PVS Pathway

PVS Evaluation mission report

Chinese Taipei

Human, Physical and Financial Resources

Technical Authority and Capability

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Access to Markets

April 2019

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WORLD ORGANISATION FOR ANIMAL HEALTH
Protecting animals, preserving our future

OIE PVS EVALUATION

REPORT OF THE

VETERINARY SERVICES OF

CHINESE TAIPEI

(15-26 April 2019)

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Contents

List of acronyms, abbreviations and/or special terms

ADDC	Animal Disease Diagnostic Centre
ADIB	Animal Drug Inspection Branch (within AHRI)
AFA	Agriculture and Food Agency
AHIS	Animal Health Information System
AHRI	Animal Health Research Institute (within COA)
AMR	Anti-microbial Resistance
APEC	Asia-Pacific Economic Cooperation
APQC	Animal and Plant Quarantine Center (within BAPHIQ)
ASF	African Swine Fever
ATRI	Agricultural Technology Research Institute
BAPHIQ	Bureau of Animal and Plant Health Inspection and Quarantine (within COA)
BSE	Bovine spongiform encephalopathy
BSMI	Bureau of Standards, Metrology and Inspection
CA	Competent Authority
CAS	Certified Agricultural Standards
CD/FB	Conservation Division, Forestry Bureau (within COA)
CIQS	Customs Immigration and Quarantine and Security
COA	Council of Agriculture (Executive Yuan[1])
CSF	Classical Swine Fever
CVL	Central Veterinary Laboratory
CVO	Chief Veterinary Officer
DAI	Department of Animal Industry (within COA)
DVS	Director of Veterinary Services – Chief Veterinary Officer (CVO)
EPA	Environmental Protection Agency
ESRI	Endemic Species Research Institute (within COA)
FA	Fisheries Agency (within COA)
FBO	Food Business Operators
FMD	Foot and Mouth Disease
GHP	Good Hygiene Practices
GMP	Good Manufacturing Practices
HPAI	Highly Pathogenic Avian influenza
IHR	International Health Regulations
JEE	Joint External Evaluation
LADIAs	Local Animal Disease Inspection Authorities

[1] The Executive Yuan is the executive branch of the government of Chinese Taipei.

LADIA	Local Disease Control Centre
LGAD	Local Government Agriculture Department
LIMS	Laboratory Information Management System
LRI	Livestock Research Institute (within COA)
MIA	Meat Inspector Assistant
MOEA	Ministry of Economic Affairs
MOHW	Ministry of Health and Welfare (Executive Yuan)
MOST	Ministry of Science and Technology (Executive Yuan)
NAIF	National Animal Industry Foundation
NCHU	National Chung Hsing University
NCYU	National Chiayi University
NPUST	National Pingtung University of Science and Technology
NTU	National Taiwan University
OIE	World Organisation for Animal Health
PC	Physical Containment
PTNE	Professional and Technical National Examination
PVS	Performance of Veterinary Services
R&D	Research & Development
SH	Slaughterhouse
TCDC	Taiwan Centers for Disease Control (within MOHW)
TCSB	Toxic and Chemical Standards Bureau
TFDA	Taiwan Food and Drug Administration (within MOHW)
TSC	Technical Services Centre (within NAIF)
TVMA	Taiwan Veterinary Medical Association
TVMAHIA	Taiwan Veterinary Medicine and Healthcare Industry Association
VA	Veterinary Authorities
VIC	Veterinarian in Charge
VMI	Veterinary Meat Inspector
VMP	Veterinary Medicinal Products
VPH	Veterinary Public Health
VS	Veterinary Service(s)
VSB	Veterinary Statutory Body

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PART I: EXECUTIVE SUMMARY

I.1 Introduction

Following a request to the OIE from the Government of Chinese Taipei, an evaluation of the Veterinary Services based on the *OIE PVS (Performance of Veterinary Services)* methodology was conducted in April 2019 by a team of three independent OIE certified PVS evaluators.

The evaluation began with meetings in Taipei with Dr Wen-Jane Tu, Deputy Director General, OIE Delegate and Chief Veterinary Officer of the Bureau of Animal Health and Plant Inspection and Quarantine (BAPHIQ) and senior BAPHIQ officials. This was followed by a meeting with Minister Chi-Chung Chen and Deputy Minister Jin-Cheng Huang of the Council of Agriculture, Executive Yuan. During this meeting African Swine Fever prevention and emergency preparedness were understandably identified as top national priorities.

A formal opening meeting was then held with the CVO, senior BAPHIQ officers and officials from the Ministry of Health and Welfare and other interested public agencies[2].

The OIE PVS Team then visited sites and institutions of the public, private and not-for-profit sectors in cities and rural areas of Chinese Taipei and discussed relevant matters with government officials, public and private sector veterinarians, livestock producers, traders, consumers and other stakeholders.

The mission concluded at BAPHIQ headquarters in Taipei with a closing meeting at which the overall findings of the evaluation were discussed with officials from the same agencies that attended the opening meeting.

For those less familiar with Chinese Taipei, background information is provided in Appendix 3, including country maps, geographical and climate information, human and livestock population and general economic data.

