

Development of a framework to facilitate e-veterinary certification for international trade on the basis of a single window system

(Project STDF/PG/609)



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Executive summary

The overall goal of this project is to assist developing countries by facilitating their understanding and potential use of e-veterinary certification to better engage in international trade of animals and animal products through information sharing, country visits by experts, and providing information on what other international organisations are doing in e-veterinary certification.

The project included a self-assessment by developed and developing countries (Australia, Chile, Eswatini, France, Japan, Malaysia, Nigeria, Paraguay, Singapore, United Kingdom and Zimbabwe) of their current situation in relation to e-certification and single window through the completion of a questionnaire. In the case of Eswatini, Malaysia, Nigeria, Paraguay and Zimbabwe, they also received a visit from an expert on electronic certification and single window to get a deeper insight into the current situation in these countries. In addition, the project included research on existing work undertaken by other relevant international organisations (including the Codex Alimentarius Commission [Codex] and the Secretariat of the International Plant Protection Convention [IPPC]) in relation to sanitary and phytosanitary (SPS) certification.

The first part of the report analyses output 1: 'Implementation of in-country surveys among interested Members', including analysis of country's experiences, based on responses to the questionnaire and the findings of in-country visits.

In their responses to the questionnaire, Australia, Chile, Eswatini, France, Japan, Malaysia, Nigeria, Paraguay, Singapore, the United Kingdom and Zimbabwe painted a picture of their trade profile with regard to their existing veterinary certification system, their national single window environment and their digital government strategy.

Through expert visits, the situation in Eswatini, Malaysia, Nigeria, Paraguay and Zimbabwe was further reviewed to obtain a profound vision of the needs of the applicant countries in terms of implementing e-veterinary certification for international trade on the basis of a single window system.

Basically, all countries import live animals and products derived from animals from a wide variety of countries all over the world. Whereas the export of products derived from animals appears to be worldwide, the export of live animals is far more regional.

Specific relations between e-veterinary certification, digital government strategy and single window were not very apparent. Three of the 11 countries that responded to the questionnaire apply e-veterinary certification. Only one of them has a fully implemented digital government strategy but has a single window that partially supports border control management, with some of the trade stakeholders connected. The only country that has a national single window with all stakeholders connected has no e-veterinary certification. All of the other countries have a partially implemented digital government strategy, and half of them have a single window facility that partially supports border control management, with some of the trade stakeholders connected. Of the two countries that apply e-veterinary certification but do not have a fully implemented digital government strategy, one has no single window and the other has a single window facility that partially supports border control management, with some of the trade stakeholders connected.

With regard to the benefits, improved efficiency is considered by all countries to be of major importance. The countries that apply e-veterinary certification derived the most benefits, including improved market access and enhanced authenticity and integrity. Developing countries expect first and foremost that e-veterinary certification will reduce their clearance times.

It comes as no surprise that financial resources were seen as the biggest challenge in all cases and that developing countries saw IT infrastructure as a major concern. Political will and the willingness of the private sector was not seen as a challenge.

During the in-country visits, a common finding was the lack of capacity to exchange certificate information internationally by electronic means. The capacity to operate electronically at the national level varied considerably, ranging from everything still on paper, to some processes supporting digital procedures and finally to fully digitised processes. Especially for the two countries that already have fully digitised processes at national level, the selection of a dedicated and experienced trading partner with which to start e-veterinary certification is essential. The other three countries first need to work on the digitisation of their processes at national level, including the use of a single window.

This first part of the report also includes a review of recent publications on the necessary technical and administrative infrastructure to introduce e-veterinary certification.

Countries transforming veterinary certification to e-veterinary certification should not approach this as an isolated process limited to the Veterinary Authorities. This transformation requires the involvement of all stakeholders at national level, including the border management authorities.

The second part of the report identifies commonalities and differences between other SPS areas and veterinary certifications, based on experiences in the following non-veterinary areas:

- Codex Alimentarius
- International Plant Protection Convention (IPPC)
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Four existing frameworks in SPS areas are described:

- The Codex Alimentarius framework, with an electronic working group developing guidance on paperless certification and providing a data model of its Generic Official Certificate that does not introduce specific hardware and/or software requirements at national level.
- The IPPC framework, with the development of the Global ePhyto Hub and the Generic ePhyto National System and with the IPPC Secretariat taking care of their future exploration.
- The eCITES framework, which includes making available a CITES e-permitting toolkit and working together with the United Nations Conference on Trade and Development (UNCTAD) on UNCTAD's Automated System for Customs Data (ASYCUDA) eCITES module and working together with the United Nations Environment Programme World Conservation Monitoring Centre.
- The WCO framework on exchange of information 'Globally Networked Customs,' encompasses all relevant tools and standards including the WCO Data Model a semantic and messaging standard, which does not require specific hardware and/or software solutions at national level.

Based on the frameworks developed by other organisations and their specific activities, it is recommended that the OIE consider developing a framework that will facilitate e-veterinary certification for international trade on the basis of a single window system. This framework would include practical solutions, supported by collaborations with other International Organisations and operational modalities for managing the next phase of the project.

Recommendations

The recommendations for consideration by the OIE are expected to assist developing countries not only in their understanding of e-veterinary certification at national level but also in how to apply e-veterinary *certification* internationally. This should help developing countries in their potential use of e-veterinary certification and to better engage in international trade of animals and animal products.

Based on these findings, the OIE is advised to consider the following recommendations:

OIE standard-setting process

- The introduction in the *Terrestrial Animal Health Code* and the *Aquatic Animal Health Code* of additional guidance on the transition from a paper to an electronic format on the basis of a single window system.
- The establishment of an ad hoc Group with dedicated tasks with regard to e-veterinary certification on the basis of a single window system.

OIE collaboration with other International Organisations

- As e-veterinary certification at national level should not be an isolated process of the Veterinary Authorities, e-veterinary certification at the international level should not become an isolated process of the OIE. Cooperation between the OIE, IPPC and Codex, the 'three sisters' recognised by the World Trade Organization (WTO) SPS Agreement and the Customs authorities will help countries more effectively develop e-veterinary certification for international trade on the basis of a single window system.
- As the OIE, the Codex Alimentarius and the IPPC are the three standard-setting organisations ('three sisters') recognised by the World Trade Organization (WTO) Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement), the explorations with the Codex Alimentarius and the IPPC could be initiated in the framework of the WTO SPS meetings.
- The OIE cooperate with the WCO Secretariat and relevant experts on enabling inclusive digital collaboration between government agencies in the context of a single window environment.
- The OIE work with the UNCTAD to develop a standardised e-veterinary certification technical solution for export and for import with the use of the OIE Derived Information Package from the WCO.
- The OIE explore with the Codex Alimentarius Commission the possibility of incorporating the Codex Derived Information Package from WCO in the above cooperation with UNCTAD on standardised e-certification technical solutions for import and export.
- The OIE explore with the IPPC Secretariat:
 - the exchange of electronic veterinary certificates through the IPPC Global ePhyto Hub;
 - the potential for expansion of the Generic ePhyto National System (GeNS) to enable it to be used for international trade of animals and animal products.
- The OIE investigate the possibility of a partnership with the World Bank in its efforts to implement the WTO's Trade Facilitation Agreement (TFA).

Considerations on technical solution

An off-the-shelf software solution for electronic certification – Taking into consideration the (expected) benefits and challenges for the countries that have quantifiable import and export volumes combined with limited resources and IT infrastructure, the availability of an off-the-shelf software solution for electronic certification that can be configured to the specific requirements and needs of the Veterinary Authorities, including adaptation to national languages, government border requirements and workflows during import and export, might be considered a welcome and feasible option. This software solution must not only support international exchanges but also provide for digitisation of processes at national level in a single window environment.

This off-the-shelf software solution is expected to benefit from cooperation between the OIE and the WCO on the WCO Data Model OIE Derived Information Package (see Part 2). Formal validation of the Package will also assist developed countries to better engage in international trade of animals and animal products through e-veterinary certification.

The WCO data model also contains the Codex Derived Information Package. Countries with limited resources and IT infrastructure might be interested in working with an off-the-shelf software solution not only for electronic certification by Veterinary Authorities but also for electronic certification by food authorities. Such a multi-disciplinary software solution could be created by incorporating the WCO data model OIE Derived Information Package together with the Codex Derived Information Package.

Background

The World Organisation for Animal Health (OIE) is the intergovernmental organisation responsible for improving animal health worldwide. It is recognised as a reference organisation by the World Trade Organization (WTO) and in 2019 has a total of 182 Members. The OIE is placed under the authority of the World Assembly of Delegates of the OIE, which consists of Delegates designated by the Governments of all OIE Members. The OIE maintains permanent relations with nearly 75 other international and regional organisations.

The OIE helps to safeguard animal health worldwide through its World Animal Health Information System (WAHIS) and, amongst others, through the publication of OIE international standards for international trade in animals and animal products. Compliance with these health standards is guaranteed by veterinary competent authorities through veterinary certification. For a long time, guarantees were provided only in a paper format, but in the past two decades more and more countries have started to develop systems that facilitate electronic veterinary certification.

Veterinary certification is described in Section 5 of the *Terrestrial Animal Health Code* (hereafter the *Terrestrial Code*) and the *Aquatic Animal Health Code* (hereafter the *Aquatic Code*). In both these publications Chapter 5.2. describes the certification procedure. They also provide model veterinary certificates, in Chapters 5.10., 5.11. and 5.13. of the *Terrestrial Code* and Chapter 5.11. of the *Aquatic Code*.

Electronic certification is described in both the *Terrestrial Code* and the *Aquatic Code* in Article 5.2.4. as certification provided by electronic exchange of data sent directly from the Competent Authority of the exporting country to the Competent Authority of the importing country.

Introduction

The project 'Development of a framework to facilitate e-veterinary certification for international trade on the basis of a single window system' is funded by the WTO Standards and Trade Development Facility (STDF)¹ and has been implemented by the OIE on behalf of the five applicant countries, namely Cambodia, Eswatini, Nigeria, Paraguay and Zimbabwe.

The overall goal of this project is to assist developing countries by facilitating their understanding of e-veterinary certification and its potential use to better engage in international trade of animals and animal products. Furthermore, through the implementation of this project, the Veterinary Services of OIE Members will better liaise with their counterparts of plant health, food safety and customs authorities to establish e-veterinary certification.

The scope of the project is focused on export and import procedures including certification. Negotiation of import requirements with trading partners is excluded from the scope.

Part 1 of the report reviews in-country surveys based on 11 questionnaires that were completed at the beginning of 2019 and on five in-country visits by experts on e-certification and single window in June and July 2019.

Part 2 of the report identifies commonalities and differences between veterinary certifications in other sanitary and phytosanitary (SPS) areas and how to make use of experiences in non-veterinary areas.

1 www.standardsfacility.org/PG-609

Project management approach

The OIE was responsible for implementing and managing the project on behalf of the **five applicant countries**: Cambodia, Eswatini, Paraguay, Nigeria and Zimbabwe.

The **Reference Group** was established by the OIE and consisted of the five applicant Members (Cambodia, Eswatini, Paraguay, Nigeria Zimbabwe) and additional Members that had previously expressed interest in e-veterinary certification (Australia, Canada, Chile, France, Germany, Japan, Malaysia, Netherlands, New Zealand, Singapore, United Kingdom and United States of America) and the European Union (EU).

The **Steering Committee** consisted of six experts from members of the Reference Group (Australia, Japan, Malaysia, Nigeria, Paraguay, United Kingdom) and experts on e-certification in SPS areas or trade facilitation from relevant international organisations (World Customs Organization [WCO], United Nations Centre for Trade Facilitation and Electronic Business [UN/CEFACT], World Bank, Food and Agriculture Organization of the United Nations [FAO]²) and the EU as an observer.

The **OIE Project team** consisted of personnel from the OIE Headquarters in Paris: Standards Department (project manager) and Financial Directorate (grant manager) under the guidance and supervision of the Head of the OIE Standards Department.

Implementation of the project followed a phased approach as described in Annex 1. The expected outputs of the project were:

- Output 1: Development and implementation of in-country surveys among interested Members, which were:
 - for developing countries: Cambodia, Eswatini, Malaysia, Nigeria, Paraguay, Zimbabwe;
 - for developed countries: Australia, Chile, France, Japan, Singapore and United Kingdom.
- Output 2: Research into ongoing work on e-certification in other SPS areas and analysis of commonalities and differences;
- Output 3: Development of recommendations and a plan on how to move forward.

For Output 1, the OIE together with the Steering Committee developed an in-country survey plan based on:

- **a questionnaire** (Annex 2) to be completed by 12 selected countries, including the applicant countries. The OIE received 11 completed questionnaires;
- **in-country visits**. Five countries received the visit of experts on certification and single window.

For Output 2, the OIE together with the Steering Committee developed a research framework, with guiding principles.

Dr Erik Bosker, senior policy advisor at the Ministry of Agriculture, Nature and Food Quality of The Netherlands was recruited as the consultant for this project and was responsible for drafting this report on the survey results (Output 1) and on experiences with e-certification and single window in other relevant areas (Output 2) to develop recommendations on e-veterinary certification and single window.

This report has been reviewed by the members of the Reference Group and the members of the Steering Committee.

² Including the Codex Alimentarius and the International Plant Protection Convention (IPPC).

Acronyms

BIP	Base Information Package
CAC	Codex Alimentarius Commission
CCC	Customs Co-operation Council
CCFICS	Codex Committee on Food Import and Export Inspection and Certification Systems
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
DIP	Derived Information Package
DMPT	Data Model Projects Team
DoA	Department of Agriculture (Malaysia)
DoF	Department of Fisheries (Malaysia)
DVLS	Department of Veterinary and Livestock Services (Eswatini)
DVPCS	Department of Veterinary and Pest Control Services (Nigeria)
DVS	Department of Veterinary Services (Malaysia) Department of Veterinary Services (Zimbabwe)
ePhyto	Electronic phytosanitary certificate
EPIX	Electronic Permit Information Exchange
FAO	Food and Agricultural Organization of the United Nations
GeNS	Generic ePhyto National System
GTFP	Global Trade Facilitation Programme
IPPC	International Plant Protection Convention
ITC	International Trade Centre
JICA	Japan International Cooperation Agency
LPCO	Licences, Permits, Certificates and Other
MAQIS	Malaysian Quarantine and Inspection Services
MIP	My Information Package
MoA	Ministry of Agriculture and Agro-Based Industry (Malaysia)
MOA	Ministry of Lands, Agriculture, Water, Climate and Rural Resettlement (Zimbabwe)
NAFDAC	National Agency for Food and Drug Administration and Control (Nigeria)
NAQS	Nigeria Agriculture Quarantine Service
NEPC	Nigerian Export Promotion Council
NPPO	National Plant Protection Organization
NSW	National Single Window
OECD	Organisation for Economic Co-operation and Development
SECO	State Secretariat for Economic Affairs of Switzerland
SENACSA	Servicio Nacional de Calidad y Salud Animal (National Service for Animal Quality and Health, Paraguay)
SRA	Eswatini Revenue Authority (Customs)
STDF	Standards and Trade Development Facility
TFA	Trade Facilitation Agreement
UN/CEFACT	United Nations Centre for Trade Facilitation and Electronic Business
UNCTAD	United Nations Conference on Trade and Development
UNEP-WCMC	United Nations Environment Programme World Conservation Monitoring Centre
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
WCO	World Customs Organization
WCO DM	World Customs Organization Data Model
WTO	World Trade Organization
ZRA	Zimbabwe Revenue Authority

Part 1

IMPLEMENTATION OF IN-COUNTRY SURVEYS AMONG INTERESTED MEMBERS

Summary of questionnaire responses

For the Output 1, the OIE together with the Steering Committee developed an in-country survey plan based on:

- a questionnaire (see Annex 2);
- in-country visits for five countries (Eswatini, Malaysia, Nigeria, Paraguay and Zimbabwe) on certification and single window.

The questionnaire was a tool to facilitate the selfevaluations by participating countries in order to analyse the current situation in respect of the country's eveterinary certification system for the import and export of animals and animal products in a single window environment.

The following countries completed the questionnaire in May 2019: Australia, Chile, Eswatini, France, Japan, Malaysia, Nigeria, Paraguay, Singapore, United Kingdom and Zimbabwe.

Each of them provided the following information:

1. Country trade profile (import and export) in the terrestrial and/or aquatic domain
2. Current situation concerning the veterinary certification system
 - a. Administrative procedure concerning paper-based and electronic veterinary certification
 - b. Funding sources
 - c. Processes, procedures and documents required for the import and export of live animals and products derived from animals
3. Digital government strategy
4. Single window system & interoperability
 - a. Single window system
 - b. Interoperability
5. Benefits and challenges of developing an e-veterinary certification system

Key findings

1. Country trade profile (import and export) in the terrestrial and/or aquatic domain

According to the provided profiles almost all of the countries import from all over the world live animals and products derived from animals.

With regard to exports:

- most countries export live animals to regional destinations;
- worldwide export of live animals appears to be limited;
- most countries export products derived from animals to destinations in the region as well as worldwide.

2. Current situation concerning the veterinary certification system

- a. Paper-based and electronic veterinary certification
 - All surveyed countries have the required legal instruments in place for issuance of veterinary certificates for animals and products derived from animals.
 - Paper-based export certification procedures were rated in terms of performance, from 'medium' to 'very good'.
 - Only two countries rated the performance of paper-based import procedures as 'low'; the others rated it from 'medium' to 'very good'.
 - Half of the countries reported having legal instruments for issuing e-veterinary certificates.
 - Two countries reported having legal instruments that prevent the acceptance of eveterinary certificates for import.
 - Where electronic veterinary certification for export and import is applied (3 countries), its performance was rated from medium to very good.
- b. Funding sources
 - Public funding is generally applied, and in 30% of countries this is combined with fees.

3. Digital government strategy

- Only one country has a fully implemented digital government strategy, whereas the others report having partially implemented the strategy.
- In most countries, digitisation is supported by decision-makers and policy-makers, and in 30% of countries by law, and digitalised processes and procedures are in general supported by the government.

4. Single window system & interoperability

- a. Single window (SW) system**
- Most countries have Internet connections available at official border crossings.
 - Only one country reported having a national SW; of the remaining countries, 50% reported having a partially functioning SW and 50% reported having no SW. This was equally the case for government authorities responsible for managing trade at the border as for Veterinary Authorities managing trade of animals and animal products at the border.
 - 50% of countries have contingency arrangements for IT failure.
 - The country with an operating SW has all stakeholders connected to the SW. All other countries have either some or none connected.
 - In most cases where an SW exists, the Customs authorities lead and administer its establishment and operation.
 - Only the country with an operating SW has a legal framework for the use of the SW.
- b. Interoperability**
- The answers on interoperability referred only to national systems and not to the interoperability of Single Window Systems (UN/CEFACT recommendation 36).

5. Benefits and challenges of developing an e-veterinary certification system

(ranked on a scale of 1 to 5, where 1 = none and 5 = high)

The results of this section are presented in the tables below, where the order in the individual cells is from high to low.

Comments on the benefits

- Irrespective of development level, improved efficiency is, or is expected to be, one of the biggest benefits.
- The 5 visited countries expect a reduction of clearance times to be the biggest benefit.
- For the 3 countries implementing e-certification, the biggest benefit appeared to be improved efficiency.
- The e-veterinary certificate countries are experiencing many benefits, with improved market access and enhanced authenticity and integrity amongst the biggest benefits.
- For the 5 visited countries, improved market access was judged to be the lowest benefit.

Comments on the challenges

- The financial resources are independent of the country situation and were always reported as the biggest challenge.
- For the 5 visited countries, it is not surprising that IT infrastructure, human resource expertise and establishment of a clearly designated lead agency or committee are also considered to be big challenges.
- Compatibility between IT systems stands out as a bigger challenge for both developed and developing countries, whereas the e-veterinary certificate countries see this as the least challenging.

Benefits	For all 11 countries	For the 5 developing countries	For the 3 countries where e-veterinary certificate is implemented
(Rated >4)	<ul style="list-style-type: none"> - Improved efficiency - Reduced clearance times - Enhanced authenticity and integrity - Reduced administrative costs 	<ul style="list-style-type: none"> - Reduced clearance times - Improved efficiency 	<ul style="list-style-type: none"> - Improved efficiency - Reduced clearance times - Improved market access - Enhanced authenticity and integrity - Improved confidence among stakeholders in value chains
(Rated between 3–4)	<ul style="list-style-type: none"> - Improved confidence of stakeholders in value chains - Improved market access 	<ul style="list-style-type: none"> - Enhanced authenticity and integrity - Reduced administrative costs - Improved confidence of stakeholders in value chains - Improved market access 	<ul style="list-style-type: none"> - Reduced administrative costs

Part 1

Challenges	For all 11 countries	For the 5 developing countries	For the 3 countries where e-veterinary certificate is implemented
(Rated 4–5)	Financial resources Compatibility between IT systems	- Financial resources - Compatibility between IT systems - IT infrastructure	- Financial resources
Rated 3–4	Human resource expertise - IT infrastructure - Coordination between government agencies - Cost sharing with industry	- Human resource expertise - Development of a legal framework - Establishment of a clearly designated lead agency or committee - Cost sharing with industry	- Coordination between government agencies
Rated–3	- Establishment of a clearly designated lead agency or committee - Development of a legal framework - Willingness of private sector - Border efficiency - Cultural resistance to change - Political willingness - Complexity of paper-based system	- Border efficiency - Political willingness - will of private sector - Coordination between government agencies - Cultural resistance to change - Complexity of paper-based system	- Compatibility between IT systems - Human resource expertise - Willingness of private sector - Complexity of paper-based system - Establishment of a clearly designated lead agency or committee - Cost sharing with industry - IT infrastructure - Political willingness - Border efficiency - Development of a legal framework - Cultural resistance to change

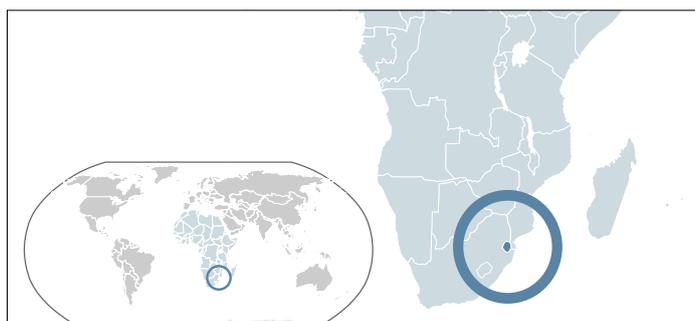
- Coordination between government agencies is considered less of a challenge by the 5 visited countries, whereas this appeared to be one of the bigger challenges for e-veterinary certificate countries.
- It might appear surprising that cultural resistance to change is not expected to be a challenge, despite this having been reported in OECD publications.
- Political will and will of private sector appear to exist everywhere. Complexity of paper-based systems does not appear to be a challenging issue.

