the ToR, the technical session following the PCE presentation did not take place and the time was utilized more for discussions with thel stakeholders on the modalities of moving ahead for re-engaging with PQW/DAE.*

IV. Work Plan

The Work Plan consisted of the following steps as per the defined items of Terms of Reference (ToR):

Preparing for a high-level meeting in Bangladesh to present the findings of the PCE, and to discuss on developing a Roadmap for phytosanitary capacity building in Bangladesh (Tor 1-4)

This items of ToR (1-4) were a part of the previous contract of USDA, and was undertaken on 6th August 2018 during August 4-8 mission in Dhaka. However, this was not accounted for in the earlier reports. Therefore, it was considered important to make a brief mention of the same here as during this workshop not only the PCE findings were presented and discussed with key stakeholders of Bangladesh, but also discussions on developing a roadmap for developing a strategy plan was initiated.

The program for the Workshop for High Level Presentations was drawn after due consultant with USDA/USAID/DAE is given in Annexure 1A, the presentations made by the Consultant is given in Annexure 1B and the summary of the discussions, presentations and conclusions made are given in Annexure 1C.

Contribute to the dialogue on strengthening the national plant health system by providing capacity building recommendations to enable policy and regulatory changes (ToR 5)

This was undertaken initiated during August 4-8, 2018 mission and continued in July 2-7, 2019 mission. For achieving this objective a continued in-depth discussions were held with staff of DAE, more specifically with the Director PQW and some of his senior staff, other national (BARI, BARC) and international (IFPRI, FAO, SAARC) Organizations at Bangladesh. Those contacted are listed below:

- Kbd. Mir Nurul Alam, Director General (DG), Department of Agricultural Extension (DAE)
- Dr. Md. Abdul Muyeed. Director, Field Services Wing, DAE
- Dr. Md. Azhar Ali, Director Plant Quarantine Wing (PQW)
- 1:1 discussions with some core staff of the PQW
- Dr. Abul Kalam Azad, DG, Bangladesh Agricultural Research Institute BARI, Gazipur
- Dr. Debasish Sarker, Chief Scientific Officer & Head Entomology Division, BARI
- Dr. Syed Nurul Alam, Director (PRL) Planning and Evaluation Wing, BARI
- Dr Akhter Ahmed Country Representative, International Food Policy Research Institute,
- Dr SM Bokhtiar, Director, SAARC Agricultural Committee (SAC) of South Asia association of Agricultural Research Institute (SAARC); Rudra Bahadur Shresta, Senior Program Specialist, SAC; Pradyumna Raj jPandey Senior Program Specialist, SAC; Dr. Md. Younus Ali, Senior Technical Officer, SAC; Nasreen Sultana, Senior Program Specialist, SAC;and his Subject Matter Specialist
- Shaheeduddin Ahmad. Facilitator, USDA, Bangladesh

Some interactions could not take place due to unavailability of the officials. (This include Robert D. Simpson, FAO Representative in Bangladesh: Mr. Nur Khondaker, Assistant FAO Representative; Anil Kumar Das, National Consultant, FAO, Bangladesh)

A brief summary of the interaction with various stakeholders during the mission is given in Annexure 2.

Besides, in-depth regular discussions separately with USDA/ USAID representatives (concerned with the project) during the mission and also regularly on mails and regular skypes played a critical role in appreciating the status of both US Government and the Bangladesh Government.

- Emanuela Montanari-Stephens, Office of Capacity Building and Development, Foreign Agricultural Service, USDA, Washington, DC
- Jessica Mudjitaba-Fernández, Office of Capacity Building and Development, Foreign Agricultural Service, USDA Washington, DC
- Mitch Nelson (USAID, Bangladesh)

The summary of key points captured during these discussions are also given in Annexure 2.

Discuss a Roadmap for developing phytosanitary capacity of Bangladesh in association with USAID senior officials, and highlight the need for developing a strategy plan for executing the same (ToR 7)

This was finalized based on the series of activities which included the findings of the several PCE sessions conducted, discussions with DG and other senior officials of DAE, Director PQW and his batch of staff, High level Presentation Workshop held to discuss the PCE findings, telephonic discussions with Mr Orlando Sosa (IPPC, FAO, Rome), group and 1:1 discussions with various national and international Institutes located at Dhaka and also desk work undertaken on Bangladesh trade scenario with respect to SPS compliances..

The Conclusions and Recommendations including Roadmap for developing phytosanitary capacity of Bangladesh and highlights on the need for developing a strategy plan was earlier given in the final report of the previous contract agreement submitted on 10 May, 2018.

The present report deals with the fine-tuned version of the Roadmap which is based on further intensive discussions with DAE, and their commitments and critical discussions with USDA/USAID representatives for the practical way forward by prioritizing the capacity building domains.

Key Outputs

1. Outputs from the High-level Presentation Workshop:

The 13 PCE modules that were conducted pertained to Country profile, National Phytosanitary legislation, Environmental forces assessment, NPPO's mission and strategy, NPPO's structure and process, NPPO's resources, Pest diagnostic capacity, Pest surveillance and pest reporting capacity, Pest eradication capacity, Pest risk analysis, Phytosanitary import regulation, Pest free areas, places and sites, low pest prevalence areas, and Export certification, re-export and transit. The key outputs were:

- The PCE has highlighted various domains of the phytosanitary system where in there are some strengths but huge gaps in complying with the SPS Agreement of WTO by Bangladesh.
- Based on the gaps or weaknesses observed the areas to be addressed were defined at activity and generic level
- Investing in addressing the gaps in some crucial technical areas such as NPPO's structure and processes, pest surveillance and pest reporting, pest risk analysis and export certification would be more logical approach to build capacity of PQW.
- Important to spend more on developing human resources and the processes than on infra-structure development
- Need to share the PCE findings with the senior officials in the Ministry of Agriculture to get their buy-in.
- The DAE/PQW needs to finalize the establishment of the proposed National Plant Quarantine Authority on priority. This would also bring in a governance model where NPPO shall have freedom for financial management of its activities, administrative powers for appointments of its own technical staff, to retain the capacity that is being built and to take decisions on technical matters with a scientific rationale.
- Also awareness on SPS, knowledge management system, linkages with various stakeholders, Risk communication strategy and legislative amendments would go a long away to support the capacity that will be developed for the PQW.
- Linkages with various stakeholders, Risk communication strategy and legislative amendments would go a long away to support the capacity that will be developed in PQW.
- A clear strategy plan with time frame needs to be developed to undertake the phytosanitary capacity building for PQW.

Action to be Taken by PQW/DAE

- It is now the task of the PQW (NPPO) to organize a national validation workshop with relevant national and external stakeholders to discuss the findings of the PCE and to get a buy-in from the higher authorities for further capacity building.

- The PQW (NPPO) also needs to get in touch with IPPC, Rome (where the outcomes of the PCE exercise for all the 13 modules were submitted online on regular basis) to seek further advise and support. This is good possibility of receiving a Technical Cooperation Project from FAO if the gaps are highlighted to FAO by the Ministry of Agriculture in a very rational manner.
- The PQW (NPPO) need to ensure that plant protection officials are clear on the strategy to develop phytosanitary capacity and there is transparency and buy-in to support capacity development actions.

2. Prioritizing Capacity Building Areas to be Addressed

USDA/FAS has been working with Bangladesh since 2012 to increase the country's ability to comply with international phytosanitary and food safety trade standards and to develop into a productive trading partner for the U.S. and internationally. USDA/FAS has supported in institutional capacity for pest detection and surveillance through concerted training and technical assistance on, specifically: port inspections; biosecurity; pest identification, and an IPPC-sponsored phytosanitary diagnostic capacity evaluation of the national system (2018).
It seems, till date no concrete action has been taken to operationalize the recommended priority interventions as outlined in the Phytosanitary Capacity Evaluation (PCE diagnostic tool).

Detailed discussions with USDA gave an indication that FAS/USDA intends to re-engage with government authorities to implement some of the top priority actions as outlined by the PCE evaluation and possibly gain the government's commitment to establish a fully functioning National Plant Protection Authority. USDA/USAID may agree to reinvest on building human capacities and may not invest on infra-structure.

In order to strengthen the institutional capacity of the PQW, it was considered important to prioritize the needs for capacity building that can be captured in the roadmap on how to address the key gaps identified in the phytosanitary capacity evaluation (PCE) self-diagnostic evaluation tool as follows:

Through due diligence of extensive consultative process with IPPC/FAO, Rome, FAS/USDA, USAID and DAE experts following four areas were prioritized for capacity building of PQW:

a. To strengthen the NPPO structure and processes (including allocation of resources)
b. To strengthen the national pest risk analysis system
c. To strengthen the import inspections system (for a successful 2-way trade and to streamline entry)
d. To strengthen the national export certification system (focusing on market access)

3. Capacity Building – Rationale and Areas to be Addressed

3.1 To Strengthen the National Pest Risk Analysis System

Rationale: Pest Risk Analysis (PRA) is a core phytosanitary activity. The NPPO capacity to conduct Pest Risk Analysis indicates its ability to comply with the international agreements in relation to the application of phytosanitary measures for the exclusion of regulated pests

To develop capacity in the PRA area it was considered as a pre-requisite to look at the existing situation and performance of NPPO's PRA activities and understanding the desired future situation of NPPO's PRA activities *vis a vis* the provisions in various ISPMs. It is thus important to note the following:

- Article VI.1b of the International Plant Protection Convention (IPPC, 1997) requires that phytosanitary measures are: 'limited to what is necessary to protect plant health and/or safeguard the intended use and can be technically justified by the contracting party concerned.'
- ISPM 3 guidelines for the export, shipment, import and release of biological control agents and other beneficial organisms (2005) provides guidelines for risk management related to the export, shipment, import and release of biological control agents and other beneficial organisms.
- ISPM 11 Pest Risk Analysis for Quarantine Pests Including Analysis of Environmental Risks and Living Modified Organisms (2013) provides details for the conduct of pest risk analysis (PRA) to determine if pests are quarantine pests. It describes the integrated processes to be used for risk assessment as well as the selection of risk management options.
- ISPM 21 Pest Risk Analysis for Regulated Non-Quarantine Pests (2004) provides guidelines for conducting PRA for regulated non-quarantine pests (RNQPs). It describes the integrated processes to be used for risk assessment and the selection of risk management options to achieve a pest tolerance level.
- ISPM 24 - Guidelines for the Determination and Recognition of Equivalence of Phytosanitary Measures (2005): discusses the applicable principles and requirements for the determination of equivalence of phytosanitary measures.

Areas to be Addressed for Capacity Building for Strengthening the PRA system

The areas that need to be addressed are many and a comprehensive approach is given below that not only concerns the technical process of undertaking PRA but also deals with capacities in areas that need to be built to have an enabling environment to undertake PRA and to optimally use it for the process of trade facilitation. The specific gaps to be addressed in different domains that governs the efficiency of PRA are given in the Table below:

Areas to be Addressed for Capacity Building for Strengthening the PRA system

1.Legislative gaps to be plugged	• Giving the authority to approve/ accredit/ contract phytosanitary service providers from the official or private sectors to collaborate in some of the PRA stages. • Having provision to allow NPPO to charge fees for the PRAs performed. • Having provisions to include the adopted phytosanitary requirements, restrictions or prohibitions, shall be immediately published and transmitted to contracting parties that NPPO believes may be directly affected. • Establish the NPPO obligation to promptly review the PRA, when there is new relevant information available.
2.Improving Organizational structure and competences	• Need to appoint a national PRA manager/unit responsible for the PRA process. • A written job description for the staff to carry out their functions effectively and in accordance with international phytosanitary standards. • Having an organizational chart of the PRA service. • The NPPO need have linkages with the relevant stakeholders to get support and improve the quality of the PRA service. • NPPO's phytosanitary service providers involved in some steps of the PRA process need to be approved/ accredited or contracted by the NPPO.
3.Developing the documented procedures	• Developing an operational manual for the PRA process. • Storing the information in a computerized retrieval system. • Establishing linkages with other NPPO's programs (pest surveillance, import inspection) in the PRA operational manual. • Establishing procedures for PRA of LMOs in accordance with ISPM 11. • Developing a written procedure to perform PRA of consignments in transit. • Developing an internal technical review and audit program to improve the quality of the PRA process. • Making the type and level of inspection based on pest risk analysis.
4.Building an appropriate HR capacity	• Training of NPPO staff to conduct climatic analysis using tools such as CLIMEX and others. • Recruiting a minimum core group of staff specialized in weed science, mycology, bacteriology, entomology, virology and LMOs. • Capacity to be built within NPPO: ➢ To determine whether the pest could cause an unacceptable economic impact for pest categorization purposes. Experts for that matter seems to be available elsewhere but not within organization. ➢ To undertake economic impact assessment expertise to estimate potential economic impacts of regulated pest(s), both direct and indirect pest effects, using economic analysis techniques. ➢ To determine under what circumstances integrated pest management measures (systems approach) can be used and can they evaluate the measures. ➢ To evaluate the integrated risk management measures proposed by trading partners. ➢ To undertake any research on various integrated pest risk management measures or to work closely with other institutions or agencies (government and private) within the country undertaking such research.