I.2 Key findings of the evaluation

I.2.A Human, physical and financial resources

Staffing

The Veterinary Services of Chinese Taipei enjoy a strong resource base of professionals trained at internationally recognized veterinary colleges in the country and overseas. Excellent veterinary educational establishments (VEE) provide a solid foundation on which to strengthen a national programme to train veterinary paraprofessionals in accordance with OIE Guidelines.

While the majority of public sector veterinary positions are filled, there is a need to assess current and future requirements including those of the private sector. New demands to prevent and respond to emerging epizootics such as African Swine Fever (ASF), to manage Foot and Mouth Disease (FMD)-free zones, and to address anti-microbial resistance (AMR) and other issues in a collaborative One Health mode require enhanced expertise and capacity at central levels as well as greater front-line capacity at border points and for coverage of remote rural areas to meet the needs of smallholder farms.

[2] Forestry Bureau, Animal Health Research Institute (AHRI), National Taiwan University (NTU), Animal Technology Research Institute (ATRI), National Animal Industry Foundation (NAIF), Taiwan Food and Drug Administration (TFDA, Department of Animal Industry (DAI) and the Taiwan Center for Disease Control (TCDC).

There is effective management of public sector veterinarians at national and regional levels with formal job classifications, performance reviews, recruitment, rotation and promotion procedures.

There is a formal and consistent approach to the training and management of veterinary paraprofessionals (VPP) for meat inspection. A proposal has been developed to strengthen the training, certification and supervision of veterinary assistants working in the private sector. Continuing education is mandatory for veterinarians and some categories of VPP in the public and private sectors.

Policy and Management

The national Veterinary Authority (BAPHIQ) has a direct and effective chain of command within its own structure from headquarters to officers at border posts. For animal health and food safety programmes an effective chain of command runs from the CVO to BAPHIQ's regional branches and administratively separate local governments and not-for-profit organizations (NPOs), notably the Agricultural Technology Research Institute (ATRI) and the National Animal Industry Foundation (NAIF) that perform delegated functions.

Partnerships amongst veterinary and public health authorities are advanced. These occur at the national, regional and local levels. Ongoing efforts are required to maintain and strengthen effective vertical and horizontal coordination amongst these agencies. This is particularly important in the case of vertical coordination (chain of command) to address the challenges posed by the current epidemic of ASF in Asia [3, 4].

Regular evaluations guide plans to adapt to emerging priorities such as securing and maintaining freedom from FMD, preventing an incursion of ASF, and implementing a national AMR action plan. BAPHIQ's Deputy Director General (CVO) has proposed to strengthen this work through systematic evaluations of policies and measures based on risk assessment and international standards.

Technical Independence

Chinese Taipei has a strong foundation for technical independence with Civil Service Ethics Offices at central and regional levels that serve as independent observers, promote ethical behaviour and provide an ombudsman service. Senior BAPHIQ officials understand the importance of "fearless advice" when briefing political leaders and make use of OIE standards and risk analysis in this work. Evidence of technical independence was noted on commissioned services such as meat inspection. Rotations of top officials every three years also serves to maintain their independence.

Resources

The national Veterinary Authority (VA) enjoys exceptional infrastructure with some minor exceptions, and adequate operational and human resources funding. The same appears to be true for local government agencies and the private sector based on smaller samples. Strategies to adapt to national budget restraints, such as the use of not-for-profit organizations (NPOs) to limit the number of public servants for functions like meat inspection, laboratory services and training, have been successful to date. Effective systems are in place for emergency funding and compensation.

[3] The Economist May 25, 2019: https://www.economist.com/china/2019/05/25/african-swine-fever-hits-china-home-of-half-the-worlds-pigs?frsc=dg%7Ce

[4] The Guardian June 6, 2019: https://www.theguardian.com/world/2019/jun/06/millions-of-pigs-culled-across-asia-african-swine-fever-spreads-thailand-?CMP=Share_iOSApp_Other

I.2.B Technical authority and capability

Laboratories

Chinese Taipei has internationally recognized science capacity in a world class laboratory network. This is centred around the Animal Health Research Institute (AHRI) and extends to research and service laboratories operated by ATRI and NAIF as well as Animal Disease Diagnostic Centers at 4 veterinary colleges and sample collection and screening laboratories operated by some Local Animal Disease Inspection Authorities (LADIAs). A diagnostic reporting system feeds into an Animal Health Information System that serves the national VA.

The laboratory network includes OIE reference centres for classical swine fever (CSF) and two diseases of shrimp. Through AHRI, the network has established linkages with international reference laboratories on new and emerging diseases. AHRI operates an Exotic Animal Disease Laboratory which is a strictly isolated and negative-pressurized PC3 facility.

While funding is stable, in some instances, questions arose as to whether the laboratories are used to full capacity. In assessing the full return on investment, one must bear in mind the laboratory contributions to the national economy through the employment and foreign exchange revenues from the commercialization of vaccines they have developed. There is also a significant contribution to national economic and food security in having the capacity to deal quickly with a major epizootic or food safety crisis through surge capacity in laboratory testing and/or the rapid development of vaccines that may not be commercially viable for production by the private sector.

All major laboratories have certified quality assurance programmes, including AHRI, Animal Drug Inspection Branch (ADIB), ATRI, Animal Disease Diagnostic Centres (ADDC) and Technical Services Centre (TSC). Key exceptions are the laboratories operated by LADIAs for screening tests (e.g. RBPT proficiency) and submission of samples to the main diagnostic laboratories.