A general, summarising comment could be that although developing and developed countries present some differences, they also have a number of benefits and challenges in common.

In-country visits: findings



ESWATINI



The Department of Veterinary and Livestock Services (DVLS) of the Ministry of Agriculture is the competent authority of Eswatini and is responsible for animal health and veterinary public health. The Eswatini country system for import and export of animals and animal products generally involves both permits and health certificates. Current processing and issuance of permits and certificates are done manually and in hardcopies. This means that traders have to visit the authorities' office frequently to submit and collect documents and courier documents to their counterparts in other countries.

The DVLS does not have access to IT systems at border checkpoints. The Ministry of Agriculture does not have a policy to provide all staff with laptops. The provision of laptops and desktop computers is dependent on work requirements and budget availability. The Eswatini Revenue Authority (SRA) has well developed IT infrastructure available at border checkpoints.

Eswatini has started several IT projects linked to Veterinary Services. There is a project to develop an electronic system for applications for, and the processing and issuance of, permits and certificates. There is also a project to develop a national single window (NSW) that is supported by the World Bank. However, it appears that the systems being developed are focused on the local electronic transmission of information and have not included specifications for government-to-government transfer of electronic certificates.

The DVLS could leverage the NSW project to tap into the IT expertise of the consultants and the SRA to develop the system for electronic veterinary certification. To implement e-certification, the DVLS would also need to identify trading partners that are both keen and have the capability to establish e-certificate connectivity.

Eswatini is a land-locked country and exports occur mainly to or via neighbouring countries, such as South Africa. This means that not only the importing country but also the transit countries would need to have e-certificate capability to fully benefit from e-certification and the NSW.

Political support for electronic government services is high and there is strong political will to deliver these services. Veterinary legislations are technology agnostic and there is no restriction on potential use of electronic certificates.

Current challenges for Eswatini with implementing electronic veterinary certification and NSW include:

- limited or uneven distribution of IT infrastructure at key locations such as at border checkpoints;
- limited IT and financial support and infrastructure;
- inconsistent stability of IT networks and systems may result in electronic services experiencing downtime;
- limited financial resources to develop sophisticated IT systems;
- perception on the part of employees that digitalisation and automation may put their jobs at risk;
- establishment of a cost recovery mechanism to maintain the future IT systems.



MALAYSIA

The Department of Veterinary Services (DVS) of the Ministry of Agriculture and Agro-Based Industry (MoA) is the Malaysian veterinary competent authority. The DVS sets Malaysian import requirements and issues veterinary export certificates at the following levels:

- Federal level: export certificates to China (People's Rep. of) for edible bird's nests;
- State level: all other veterinary certificates.

The Malaysian Quarantine and Inspection Service (MAQIS) of the MoA is the inspection service responsible for import and exit control at 55 points (14 Air, 11 Road, 30 Sea). MAQIS carries out controls on behalf of the following two Agencies and three Departments of the Ministry of Agriculture:

1. Department of Fisheries (DoF)
2. Malaysia Fish Development Agency
3. Department of Agriculture (DoA)
4. Federal Agricultural Marketing Agency
5. Department of Veterinary Services (DVS).

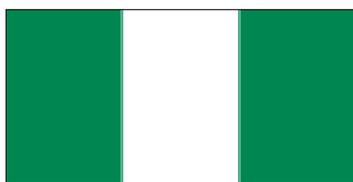
MAQIS is the department responsible for issuing import and export permits once approved by the competent authorities such as DVS, DoA and DoF.

The import and export processes in international trade are under the responsibility of the three agencies and the MAQIS of the Ministry of Agriculture. The permit and the veterinary certificate are indissolubly related to each other and governmental agencies benefit from the electronic exchange of permit data through the National Single Window for Trade Facilitation. The national application process for veterinary certificates is paperless and every certificate that is issued is archived electronically. The certificates are issued on paper.

The MoA is developing a generic approach for all its certificateissuing agencies (DVS, DoF and DoA) to the electronic exchange of certificates with third countries. The DoA is technically prepared to exchange ePhytos with the ePhyto Hub and with third countries and is awaiting the decision of the MoA on the generic approach to electronic exchange of certificates with third countries.

Taking into consideration the current position and functionalities of the National Single Window (NSW) for Trade Facilitation, the government agencies would further benefit for the implementation of electronic exchange of veterinary certificates between competent authorities of the importing and the exporting country from the technical capacities of the NSW for Trade Facilitation.

Malaysia is expected to benefit from knowledge and experience in data modelling of the OIE model certificates contained in the *Terrestrial Code* and the *Aquatic Code* (especially for the veterinary certificate for edible bird's nests).



NIGERIA

Nigeria is actively promoting non-oil exports (currently about 20% of Nigeria's total exports) by means of the Nigerian Export Promotion Council (NEPC), which is the Federal Government of Nigeria's apex institution for promoting development and diversification of exports. The NEPC is an agency of the Federal Ministry of Industry, Trade and Investment.

The Department of Veterinary and Pest Control Services (DVPCS) is the competent authority of Nigeria and is placed under the Federal Ministry of Agriculture and Rural Development. The DVPCS functions as the policy adviser to the Government on all animal health, safety and wholesomeness of food of animal origin for human consumption and Pest Control Services. The Department is responsible for the prevention, control and eradication of trans-boundary animal diseases and pests, control of vector and vector-borne diseases, sanitary certification, veterinary public health and control of zoonotic diseases to guarantee healthy national herd, wholesomeness of foods of animal origin and safe international trade in animals and animal products

The Nigeria Agriculture Quarantine Service (NAQS) is a regulatory agency under the Federal Ministry of Agriculture and Rural Development and at ports of entry and exit regulates sanitary (animal and fisheries health) and phytosanitary (plant health) measures in connection with import and export of agricultural products. NAQS is working on implementing the IPPC ePhyto Solution (see Part 2 of this report). This knowledge is available to be shared with other agencies involved in certification. NAQS uses the single window for trade.

The Department of Fisheries of the Federal Ministry of Agriculture and Rural Development is responsible for fisheries and aquaculture.

For veterinary certification, Nigeria uses OIE model certificates from the *Terrestrial Code* and the *Aquatic Code* and would benefit from data modelling these model certificates.

The National Agency for Food and Drug Administration and Control (NAFDAC) is a federal agency under the Federal Ministry of Health and is responsible for regulating and controlling the manufacture, importation, exportation, advertising, distribution, sale and use of the following categories of commodities in Nigeria: food; drugs and medical devices; herbals and cosmetics; vaccines and biologicals; chemicals; narcotics; veterinary medicines, animal feeds, premix, concentrate and feed additives. NAFDAC uses the single window for trade.

The single window for trade is operated by the Nigeria Customs Services and is used by 12 agencies, including Customs, NAFDAC and NAQS, for import purposes. The DVPCS was not able to provide details of the experience of NAFDAC and NAQS in using the single window. The DVPCS is currently developing a National Electronic Veterinary Certification System thus is yet to integrate into the Custom's Single Window for trade

In terms of international trade, import and export certification processes are under the responsibility of four agencies within two Ministries and generally involve permits and health certificates. Information exchange between several agencies is required for export as well as import procedures. Digitising these procedures with the use of a single window is expected to improve functionality and efficiency for import and export.

For the planned development of e-veterinary certification for international trade, Nigeria is expected to benefit from high-level coordination between the Ministry of Agriculture, the Ministry of Health, the Ministry of Finance and the Ministry of Industry, Trade and Investment on a solid and consistent national approach (including information exchange between the federal and the state level) to the use of a single window facility.



PARAGUAY



SENACSA, Servicio Nacional de Calidad y Salud Animal (National Service for Animal Quality and Health), is the competent authority of Paraguay. SENACSA is the Veterinary Authority in charge of animal health and food safety, including issuance of veterinary certification for both exportation and importation of animals and animal products. SENACSA is also in charge of animal disease control at farm level, domestic animal movement control, and ante- and post-mortem inspection at slaughterhouses. All the data in relation to animal disease control are administered by SENACSA in its database system.

SENACSA veterinary officers are stationed in slaughterhouses and meat processing plants licensed for exportation, to check documents and data on animal health upon arrival of animals. All the results of these inspections, including ante- and postmortem inspections, are entered in SENACSA's database system.

The certification system for both animal health and food safety are under the jurisdiction of SENACSA, which means that processes and procedures for exportations of animals and animal products are administered exclusively by SENACSA, and that veterinary inspection and issuance of certificates have been performed by one competent authority.

All the domestic procedures and processes for importation and exportation are digitised. Single window systems for export and import have already been introduced in Paraguay and are established for the interexchange of relevant data, through which national competent authorities and private sector stakeholders are connected on-line 24/7 nationally. The Ministry of Industry and Commerce administers the single window systems. The exporter's Single Window is a public/private alliance and the importer's Single Window is 100% public administration. SENACSA has electronic systems for processing and issuing (printing on paper) of Health Certificates. SENACSA through Single Windows has the technical capacity to carry out electronic exchanges of veterinary certificates.

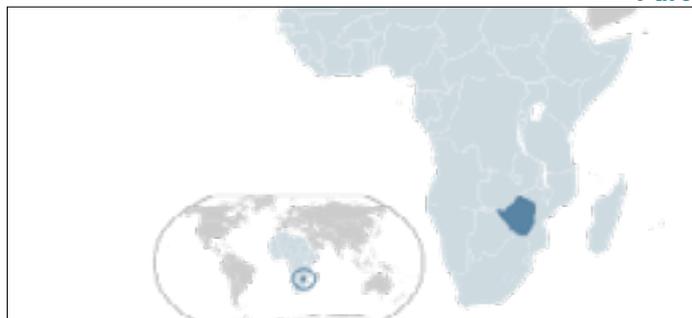
Paraguay has no electronic veterinary certification systems, or exchanges of veterinary certificates in electronic form. The livestock industry is the principal industry in Paraguay. The country imports livestock animals mainly from neighbouring countries, such as Brazil, Argentine and Uruguay. In terms of beef exports, the private sector, which includes the food industry and farmers, is aware of the importance and significance of introducing electronic veterinary certificate systems to cover these exports.

Given that there is already a single window system in Paraguay, the rationale exists for the introduction of electronic certification on the basis of a single window system. Paraguay already possesses the basic framework and infrastructure, such as the single window system, to introduce an electronic veterinary certification system for use with its exporting and importing countries.

Concerning imports, a majority of the exchanges would come from Mercosur countries. One of the pressing issues for Paraguay is to introduce an electronic veterinary certificate system for the exportation of beef to Russia in order to maintain and ensure the reliability of the export certificates issued by Paraguay. From this perspective, Paraguay expects to be able to benefit from its knowledge and experience in the application of relevant international standards, recommendations and guidelines.



ZIMBABWE



The Department of Veterinary Services (DVS) of the Ministry of Lands, Agriculture, Water, Climate and Rural Resettlement (MOA) is the competent authority of Zimbabwe and responsible for animal health and veterinary public health. Permits and certificates for food of animal origin are managed together with animals and animal products by the DVS.

The Zimbabwe national system for import and export of animal and animal products generally involves both permits and health certificates. Current processing and issuance of permits and certificates is done manually and in hardcopies (i.e. the use of pre-printed carbon copy booklets and additional documents printed from electronic templates). The district offices exercise flexibility in the application procedure for permits and certificates and allow traders to submit details by phone or email. Hence, traders may not have to visit the authorities' offices to apply for permits and certificates, but they still have to visit the offices to collect the documents.

The Zimbabwe Revenue Authority (ZRA) and the DVS have staff at the border to conduct checks on documents and consignments, and the ZRA checks that outgoing consignments have the necessary permits from other agencies (e.g. Controlled Goods Export Permit for selected agricultural products). ZRA is the lead agency for the NSW and is using the system known as ASYCUDA (Automatic System for Customs Data).

Some border veterinary posts have access to IT equipment. Many of the processes at the border are done manually, such as the issuance of records of checks done, the issuance of import declarations after conducting border inspections and the records of inspections.

The MOA is developing an online system for all MOA services as part of the 'E-Government 100 Online Services' initiative. The project is funded by local government. This system basically digitalises DVS traderelated services for permits, health certificates and 'freedom from disease' certificates. There is a committee tasked with ensuring that the systems developed are able to interface with each other, including linkages between ASYCUDA and the E-Government 100 Online Services initiative.

The system is currently being developed based on processes provided by the DVS and is targeted to go live in July 2020. The MOA indicated that financing for the E-Government 100 Online Services initiative is through the President's office and noted that there is a prioritisation of projects due to limited funding. MOA and DVS have requested any possible financial assistance to develop the system, but this will depend on prioritisation by the President's office.

Zimbabwe is a land-locked country and exports occur mainly to or via neighbouring countries, such as South Africa. This means that not only the importing country but also the transit countries would need to have ecertificate capability to fully benefit from e-certification and the NSW.

Political support for electronic government services is high and there is a strong political will to deliver these services. Veterinary legislations are technology agnostic and there is no restriction on potential use of electronic certificates.

Current challenges for Zimbabwe with implementing electronic veterinary certification and NSW include:

- multiple, complicated and sensitive business processes at district and federal level;
- limited or uneven distribution of IT infrastructure at key locations, such as at border checkpoints;
- limited financial resources to develop sophisticated IT systems;
- limited in-house IT expertise to develop electronic certification system;
- delay in IT development projects when there is reprioritisation of funding within the government;
- no known plans to develop capability for government-to-government transfer of electronic certificates;
- no cost recovery mechanisms to maintain the future IT systems.

Technical/administrative infrastructure requirements to introduce e-veterinary certification

Paperless trade has already been widely discussed in trade facilitation literature. E-veterinary certification is a requirement for cross-border paperless trade, which is described by UNESCAP³ as 'trade taking place on the basis of electronic communications, including exchange of trade-related data and documents in electronic form'. The veterinary certificate is of course only one of these trade-related documents. Over the past few years, paperless trade has formed part of the customs reforms in a variety of countries. This is also reflected in the questionnaire responses.

Moving forward on paperless trade is challenging not only for developing countries but also for developed countries. The results of the OIE questionnaire clearly reflect this. The difference is the wide range of areas in which improvements have to be made. The OECD already signalled in 2014 that, for countries with much to do in terms of implementing cross-border paperless trade, it is clear that the first policy priority should be on general paperless initiatives, such as customs automation, and an electronic single window. These systems need to be fully in place before other cross-border aspects such as e-veterinary certification can be properly dealt with. Furthermore, the two processes need to work together by building such capabilities into paperless trading systems, so that cross-border expansion can become more straightforward. The two areas should therefore work in tandem. This point is particularly important for those countries that still have to make fundamental reforms to border processes. They should even consider becoming involved in regional cooperation on cross-border paperless trade at an early stage. This could be helpful to avoid having to reengineer processes at a later point, thereby profiting from considerable overall implementation cost savings.

Countries implementing electronic communications might also have to deal with regulating sectorspecific data flows and data protection,⁴ which varies across cultures and results in differences in regulation. This is to safeguard the privacy of individuals and their personal data. It could, for example, require local storage of data from a national security perspective or to enable national security services

to access and review data. This type of requirement does not necessarily create flow or processing restrictions but could target business accounts. Although e-veterinary certification is basically about already existing exchange of information on paper, which has become electronic, the implementation of paperless exchange of certificates might be accompanied by unexpected challenges, because of sector-specific and/or general storage with specific processing and/or flow requirements.

Introduction of e-veterinary certification will only be successful when businesses' expectations about their interactions with the Veterinary Services are fulfilled. Meeting these new expectations may pose a great challenge for these services, because it requires them to transform themselves digitally.⁵

Governments are adapting public service delivery, policy making, engagement and collaboration approaches to the digital age. New, digitally enabled approaches, supported by the necessary changes in public sector culture, need to be implemented if governments are to successfully meet the needs and demands of citizens and businesses.

To rise to this challenge, governments, including the Veterinary Services, need to change the way they work and organise themselves, and ensure they have the skill sets needed to use new digital tools, work collaboratively and engage with businesses and other authorities. This will require, among others, creating or updating relevant legal, regulatory and governance frameworks.

3 UNESCAP report Estimating the Benefits of Cross Border paperless Trade.

4 OECD Trade Policy Papers, No. 220, Trade and Cross-Border Data Flows.

5 OECD March 2019, Strengthening Digital Government.

This will in essence require the digital transformation of governments: a digital government is fundamental to serve digital societies and economies' needs (OECD, 2017a). Also, Veterinary Services need to understand that becoming fully digital is no longer merely an option, but rather an imperative for their legitimacy as guardians of wellbeing and progress.

Digital technologies should not just be used to digitise the existing processes of the Veterinary Services and to offer public services online. Governments should prioritise using digital technologies and data to rethink the design and implementation processes of public services. Ultimately, a transformed public governance should produce outcomes that best meet user needs (OECD, 2014).

'To become fully digital, governments need to adopt and use digital technologies and data as strategic components of their efforts to modernise the public sector. Digital technologies and data reuse need to be integrated in core processes and activities in order to establish new ways of working and promote greater openness and collaboration. This requires new governance and institutional frameworks and the development of new capabilities and skills able to sustain a digital public sector culture (OECD, forthcoming a; 2014).⁶

6 Extract from 'Strengthening Digital Government', OECD 2019.

Gap analysis

Gaps in the technical/administrative infrastructure to introduce e-veterinary certification on the basis of a single window system could be divided to two key gaps, a national gap and an international gap.

1. The national gap

The national gap relates to the capability for digital interaction between business and the Veterinary Services, including border management and the availability of a national export documentation system. This will require an individual, tailor-made approach as the five country reports clearly revealed through the challenges they experienced (Annex 3). The common element would be the necessity for all countries to implement the Trade Facilitation Agreement (TFA) of the World Trade Organisation (WTO) and the above-mentioned digitisation seems to fit quite naturally into this obligation.

This is anyhow the case for three of the five developing countries, one of which has a single window for trade, though the Veterinary Authority is not currently connected to this facility. The two other countries have already reached full digital interaction between all involved stakeholders, including a functional single window.

The biggest mutual challenges will be the necessary financial resources, the IT infrastructure and, in some cases, the compatibility of IT systems.

2. The international gap

The international gap relates to the capacity to exchange certificate information electronically with trading partners. To overcome this international gap the application of international standards and recommendations is required for:

- end-to-end communication;
- the message language, structure and exchange protocols;⁷
- the non-repudiation service (including digital signature and certifying officer identity);
- data modelling of the OIE model certificates.

The biggest challenges will again be the necessary financial resources and the identification of dedicated trading partners.

7 UN/CEFACT SPS standardised language, structure and exchange protocols.

Part 1

The two developing countries that already have fully digitised processes should be able to start from this perspective. Both these countries should also be in a position to identify a dedicated trading partner that already has experience with the handling of electronic import certificates based on international standards and recommendations.

Starting e-veterinary certification with an experienced trading partner will create a situation where both sides (the exporting and the importing side) are expected to have benefits and this usually results in proper involvement of both sides in achieving satisfactory results.

This work will also profit from the availability of an international standard for the data models of the OIE model certificates.

Part 2

**Research of ongoing work
on e-certification in other SPS areas
and analysis of the commonalities
and differences**

Ongoing work in SPS areas

Output 2 of the project included research of ongoing work on e-certification in other SPS areas and analysis of the commonalities and differences. The following section summarises relevant findings for four SPS-related organisations: CODEX, IPPC, CITES and WCO.



ABOUT CODEX ALIMENTARIUS AND GUIDANCE ON PAPERLESS CERTIFICATION

1. About Codex Alimentarius

The *Codex Alimentarius*, or 'Food Code', is a collection of standards, guidelines and codes of practice adopted by the Codex Alimentarius Commission (CAC), a body that was established at the 11th FAO Conference in 1961 and was subsequently joined by the World Health Organization (WHO). The CAC is the central part of the Joint FAO/WHO Food Standards Programme and was established by FAO and WHO to protect consumer health and promote fair practices in food trade. The CAC held its first session in 1963.

Nowadays the CAC is supported by a large number of committees, amongst others an Executive Committee, 10 General Subject Committees and more. The work on paperless certification is done in one of the 10 General Subject Committees, the Codex Committee on Food Import and Export Inspection and Certification Systems (CCFICS).

The *Codex Alimentarius* is a collection of internationally adopted food standards and related texts presented in a uniform manner. Publication of the *Codex Alimentarius* is intended to guide and promote the elaboration and establishment of definitions and requirements for foods to assist in their harmonisation and in so doing facilitate international trade.

The *Codex Alimentarius* includes standards for all the principal foods, whether processed, semi-processed or raw, for distribution to the consumer. Materials for further processing into foods should be included to the extent necessary to achieve the purposes of the *Codex Alimentarius* as defined. The *Codex Alimentarius* includes provisions

in respect of food hygiene, food additives, residues of pesticides and veterinary drugs, contaminants, labelling and presentation, methods of analysis and sampling, and import and export inspection and certification.

2. About Codex guidance on paperless use of electronic certificates

In 2014, during the 21st Session of the CCFICS,⁸ the Committee supported requests to develop a discussion paper on electronic certificates in international food trade. The purpose of this discussion paper was to describe the possibilities of the use of electronic certificates by competent authorities as well as the migration to paperless certification.

In 2016, during its 22nd Session, the CCFICS considered that further discussion was needed before sending a project document to the CAC for approval.⁹

The CCFICS agreed to establish an electronic Working Group (EWG) chaired by The Netherlands and cochaired by Australia to revise the discussion paper and prepare a project document. This work should in particular perform a gap analysis with current Codex texts and a technology review on this topic as well as explore resource requirements for procedural concepts of paperless electronic certification.

8 www.fao.org/fao-who-codexalimentarius/sh-proxy/en/?lnk=1&url=https%2F%2Fworkspace.fao.org%2Fsites%2Fcodex%2FMeetings%2FCX-733-21%2FREP15_FCe.pdf

9 www.fao.org/fao-who-codexalimentarius/sh-proxy/en/?lnk=1&url=https%2F%2Fworkspace.fao.org%2Fsites%2Fcodex%2FMeetings%2FCX-733-22%2FReport%2FREP16_FICSe.pdf

In 2017, immediately prior to the opening of the 23rd Session of the CCFICS, a workshop was organised on the development of Codex guidance for paperless certification with the participation of Colombia, the IPPC, Mexico, Nigeria, Singapore, UN/CEFACT and the WTO.

During its 23rd Session,¹⁰ the CCFICS discussed and revised the project document prepared by the EWG and decided that the section 'Main aspects to be covered' should be redrafted:

1. To reflect the need for the guidance to take into account a step-by-step approach in transitioning towards paperless certification;
2. To reflect that the work would 'define fundamental concepts necessary to understand and interpret requirements for exchange mechanisms, data mapping and legal and regulatory changes needed to facilitate electronic-certification systems';
3. To clarify that the work would take into account, as appropriate, 'related electronic certification efforts of international organizations, such as IPPC, OIE, WCO and the WTO'.