Need for a Holistic Capacity Building Program of NPPO

- **The PRA unit needs to be established on priority.** The objectives of the PRA unit need to be SMART i.e. specific, measurable, achievable, relevant and timely. There is a need of developing review mechanism of performance of the unit.
- There is a need to develop a set of good indicators for measuring the effectiveness and efficacy of the PRA program. Indicators that could be used for measuring the status of the PRA program' s relevance are as follows:
    - Increasing number of import permits
    - Decreasing number of interceptions
    - Increasing number of market access
    - Functioning of an efficient PRA unit

3.2 To Strengthen the National Export Certification System (Focusing on Market Access)

Rationale: Export certification is an essential component and a core activity of the NPPO. Under IPPC it is established that, contracting parties should exercise due diligence in operating an export certification system and ensuring the accuracy of the information and additional declarations contained in phytosanitary certificates. The basic elements of the phytosanitary certification process include: ascertaining the relevant phytosanitary requirements of the importing country (including import permits if required) verifying that the consignment conforms to those requirements at the time of certification issuance of a phytosanitary certificate.

To develop capacity in the national export certification system area it was considered as a pre-requisite to look at the existing situation and performance of NPPO's activities and understanding the desired future situation of NPPO's export certification system activities *vis a vis* the provisions in IPPC and various ISPMs. It is thus important to note the following:

- Under IPPC Article IV.2.as it is indicated that the responsibilities of an official national plant protection organization shall include the issuance of certificates relating to the phytosanitary regulations of the importing contracting party for consignments of plants, plant products and other regulated articles.

- ISPM 7 - Phytosanitary certification system (2014): describes the components of a national system for the issuance of phytosanitary certificates for export. Exported consignments certified under these systems should meet the current phytosanitary requirements of the importing country.

- ISPM 12 - Phytosanitary certificates (as revised by CPM-9, 2014): describes principles and guidelines for the preparation and issue of phytosanitary certificates.
- ISPM 23 - Guidelines for inspection (2005): describes the procedures for the inspection of consignments of plants and plant products and other regulated articles at import and export.
- ISPM 25 - Consignments in Transit (2006): The standard describes procedures to identify, assess and manage phytosanitary risks associated with consignments of regulated articles, which pass through a country without being imported, in a manner that any phytosanitary measures applied in the country of transit are technically justified and necessary to prevent the introduction into and/or spread of pests within the transit country. This standard provides guidelines by which the NPPO of the country of transit may decide which movements require intervention of the NPPO and are subject to the application of phytosanitary measures, and if so, the type of phytosanitary measures to be applied.

Areas to be Addressed in for Capacity Building in Export Certification System

The areas that need to be addressed are many and a comprehensive approach is given below that not only concerns the technical process of approvals and issuance of certificates but also deals with capacities in areas that need to be built to have an enabling environment to undertake export certification system for facilitating trade. The specific gaps to be addressed in different domains that governs the efficiency of export certification system are given in the Table below:

Areas to be Addressed for Capacity Building in Export Certification System

1.Legislative gaps to be plugged	• The authority of NPPO to refuse the issuance of the phytosanitary certificate for the export of consignments do not meet an importing country's requirements. • NPPO need to have the authority to approve/accredit phytosanitary service providers from the official or private sectors to collaborate in the export certification program (field inspection, packing inspection, treatment, inspection and storage facilities, etc.). • The quarantine fees are to be charged on a cost recovery base. • NPPO to have an efficient and transparent management system that ensures that all requirements, including certification, legislative and technical requirements and administrative requirements, are satisfied for each certificate issued. • NPPO's export certification need have an operational manual. • NPPO to maintain up-to-date information on the import requirements of importing countries. Also this information is not stored in a computerized retrieval system. • NPPO to have documented procedures and work instructions to cover the following key aspects of the certification system: ➢ Control over issuance (manual or electronic) ➢ Procedures for working with industry ➢ Consignment identification, trace ability, and security • Records to be kept for any inspection, testing, treatment or other verification which was conducted on a consignment basis. The name of the staff is to be given in the process of verification of consignment. • The information need to be stored in a computerized retrieval system. • All consignments and their certification are to be traceable through all stages of production, handling and transport to the point of export. • NPPO's export certification program need to have a procedure to ensure the phytosanitary security and the consignment's integrity, after the certification until export. • The linkages with other NPPO's programs (pest diagnostics, surveillance, internal quarantine, and phytosanitary inspectors) need to be well established in the export certification manual. • The NPPO has to make available an IPPC contact point for the importing country's NPPO to which cases of non-compliance can be reported. • The NPPO has to establish procedures for investigating reports from importing countries of non-compliant consignments covered by a phytosanitary certificate. • The NPPO to have an internal technical audit program to improve the quality of the export certification program.

	• Certificates to be issued in accordance with the good practices for certificate issuance as established in ISPM 12. • Re export certificate is to be issued in case of re export.
2.Export Certification - Human Resources	• There is need of enough number of staff required by the NPPO's export certification program. • Inspectors in general need to be specifically qualified and trained to perform export certification as per norms. • Training programs for staff involved in export certification though conducted annually by the government, but it has to be ensured that the trained staff do remain in same position for long. • Export certification program's managers need to be trained in management
3.Equipment	• The availability and requirements of equipment and transport in the NPPO's export certification program need to be sufficient to carry on the required operations of diagnostics and disinfestations. • The space for office and inspection facilities in the NPPO's export certification program needs to be increased keeping in view the consignments handled. • Computers and tailored software in the NPPO need to be accessible to all staff.
4.NPPO export certification performance	• There is a set of good indicators to measure the effectiveness of the export certification service. • Following indicators could be used to measure the efficacy of the certification service: a) No rejection by the importer b) Minimum level of interception by the importing country c) Increase the number of Phytosanitary certificate issued.

3.3 To Strengthen the Import Inspections' System (For a Successful 2-Way Trade and to Streamline Entry)

Rationale: The Import regulatory system is an essential component of the NPPO capacity for pest exclusion. It consists of two components: a regulatory framework of phytosanitary legislation, regulations and procedures; and an official service, the NPPO, responsible for operation or oversight of the system.

To develop capacity in the national import inspection system it was considered as a pre-requisite to look at the existing situation and performance of NPPO's activities and understanding the desired future situation of NPPO's import inspection system activities *vis a vis* the provisions in IPPC and various ISPMs. It is thus important to note the following:

- ISPM 20 describes the structure and operation of a phytosanitary import regulatory system and the rights, obligations and responsibilities which should be considered in establishing, operating and revising the system.

- The objective of a phytosanitary import regulatory system is to prevent the introduction of quarantine pests (ISPM 11) or limit the entry of regulated non-quarantine pests with imported commodities (ISPM 21) and other regulated articles. It may include measures concerning consignments in transit as established by ISPM 25, the importation and release of Biological Control Agents (CA) as per ISPM 3, the importation of LMOs and IAS (ISPM 11) or the introduction of pest through containers and wood packing materials (ISPM 15).

- In operating an import regulatory system, the NPPO has a number of responsibilities. These include the responsibilities identified in Article IV.2 of the IPPC (1997) relating to import, including surveillance (ISPM 6), inspection (ISPM 27), disinfestations or disinfection, the conduct of pest risk analysis, (ISPM 2, ISPM 11 and ISPM 21) and training and development of staff.

Areas to be Addressed for Capacity Building in Import Inspection System

The areas that need to be addressed are many and a comprehensive approach is given below that not only concerns the technical process of approvals and issuance of certificates but also deals with capacities in areas that need to be built to have an enabling environment to undertake import inspection system for facilitating trade. The specific gaps to be addressed in different domains that governs the efficiency of import inspection system are given in the Table below:

Areas to be Addressed for Capacity Building in Import Inspection System

1.Legislative gap to be plugged	• The legislation to grant authority to take emergency action.
2.NPPO's role	• An effective liaison mechanism with those public or private services or agencies need to be clearly identified. • The NPPO to have procedures to facilitate cooperation, information sharing and joint clearance activities with other relevant public or private services or agencies as appropriate.
3.Regulatory framework	**The import regulatory system procedures or regulations:** • Need to specify that phytosanitary measures cannot be applied to non-regulated pests. • Need to indicate that plant or plant products destined for consumption cannot be regulated as regulated non-quarantine pests.
4.Organization and management	• The NPPO need to have procedures in place for timely communication to relevant personnel and to the importers (within the country) and the NPPO of the exporting country, concerning changes in Import phytosanitary requirements, pest status and geographical distribution and on operational procedures. • NPPO's phytosanitary service providers who have been approved/or accredited by the NPPO need to be involved in the import process.
5.Documented procedures	**The NPPO to have/provide/keep:** • Management system for the development, maintenance and revision of the import regulatory system and the phytosanitary regulations. • Written procedure for keeping updated lists of regulated pests, as per ISPM 19. • For the NPPO to audit the relevant components of the export certification system (such as production systems, treatments, inspection procedures, phytosanitary management, accreditation procedures, testing, surveillance, etc.) in the country of origin. • Clearly documented procedures and work instructions to cover the key aspects of the compliance check of imports such as documentary checks, consignment identity checks, phytosanitary inspection, sampling, testing, instances of non-compliance, action in case of noncompliance and emergency actions. • Written procedures for reporting the interception, instances of non-compliance and emergency actions. • Written procedures to promptly notify concerned exporting countries about any changes in the phytosanitary regulations or emergency or provisional measures that change the entry procedures. • Written procedures for the authorization under NPPO's control and responsibility, of organizations, agencies or persons to act on its behalf for certain defined functions. • Written procedures which include provisions for the demonstration and audits, corrective actions, system review and withdrawal of authorizations.

	• Written procedures to review cases of non-compliance and emergency action. • Written procedures for consultation, exchange of information and dispute settlement, with other NPPOs, in cases of non-compliance of imports, • Records of all the actions, results and decisions concerning the regulation of imports, including: non-compliance and emergency actions, consignments with specific end-uses, consignments subject to post-entry quarantine or treatments, consignments requiring follow up action (including trace back), and other records as necessary to manage the import regulatory traceability system. • In place review mechanisms for its import regulatory system, including monitoring the effectiveness of phytosanitary measures, internal audit of the NPPO activities and authorized organizations or persons, and for modifying the phytosanitary legislation, regulation and procedures.
6.Staffing	• The NPPO's import regulatory system human resources capacity in terms of: numbers need to be sufficient with experienced and qualified staff. • The inspection regulatory system personnel need to receive adequate training to ensure competency in their area of responsibilities. • The training programs for staff involved in the import regulatory system need to be frequent. • The import regulatory system's managers are to be trained in management.
7.Equipment	**<u>The NPPO's import regulatory system:</u>** • Need to have enough availability of equipment and transport. • Sufficient communications equipment. • Adequate office and inspection facilities • Enough computers and tailored software.

3.4 To Strengthen the NPPO Structure and Processes (Including Allocation of Resources)

Rationale: The structure of an organization is the system of relationships developed to divide and coordinate tasks among people and groups while working toward a common purpose. It involves the division of labor including roles, responsibility, and authority, as well the coordination of labor into units and inter- and intra-unit groupings.

To develop capacity in the NPPO structure and processes it is a pre-requisite to look at the existing situation and performance of NPPO in this area and understanding the desired future situation of *vis a vis* the capacity building needs and requirements to create an effective system for NPPO's structure and processes.