Risk Analysis

Risk analysis is used to make decisions on imports and trade agreements with partners as well as for the design of surveillance programmes. An Animal Health Information System supports epidemiological analyses and disease control and prevention measures. Committees of experts are used to develop independent science-based risk assessments. Information on risk assessments is provided to stakeholders, international agencies and trading partners through publications, meetings and by posting reports on a web site in the case of the Taiwan Food and Drug Administration (TFDA).

Quarantine and border security

There are well-resourced border control and quarantine services with extensive public awareness and information campaigns. Effective coordination is practiced with several agencies (Customs, TFDA, police, coast guard) to reduce import risks.

Animal Health

Chinese Taipei has effective passive and active disease surveillance and reporting systems from the city/county/township to central levels, with good evidence of negative and positive reports being generated and disseminated, including to the public health sector and other stakeholders and internationally through the OIE. Web-based reporting systems are currently operational and user-friendly. Active surveillance programs are undertaken for rabies, FMD, Highly Pathogenic Avian influenza (HPAI), tuberculosis, brucellosis and Bovine Spongiform Encephalopathy (BSE).

Adequate legislative provisions and financial arrangements exist for disease prevention, control, and eradication, including compensation. The VA promotes farmer awareness and cooperation (e.g. recent cases of FMD, ASF and HPAI).

Disease prevention and control systems address priority areas including:

- ASF: Priorities are prevention and emergency preparedness, including simulation exercises. Questions were raised about risks posed by assembly of pigs at auction markets and swill feeding despite control measures in place. There were also questions about whether surveillance might be strengthened for smallholder farms and whether the VA should rely on health declarations from farmers rather than certificates from veterinarians for livestock movement.
- HPAI: Questions arose about surveillance and control for smallholder farms and whether a review of prevention and control programmes might be warranted.
- FMD: Good progress has been made on zoning and work is underway to complete and maintain recognition of freedom without vaccination.
- Rabies: Effective inter-agency collaboration and good science have documented a previously unknown presence of rabies in ferret badgers. Surveillance, vaccination, dog population control, and awareness campaigns are in place.

Food Safety

Regulations, authorization and supervision procedures for establishments producing food of animal origin are defined and sufficient resources are allocated. Good coordination exists between BAPHIQ and TFDA at central and local levels but could be further strengthened. There is a need to simplify procedures and to continue developing inter-operative information systems to apply one health approaches to improve public health.

Ante- and post-mortem inspection meets international standards at all slaughterhouses. Active investigations and a penalty system are in place to combat Illegal slaughtering.

NPOs (ATRI and NAIF) are “commissioned” under a formal delegation process to conduct slaughterhouse meat inspection training and operations and related food safety activities. This provides technical and scientific resources without compromising technical independence while limiting the number of public service positions required.

Veterinary Drugs/Biologicals and AMR

A comprehensive regulatory framework exists for registration and inspection of veterinary medicinal products and to control their use. Chinese Taipei has capacity to develop and produce vaccines and an appropriate cold chain. These are important assets if emergency vaccination is required and support reduced use of antimicrobials. Growth promoters are being delisted and the policy is supported by industry. Development of a comprehensive pharmacovigilance programme would complement existing registration and other controls on veterinary medicinal products.

A task force involving several government agencies and private stakeholders is in place as well as initial baseline studies for control of AMR. A National AMR Action Plan has been drafted but needs to be finalised.

Animal Feed

A comprehensive system is in place to register and inspect all feed production establishments, including “on farm” feed production. In addition, chemical and microbiological controls are in place for feed produced in the country or imported. The VA, other agencies and contracted NPOs play roles in feed safety and good coordination exists. Swill feeding of pigs poses a disease risk despite controls in place.

Identification & Traceability

All animal farms are given unique identifiers by the VA. The VA has access to an information system that provides GPS coordinates and other information on animal farms. Cattle, sheep and goats have unique ID and pigs are given serial numbers at auction or prior to slaughter. Movement of poultry to slaughter requires a health certificate from a veterinarian, while for livestock only a health declaration is required from the farmer raising questions noted previously. The official VA requirements are supplemented by additional private standards.

The use of new smart technology for labelling and traceability of food products is very impressive and comprehensive. Further experience with the recall of products to test the system’s effectiveness is needed.

Animal Welfare

Animal welfare regulations are in place for production, transport, and slaughter of livestock and poultry. Actions are now required to strengthen implementation of these regulations and to monitor performance. Additional animal husbandry welfare standards are being driven by market demand. A program of training and certification of animal handlers is in place.

I.2.C Interaction with stakeholders

Communication, consultation & joint programs

The VA/VS have effective communication with all stakeholders using strategies for different audiences that are professionally developed. Social media is used to share information, raise awareness and consult stakeholders and the general public. Crisis communication is defined with clear procedures and coordination amongst the various governmental agencies. Education, especially of the younger generation, on issues such as conservation of biodiversity is remarkable. These measures create strong stakeholder engagement and public support.

Poultry and livestock associations are well organized and influential. The VA consults them frequently and there are joint policies. Care is required and exercised to ensure that the VA maintains its technical independence.

Delegation to NPOs (ATRI and NAIF) for functions ranging from risk assessment to meat inspection and residue monitoring is an effective use of public private partnerships and enhances engagement of stakeholders.