The Committee agreed to start work on the revision of the Guidelines for Design, Production, Issuance and use of Generic Official Certificates (CAC/GL 38-2001), to include guidance on paperless certification, and submit the revised project document to CAC40 for approval. The Committee also agreed to establish an eWG, chaired by The Netherlands and co-chaired by Australia, that, subject to approval of new work by CAC40 would prepare proposed draft guidance for circulation for comments and for consideration at CCFICS24.

At its 24th Session,¹¹ the CCFICS considered the draft guidance developed by the EWG and noted the difficulties associated with revising the Guidelines for Design, Production, Issuance and use of Generic Official Certificates (CXG 38-2001) for implementing guidance on paperless use of electronic certificates.

The EWG, chaired by The Netherlands and co-chaired by Australia, was re-established to continue the drafting of the proposed draft guidance.

This work will be further supported by convening a Physical Working Group, chaired by The Netherlands and co-chaired by Australia, which will meet in March 2021 immediately prior to CCFICS25 to consider the report of the EWG and any comments thereto and prepare recommendations for the plenary session.

State of play in 2019

The current EWG is composed of 40 Codex members and eight observers, including FAO, the IPPC, the OIE, UN/CEFACT and the WCO. The existing Codex guidance on certificates (CAC/GL 38-2001) is applicable to official certificates regardless of their mode of transmission (i.e.

paper or electronic) and describes the use of paper and electronic certificates. This does not naturally result in paperless exchanges between competent authorities and the use of a Single Window system in such exchanges.

The draft guidance document on paperless certification is currently being circulated for discussion on the following subjects:

- definition for paperless exchange;
- definition for 'Single Window system', with reference to interoperability;
- principles concerning the form of the certificate data, taking into account the use of a Single Window system when certificates are exchanged in paperless format;
- issuance and receipt of official certificates: specification of general essentials for paperless exchange of official certificates with regard to:
 - infrastructure;
 - application of international standards and recommendations for:
 - the electronic systems involved;
 - means of authentication.
- a draft annex describing:
 - requirements for transition to paperless exchange of official certificates and responsibilities, differentiating between internal preparatory considerations and bilateral/multinational considerations;
 - examples of exchange mechanisms, without excluding future evolved electronic certification mechanisms and exchanges of electronic representations of certificates (e.g. secured PDF) that competent authorities consider suitable to meet their requirements;
 - the generic reference model of the Codex Generic Model Official Certificate that can be used for further mapping into a XML data model and XML schema (XSD) of the data elements.

3. Collaboration with other International Organisations

Codex and IPPC

The IPPC¹² and Codex Secretariats have been working together since 2015 on the implementation of a joint Online Commenting System (OCS), a web tool providing a standardised platform for contact points to submit comments on draft standards, thus enhancing the transparency and inclusiveness of the respective standard-setting processes. This tool has already been noted as best practice by the SPS Committee and may also fit the needs of other organisations. Both organisations have also expanded the use of the system to include documents other than standards. Codex Secretariats and the IPPC are also working together and sharing knowledge on a number of innovative IT solutions, such as their respective websites, an online registration system for meetings, online forums and polls,

¹⁰ www.fao.org/fao-who-codexalimentarius/sh-proxy/en/?lnk=1&url=https:%2F%2Fworkspace.fao.org%2Fsites%2Fcodex%2FMeetings%2FCX-733-23%2FREPORT%2FREP17_FCe.pdf

¹¹ www.fao.org/fao-who-codexalimentarius/sh-proxy/en/?lnk=1&url=https:%2F%2Fworkspace.fao.org%2Fsites%2Fcodex%2FMeetings%2FCX-733-24%2FFinal%2520Report%2FREP19_FCe.pdf

¹² www.fao.org/fao-who-codexalimentarius/sh-proxy/en/?lnk=1&url=https:%2F%2Fworkspace.fao.org%2Fsites%2Fcodex%2FMeetings%2FCX-701-41%2FInformation%2Bpaper%2Fif41_07e_IPPC.pdf

social media and communication tools and procedures. The IPPC is participating in the CCFICS Electronic Working Group on the development of Codex guidance for paperless electronic certification.

Codex, OIE and IPPC

Codex,¹³ in conjunction with the OIE and the IPPC, also form another strong partnership when working on global issues

13 www.fao.org/fao-who-codexalimentarius/sh-proxy/en/?Ink=1&url=https%2F%2Fworkspace.fao.org%2Fsites%2Fcodex%2FMeetings%2FCX-733-24%2FWorking%2BDocuments%2Ffc24_03e_Add2.pdf

such as antimicrobial resistance or when called upon to act as the benchmark for standards in connection with trade disputes referred to the WTO.

Codex and OIE

A collaborative approach by the OIE and Codex to standard setting on certain key topics is important to ensure harmonisation of standards and recommendations, when relevant, while avoiding duplication of effort, overlap and gaps in standard-setting work. The OIE is participating in the CCFICS Electronic Working Group on the development of Codex guidance for paperless electronic certification.



ABOUT THE IPPC AND THE EPHYTO SOLUTION

1. About the IPPC

The IPPC – the International Plant Protection Convention – is an international treaty that aims to secure coordinated, effective action to prevent and to control the introduction and spread of pests and diseases of plants and plant products.

- The Convention has been deposited with the Director-General of the Food and Agriculture Organization of the United Nations (FAO) since its adoption in 1951.
- The Convention extends beyond the protection of cultivated plants to the protection of natural flora and plant products. It takes into consideration both direct and indirect damage by pests, so it includes weeds. It also covers vehicles, aircraft and vessels, containers, storage places, soil and other objects or material that can harbour or spread pests.
- The Convention provides a framework and a forum for international cooperation, harmonisation and technical exchange between contracting parties.

Implementation of the Convention involves collaboration by National Plant Protection Organizations (NPPOs), which are the official services established by governments to discharge the functions specified by the IPPC, and in some circumstances Regional Plant Protection Organizations (RPPOs), which can act as coordinating bodies at a regional level to achieve the objectives of the IPPC.

2. About the IPPC ePhyto Solution

The ePhyto Solution, initiated in 2011 by the IPPC with the financial support of the Standards and Trade Development Facility (STDF) and donor countries, aims to improve the safe and efficient trade in plants and plant products.

ePhyto is short for 'electronic phytosanitary certificate'. An ePhyto is the electronic version of a phytosanitary certificate in Extensible Markup Language (XML) format. All the information contained in a paper phytosanitary certificate is also in the ePhyto. ePhytos can be exchanged electronically between countries or the data printed out on paper. ePhytos should be produced in accordance with ISPM 12, including Appendix 1.¹⁴

Vision of the IPPC ePhyto Solution

Phytosanitary certificates for the trade of plants and plant products are electronically exchanged in a safe, secure and efficient manner between NPPOs.

Goal of the Commission on Phytosanitary Measures for the IPPC ePhyto Solution

All contracting parties to the IPPC have access to technology supporting the exchange of ePhytos.

14 www.ippc.int/en/publications/609/

The IPPC ePhyto Solution consists of three main elements aimed at supporting the exchange of ePhytos between NPPOs:

- a central server (Hub): to facilitate the transfer of electronic phytosanitary certificates between NPPOs, either from and to their own national electronic system or by using the generic system described below;
- a Generic ePhyto National System (GeNS): a web-based system that can produce and receive ePhytos, to allow countries that do not have a national electronic system to produce, send and receive ePhytos;
- harmonisation: the structure and transmission of ePhytos will follow a harmonised format through the use of standardised mapping, codes and lists.

The ePhyto systems work the same way as the current paper certificate (as per ISPM 12, guidelines for phytosanitary certificates). The attestations of an exporting country (NPPO) to meet the importing country's requirements are detailed in the Additional Declarations section of the phytosanitary certificate (paper certificate and ePhyto). These statements (comparable to health requirements in veterinary certificates) are based on the importing country's requirements, which may be provided in an import permit or a more complex 'protocol' that would require market access negotiation (i.e. for prohibited imports that require strict imports conditions [fruit fly host material, for example]).

The ePhyto also contains a standard field to provide details of treatments applied as per the requirements of the importing country. The ePhyto includes relevant data (chemical composition, temperature, duration, etc.) in separate data components, to allow the importing country to make better use of the data than would be the case with a free text field. However, a free text field is also available. The ePhyto also provides the Import Permit number, so that the importing NPPO can check that the required treatments/conditions have been met.

What is the IPPC Global ePhyto Hub?

The IPPC Global ePhyto Hub is a central exchange system for ePhytos that can be used by all countries linked to it. It is commonly referred to as the 'Hub'. Under this approach, an exporting NPPO can transfer an ePhyto via a secure system to the Hub. The Hub will then transfer the ePhyto to the importing country's 'mailbox' in the Hub, where the importing country can retrieve it. The Hub requires that all countries participating in the exchange of ePhytos use standardised messaging for ePhyto transmission and retrieval. This eliminates the need for multiple bilateral access agreements and enables all countries (i.e. NPPOs) wishing to do so to participate. No information from phytosanitary certificates is stored in the Hub. The Hub was put into production in October 2017.

The table below shows the status of the use of the Hub as of September 2019

Countries in production	Argentina, Chile, Netherlands, New Zealand, United States of America
Countries testing	Australia, Brazil, Canada, China (People's Rep. of), Colombia, Costa Rica, Ecuador, European Union, Hong Kong (SAR-PRC), Kenya, Korea, Morocco, Mexico, Paraguay, Peru and South Africa
Registered countries	Belgium, Indonesia, Norway, United Kingdom

The Generic ePhyto National System (GeNS)

This web-based GeNS will enable countries without their own national system to access the Hub and exchange ePhytos with any country via the Hub, as the GeNS is always connected to the Hub. This is due to the harmonised message format and schema, accompanying codes, lists and terms to be used in the schema which have been developed by the ePhyto Steering Group (ESG). Consequently, the reports from the GeNS piloting phase indicate that the implementation of the GeNS should be relatively seamless once some initial training and industry facilitation has taken place. The GeNS was put into production in July 2019 and is now used by Ghana, Samoa and Sri Lanka (the three pilot countries). The nature of the GeNS is such that a country using it is not expected to perform maintenance or updates to the system as that is all done by the United Nations International Computing Centre (UNICC), the technical partner for the ePhyto Solution.

The table below shows the status of GeNS implementation as of September 2019

Countries in production	Ghana, Samoa, Sri Lanka
Countries testing	Fiji, Jamaica, Papua New Guinea
Registered countries	Antigua and Barbuda, Cambodia, Cayman Islands, Grenada, Guatemala, Guyana, Marshall Islands, Myanmar, St Kitts and Nevis, St Vincent and the Grenadines

The ePhyto Solution project has completed the development of IT systems for use by contracting parties. The ePhyto Strategic Implementation Plan 2019-2023 implements the activities outlined in the IPPC Strategic Framework 2020-2030, with an initial focus on implementation of the systems by countries, securing uninterrupted service and establishing effective governance and financial management structures for its longterm operation. The IPPC Strategic Framework 2020-2030 prescribes the implementation of 'a global system for production and exchange of electronic certification information' as one of the key components in its Development Agenda. It specifies key activities to be carried out:

- successful establishment of the IPPC ePhyto Hub as the international system for the exchange of electronic phytosanitary certificates – done;
- successful establishment of the IPPC ePhyto Generic National System (GeNS) for production, sending and receiving of electronic phytosanitary certificates – done;

- the investigation of the use of additional messaging and information (such as notices of non-compliance and regulatory import requirements) in the ePhyto Solution – to commence shortly (with a two-way trial between Australia and New Zealand);
- the establishment of pilot projects for new or improved capabilities for uninterrupted operation of the Hub and the GeNS.

All of the above leads to one key point: the IPPC ePhyto Solution needs to transit from a project to a business-as-usual operation within the IPPC Secretariat. To facilitate this transition, a number of activities must take place, and these are outlined in the Strategic Implementation Plan 2019-2023.

Country implementation of the ePhyto Solution

As already mentioned, the GeNS is available to countries without national systems capable of producing, sending and receiving ePhytos. The support required by NPPOs to implement the ePhyto Solution varies by country, with many able to implement GeNS operation without any retooling of phytosanitary certificate business processes by either the NPPO or the trader. The ePhyto Solution project has produced guidance for implementing the Hub and the GeNS. These guides will continue to be reviewed by countries implementing the system and will be updated, as necessary, to ensure they remain effective.

The IPPC Secretariat's core ePhyto programme will provide the minimum tools that describe how to use the technology. These tools will include advisory and consulting services (country assessments, technical requirements, etc.).

The IPPC Secretariat is discussing a partnership with the World Bank in its efforts to implement the WTO's Trade Facilitation Agreement (TFA), as the amount of resources generally available to the Secretariat is consistently limited. Under the proposed agreement, the World Bank would assist countries that have indicated that they do not have the capacity to implement the ePhyto Solution without help with first implementing the procedural and legal conditions prior to eventual ePhyto implementation. Technical implementation of the ePhyto Solution is the responsibility of the IPPC Secretariat and the UNICC. The World Bank will also attempt to secure donor funding to improve the capacities of countries to implement the ePhyto Solution within an overall implementation of trade facilitation and border management improvement.

The World Bank, as well as any other organisation interested in an implementation partnership, will, under the full direction of the IPPC Secretariat, provide assistance to countries in implementing the ePhyto Solution within a comprehensive approach to implementing the WTO TFA. The IPPC Secretariat will continue to work with the World Bank and any other interested organisations in developing tools for use by countries to implement the ePhyto Solution independently or with the assistance of countries or regions

with experience in its implementation. The ePhyto Solution is and shall remain an IPPC Secretariat operation.

RPPOs and NPPOs with sufficient resources and understanding of the technology and the business processes should, wherever possible, support implementation. To ensure consistency and universal availability, the development of guidance material for use by RPPOs and countries to assist in implementing ePhyto will be coordinated by the IPPC Secretariat. This would expand on existing tools developed under the project and could be a key component of an RPPO's annual work plan.

3. Collaboration with other International Organisations

In its international cooperation, the IPPC is focusing on harmonisation between ePhyto and other electronic certification initiatives and activities, as well as on ensuring the compatibility of ePhyto with the global implementation of single window functions. Collaboration with the CAC and the OIE on harmonisation would assist countries in developing systems capable of handling various SPS certificates, thus simplifying border activities and the uptake of electronic certification. Harmonisation would also assist in facilitating safe trade and improving biosecurity. The IPPC Secretariat will work with other international organisations to explore the exchange of non-phytosanitary electronic certificates through the Hub, with potential benefits to IPPC by simplifying the process of exchange for countries, reducing operational costs through economies of scale and increasing the viability of the Hub service.

IPPC and Codex

The IPPC contributes to the discussions in the context of the Codex Committee on Food Import and Export Inspection and Certification Systems (CCFICS) on the use of electronic certificates by competent authorities and migration to paperless certification and has offered to coordinate discussions by the three standardsetting organisations (the 'three sisters') on this matter. A successful partnership between the IPPC and Codex communities is crucial in fulfilling their respective mandates, namely, to protect the world's plant resources from pests and to protect the health of consumers and ensure fair practices in the food trade.

IPPC and WCO

As countries implement single windows and adopt paperless trading mechanisms, the alignment of ePhyto data with the appropriate elements of the WCO data model should be investigated thoroughly; the IPPC Secretariat has already initiated this activity. The IPPC Secretariat is proactively working with interested international organisations and with its contracting parties to undertake an analysis of alignment to allow countries to make informed decisions on how ePhyto can be used within single windows and Customs systems.



ABOUT CITES AND eCITES

1. About CITES

The Convention on International Trade in Endangered Species of Wild Fauna and Flora, known as CITES or the Washington Convention, was signed in Washington, DC, United States of America, on 3 March 1973 and entered into force on 1 July 1975. Today, almost all countries in the world are Parties to this international legally binding agreement.

CITES aims to ensure that international trade in wild animals and plants is legal, sustainable and traceable, and does not threaten the survival of species in the wild. It reflects all three dimensions of sustainable development – social, economic and ecological – and contributes to the achievement of the United Nations Sustainable Development Goals, built around the pillars of People, Planet, Prosperity, Peace and Partnerships.

CITES regulates international trade in specimens of species of wild fauna and flora based on a system of permits and certificates issued under certain conditions. It covers export, re-export, import and landing from the high seas of live and dead animals and plants and their parts and derivatives.

CITES accords varying degrees of protection to more than 36,000 species of animals and plants by applying different provisions to species included in three Appendices:

- **Appendix I**
 - Species threatened with extinction;
 - International commercial trade is generally prohibited.
- **Appendix II**
 - Species not necessarily threatened with extinction but may become so unless trade is regulated, and species whose specimens in trade look like those of species listed for conservation reasons;
 - International commercial trade is allowed but controlled.
- **Appendix III**
 - Species subject to regulation within the jurisdiction of a Party and for which the cooperation of other Parties is needed to control international trade.

Annually, over 1 million CITES permits and certificates (97% Appendix II) are issued by Parties, covering international wildlife trade estimated to be worth billions of dollars and to include hundreds of millions of plant and animal specimens [Source: *CITES brochure UNEP/CITES/2019/1*].

2. About eCITES

CITES is working on digitising the issuance and exchange of its permits and certificates through:

- The eCITES Implementation Framework - A Practitioner's Guide to implement electronic CITES Permits.¹⁵ This document provides guidance and specific recommendations for automation of permit procedures in Management Authorities, implementation of electronic data exchange with customs for improved CITES border controls, as well as the Electronic Permit Information Exchange (EPIX) system, to prevent fraudulent use of permits and support automated generation of annual reports. It provides a structured, stepwise implementation approach to electronic CITES systems, which Parties can adapt to their specific needs and readiness to implement automated procedures. The Guide explains the differences between exchange of paper and exchange of electronic permits, identifies some of the challenges in migrating from paper to electronic permits and suggests a set of recommendations and standards that CITES should develop and adopt to facilitate the exchange of electronic permits between Parties. The EPIX system was developed by the United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC). EPIX facilitates the exchange of CITES permits and certificates and, as a central registry, facilitates validation of CITES permit data by CITES Management Authorities and Customs officials. The Guide further describes EPIX Onboarding: Simplifying the implementation of Electronic Permit Information Exchanges between Parties to facilitate integration of new Parties into already established electronic permit exchanges. It proposes a three-step process with a separation of roles between the onboarding Party, the Parties already exchanging electronic permits and the Secretariat.
- Facilitating the Swiss French pilot, which provided important technical information for Parties preparing for electronic permit information exchanges and on possible future CITES standards for electronic permit information exchange.
- Development of joint projects – CITES is working with UN/CEFACT, UNCTAD, the ITC, the World Bank, the WCO, and the WTO in the context of the Trade Facilitation

¹⁵ <https://cites.org/sites/default/files/20180219eCITESImplementationFramework.pdf>

Agreement, and other relevant partners, to continue the development of joint projects that will facilitate Parties' access to electronic permitting services and their alignment to international trade standards and norms, such as the revision of the CITES epermitting toolkit and the development of the ASYCUDA eCITES module. This module provides an off-the-shelf software solution for electronic certification, control and reporting of trade in CITES-listed species adapted to national languages and alphabets, legal requirements and workflows of the CITES Management Authority.

- eCITES is understood by the CITES WSG on electronic systems and Information technologies as a chapeau for a set of standards and guides to support Parties in the implementation of electronic systems. The development of these tools is ongoing. eCITES is per se vendor and (as far as possible) technology independent and recommended to all Parties. eCITES includes inter alia recommendations on these of electronic signatures and the adaptation of the UN/CEFACT eCERT standard for CITES. eCITES@ASYCUDA.org (or other combinations with the name eCITES in it) refer to systems that apply these standards but are country/vendor specific.
- Developing technical cooperation projects – CITES is working together with UNCTAD, with selected countries to develop technical cooperation projects, noting that the main obstacle for ASYCUDA eCITES implementation appears to be the lack of funding for many of the interested developing countries, since they generally rely on external support for the automation of permit processes.
- Working with the Secretariat of the IPPC. CITES is working with IPPC in the development of electronic trade documentation and learning from the IPPC's efforts to develop electronic phytosanitary certificates.

When using electronic CITES systems, Parties are advised to take the following additional considerations into account:

- For the authentication of trade documents, UN/CEFACT Recommendation 14 functions as good practice when implementing the electronic equivalent of signatures and seals in electronic CITES permitting systems and exchanges;
- To authenticate each user that has access to the electronic system, using username and passwords, and/or similar technologies, or both;
- To ensure that electronic CITES systems keep an audit trail, i.e. keep electronic records (including, but not limited to, confirmation of transmission and receipt with associated time stamps and message headers) that enable the Management Authority to identify each person who requested, approved, processed, issued, endorsed or altered electronic CITES permits and certificates;
- To keep archives of audit trails for no fewer than 5 years after the expiry date of the permit or certificate, or no fewer than 5 years after the date that the trade was reported in the Party's annual report, whichever is later.

3. Collaboration with other International Organisations

CITES collaborates with international organisations to align eCITES standards with other international standards.

The CITES Secretariat is aiming to work with the UN/CEFACT, UNCTAD, the ITC, the World Bank, the WCO, the WTO and other relevant partners to continue the development of joint projects that would facilitate Parties' access to electronic permitting services and their alignment with international trade standards and norms, such as the further development and implementation of the UNCTAD ASYCUDA eCITES system.

CITES and UN/CEFACT

With regard to UN/CEFACT, the CITES Secretariat works in particular with the experts of the UN/CEFACT Domain on Agriculture, Fisheries and Agri-Food and has provided information on the relevant work of CITES at the experts' meetings.

CITES and UNCTAD

UNCTAD and the CITES Secretariat, working in cooperation, have developed an UNCTAD Automated System for Customs Data (ASYCUDA) eCITES software solution for the automation of CITES business processes, including inter-operation with Customs IT systems.

The ASYCUDA eCITES system provides an off-the-shelf software solution for electronic certification, control and reporting of trade in CITES-listed species. The system can be configured to the specific requirements and needs of the CITES Management Authority, including adaptation to national languages and alphabets, legal requirements and workflows. The ASYCUDA eCITES system can be implemented in interested countries within the framework of a technical cooperation project with UNCTAD, comprising adaptation to national requirements, the development of country-specific reports, integration into Customs control processes, and capacity building through training of the national CITES Management Authority and trade operators.

The CITES Secretariat has received official requests to support the implementation of an ASYCUDA eCITES system in Sri Lanka and in the Bahamas and has been in discussion with the relevant national authorities. UNCTAD and the CITES Secretariat are also aware of the interest expressed by Armenia, Botswana and Georgia, as well as countries in the South Pacific and Caribbean sub-regions.

