



**Asia-Pacific
Economic Cooperation**

APEC Workshop on the Application of Electronic Veterinary and Phytosanitary Certificate

Chinese Taipei | 13 – 14 October 2022

APEC Agricultural Technical Cooperation Working Group

May 2023

APEC Project: ATC 01 2021 A

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Produced by

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APEC#223-AT-04.1

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Acknowledgement

We would like to express our deepest appreciation to all those who provided us the support and encouragement to complete this project, especially the APEC Secretariat. We are immensely indebted to the APEC member economies that participated and gave recommendations on this project. Finally, we would also like to express our sincere gratitude to the researchers, research assistants and staff who devoted their time and efforts during the implementation of this project.

I. Introduction

The COVID-19 pandemic has affected global supply chains, especially procedures that are traditionally paper-based and require physical contacts. Veterinary and phytosanitary certification of imported goods is one such activity that had to adjust during the pandemic. The need to shift towards electronic certificates or e-certificates as a means to facilitate trade of animal and plant products has been brought to the fore in the past couple of years.

Sanitary and phytosanitary (SPS) measures aim to prevent animal or plant pests or diseases transmitted through international trade of agricultural products. By conducting SPS measures properly, APEC member economies can prevent animals and plants from exposure to diseases and pests, ensure and stabilize the agricultural production and quality, and protect the health or life of human, animals and plants. The veterinary or phytosanitary certificates are important and necessary official documents noting SPS measures for international trade of agricultural and livestock products. In the context of the COVID-19 pandemic, using digital technologies becomes a global trend for transmitting veterinary or phytosanitary certificates.

To better promote the application of electronic veterinary and phytosanitary certificate, Chinese Taipei conducted the “APEC Workshop on the Application of Electronic Veterinary and Phytosanitary Certificate”. This virtual workshop was held from 13 to 14 October, 2022 via Webex. It aimed to share experiences and discuss the challenges in the application of electronic veterinary or phytosanitary certificate (e-certificate) in order to minimize the trade impact in the region due to the COVID-19 pandemic. Prior to the workshop, a pre-meeting survey was conducted to gather information on the challenges and successful experiences of developing veterinary and phytosanitary e-certificate systems through bilateral or multilateral agreements. An evaluation survey was also distributed to participants after the workshop. Results of these two surveys are summarized below.

Apart from the Opening Session, Individual Economy Reports and a Recommendation and Closing Session, this two-day program consisted of four other main sessions, which included introduction to SPS e-certification, application of e-certification, experience sharing on alternative measures, best practices on using e-certification, and recommendations on future development. See [Chapter IV](#) for the more detailed agenda.

There were a total of 144 registrants from 14 APEC member economies, including Australia; Canada; Chile; Hong Kong, China; Japan; Malaysia; Mexico; New Zealand; the Russia Federation; Singapore; Chinese Taipei; Thailand; the United States; and Viet Nam. Out of the 144 participants, 88 (or 61%) were females.



Figure 1.1 Workshop group photo



Figure 1.2 Opening remarks given by Mr Teddy Pavon



Figure 1.3 Opening remarks given by Ms Hui-Chuan Chou



Figure 1.4 Opening remarks given by Dr Su-San Chang

II. Summaries of Working Group Discussions

2.1 Opening Session

The opening remarks were given by Mr Teddy Pavon, PPFS Program Director, APEC Secretariat; Dr Su-San Chang, APEC Agricultural Technical Cooperation Working Group (ATCWG) Lead Shepherd, Chinese Taipei; and Ms Hui-Chuan Chou, Deputy Director General, Bureau of Animal and Plant Health Inspection and Quarantine (BAPHIQ), Council of Agriculture (COA), Chinese Taipei.

After greeting all the participants, Ms Hui-Chuan Chou highlighted that by conducting SPS measures properly, APEC member economies can prevent animals and plants from exposure to diseases and pests, ensure and stabilize the agricultural production and quality, and protect the health or life of human, animals and plants. The veterinary or phytosanitary certificates are important and necessary official documents required by SPS measures for cross-border trade of agricultural and livestock products. She also introduced the themes of the two-day workshop. She expressed her hope that the workshop will provide a strong affirmation of APEC's commitment to the key issue of food security.

Dr Su-San Chang underscored how the global supply chain disruption caused by the COVID-19 pandemic induced the development of veterinary and phytosanitary e-certificate systems. This workshop aligns with the ATCWG Strategic Plan for 2021–2025 to strengthen cooperation on prevention and control of animal and plant pests and diseases, as well as promoting smart agriculture. The APEC Food Security Roadmap Towards 2030 (Roadmap 2030) set digitalization and innovation as one of the key action areas, and Thailand led the APEC Policy Partnership on Food Security (PPFS),

ATCWG, and other relevant APEC fora to develop the implementation plan of the Roadmap 2030. This ATCWG project is in line with key action areas of the Roadmap 2030 and will contribute to the implementation plan of the Roadmap 2030.

Mr Teddy Pavon reiterated the importance of food security in APEC in the face of food insecurity. The Food Security Roadmap Towards 2030 aims to build an open, fair, transparent, productive, sustainable and resilient APEC food system. This workshop provided each member economy with an opportunity to learn more about the application of electronic veterinary or phytosanitary certificates in order to minimize trade impact in the region brought about by the COVID-19 pandemic, with the aim to ensure food security, safety and improved nutrition for all.

2.2 Session 1 – Introduction to SPS e-Certification

Digital opportunities for SPS systems and the trade facilitation effects of SPS electronic certification.

Dr Annelies DEUSS, Senior Agricultural Policy Analyst, Organisation for Economic Co-operation and Development (OECD)

Dr Deuss briefed us on the key trends in e-certification and its potential benefits. Digital SPS technologies helped minimize the effects of trade disruptions due to COVID-19. The exchange of e-certificates among economies has increased from 7,992 cases in 2019 to 121,068 cases in 2022, through bilateral, plurilateral, and multilateral channels. E-certificates for plant products are used more widely than animal products. Completely paperless exchanges are not yet commonplace, but do exist between some trading partners. She then explained the works of the International Plant Protection Convention (IPPC), World Organisation for Animal Health (WOAH), and Codex Alimentarius of the FAO and WHO. The IPPC is establishing a multilateral exchange of phytosanitary e-certificates via the ePhyto Hub, WOAH is considering recommendations on a framework to facilitate e-veterinary certification, and Codex is establishing an electronic working group.

Afterwards, she shared the results of their recent study, in which they found that e-certification in plant and animal products contributed to increasing bilateral trade value among OECD member economies. She ended by enumerating some challenges and providing recommendations on how to move forward to expand e-certification to more areas. The challenges, which included digital technologies, require careful planning, analysis, and investment. Second, there is a need for a clear and enabling legal framework. Third, the capacity and capability to adopt digital technologies is mixed, and digital technologies can give rise to trust concerns regarding data. She also recommended examining the potential for further harmonization between economies and international organizations using the technologies, and continuing to exchange best-practice guidance regarding the use of the digital technologies to develop a shared pool of expertise.

Establishment, current utilization and future aspect on ePhyto Hub and ePhyto Solution

Tang-Kai WANG, Chair, Committee on SPS Measures, World Trade Organization (WTO)

Mr Wang introduced the ePhyto solution, how it works and how to join. The ePhyto solution is a project that facilitates the exchange of electronic phytosanitary certificates. It is the first one of its kind among the three international standard setting bodies (IPPC, WOH and Codex). The content of the ePhyto solution includes Hub, Generic ePhyto National System (GeNS), and Harmonization. The Hub is a centralized system to facilitate exchange of ePhytos between National Plant Protection Organisations (NPPOs) with a set of prescribed rules of connection and defined structure/codes/terms for the XML message. The GeNS is a centralized system to facilitate the creation of ePhytos. It is a multi-tenant web-based system developed for members without their own system to produce ePhytos, and to send and receive them electronically. The Harmonization is a globally harmonized approach for ePhyto through an international Hub.

He then spoke about relevant WTO activities, documents and SPS-related sources. Finally, he urged the facilitation of knowledge-sharing in this regard, expansion of the ePhyto solution beyond plant products, and extension of its system to other global players as possible next steps.

E-Certification of live animals and animal products

Erik BOSKER, International Expert in E-veterinary Certificate, Ministry of Agriculture, Nature and Food Quality, the Netherlands

Mr Bosker shared his experiences in being involved in bilateral negotiations of the Netherlands with China and the Russian Federation for e-certification of dairy products. He emphasized that having e-certificates is not difficult, but going totally paperless is more challenging. He also shared the essentials of WOH and Codex. The WOH is transforming veterinary certification to e-veterinary certification, which should not be an isolated process of the Veterinary Authority. The Codex Guidelines for Design, Production, Issuance and Use of Generic Official Certificates (food also from animal origin) was also mentioned.

He also shared his ideas about standard setting for veterinary e-certificates. In this regard, he emphasized the need for cooperation among different competent authorities, international bodies, and the private sector players involved. Finally, he also shared his latest work-in-progress with WOH on data modeling.

Promoting wider adoption of e-certification for trade facilitation in Asia Pacific

Mr Sangwon LIM, Special Advisor, United Nations Network of Experts for Paperless Trade and Transport in Asia and the Pacific (UNNEXT)

Mr Sangwon Lim, who advises the UN on paperless trade, spoke about promoting wider adoption of e-certification or trade facilitation in the Asia Pacific. He underscored the significance of intergovernmental cooperation and arrangement, political commitment and stakeholder on-boarding, optimizing business model and thinking sustainability, potential of emerging technologies, and sharing good practices and lessons learned to facilitate trade by using e-certification for trade. He then shared some emerging technologies like block chain. Finally, he left us with some sources on best practices for paperless trade.