Areas to be Addressed for Capacity Building in NPPO Structure and Processes

The key areas that are identified to be addressed for establishing a robust NPPO are Tabulated below:

Areas to be Addressed for Capacity Building in NPPO Structure and Processes

1.Structure	• Ability to to achieve NPPO's mission and goals within the current organizational structures and lack of autonomy in crucial areas of functioning. • Improvement needed in many areas on the required institutional needs to carry out core phytosanitary activities such as surveillance, pest diagnosis, pest eradication, import verification, exports certification, pest risk analysis, risk communication, public awareness programs, international liaison activities, staff training etc. • Need to have an established system or any special unit to liaison with any of the related International bodies such as IPPC Secretariat, Bilateral counterparts • **<u>The NPPO to have a designated unit/manager responsible for/to:</u>** ➢ Progressing and/or supervising PRA. ➢ Pest surveillance. ➢ Pest diagnostics. ➢ Import verification. ➢ Strategic planning/management. ➢ Staff training. ➢ The technical audit program. ➢ Performance assessment. ➢ The operational manual system. ➢ Export certification activities including collection of import requirements of trade partners. ➢ Internal quarantine, pest control/eradication programs, and maintenance of pest free areas. ➢ Assist with managing contact with the news media and events which may impact on the general public.
2.Processes	**<u>The NPPO to have:</u>** • System of operational manuals covering the core activities. • Written procedure to develop and keep the operational manuals updated. • Internal technical audit procedure in place to check and improve the quality of the core services provided by the NPPO.
3.Resources	***<u>Financial resources</u>*** • Need to revisit the financial management system of the NPPO. The NPPO acquire resources to invest in the improvement of phytosanitary services by preparing its budget and submitting to Department of Agricultural Extension which is the regular budget funding sources. Generally, there is a cut in the budget requested for and the increase in budget in subsequent years cannot exceed the 10% of the amount spent in the previous year. • The NPPO to have its own program of finance including planning; managing and monitoring expenditure, cash flow and budget; ensuring an accountable and auditable financial system. • The NPPO to be charging for the service by ensuring that the charges are levied on a cost recovery basis. ***<u>Human Resources</u>*** • In the present structure NPPO may require 20-25% more staff but in the new proposed structure of the Authority the manpower requirement will be 100% more.

	• Inadequately staffed to carry out all the required functions. • The NPPO to have: ➢ Direct control over the appointment of staff ➢ HR strategy plan for staff development. ➢ Inbuilt capacity for an on-going program for staff training to improve skills at various levels. ➢ Partnership agreement with other NPPOs or Universities, for professional development of staff. ➢ Information management resources (hardware, software, communications and technical skills) to link the processes of core activities among the headquarters and regional offices. ➢ Comprehensive record keeping and information retrieval system for all the core activities which enables it to provide appropriate information to relevant parties (e.g. commodities imported or exported, number of non-compliances, pest intercepted etc.) on request. • The promotion system for NPPO staff is to be based on performance. • Senior technical staff (e.g. entomologist) may also be allowed to move to management positions primarily because of the level of remuneration (i.e. higher pay). • Some of the staff members of NPPO (approx. 50%) are partially trained and qualified to carry out the functions of their position in the NPPO however none are fully qualified. • The average level of communication skills of NPPO staff can be safely rated as poor, though there are a few with excellent communication skills. Also the level of required linguistic skills of NPPO staff on an average is at medium level. • NPPO to publish a summary of phytosanitary activities (e.g. annual report) for stakeholders. • The NPPO's capacity to inform its stakeholders at the national and international levels has to be very interactive. • The NPPO's technical staff to have good access to scientific and international sources of information. ***<u>Infrastructure resources</u>*** • Infrastructure resources at a few border inspection points are good but needs improvement in majority of them. • Vehicle resources for NPPO need to be enhanced. • Technical and scientific library resources need to be upgraded.

4. Roadmap for Developing a Strategy Plan for Phytosanitary Capacity in Bangladesh

- The PCE modules that were conducted with stakeholder's participation has highlighted various domains of the phytosanitary system where in there are huge gaps in complying with the SPS Agreement of WTO. A large number of areas ranging from regulatory, administrative and financial reforms to the important technical components need to be addressed for developing infrastructure, processes and human resources. Addressing all the domains at one time with the same force is bound to be a huge task and very resource intensive. Four key domains have been prioritized for capacity building which may need urgent attention as below. However, at the same time other areas too have to be kept in mind to be addressed gradually for a holistic strengthening of the phytosanitary system of PQW/DAE. A summary of the major gaps in four prioritized areas are given in section 3 (3.1, 3.2, 3.3 and 3.4) of this report.

  However, apart from above areas at the same time other areas too have to be kept in mind to be addressed gradually to continue with the overall reform process and this has to be based on availability of financial and human resources.

Road Map for Developing a Strategy Plan

Seven critical steps are proposed below as key elements of the Road map:

1. **Addressing the Gaps and Action Plan at Various Levels:** It is important to create a political will to ensure commitment and support of the Government for improving the phytosanitary system. USDA and USAID had been investing on assessing the SPS framework and in certain capacity building programs. The outputs of the detailed PCE carried out as per IPPC modules along with a strong political will of the Government should be used to set the stage for re-orienting its investment and in focusing on important gaps in a holistic manner. PQW should highlight the export rejections and current pest outbreaks such as Fall Armyworm and Wheat Blast disease to draw the attention of the authorities on the failure to comply with SPS Agreement. Also PQW should discuss on the importance of PCE findings at various technical fora to prepare a national mindset on the importance of the need for revamping the plant protection activities with special reference to pest epidemics and role of SPS in trade and for networking with like-minded organizations.

2. **Addressing the establishment of proposed National Plant Quarantine Authority**: The Government of Bangladesh has recently initiated the process to establish a National Plant

Quarantine Authority. An Organogram of the NPQA has been prepared by PQW and has been submitted to the Ministry of Agriculture (Annexure 3). Though this would be a giant leap for Bangladesh to make the functioning of the NPPO independent of the routine interferences from the Government and to get financial and administrative autonomy to operate but there are a lot of challenges as it needs political commitment, financial resources and in-depth knowledge to establish the NPQA, and above all PQW may need some regular administrative and technical advice from experts in the field, and also regular support and motivation from DAE to make it happen. The costs to the government for establishing such an Authority may be a limiting factor, but a rational White Paper needs to be brought out showing its short and long-term gain for the Government that may come from boosting of export of agricultural commodities and minimizing the introduction of new devastating pests. Though this is an important area to be pursued vigorously, it should not be at the cost of capacity building in some niche areas that were prioritized.

3. **Addressing Capacity building for Pest Risk Analysis System:** Keeping in view the high importance of PRA in trade and the gaps identified in this area (section 3.1) it needs to be taken up in a holistic manner to ensure fulfilling the legislative gaps in the Plant Quarantine Act 2011 with the support of a Legal Expert, developing capacity for improving organizational structure and competence, developing capacity for bringing out documented procedures of PRA, building HR capacity on technical aspects of PRA through training programs and more so to establish a national PRA Unit where all capacities to be developed need to be reviewed and implemented. A detailed plan for training in PRA and related aspects need to be worked out by assessing the export-import scenarios from various quarantine stations of the PQW. Training programs can also be in the form of study tours to countries like India (to be cost effective). Training Material on Pest Risk Analysis Based on IPPC Standards are also available on line and can be used (Annexure 4). This is one of the most crucial area to be addressed on priority to enable trade facilitation.

4. **Addressing Capacity building for Export Certification System:** In order to avoid export rejections and keeping in view the gaps identified in this area (section 3.2) it needs to be taken up on priority to ensure the plugging of a number of legislative gaps in the Plant Quarantine Act 2011 with the support of a Legal Expert, developing HR capacity, ensuring sufficient equipments to carry out diagnostics and disinfestations, developing training programs on export certification procedures and approvals, a system to judge the performance of the system. In this case also training programs can also be in the form of study tours to countries like India (to be cost effective). This is one of the most crucial area to be addressed on priority to enable trade facilitation.

5. **Addressing Capacity building for Import Certification System:** Keeping in view the recent introduction of pests in Bangladesh such as Fall Armyworm , Wheat Blast disease, etc and also the gaps identified in the areas of import inspection (section 3.3) there is an urgent need for plugging of a number of legislative gaps in the Plant Quarantine Act 2011 with the support of a Legal Expert, developing HR capacity, developing the manual for inspection and treatment, ensuring sufficient equipments to carry out diagnostics and disinfestations, developing training programs on import inspection procedures and approvals, a system to judge the performance of the system. In this case also training programs can also be in the form of study tours to countries like India (to be cost effective). This is also one of the most crucial areas to be addressed on priority to enable trade facilitation.

6. **Addressing NPPO Structure and Processes:** This is another very important area to be addressed. A number of fundamental gaps have been identified in terms of NPPO's function and resources (section 3.4). In order to work on those gaps lot of support from the government in terms of financial and human resources is needed. Infact the establishment of NPQA once done would take care of most of the gaps in structure and processes of the NPPO as then things would start functioning in a systems mode. However, since that is a daunting task efforts need to be made alongside to prepare an internal work plan to strengthen NPPO in terms of its structure and processes by the grant available to PQW from DAE, and by seeking grants or securing projects from external agencies. It may be noted that this effort will need a greater level of expertise within PQW which can be built by seeking support from some external agency. The IIPC in 2015 published a manual : *Establishing a National Plant Protection Organization -A guide to understand the principal requirements for establishing an organization to protect national plant resources from pest* can also serve as a useful resource (https://www.ippc.int/static/media/files/publication/en/2018/06/Establishing_an_NPPO_Guide_Final_WEB.pdf) which may be consulted in conjunction with the findings of the PCE to start the process. Capacity can be built in this area by exposure of one or two senior officials of PQW in an established NPPO in other neighboring countries such as India (to be cost effective).

7. **Making In-house Efforts to Gradually Enhance Capacity in Other Important Areas:** There are a number of other very important areas wherein in-house efforts have to be made by PQW/DAE to built its capacity that would largely support the other capacities built in niche technical areas.

a. ***SPS Knowledge Management System*** needs to be built as the institutional memory pf PQW was found to be very weak on SPS matters, and there is no platform where various information on SPS can be obtained easily, and donors, exporters and importers and other stakeholders can get ready information for decision making. This may require a modest investment by the Government and may not entail some specialized capacity building needs.
b. ***Inter-Departmental and Inter-Ministerial linkages*** on SPS matters is crucial as both *t*he implication and application of phytosanitary measures are cross sectoral. Linkages within DAE with Plant Protection Wing, within the country with research Institutes (BARI, BRRI, BARC, Universities etc) and within government (Ministry of Trade) is of paramount importance.
c. ***SPS Risk Communication Strategy*** assumes importance once the SPS risks are identified through risk assessment and results of field/laboratory tests during quality control or quarantine. A strategy to communicate risks to the importers and exporters and also to the civil society along with the related mitigation measures of risks that can be put in place brings a level of transparency and facilitates trade in the global market through trust building.

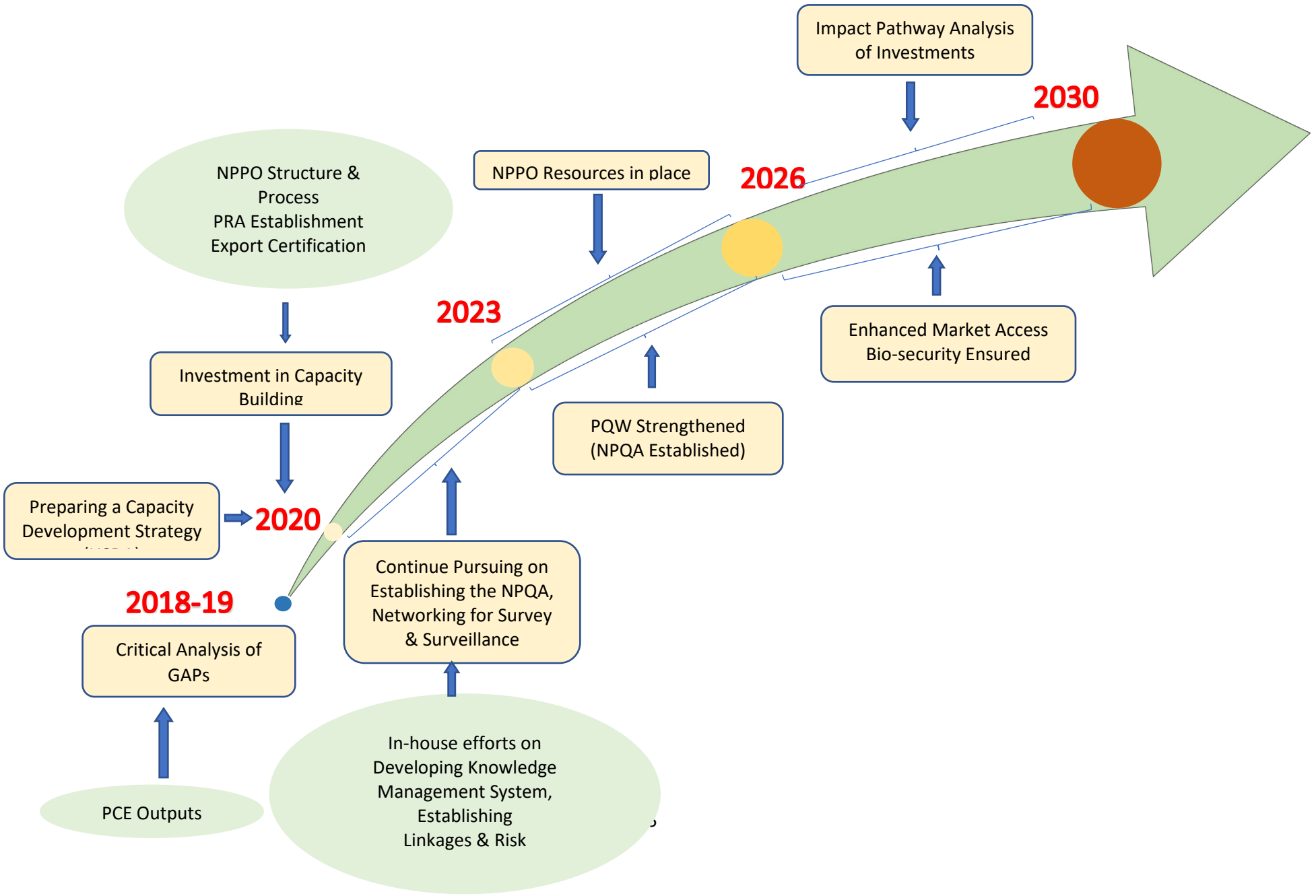
Preparing a Capacity Development Strategy: The Road Map ahead has to be looked at in a given time frame with a defined strategy plan. Bangladesh has already undertaken the basic and tedious task of its phytosanitary capacity evaluation. Keeping in view the present status of capacity and resources of PQW / DAE it is expected that a span of more than 5 years may be required to make the phytosanitary system in Bangladesh SPS compliant to WTO requirements in trade in a real sense. Also this would require some intensive capacity building on key technical areas and also simultaneously taking up baby -steps for improving the functioning of PQW in terms of its national linkages, other knowledge management, risk communication. Some of the key technical areas such as diagnostics, survey and surveillance have to be taken up by identifying the national expertise and roping them in formally within NPPOs network for collaborating and synergizing to achieve the targets. A diagrammatic presentation of the Road Map is given in Figure 1 to have an overview of the key elements and the anticipated timeline.