Management of the Veterinary Profession

An effective certification/licencing regime exists for veterinarians. Certification of veterinarians is done by BAPHIQ following a national accreditation exam and subsequent licensing requires membership in the local veterinary medical association. Prior to 2009 certification of veterinary assistants was also performed by BAPHIQ and LADIAs on the basis of their education, a national exam and work experience. Work has been proposed to re-establish an accreditation regime and to strengthen the training and supervision of Veterinary Assistants.

The Taiwan Veterinary Medical Association is the accreditation body for mandatory continuing education. A separate education and licencing regime for veterinary paraprofessionals is operated by ATRI and NAIF for meat inspection.

I.2.D Access to markets

Legislation

Comprehensive legislation and supporting regulations and procedures exist and are enforced for most areas of the veterinary domain. Questions arose about whether there are sufficient legal specialists for updating of legislation and to support compliance promotion and enforcement of priority programmes (e.g. ASF, HPAI, FMD, AMR).

Trade

The VA actively participates in meetings with international organizations and trading partners and implements evolving standards. International certification procedures require vertical and horizontal collaboration amongst multiple agencies.

Plans exist to complete the OIE process for recognition of FMD free zones without vaccination.

Compartmentalisation should be developed to protect food security and markets from disease outbreaks.

Enhanced audit/evaluation measures may assist to ensure the effectiveness of zones and compartments if and when established.

Table 1: Summary of OIE PVS evaluation results

PVS summary results of Chinese Taipei	Result 2019
I. HUMAN, PHYSICAL AND FINANCIAL RESOURCES	
I.1.A. Staffing: Veterinarians and other professionals	**5**
I.1.B. Staffing: Veterinary paraprofessionals	**3**
I.2.A. Competency and education of veterinarians	**5**
I.2.B. Competency and education of veterinary paraprofessionals	**3**
I.3. Continuing education	**4**
I.4. Technical independence	**5**
I-5. Planning, sustainability and management of policies and programmes	**4**
I-6.A. Internal coordination (chain of command)	**4**
I-6.B. External coordination (including the One Health approach)	**4**
I-7. Physical resources and capital investment	**5**
I-8. Operational funding	**5**
I-9. Emergency funding	**5**
II. TECHNICAL AUTHORITY AND CAPABILITY	
II-1.A. Access to veterinary laboratory diagnosis	**5**
II-1.B. Suitability of the national laboratory infrastructures	**5**
II-1.C. Laboratory quality management systems	**3**
II-2. Risk analysis and epidemiology	**5**
II-3. Quarantine and border security	**5**
II-4.A. Passive surveillance, early detection and epidemiological outbreak investigation	**4**
II-4.B. Active surveillance and monitoring	**4**
II-5. Emergency preparedness and response	**5**
II-6. Disease prevention, control and eradication	**5**
II-7.A. Regulation, inspection, authorisation and supervision of establishments for production and processing of food of animal origin	**5**
II-7.B. Ante- and post mortem inspection at slaughter facilities and associated premises	**5**
II-8. Veterinary medicines and biologicals	**4**
II-9. Antimicrobial Resistance and Antimicrobial Use	**2**
II-10. Residue testing, monitoring and management	**5**
II-11. Animal feed safety	**4**
II-12.A. Premises, herd, batch and animal identification, tracing and movement control	**5**
II-12.B. Identification, traceability and control of products of animal origin	**4**
II-13. Animal welfare	**4**
III. INTERACTION WITH STAKEHOLDERS	
III-1. Communication	**5**
III-2. Consultation with stakeholders	**5**
III-3. Official representation and international collaboration	**5**
III-4. Accreditation/authorisation/delegation	**5**
III-5. Regulation of the profession by the Veterinary Statutory Body (VSB)	**4**
III-6. Participation of producers and other stakeholders in joint programmes	**5**
III-7. Veterinary clinical services	**5**
IV. ACCESS TO MARKETS	
IV-1.A. Integrity and coverage of legislation and regulations	**4**
IV-1.B. Implementation of and compliance with legislation and regulations	**4**
IV-2. International harmonisation	**5**
IV-3. International certification	**4**
IV-4. Equivalence and other types of sanitary agreements	**4**
IV-5. Transparency	**5**
IV-6. Zoning	**5**
IV-7. Compartmentalisation	**NA**

NA: Not Applicable

I.3 Key recommendations

I.3.A Human, physical and financial resources

To improve their human, physical and financial resources, the VS should consider the following recommendations:

Staffing

- Commission a thorough study on evolving workforce needs[5] to inform BAPHIQ, the Taiwan Veterinary Medical Association (TVMA) and the veterinary education establishments (VEE) of current and future needs for veterinarians and veterinary paraprofessionals (VPP) in both the public and private sectors. The study must include coverage of remote rural areas and smallholder farms and take account of the need to address emerging regional and global pressures such as ASF, zoonoses, AMR and food safety.
- Priority should be assigned to a national initiative to develop a "Veterinary Medical Assistant System" that would establish standardized training, accreditation and supervision for Veterinary Assistants, and which should be consistent with OIE Guidelines[6].