2.3 Session 2 – Application of e-Certification – Perspectives from government and industry

Guidance and experiences in implementing paperless use of electronic certificate from Australia

Matthew MOORE, Director, Department of Agriculture, Fisheries and Forestry, Australia

Mr Moore focused on specific applications of e-certifications in Australia. He shared how their respective economies planned, developed, negotiated, set up, tested and eventually rolled-out their own e-certification systems or connected with the ePhyto HUB. The key steps they took included identifying critical contacts (Officials, Business Owners, IT Developers, IT Designers), developing an e-certificate system, building the exchange method, completing the mapping work, discussing a trial period and commodities, exchanging e-certificates in a test environment, then exchanging them in a production environment and using the same for import clearance to set up the system of e-certificates in Australia.

Mr Moore shared key lessons Australia has learned as follows: economies may have multiple agencies which use the certificate to access information; in some economies, paper certificates have to be authenticated by the importing economy's embassy which probably doesn't have to happen with e-certificates; the data on the paper certificate may be manually keyed into a system; system development is always based on the funding of priorities; and connectivity in some ports can create import clearance issues.

Current situation and prospects for the application of electronic certificate system in Japan

Keitaro NAGANO, Principal Animal Quarantine Officer, Animal Quarantine Service, Ministry of Agriculture, Forestry and Fisheries (MAFF), Japan

Mr Nagano introduced the applications of e-certification in Japan. They have received e-certificates from Australia since 1998. They used SANCRT from 1998 to 2011 which connected partners by private lines, and shifted to e-certificates beginning in 2011. The system was applied to products like meat, hides & skins, and milk & dairy products.

They used the Nippon Automated Cargo and Port Consolidated System (NACCS) to run the e-certificate system. NACCS was originally developed by Japanese Customs and integrated other government border systems to help facilitate cross-border procedures. In general, the steps comprise of application for import of animal products through NACCS; receipt of import applications; receipt of e-certificates; registration of the product data; document check and issuance of certificate; and import permit through NACCS. Finally, he shared a proposal from Japan to develop a common global platform, like the IPPC ePhyto system, which could encourage and facilitate the exchange of the electronic veterinary certificates for animals and animal products.

Modernising agri-food trade in Thailand by replacing paper phytosanitary certificates with ePhyto Solution

Pouchamarn WONGSANGA, Project Director, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Thailand

Ms Wongsanga introduced the applications of e-certifications in Thailand. Their Department of Agriculture has been effectively deploying its ePhyto solution as well as connecting to the IPPC Hub through the National Single Window (NSW) to facilitate the exchange of ePhyto certificates with the National Plant Protection Organizations (NPPOs) worldwide by 2022. She also shared the status of Thailand in using ePhyto. There is a domestic policy for developing e-certificates and enabling exchange with other economies via NSW, and the various trade agreements and requirements with trading economies. Finally, she also shared about their collaboration with private sector. She also provided updates on the project implementation, and discussed opportunities to engage the private sector.

Establishment and application on e-certificate exchange between New Zealand and Chinese Taipei

Ming-Chia YUANG, Specialist, Trade Van Co., Chinese Taipei

Ms Yuang introduced the progress of e-certification in Chinese Taipei. The Ministry of Primary Industries of New Zealand proposed the cross-border cooperation for the exchange of e-certificates to the Bureau of Animal and Plant Health Inspection and Quarantine (BAPHIQ) of Chinese Taipei at the meeting of the ANZTEC SPS Joint Management Committee starting from 2017. The consultations with New Zealand on the exchange of e-certificate information were conducted in stages from 2018 to 2019, and electronic verification was conducted in 2020. Chinese Taipei used the current quarantine declaration and certificate system for e-certificate particulars.

Finally, she reiterated the advantages and disadvantages of e-certificates, including the use of specified paths and encrypted messages, the speed of transmission and verification, which reduces business costs and increases overall value. However, there is no multilateral platform for veterinary e-certificates, which leaves economies having to individually negotiate, deploy, and maintain such platforms among themselves.

2.4 Session 3 – Experience Sharing on Alternative Measure

APEC Survey results on the application of electronic certificates and alternative measures

Kenneth Dy, Academia Sinica

The results of the survey are reported in the next chapter

Harmonization issues of implementing e-Phyto and alternative validation mechanism

Christian DELLIS, Deputy Director, Phytosanitary Issues Management–Export Services, Animal and Plant Health Inspection Service (APHIS), USDA, the United States

Mr Dellis shared the basics of the ePhyto solution and showed the examples of how the e-certificate XML looks like. For him, the main features of ePhyto that stands out, and allows it to deliver the benefits that it does, are its validation tools, mapping capability (this is the most important feature according to him), cooperation among many economies, and its suitable level of flexibility. All these features took them years to develop. However, the effort paid off. Based on their computation, the system saves about \$30 per shipment; and given that they could handle up to around 700,000 certificates a year, that adds up to a lot of savings.

Lastly, he also pointed out that although going totally digital is ideal, papers are here to stay for a while since industry members still require physical documents for other purposes. This is one reason why the United States has made paper certificates permanently acceptable, alongside e-certificates. Their paper certificates have clear indicators as to whether the same has an e-certificate version. They also use QR codes on paper certificates that direct to a website where trading partners can verify authentication.

Digital practices and complementary security measures to facilitate trade in plant products in response to the COVID-19 pandemic

Kuo-Shiou HUANG, Section Chief, BAPHIQ, COA, Chinese Taipei

Dr Huang shared some digital practices and complementary security measures to facilitate trade in plant products during the COVID-19 pandemic. This talk focused on what were done during a time when handling of hardcopy certificates is not easy due, among other things, to limited labor force in ports and restricted courier services. Several economies quickly shifted to e-certificates.

He introduced us to some of the indications inscribed in the International Standards for Phytosanitary Measures No. 12 (ISPM 12). According to ISPM 12, phytosanitary e-certificates may be issued if it is accepted by the NPPO of the importing economy. They may also be subject to the following provisions: (a) the mode of issue, transmission and

level of security must be acceptable to the NPPOs of the importing economy and, if relevant, to the NPPOs of other economies involved; the information provided should be consistent with the IPPC model and satisfies the purposes set therein; and the identity of the issuing NPPOs should be adequately established and authenticated. After emphasizing the issue that not all trading partners can participate in the ePhyto system, he spoke about the temporary alternative arrangements in Chinese Taipei, as well as examples of alternative measures implemented by Brazil and South Africa. He concluded by reiterating the importance of e-certificates, complementary security measures, and expansion of the ePhyto system.

Q&A

Dr Su-San Chang asked about the possibility of extending the ePhyto or the GeNS to allow non-contracting parties of the IPPC to use the system and thereby facilitate agricultural trade globally. Mr Dellis reassured everyone that they are exploring possibilities of expanding the system to other parties and other certificate types (i.e., other products). He even mentioned that they are also discussing ways to help the industry digitize other documents even though this is not the government's job.

Ms Yi-Chieh Chen asked about how one can verify the authenticity/originality of a certificate printed on plain paper, and avoid it being repeatedly used. She further asked whether QR codes or e-signatures on paper certificates are good enough to verify the authenticity or detect forgery. Mr Dellis replied that it is difficult to prevent repeated use, although verifying authenticity is less challenging. Nevertheless, the United States accepts them, since container numbers or some other unique identifier on documents can't be easily replicated, at least, in the short-term. Mr Huang replied explaining the measures that Chinese Taipei has been implementing.

Director Woan-Ru Lee of BAPHIQ, COA asked about how veterinary e-certificates can be integrated with the ePhyto Hub as they shared in their survey response. Mr Dellis replied that a possible solution has been worked out with the IPPC, but the standards are still a work-in-progress and they don't have exchange partners for this veterinary certificate system.

2.5 Session 4 – APEC ME Report and Information Sharing

Australia

Mr Matthew Moore from Australia explained the changes in international trade that they have observed in the past couple of years. He also shared the changing of clearance processes in many economies, including the use of e-certifications and paperless trade, the use of online verification tools (including web view certificates) and the acceptance of scanned copies of paper certificates in Australia.

Chile

Mr Rodrigo Robles shared some statistics about their current use of e-certificates, and their ongoing e-certification projects with the Netherlands, Argentina, and with

economies within the Pacific Alliance. He believes that the system can still be improved through a strong institutional structure within the NPPO and veterinary services. He also suggested enhancing communication channels for stakeholders through the systems of exchange data between public and private sector.

Malaysia

Mr Redzuan Kamis from Malaysia explained the progress of e-certification in their economy, including an ongoing project with other members of the Association of Southeast Asian Nations (ASEAN) to develop the ASEAN Single Window (ASW). Finally, he shared the challenges of complying with international standards, the lack of funding and resources, as well as the lack of a multilateral veterinary e-certificate system.

Mexico

Ms Paola Carolina Carreño from Mexico explained how their single window system works. In Mexico, the ePhyto was integrated directly through the Single Window portal (VDMCE). Its development was carried out in coordination with Mexican Customs, hand in hand with the National Service for Agri-Food Health, Safety and Quality (SENASICA).

New Zealand

Dr Bill Jolly from New Zealand elaborated on their veterinary e-certificate, which covers food safety, animal health, halal, organic, origin and composition assurances. The biggest hurdles they faced include the lack of digitalized processes at importing economy ports, multiple border agencies involved who don't coordinate or share information, variability of data elements expected (too many economies are not using WOH/Codex model certificates), and most crucially, the lack of standardized scheme for animal product e-certificates. Finally, he suggested that WOH or Codex model certificates can be used for animals and animal products, for which the WOH or Codex needs to develop a standardized scheme for these model certificates.

The United States

Mr Bryce Carson explained some of the mechanisms behind their electronic export application and certification within their Public Health Information System (PHIS), which is a web-based system designed to collect, consolidate, and analyze data. He also shared the benefits and challenges of PHIS, including secure capture and transfer of data, certificate authentication, and time and resource savings. But they likewise face challenges like other economies' requirements for wet signatures or paper-based processes, and also the cost of development and prioritization of changes when needed.