All the elements of addressing the capacity needs have to captured in a Strategy Plan giving the strategic priorities and activities as discussed above. The outputs have to be well defined with indicators, means of verifications and assumptions and should incorporate the element of impact pathway assessment of the investments that would be required to be made. Preparing a national phytosanitary capacity development strategy plan (https://www.ippc.int/en/publications/86077/)

thus seems to be the most important next (first) step in order to move ahead systematically for strengthening the PQW.

Besides a large number of Guides, Training materials and Fact Sheets have been brought out by IPPC and the NPPO must go through to get guidance in routine on technical matters (https://www.ippc.int/en/core-activities/capacity-development/guides-and-training-materials/). The NPPO finally needs to have a clear plan to face the challenges in order to streamline its activities. An intensive involvement of PQW/DAE thus becomes indispensable.

Figure 1. Roadmap for Developing a Strategy Plan for Phytosanitary Capacity in Bangladesh



Conclusions

To sum up, a strategy plan needs to be developed on capacity building on all fronts by keeping in view the various functions of the NPPO and by addressing on priority some critical areas. The establishment of the NPQA needs to pursued steadily but the technical, regulatory and administrative areas of capacity building needs to be taken up on urgent basis. DAE/PQW may consider requesting for funds in the niche areas of capacity building and the investment needed will have to be worked out based on a rational assessment and prioritization of actions. Besides, DAE/PQW should consider approaching FAO for a Technical Cooperation Project on capacity building for strengthening its phytosanitary measure as the PCE was carried out as per FAO/IPPC modules.

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Annexures

USDA UNITED STATES DEPARTMENT OF AGRICULTURE

Annexure 1A

Phytosanitary Capacity Evaluation Presentation

The Department of Agriculture Extension,
Government of the People's Republic of Bangladesh
Dhaka, Bangladesh
August 6, 2018 | 9:45 am – 1:00 pm

9:30 – 10:00 am	Welcome remarks and introduction (Kbd. Mir Nurul Alam, DG, DAE) The importance of a Phytosanitary system and its effect on trade in Bangladesh (Kbd. Mir Nurul Alam, DG, DAE)
10:00 – 10:10 am	Opening remarks (Mitch Nelson, USAID) Role of USG in upgrading phytosanitary capacity in Bangladesh (Mitch Nelson, USAID)
10:10 – 10:20 am	FAS – Importance of Trade in Agriculture (Mark Myers, FAS/USDA)
10:20 – 10:45 am	Role of Plant Quarantine Wing in Facilitating Trade (Dr. Azhar Ali, PQW)
10:45 – 11:00 am	Tea/Coffee Break
11:00 – 11:45 am	Phytosanitary Capacity Evaluation (PCE) presentation of Bangladesh (Ravi Khetarpal)
11:45 – 12:20 pm	Observations on the PCE findings and next steps (Dr. Azhar Ali/ Quamrun Nahar, PQW/ DAE)
12:20 – 12:45 pm	Roadmap for Developing phytosanitary capacity in Bangladesh (Mitch Nelson, USAID & Ravi Khetarpal)
12:45 – 1:00 pm	Concluding Remarks (Kbd. Mir Nurul Alam, DAE)
1:00 pm	Lunch

Annexure 1B

Presentation on Phytosanitary Capacity Evaluation

Phytosanitary Capacity Evaluation of Bangladesh

DAE, Dhaka, Bangladesh, 6 August, 2018

Presentation

Ravi Khetarpal
Consultant-USDA

Work plan
PCE features
Key Findings
Way Forward

Workplan

- Discussions with USDA, PQW/DAE
- Preliminary Assessment
- Agreeing for conducting all the 13 PCE Modules
- Specifying the technical other logistics requirements
- Conducting the PCE modules
- Online transmission of the modules to IPPC
- Analysis of findings
- Report writing

Preliminary Assessment- Setting the stage

- To get familiarized with the NPPO, its staff and facilities and existing Phytosanitary system
- To make a Recap on WTO / SPS and its provisions
- Introduction to the PCE and process
- Finalizing the work plan

PCE and its Purpose

Provides

- a snapshot of a country's phytosanitary capacity
- a basis for planning phytosanitary capacity building
- a clear idea on capacity of the NPPOs
- a framework for rational strategic planning

Phytosanitary Capacity Evaluation of Bangladesh

Key Features of PCE

- Consensus based
- Can be applied in total or in parts
- Financed by contracting parties or donors
- **Vetted by IPPC**
  - The IPPC maintains a complete training tool kit for validated PCE facilitators

Phytosanitary Capacity Evaluation of Bangladesh

The 13 Modules of PCE

- Country profile
- National Phytosanitary legislation
- Environmental forces assessment
- NPPO's mission and strategy
- NPPO's structure and process
- NPPO's resources
- Pest diagnostic capacity
- Pest surveillance and pest reporting capacity
- Pest eradication capacity
- Pest risk analysis
- Phytosanitary import regulation
- Pest free areas, places and sites, low pest prevalence areas
- Export certification, re-export and transit

Phytosanitary Capacity Evaluation of Bangladesh

Module 1 : Country Profile

Key Features

- Total value of imports – 100 m US dollars
- Imports often arrive in after being in transit in another country
- Total value of exports 25-50 m US dollars
- Contribution of agriculture (including forestry) to GDP is 14.75%
- Imports are mainly from India, China, South Africa, Brazil, Turkmenistan, Australia, USA, Russia, Canada and Thailand
- Exports are mainly to Malaysia, Turkey, UAE, China, India, Egypt, Singapore. Belgium, Germany and other EU countries
- Member of SAARC, BIMSTEC, SAFTA
- USDA is the key donor for SPS activities

Phytosanitary Capacity Evaluation of Bangladesh

Module 1 : Country Profile

Key Features

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- Member of SAARC, BIMSTEC, SAFTA
- USDA is the key donor for SPS activities

Phytosanitary Capacity Evaluation of Bangladesh **Module 3: Environmental Forces**	Phytosanitary Capacity Evaluation of Bangladesh **Module 4 : NPPO Mission and Strategy**
NPPO needs • to be directly involved in developing and upgrading its own policies • to address numerous pathways for entry of pests • a written phytosanitary policy • human and infrastructural resources	***Need for*** • a strategy plan for NPPO • mechanism for inputs from various stakeholders • a 100% cost recovery model • SOPs and Manuals • a formal inter agency collaboration
Phytosanitary Capacity Evaluation of Bangladesh **Module 5 NPPO Structure and Processes**	Phytosanitary Capacity Evaluation of Bangladesh **Module 6 : NPPO Resources**
Need for • Autonomy by NPPO to operate • Core technical activities (pest surveillance pest eradication, risk communication) • Technical auditing • Operational manual system • a coordination unit to liaison at international level	***Need for*** • Financial resources for undertaking variables costs • Human resources to carry out all the functions • HR strategy plan for NPPO • Financial support for developing proper infrastructure and logistics

Phytosanitary Capacity Evaluation of Bangladesh

Module 7 : Pest Diagnostic Capacity

Need for

- a plan for efficient functioning of laboratories
- financial power and financial resources
- expertise for specialized fields of diagnostics
- a list of prohibited pests need to be established

Phytosanitary Capacity Evaluation of Bangladesh

Module 8: Pest surveillance and pest reporting capacity

Need for

- Surveillance to be an activity of NPPO
- Needs collaboration with Plant Protection Wing
- National pest reporting
- Pest database
- Linkages among relevant stakeholders

Phytosanitary Capacity Evaluation of Bangladesh

Module 9: Pest eradication capacity

Need for

- An eradication program - the legislative provision do exist
- operational plan for pest eradication
- specified and skilled manpower
- specific budget allocation
- a coordination mechanism among agencies need

Phytosanitary Capacity Evaluation of Bangladesh

Module 10: Phytosanitary import regulatory system

Need for

- a written program or plans
- documented procedures for functioning
- sufficient skilled manpower
- financial resources
- good communication systems

Phytosanitary Capacity Evaluation of Bangladesh

Module 11: Pest risk analysis

Need for

- a well-defined PRA program
- a PRA unit
- one National Manager
- operational plan
- urgent inhouse capacity for undertaking PRA
  - outsourcing of all PRA's does not allow fair judgment on efficacy of PRA

Phytosanitary Capacity Evaluation of Bangladesh

Module 12 : Pest free areas, places and sites, low pest prevalence areas

Need for

- A well-defined program
- a focal point/national manger
- an operational plan
- skilled capacity within NPPO
- sufficient financial resources

Phytosanitary Capacity Evaluation of Bangladesh

Module 13: Export certification, re-export, transit

Need for

- proper interaction/liaison among exporters
- NPPO documented operational plan
- skilled Human Resources
- financial and logistics support
- need for administrative and financial power for NPPO.

Phytosanitary Capacity Evaluation of Bangladesh

Conclusions

- The PCE has highlighted various domains of the phytosanitary system where in there are **some strengths but huge gaps in** complying with the SPS Agreement of WTO by Bangladesh.

- Based on the gaps or weaknesses observed the areas to be addressed are defined at activity and generic level

Phytosanitary Capacity Evaluation of Bangladesh

Conclusions

- Investing in addressing the gaps in some crucial technical areas
  - NPPO's structure and processes, pest surveillance and pest reporting, pest risk analysis and export certification
- Important to spend more on developing human resources and the processes than on infra-structure development

Phytosanitary Capacity Evaluation of Bangladesh

Political Will and Commitments

- Need to share the PCE findings with the senior officials in the Ministry of Agriculture to get their buy-in
- Finalize the establishment of the proposed National Plant Quarantine Authority on TOP PRIORITY
- Need for a governance model where NPPO has
  - freedom for financial management of its activities
  - administrative powers for an effective governance
    - for appointments of technical staff
    - to retain the capacity that is being built
    - To take decisions on technical matters with a scientific rationale.

Roadmap

Developing Phytosanitary Capacity in Bangladesh

Phytosanitary Capacity Evaluation of Bangladesh

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  - Mitchell Nelson, Ahmad Shaheeduddin
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- CABI, UK - Ulrich Kuhlmann and Patricia Neenan
- APAARI, Thailand

Annexure 1C

Summary of High-level Presentation of PCE Findings

This was undertaken on 6th August 2018 during the August 4-8 mission undertaken at Dhaka. In fact was a part of the previous contract of USDA. However, this was not accounted for in the earlier reports. Therefore, it was considered important to make a brief mention of the same here as during this workshop not only the PCE findings were presented and discussed with key stakeholders of Bangladesh, but also discussions on developing a roadmap for developing a strategy plan was initiated.