CITES and the IPPC

The CITES Secretariat is furthermore aiming to work with the Secretariat of the International Plant Protection Convention (IPPC), National Plant Protection Organizations (NPPOs) and other relevant organisations to learn from their exchange information and experience and work towards a harmonisation of standards and procedures for the licences, permits and certificates frequently used in conjunction with cross-border trade in CITES-listed specimens.

The CITES Secretariat has already liaised with and is currently exchanging experience with the ePhyto project for the electronic exchange of phytosanitary certificates

conducted jointly by the IPPC and the WTO (see also the IPPC chapter of this report).



ABOUT THE WORLD CUSTOMS ORGANISATION (WCO) AND THE WCO DATA MODEL

1. About the WCO

The World Customs Organization (WCO), established in 1952 as the Customs Co-operation Council (CCC), is an independent intergovernmental body whose mission is to enhance the effectiveness and efficiency of Customs administrations. Today, the WCO represents 183 Customs administrations across the globe that collectively process approximately 98% of world trade. As the global centre of Customs expertise, the WCO is the only international organisation with competence in Customs matters and can rightly call itself the voice of the international Customs community. The WCO's governing body – the Council – relies on the competence and skills of a Secretariat and a range of technical and advisory committees to accomplish its mission. The Secretariat comprises over 100 international officials, technical experts and support staff of various nationalities.

As a forum for dialogue and exchange of experiences between national Customs delegates, the WCO offers its Members a range of Conventions and other international instruments, as well as technical assistance and training services provided either directly by the Secretariat or with its participation. The Secretariat also actively supports its Members in their endeavours to modernise and build capacity within their national Customs administrations. Besides the vital role played by the WCO in stimulating the growth of legitimate international trade, its efforts to combat fraudulent activities are also recognised internationally. The partnership approach championed by the WCO is one of the keys to building bridges between Customs administrations and their partners. By promoting the emergence of an honest, transparent and predictable Customs environment, the WCO directly contributes to the economic and social well-being of its Members.

Mission statement: The World Customs Organization develops international standards, fosters cooperation and builds capacity to facilitate legitimate trade, to secure a fair revenue collection and to protect society, providing leadership, guidance and support to Customs administrations.

2. About the WCO Data Model

The WCO Data Model (WCO DM) is a set of carefully combined data requirements that are mutually supportive and are updated on a regular basis to meet the procedural and legal needs of cross-border regulatory agencies (CBRAs), such as Customs, that control export, import and transit transactions. It is consistent with other international standards and is Single Window compatible.

An international standard, the WCO DM is a compilation of clearly structured, harmonised, standardised and reusable sets of data definitions and electronic messages designed to meet the operational and legal requirements of CBRAs, including Customs, which are responsible for border management. The content of the electronic data messages includes goods declarations, cargo declarations, cargo movements and goods inspections and permits, as well as licensing requirements.

The WCO DM has three main components, namely semantics, message formats (syntax) and business process model (BPM). The semantics component consists of a number of properties for the WCO DM data elements, such as the identification (WCO ID), name, definition, format representation and the recommended list of coded values. The syntax component enables the implementation of the WCO DM semantics into an actual electronic message. The WCO currently supports two message formats, namely the EDIFACT (Electronic Data Interchange for Administration,

Commerce and Transport) GOVCBR (Government and Cross-border Regulatory) format and XML, while the BPM component elaborates the context of processes/procedures under which WCO DM subsets are used.

Version 3.0.0 of the WCO DM, released in 2009, and its subsequent releases have been further developed to support the implementation of a Single Window environment to promote collaboration between Customs administrations, government regulators and the business community and to manage reporting as well as compliance with government border requirements.

The WCO DM has been organised in such a way that the complex nature of the data requirements for various cross-border procedures could be developed and understood in a simple, consistent and harmonised manner. This objective was achieved through the use of the Information Package concept. Information Packages are subsets of the Model that act as hierarchical standard templates linked to a particular policy/legal requirement and business process, such as the cargo declaration, the goods declaration, conveyance reporting, licences/permits, and certificates. This concept enables WCO Members and their partner government agencies to select and focus on a particular subset of the WCO DM that fits the purpose for a specific national regulatory procedure, by deriving a pertinent Information Package, either a Base Information Package (BIP) or a specific Derived Information Package (DIP), and translating it into a My Information Package (MIP), resulting in the national implementation of the WCO DM.

The WCO DM includes an LPCO BIP that describes the use of the WCO DM for electronic Licences, Permits, Certificates and Other forms. The LPCO is the BIP under which the DIP for the OIE Veterinary Certificate for International Trade is included. The OIE DIP describes the subset of the WCO DM structure of certificates containing essential information relating to animal health and public health. The DIP was developed bearing in mind national requirements on the clearance of consignments, as well as the requirements of authorities in the importing country for the importers to present certification issued by, or with the authority of, authorities in the exporting country. The WCO DM LPCO BIP also includes the CITES DIP, which is not published by the WCO but is available on the CITES website (the CITES electronic permitting toolkit).

The WCO, through its Data Model Projects Team (DMPT), actively maintains the WCO DM. The DMPT undertakes to produce annual updates to the WCO DM to take account of new business and technological developments. The WCO DM update is governed by a robust Data Maintenance Request (DMR) mechanism. The latest update to the WCO DM, namely version 3.8.1, was released in January 2019.

The table below gives an overview of BIPs and DIPs and shows the relationship between them

BIP (Base Information Package)	DIP (Derived Information Package)
Declaration	Customs Main areas (import, export, cargo, report)
	Advance Electronic Information
	Advance Passenger Information
	Single Administrative Document
LPCO (Licences, Permits, Certificates and Other)	E-Phyto (1 model certificate)
	E-Veterinary Certificate (6 model certificates)
	Food Safety Certificate (1 model certificate)
	Certificate of Origin
Response	Control
	Information
	Business Validation
	Technical Validation
	Status
INTERGOV	Master Data

3. Collaboration with other International Organisations

Collaboration to support the implementation of the WTO-Trade Facilitation Agreement (TFA)

The WCO cooperates with donors, other International Organisations and national public sector stakeholders. As an Annex D WTO Organisation, the WCO has established a specially dedicated Mercator Programme to support implementation of the Trade Facilitation Agreement (TFA) in all six regions of the WCO, covering all the developing and least developed Members across the globe. The activities include TFA-focused programmes/projects such as:

- Collaboration between the United Kingdom (Her Majesty's Revenue & Customs [HMRC]), the WCO) and UNCTAD in a trade facilitation capacity-building programme, aimed at supporting developing and least developed Commonwealth countries to effectively implement the provisions of the WTO TFA, using the WCO's international standards and tools. The United Kingdom's support for this programme was announced in April 2018 at the Commonwealth Heads of Government Summit.
- The WCO Customs Capacity Building phase II project for the East and Southern Africa (ESA) region, funded by the Finnish Government, which is designed to assist developing countries in the ESA region to make effective progress on trade facilitation, using the WCO's international tools and instruments. The project was launched in 2017.

- The WCO/JICA Joint Project, which is a partnership between JICA (Japan International Cooperation Agency) and the WCO aimed at supporting the efforts of Customs administrations on trade facilitation and Customs modernisation in Africa through collaborative assistance. The project was launched in July 2016.
 - The SECO-WCO Global Trade Facilitation Programme (GTFP), which is the first joint initiative between SECO (State Secretariat for Economic Affairs of Switzerland) and the WCO to address trade facilitation for selected beneficiary countries in South America and Central Asia, through a 4-year comprehensive programme (2018-2022).
- Cooperation with CITES, the OIE, the IPPC and Codex**
- Furthermore, the WCO has formal cooperation arrangements with CITES, the OIE and the IPPC and participates in the CCFICS EWG Paperless Use of Electronic Certificates:
- Memorandum of Understanding between the World Customs Organization and the CITES Secretariat;¹⁶
 - Cooperation agreement between the World Organisation for Animal Health (OIE) and the World Customs Organization (WCO):¹⁷
 - *Article 5.(V) 'technical cooperation on the development of databases' interconnectivity, whenever necessary for the purpose of improved risk management and trade facilitation'.*
 - Agreement between the Food and Agriculture Organization of the United Nations (FAO) on behalf of the Secretariat of the International Plant Protection Convention (IPPC) and the World Customs Organization (2018)¹⁸, including provisions on Electronic data exchange, eCommerce, Sea Containers and Single Window;
 - Joint Work Plan for Cooperation Between the Secretariats of the WCO and the IPPC (2019);¹⁹
 - WCO is participating in work of the CCFICS eWG on the development of Codex guidance for paperless electronic certification with the aim of aligning its initiatives on paperless processes with the initiatives of CODEX.

¹⁶ www.wcoomd.org/-/media/wco/public/global/pdf/about-us/partners/mou/034_mou.pdf?la=en

¹⁷ www.wcoomd.org/-/media/wco/public/global/pdf/about-us/partners/mou/180_mou_en.pdf?la=en

¹⁸ www.wcoomd.org/-/media/wco/public/global/pdf/about-us/partners/mou/210_mou_eng.pdf?la=en

¹⁹ www.wcoomd.org/en/media/newsroom/2019/march/wco-and-ippc-agree-on-a-joint-cooperation-work-plan.aspx

Analysis of commonalities and differences of relevant international organisations in relation to the OIE

CITES regulates international trade in specimens of species of wild fauna and flora based on a system of permits and certificates in order to ensure that this trade is legal, sustainable and traceable. All import, export, re-export and introduction from the sea of species covered by the Convention has to be authorised through a licensing system, the CITES Business Process. CITES decided to facilitate automation of this process by:

- the Electronic Permit Information eXchange (EPIX) system;
- the CITES e-permitting toolkit; and
- development of the eCITES module.

The **Codex Alimentarius** is a collection of internationally adopted food standards and related texts presented in a uniform manner. Publication of the *Codex Alimentarius* is intended to guide and promote the elaboration and establishment of definitions and requirements for foods to assist in their harmonisation and in so doing facilitate international trade.

The Codex Alimentarius Commission approved the work in CCFICS, the Codex Committee on Food Import and Export Inspection and Certification Systems, to revise the Guidelines for Design, Production, Issuance and use of Generic Official Certificates (CAC/GL 38-2001) to include guidance on paperless certification by:

- taking into account a step-by-step approach in transitioning towards paperless certification;
- defining the fundamental concepts necessary to understand and interpret requirements for exchange mechanisms, data mapping and legal and regulatory changes needed to facilitate electronic certification systems.

The **International Plant Protection Convention** is an international treaty that aims to secure coordinated, effective action to prevent and to control the introduction and spread of pests and diseases of plants and plant products, providing a framework and a forum for international cooperation, harmonisation and technical exchange between contracting parties. All these parties should have access to technology supporting the exchange of electronic phytosanitary certificates (ePhytos).

The **World Customs Organization** develops international standards, fosters cooperation and builds capacity to facilitate legitimate trade, to secure a fair revenue collection and to protect society, providing leadership, guidance and support to Customs administrations. One of the WCO's international standards is the WCO Data Model (DM), a compilation of clearly structured, harmonised, standardised and reusable sets of data definitions and electronic messages designed to meet the operational and legal requirements of crossborder regulatory agencies (CBRAs), including Customs, responsible for border management.

To summarise, all four International Organisations are facilitating in their own domain and in their own way international electronic exchanges of their official documents between regulatory bodies, and each of them is reaching out to the other International Organisations to collaborate.

- The IPPC ePhyto Solution can be considered as one of the most far-reaching projects by developing the IPPC Global ePhyto Hub and offering the Generic ePhyto National System (GeNS) for developing countries. The key point for the IPPC is to enable the transition from a project to a business-as-usual operation within the IPPC Secretariat.
- The Codex work is aimed at developing guidance on (transition to) paperless certification and does not cover hardware and/or software solutions. The draft guidance provides a data model of the Codex Generic Model Official Certificate.
- CITES has delivered for its business process a toolkit, the EPIX system and the eCITES module, to facilitate Parties' access to electronic permitting services and their alignment with international trade standards and norms.
- The WCO has developed the WCO Data Model, an international standard of sets of data definitions and electronic messages designed to enable cross-border regulatory agencies to meet their operational and legal requirements in a Single Window environment. The WCO has also developed guidelines to help Customs administrations implement the Standards and Recommended Practices contained in the Revised Kyoto Convention.²⁰ These Kyoto ICT Guidelines do not cover hardware and/or software solutions. These decisions must be reached by each administration keeping in mind its own needs and the needs of its trading community.

²⁰ www.wcoomd.org/en/topics/facilitation/instrument-and-tools/conventions/pf_revised_kyoto_conv.aspx

Considerations for the OIE relating to the e-veterinary certification project

To ensure that the future OIE framework on e-veterinary certification functions properly, it will first of all need to fit into the OIE objective to safeguard world trade by publishing health standards for international trade in animals and animal products. Assistance to developing countries, to help them understand e-veterinary certification, and assistance to developing and developed countries in their potential use of e-veterinary certification could be achieved by the development of practical solutions supported by collaborations with other International Organisations.

The frameworks described in this report provide concrete points of contact for collaboration between the OIE and the other International Organisations. The point of departure for the OIE framework will be e-veterinary certification in accordance with the provisions of the *Terrestrial Animal Health Code* and the *Aquatic Animal Health Code*, the model veterinary certificates included.

E-veterinary certification is defined as certification that is provided by electronic exchange of data sent directly from the Veterinary Authority of the exporting country to the Veterinary Authority of the importing country. This would require in the first place, systems at national level that have interfaces with commercial organisations and other regulatory agencies to provide electronic certificates.

With regard to the international exchange of electronic certificates, internationally standardised language, message structure and exchange protocols should be applied for Extensible Markup Language (XML) as well as secure exchange mechanisms between Veterinary Authorities on the basis of a single window system. Guidance for electronic certification in XML as well as secure exchange mechanisms between Veterinary Authorities is provided by the United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT). This guidance also contains provisions for electronic exchange of additional information in the XML message of the certificate in question.

The electronic data exchange is expected to be secured by digital authentication of certificates, encryption, non-repudiation mechanisms, controlled and audited access and firewalls.

The recommendations below are a package of initiatives that are mutually compatible and are expected to function as a solid and consistent way forward for the OIE towards e-veterinary certification on the basis of a single window system.

Solutions for consideration

- To introduce in both the *Terrestrial Code* and the *Aquatic Code* additional guidance on the transition from paper to electronic format on the basis of a single window system.

This would assist developing countries in their understanding of e-veterinary certification at national level and how to apply e-veterinary certification internationally on the basis of a single window system.

- The OIE to work with UNCTAD of a standardised e-veterinary certification technical solution for export and import on the basis of the OIE Derived Information Package from the WCO. This e-veterinary certification solution would provide the following three options for implementation:
 1. National implementation, where the operation and the functional/technical administration and maintenance of the national certification system are the responsibility of the Veterinary Authorities. The certification software will be installed in the beneficiary country in the framework of a technical assistance agreement for the provision of:
 - technical/functional support during customisation, testing, piloting and rollout of the system;
 - training on the operation, functional/technical administration and maintenance of the system.
 2. National Single Window/Regional implementation, where the national certification workflow for the Veterinary Authorities is digitised and the operation and the functional/technical administration and maintenance of the national certificate exchange system are the responsibility of the national Single Window operator or of the regional organisation, as applicable. The certificate exchange software will be installed in the beneficiary country as a component of the national Single Window environment or in the regional organisation, as decided, within the

framework of a technical assistance agreement for the provision of:

- technical/functional support during the customisation, testing, piloting and rollout of the system;
- training on the operation, functional/technical administration and maintenance of the system.

3. A hosted solution, where only the operation and the functional administration of the national certification system are the responsibility of the national Veterinary Authorities. The national certification software will be hosted and technically administrated by UNCTAD, within the framework of a technical assistance agreement for provision of:

- functional support during the customisation, testing, piloting and rollout of the system;
- training on the operation and the functional administration of the system.

This would provide off-the-shelf software solutions for electronic certification that can be configured to the specific requirements and needs of the Veterinary Authorities, including adaptation to national languages, government border requirements and workflows during import and export.

certification by competent authorities. This cooperation would provide the relevant national competent authorities with similar basic options for implementation as those described in the second bullet of 'Solutions for consideration'.

This would provide a multi-functional off-the-shelf software solution for electronic certification of food and veterinary commodities that can be configured to the specific requirements and needs of the food and veterinary authorities, including adaptation to national languages, government border requirements and workflows during import and export.

- To explore with the IPPC Secretariat:
 - the exchange of electronic veterinary certificates through the IPPC Global ePhyto Hub;

This would enable more countries to better engage in international trade of animals and animal products.

- the potential for expansion of the Generic ePhyto National System (GeNS) to be used for international trade of animals and animal products.

This would enable developing GeNS countries with the necessary capacity to also participate in the exchange of electronic certification for the international trade of animals and animal products.

- To investigate the possibility of a partnership with the World Bank in its efforts to implement the WTO's Trade Facilitation Agreement (TFA) by making available for developing countries standardised e-veterinary certification technical solutions for export and import that might be developed by UNCTAD.

Collaboration with other International Organisations

- WCO - To cooperate in the framework of e-veterinary certification with the WCO Secretariat and relevant experts on enabling inclusive digital collaboration between government agencies in the context of a Single Window environment by:
 - examining and further aligning the existing WCO DM DIP with OIE standardised data requirements for the Veterinary Certificate for International Trade;
 - maintaining and recognising the WCO DM DIP for the Veterinary Certificate for International Trade as an international standard to facilitate the development and implementation of e-veterinary certificate exchanges through a Single Window system.

This would assist developing countries in their potential use of e-veterinary certification.

- To explore with Codex Alimentarius the possibility of incorporating the Codex Derived Information Package from the WCO in the suggested development of a standardised e-certification technical solution for import and export by UNCTAD. Incorporation of the Codex Derived Information Package would extend the functionality of such a technical solution to food

Considerations on the operational modality for managing the next phase of the project

It is obvious that a next phase in developing e-veterinary certification will require an operational modality to manage all the activities. Taking into consideration the structure of the OIE, the following might be considered:

- to establish an OIE *ad hoc* group with dedicated tasks with regard to e-veterinary certification on the basis of a Single Window system;
- as the OIE together with Codex Alimentarius and the IPPC are the three standard-setting organisations ('three sisters') recognized by the WTO SPS Agreement, explorations with Codex Alimentarius and the IPPC could be initiated in the framework of the WTO SPS meetings.

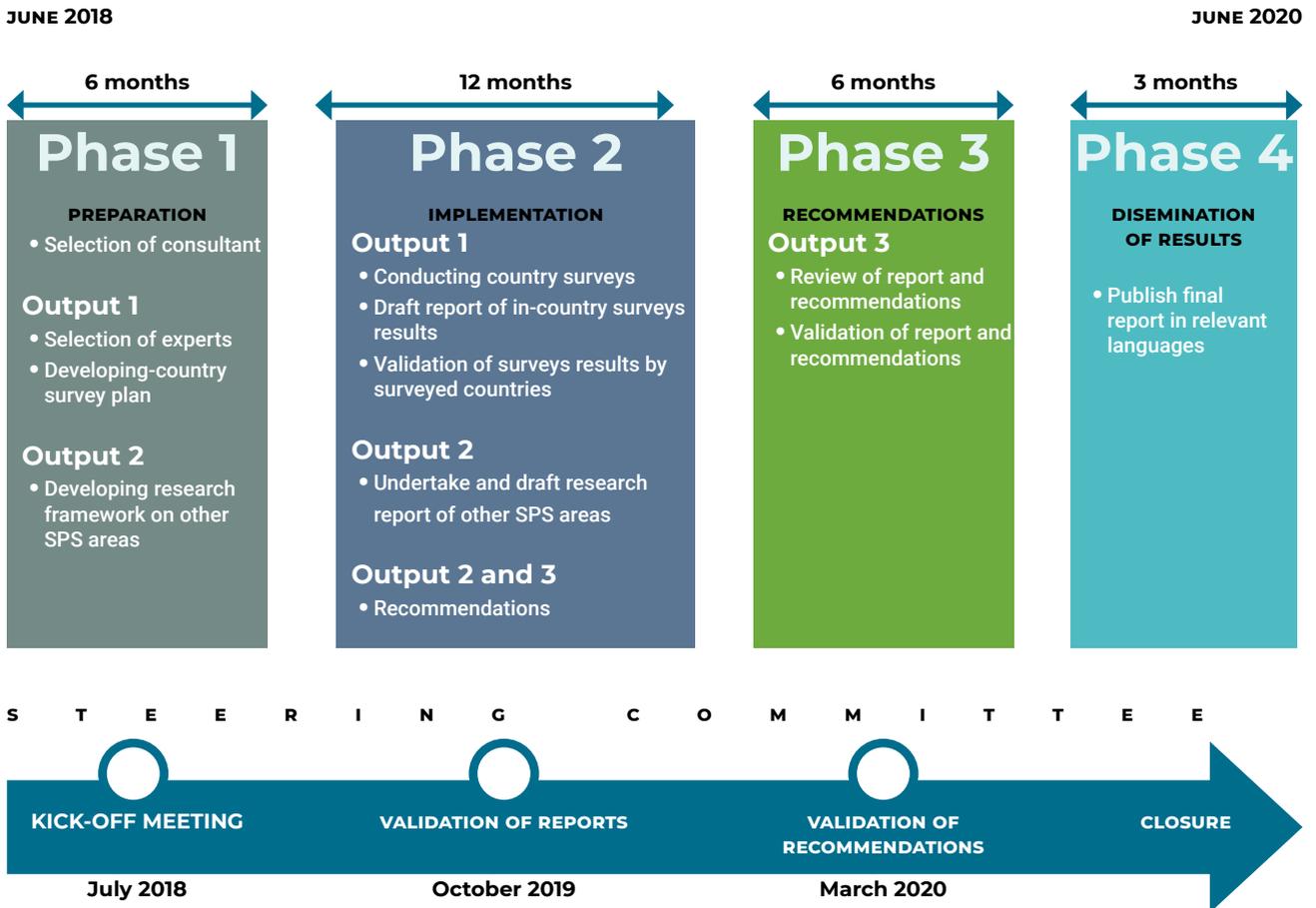
Conclusions

Merging the proposed considerations for the OIE in Part One (Output 1) with the outcomes and recommendations of Part Two (Output 2) of this report leads to the following more specific considerations, which are expected to assist developing countries in their potential use of e-veterinary certification to better engage in international trade of animals and animal products:

- a. To investigate the possibility of a partnership with the World Bank** to support countries in their process to achieve digital interaction between business and the Veterinary Services, including border management and the availability of a national export documentation system within the framework of implementing the Trade Facilitation Agreement (TFA) of the World Trade Organization (WTO).
- b. To coordinate with the World Customs Organization (WCO)** to ensure an international standard for data models of the OIE model certificates. All countries, including the e-veterinary certificate countries, have to deal with a huge variety of veterinary certificates and would benefit from the harmonisation of these certificates. The availability of validated international data models like the WCO Data Model Derived Information Packages and UN-CEFACT-compliant data models might assist with simplifying the introduction and maintenance of e-certificate exchanges and, in so doing, assist developing and developed countries in their potential use of e-veterinary certification.
- c. To work together with UNCTAD** by providing off-the-shelf software solutions for electronic certification that can be configured to the specific requirements and needs of the Veterinary Authorities, including adaptation to national languages, government border requirements and workflows during import and export. This software solution should be of particular interest to countries that have calculable import and export volumes combined with limited resources for achieving digital interaction between business and the Veterinary Services, including border management and the availability of a national export documentation system, as well as limited IT infrastructure.
- d. To coordinate with Codex** with regard to the use of the WCO Data Model Codex Derived Information Package in proposed cooperation with UNCTAD. This recommendation is expected to deliver a multidisciplinary off-the-shelf software solution for electronic certification of food and veterinary commodities that can be configured to the specific requirements and needs of the food authorities and the Veterinary Authorities, including adaptation to national languages, government border requirements and workflows during import and export. This software solution should be of particular interest to countries that have calculable import and export volumes combined with limited resources for achieving digital interaction between business and the Veterinary Services, including border management and the availability of a national export documentation system, as well as limited IT infrastructure.
- e. To explore with the IPPC Secretariat** the potential for expansion of the Generic ePhyto National System (GeNS) to be used for international trade of animals and animal products. This would firstly assist GeNS developing countries (see GeNS table on page 21) in their potential use of e-veterinary certification and enable the exchange of electronic veterinary certificates through the IPPC Global ePhyto Hub.