2.6 Session 5 – Recommendations on Future Development

Opportunities and challenges for implementing ePhyto and other eSPS certificate solutions

Tom Butterly, ePhyto Initiative Manager, Global Alliance for Trade Facilitation

(GATF), Switzerland

Mr Butterly explained what their organization does which includes conducting business analysis for each project and helping single windows integrate with the ePhyto Hub. He highlighted the case of Morocco, and its ongoing projects with 8 different economies. Based on the success of the ePhyto project in Morocco, the Alliance and the IPPC Secretariat formed a partnership to support several economies in introducing ePhytos, making trade in plants and plant products simpler, faster and more cost-effective while still protecting consumer safety.

He encouraged all economies participating in the webinar to join the ePhyto Hub, and reassured everyone that it is not difficult to do so. As for veterinary e-certificates, he admitted that it was more complicated than phytosanitary, so he advised us to think small (e.g., small pilot projects), and not to wait for a perfect solution to come along.

Promoting trust and confidence on the use of electronic SPS certification

Christiane WOLFF, Counsellor, WTO Secretariat

Ms Wolff spoke about some of the works by the WTO with regard to e-certification. She then told that after meeting with industry players, they found out that some of the measures implemented during the pandemic are being rolled back. They are trying to find out why, and one reason they heard is that some agencies allegedly have vested interests in keeping paper certificates. After sharing the success story of Nigeria with Mexico on e-certification of hibiscus plants, she advocated for more successful case stories to be disseminated in order to draw more economies into the system.

Q&A

Prof Tony Hsu asked how non-IPPC members can use the GeNS or ePhyto Hub. Mr Butterly preferred not to answer this since he is not from the IPPC, and instead directed the question to Mr Dellis, and asked the inquirers to communicate with the IPPC directly. On the other hand, Mr Padilla acknowledged that due to the political nature of the matter, it is better to raise the issue with each economy's NPPOs and let them discuss with the IPPC, WOHAT or the Codex Alimentarius Secretariat. Apart from this, he recommended that non-IPPC parties can form or connect with regional Hubs such as the EU Traces, which is itself connected to the ePhyto Hub; this way, non-IPPC parties can still be indirectly connected to the Hub.

2.7 Session 6 – Closing Remarks

Dr Ching-Cheng Chang, Academia Sinica

Prof Ching-Cheng Chang provided a concluding presentation by explaining what e-certification is, why it matters, what progress has been achieved so far, and what may need to happen next. She reminded participants that based on ISPM 12, a phytosanitary certificate requires authenticity, integrity, and non-repudiation, which poses a real challenge for both paper and paperless exchanges of certificates. Apart from other

benefits of e-certification, she directed our attention to other advantages that were less emphasized during the workshop such as tackling food loss and waste, reducing greenhouse gas emissions, and promoting greater equity and gender inclusivity.

She also noted that even though there are 18 APEC member economies that are the IPPC contracting parties, only 10 of them exchange e-certificates through the ePhyto Hub. Nevertheless, APEC member economies are invariably willing to negotiate in multilateral and bilateral e-certificate systems; therefore, APEC has made some progress, but not enough has been achieved yet. She reiterated some other points made by various speakers during the webinar. In closing, she said that Chinese Taipei will collaborate with member economies on the development and use of e-certificates, harnessing its full potential as an enabler of inclusive growth and prosperity.

Dr Su-San Chang, Lead Shepherd, ATCWG

Dr Su-San Chang called for the importance of the goal of the APEC Food Security Roadmap Towards 2030 is to build “An open, fair, transparent, productive, sustainable and resilient APEC food system”, in which the 1st Key Action Area is precisely Digitalization and Innovation. This workshop is in line with the actions of digitalization and innovation. Finally, she expressed her hope that all the economies have learned much from these two days.

Mr Hung-Jen Liao, Section Chief, BAPHIQ, COA, Chinese Taipei

Mr Liao expressed his pleasure for a fruitful workshop. He further encouraged all the economies and recommend the application or best practices about the e-certificates throughout the APEC region.

III. Results of Surveys

There were two surveys conducted within the project period. First, “A Survey on the Application of Electronic Veterinary and Phytosanitary Certificate in APEC” was a pre-workshop survey designed to gather information about using e-certificate, alternatives to e-certificate during the COVID-19 pandemic, and the prospects of e-certificate. Subsequently, after the 2-day workshop, a post-workshop survey was distributed among the workshop participants to gather their opinions on the project.

3.1 Pre-workshop survey participants

In total, we were able to get 15 respondents from 12 member economies (see Table 3.1). Some member economies (MEs) responded twice since the agency in charge of phytosanitary (plant) certification is different from that of veterinary (animal) certification, and they preferred to answer separately.

Table 3.1 Number of respondents per member economy

Member Economy	Number	Member Economy	Number
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Australia	1	Papua New Guinea	1
Chile	2	The Philippines	1
Japan	1	Russia	1
Malaysia	2	Singapore	1
Mexico	2	Chinese Taipei	1
New Zealand	1	The United States	1

Ten respondents (eight economies) have indicated in question 1.1a that their economy uses e-certificates (see the blue area in Figure 3.1). Among those that have e-certificates, most have for both plants and animal products, based on answers to question 1.2. There were two MEs that indicated they have electronic veterinary certificates only.



Figure 3.1 Tree map chart of MEs using e-certificates

3.1.1 Existing multilateral and bilateral agreements

Figure 3.2 shows a pie chart that depicts the multilateral e-certificate system that member economies (MEs) are using (see question 1.4a). Note that the labels correspond to the number of respondents, not the number of economies. Only six respondents (five MEs) are users of the IPPC's ePhyto. Only Australia indicated that they are using a multilateral electronic veterinary certificate system. Those counted as none include those that do not have e-certificates at all, and those that may have bilateral e-certificate exchange systems with other economies, but without being in a multilateral system.

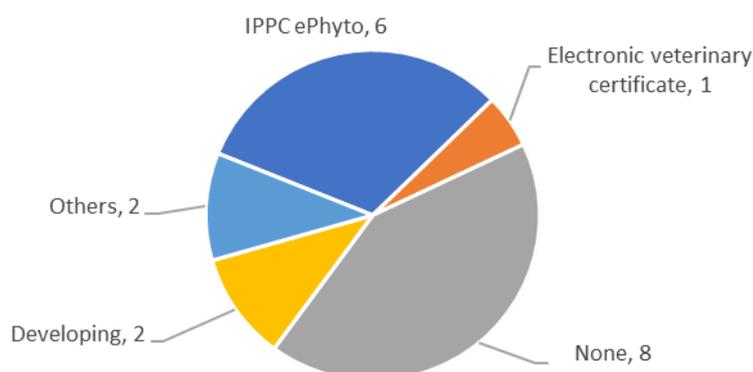


Figure 3.2 Multilateral electronic certificates used

Mexico uses a multilateral exchange system for electronic phytosanitary certificates with Colombia, Peru and Chile through *Alianza del Pacífico* (Pacific Alliance). Note

that Mexico, Peru and Chile are APEC member economies. Part of this alliance is for each member to establish an office that will serve as a Single Foreign Trade Window (or VUCE from its Spanish term Ventanilla Única de Comercio Exterior).² Their website explains, “The offices in charge of the VUCE in the member [economies] are meeting periodically in the development of a project that seeks to advance in the interoperability of the single windows... The work has focused on the implementation of the interoperability project of the phytosanitary certificates initially, and then on the digital certificate of origin, the animal health certificates and the customs declaration.”³ Both respondents from Chile mentioned that their economy is developing a multilateral single-window exchange system for electronic veterinary certificates with those in the Pacific Alliance.

Some economies like the United States exchanges phytosanitary certificates only through the IPPC ePhyto Hub and has no bilateral mechanisms for plant product certificates. In fact, the survey respondent from the United States shared that they are “developing a system to connect to the ePhyto Hub for live animal veterinary e-certification.”

Figure 3.3 depicts the bilateral partners with which APEC MEs have negotiated and established an electronic veterinary certificate exchange system (see question 1.4b). There were ten respondents (8 MEs) who indicated that they have bilateral agreements with other economies to exchange veterinary e-certificates. In this regard, five out of those ten respondents said their economy has bilateral agreements with Australia and the Republic of Korea; four out of ten with Hong Kong, China; New Zealand; the Russia Federation and non-APEC members; three out of ten with Canada; P.R. China; Malaysia and Thailand.

² Chile (<https://www.aduana.cl/sicex-ventanilla-unica-del-comercio-exterior/aduana/2019-01-04/161016.html>); Mexico (<https://www.ventanillaunica.gob.mx/vucem/index.html>); Peru (<https://www.vuce.gob.pe/>)

³ <https://alianzapacifico.net/en/technical-group-trade-facilitation-and-customs-cooperation/>

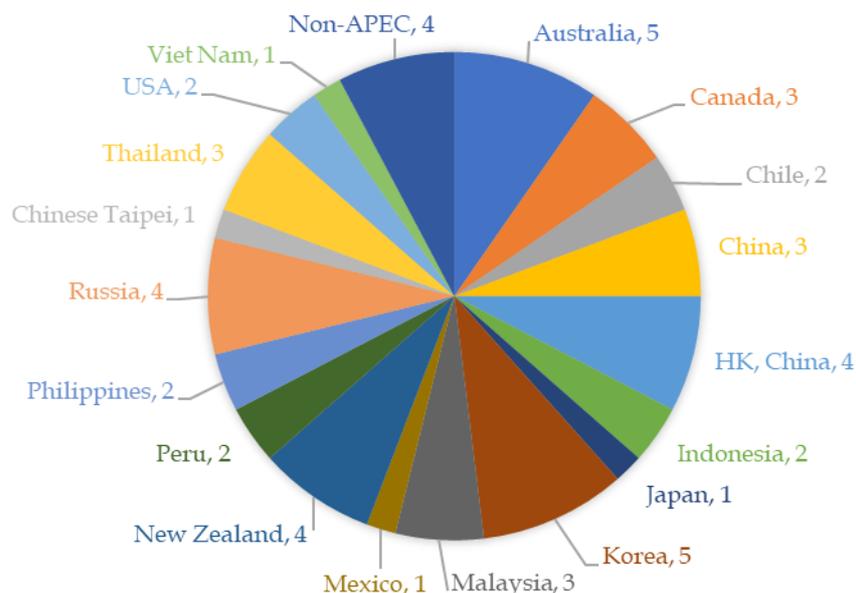


Figure 3.3 Existing bilateral electronic veterinary certificate exchange agreements

On the other hand, Figure 3.4 depicts the bilateral partners with which APEC MEs have negotiated and established an electronic phytosanitary certificate system (see question 1.4c). There were seven respondents (5 MEs) who indicated that they have bilateral agreements with other economies to exchange phytosanitary e-certificates. Most of their agreements are with non-APEC economies.