Policy and Management

- Consistent with a perspective articulated by the CVO, broaden and strengthen the use of evaluations and audits to systematically review the effectiveness and efficiency of programmes using approaches such as "value for money audits"[7]. Priority programme areas would include the vertical coordination (chain of command), disease prevention and control, food safety, border operations and law enforcement.
- Continue to strengthen systems and activities that support an effective chain of command and collaboration amongst public health, animal health, and food inspection sectors at both local and national levels to enhance food safety and improve outbreak investigation capabilities. Measures to consider include formal reviews under the afore-mentioned enhanced audit/evaluation regime.

Resources

- Maximize the return on investment from Chinese Taipei's national science and management capacity by:
  - continuing to develop commercially viable products such as a Porcine Reproductive and Respiratory Syndrome (PRRS) vaccine based on a patented technology that has generated employment and foreign exchange,
  - using Chinese Taipei's vaccine certification and production capacity to ensure that the country is positioned to be an early adopter of much

[5] An example of such a study is available from Australia - see: https://www.voced.edu.au/content/ngv%3A77334 and https://www.voced.edu.au/content/ngv%3A77335

[6] OIE Guidelines for Veterinary Paraprofessionals – see:
http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/A_Competence.pdf
and
http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/AF-CoreCV-ANG.pdf

[7] Value for Money Audits" - see: http://publications.gc.ca/collections/Collection/FA3-30-2000E.pdf and http://www.auditor.on.ca/en/content/annualreports/arreports/en16/v1_300en16.pdf

needed products such as an effective ASF vaccine if/when one becomes available[8],

- offering international support in veterinary science and programme management and leadership to less developed countries through international development programmes, including possible collaboration with OIE.

➢ Incorporate cost-benefit analysis as appropriate into high level decision-making including for major capital investments.

I.3.B Technical authority and capability

Laboratories

To improve their technical authority, capability and impact, the VS should consider the following recommendations:

➢ As noted above, the impressive scientific and diagnostic capacity of this network could be used to support less developed countries a) for laboratory diagnostic work and b) for the management and operation of a diagnostic network spanning central and local governments.

➢ Review laboratory testing programmes to balance costs and workload while maintaining the technical excellence required to develop and apply vaccine and testing methods and to provide surge capacity for responses to national emergencies.

➢ LADIA laboratories that provide veterinary services should participate in the national quality management systems and be provided with the required human, training and technical resources.

Risk Analysis

➢ Consider enhancing capacity for advanced training on risk analysis.

➢ Continue to apply risk analysis and cost-benefit analyses in reviewing disease control and food safety programmes.

➢ BAPHIQ should consider publishing risk assessment reports on a website similar to the policy and process adopted by TFDA.

Quarantine and Border Security

➢ Review and where warranted improve the inspection facilities and sample collection areas at warehouses to preserve an effective cold chain.

➢ Include border operations in the proposed enhanced audit and evaluation approaches.

Animal Health

➢ Review and enhance the Animal Health Information System (AHIS) to provide a fully integrated information system operating in real-time to capture the reporting and investigation of suspect diseases and the results of diagnostic testing.

➢ Assess risks, and as required strengthen controls and surveillance at all (including small-scale) abattoirs, livestock markets, and poultry wholesale markets with clear guidelines for sampling of animals rejected on the basis of

[8] Reports on ASF vaccine research- see: https://www.sciencedaily.com/releases/2019/05/190507110426.htm and https://www.reuters.com/article/us-china-swinefever-vaccine-idUSKCN1SU0L4

poor health, including veterinary presence at livestock and poultry markets with a focus on inspection and passive surveillance.

- Ensure that active surveillance sampling plans cover the full spectrum of farm and production types, including smallholder farms.
- Consider reviewing the cost-benefit of undertaking high levels of active surveillance for endemic diseases of limited economic impact.
- Review current HPAI prevention/control programmes to define objectives and required tools and measures.
- Review the reliance on farmers' declarations for livestock movement and consider adding information from movement documents (health certificates for poultry and health declaration for livestock) to the animal health management system.
- Consider establishing a training/simulation programme on emergency preparedness and response for all staff including top national officials and local authorities as well as stakeholders according to their roles. Similarly, consider additional contingency plans for key risks including possible emerging diseases.

Food Safety

- Strengthen risk-based sampling and inspection plans for food business operators.
- Develop baseline studies of foodborne pathogens on farms.
- Continue to strengthen coordination and sharing of information between the Taiwan Centers for Disease Control (TCDC), TFDA, and Council of Agriculture (COA) to facilitate rapid identification and control of foodborne illness and prevention of food contamination and disease outbreaks.
- Assess the risks for cross contamination of carcasses by automatic evisceration and inspection by cutting vs palpation.

Veterinary Drugs/Biologicals and AMR

- Develop and implement a pharmacovigilance programme.
- Further employ technical capacity to support regional and international research and development of Veterinary Medicinal Products (VMP).
- Approve and implement the National AMR action plan.
- Work to further improve links amongst surveillance systems for foodborne pathogens and AMR organisms. Review robustness of the surveillance plan for AMR in the animal sector (prior to slaughterhouses) and consider integrating human health information.

Animal Feed

- Assess and eliminate risks of swill feeding through policies to carefully manage and eradicate the practice.

Identification & Traceability

- Conduct periodic audits on the effectiveness of identification and traceability procedures, in coordination with TFDA.
- Conduct simulation exercises and/or a review of a relevant food safety incident to verify the effectiveness of traceback/traceforward and product recall protocols.