Annexes

Annex 1 Project implementation plan



Annex 2

Questionnaire for selected countries

Development of a framework to facilitate e-veterinary certification for international trade on the basis of a single-window system (Project STDF/PG/609)

QUESTIONNAIRE

Introduction

The project 'Development of a framework to facilitate e-veterinary certification for international trade on the basis of a single-window system' is funded by the Standards and WTO Trade Development Facility (STDF)²¹ and is being implemented by the OIE on behalf of the five applicant countries: Cambodia, Eswatini, Nigeria, Paraguay and Zimbabwe.

E-veterinary certification means electronic certification as described in Article 5.2.4. of the *Terrestrial and Aquatic Codes*. Certification is provided through the electronic exchange of data sent directly from the Competent Authority of the exporting country to the Competent Authority of the importing country. As a consequence, the scope of the project is focused on export and import procedures including certification, while the negotiation of import requirements with trading partners is excluded from said scope.

The overall goal of this project is to assist developing countries by facilitating their understanding and the potential use of e-veterinary certification, in order to better engage in the international trade of animals and animal products. Furthermore, through the implementation of this project, the Veterinary Services of Members will improve liaison with their counterparts in terms of plant health, food safety and customs authorities with respect to establishing e-veterinary certification.

Sharing experiences, terminologies and concepts of e-veterinary certification could be the basis for facilitating the future development of a versatile e-veterinary certification scheme, particularly in terms of its use in a single-window system with recommendations to Veterinary Authorities, the OIE and donor communities.

This questionnaire is a tool to facilitate in-country self-evaluation in order to analyse the current situation in relation to the e-veterinary certification system of the respective countries, in terms of the import and export of animal and animal products in a single-window environment.

The questionnaire will be completed by all 12 countries. In the case of developing countries, a desk review of the information provided through the questionnaire will be conducted by Single Window and e-certification experts, followed by an in-country visit to support the self-evaluation process and gather missing information.

The countries involved in this project are as follows: Australia, Cambodia, Chile, Eswatini, France, Japan, Malaysia, Nigeria, Paraguay, Singapore, United Kingdom and Zimbabwe.

21 This STDF Project is available at: <http://www.standardsfacility.org/PG-609>

Outcomes

The completed questionnaires, together with the reports of the in-country assessments, will be used to develop a report, which will provide an overview of the key drivers and challenges for the implementation of e-veterinary certification. The report will also outline the basic features of currently operating e-veterinary certification and single-window systems. This questionnaire is not meant to provide information for statistical purposes.

How to complete the questionnaire?

The answers to the questionnaire should be as complete and accurate as possible. For this purpose, it is important to consider that other relevant authorities, including other ministries, agencies and institutions involved in the provision of export and import certification, should be consulted.

The questionnaire's structure allows all countries to respond irrespective of the level of implementation of their respective e-veterinary certification systems, i.e. have not been designed or are not yet implemented or are partially or fully implemented.

Please provide answers to the questions as fully as possible and attach all relevant documents or weblinks that are considered relevant.

One questionnaire should be completed and submitted per country. In order to reply to all questions, a coordination process should be ensured between the different agencies involved in export and import processes, and in both terrestrial and aquatic domains.

Information on the respondent

COUNTRY:

Please provide the contact information of the person responsible for completing this questionnaire

Name(s)	
Organisation	
Position	
Telephone	
Email	

SECTION 1: Country trade profile

The objective of Section 1 is to provide an overview of the country trade profile concerning prioritised commodities which are (or potentially are) covered by an electronic certification process.

Import

1. Please, list a maximum of four prioritised commodities (terrestrial and/or aquatic domain) and complete the list of country trading partners:

	HS Code	Live animals imported	Exporting country(ies)
1			
2			
3			
4			

	HS Code	Products of animal origin imported	Exporting country(ies)
1			
2			
3			
4			

Export

2. Please, list a maximum of **four prioritised** commodities (terrestrial and/or aquatic domain) and provide a list of country trading partners:

	HS Code	Live animals exported	Importing country(ies)
1			
2			
3			
4			

	HS Code	Products of animal origin exported	Importing country(ies)
1			
2			
3			
4			

SECTION 2: Current situation concerning the veterinary certification system

A. Administrative procedures concerning paper-based and electronic-veterinary certification

The objective of Section 2-A is to provide a clear understanding of the current veterinary certification process, paper-based and/or electronic. This includes the related legislation and the process and procedures involved in trading matters. This information will be used to provide a state-of-play and to identify challenges.

For the purpose of the questions below, the following definitions are applied:

'Legal instrument' means the legally-binding rule that is issued by a body with the required legal authority to issue such an instrument. Legal instruments may be issued by the legislative body (Primary legislation) or by the executive body (Secondary legislation) of a Member Country.

'Efficiency' of a process means achieving maximum output from a given level of resources used to carry out an activity (including timeframe).

'Security' of a process means measures taken to prevent unauthorised access or use of data or fraud.

Paper-based certification

3. In your country, are there any legal instruments regulating the issuance of veterinary certificates of animals and products derived from animals?

Yes

No

If yes, provide a copy/web link of the legal instrument/s:

4. Are there any legal instruments describing the procedure to export animals and products derived from animals?

- Yes
- No

If yes, provide a copy/web link of the legal instrument/s:

5. Are there any legal instruments describing the procedure to import animals and products derived from animals?

- Yes
- No

If yes, provide a copy/web link of the legal instrument/s:

6. Paper certificates should be designed so as to minimise the potential for fraud. Which assurance systems, if any, underpin the authenticity and contents of a certificate?

7. Rank each of the following characteristics of the existing process for the issuance of paper-based veterinary certificate for exports from your country (from the initial application until the certificate has been issued).

	Please rank from 1 (bad performance) to 5 (very good performance)
Efficiency	
Security	

8. Rank each of the following characteristics of the existing process for the **import** of consignments accompanied by paper-based certificates into your country (from the initial application until clearance).

	Please rank from 1 (bad performance) to 5 (very good performance)
Efficiency	
Security	

Electronic certification

9. Are there any legal instruments or bilateral agreements supporting the issuance of e-veterinary certificates for **export**?

- Yes
- No

If yes, provide a copy/web link of the legal instrument/s or specify which countries you have bilateral agreements with in this regard:

10. Are there any legal instruments that prevent the acceptance of e-veterinary certificates for **imports**?

- Yes
- No. E-veterinary certificates are accepted but hardcopies must also be provided.
- No. E-veterinary certificates are accepted.

If yes, provide a copy/web link of the legal instrument/s:

11. If yes, how long would it take to change these legal instruments?

- Less than a year
- 1 to 2 years
- More than two years

12. For the security of electronic certificates to prevent access by unauthorised persons or organisations, what measures are in place to prevent such access, and do assurance systems exist that underpin the authenticity and contents of a certificate? If yes, provide a copy/web link of the legal instrument/s:

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13. Rank each of the following characteristics of the existing process for the issuance of e-veterinary certificates for **exports** from your country (from the initial application until the certificate has been issued).

	Please rank from 1 (bad performance) to 5 (very good performance)
Efficiency	
Security	

14. Rank each of the following characteristics of the existing process for **imports** of consignments accompanied by e-veterinary certificates into your country (from the initial application until clearance).

	Please rank from 1 (bad performance) to 5 (very good performance)
Efficiency	
Security	

B. Funding sources

15. Please indicate the funding sources for each current certification system, if applicable. If more than one funding source is marked, indicate an approximate percentage for each item.

	Paper-based	Electronic and paper	Electronic (paperless)
Public funding			
Private contribution			
Fees			
Other/s (please specify)			

C. Processes, procedures and documents required for the import and export of live animals and products derived from animals

16. IMPORTATION: Describe the process for importation from the import permit application until the end of the process (i.e. clearance, destruction, re-export)

Based on prioritised commodities or group of commodities sharing the same procedure (Section 1), this description should include at least the following (if relevant):

- A description of each step: from the application for the import permit, pre-clearance, import inspection, clearance.
- A list of forms and documents required for each step.
- The areas/agencies/institutions involved and their role in the process.
- The average time required to complete each step.
- The regulations applied.
- Method of exchange: paper based, electronic with paper and electronic exchange (i.e. paperless).

Commodity/ies (HS code/s) Country: Regulations:	Objective of the step	Agencies / institutions involved	List of forms and documents	Methods of exchange 1. Paper based 2. Electronic with paper 3. Electronic exchange (i.e. paperless) In the case of an electronic exchange, please specify exchange protocols and languages	Average time
Step 1					
Step 2					
Step 3					
Step 4...					

17. EXPORTATION: Describe the process from the export permit application until the end of the process

Based on prioritised commodities or group of commodities sharing the same procedure (Section 1), this description should include:

- A description of each step: export permit application, issuance of veterinary certificate, application for export inspection, despatch.
- A list of forms and documents required in each step.
- The areas/agencies/institutions involved and their role in the process.
- The average time required to complete each step.
- The regulations applied.
- Method of exchange: paper-based, electronic with paper and electronic exchange (i.e. paperless).
- Actions taken if consignments are rejected or re-directed to another country (i.e. if a certificate has to be replaced or reissued).

Commodity/ies: (HS code/s) Country: Regulations:	Objective of the step	Agencies / institutions involved	List of forms and documents	Methods of exchange 1. Paper based 2. Electronic with paper 3. Electronic exchange (i.e. paperless) In the case of an electronic exchange, please specify exchange protocols and languages	Average time
Step 1					
Step 2					
Step 3					
Step 4					

SECTION 3: Digital government strategy

The need for digitalised administrative processes and procedures

Section 3-A aims to identify the extent and consistency of the development and implementation of digitalised administrative processes and procedures in the context of a legal framework and/or drivers that actually or potentially support the development of digitalised administrative processes and procedures.

For the purpose of the questions below, the following definitions are applied:

Digital Government: Refers to the use of digital technologies, as an integrated part of government modernisation strategies, to create public value. (OECD)

Digitalised administrative processes and procedures: Technology leveraged re-engineering and re-designing of administrative processes and procedures.

Digital technologies: Refer to ICTs, including the Internet, mobile technologies and devices, as well as data analytics used to improve the generation, collection, exchange, aggregation, combination, analysis, access, searchability and presentation of digital content, including for the development of services and apps. (OECD)

18. Does a national policy exist to support the implementation of digitalised administrative processes and procedures as part of a digital government strategy?

- Yes – fully implemented
- Yes – but partially implemented
- No

19. The support to digitalise administrative processes and procedures is expressed:

- By law or another legal instrument (Please provide a copy/link of the legal instrument/s)

- By decision-makers and policy-makers (Please provide a copy/link of any document, if available, that could illustrate this type of support)

- By core stakeholders

20. Digitalised processes and procedures are supported at the:

- Government level (national) (please specify in the comment box)
- Stakeholder level (private-sector)
- Public-private partnership level
- Other(s) (please specify in the comment box)
- Don't know

21. Provide the list of core stakeholders (private-sector) already or potentially interested in digitalised processes and procedures.

SECTION 4: Single-window system and Interoperability

A. Single-window system

The objective of Section 4 is to ascertain the state-of-play of the Single Window for international trade including animals and animal products. The questions follow a progressive approach from general to more specific.

For the purpose of the questions below, the following definition is applied:

Single Window: A facility that allows parties involved in trade and transport to lodge standardised information and documents with a single-entry point to fulfil all import, export, and transit-related regulatory requirements. If information is electronic, then individual data elements should only be submitted once (UNECE Recommendation No.33).

22. Are Internet connections available at official border-crossings?

- Yes – at all of them
- Yes – at some of them
- No

23. Is there an electronic single-window system functional at the national level supporting cooperation amongst the national government authorities responsible for managing trade at the border?

- Yes – fully
- Yes – partially
- No – Please go to section 5

24. Is there an electronic single-window system that is functional and supports cooperation amongst the national government authorities responsible for managing the trade of animals and animal products at the border?

- Yes – fully
- Yes – partially
- No – Please go to section 5

25. Are there any contingency arrangements in case of an IT failure?

- Yes
- No

26. Are relevant trade stakeholders (traders and other stakeholders) connected to an electronic single-window system?

- All of them – (Please list them in the comment box)
- Some of them – (Please list them in the comment box)
- Not implemented

27. Who is leading and administrating the establishment and operation of a Single Window for international trade?

- Customs authorities
- Port authorities
- Other governmental authorities (please specify in the comment box)
- Public/private partnership (please specify in the comment box)

28. Is there a legal framework requiring trade-related government agencies to use an electronic single-window system?

- Yes – for all of them
- Yes – for some of them (please specify)
- No

29. Does your country use existing recommendations, standards and tools developed by intergovernmental agencies and international organisations such as UNECE, UNCTAD, WCO, IMO, ICAO and the ICC in order to implement Single Window for international trade?

- Yes
 No

If yes, please specify the recommendations, standards and tools:

30. If a Single Window is used for exchanges in other SPS areas (Codex, IPPC), please provide further information.

B. Interoperability

To facilitate cooperation among countries, cross-border and cross-sector interoperability solutions can be implemented to enable more efficient and secure public services.

Section 4-B aims to provide an overview of the interoperability framework developed by each country.

Interoperability means the ability of computer systems or software to exchange and make use of information. There are different levels of interoperability, including 'Semantic' and 'Technical'.

Semantic interoperability refers to the meaning of data elements and the relationships between them. It includes the vocabulary to describe data exchanges and thus ensure that data elements are understood in the same way by communicating parties.

Technical interoperability refers to the ability of two or more information and communication technology applications, to accept data from each other and perform a given task in an appropriate and satisfactory manner, and without the need for the intervention of an additional operator. It includes aspects such as interface specifications, interconnection services, data integration services, data presentation and exchange.

31. Please describe the semantic interoperability framework and specifications used at the regional level (two or more economies) and/or international level, and which is used by your government as part of its digitalised processes and procedures.

32. Please describe the technical interoperability framework and specifications used at the regional level (two or more economies) and/or international level, and which is used by your government as part of its digitalised processes and procedures.

SECTION 5: Benefits and challenges of developing an e-veterinary certification system

Section 5 consists of a group of questions for the country to answer in order to provide its perception concerning the benefits and challenges of developing an e-veterinary certification system.

33. What do you consider are the benefits of an e-veterinary certification system?

	Please rank from 1 (no benefit) to 5 (high benefit)
Enhanced authenticity and integrity	
Improved efficiency	
Reduced administrative costs	
Reduced clearance times	
Improved market access	
Improved confidence of stakeholders in value chains	
Others (please specify and rank)	

34. What are the main challenges faced by your country in developing and implementing an e-veterinary certification system?

	Please rank from 1 (not a challenging factor) to 5 (highly challenging factor)
Political will	
Private sector willingness	
Development of a legal framework	
Coordination between government agencies	
Establishment of a clearly designated lead agency or committee <i>(e.g. an ad hoc group/entity, which includes representatives from different governmental agencies, the private sector, etc.)</i>	
Financial resources	
Cost-sharing with industry	
Human resource expertise	
IT infrastructure	
Compatibility between IT systems	
Border efficiency	
Complexity of paper-based system	
Cultural resistance to change	
Others (please specify and rank)	

Annex 3

In-country visits: reports

Development of a framework to facilitate e-veterinary certification for international trade on the basis of a single-window system (Project STDF/PG/609)

COUNTRY SURVEY REPORTS



ESWATINI

Dr Alwyn Tan
9-12 July 2019

1. Introduction Development of the mission/description of activities

Date	Time	Meeting	Where
9 July 2019	09.00	Opening meeting with Director of Veterinary and Livestock Services	Ministry of Agriculture, Mbabane
	14.30	Visit to Eswatini Dairy Board	Eswatini Dairy Board, Manzini
	15.30	Visit to National Agricultural Marketing Board (Namboard)	Namboard, Manzini
10 July 2019	07.00	Site visit to Ezulwini dipping tank	Ezulwini
	09.00	Site visit to Hhohho Regional Office (import permit, livestock movement permit, health certificate)	Hhohho Regional Office, Mbabane
	11.00	Visit to Eswatini Revenue Authority Headquarters	Eswatini Revenue Authority, Lobamba
	12.30	Site visit to Africa chicks (import hatching eggs, export DOC)	Africa Chicks, Ngwenya
	14.30	Site visit to Ngwenya port of entry	Ngwenya Border Post, Ngwenya
11 July 2019	09.00	Site visit to Central Veterinary Laboratory (import permit, quarantine booking)	Ministry of Agriculture, Manzini
	10.00	Site visit to Veterinary Public Health (import permit, health certificate for food products of animal origin)	Ministry of Agriculture, Manzini
	11.30	Site visit to livestock quarantine station	Manzini
	14.30	Site visit to Eswatini Meat Industries (export beef)	Matsapha
12 July 2019	09.00	Site visit to Malkerns Research (National plant protection organisation)	Malkerns
	11.30	Closing meeting	Manzini

2. Country information

Overview of Ministries, Agencies and Organisations involved in the import and export of live animals and products derived from animals, based on the trade profile described in the questionnaire and their resources.

Ministries, Agencies and Organisations	Responsibility	Service	Resources
Department of Veterinary & Livestock Services, Ministry of Agriculture (DVLS)	Animal health; veterinary public health	Veterinary import permits, health certificates	Block budget from Ministry Fees collected into government central consolidated fund
Dairy Board	Quotas; Industry development	Import & export permits	Permit fees and levy collected by the board.
National Agricultural Marketing Board (Namboard)	Quotas; Industry development	Import & export permits	Permit fees and levy collected by the board.
Eswatini Revenue Authority (SRA)	Collect taxes; regulate import & export of goods	Import & export declarations	Permit fees and levy collected by the SRA.



Opening Meeting with Eswatini DVLS



Visit to Eswatini Revenue Authority

3. Key findings

a. As-is national exporting process for international trade

Main exports are day old chicks and beef.

(What, who and when)

- Role and responsibility of authorities/stakeholders/agencies
- Information flows and applicable documents for veterinary certification (including issuance of the final certificate)

Authorities/ stakeholders/ agencies	Role and responsibility	Information flows and applicable documents
Exporter	<ul style="list-style-type: none"> - Obtain import permit from importing country or obtain in-transit permit to export via South Africa (RSA) - Apply to DVLS for health certificate - Apply customs declaration 	<ul style="list-style-type: none"> - Hardcopy import permit is required when applying for the health certificate
DVLS	<ul style="list-style-type: none"> - Process and issue health certificate 	<ul style="list-style-type: none"> - Requires original import permit to be submitted - Conduct inspection, if required - Check lab test, if required
SRA	<ul style="list-style-type: none"> - Process and clear customs declaration 	<ul style="list-style-type: none"> - Check invoice and product list
Export of consignment occurs		

- Interaction of relevant entities active in international trade at the border:
The Eswatini Revenue Authority (SRA) conducts checks on outgoing consignments at the border.
- Relations to/interaction with the Single Window:
The SRA checks that outgoing consignments have the necessary permits from other agencies (e.g. Namboard export permit for selected agricultural products).

b. As-is national importing process for international trade

Main imports are dairy products, beef and hatching eggs.

- Role and responsibility of authorities/stakeholders/agencies
- Information flows and applicable documents including the veterinary certificate

Authorities/ stakeholders/ agencies	Role and responsibility	Information flows and applicable documents
Importer	- Apply to Namboard or Dairy Board for import permit (for scheduled products)	- Provide details of products and volume
Namboard or Dairy Board	- Process and issue import permit	
Importer	- Apply for veterinary import permit	- Provide original Namboard/Dairy Board import permit
DVLS	- Process and issue import permit	
Importer	- Courier import permit to exporter - Exporter uses import permit to apply for health certificate - Apply customs declaration	- Health certificate must be in the template and format issued by Eswatini
SRA	- Process and clear customs declaration for import	- Risk engine on ASYCUDA World ensures required permits from other agencies are provided.
Import of consignment occurs		
Namboard / Dairy Board	- Border check of permit	
DVLS	- Border check of permit & health certificate	
SRA	- Border check of customs declaration and consignment	
Consignment cleared for import		
DVLS	- Truck inspection at inspection point, quarantine or importer premises (for selected goods such as meat, livestock) - Collect import permit and health certificate.	- Used import permit and health certificate stored in regional office for records.

- Interaction of relevant entities active in international trade at the border
The Namboard, the Dairy Board and DVLS maintain staff at the border to conduct checks on documents and consignments. The SRA conducts checks on incoming consignments to ensure they have cleared the relevant agencies.
- Relations to/interaction with the Single Window
ASYCUDA World has a risk engine to ensure import declarations have the required permits attached from other agencies.

c. As-is exchange of information at the border post during import and export procedures

The insertion and role of the veterinary certificate as well as the agencies involved in this flow of information.