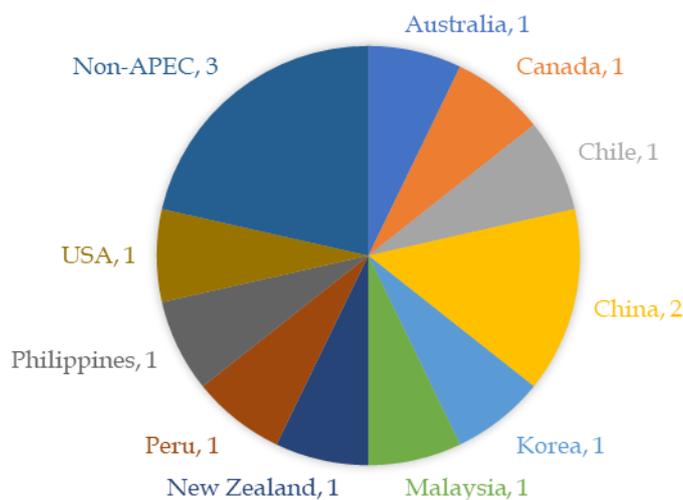


Figure 3.4 Existing bilateral electronic phytosanitary certificate exchange agreement

From Figures 3.3 and 3.4, one notices that there is more variety of bilateral partners when one looks at electronic veterinary certificates, as opposed to phytosanitary ones. A multilateral system for veterinary e-certificates may be beneficial to a lot of economies, especially in lowering transaction costs. In fact, when asked in question 1.5 why economies use both multilateral and bilateral e-certificate exchange systems, four out of 14 respondents ticked “There is no multilateral e-certificate system for

animal and animal products.” For example, the United States prefers a multilateral system, but since there is currently none in existence for animal products, it has to make bilateral agreements with Australia, New Zealand and the Netherlands for certification of edible meat, poultry, and egg products. Other main reasons for using both bilateral and multilateral systems include the need to trade with non-IPPC members or with economies not using the ePhyto Hub (see Figure 3.5).

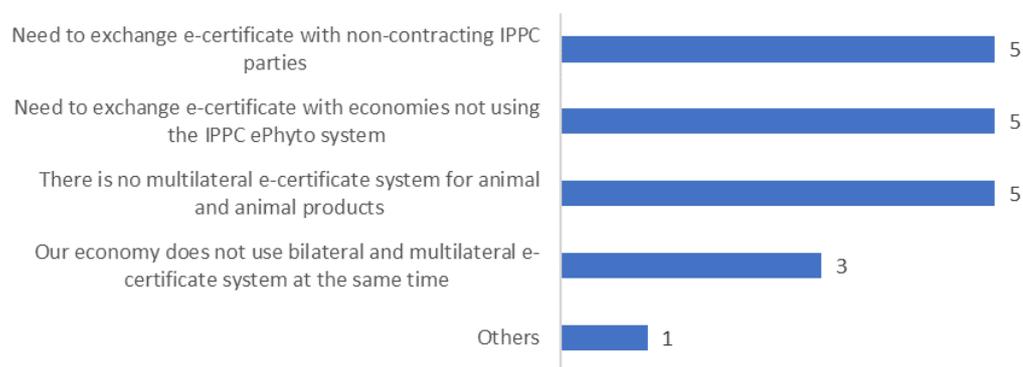


Figure 3.5 Reasons for using both multilateral and bilateral channels for e-certificate exchange

To further elaborate on their bilateral and multilateral arrangements, the respondent from Australia wrote in response to questions 1.3b and 1.3d, “Australia has a number of paperless veterinary [and phytosanitary] electronic exchanges with various [economies], as well as both parallel (sending paper and electronic certificates), and developing exchanges.” She further explains, “Australia is currently *sending* ePhyto’s via bilateral exchanges, and is able to *receive* [e-certificates] via a bilateral exchange as well as via the IPPC ePhyto Hub. Australia is developing our system to be able to also *send* ePhyto’s via the IPPC ePhyto Hub.” (italics added here) Hence, being able to receive ePhyto via IPPC’s multilateral Hub, does not necessarily mean an economy automatically can use the same system to send ePhyto certificates. In this case, it’s because an economy’s own system has not yet fully integrated with the ePhyto Hub. Likewise, the respondents from Chile, which is also an IPPC member, said, “Currently, we are sending electronic veterinary certificates with the People’s Republic of China; Hong Kong, China; the Russian Federation (both animal and fisheries); the Republic of Korea (both animal and fisheries)... [and] sending the 70% of the phytosanitary certification in electronic way, to about 40 economies and receiving from 11 [economies]” (italics added here). Therefore, several APEC MEs, despite being IPPC members still go through multiple bilateral negotiations.

Another general observation from the preceding two sections is the lack of APEC-wide e-certification system. Moreover, neither are the existing bilateral e-certification systems enough to cover all the APEC member economies.

3.1.2 Alternatives to electronic certificates

Part 2 of the questionnaire assumes that the economies use alternatives as a response to the pandemic since the traditional paper-based inspections and verifications were not possible while social distancing and lockdown policies were being implemented. However, it may be possible that these were not alternatives to e-certificates per se since some of them have not been using e-certificates to begin with. Such “alternatives” may have been there even before the pandemic (in lieu of e-certificates) or implemented as a response to the pandemic (in lieu of physical inspections).

Figure 3.6 shows the number of respondents who indicated that their economy is using QR codes or an official online database to check the authenticity of phytosanitary certificates (6a), or those printed on plain paper (6b), a forgery of which would be difficult to detect. Some of them, like Japan, may accept certificates printed on plain paper only as an exception, and only when there is an original signature and stamp. For some, the QR codes and official online databases have been in operation as part of the authentication or verification process of paper certificates. Most of them indicated that they will continue such arrangements as part of a new normal after the pandemic (6c). Figures (6a) to (6c) are based on responses to questions 2.1 to 2.3.

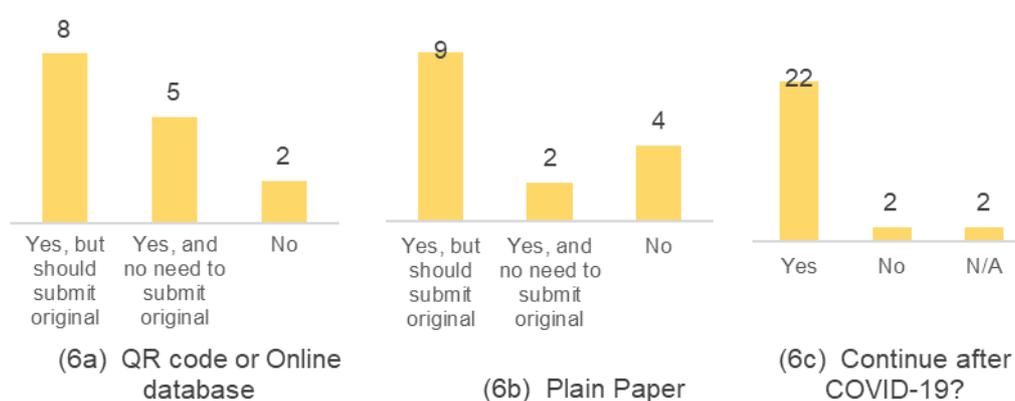


Figure 3.6 Alternatives to phytosanitary e-certificates

Respondents were likewise asked about alternatives to veterinary e-certificates. Figure 3.7 shows the number of respondents who indicated that their economy is using QR codes or an official online database to check the authenticity of veterinary certificates (7a), or those printed on plain paper (7b), a forgery of which would be difficult to detect. Similar to the case of phytosanitary measures, most of them indicated that such policies will continue after the pandemic (7c). Figures (7a) to (7c) are based on responses to questions 2.4 to 2.6.

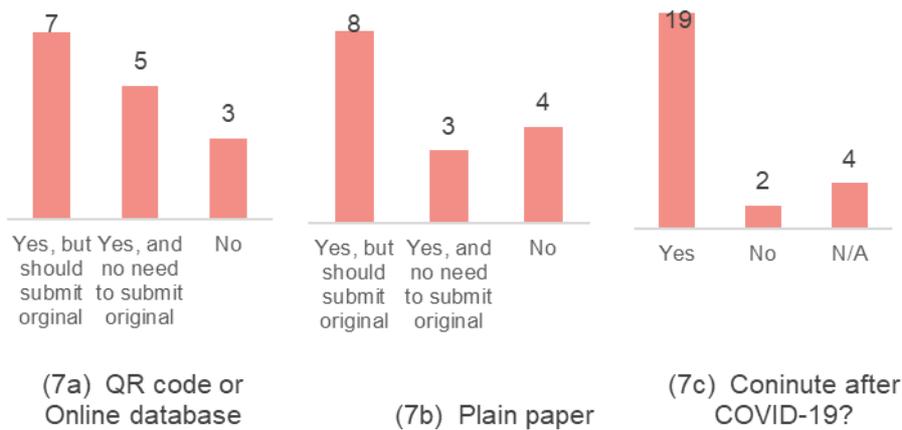


Figure 3.7 Alternatives to veterinary e-certificates

For Figure (6b) and (7b), very few economies indicated that there is no need to submit the original. In other words, for some economies, certificates printed on plain paper are treated equivalently as original; but for most other respondents, this is not the case.