The programme developed for the Workshop is given in Annexure. The objectives were to endorse the key findings of the self-diagnostic phytosanitary capacity evaluation of the plant quarantine system of Bangladesh and to initiate a dialogue on how to develop an action plan for addressing priority recommendations.

It was attended by senior officials. Department of Agriculture and Extension (DAE), staff of Plant Quarantine Wing (PQW) representatives of USDA/USAID and others. DAE officials thanked USDA / USAID for their support in phytosanitary capacity building in Bangladesh and expressed hopes to receive more support in capacity building. In his Introductory Remarks Mark Myers, Foreign Agricultural Attaché of US in Bangladesh reaffirmed the commitment US Government to improve plant health, animal health and food safety (the SPS system) in Bangladesh as a foundation for food security in the country. He highlighted that overall, the United States and Bangladesh share a growing relationship on food and agricultural trade. In 2017, the value of U.S. agricultural exports to Bangladesh reached $882 million which made Bangladesh the United States' 25th largest agricultural export market. Leading export categories include: soybeans ($385 million), soybean meals ($43 million), cotton ($284 million), wheat ($84 million), corn ($31 million), and miscellaneous feeds & fodders ($20 million).

The findings of the PCE undertaken was presented by the Consultant (Annexure 1B) covered the aspects of workplan, preliminary assessments, briefing on PCE purpose and running the 13 PCE modules and making analysis of gaps. The major conclusions made included the following:

- The PCE has highlighted various domains of the phytosanitary system where in there are some strengths but huge gaps in complying with the SPS Agreement of WTO by Bangladesh.
- Based on the gaps or weaknesses observed the areas to be addressed are defined at activity and generic level
- Investing in addressing the gaps in some crucial technical areas such as NPPO's structure and processes, pest surveillance and pest reporting, pest risk analysis and export certification.
- Important to spend more on developing human resources and the processes than on infra-structure development
- Need to share the PCE findings with the senior officials in the Ministry of Agriculture to get their buy-in
- Finalize the establishment of the proposed National Plant Quarantine Authority on TOP PRIORITY
- Need for a governance model where NPPO has freedom for financial management of its activities, administrative powers for an effective governance, for appointments of technical staff, to retain the capacity that is being built and to take decisions on technical matters with a scientific rationale.

A discussion on developing the Roadmap for developing the strategy plan for phytosanitary capacity building in Bangladesh was taken up by Mitch Nelson (USAID, Bangladesh) and the Consultant. Both voiced strongly that the strategy plan development needs a very strong commitment from the Ministry of Agriculture and it must encompass timeline for ensuring the establishment of the proposed National Plant Quarantine Authority with simultaneous efforts on capacity building on some key areas that may concern maximum to trade. Also awareness on SPS, knowledge management system, linkages with various stakeholders, Risk communication strategy and legislative amendments would go a long away to support the capacity that will be developed for the PQW.

Annexure 2

Interaction with Stakeholders

Person Contacted	Topic of Discussions
Kbd. Mir Nurul Alam Director General (DG), Department of Agricultural Extension (DAE) Also present was **Dr. Md. Abdul Muyeed** Director, Field Services Wing, DAE	• Jessica provided a brief background to DG on the PCE done and desired to re-engage with DAE to formalize next steps and USDA capacity building support for possible implementation of NPQA and involvement over short, medium and long term. Ravi Khetarpal further highlighted the findings of PCE and the gaps identified which needs to be prioritized for further actions on capacity building of the PQW. • DG and his team informed that a modified proposal had been submitted to the MoA for formation of the NPQA; An IT system is being implemented for Phytosanitary certification and that DAE would like to go for increased levels of automation. He further highlighted that a big GOB project is coming up to support the development of NPQA both in terms of infrastructure and capacity building • DG also mentioned the need to capture and preserve data and indicates DAE is open to cooperation in this regard. • RK emphasized that FAW is a quarantine pest and provides a good case study for the NPPO to take up to mitigate its onslaught. Discussions were held on developing a concept paper as to the role of the NPPO and measures it can take to counter FAW and similar pests. • Emanuela assured further support to DAE and highlighted the importance commitments of the government at the higher level. • DG profusely thanked USDA/USAID for the efforts being made to upgrade the phytosanitary capacity of PQW.
Dr. Md. Azhar Ali Director Plant Quarantine Wing (PQW) and senior staff members of PQD **(Dr Ahhan Ullah, Mahmood Ali, Quamrun Nahar, Rita Dey, Karima Akhtar and others**)	• Director PQW informs that the PCE report has been submitted to the MoA and that the Minister and Secretary are both keen to proceed with the formation of the NPQA • Talk of the separate roles of the MoA and MoC in Bangladesh. MoA according to its rules of business is not responsible for dealing with export/import issues. This is the responsibility of MoC. There is a lack of coordination here. Ministry officials are not well acquainted with quarantine matters and lack initiative. • Supposedly the joint secretary in MoA has been informed of USDA support and interest to help develop and proper PQA. • Mention is made that USDA/USAID is the only development partner that has provided PQW with any sort of Technical Assistance for capacity building. • Point is made of the gap between technical personnel at DAE and bureaucrats at the ministries. • ES solicits suggestions as how to present the PCE to the ministry and mentions that assistance can be provided to develop a revised proposal on NPQA

	• RK mentions that a revised proposal may replace the earlier one before it is returned for revision. • Talk about the Director taking an initiative to bring the MoA and MoC together on the issue of NPQA and that USDA support could expedite matters. • Mention is made of the formation of a Technical Committee to carry forward the issue of NPQA • RK again mentions that USDA can provide assistance in revising the proposal • Mention is also made of the need to establish a national committee including members from other relevant ministries. The present TC is only from within the PQW. • A single window facility has supposedly been established between the MoA and MoC to handle all trade related matters. • RK enquires whether a database exists for quarantine pests and is informed that a pest list has been prepared but has not been published yet. It will be provided on the website within a month. • The diagnostic side is also supposedly progressing slowly. • Surveillance of the FAW was done by the PPQ and FSW of DAE not the PQW. • PPW is mainly responsible for registration and regulation of pesticide use. • Team informed by Director and his staff that formation of the NPQA is the first priority • PQW would like to resolve contradictions between MoA and MoC in roles and responsibilities • PQW would like assistance to develop diagnostic capacity for pest and disease identification etc. • USDA can be involved in discussions with ministry either in late July or early September in support of formation of NPQA. • USDA can provide assistance for capacity building once the NPQA is formed. • PQW has automated issuance of import permits and phyto certificates for perishable items within 24 hours. This is a PQW initiative and system. Link with others not yet provided

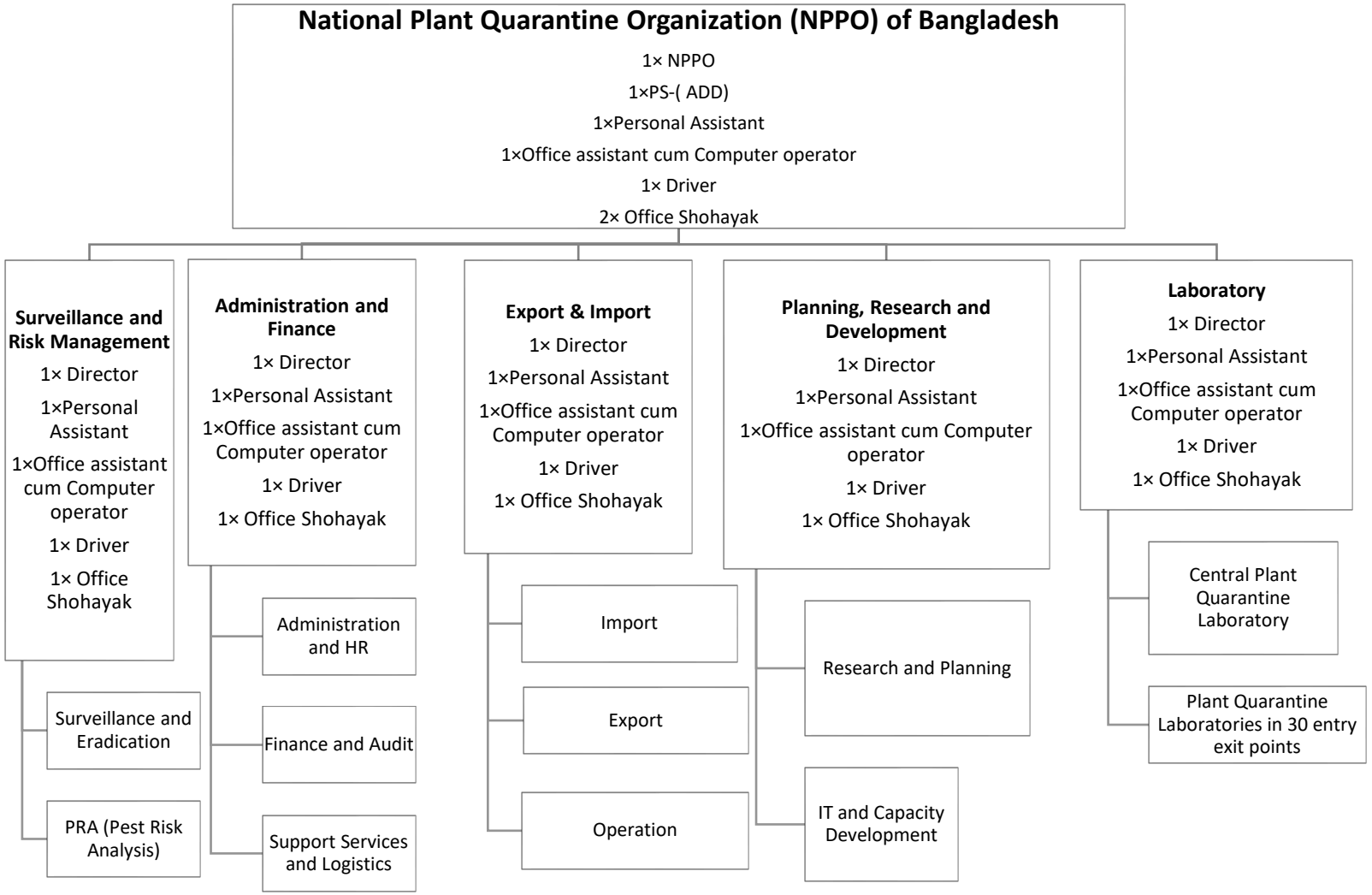
Dr. Abul Kalam Azad Director General (DG), Bangladesh Agricultural Research Institute BARI, Gazipur **Dr. Debasish Sarker** Chief Scientific Officer, BARI **Dr. Syed Nurul Alam** Director, Planning and Evaluation Wing, BARI	• A visit was made to Bangladesh Agricultural Research Institute at Gazipur. • The DG informed that BARI was established in 1976 by the Bangladeshi Government as the country's premier autonomous agricultural research organization. • BARI is the largest crop research institute in the country, conducting research on a wide variety of crops, as well as research into areas such as soil and crop management, water management and irrigation, post-harvest handling and socioeconomic studies related to production, processing, marketing and consumption. • BARI has taken lead in Bangladesh to survey the occurrence and spread of Fall Army worm which was recently introduced in the country. • Lab visit showed that BARI has developed the biological control methods to mange the FAW pest and is testing the biocontrol agent now for its efficacy at large scale. • It was found that BARI has no official linkages with PQW of DAE which otherwise is important for the country to use its expertise judiciously in a networking mode.
Dr. Akhter Ahmed Country Representative, International Food Policy Research Institute (IFPRI, Bangladesh)	• Dr. Ahmed briefed the USDA team on the role and activities of IFPRI in Bangladesh including the USAID, supported programme that focuses on food policy research and tracking of Food Security initiatives. • He highlighted that commendable progress has been made in control of the use of chemicals for the ripening and preservation of fruits. However, a research study found that 50-100 times the recommended dosage of pesticides was being used in the cultivation of BT Brinjal a GMO plant variety developed by BARI in collaboration with Cornell University. The plant is supposed to be resistant to short borer which affects cultivation of brinjal.Cultivators have reported yield increase, cost reduction and profit increase.4 varieties have been developed but large scale commercialization has not yet been done. Bangladesh Agricultural Development Corporation is responsible for seed distribution • The World Bank has a project under which grain storage facilities are being developed. 6 silos have been built to store rice for 2-5 years.The WB and GOB are funding a policy research project that includes a component to determine maximum storage periods. • IFPRI tracks policy changes in Food Security and contributions have been made to Seed Sector policy reforms resulting in the National Seed Act of 2018. Rules are being formulated based on the Draft Seed Policy. • RK mentioned the role of the Cartagena Protocol in the transfer of seeds and genetic material between countries • Dr. Ahmed mentioned that at present the policy focus for IFPRI in Bangladesh is on 3 areas (1) Purchase of grain/rice (2) Building food stocks (3) Stabilizing prices