The veterinary certificate for import and export are transmitted from government to government via hardcopy along with the consignment.

d. Resources for national import/export processes for international trade

Human resources and Training

- Personnel are provided by the respective agencies to process permits, certificates and conduct border checks. The National Plant Protection Office has delegated border checks to be carried out by DVLS inspectors.
- Officers are aware of their duties and able to meet service standards. There have been plans to train DVLS border inspectors to conduct truck inspections so that an additional inspection is not required at the importer premises.
- DVLS has been unable to recruit personnel due to a staffing freeze caused by budgetary constraints.

IT resources

- DVLS, Namboard and the Dairy Board do not have access to IT systems at the border checkpoints. However, the SRA has a well developed IT infrastructure available at the border checkpoints.
- The Ministry does not have a policy to provide laptops to all staff. The provision of laptops and desktops are dependent on work requirements and budget availability.

Legislation

- All current functions related to permits and certificates are adequately covered by legislation.
- There are no specific restrictions on the use of electronic certification in current legislation.

4. View of the competent authorities on the national roadmap for the implementation of e-veterinary certification in a single-window environment

Which approach for e-certification solutions might be preferable, taking into consideration national managerial, legal, political and financial aspects.

- From a veterinary perspective:
 - DVLS would like to eradicate paper permits and certificates being passed around, and attain better traceability on the status and location of issued permits and certificates.
- In relation to the competent authorities for phytosanitary and food matters:
 - Permits and certificates for any food of animal origin are managed together with animal and animal products by the DVLS.
 - Both the NPPO and DVLS are developing electronic systems for the application, processing and issuance of permits and certificates. The NPPO system (Plant Health Information Management System) allows clients to apply for permits and certificates online, and generates PDF permits and phytosanitary certificates. However, due to budget constraints, there are no specifications for the electronic transfer of phytosanitary certificates.
 - The DVLS is upgrading their cattle movement database to include the management of veterinary medication. This includes registration and permits for the trade of veterinary medication. Due to budget constraints, the electronic system does not include functions for other animals or animal products.
- Concerning the connection with the (future) Single Window:
 - There is a blueprint for implementation of the Eswatini National Single Window that is supported by the World Bank Group. They had conducted a business process review, ICT needs assessment and a time release study for border clearance. The draft blueprint was circulated in July 2019.
 - The lead agency for the National Single Window (NSW) is the SRA and they are keen to engage with other regulatory agencies (DVLS, Namboard, the Dairy Board, NPPO) in developing the NSW. The World Bank secretariat for the project is located in the SRA office. The target date for implementing the NSW is 2022.
- Concerning prioritisation:
 - It is preferred that the E-veterinary certification system is able to cover all commodities. If priority has to be given, DVLS would focus on the current key traded animal and animal products with well-developed value chains, including the export of beef and day-old chicks, and the import of dairy products, hatching eggs and cattle.

In this approach, what are expected to be the two most important national:

- **Strengths?**
 - There is political will to provide electronic government services shown in the Eswatini National Trade Facilitation Strategic Initiatives that includes coordinated control and the NSW.
 - An effective paper-based certification system is in place with clear roles and responsibilities.
 - The private sector is generally IT savvy and thus able to adopt electronic services for trade.
 - There are existing IT systems that serve selected functions of agencies, e.g. SLITS (Swaziland Livestock Information and Traceability System for managing cattle records), iPelmis (the Dairy Board system for backend processing and issuance of permits), Namboard Intranet (Namboard system for backend processing and issuance of permits), and ASYCUDA World (SRA system for integrated border clearance). These systems may be expanded in functionality and connectivity as part of the NSW.
- **Weaknesses?**
 - Limited or uneven distribution of IT infrastructure at key locations such as at border checkpoints
 - Inconsistent stability of IT networks and systems may result in downtime of electronic services
 - Limited financial resources to develop sophisticated IT systems
 - Limited in-house IT expertise to develop an electronic certification system.
- **Opportunities?**
 - Plans to develop and implement a NSW may allow for the concurrent development of electronic system for veterinary-related permits and certificates.
 - Plans to expand the market for the export of beef and lamb will increase the volume of trade, which in turn can be used to support the cost of the IT systems. The improved efficiency, security and authenticity of electronic certificates would also reduce the time used for border clearance.
 - Agencies involved in import and export (i.e. DVLS, NPPO, SRA) are keen for closer collaboration to streamline regulations, processes and IT systems.

- **Threats?**

- Being a landlocked country, exports occur mainly to or via neighbouring countries such as the Republic of South Africa. The in-transit and importing countries would need to have e-certification capability to be able to realise the benefits for e-certification and the NSW.
- Perception of employees that digitalisation and automation may put their jobs at risk.
- The cost recovery mechanisms to maintain future IT systems have yet to be established.

5. Conclusions

The Eswatini country system for the import and export of animals and animal products generally involves both permits and health certificates. Current processing and issuance of permits and certificates are carried out manually and in hardcopies. This means that traders frequently have to visit the offices of the authorities in order to submit and collect documents, and courier documents to their counterparts in other countries.

Political support for electronic government services is high and there is a strong political will to deliver electronic government services. Veterinary legislations are technology agnostic and there is no restriction on the potential use of electronic certificates.

Current challenges for the implementation of electronic veterinary certification and NSW include limited IT, financial support and infrastructure. There is also a need to engage ground staff to get their buy-in on the benefits of the digitalisation of processes.

Eswatini has started several IT projects linked to veterinary services. There is a project to develop an electronic system for the application, processing and issuance of permits and certificates. There is also a project to develop a NSW that is supported by the World Bank. However, it appears that the systems being developed are focused on the local electronic transmission of information, and have not included specifications for the government-to-government transfer of electronic certificates. DVLS could apply leverage on the NSW project to tap on the IT expertise of the consultants and the SRA to develop the system for electronic veterinary certification. To implement e-certification, DVLS would also need to identify trading partners that have the capability and are keen to establish e-certificate connectivity.

6. Addendum

Timetable of the mission; sites/facilities visited and list of re contact persons met or interviewed

Date	Entity/Institution/Site	Key persons met
9 July 2019	Opening meeting with Director of Veterinary and Livestock Services	Dr Roland Xolani Dlamini, Director of Veterinary and Livestock Services Dr Patrick Mduzuzi Dlamini, Senior Veterinary Officer (Field Services) Dr Sihle Mdluli, Senior Veterinary Officer (Epidemiology Unit)
	Visit to Eswatini Dairy Board	Dr Tony Dlamini, Chief Executive Officer
	Visit to National Agricultural Marketing Board (Namboard)	Mr Tammy Dlamini, Agribusiness Manager
10 July 2019	Site visit to Hhohho Regional Office	Dr Thembi Ndlangamandla, Regional Veterinary Officer (Hhohho)
	Visit to Eswatini Revenue Authority Headquarters	Mrs Mandlondlo Mkhwanazi, ASYCUDA Officer Mr Themba Shongwe, ASYCUDA Officer
	Site visit to Africa chicks	Mr Ross Mackie, Director
	Site visit to Ngwenya port of entry	Mr Thokozani Maphanga, Acting Senior Inspector, Dairy Board Mr Thulasizwe Shabangu, Inspector, Namboard Mr Sikelela Mkhonta, Central Processing Hub, SRA Mr Sibusiso Hlatjwako, Port of Entry Inspector, DVLS
11 July 2019	Site visit to Central Veterinary Laboratory	Dr Fantu Ashine Kelkele, Veterinary Investigation Officer
	Site visit to Veterinary Public Health	Mr David Ngwenya, Senior Meat Inspector
	Site visit to Eswatini Meat Industries	Mr Duncan McCloud, Production Manager
12 July 2019	Site visit to Malkerns Research (National plant protection organisation)	Mr Bheki Nzima, Principal Plant Protection officer



MALAYSIA

Erik Bosker
1-4 July 2019

1. Introduction Development of the mission/description of activities

To start, I wish to sincerely thank the Department of Veterinary Services of the Ministry of Agriculture, the OIE and Dagang Net for their excellent support during this visit. This mission was to review and broaden the information that Malaysia provided in its OIE questionnaire about e-veterinary certification. It appeared to function very well for this mission to work together with the Department of Veterinary Services and to be informed by Dagang Net (DNT) about the Malaysian National Single Window for Trade Facilitation.

The project 'Development of a framework to facilitate e-veterinary certification for international trade on the basis of a single-window system' is being implemented by the OIE on behalf of the following applicant countries: Eswatini, Nigeria, Paraguay and Zimbabwe.

E-veterinary certification refers to electronic certification as described in Article 5.2.4. of the *Terrestrial and Aquatic Codes*. Certification is provided through the electronic exchange of data sent directly from the Competent Authority of the exporting country to the Competent Authority of the importing country.

Through a questionnaire (Annex 1), Malaysia analysed the state-of-play with regards to its (e-)veterinary certification system for the import and export of animal and animal products in a single-window environment.

The activities of this visit supported the broadening of the self-evaluation process by Malaysia and provided not only additional information relevant for e-veterinary certification, but also about the functioning of a National Single Window and developments in preparing for e-certification in the phytosanitary domain (ePhyto).

The most important observation was the readiness of Malaysia to develop e-veterinary certification integrated with the Malaysian National Single Window for Trade Facilitation, which is used by all agencies involved in imports and exports.

Date	Meeting	Who
1 July 2019	<ul style="list-style-type: none"> - Introduction - Import and export processes for international trade - View on the National Roadmap for the implementation of an e-veterinary certification system - Review of Malaysia's questionnaire - Demonstration of e-permit and veterinary certification 	DVS DVS MITI DVS DVS
2 July 2019	<ul style="list-style-type: none"> - Briefing on the MAQIS Operation and System - Discussion on border clearance processes and certification flows - Demo on the physical inspection of cargo - Import and export processes for international trade in food - Codex guidance for paperless certification 	MAQIS Westport MAQIS Westport Westport terminal Food Safety and Quality Division (MoH) FSQD
3 July 2019	<ul style="list-style-type: none"> - E-veterinary certification in Malaysian Single-Window environment - Malaysian National Single Window 	Customs, DNT, DVS, MAQIS DNT
4 July 2019	<ul style="list-style-type: none"> - Phytosanitary certification and ePhyto in the Malaysian Single-Window environment 	Department of Agriculture, DNT

Annexes



Opening meeting with DVS and MITI



Meeting with MAQIS Westport



Physical inspection at Westport Terminal



Closing meeting with Customs, Dagang Net, DVS and MAQIS



Meeting on NSW with Dagang Net

2. Country information

Overview of Ministries, Agencies and Organisations involved in the import and export of live animals and products derived from animals, based on the trade profile described in the questionnaire and their resources.

According to the Observatory of Economic Complexity, Malaysia in 2017 was the nineteenth largest economy in the world, and the twenty-fifth most complex economy according to the Economic Complexity Index (ECI). Top Malaysian exports include woodchips, refined petroleum, office machinery parts, petroleum gas and palm oil. Top imports include woodchips, refined petroleum, crude petroleum, broadcasting equipment and office machinery parts. With regards to trade in veterinary commodities including fish, Malaysia is more an importing than an exporting country. The Ministry of Agriculture and Food Industries (MoA) has four Federal Departments involved in exports and imports:

1. Department of Agriculture Malaysia (DoA)
2. Department of Veterinary Services (DVS)
3. Department of Fisheries (DoF) (not visited)
4. Malaysian Quarantine and Inspection Service Department (MAQIS).

The Department of Veterinary Services is the competent Malaysian veterinary authority and issues veterinary export certificates.

- At the federal level: export certificates to China for edible bird nests;
- At the state level: all other veterinary certificates;
- Establishes Malaysian import requirements.

The Malaysian Quarantine and Inspection Service (MAQIS) is the service responsible for import and exit control at 55 border control posts (14 air, 11 road and 30 sea posts). MAQIS oversees 5 departments:

1. Department of Fisheries
2. Malaysia Fish Development Agency
3. Department of Agriculture
4. Federal Agricultural Marketing Agency
5. Department of Veterinary Services.

MAQIS is the department responsible for issuing import and export permits once approved by the competent authorities such as the DVS, DoA and DoF.

Department of Fisheries (not visited): issues import and export permits and export health certificates for live fish. Department of Agriculture, Plant Biosecurity Division NPPO from Malaysia: issues import and export permits, along with export Phytos (phytosanitary certificates).

The Food Safety and Quality Division of the Ministry of Health, issues (non-veterinary) certificates for a limited number of food commodities.

The current National Single Window (NSW) for trade facilitation, falls under the responsibility of the Ministry of Finance, and is developed, operated and managed by Dagang Net. This NSW operates with more than 30 Permit Issuing Agencies, 50 authorities, 10 banks, 160 customs posts. It also simplifies clearance procedures, facilitates the electronic exchange of trade-related data, reduces the cost of undertaking business transactions and thereby enhances trade efficiency and national competitiveness. This network is not only linked across the region but also globally, for example, its interaction with the Association of Southeast Asian Nations (ASEAN) Single Window.

The connection between Malaysia and the ASEAN Single Window, which will become a gateway for 10 regional countries, falls under the responsibility of the Ministry of International Trade and Industry. At the moment, just one document is shared through the ASEAN Single Window. In the future, SPS documents (certificates for SPS commodities), should also become available through this gateway.

3. Key findings

As-is national exporting process for international trade

Role and responsibility of authorities/stakeholders/agencies

- DVS issues permits in which the requirements from the importing country for the involved commodity are detailed. Issuance of the veterinary certificate (at both federal and state levels) is incorporated in the ePermit procedures. The DVS also issues the certificates for veterinary MoH commodities, while the DoF issues permits and certificates for live fish.
- MAQIS is responsible for all SPS exit checks, which it does by revising export health certificates and electronically approving the export permit of conforming consignments. The business operator initiates the process at the border by providing MAQIS with the original hardcopy of the health certificate and a copy of the permit.

Information flows and applicable documents for veterinary certification (including issuance of the final certificate)

- The permit and certification process is supported by the National Single Window for Trade Facilitation.
- The ePermit application is used by the DVS, DoF, DoA and by MAQIS. Applications and processing are paperless procedures. The processes (at the federal and state levels) for DVS conclude when this department has printed and issued the veterinary certificate. Thus, the process related to export permits up to the exit check at the border post, is paperless and provides, at an intermediate stage, a paper copy of the veterinary certificate. Identity exit checks are carried out by MAQIS. Paper copies of permits and certificates are used by MAQIS for exit check procedures. The permit is also electronically available for MAQIS, although the health certificate is not. At the federal level, only the export certificate for one commodity (edible bird nests for China on watermarked security papers) is issued. All other certificates are handled in a similar way at the State level, and without the use of watermarked security papers.
- DVS issues all veterinary certificates (also for veterinary MoH products) except for live fish (DoF). Every certificate that is issued is electronically archived.
- DoA issues phytos (phytosanitary certificates) which, and similar to the DVS procedure, is a paperless process until the certificate is actually printed. DoA has already developed and created an e-certification system for XML files to be exchanged with third-party countries and the ePhyto hub.

Interaction of the relevant entities that play an active role in international border trade

- MAQIS receives all export permit information through the NSW for trade facilitation purposes.
- The business operator initiates the process at the border post, first with MAQIS and following this with the customs authorities, which have access to permit information in their data system through the National Single Window for Trade Facilitation. After the permit is approved by MAQIS, the customs information system receives the electronic version through NSW for Trade Facilitation, and said system then acknowledges reception of the permit.

Relations to/interaction with the Single Window

- Permit processes at the national level and information exchanges between government agencies are run through the NSW for Trade Facilitation. With respect to veterinary documents, to date there have been no connections with any third-country system.

As-is national importing processes for international trade

Role and responsibility of authorities/stakeholders/agencies

- DVS sets the import requirements for live animals and most products of animal origin and issues the import permits.
- In the case of offal, animal by-products, honey, cheese and fishery products (shrimps), the import requirements are set by the MoH (Food Safety and Quality Division).
- All SPS import checks (permits, certificates and consignments) are the full responsibility of MAQIS.
- MoH requires a veterinary certificate for raw milk and cheese; in the case of heat-treated dairy products, no certificate is required.
- The national process for the application and approval of import permits is paperless.

Information flows and applicable documents including the veterinary certificate

- Permits are electronically issued by MAQIS and are made available to the customs authorities through the NSW for Trade Facilitation. Veterinary certificates for imports (hardcopy) is handed over by the importer to MAQIS to be physically checked and identified.
- MAQIS accesses the NZ e-certification (by username/password), in order to check the authenticity of the NZ certificate paperwork (veterinary and Halal verification).
- MAQIS enters a separate confirmation into the customs information system regarding the conformity of consignments for clearance by the customs authorities. This customs information system is connected to the NSW for Trade Facilitation.

Interaction of the relevant entities that play an active role in international trade at the border

- The business operator initiates the process at the border post, first with MAQIS, followed by the customs authorities. MAQIS processes the e-permit (in their own system, which is part of the NSW and the customs information system), along with the paperwork for veterinary import certificates.
- MAQIS needs to access the customs information system to enable the customs authorities to provide clearance. In the case of imports, the customs information system functions independently from the NSW for Trade Facilitation.

Relations to/interaction with the Single Window

- Import permits (electronic format) that are issued by MAQIS, are available through the NSW for Trade Facilitation.
- In the case of imports, the customs information system is at present functioning independently from the NSW for Trade Facilitation.
- With respect to veterinary documents, there are presently no connections with any third country systems.

As-is exchange of information at the border post during import and export procedures

The insertion and role of the veterinary certificate, as well as the agencies involved in this flow of information.

The permits that are issued by agencies that fall under the MoA for exports and by MAQIS for imports are electronically available for MAQIS at the border control posts. Only export permits are electronically available for the customs authorities.

The veterinary certificate is presented in a hardcopy for imports and for exit checks, and the certificate should have a relation to and be compliant with the corresponding permit. All checks are the responsibility of MAQIS.

For imports, MAQIS needs to access the customs information system in order to update the information regarding the consignment following the border checks it has previously carried out.

Resources for national import/export processes for international trade

At the state and federal levels - Human resources and training.

- NZ organised a seminar for MoA, MoH and MAQIS on NZ e-certification
MoA (MAQIS) has started a trial receiving NZ e-certification (including Halal products). MoA is working together with Dagang Net on this project.
- IT resources
NSW operated and managed by Dagang Net
ASEAN SW
Customs authority import system
- Legislation

View of the competent authorities on the national roadmap for the implementation of e-veterinary certification in a single-window environment

- Which approach for e-certification solutions might be preferable taking into consideration national managerial, legal, political and financial aspects.
 - **From the veterinary perspective:**
 - Exports are the responsibility of DVS and DoF.
 - Imports are the responsibility of MAQIS.
 - Certificates should be made available for the competent authority through the NSW.
 - NSW operators need to be involved in creating the solution(s) without influencing the exchange of certificates between the competent authorities.
 - **In relation to the competent authorities for phytosanitary and food matters:**
 - Phytosanitary measures fall under the MoA (DoA), and food under the MoH (Food Safety and Quality Division).
 - The MoA works together with the Ministry of International Trade and Industry (MITI) in the decision-making processes regarding the role/position of the NSW and ASEAN single window in the exchange of e-SPS certificates with the rest of the world.
 - **Concerning the connection with the (future) Single Window:**
 - all involved agencies are connected with the NSW, which is in a position to facilitate the appropriate exchanges of e-SPS certificates.
 - **Concerning prioritisation:**
 - MoA is in the process to decide about the role of the NSW and ASEAN SW in the international exchanges of SPS certificates. This is considered to be a primary priority.
- In this approach, what are expected to be the two most important national
 - **Strengths**
 - Agencies using the NSW with the availability of electronic data
 - Existing experience in developing SW functions
 - **Weaknesses**
 - Time that might be needed to take decisions on the approach to e-certification
 - **Opportunities**
 - Availability of a functioning NSW with the capacity to develop electronic exchanges with third countries
 - Existing knowledge on e-certification at the departmental level
 - **Threats**
 - Apprehension of key management regarding the approach to e-certification

4. Conclusions

- a. In Malaysia, the import and export processes in international trade fall under the responsibility of three agencies within the Ministry of Agriculture.
- b. The national application process for veterinary certificates is paperless and every certificate that is issued is archived electronically.
- c. The MoA is developing a generic approach to all its certificate-issuing agencies (DVS, DoF and DoA), in order to undertake the electronic exchange of certificates with third countries.
- d. At the national level, permits and veterinary certificates are closely related to each other, and government agencies benefit from the electronic exchange of permit data through the NSW for Trade Facilitation.
- e. Malaysia would benefit from the knowledge and experience in data modelling of the OIE model certificates from the *Terrestrial Code* and from the *Aquatic Code* (especially in terms of the veterinary certificates for edible bird nests)
- f. Taking into consideration the current position and functions of the NSW for Trade Facilitation, government agencies would further benefit from the implementation of the electronic exchange of veterinary certificates between competent authorities of the importing and exporting country, with respect to the technical capacities of the NSW for Trade Facilitation.
- g. The DoA is technically prepared to exchange ePhytos with the ePhyto hub and with third countries, and is awaiting the decision from the Ministry of Agriculture on the generic approach to the electronic exchange of certificates with third countries.



NIGERIA

Erik Bosker
17-20 June 2019

1. Introduction Development of the mission/description of activities

To start, I wish to sincerely thank the Department of Veterinary and Pest Control Services, the Nigeria Export Promotion Council and the OIE for their excellent support during this visit. This mission was to review and broaden the information that Nigeria provided in its OIE questionnaire regarding e-veterinary certification. It appeared to function very well for this mission to work in a team consisting of the person responsible for the completion of this questionnaire, the Nigerian UN-CEFACT single-window expert and the OIE veterinary expert.

The project 'Development of a framework to facilitate e-veterinary certification for international trade on the basis of a single-window system' is being implemented by the OIE on behalf of the following applicant countries: Eswatini, Nigeria, Paraguay and Zimbabwe.

E-veterinary certification means electronic certification as described in Article 5.2.4. of the *Terrestrial and Aquatic Codes*. Certification is provided through the electronic exchange of data sent directly from the Competent Authority of the exporting country to the Competent Authority of the importing country.

Through a questionnaire (Annex 1) Nigeria analysed the state-of-play with regards to its(e-)veterinary certification system for the import and export of animal and animal products in a single-window environment.

The activities of this visit supported the broadening of the self-evaluation process by Nigeria and provided not only additional information relevant to e-veterinary certification, but also about the importance of a Single-Window environment and current developments in preparing for e-certification in the phytosanitary domain (ePhyto).

The most important observation of the team was not only regarding an elementary understanding of the issue, but also the existence of a relevant number of components for potential use in e-veterinary certification that are already present in Nigeria.