3.1.3 Policies to prevent repeated use of printed certificates or verify authenticity

In questions 2.3a, 2.3c, 2.6a and 2.6c, the questionnaire asked respondents whether they have any policy to avoid photocopies of a certificate from being repeatedly used, or any policy to verify the authenticity of a photocopied certificate.

Immediately noticeable is that most respondents chose not applicable (N/A), indicating that their economy does not accept photocopies. Barely half of those who accepted photocopies also said they have a policy against its repeated use. It would seem that there is still room for improvement in this regard. On the other hand, a majority of those who indicated that their economy accepts photocopy certificates, also said that they have policies to verify authenticity. Figures (3.8a) and (3.8b) correspond to answers for questions 2.3a to 2.3d.

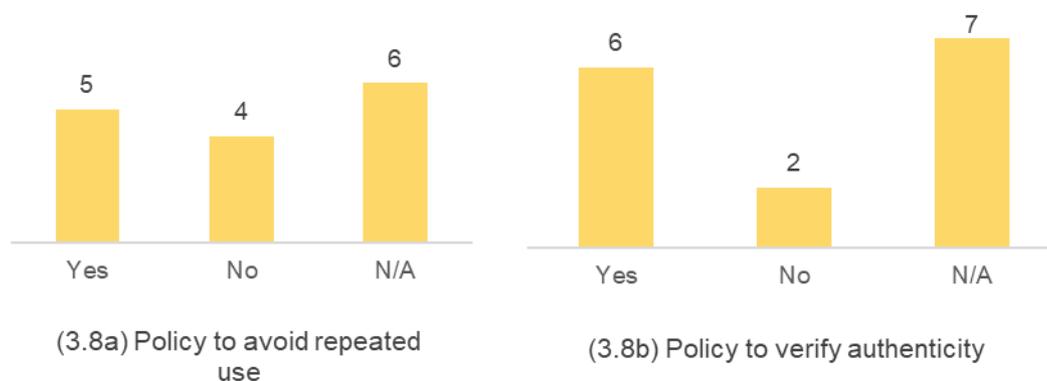


Figure 3.8 Policies to avoid repeated use and verify authenticity of photocopy phytosanitary certificates

Similar to phytosanitary certificates, most economies do not accept photocopy certificates in general. Likewise, there is an evident need to develop policies against the multiple uses of the same photocopy certificate (See Figure 3.9). Figures (3.9a) and (3.9b) correspond to answers for questions 2.6a to 2.6d.



Figure 3.9 Policies to avoid repeated use and verify authenticity of photocopy veterinary certificates

Some economies, such as Papua New Guinea and the Philippines, categorically stated that they only accept originals to ensure that only one certificate is used for each entry of goods. As for the details about policies for preventing repeated use and checking the authenticity of photocopied certificates under questions 2.3b, 2.3d, 2.6b and 2.6d, due to page limitations, they are omitted from this report. Readers may contact the authors or APEC secretariat for the preliminary report that includes a table on such.

From the answers in Section 2, the responses to both the multiple-choice-type questions and open-ended questions appear to agree that policies to verify the authenticity of paper certificates are mostly in place, while policies to prevent repeated use still require some improvement in general across the APEC region. With regard to verification, most of the economies use email communication with exporting economies.

3.1.4 Prospects of electronic certificates

This section presents the results for the third part of the survey asking respondents about their economy's willingness to negotiate a multilateral and bilateral electronic certificate exchange systems. Due to technical errors that prevented earlier respondents to choose multiple answers in question 3.1, answers thereof are superseded by responses to questions 3.1a to 3.1d, which are sufficient to express the economies' willingness.

Figure 3.10 shows the number of respondents who indicated that their economy is willing to establish a multilateral phytosanitary e-certificate system. There were 12 out of 15 respondents who said that their economy is willing to use the IPPC ePhyto Hub. However, six of these 12 are already users of ePhyto. Like the case of Australia, this may indicate that current users still need to update their system in order to be able to fully utilize the Hub since each economy may not necessarily be able to both receive and send ePhyto certificates, e.g., they may be able to receive ePhyto through the Hub, but still require bilateral agreements to send e-certificates to other economies. This may also indicate that incumbent ePhyto users are willing to extend access to the Hub with non-IPPC members. Indeed, the respondent from Australia said that they are “happy to also maintain bilateral phytosanitary exchanges where [economies] are unable to connect to the IPPC ePhyto Hub.” Likewise, Mexico is willing to extend the scope of the Pacific Alliance they have with Chile, Colombia and Peru. Since the coverage of the ePhyto Hub is still limited, its users still require bilateral agreements with several other trading partners. This situation will become more acute since one lesson that economies have learned from the global supply chain disruption of the past two-and-a-half years is that maintaining a diverse set of trading partners can be beneficial.

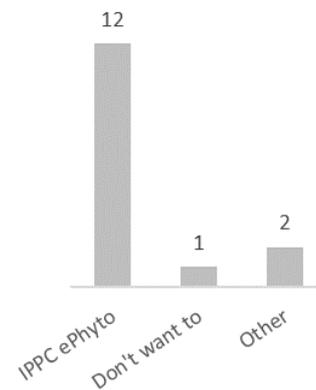


Figure 3.1 Willingness to establish multilateral phytosanitary e-certificate exchange system

Some respondents mentioned other multilateral channels such as the ASEAN Single Window (ASW),⁴ and for veterinary e-certificates, the platform of World Organisation for Animal Health (WOAH) for e-animal health certificate.⁵

Figure 3.11 and 3.12 show the economies with which the respondent’s economy is willing to negotiate a bilateral e-certificate for animal and plant products, respectively. For these two graphs, however, the answers to question 3.1b and 3.1c had to be double-checked against their answers to question 1.4b and 1.4c. Suppose a respondent indicated in question 1.4b that their economy already has a bilateral veterinary e-certificate system with economy B, then it would be inconsistent in question 3.1b to indicate that they are willing to negotiate again with Economy B; unless, they meant that they want to establish one for another animal product that the existing system does not cover. But in the absence of specific evidence for such, this simple survey cannot presume such a conclusion. Therefore, answers to question 3.1b and 3.1c were adjusted to remove such anomalies. The results are as presented here.

In contrast to Figures 3.3 and 3.4, where existing bilateral systems are depicted, and

⁴ <https://asean.org/our-communities/economic-community/asean-single-window/>

⁵ Formerly, WOAHA was called *Office International des Epizooties* (OIE). Their website: <https://www.woah.org/en/home>.

where it would seem that APEC economies are not willing to establish e-certificate relations, it seems that there is in fact a general willingness to work with all member economies. This would seem to be especially true for animal products where there were fewer respondents who said their economy is not willing to start negotiations with any economy, whether within or outside APEC. All economies that do not have e-certificates (based on responses to question 1.1a) are invariably willing to negotiate both multilateral and bilateral e-certificate exchange systems.

Some economies shared that they are in the process of establishing bilateral agreements like Chinese Taipei establishing a bilateral veterinary e-certificate with New Zealand. Others like Japan said they are willing to negotiate bilateral exchange systems but only for veterinary and not for phytosanitary e-certificates. Even though they have no current plans to negotiate with any economy, they are willing to consider this if other economies request it.

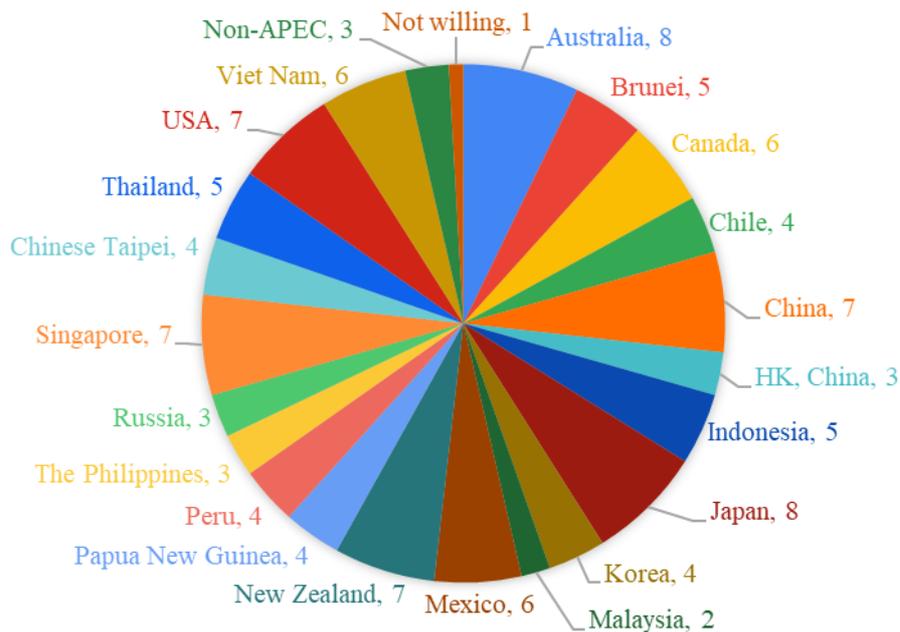


Figure 3.11 Willingness to negotiate bilateral veterinary e-certificate system with ...