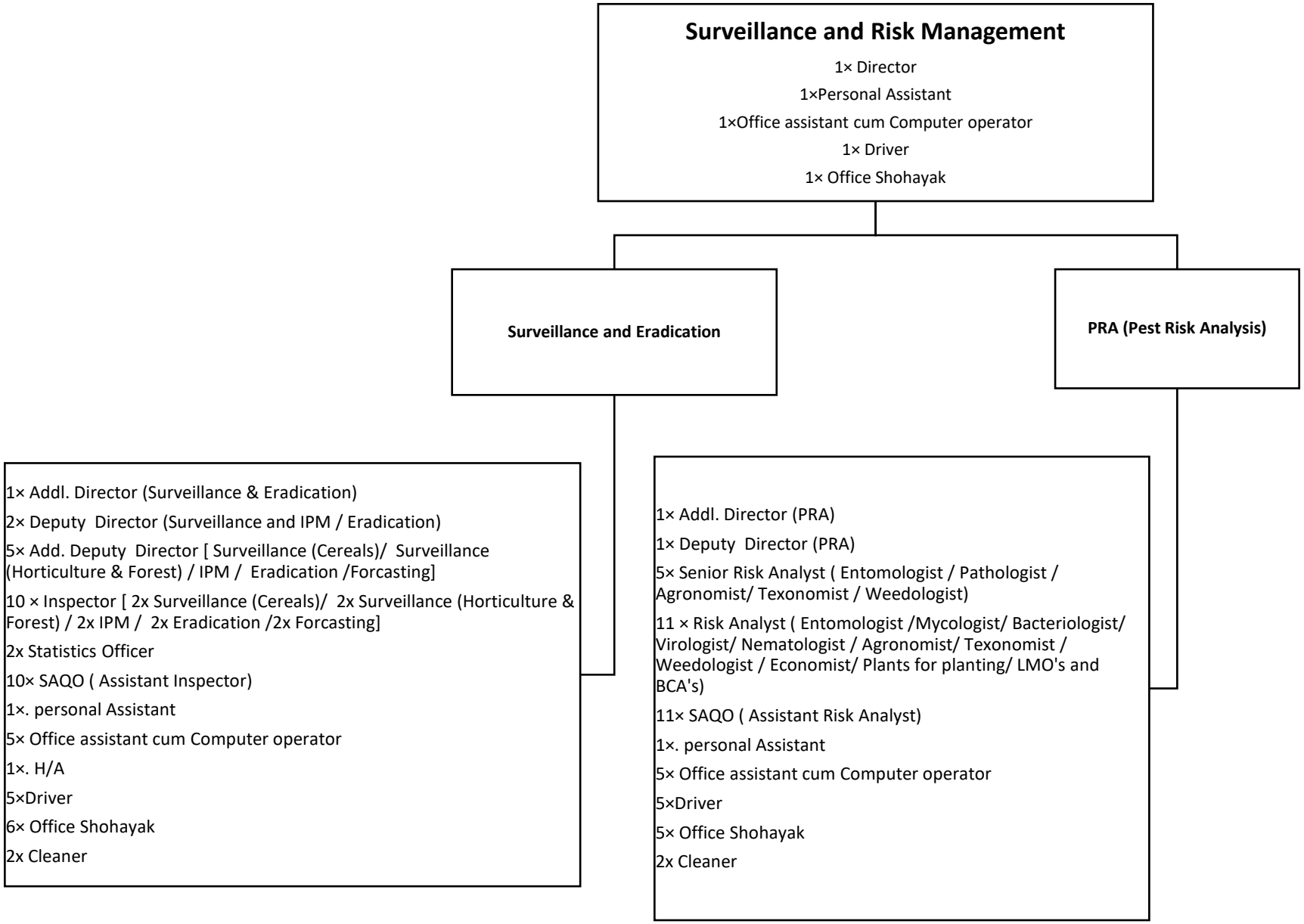
Dr. SM Bokhtiar Director, SAARC Agricultural Committee (SAC) of South Asia association of Agricultural Research Institute (SAARC) **Rudra Bahadur Shresta** Senior Program Specialist, SAC **Pradyumna Raj Pandey** Senior Program Specialist, SAC **Dr. Md. Younus Ali** Senior Technical Officer, SAC **Nasreen Sultana** Senior Program Specialist, SAC, Subject Matter Specialist	The meeting was more to find out if there is any synergy in phytosanitary activities of DAE with that that of SAC of SAARC, specially if the fight against Fall army worm is being also addressed by SAC and also to see if USAID/USDA can synergise their work in any way on that front. • Bokhtiar provided a brief introduction on SAARC and SAC and that SAC is now giving priority to developing a ten year multi-sectoral plan for strategy and operations. Multi country projects have been/are being initiated in areas like livelihood, climate resilient agriculture, feminization in agriculture (gender mainstreaming). Bill and Melinda Gates foundation is providing support. SAC is an information "Hub" in South Asia having many publications each year and is now preparing its document on Vision 2030. • He also highlighted that a material transfer agreement exists which allows for exchange of agricultural material among SAARC nations. Germplasm has already been received from India and Pakistan. A high level policy dialogue is planned in this area. The recently concluded SAARC agriculture ministers meeting in Bhutan, concluded with the THIMPU Declaration which makes SAC responsible to work with UN bodies for agriculture development. There is also a lot of pressure to form a SAARC Seed Bank and Food Bank. • Ravi Khetarpal introduced the purpose of visiting along with USDA team for exploring collaborative actions in Bangladesh. Emanuela mentioned in greater detail on the USDA SPS programme in Bangladesh in providing capacity development support in the areas Plant, Animal Health and Food Safety. Jessica explained about USDA initiative w.r.t different plant viruses in the region and its role and interest in strengthening national quarantine capacity in Bangladesh. Also gave a brief on USDA engagement with DAE and conduct of PCE as a support system for formation of the National Plant Quarantine Authority (NPQA) in Bangladesh. • Discussions were also held on policy directions and decisions regarding trans-boundary diseases. Dr. Bokhtiar suggested to explore the possibilities of inviting the minister and senior staff to USDA for further discussions. Joint Secretary (Research) of MoA mentioned desirability of collaboration with USDA and informs that Bangladesh has adopted SAARC GAP initiative and extensive training has been provided to farmers in this regard. The JS was informed of the PCE and the submission of proposal to MoA through DAE. Talked about the possible impact of inviting Minister to the SAARC multi country meet planned for 14/15 July 2019. Bokhtiar agreed that this could be a good opportunity to place USDA interest and involvement in development of sound SPS systems in Bangladesh, the conduct of PCE and formation of the NPQA. • The staff of SAC took interest in the discussions and all were convinced of exploring the possibilities of collaboration with USDA for their activities. Bokhtiar assured inviting USDA/USAID in the forthcoming SAARC multisectoral work plan meeting.

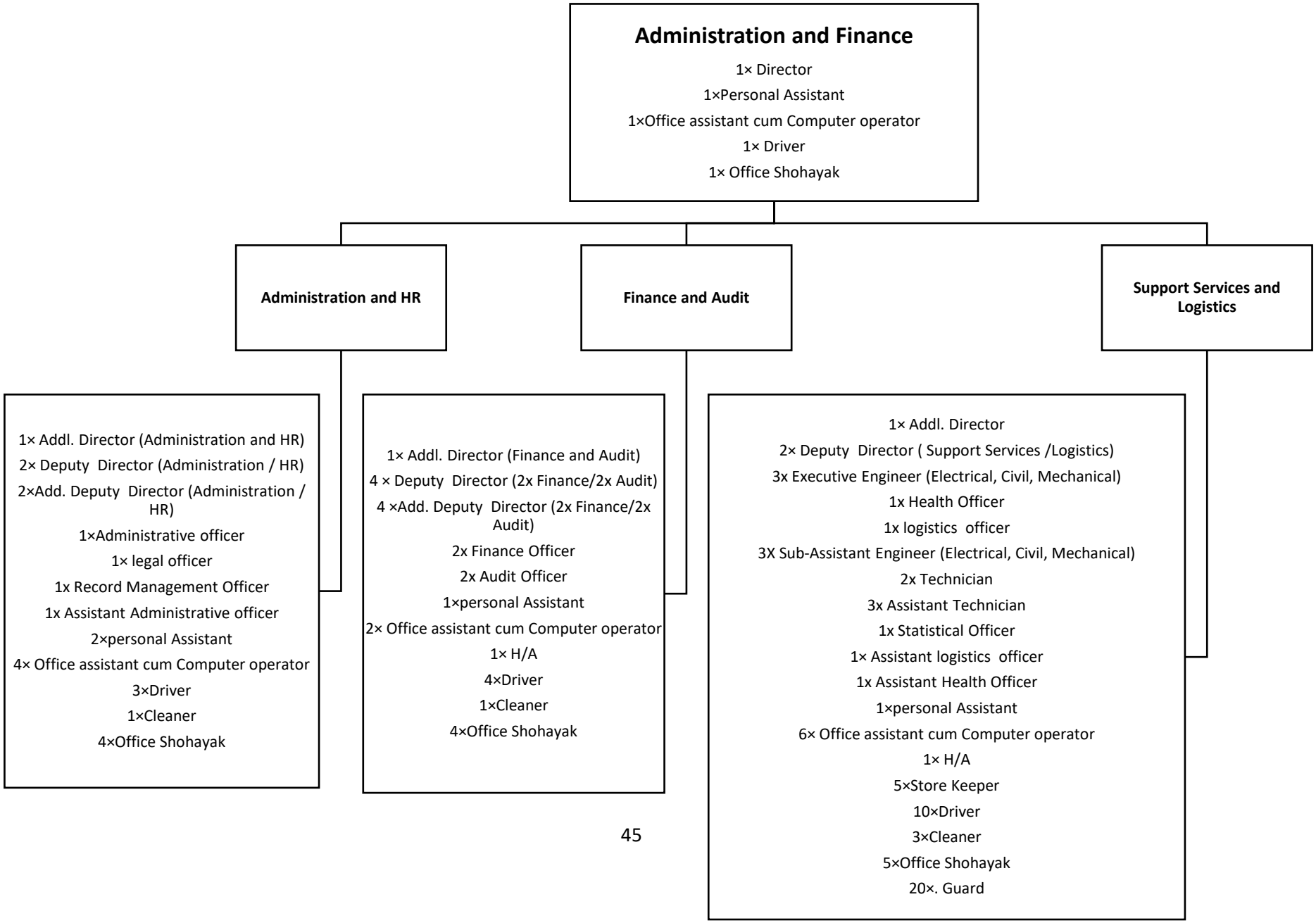
Emanuela Montanari-Stephens Foreign Agricultural Service, USDA, Washington, DC **Jessica Mudjitaba-Fernández** Foreign Agricultural Service, USDA Washington, DC **Mitch Nelson** USAID, Bangladesh	A regular discussions were held with FAS/USDA representatives and a few with USAID representative which were of critical importance and led to the development of a concept by FAS/ USDA (Emanuela) as below on Roadmap for the establishment of an NPPO. **GOAL I: To develop a strategic plan and roadmap for implementation of the Bangladesh Plant Protection Authority (NPPO)** **Sub-goal I**: Identification and prioritization of rules and regulations to implement the Plant Quarantine Act of 2011. Activities: 1. To review and assist in finalizing the draft National Plant Quarantine Authority (NPQA) mandate the DAE prepared (October 2018 document version). 2. To draft a set of standard operating procedures (SOPs) and manuals which outline a "how to" mechanism for the establishment of an NPQA Authority. This will include: a. SOPs to operationalize technical; administrative and financial management functions of the NPQA b. A clearly outlined governance model. 3. To facilitate inter-agency dialogue (Ministry of Agriculture and Ministry of Commerce) on trade in plants and plant products including pest detection; surveillance and issuance of import/export certificates. 4. To assist the PQW on a gradual transition to acquire NPQA status including: (i) identification of core staff roles and responsibilities; and (ii) definition of line management functions and hierarchy. **Sub-goal II**: Establishment of an outreach/knowledge management and advocacy platform on emerging plant health and SPS issues that allows for stakeholders' engagement (industry; public; academia). Activities: 1. To build the capacity of the Bangladesh Enquiry Point and Notification Authority to properly and consistently notify SPS draft laws and regulations to the WTO (transparency principle, SPS Agreement). 2. To facilitate and streamline direct communication between PQW/DAE and USDA-APHIS on bilateral trade issues such as import/export certificates requirements. When import certificate conditions change, APHIS is not consistently and properly informed. Opportunities for rent seeking behaviors are then created. **Sub-goal III**: Establishment of a train-the-trainer program for technical staff at PQWA. Activities: 1. To address numerous pathways for entry of pests 2. To develop a phytosanitary policy 3. PRAs (pest risk analysis) trainings with a focus on: pest surveillance; pest eradication, and risk communication. 4. Operational planning to establish pest free areas.