Animal Welfare

- Continue implementing animal welfare programmes, including action to address non-compliance issues and the establishment of regular audits and reviews.

I.3.C Interaction with stakeholders

To improve their interaction with stakeholders, the VS should consider the following recommendations:

Communication, consultation & joint programs

- As the veterinary authorities actively seek input from interested parties on policy issues it is important to ensure that the views of smaller producers are also captured.
- Chinese Taipei has the technical competency and capacity to provide an important contribution to animal health and welfare and should continue to strengthen its international collaboration activities to this end.
- Priority should continue to be assigned to training personnel while audit results and surveillance inspection findings should continue to be analysed to guide policies and procedures.

Management of the Veterinary Profession

- Establish educational programmes, a certification regime and rules and responsibilities for the regulation of veterinary paraprofessionals in accordance with OIE standards.

I.3.D Access to markets

To improve their access to markets, the VS should consider the following recommendations:

Legislation

- Develop/amend legislation to set standards for and require the registration of veterinary paraprofessionals.
- Ensure sufficient legal professionals are available by drawing on resources of COA to keep current the Acts and regulations required by the VA.
- Consider strengthening audit and evaluation of compliance promotion and enforcement for priority programmes such as ASF, HPAI, FMD and AMR.

Trade

- Seek ways to enhance the coordination of work and the flow of information amongst inspection agencies for import/export certification and consider e-certification.
- Enhance engagement of interested parties if and when required for expanded trade in the region and more broadly.
- Maintain the current FMD free zones with vaccination and proceed with plans to establish and seek official recognition for an FMD free zone without vaccination. To that end:
    - Ensure that staffing at field level and movement control posts is adequate to support an FMD-free zone without vaccination, and

- Consider enhanced audit/evaluation of prevention and control measures to support the FMD free zones.

➢ A policy and regulations for compartmentalisation should be established to protect domestic food production and export markets and to prevent and control disease spread in the event of an emergency outbreak of a disease such as ASF.

PART II: CONDUCT OF THE EVALUATION

At the request of the Government of Chinese Taipei, the Director General of the OIE appointed an independent OIE PVS team consisting of Dr Barry Stemshorn (Team Leader), Dr Ana Afonso (Technical expert), and Dr Thanawat Tiensin (Trainee Expert) to undertake an evaluation of the veterinary services of Chinese Taipei. The evaluation was carried out from 15-26 April 2019.

The evaluation was carried out with close reference to the OIE standards contained in Chapters 3.1., 3.2., 3.3. and 3.4., and in other chapters as relevant, of the OIE *Terrestrial Animal Health Code* (the Terrestrial Code), using an interim version of the *OIE PVS Tool* - 7th Edition, 2019[9] to guide the process. Relevant Terrestrial Code references are referenced for each Critical Competency in Appendix 1.

This report identifies the strengths and weaknesses of the veterinary services of Chinese Taipei as referenced to the OIE standards. The report also makes some general recommendations for actions to improve performance.

II.1 OIE PVS Tool: method, objectives and scope of the evaluation

To assist countries to establish their current level of performance, form a shared vision, establish priorities and carry out strategic initiatives, the OIE provides an evaluation tool called the OIE Tool for the Evaluation of Performance of Veterinary Services (OIE PVS Tool[10]) which comprises four fundamental components:

- Human, physical and financial resources
- Technical authority and capability
- Interaction with stakeholders
- Access to markets

These four fundamental components encompass 45 Critical Competencies, for each of which five qualitative levels of advancement are described. For each Critical Competency, a list of suggested sources of verification was used by the OIE PVS Team to help determine the level of advancement.

A glossary of terms is provided in Appendix 2.

The report follows the structure of the OIE PVS Tool incorporating the descriptions and levels of advancement for each Critical Competency.

The objective and scope of the OIE PVS Evaluation includes all aspects of the veterinary domain relevant to the OIE Terrestrial Animal Health Code and the quality of Veterinary Services.

[9] The final version of the OIE PVS Tool - 7th Edition has been published in April 2019. The interim version used for the PVS Evaluation mission in Chinese Taipei is very similar to the final version and the results of the mission should be considered as valid and comparable as those from missions undertaken with the final version.

[10] Available at http://www.oie.int/solidarity/pvs-evaluations/oie-pvs-tool/

II.2 Context of the evaluation

II.2.A Availability of data relevant to the evaluation

A list of documents received by the OIE PVS Team before and during the PVS Evaluation mission is provided in Appendix 6. All documents and pictures listed in Appendix 6 are referenced to relevant critical competencies and provide material evidence for the levels of advancement and related findings.

The following table provides an overview of the availability of the main categories of documents or data needed for the evaluation, taking into account the requirements set out in the OIE Terrestrial Code.