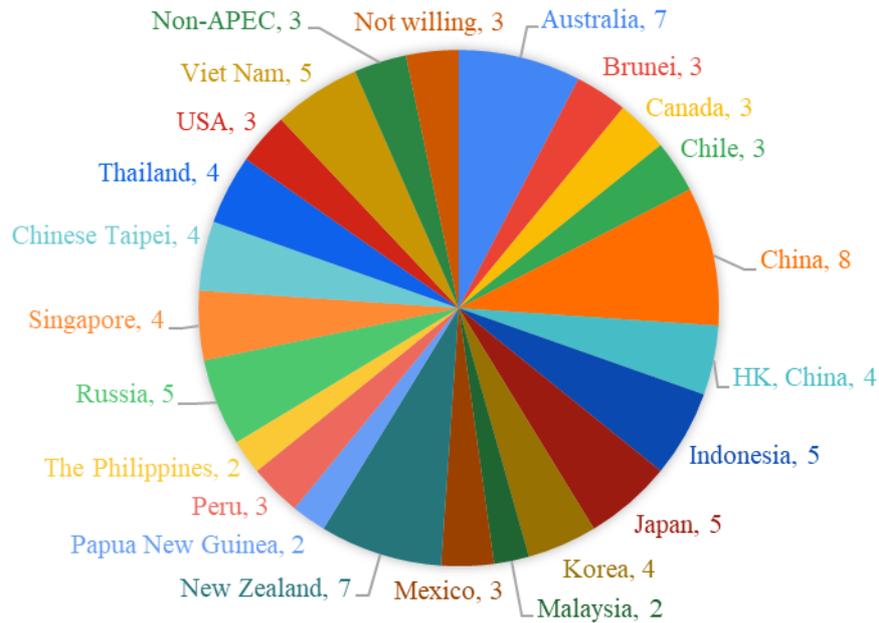


Figure 3.12 Willingness to negotiate bilateral phytosanitary e-certificate system with ...

Finally, questions 1.1b, 1.6, and 3.1d all relate to areas for improvement insofar as e-certificates are concerned. The first two—questions 1.1b and 1.6—are virtually the same, except that one is for those who do not have any e-certificates (4 MEs), and the other for those that do have (8 MEs). They are depicted in Figures 3.13 and 3.14, respectively. It was noted in the previous section that most of those who do not have bilateral systems with other MEs are nevertheless willing to negotiate one. Indeed, as Figure 13 shows most of those who do not have e-certificates (at all, either multilateral or bilateral) are in the process of developing their economy’s platform. This section may shed some light on the likely obstacles to successfully arriving at a bilateral or multilateral agreement.

Another perspective to view the chart below is that, except for lack of funding and resources, all the other three reasons do not deter an economy from setting up or, at least, endeavoring to establish e-certificate platforms.



Figure 3.13 Reason for not using an e-certificate system

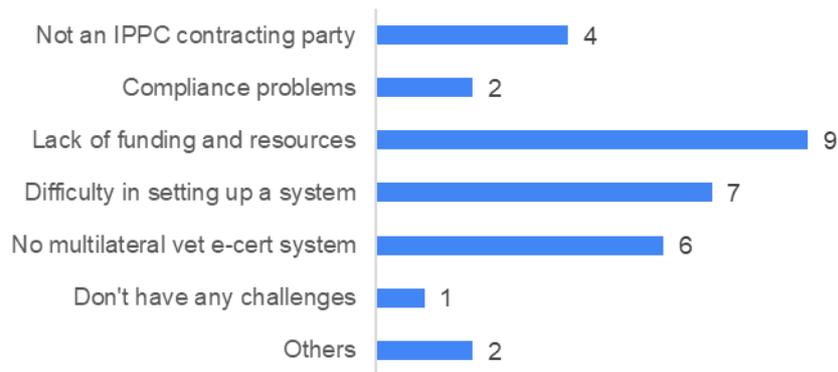


Figure 3.14 Challenges in setting up or using e-certificates

In Figure 3.14, among all the choices offered as possible challenges, on the top is lack of funding and resources, followed by difficulty in setting up a system. Several respondents also ticked the absence of multilateral veterinary e-certificate system. The respondents that ticked “Not an IPPC contracting party, so cannot use its ePhyto system” includes those whose economies are already IPPC members, which again suggests that IPPC members are still constrained in this regard despite being users of the ePhyto Hub.

In addition to the choices provided, the respondent from New Zealand further wrote, “Lack of digitisation of import controls has been a major hold up for transitioning to e-cert with many [economies]. Similarly, too many border agencies want to do their own thing rather than coordinate and exchange via single windows and share information with all of the other border agencies as relevant to the clearance of that commodity across the border and into commerce.”

Figure 3.15 shows the reasons why an economy may not be willing to negotiate either a bilateral or a multilateral e-certificate exchange system, either for animal or plant products (question 3.1d). Unsurprisingly, this item is overwhelmingly not applicable to many who are willing to establish such platforms. For those who are not (mostly referring to bilateral e-certificate systems), the same two reasons are given: lack of funding and resources, and difficulty in setting up a system.

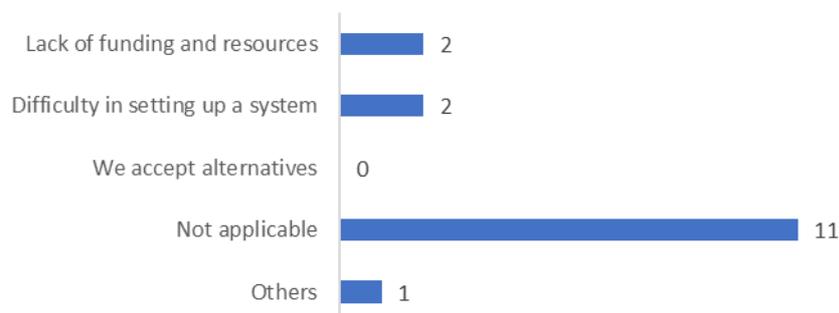


Figure 3.15 Reasons for unwillingness to negotiate

Note that question 3.1d encompasses both multilateral and bilateral systems. On

why an economy may favor multilateral, and reject bilateral negotiations, according to one respondent, who is in charge of using ePhyto for one economy, the best way to get ePhyto working is to have similar standards for all economies. Such initiatives have been attempted by the IPPC and recently by ASEAN for member economies. Having multiple bilateral negotiation between economies with specific standards is going to slow down the process. For this reason, some economies prefer to have multilateral negotiations rather than bilateral negotiations. New Zealand for question 1.5 also expressed the same thing; that standardization in certificates and associated schemes is crucial in getting more economies to use veterinary e-certificates. The respondent further explains that if economies were to use “the model WOH and Codex certificates and if we collectively agreed to a standardised schemes for these, then this would greatly simplify both the development of export and import systems and the associated exchanges.”

The respondent from the United States agrees with the above remarks writing in question 1.6, “The biggest challenge was [that] prior to the IPPC Hub, every trading partner interpreted the application of it differently even though the UN/CEFACT standard was in place. This led to all the work having to be duplicated each time which took tremendous amounts of time and unnecessary costs. Once the IPPC mapping became available, there are more standard rules, and it is much easier to incorporate new trading partners. In the United States, multiple agencies have jurisdiction over agricultural commodities, thus making it difficult to implement a unified solution. It is also difficult to find partner [economies] to collaborate on e-certification processes who have the resources, desire, and a system to achieve the goal. International cooperation and standard-setting are needed, including collaboration among international standard-setting bodies so there is more consistency among the SPS e-certification requirements.”

3.2 APEC Project Evaluation Survey

After the workshop, we distributed the “APEC Project Evaluation Survey” to participants and received 54 responses from 8 economies. Table 3.2 shows the breakdown of the respondents according to the economy.

Table 3.2 Respondents by Member Economy

Member Economy	Number	Member Economy	Number
Chile	1	New Zealand	2
Hong Kong, China	1	Singapore	1
Malaysia	4	Chinese Taipei	27
Mexico	12	Thailand	5

The implementation of this project has enhanced the understanding of the topic among the participants. Moreover, almost all respondents agreed the content was well organized and easy to follow, and the materials distributed were useful.

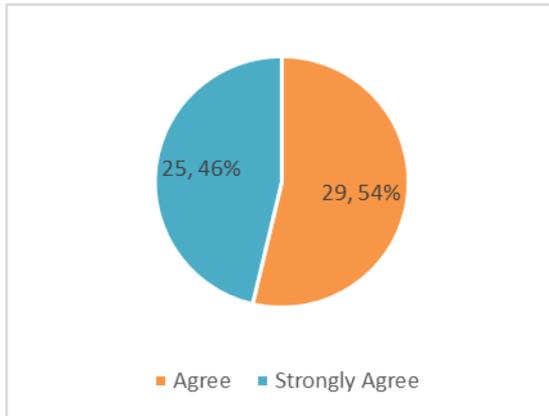


Figure 3.16 *The content was well organized and easy to follow*

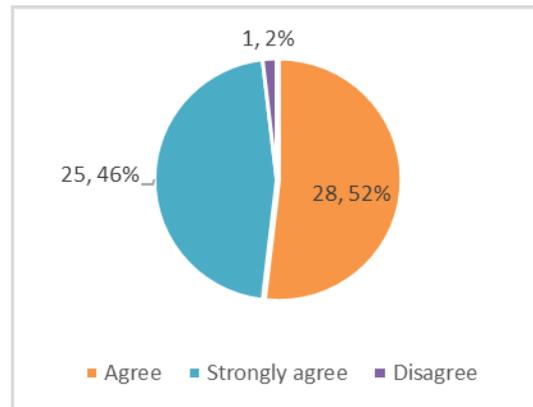


Figure 3.17 *The materials distributed were useful*

As Figures 3.16 and 3.17 show, 100% of respondents agree the content was well organized and easy to follow (46% of respondents strongly agree), and 98% of respondents agree the materials distributed were useful (46% of respondents strongly agree).

When asked whether this workshop achieved its intended objectives, about 46% of the participants answered strongly agree, as shown on Figure 3.18. Regarding whether gender issues were sufficiently addressed during the implementation, more than 98% of the respondents answered in the affirmative (of which, 37% strongly agreed), as Figure 3.19 shows.