Date	Activity
17 June 2019	Introductory meeting with the Department of Veterinary & Pest Control Services
	Courtesy call on the Permanent Secretary, Federal Ministry of Agriculture & Rural Development
	Meeting with the Department of Veterinary & Pest Control Services
	Meeting with the Nigeria Customs Services
18 June 2019	Meeting with the Nigeria Agricultural Quarantine Services
19 June 2019	Visit to Murtala Mohammed International Airport, Lagos
	Visit to the National Agency for Food and Drug Administration and Control (NAFDAC)
20 June 2019	Department of Fisheries

Annexes



Courtesy call on the Permanent Secretary, Federal Ministry of Agriculture & Rural Development



Meeting with the Federal Ministry of Industry, Trade and investment



Meeting with the Nigeria Export Promotion Council



Visit to the National Agency for Food and Drug Administration and Control (NAFDAC)



Department of Fisheries

2. Country information

Overview of Ministries, Agencies and Organisations involved in the imports and exports of live animals and products derived from animals based on the trade profile described in the questionnaire and their resources.

According to the Observatory of Economic Complexity, Nigeria in 2017 was the 49th largest economy in the world, and the 124th most complex economy according to the Economic Complexity Index (ECI).

Top Nigerian exports include crude petroleum, petroleum gas, refined petroleum, coco beans and rough wood. Top imports are refined petroleum, passenger and cargo ships, wheat, cars and raw sugar. With regards to trade in veterinary commodities, Nigeria is more an importing than an exporting country.

Nigeria is actively promoting non-oil exports (currently representing about 20% of Nigeria's total exports), through the Nigerian Export Promotion Council (NEPC), which is the Federal Government of Nigeria's primary institution for promoting the development and diversification of exports. The NEPC is an agency that falls under the Federal Ministry of Industry, Trade and Investment.

The Federal Ministry of Industry, Trade and Investment together with other agencies are responsible for the promotion of exports and the expansion of trade. This Ministry is also the WTO contact point for SPS-TBT issues and distributes this information to the Ministry of Agriculture (the Department of Veterinary and Pest Control Services and Department of Fisheries), the National Agency for Food and Drug Administration and Control and the Nigeria Agriculture Quarantine Service.

The Department of Veterinary and Pest Control Services (DVPCS) is the competent authority in Nigeria and falls under the Federal Ministry of Agriculture and Rural Development. The DVPCS functions as the policy adviser to the government on all animal health issues, as well as the safety and quality of food of animal origin for human consumption, and pest control services.

The Department draws its mandate from the Animal Diseases Control Act No. 10 of 1988, and adheres to World Organisation for Animal Health (Office Internationale des Epizooties-OIE) standards, recommendations and guidelines for animal health and welfare.

The Nigeria Agriculture Quarantine Service (NAQS), is a regulatory agency that falls under the Federal Ministry of Agriculture and Rural Development. It regulates sanitary issues (the health of animals and fish stocks) at the ports of entry and exit, and administers phytosanitary (plant health) measures in connection with imports and exports of agricultural products.

The Department of Fisheries within the Federal Ministry of Agriculture and Rural Development is responsible for fisheries and aquaculture.

The National Agency for Food and Drug Administration and Control (NAFDAC) is a federal agency under the Federal Ministry of Health. It is the Nigerian agency responsible for regulating and controlling the manufacture, importation, exportation, advertisement, distribution, sale and use of food; drugs and medical devices; herbal remedies and cosmetics; vaccines and biologics; chemicals; narcotics; veterinary medicine; animal feeds; premix, concentrates and feed additives.

3. Key findings

- a. Veterinary certificates (except for fish) are issued at the federal level by the DVPCS.
- b. Export certificates for live ornamental fish are issued by NAQS at the Federal level.
- c. Certificates for fisheries and aquaculture are issued by the Department of Fisheries.
- d. All checks for imports and exports at border control posts are executed by NAQS at the state level.

As-is national exporting processes for international trade (see annex II)

Role and responsibility of authorities/stakeholders/agencies

All non-oil exporting businesses should be registered with the Nigeria Export Promotion Council. Both the import and export of veterinary commodities is only allowed with a valid permit.

- In general, permits are issued by DVPCS except for those for aquatic and animal feeds.
- Permits for the import and export of live ornamental fish are issued by NAQS at the Federal level.
- Permits for the imports of frozen fish are issued by the Department of Fisheries.
- Permits for animal feeds are issued by DVPCS and registered by NAFDAC.

Information flows and applicable documents for veterinary certification (including issuance of the final certificate)

Every non-oil exporting business should be registered with the NEPC, including all traded products. The NEPC provides a website for on-line registration.

DVPCS

- Exports of live animals and products of animal origin starts with the paperwork or electronic application by the business operator, requesting a permit from the DVPCS at the federal level.
The DVPCS at the state level will check the consignment for conformity with the requirements of the country of destination. For conforming consignments, the DVPCS at the federal level will issue the permit and the international veterinary certificate and forward these to the business operator.
- In the case of pets, a registered private veterinarian examines the pet and issues a health certificate, which is transmitted to the DVPCS with the relevant vaccination and laboratory test results. Pets with satisfactory documentation are issued an international veterinary certificate (export permit) by the DVPCS.
- Issued international veterinary certificates are transmitted to both the applicant/business operator and the NAQS. This is to prepare the NAQS with prior information before the departure of animals.

Fish

- Exports of live ornamental fish start with the application from the business operator for a permit from the NAQS at the federal level. The permit is forwarded by the NAQS to the business operator.
 - The NAQS at the state level will check the consignment for conformity with the requirements of the country of destination.
 - For conforming consignments, the NAQS will issue the international certificate.
- Exports of frozen fish and aquaculture products starts with the application by the business operator for a permit from the Department of Fisheries (DOF Lagos office).
 - The DOF Lagos office checks the consignment for conformity with the requirements of the country of destination.
 - For conforming consignments, the DOF Lagos office will issue the international certificate.
- All veterinary exit checks (validity of permit and the international veterinary certificate) are carried out at the border by the NAQS.
 - The NAQS coordinates exit checks with the customs authorities using hardcopy documents.

Interaction of relevant entities active in international trade at the border

At the border post, the business operator, the NAQS at the state level and the customs authorities are the participating entities; interaction with the customs authorities is initiated by the NAQS through paper-based procedures.

Relations to/interaction with the Single Window

In the case of exports, there is no single-window facility or anything similar available.

As-is national importing processes for international trade

Role and responsibility of authorities/stakeholders/agencies

The import of veterinary commodities is only allowed with a valid permit.

- In general, permits for veterinary commodities are issued by the DVPCS except those for fish.
- Permits for the import of aquatic commodities, such as ornamental fish, are issued by the NAQS at the federal level.
- Permits for imports of frozen fish are issued by the Department of Fisheries.
- Permits for animal feeds are issued by NAFDAC.

Information flows and applicable documents including the veterinary certificate

- Imports of live animals, including pets and products of animal origin, start with the paperwork or electronic application on the part of the business operator, requesting a permit from the DVPCS at the federal level.

The DVPCS at the federal level checks the completed international veterinary certificate that is issued by the competent authority of the exporting country.

For conforming certificates, the DVPCS at the federal level issues the import permit and forwards it to the business operator.

- Imports of aquatic commodities, such as live ornamental fish, start with the application by the business operator, using the Single Window for trade to request a permit from the NAQS at the federal level.

Imports of frozen fish and aquaculture products, start with the application by the business operator for a permit from the Department of Fisheries (DOF).

The DOF issues the import permit, including the import requirements for the international certificate to be issued by an official of the exporting country, and forwards it to the business operator.

- For imports of food; drugs and medical devices; herbal remedies and cosmetics; vaccines and biologics; chemicals; narcotics; veterinary medicine, animal feeds, premix, concentrate and feed additives, starts with an electronic application by the business operator, using the Single Window for trade to request a permit from the NAFDAC.
 - NAFDAC undertakes an electronic revision of the required official documents from the exporting country
 - In the case of compliant documentation, NAFDAC issues an electronic copy of the import permit.
- All veterinary import checks (validity of permits and international veterinary certificates), are carried out at the border post by the NAQS and NAFDAC, with respect to commodities regulated by the latter.

Interaction of relevant entities active in international trade at the border

- At the border post, the business operator, the NAQS at the federal level and the customs authorities are the participating entities; interaction with the customs authorities is initiated by the NAQS.
- The NAQS is unable to check customs manifests for the prior identification of veterinary consignments for inspection.

Relations to/interaction with the Single Window

The customs authorities, NAFDAC and business operators all interact with the Single Window for Trade.

As-is exchange of information at the border post during import and export procedures**The insertion and role of the veterinary certificate, as well as the agencies involved in this flow of information.**

- Every veterinary certificate for international trade is administered by the NAQS.
- The NAQS is the inspection agency for import and export checks at the border.
- The NAQS coordinates import checks with the customs authorities through the use of hardcopy documents.
- In the current paperwork procedures, the DVPCS transmits issued international veterinary certificates to the NAQS for enforcement at the border control posts. The DVPCS is yet to be integrated into the customs authorities' Single Window for Trade, and as such does not transmit such certificates to said authorities. Also, the NAQS does not receive prior notice from the customs authorities for scheduled imports and exports; NAFDAC, however, does receive prior notice from said authorities.

Resources for national import/export processes for international trade

Human resources and Training

There were no signs that any of the import/export processes for international trade were suffering from a lack of personnel. The team observed an elementary understanding of processes related to e-veterinary certification. An interest to deepen this understanding was expressed on several occasions.

IT resources

In the respective offices, the required hardware is generally available. At the agency level, a limited number of procedures have been digitalised, replacing in some cases paperwork procedures. There are initiatives for further software development, mostly at the agency level.

Single Window for the Trade of imports

The exchange of data between 12 agencies with regards to international trade is implemented with the Single Window for Trade which is operated by the Nigeria Customs Services.

The following agencies are connected:

- The Nigeria Customs Service provides effective clearance of goods crossing the borders and anti-smuggling services, and in ways that maximise revenue collection and promote trade competitiveness.
- The National Agency for Food and Drug Administration and Control regulates and controls quality standards for foods, drugs, cosmetics, medical devices, chemicals, detergents and packaged water that have either been imported or manufactured locally.
- The Standards Organisation of Nigeria (SON) is the policy making body for supervising the administration and financial management of the organisation.
- The Central Bank of Nigeria aims to be proactive in providing a stable framework for the economic development of Nigeria, through the effective, efficient and transparent implementation of monetary- and exchange-rate policy and the management of the financial sector.
- The Federal Ministry of Finance is responsible for the management and control of all finances of the Federal Government, as set down in the Constitution of the country, as well as other laws created by the National Assembly such as the Finance law.
- The National Bureau of Statistics is custodian of the official statistics in Nigeria, and is the main agency responsible for the development and management of official statistics, as well as promoting statistics as a tool for development planning and evidence-based policy making
- The Federal Inland Revenue Service provides quality services to taxpayers in partnership with other stakeholders. It operates a transparent and efficient tax system that optimises tax revenue collection and voluntary compliance.
- The National Environmental Standards and Regulations Enforcement Agency (NESREA) has responsibility for the protection and development of the environment, biodiversity conservation and sustainable development of Nigeria's natural resources in general. It also deals with environmental technology including coordination and liaison with relevant stakeholders within and outside of Nigeria, regarding matters of enforcement of environmental standards, regulations, rules, laws, policies and guidelines.
- The FRSC is the lead agency in Nigeria on road safety administration and management.
- The Raw Materials Research and Development Council (RMRDC) is an agency of the Federal Government of Nigeria, and has been given the mandate to promote the development and use of Nigeria's industrial raw materials.
- The Nigeria Agricultural Quarantine Services (NAQS) has the task of ensuring that all plants, animals and aquatic produce/products exiting the country meet international standards.
- The Nigerian Financial Intelligence Unit (NFIU) is the central national agency in Nigeria responsible for the receipt and analysis of financial disclosure (currency transaction reports and suspicious transaction reports), along with the dissemination of intelligence gathered from this process to the competent authorities.

View of the competent authorities on the national roadmap for the implementation of e-veterinary certification in a single-window environment

Which approach for e-certification solutions might be preferable taking into consideration the national managerial, legal, political and financial aspects.

From the veterinary perspective:

E-veterinary certification means electronic certification as described in Article 5.2.4. of the *Terrestrial and Aquatic Codes*. Certification is provided through the electronic exchange of data, based on OIE model certificates in both *Codes*, and sent directly from the Competent Authority of the exporting country to the Competent Authority of the importing country.

In the case of exports, four Competent Authorities, i.e. the DVPCS, DOF, NAQS and NAFDAC, issue certificates for veterinary commodities.

- DVPCS - animals and products of animal origin and biologics
- NAQS - plant products (e-Phyto Certificates) and ornamental fish
- DOF - frozen fish
- NAFDAC - processed food of animal and plant origin, as well as animal feed.

The original veterinary certificates for imports are administered by the DVPCS, and therefore this body is the Competent Authority in the case of Nigeria.

Every import and export certificate has a relation with a permit that is issued by one of the four agencies.

Permits issued by the DVPCS, NAQS and NAFDAC are already (partially) digitally supported. However, further development of electronic processing would benefit from a consistent national approach.

As the permit and the certificate are closely connected with each other, the digitalisation process for issuing veterinary export certificates and receiving veterinary import certificates needs to be harmonised with the system(s) that is/are used to issue and archive permits.

From this perspective, the development of e-veterinary certification for international trade would benefit from high-level coordination between the Ministry of Agriculture, Ministry of Health, Ministry of Finance and Ministry of Industry, Trade and Investment, in order to adopt a solid and consistent national approach (including information exchange at the federal and state level) towards the use of a Single-Window facility.

In relation to the competent authorities for phytosanitary and food matters:

NAQS is the competent authority for plants and administers the original (e-)phyto certificates.

The Plant Health Department of NAQS is already developing a national system for electronic phytosanitary certification, and is working on an interface with the ePhyto hub. As NAQS is already connected with the Single Window for Trade (for import permits), it might be expected that concerning the interface with the ePhyto hub the Plant Health Department might also take into consideration the possibility of using a single-window facility in the development of the exchange process with the ePhyto hub. The knowledge and experience of the Plant Health Department from NAQS would also be useful for other NAQS departments and other Ministry of Agriculture agencies.

The competent authority for food, NAFDAC, has already implemented the use of the Single Window for Trade for import permits.

Concerning the connection with the (future) Single Window:

The current Single Window for Trade is import orientated and NAQS and NAFDAC are already connected. Taking into consideration that four agencies (the DVPCS, DOF, NAQS and NAFDAC) are involved in imports and exports, a structured and coordinated approach for the digitalisation of their import and export processes, including certification properly connected with a single-window environment, is considered useful.

Integration in the Single-Window environment of the connection protocol with certification systems from exporting and importing countries, will streamline the international exchanges of messages for all involved agencies.

Concerning prioritisation:

Development of a coordinated and consistent approach, including the use of the single-window environment for procedures at the national level, should be followed by further development of initiatives for the international exchange of e-certificates with the competent authorities in importing and exporting countries

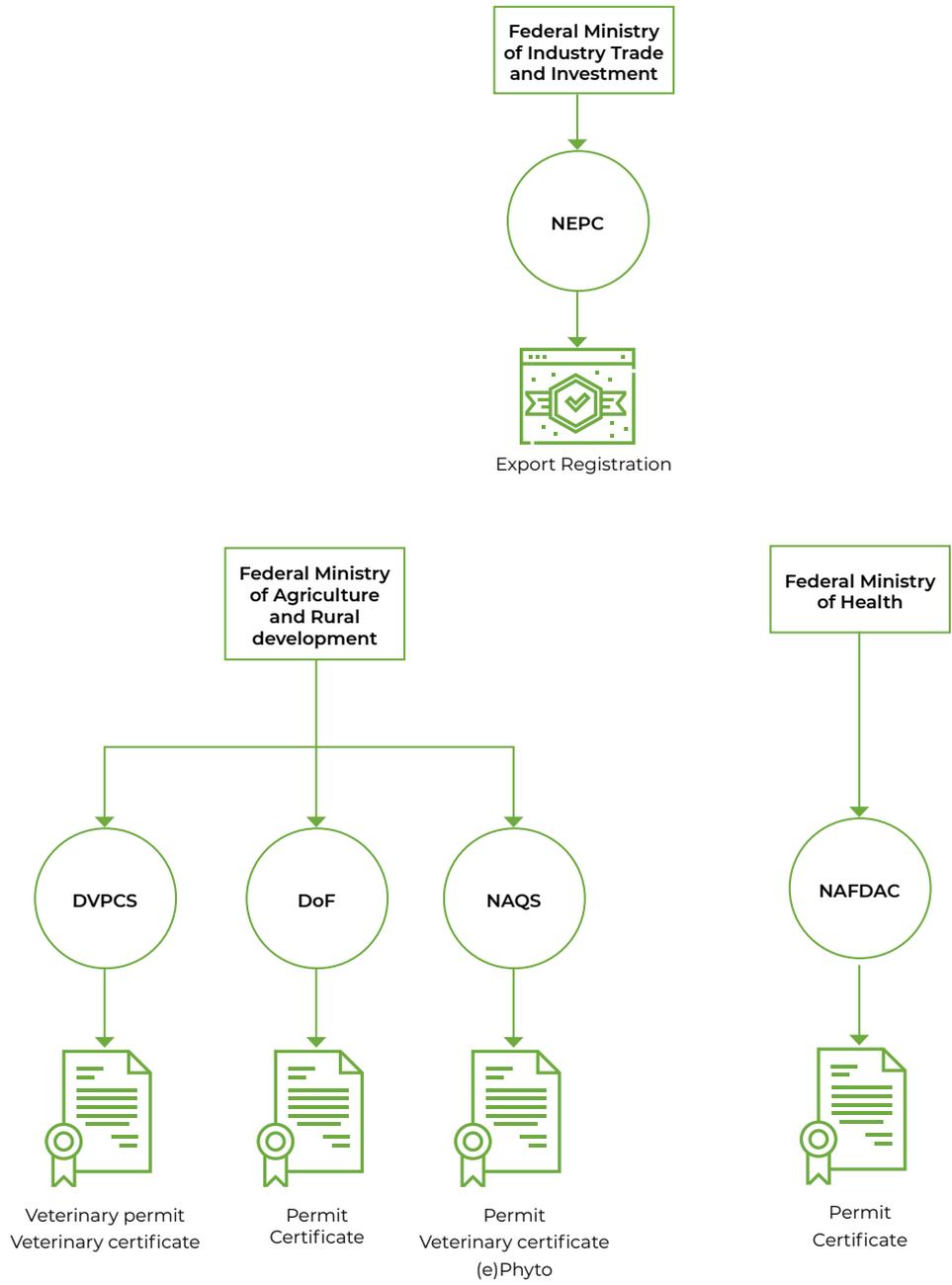
In this approach, what are expected to be the two most important national

- **Strengths**
 - dedication
 - involvement
- **Weaknesses**
 - complex structure
 - lack of coordination between agencies and ministries
- **Opportunities**
 - sharing experiences (Customs/SW)
 - sharing knowledge (NAQS/Phyto)
- **Threats**
 - approaches based on initiatives from individual agencies, which are insufficiently coordinated at the federal level.
 - inconsistent development of the Single Window.

4. Conclusions

- a. In Nigeria, the import and export processes in international trade (including veterinary certification and without exporter registration), fall under the responsibility of four agencies within two Ministries.
- b. This plural involvement requires coordination at a high federal level to ensure a consistent and solid approach for all involved organisations towards the implementation of e-veterinary certification in a single-window environment.
- c. At the national level, export permits and veterinary certificates are closely related to each other and issuing agencies would benefit from harmonising the processes related to these two documents and enhancing the understanding of e-veterinary certification.
- d. Nigeria is using OIE model certificates from the *Terrestrial Code* and the *Aquatic Code* for exports and would benefit from the data modelling of these model certificates.
- e. As information exchange between the import and export agencies is essential, mutual acceptance of the Single Window by the pertinent organisations, would facilitate smoothly run processes in all the organisations involved and at the country's border control posts.
- f. With respect to the import process, the connection between the import permit and the veterinary certificate from the exporting country, after it is received by DVPCS, is essential.
- g. Taking into consideration the processes at the border, integration of the connection protocol in a Single Window will streamline the Nigerian processes for e-veterinary certificate exchange in international trade.
- h. Knowledge and experience from NAQS and NAFDAC with regards to ePhyto and Single-Window Trade, respectively, is useful in terms of being shared between agencies involved in export certification.

5. Addendum Export-diagram





PARAGUAY

Kenji Sakurai
Ministry of Agriculture, Forestry and Fisheries of Japan
10-14 June 2019

1. Introduction

Main objectives of the mission (in-country survey of Paraguay)

- To study the actual situation of the paper-based and electronic veterinary certification system in Paraguay.
- To assist the veterinary services of Paraguay in order to complement and specify the information provided by Paraguay in its answers to the questionnaire.

The aforementioned was achieved through the following activities that took place during the mission period in Paraguay:

1. Technical meeting with the National Service for Animal Quality and Health (SENACSA) and the Ministry of Industry and Commerce
2. Visit to a slaughterhouse/abattoir authorised for beef exports
3. Visit to an establishment used for processing animal by-products authorised for export
4. Visit to a cattle auction house (establishment)
5. Visit to an animal quarantine office located within Asuncion's international airport

2. Description of activities

Day 1: 10 June

On the morning of Day 1, the reporter was welcomed by the president of SENACSA and his colleagues (directors, etc.), and held an initial meeting to confirm activities during the mission period, as well as the main objective and aim of the visit. The functions of each department of SENACSA were presented by its officials during the meeting.

The meeting was attended by the director generals of different departments, including food safety for animal products, animal health and the department that administers the country's traceability system.

After the initial meeting at SENACSA, the reporter was invited to join a weekly meeting alongside the members of the Animal Health Service Foundation (Fundación del Servicio de Salud Animal -Fundasa- in Spanish), which is organised on a weekly basis during the FMD vaccination campaign season, so that representatives from each vaccination zone gather to report the campaign's progress in their respective zone.

Day 2: 11 June

On the morning of Day 2, the reporter attended a technical meeting with the officials of SENACSA and their counterparts from the Ministry of Industry and Commerce in charge of the single-window system. The main objective of the meeting was to ascertain how the single-window system works in Paraguay, and to check and complement the answers to the OIE questionnaire. During the meeting, each answer to the questionnaire was verified and confirmed.

On the afternoon of Day 2, the reporter was invited to hold a meeting with SENACSA's General Directorate of Technical Services. During the meeting, an introductory presentation was made regarding the information management system for regional offices, which connects the central office and regional offices in the country's livestock sector. This system covers three areas, namely: a register of veterinarian; veterinary products; and livestock statistics. This system is also connected to livestock movement points, cattle markets, and slaughterhouses/abattoirs and processing plants authorised for exports. All the data in relation to livestock movements, sanitary issues and traceability, as well as animal products and by-products, is integrated into this centralised national system.