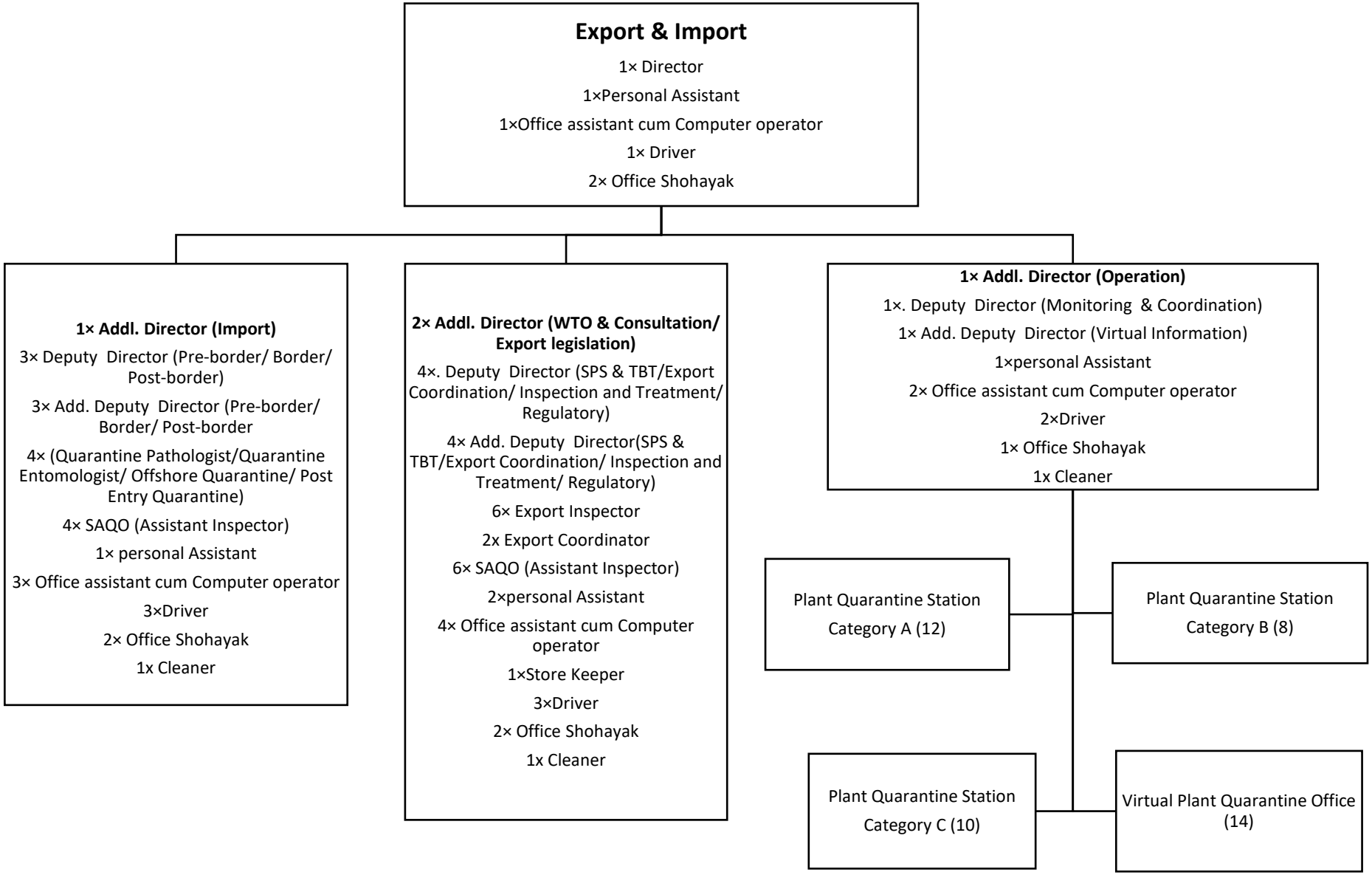
Annexure 3

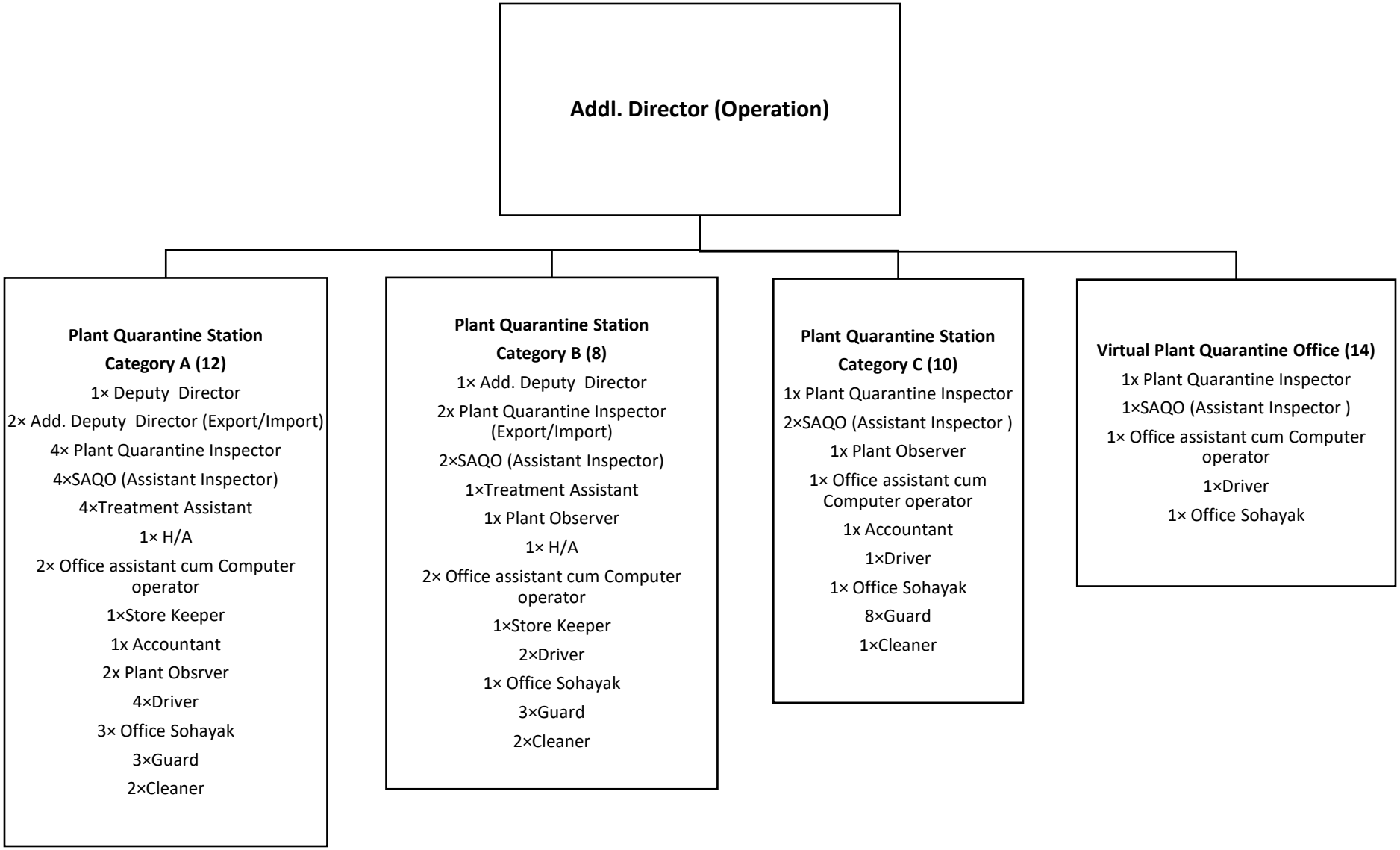
Organogram
(Proposed National Plant Quarantine Authority)