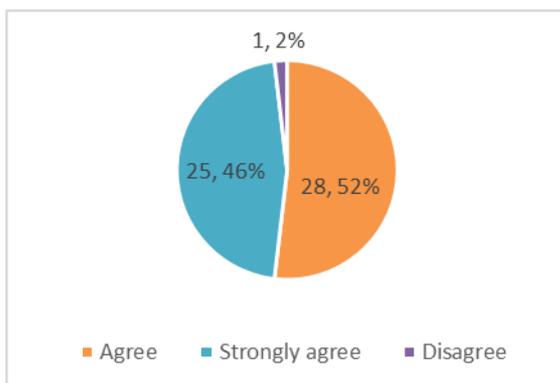


Figure 3.18 *The project achieved its intended objectives*

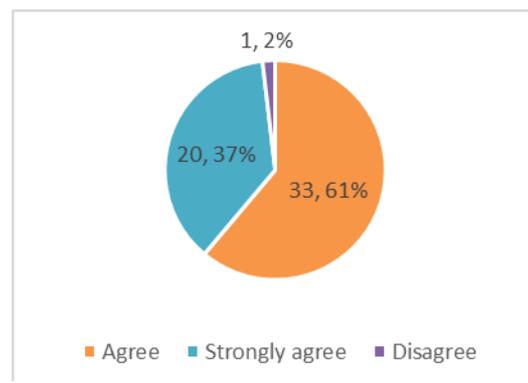


Figure 3.19 *Gender issues were sufficiently addressed during implementation*

Moreover, most of the respondents thought the workshop was relevant to their economy. As Figure 3.20 shows, only 2% of respondents thought this workshop to be of little relevance. Finally, respondents were asked what needs to be done next by APEC, and what should be improved in this workshop. Twelve out of 54 respondents hope to organize a workshop on collaboration with government and private sectors from all member economies to exchange e-certificates, while eight respondents hoped to have similar conferences in the future. On improvements to this workshop, eight respondents hope to have more best practices or cases about technical information and the use of e-certificates. Lastly, seven out of 54 respondents hope to have more Q&A in each session.

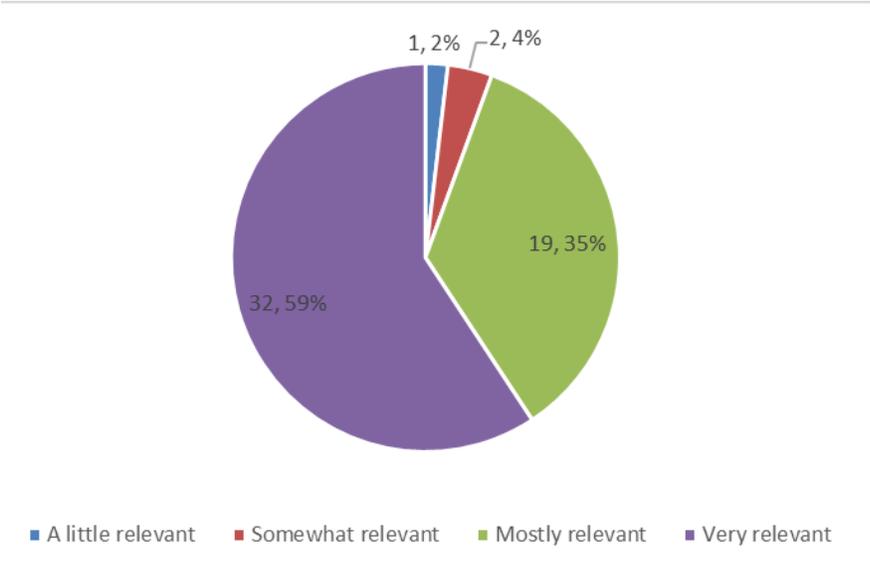


Figure 3.20 *How relevant was this project to you and your economy*

IV. Agenda

Dates: October 13 – 14, 2022

Time: 09:00am - 11:30am Taipei time (CTT / UTC+8)

Location: Webex (<https://shorturl.at/dnUX5>)

Organiser: Bureau of Animal and Plant Health Inspection and Quarantine (BAPHIQ), Council of Agriculture

Host economy: Chinese Taipei

Day 1: October 13, 2022 (Thursday)	
08:00 – 09:00	Login and system checks <ul style="list-style-type: none"> - Delegates to login using the assigned usernames - Checking audio and visual connections - Connection confirmation, familiarization with ‘Chat’ function
09:00 – 09:20	Welcome and Opening (MC) <ul style="list-style-type: none"> - Hui-Chuan CHOU, Deputy Director General, Bureau of Animal and Plant Health Inspection and Quarantine (BAPHIQ), Council of Agriculture (COA), Chinese Taipei - Su-San CHANG, Lead Shepherd, Agricultural Technical Cooperation Working Group (ATCWG), APEC - Teddy PAVON, Program Director, APEC Secretariat Group Photo
09:20 – 10:20	Session 1 – Introduction to SPS eCertification <ol style="list-style-type: none"> 1. Digital opportunities for SPS systems and the trade facilitation effects of SPS electronic certification. <ul style="list-style-type: none"> - Annelies DEUSS, Senior Agricultural Policy Analyst, Organisation for Economic Co-operation and Development (OECD) 2. Establishment, current utilization and future aspect on ePhyto Hub and ePhyto Solution <ul style="list-style-type: none"> - Tang-Kai WANG, Chair, Committee on SPS Measures, World Trade Organization (WTO) 3. E-Certification of live animals and animal products <ul style="list-style-type: none"> - Erik BOSKER, International Expert in E-veterinary Certificate, Ministry of Agriculture, Nature and Food Quality, the Netherlands 4. Promoting wider adoption of e-certification for trade facilitation in Asia Pacific <ul style="list-style-type: none"> - Sangwon LIM, Special Advisor, United Nations Network of Experts for Paperless Trade and Transport in Asia and the Pacific (UNNEXt) Moderator: Su-San CHANG , Lead Shepherd, ATCWG, APEC
10:20 – 10:25	Break
10:25 – 11:25	Session 2 – Application of eCertification - Perspectives from government and industry <ol style="list-style-type: none"> 1. Guidance and experiences in Implementing paperless use of electronic certificate from Australia <ul style="list-style-type: none"> - Matthew MOORE, Director, Department of Agriculture, Fisheries and Forestry, Australia 2. Current situation and prospects for the application of electronic certificate system in Japan <ul style="list-style-type: none"> - Keitaro NAGANO, Principal Animal Quarantine Officer, Animal Quarantine Service,

	<p>Ministry of Agriculture, Forestry and Fisheries (MAFF), Japan</p> <p>3. Modernising agri-food trade in Thailand by replacing paper phytosanitary certificates with ePhyto Solution</p> <ul style="list-style-type: none"> - Pouchamarn WONGSANGA, Project Director, Gesellschaft für Internationale Zusammenarbeit (GIZ), Thailand <p>4. Establishment and application on e-certificate exchange between New Zealand and Chinese Taipei</p> <ul style="list-style-type: none"> - Ming-Chia YUANG, Specialist, Trade Van Co., Chinese Taipei <p>Moderator: Ching-Cheng CHANG, Research Fellow, Academia Sinica, Chinese Taipei</p>
11:25 – 11:30	Closing of Day 1 (MC- What is planned for Day 2)

Day 2: October 14, 2022 (Friday)	
08:00 – 09:00	Login and system checks <ul style="list-style-type: none"> - Delegates to login using the assigned usernames - Checking audio and visual connections - Connection confirmation, familiarization with ‘Chat’ function
09:00 – 09:05	MC – Recap, Objectives for Day 2
09:05 – 10:00	Session 3 - Experience Sharing on Alternative Measures <i>Cases on using alternative temporary measures by QR code or an official website that can be equivalent to the paper/e-certificates.</i> <ol style="list-style-type: none"> 1. APEC Survey results on the application of electronic certificates and alternative measures <ul style="list-style-type: none"> - Kenneth DY, Postdoctoral Fellow, Academia Sinica, Chinese Taipei 2. Harmonization issues of implementing e-Phyto and alternative validation mechanism <ul style="list-style-type: none"> - Christian DELLIS, Deputy Director, Phytosanitary Issues Management–Export Services, Animal and Plant Health Inspection Service (APHIS), USDA, the United States 3. Digital practices and complementary security measures to facilitate trade in plant products in response to the COVID-19 pandemic <ul style="list-style-type: none"> - Kuo-Shiou HUANG, Section Chief, BAPHIQ, COA, Chinese Taipei <p>Q&A 10 mins Moderator: Woan-Ru LEE, Director, BAPHIQ, COA, Chinese Taipei</p>
10:00 – 10:20	Session 4 - APEC ME Report and Information Sharing - 3 mins for each economy (non-mandatory) Moderator: Ching-Cheng CHANG , Research Fellow, Academia Sinica, Chinese Taipei
10:20 – 10:30	Break
10:30 – 11:10	Session 5 - Recommendations on Future Development <i>Recommendations on future development and cooperation in APEC on electronic SPS certification for sustainable economic growth.</i> <ol style="list-style-type: none"> 1. Opportunities and challenges for implementing ePhyto and other eSPS certificate solutions <ul style="list-style-type: none"> - Tom BUTTERLY, ePhyto Initiative Manager, Global Alliance for Trade Facilitation (GATF), Switzerland 2. Promoting trust and confidence on the use of electronic SPS certification <ul style="list-style-type: none"> - Christiane WOLFF, Counsellor, WTO Secretariat <p>Q&A 10 mins Moderator: Simon PADILLA, Economic Affairs Officer, Standards and Trade Development Facility (STDF)</p>
11:10 – 11:30	Session 6: Closing Remarks (MC) <ul style="list-style-type: none"> - Ching-Cheng CHANG, Research Fellow, Academia Sinica, Chinese Taipei - Su-San CHANG, Lead Shepherd, ATCWG, APEC - Hung-Jen LIAO, Section Chief, BAPHIQ, COA, Chinese Taipei (Project Overseer)

Appendix A Survey Questionnaire

This appendix is omitting the introductory part of the survey.

1. The information of using e-certificate

1.1a Does your economy use e-certificates?