Day 3: 12 June

On the morning of Day 3, the reporter visited a slaughterhouse/abattoir establishment for cattle on the outskirts of Asuncion, the capital of Paraguay. The establishment is authorised for the exports of beef to various countries, including Russia and some Islamic nations. The main objective of the visit was to observe and ascertain how the export veterinary certification system functions with respect to beef and viscera derived from cattle.

On the afternoon of Day 3, the reporter was invited to visit a cattle auction establishment located on the outskirts of Asuncion, in order to ascertain how cattle marketing is controlled and registered by SENACSA.

Day 4: 13 June

On Day 4, the reporter visited a processing plant for by-products (meat-and-bone meal, cattle leather and tallow), which is authorised for the exports of these by-products to various countries, including European Union nations. The main objective of the visit was to observe how the inspection for the exportation of by-products is conducted, how the export certification system is integrated into the single-window system, and how the export certificate is issued. The aforementioned visit was followed by one to an animal quarantine office located in Asuncion's international airport, in order to ascertain how the animal quarantine inspection for imports and exports is conducted, and to observe how the veterinary certification system is integrated into the single-window system at Paraguay's main international airport.



Visit to the International Airport in Asunción

**Day 5: 14 June**

On Day 5, the reporter visited the headquarters of SENACSA to have a brief final meeting with the organisation's president, and to report activities undertaken during the mission to Paraguay.

3. Results of the mission**Analysis of the current situation regarding the veterinary certification system***Administrative procedures concerning veterinary certification***a. Legal framework (related laws, regulations)**

Laws and regulations exist that regulate the issuance of veterinary certificates for imports and exports of animals and their products. However, current legislation does not stipulate the issuance or exchange of veterinary certificates in an electronic format. The current legal framework only allows veterinary authorities to issue veterinary certificate in a hardcopy format.

Given such circumstances, modification of related laws and/or regulations is needed to allow the veterinary authorities to exchange veterinary certificates with trading partners in an electronic format. As described in the questionnaire, it is expected to take a certain period of time (less than one year) to amend the corresponding legislation.

b. Processes, procedures, and documents required for import and export clearance

In the case of Paraguay, all the internal processes and procedures for imports and exports are digitalised within the national single-window system. Importers/exporters and customs brokers and other relevant organisations, have the right to access the national single-window system for customs clearance, while the animal health authorities, i.e. SENACSA, has access to all the digitalised data in relation to imports and exports of animals and their related products. However, the single-window system has not yet been applied to the exchange of import or export veterinary certificates with importing/exporting countries. At present, the system is only used for internal processes and procedures for import and export clearance purposes.

c. Average transaction time for import and export clearance

As described in the questionnaire, the average transaction time for import and export clearance is dependent on whether this involves live animals or animal products, as well as whether it is for import or export purposes. In the case of animal products, the transaction time is relatively shorter than that for live animals.

d. Complexity of the local government structure

As all animal health and food safety, from the farm to the slaughterhouse/abattoir and to processing plants, are exclusively controlled and administered by SENACSA, all the processes and procedures for exportation fall under the jurisdiction of said body. There is no requirement to coordinate with local governments or other ministries, which is an important advantage in terms of the introduction of an e-Cert system.

e. Currently digitalised processes and procedures concerning veterinary certification (import notification/declaration, application for import inspection, clearance, etc.)

Current status concerning the digitalised internal network (interchange of data)

A digitalised network has been established for the purpose of data exchange. Data for the livestock and animal health areas, including animal populations, numbers of slaughtered animals, inspected animals and animal products for imports and exports, as well as animal movements and transactions, are all digitalised and administered by the integrated centralised computer system run by SENACSA.

This system establishes a National Network which connects SENACSA's headquarters to its branch offices, slaughterhouses/abattoirs, processing plants, livestock dealers, and the animal quarantine office in the international airport, etc.

f. Structure and organisation of the veterinary service in relation to veterinary certification

SENACSA is the veterinary authority responsible for animal health and food safety, including the issuance of veterinary certification for both exports and imports of animals and derived products.

SENACSA is also responsible for the control of animal diseases at the farm level, as well as the control of movements of domestic animals, and of ante- and post-mortem inspection at slaughterhouses/abattoirs. All the data in relation to animal disease control are administered by SENACSA in its database system.

In the case of slaughterhouses/abattoirs and processing plants authorised for exportation, veterinary officers of SENACSA are stationed in order to undertake checks on documents and data regarding the health of animals when they arrive at such facilities. All the results obtained from said inspections, including ante- and post mortem examinations conducted by said officers, are entered into SENACSA's database system.

g. The existing IT infrastructure for administrative processes and procedures in relation to veterinary certification

SENACSA possesses a database system on animal health, which is linked to the national single-window system for the import and export of animals and derived products. Given that all the results of inspections conducted at slaughterhouses/abattoirs, along with cutting and processing plants, are entered into the system, veterinary certificates for exportation are printed out in a hardcopy format at the slaughterhouses/abattoirs. This takes place as soon as officers at SENACSA headquarters have confirmed that everything is in accordance with the animal health requirements of the importing countries. A veterinary officer then signs the hardcopy veterinary certificate for the exported goods, an original copy of which accompanies said goods. Thus, veterinary certificates are exchanged in a hardcopy format. To date, Paraguay does not have a system for the exchange of electronic veterinary certificates.

h. Trade data

Import and export quantities of animals and animal products

As described in the questionnaire, the main animal products for export are beef and viscera derived from cattle. The main destination markets for these exports are Russia, Chile, Vietnam, Brazil, Israel and countries within the European Union.

Importing/exporting countries (trading partners): electronic veterinary certification systems currently being implemented

Although all the domestic procedures and processes for importation and exportation are digitalised in Paraguay, there are no electronic veterinary certification systems, and neither are there any for the exchange of veterinary certificates in an electronic format.

Analysis of the need for digitalised administrative processes and procedures

National policies for the digitalisation of administrative processes and procedures, including support from policymakers and decision makers

In Paraguay, all the domestic processes and procedures for importation and exportation mainly take place within the single-window system that links up the competent authorities, including SENACSA and the Ministry of Commerce, and the private sector. In addition, and as mentioned above, SENSCSA maintains its own database system, which is connected to the single-window system.

As Paraguay is an exporting country of beef and animal products derived from cattle, the Paraguayan government has a very high interest and places priority on the introduction of an electronic veterinary certification system, particularly for exports of beef and animal products.

Such strong determination and the initiative of the government to digitalise procedures and processes for the trade of livestock products, can be understood in relation to the fact that the country has been running a single-window system since 2006.

In terms of beef exports, the private sector, including the food industry and farmers, is aware of the importance and significance of the introduction of an electronic veterinary certification system for exports. And given that Paraguay already maintains a single-window system, it can be stated that there exists a rationale for the introduction of an electronic certification system at the national level.

Furthermore, the certification system in Paraguay for animal health as well as food safety, falls under the jurisdiction of SENACSA, which means that processes and procedures for exportations of animals and animal products are administered exclusively by the agency, i.e. SENACSA, and that veterinary inspection and the issuance of certificates are undertaken by one competent authority. This is one of the most important advantages for the introduction of an electronic veterinary certification system, which ensures the introduction of a simplified and efficient export certification system.

In the case of imports of animals and derived products, and as the livestock sector is the country's main industry, the country imports livestock mainly from neighbouring countries such as Brazil, Argentina and Uruguay in order to provide genetic resources. In this context, if the MERCOSUR economic block introduced an electronic veterinary certification system, this would allow Members to promote and facilitate the trade of livestock between the respective nations.

However, in the case of the trade of live animals, animal health requirements for importations may vary from country to country, depending on the animal health situation in each nation. However, this fact may hinder the introduction of an e-cert system on a multilateral basis in this area of international trade.

Analysis of the system currently operating for the online processing of procedures undertaken with the Customs and other relevant administrative authorities or related private-sector services for imports/exports (analysis of a single-window system)

In Paraguay, a single-window system has already been introduced and has been established for the exchange of relevant data. This system provides a permanent on-line connection between the national competent authorities and the private sector at the domestic level (please note that the single-window system is yet to be applied to the area of live animal exports). However, veterinary certificates are not digitalised in terms of being exchanged with trading partners. Under such circumstances, one of the pressing issues for Paraguay is to introduce an electronic veterinary certification system for exports of beef to Russia, in order to maintain and assure the reliability of export certificates issued by Paraguay.

It can be stated that Paraguay already possesses the basic framework and infrastructure, such as a single-window system, in order to introduce an electronic veterinary certification system to be used with its export partners. However, the issues to be addressed are to secure the necessary financial resources or a budget, as well as expertise in the area of e-certification. It also goes without saying that trading partners such as Russia are also eager to introduce an e-cert system with Paraguay; thus, and in the case of Russia, this country should also secure the necessary funding resources to develop such a system with Paraguay.



ZIMBABWE

Dr Alwyn Tan
15-18 July 2019

1. Introduction Development of the mission/description of activities

Date	Time	Meeting	Where
15 July 2019	09.00	Opening meeting with the Chief Director, Department of Veterinary Services	Department of Veterinary Services, Harare
	10.00	Overview of Zimbabwe's veterinary service and import & export procedures	Department of Veterinary Services, Harare
	14.00	Meeting with Director of ICT, Ministry of Agriculture	Department of Veterinary Services, Harare
	15.00	Visit to the Import Permits Office	Department of Veterinary Services, Harare
16 July 2019	09.00	Visit to the Plant Quarantine Office	Plant Quarantine, Mzaoe
	12.00	Visit to the Harare Veterinary District Office	Department of Veterinary Services, Harare
	14.30	Visit to the Colcom Veterinary Public Health Office	Department of Veterinary Services, Harare
	16.00	Meeting with ICECASH (system for registering cattle and administration of livestock movements)	Department of Veterinary Services, Harare
17 July 2019	09.30	Visit to the Manicaland Provincial Veterinary Office	Mutare
	10.30	Visit to the Port Veterinary Health Office, Forbes Border Post	Forbes Border Post, Mutare
	11.30	Meeting with the Zimbabwe Revenue Authority, Forbes Border Post	Forbes Border Post, Mutare
18 July 2019	09.30	Meeting with the Zimbabwe Equestrian Federation	Harare
	11.30	Closing Meeting	Department of Veterinary Services, Harare



Opening Meeting with Zimbabwe DVS



Visit to Forbes Border Post, Zimbabwe

2. Country information

Overview of Ministries, Agencies and Organisations involved in the import and export of live animals and derived products based on the trade profile described in the questionnaire and their respective resources.

Ministries, Agencies and Organisations	Responsibility	Service	Resources
Department of Veterinary Services (DVS)	Animal health; veterinary public health	Veterinary import permits, health certificates	Block budget from Ministry Fees collected and retained by the Department.
Ministry of Lands, Agriculture Water, Climate and Rural Resettlement (MOA)	- Quotas - Economic strategy	Controlled goods import & export permits	Permit fees collected by the Ministry.
Zimbabwe Revenue Authority (ZRA)	Collect taxes; Regulation of the import & export of goods	Import & export declarations Border enforcement	Permit fees collected by the ZRA.

3. Key findings

As-is national exporting processes for international trade

Main exports are day-old chicks, horses, dogs and cats, chilled and frozen fish, and UHT milk.

(What, who and when)

- Role and responsibility of the the authorities/stakeholders/agencies
- Information flows and applicable documents for veterinary certification (including issuance of the final certificate)

Authorities/ stakeholders/ agencies	Role and responsibility	Information flows and applicable documents
Exporter	- Obtain import permit from importing country or obtain in-transit permit to export via South Africa (RSA) - Apply to MOA for Controlled Goods Export Permit - Apply to DVS for health certificate - Apply for the customs declaration	- Import permit is required when applying for the health certificate
MOA	Process and approve Controlled Goods Export Permit (for selected agricultural products only)	- With inputs from Agricultural Marketing Authority
DVS	Process and issue health certificate	- Requires import permit to be submitted - Requires Controlled Goods Export Permit - Conduct inspection and lab tests if required
ZRA	Process and clear customs declaration	Check invoice and product list, Controlled Goods Export Permit
DVS	- Export border check - Issue Export Declaration	Check of documents and consignment
ZRA	- Export border check - Issue Release Order	- Check of documents and consignment - Check that Export Declaration has been issued by DVS
Export of consignment occurs		

- Interaction of relevant entities active in international trade at the border
Compulsory border checks are carried out on exports of animals and derived products. The DVS conducts the export checks at the border. The Zimbabwe Revenue Authority (ZRA) is the final gatekeeper and ensures that the DVS has cleared consignments for export before they are released by the ZRA.
- Relations to/interaction with the Single Window
The ZRA checks that outgoing consignments have the necessary permits from other agencies (e.g. Controlled Goods Export Permits for selected agricultural products).

As-is national importing processes for international trade

The main imports are cattle, goats, sheep, and meat-and-bone meal.

- Role and responsibility of the authorities/stakeholders/agencies
- Information flows and applicable documents including the veterinary certificate

Authorities/ stakeholders/ agencies	Role and responsibility	Information flows and applicable documents
Importer	- Apply to DVS for import permit	
DVS	- Process and issue import permit - For scheduled products, to submit to MOA for approval	DVS will submit weekly collation to MOA for approval
MOA	Assess and approve issuance of import permits	Information submitted by DVS to MOA
DVS	Issue import permit	
Importer	Apply to MOA for Controlled Goods Import Permit	
MOA	Process and issue Controlled Goods Import Permit	Information submitted by importer
Importer	- Courier import permit to exporter - Exporter uses import permit to apply for health certificate - Apply customs declaration	- Declaring agent to attach all relevant import permits in online declaration - Health certificate must be in the template and format issued by Zimbabwe
ZRA	Process and clear customs declaration	
Import of consignment occurs		
DVS	- Border check of permit and health certificate - Issue Import Declaration	Check of documents and consignment
ZRA	- Border check - Issue Release Order	- Check of documents and consignment - Check that Import Declaration has been issued by DVS
Consignment cleared for import		
DVS	- Unloading and release inspection of consignment at importer warehouse - Issue Release Certificate - Collects import permit and health certificate	Import permit and health certificate filed in district office for records

- Interaction of relevant entities active in international trade at the border
The ZRA and DVS maintain personnel at the border to conduct checks on documents and consignments. The ZRA is the final gatekeeper and ensures that the DVS has cleared consignments for import before they can be released by the ZRA.
- Relations to/interaction with the Single Window
Veterinary import permits and Controlled Goods Import Permits are linked to the on-line Customs Declaration System (ASYCUDA). Customs officers check that all necessary import permits are attached.

As-is exchange of information at the border post during import and export procedures

The insertion and role of the veterinary certificate, as well as the agencies involved in this flow of information:

The veterinary certificate for imports and exports are transmitted from government to government via a hardcopy along with the consignment.

Resources for national import/export processes for international trade

Human resources and training

- Personnel are provided by the respective agencies to process permits, certificates and conduct border checks. There are 26 land border entry points but only 8 of these (which have higher volumes of imports of animals and derived products) are staffed by DVS officers. Checks on animals and derived products at other entry points are carried out by Plant Inspectors or ZRA officers.
- Officers are aware of their duties and able to meet service standards.

IT resources

- District offices have access to computers to generate and print permits and certificates.
- Some border veterinary posts have access to IT equipment. Many of the processes at the border, such as the issuance of records of checks undertaken and issuance of import declarations after conducting border inspections, along with records of inspections, are recorded manually.

Legislation

- All current functions related to permits and certificates are adequately covered by legislation.
- There are no specific restrictions on the use of electronic certification.

View of the competent authorities on the national roadmap for the implementation of an e-veterinary certification system in a single-window environment

Which approach for e-cert solutions might be preferable taking into consideration the national managerial, legal, political and financial aspects.

- From a veterinary perspective
 - To improve convenience for clients and achieve a more efficient and faster processing time for permits and certificates.
- In relation to the competent authorities for phytosanitary and food matters
 - Permits and certificates for food of animal origin are managed together with animals and derived products by the DVS.
 - The Plant Quarantine Service currently processes and issues permits and certificates manually, which is similar to the DVS. They are part of the MOA project to develop the electronic system for permits and certificates (E-Government 100 Online Services).
- Concerning the connection with the (future) Single Window
 - The ZRA is the lead agency for the NSW and has an online system referred to as ASYCUDA (Automatic System for Customs Data). However, there are currently no known plans to develop the capability for the electronic transmission of SPS certificates.
 - The MOA is developing an online system for all of its services as part of the 'E-Government 100 Online Services' initiative. The project is being funded by the government. The basic purpose of this system is to digitalise DVS trade-related services for permits, health certificates and freedom-from-disease certificates. A committee has been established to ensure that the systems developed are able to interface with each other, including linkages between ASYCUDA and the E-Government 100 Online Services.
 - The system is currently being developed based on processes provided by the DVS and is targeted to go on-line in July 2020. The system is already active for other agencies such as liquor licences and IP management (e.g. application for patents), and has received positive feedback from users.
 - The MOA stated that funding for E-Government 100 Online Services is carried out through the President's office and that priority has been placed on certain projects due to funding constraints. Consequently, implementation of the system would likely be delayed as the MOA receives a lower level of priority. The MOA and DVS have requested any possible financial assistance to develop the system.
- Concerning prioritisation
 - The initial focus will be to implement E-Government 100 Online Services to improve the national objective of increasing the ease of doing business in the country. Although a capability for the electronic transmission of e-certificates is not currently being developed, the DVS is keen to be an early adopter of e-certification with the relevant assistance provided, as they believe in the benefits of e-certification.

In this approach what are expected to be the two most important national

- **Strengths**
 - There is a political will to implement electronic government services as part of an initiative to improve the ease of doing business in the country.
 - A ministry committee has been established to ensure that IT systems being developed are streamlined and can easily interface.

- There are existing IT systems that serve selected tasks of agencies, e.g. the ICECASH pilot system in one district (a system for the DVS and cattle owners to manage cattle records and payments), and ASYCUDA (the ZRA system for integrated border clearance). These systems may be expanded in terms of functions and connectivity as part of the NSW.
- **Weaknesses**
 - Limited or uneven distribution of IT infrastructure at key locations such as at border checkpoints.
 - The speed of import permit issuance by the DVS is dependent on how soon the MOA can approve the permit after the DVS makes recommendations based on biosecurity criteria. At present, the DVS is able to process on the same day, however, collation, submission and the obtaining of MOA approval requires approximately 1 week.
 - IT development projects may be delayed if there is reprioritisation of funding by the government.
 - Limited financial resources to develop sophisticated IT systems.
 - Limited in-house IT expertise to develop an electronic certification system.
 - Implementation of the use of unique reference numbers for certificates issued by the DVS is not uniform. This may make it difficult to trace and authenticate where certificates have been issued from, as multiple district offices are responsible for issuing health certificates.
 - There is room for a review to be conducted of business procedures prior to the implementation of electronic systems to replace manual processes. For example, there is a potential for the collection of import fees by the DVS to be streamlined, as fees are currently collected at multiple points in the import process, such as for the import permit application, border declaration checks and unloading release certificates.
- **Opportunities**
 - Plans to develop E-Government 100 Online Services could be a stepping stone to developing a NSW and eventual capabilities for the exchange of e-certificates.
 - A Zimbabwe Agriculture Growth Programme has been established, with support from the EU, to improve value chains for the dairy and poultry industries. This may potentially increase exports of dairy products and day-old-chicks, and the larger trade volume would thus support the development costs of an electronic system.
- **Threats**
 - Being a land-locked country, exports occur mainly to or via neighbouring countries, such as the Republic of South Africa. The in-transit and importing countries would need to have an e-cert capability in order to access the benefits of e-certification and the NSW.
 - The cost recovery mechanisms to maintain future IT systems have yet to be established.

4. Conclusions

The Zimbabwe country system for the import and export of animals and derived products generally involves both permits and health certificates. Current processing and issuance of permits and certificates are carried out manually and in hardcopies (i.e. the use of pre-printed carbon copy booklets and additional documents printed from electronic templates). District offices exercise flexibility in the application for permits and certificates and allow traders to submit details via phone calls or email. Consequently, traders may not need to visit the offices of the competent authorities to apply for permits and certificates, although they still do need to make a physical visit to such offices to collect documents.

Political support for electronic government services is high and there is strong political will to deliver electronic government services. Veterinary legislations are technologically agnostic and there is no restriction on the potential use of electronic certificates.

Current challenges to implementing electronic veterinary certification and NSW include limited IT, financial support and infrastructure. There are many documents being issued as part of the current processes for the import and export of animals and derived products, and there may be room for a review to be conducted of business processes prior to the development of electronic systems to replace manual processes.

Zimbabwe has started an IT project to develop an electronic system for the application, processing and issuance of permits and certificates. However, there are currently no known plans to develop the capability for the government-to-government transfer of electronic certificates.

5. Addendum Timetable of the mission; sites/facilities visited and list of re contact persons met or interviewed

Date	Entity/Institution/Site	Key persons met
15 July 2019	Opening meeting with Chief Director, Department of Veterinary Services	Dr Unesu, Chief Director Dr Chenai Majuru, Chief Veterinary Import & Export Officer Dr Josphat Nyika, Director of Field Services Dr D.V. Makaya, Acting Director of Veterinary Technical Services
	Overview of Zimbabwe veterinary service and import & export procedures	Dr Chenai Majuru, Chief Veterinary Import & Export Officer Dr L. Dinginya, Veterinary Public Health Officer Dr T.G. Hanyire, Wildlife Veterinary Officer Dr N. Nyamakupi, District Veterinary Officer
	Meeting with Director of ICT, Ministry of Agriculture	Mr Kaseke, Director of ICT, MOA
	Visit to Import Permits Office	Dr Chenai Majuru, Chief Veterinary Import & Export Officer
16 July 2019	Visit to Plant Quarantine Office	Mr Mudada, Chief Quarantine Officer
	Visit to Harare Veterinary District Office	Dr Nyanmakupi, District Veterinary Officer
	Visit to Colcom Veterinary Public Health Office	Dr Dinginya, Veterinary Public Health Officer
	Meeting with ICECASH (system for registering cattle and movement management)	Mr Barry Gerson, ICECASH
17 July 2019	Visit to Manicaland Provincial Veterinary Office	Dr Innocent Chabanya, District Veterinary Officer Dr Gladys Matsikure, Veterinary Public Health Officer
	Visit to Veterinary Port Health Office, Forbes Border Post	Dr Innocent Chabanya, District Veterinary Officer Dr Gladys Matsikure, Veterinary Public Health Officer
	Meeting with Zimbabwe Revenue Authority, Forbes Border Post	Mr Chuma, Station Manager Forbes Border Post
18 July 2019	Meeting with Zimbabwe Equestrian Federation	Dr Carol Bus, Head of Zimbabwe Equestrian Federation & Equine Veterinary