Table 2: Summary of data available for evaluation

Main document categories	Data available in the public domain	Data accessible only on site or on request	Data not available
→ **Animal census:**			
o at 1st administrative level	x		
o at 2nd administrative level	x		
o at 3rd administrative level	x		
o per animal species	x		
o per production systems	x		
→ **Organisations charts**			
o Central level of the VS	x		
o 2nd level of the VS	x		
➢ 3rd level of the VS	x		
→ **Job descriptions in the VS**			
o Central levels of the VS		x	
o 2nd level of the VS		x	
➢ 3rd level of the VS		x	
→ **Legislations, regulations, decrees …**			
o Animal health and public health	x		
o Veterinary practice	x		
o Veterinary statutory body	x		
o Veterinary medicines and biologicals	x		
o Official delegation	x		
→ **Veterinary census**			
o Global (public, private, veterinary, para-professional)		x	
o Per level		x	
o Per function		x	
→ **Census of logistics and infrastructure**		x	
→ **Strategic plan(s)**	x		
→ **Operational plan(s)**		x	
→ **Activity reports**		x	
→ **Financial reports**	x		
→ **Animal health status reports**	x		
→ **Evaluation reports**		x	
→ **Procedures, registers, records, letters …**		x	

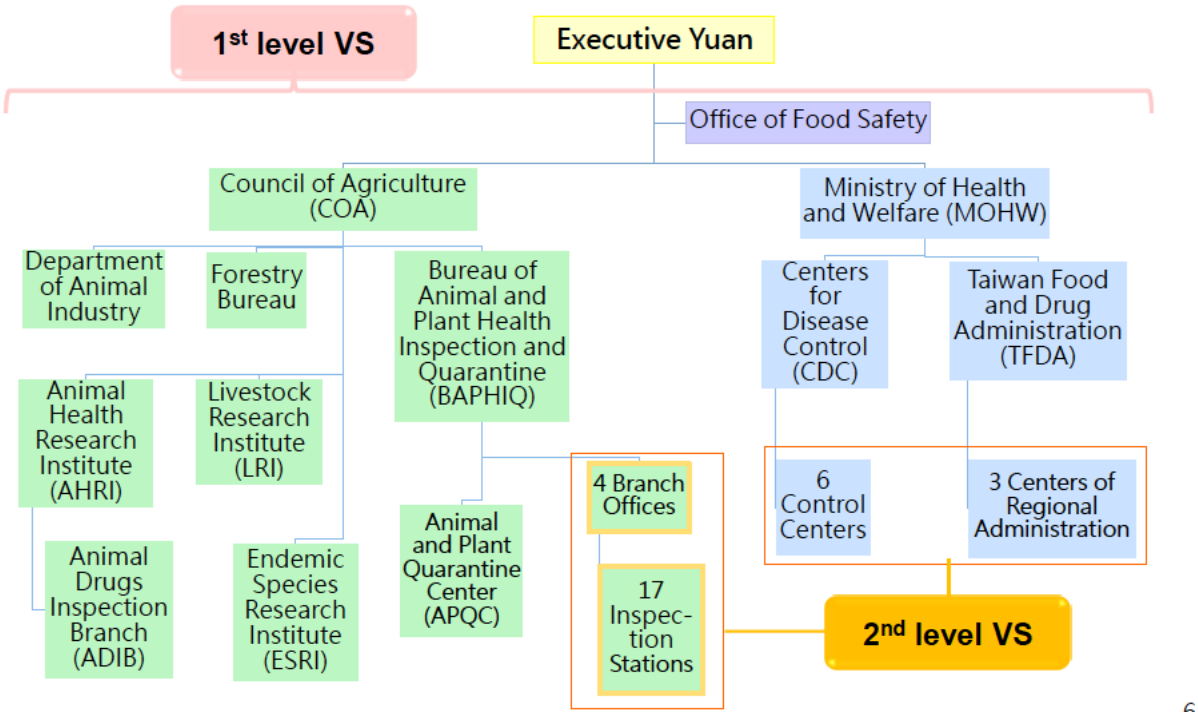
II.2.B General organisation of the Veterinary Services

1. Competent authorities for animal health in Chinese Taipei

The Council of Agriculture (COA) is the competent authority of the agricultural affairs in Chinese Taipei. The Department of Animal Industry in the Council is responsible for the management and protection of animals. Under the Council, the Bureau of Animal and Plant Health Inspection and Quarantine (BAPHIQ) is responsible for veterinary administration including inspection and quarantine of animal and plant health; AHRI is responsible for animal disease diagnosis, setting up standard for disease diagnosis, evaluation of testing ability of other laboratories for disease diagnosis, and assay for animal health products; and the Forestry Bureau is responsible for wildlife management and conservation.

Important non-veterinary service authorities in the Central Government under the Ministry of Health and Welfare are the *Center for Disease Control* (CDC) which is responsible for zoonoses and the Food and Drug Administration (TFDA) which is in charge of hygiene and food safety. Under COA the Department of Animal Industry (DAI) is responsible for regulation and control of animal feed while aspects related with medicated animal feed are under BAPHIQ's responsibility.