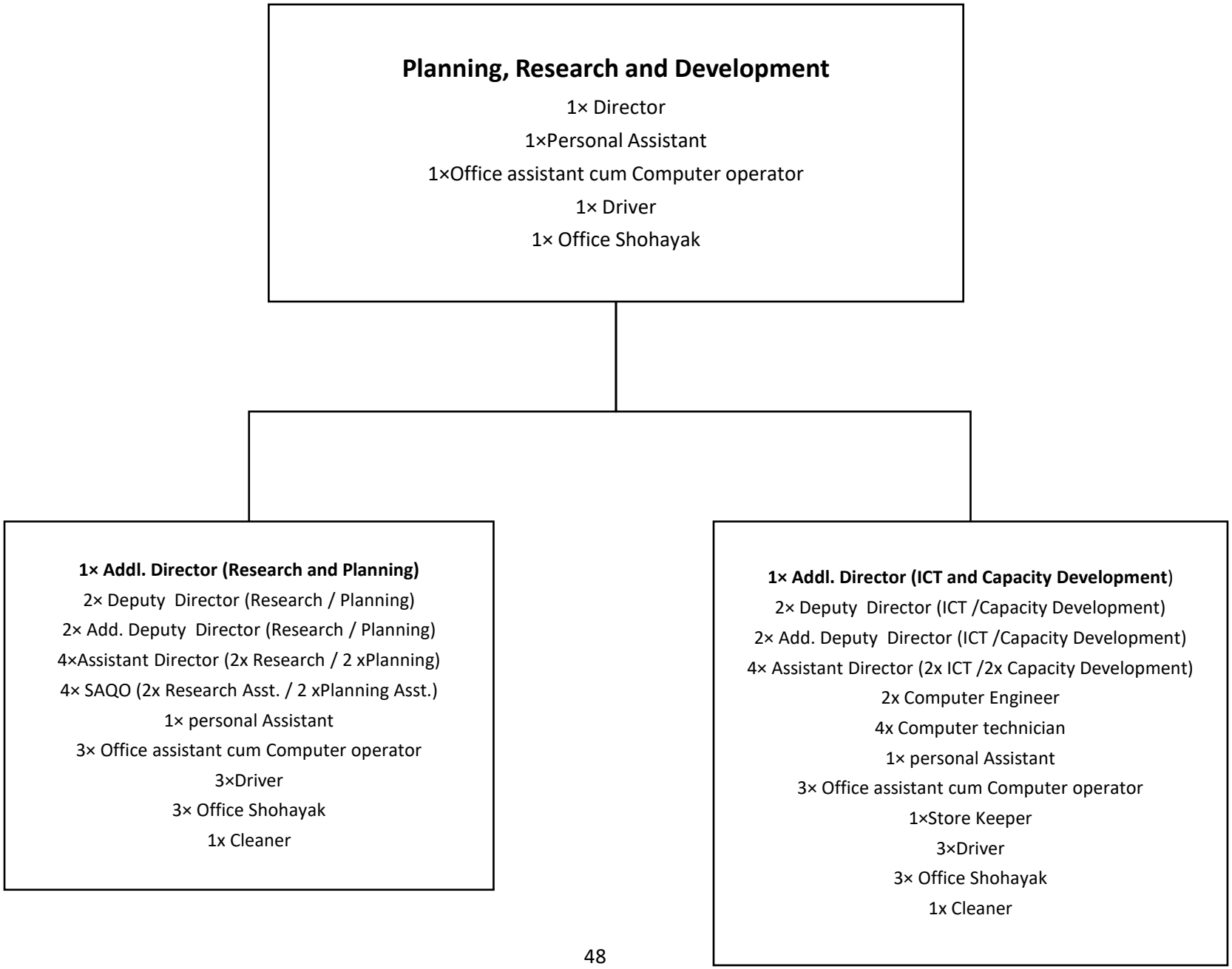


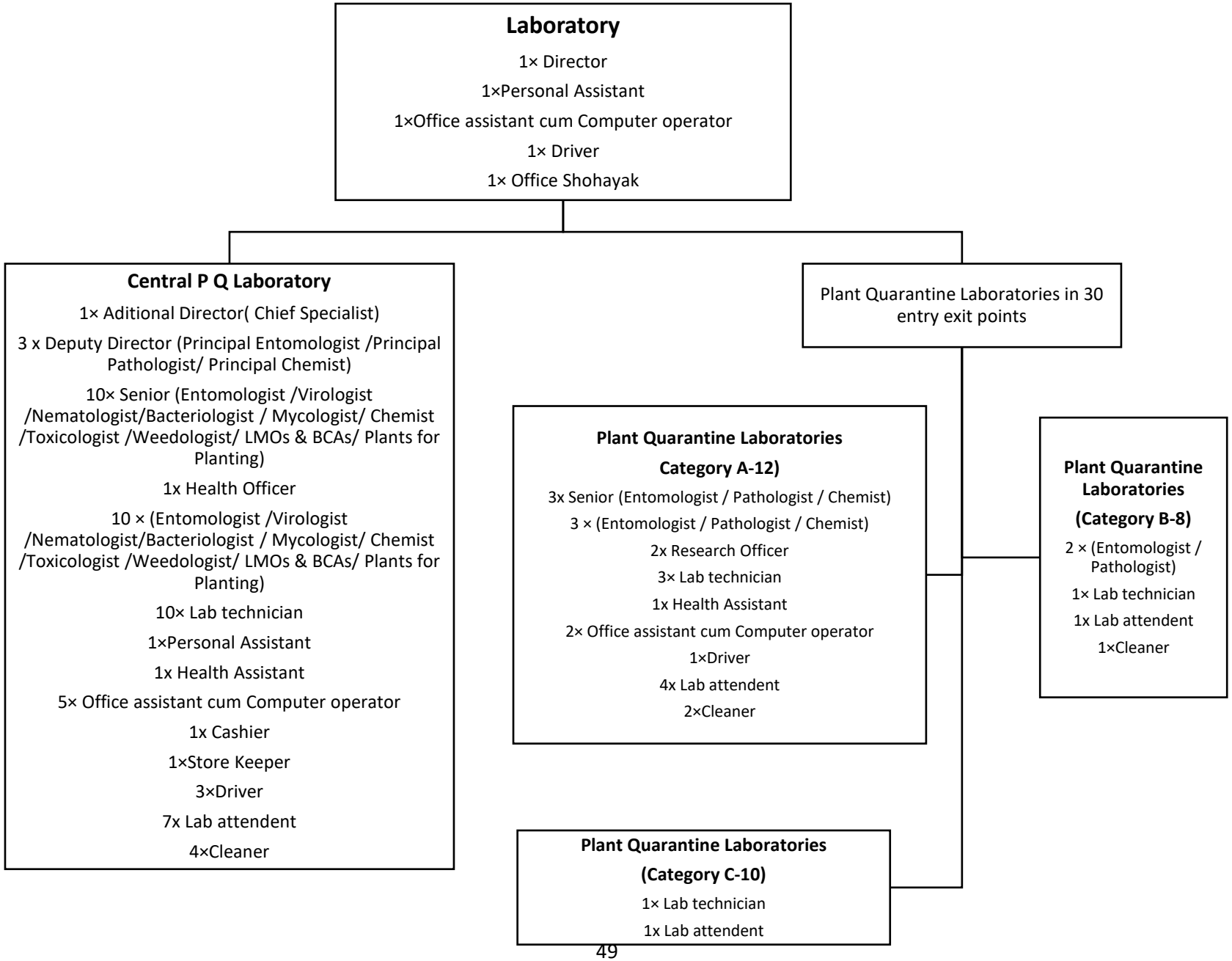

Surveillance and Risk Management
1× Director
1×Personal Assistant
1×Office assistant cum Computer operator
1× Driver
1× Office Shohayak
Surveillance and Eradication
PRA (Pest Risk Analysis)
1× Addl. Director (Surveillance & Eradication)
2× Deputy Director (Surveillance and IPM / Eradication)
5× Add. Deputy Director [Surveillance (Cereals)/ Surveillance (Horticulture & Forest) / IPM / Eradication /Forcasting]
10 × Inspector [2x Surveillance (Cereals)/ 2x Surveillance (Horticulture & Forest) / 2x IPM / 2x Eradication /2x Forcasting]
2x Statistics Officer
10× SAQO (Assistant Inspector)
1×. personal Assistant
5× Office assistant cum Computer operator
1×. H/A
5×Driver
6× Office Shohayak
2x Cleaner
1× Addl. Director (PRA)
1× Deputy Director (PRA)
5× Senior Risk Analyst (Entomologist / Pathologist / Agronomist/ Texonomist / Weedologist)
11 × Risk Analyst (Entomologist /Mycologist/ Bacteriologist/ Virologist/ Nematologist / Agronomist/ Texonomist / Weedologist / Economist/ Plants for planting/ LMO's and BCA's)
11× SAQO (Assistant Risk Analyst)
1×. personal Assistant
5× Office assistant cum Computer operator
5×Driver
5× Office Shohayak
2x Cleaner


Administration and Finance
1× Director
1×Personal Assistant
1×Office assistant cum Computer operator
1× Driver
1× Office Shohayak
Administration and HR
Finance and Audit
Support Services and Logistics
1× Addl. Director (Administration and HR)
2× Deputy Director (Administration / HR)
2×Add. Deputy Director (Administration / HR)
1×Administrative officer
1× legal officer
1x Record Management Officer
1x Assistant Administrative officer
2×personal Assistant
4× Office assistant cum Computer operator
3×Driver
1×Cleaner
4×Office Shohayak
1× Addl. Director (Finance and Audit)
4 × Deputy Director (2x Finance/2x Audit)
4 ×Add. Deputy Director (2x Finance/2x Audit)
2x Finance Officer
2x Audit Officer
1×personal Assistant
2× Office assistant cum Computer operator
1× H/A
4×Driver
1×Cleaner
4×Office Shohayak
1× Addl. Director
2× Deputy Director (Support Services /Logistics)
3x Executive Engineer (Electrical, Civil, Mechanical)
1x Health Officer
1x logistics officer
3X Sub-Assistant Engineer (Electrical, Civil, Mechanical)
2x Technician
3x Assistant Technician
1x Statistical Officer
1× Assistant logistics officer
1x Assistant Health Officer
1×personal Assistant
6× Office assistant cum Computer operator
1× H/A
5×Store Keeper
10×Driver
3×Cleaner
5×Office Shohayak
20×. Guard


Export & Import
1× Director
1×Personal Assistant
1×Office assistant cum Computer operator
1× Driver
2× Office Shohayak
1× Addl. Director (Import)
3× Deputy Director (Pre-border/ Border/ Post-border)
3× Add. Deputy Director (Pre-border/ Border/ Post-border
4× (Quarantine Pathologist/Quarantine Entomologist/ Offshore Quarantine/ Post Entry Quarantine)
4× SAQO (Assistant Inspector)
1× personal Assistant
3× Office assistant cum Computer operator
3×Driver
2× Office Shohayak
1x Cleaner
2× Addl. Director (WTO & Consultation/ Export legislation)
4×. Deputy Director (SPS & TBT/Export Coordination/ Inspection and Treatment/ Regulatory)
4× Add. Deputy Director(SPS & TBT/Export Coordination/ Inspection and Treatment/ Regulatory)
6× Export Inspector
2x Export Coordinator
6× SAQO (Assistant Inspector)
2×personal Assistant
4× Office assistant cum Computer operator
1×Store Keeper
3×Driver
2× Office Shohayak
1x Cleaner
1× Addl. Director (Operation)
1×. Deputy Director (Monitoring & Coordination)
1× Add. Deputy Director (Virtual Information)
1×personal Assistant
2× Office assistant cum Computer operator
2×Driver
1× Office Shohayak
1x Cleaner
Plant Quarantine Station Category A (12)
Plant Quarantine Station Category B (8)
Plant Quarantine Station Category C (10)
Virtual Plant Quarantine Office (14)


Addl. Director (Operation)
Plant Quarantine Station
Category A (12)
1× Deputy Director
2× Add. Deputy Director (Export/Import)
4× Plant Quarantine Inspector
4×SAQO (Assistant Inspector)
4×Treatment Assistant
1× H/A
2× Office assistant cum Computer operator
1×Store Keeper
1x Accountant
2x Plant Obsrver
4×Driver
3× Office Sohayak
3×Guard
2×Cleaner
Plant Quarantine Station
Category B (8)
1× Add. Deputy Director
2x Plant Quarantine Inspector (Export/Import)
2×SAQO (Assistant Inspector)
1×Treatment Assistant
1x Plant Observer
1× H/A
2× Office assistant cum Computer operator
1×Store Keeper
2×Driver
1× Office Sohayak
3×Guard
2×Cleaner
Plant Quarantine Station
Category C (10)
1x Plant Quarantine Inspector
2×SAQO (Assistant Inspector)
1x Plant Observer
1× Office assistant cum Computer operator
1x Accountant
1×Driver
1× Office Sohayak
8×Guard
1×Cleaner
Virtual Plant Quarantine Office (14)
1x Plant Quarantine Inspector
1×SAQO (Assistant Inspector)
1× Office assistant cum Computer operator
1×Driver
1× Office Sohayak


Planning, Research and Development
1× Director
1×Personal Assistant
1×Office assistant cum Computer operator
1× Driver
1× Office Shohayak
1× Addl. Director (Research and Planning)
2× Deputy Director (Research / Planning)
2× Add. Deputy Director (Research / Planning)
4×Assistant Director (2x Research / 2 xPlanning)
4× SAQO (2x Research Asst. / 2 xPlanning Asst.)
1× personal Assistant
3× Office assistant cum Computer operator
3×Driver
3× Office Shohayak
1x Cleaner
1× Addl. Director (ICT and Capacity Development)
2× Deputy Director (ICT /Capacity Development)
2× Add. Deputy Director (ICT /Capacity Development)
4× Assistant Director (2x ICT /2x Capacity Development)
2x Computer Engineer
4x Computer technician
1× personal Assistant
3× Office assistant cum Computer operator
1×Store Keeper
3×Driver
3× Office Shohayak
1x Cleaner


Laboratory
1× Director
1×Personal Assistant
1×Office assistant cum Computer operator
1× Driver
1× Office Shohayak
Central P Q Laboratory
1× Aditional Director(Chief Specialist)
3 x Deputy Director (Principal Entomologist /Principal Pathologist/ Principal Chemist)
10× Senior (Entomologist /Virologist /Nematologist/Bacteriologist / Mycologist/ Chemist /Toxicologist /Weedologist/ LMOs & BCAs/ Plants for Planting)
1x Health Officer
10 × (Entomologist /Virologist /Nematologist/Bacteriologist / Mycologist/ Chemist /Toxicologist /Weedologist/ LMOs & BCAs/ Plants for Planting)
10× Lab technician
1×Personal Assistant
1x Health Assistant
5× Office assistant cum Computer operator
1x Cashier
1×Store Keeper
3×Driver
7x Lab attendent
4×Cleaner
Plant Quarantine Laboratories in 30 entry exit points
Plant Quarantine Laboratories
Category A-12)
3x Senior (Entomologist / Pathologist / Chemist)
3 × (Entomologist / Pathologist / Chemist)
2x Research Officer
3× Lab technician
1x Health Assistant
2× Office assistant cum Computer operator
1×Driver
4x Lab attendent
2×Cleaner
Plant Quarantine Laboratories
(Category B-8)
2 × (Entomologist / Pathologist)
1× Lab technician
1x Lab attendent
1×Cleaner
Plant Quarantine Laboratories
(Category C-10)
1× Lab technician
1x Lab attendent

Annexure 4

List of Guides and Training Material Developed by IPPC, FAO (Websites)

Guides	Training Materials	Factsheets
• Market Access • Transit • Establishing a NPPO • Operation of a NPPO • Managing Relationships with Stakeholders • Import Verification • Export Certification • Plant Pest Surveillance • Plant Diagnostics • Good practices for CPM participation • IPPC meeting preparation support materials • Preparing a National Phytosanitary Capacity Development Strategy • Guide to National Reporting Obligations • Guide to Resource Mobilization: Promoting contracting party partnerships • IPPC Guidelines on Sea Container Surveys for NPPOs • Guide to Pest Risk Communication • Guide for Establishing and Maintaining Pest Free Areas	• e-learning course "Introduction to the International Plant Protection Convention" • e-learning on PRA • e-learning: Trade in forest commodities and the role of phytosanitary measures • e-learning course on National Reporting Obligations • PRA awareness material • **Training materials on PRA** • Participation in the CPM • NPPO establishment training kit • NPPO operations training kit • IPPC introduction presentation • Capacity development and training resources presentation	• Dielectric heat treatment fact sheet • Plant Pest Surveillance • Establishment and Operation of NPPOs • Fact sheet on Managing Relationships with Stakeholder • PCE overview • PCE extended view • IPPC Implementation and Capacity Development Guides and Training Materials • Facing the threat of Xylella fastidiosa together • Invasive ants as a biosecurity threat • Implementation Review and Support System • IPPC Guidance on Sea Container Task Cleanliness