- Yes (Please proceed to Question 1.2)
- No

1.1b Please choose the possible reason(s) why your economy does not use e-certificates. (Please proceed to Question 2)

- Not an IPPC contracting party, so we cannot use its ePhyto system
- Problems regarding compliance with international standards
- Lack of funding and resources
- Difficulty in setting up a system, or system compatibility issues
- Other: _____

1.2 Please choose the type of e-certificate being used by your economy.

- Animal Quarantine
- Plant Quarantine (proceed to 1.3c and 1.3d)
- Both

1.3a Please indicate the agencies in charge of Electronic Veterinary Certificate in your economy. (Please provide links, if available.)

1.3b Please provide information on Electronic Veterinary Certificate in your economy. If you have a sample certificate, kindly send it to apec.ecert@gmail.com. (Please provide links, if available.)

1.3c Please indicate the agencies in charge of Electronic Phytosanitary Certificate in your economy. (Please provide links, if available.)

1.3d Please provide information on Electronic Phytosanitary Certificate in your economy. If you have a sample certificate, kindly send it to apec.ecert@gmail.com. (Please provide links, if available.)

1.4a Is your economy using any **multilateral** e-certification system? (multiple choice)

- IPPC ePhyto
- Electronic veterinary certificate

Not using a multilateral e-certification system

Other: _____

1.4b Please choose the economies with which your economy has a ***bilateral*** electronic veterinary certificate system. If none, please check "None". (multiple choice)

- | | |
|--|--|
| <input type="checkbox"/> Australia | <input type="checkbox"/> Papua New Guinea |
| <input type="checkbox"/> Brunei Darussalam | <input type="checkbox"/> Peru |
| <input type="checkbox"/> Canada | <input type="checkbox"/> The Philippines |
| <input type="checkbox"/> Chile | <input type="checkbox"/> Russia |
| <input type="checkbox"/> P.R. China | <input type="checkbox"/> Singapore |
| <input type="checkbox"/> Hong Kong, China | <input type="checkbox"/> Chinese Taipei |
| <input type="checkbox"/> Indonesia | <input type="checkbox"/> Thailand |
| <input type="checkbox"/> Japan | <input type="checkbox"/> The United States |
| <input type="checkbox"/> Republic of Korea | <input type="checkbox"/> Viet Nam |
| <input type="checkbox"/> Malaysia | <input type="checkbox"/> Non-APEC member economies |
| <input type="checkbox"/> Mexico | <input type="checkbox"/> None |
| <input type="checkbox"/> New Zealand | |

1.4c Please choose the economies with which your economy has ***bilateral*** electronic phytosanitary certificate system. If none, please check "None". (multiple choice)

- | | |
|--|--|
| <input type="checkbox"/> Australia | <input type="checkbox"/> Papua New Guinea |
| <input type="checkbox"/> Brunei Darussalam | <input type="checkbox"/> Peru |
| <input type="checkbox"/> Canada | <input type="checkbox"/> The Philippines |
| <input type="checkbox"/> Chile | <input type="checkbox"/> Russia |
| <input type="checkbox"/> P.R. China | <input type="checkbox"/> Singapore |
| <input type="checkbox"/> Hong Kong, China | <input type="checkbox"/> Chinese Taipei |
| <input type="checkbox"/> Indonesia | <input type="checkbox"/> Thailand |
| <input type="checkbox"/> Japan | <input type="checkbox"/> The United States |
| <input type="checkbox"/> Republic of Korea | <input type="checkbox"/> Viet Nam |
| <input type="checkbox"/> Malaysia | <input type="checkbox"/> Non-APEC member economies |
| <input type="checkbox"/> Mexico | <input type="checkbox"/> None |
| <input type="checkbox"/> New Zealand | |

1.5 If your economy is already using a ***multilateral*** system yet still has ***bilateral*** e-certificate systems, please check the possible reasons below. (multiple choice)

- Need to exchange e-certificate with non-contracting IPPC parties
- Need to exchange e-certificate with economies not using the IPPC ePhyto system
- There is no multilateral e-certificate system for animal and animal

products

- Our economy does not use bilateral and multilateral e-certificate system at the same time
- Other: _____

1.6 Which challenges did your economy face with regard to setting up or using e-certificates? (multiple choice)

- Not an IPPC contracting party, so cannot use its ePhyto system
- Problems regarding compliance with international standards
- Lack of funding and resources
- Difficulty in setting up a system, or system compatibility issues
- Animals and animal products don't have multilateral e-certificate system
- Don't have any challenges
- Other: _____

2. Alternatives to e-certificate during COVID-19

A. Plant Quarantine

2.1 During the COVID-19 pandemic, did your economy accept alternatives like QR code to check authenticity, or searching through an official online database, to allow imports of **plants and plant products**?

- Yes, but should submit original
- Yes, and no need to submit original
- No

2.2 During the COVID-19 pandemic, did your economy accept quarantine certificates, which had been printed on a plain paper (i.e., difficult to detect forgery), to allow imports of **plants and plant products**?

- Yes, but should submit original
- Yes, and no need to submit original
- No

2.3 After the COVID-19 pandemic, will your economy continue accepting those alternatives in Q2.1 and Q2.2?

- Yes: Certificates with QR code to check authenticity
- Yes: Official online database that can be searched
- Yes: Certificates printed on a plain paper (i.e., difficult to detect forgery)
- No, we will stop accepting the above alternatives
- Not applicable because we never accepted the above during the pandemic (Please indicate "Not applicable" for 2.3a to 2.3d on the next page.)

2.3a Does your economy have any policies to avoid photocopies of a certificate (**plants and plant products**) being repeatedly used?

- Yes
- No
- Not applicable because we never accepted photocopies

2.3b Please briefly describe your economy's policies to avoid photocopies of a quarantine certificate being repeatedly used. (Please provide links, if available.)

2.3c Do you have any policies to verify the authenticity of a photocopy certificate (**plants and plant products**)?

- Yes
- No
- Not applicable because we never accepted photocopies

2.3d Please describe your economy's policies to verify the authenticity of a photocopy certificate. (Please provide links, if available.)

B. Animal Quarantine

2.4 During the COVID-19 pandemic, did your economy accept alternatives like QR code to check authenticity, or searching through an official online database, to allow imports of **animal and animal products**?

- Yes, but should submit original
- Yes, and no need to submit original
- No

2.5 During the COVID-19 pandemic, did your economy accept quarantine certificates, which had been printed on a plain paper (i.e., difficult to detect forgery), to allow imports of **animal and animal products**?

- Yes, but should submit original
- Yes, and no need to submit original
- No

2.6 After the COVID-19 pandemic, will your economy continue accepting those alternatives in Q2.4 and Q2.5?

- Yes: Certificates with QR code to check authenticity
- Yes: Official online database that can be searched
- Yes: Certificates printed on a plain paper (i.e., difficult to detect forgery)
- No, we will stop accepting the above alternatives
- Not applicable because we never accepted the above during the pandemic (Please indicate "Not applicable" for 2.6a to 2.6d on the next page.)

2.6a Does your economy have any policies to avoid photocopies of a certificate (**animal and animal products**) being repeatedly used?

Yes

No

Not applicable because we never accepted photocopies

2.6b Please briefly describe your economy's policies to avoid photocopies of a certificate being repeatedly used. (Please provide links, if available.)

2.6c Do you have any policies to verify the authenticity of a photocopy certificate (**animal and animal products**)?

Yes

No

Not applicable because we never accepted photocopies

2.6d Please describe your economy's policies to verify the authenticity of a photocopy quarantine certificate. (Please provide links, if available.)

3. The prospects of e-certificate

3.1 Is your economy willing to negotiate with other economies to establish a phytosanitary and/or veterinary e-certificate exchange system? (multiple choice)

Yes, for multilateral e-certificate system

Yes, for bilateral e-certification systems

No (Please proceed to 3.1d)

3.1a Please choose the **phytosanitary** e-certification system which you're willing to establish with other member economies.

Use IPPC ePhyto

We don't want to establish a multilateral phytosanitary e-certification system

Other: _____

3.1b Please choose the economies with which your economy is willing to negotiate in order to establish a **bilateral veterinary** e-certification system. (multiple choice)

Australia

Brunei Darussalam

Canada

Chile

P.R. China

Hong Kong, China

Indonesia

Japan

- Republic of Korea
- Malaysia
- Mexico
- New Zealand
- Papua New Guinea
- Peru
- The Philippines
- Russia
- Singapore

- Chinese Taipei
- Thailand
- The United States
- Viet Nam
- Non-APEC member economies
- Not willing to negotiate bilateral veterinary e-certificates with another economy

3.1c Please choose the economies with which your economy is willing to negotiate in order to establish a **bilateral phytosanitary** e-certification system. (multiple choice)

- Australia
- Brunei Darussalam
- Canada
- Chile
- P.R. China
- Hong Kong, China
- Indonesia
- Japan
- Republic of Korea
- Malaysia
- Mexico
- New Zealand
- Papua New Guinea
- Peru

- The Philippines
- Russia
- Singapore
- Chinese Taipei
- Thailand
- The United States
- Viet Nam
- Non-APEC member economies
- Not willing to negotiate bilateral phytosanitary e-certificates with another economy

3.1d In relation to Q3.1, if your economy does not want to negotiate with other economies to establish a phytosanitary or veterinary e-certification exchange system, please check the possible reasons below. (multiple choice)

- Lack of funding and resources
- Difficulty in setting up a system, or system compatibility issues
- We accept alternatives (QR Code or certificates uploaded to official websites)
- Not applicable (answer to Q3.1 was 'yes')
- Other: _____

4. Your expectations from this workshop

4.1 What are your expectations from this workshop (multiple choice)

- An introduction to phytosanitary and veterinary e-certification exchange systems
- To understand the current situation of e-certification systems in other economies
- To understand how economies establish e-certification systems with other economies
- To understand alternatives of e-certificates
- Other: _____

4.2 Is your economy willing to share information about using e-certificates during this workshop on 14 October? (max. 3 minutes)

- Yes
- No