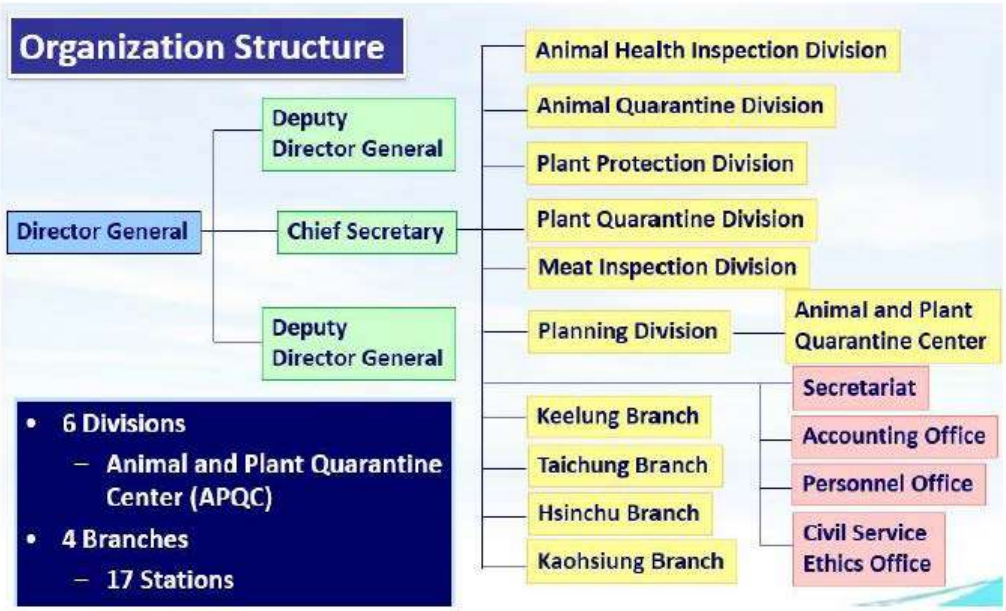
Figure 1: Executive Yuan: Council of Agriculture and Ministry of Health and Welfare



Central and regional levels of the national Veterinary Authority (BAPHIQ)

The headquarters of the national Veterinary Authority is BAPHIQ[11] (please refer to Figure 2). The Bureau has 1 Director General, 2 Deputy Director Generals (one each for animal and plant affairs), 1 Chief Secretary, 6 Divisions (Animal Quarantine Division, Animal Health Inspection Division, Meat Inspection Division, Plant Quarantine Division, Plant Protection Division, and Planning Division), 1 Animal and Plant Quarantine Center, and 4 administrative offices (Secretariat, Accounting office, Personnel office, and Civil Service Ethics Office).

Figure 2: Organisational structure of the national Veterinary Authority BAPHIQ



The main veterinary responsibilities of the BAPHIQ Headquarters are:

- Establish, implement, and oversee policies, regulations, programmes, and projects concerning the health inspection and quarantine of animals, inspection of livestock and poultry slaughtered, medicines and sanitary materials for animals, and veterinary public health issues;
- Establish, implement, and oversee policies, regulations, programmes, and projects concerning the management of the animal health inspection and quarantine personnel and veterinarians;
- Research and development of technology and technical services on animal health inspection and quarantine; establish, implement, and supervise techniques, procedures, and methods concerning health inspection and quarantine of animals and the management of livestock and poultry slaughtered;
- Epidemic reporting, information collection, risk analysis, technical consultation, and consultation services for domestic and foreign health inspection and quarantine of animals and the management of livestock and poultry slaughtered;

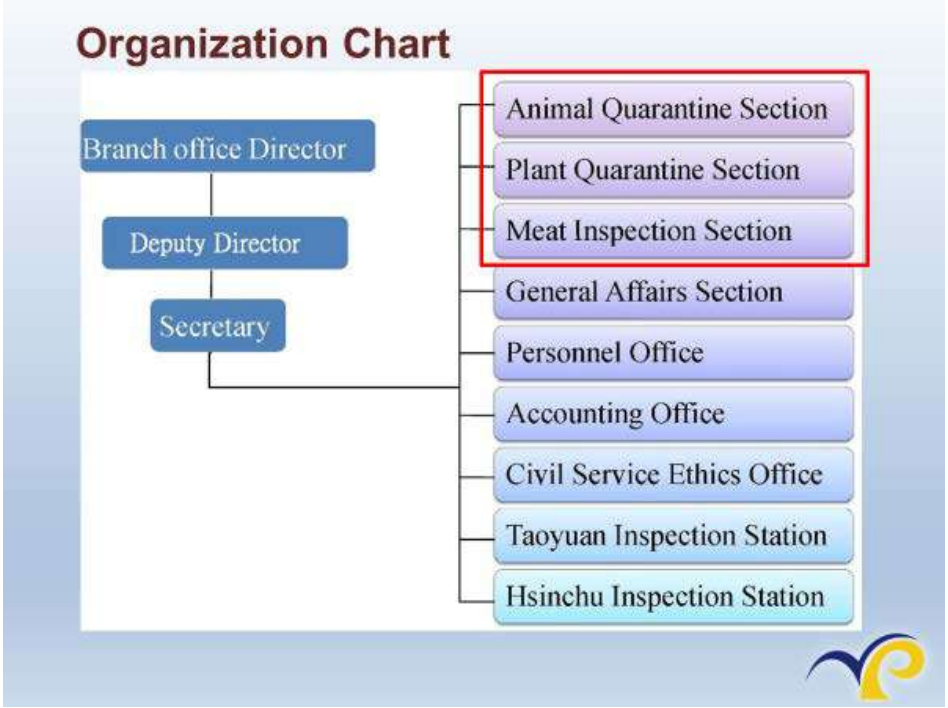
[11] Address: 9F., No. 100, Sec. 2, Heping W. Rd., Zhongzheng Dist., Taipei City

- Inspection and treatment of imported and exported animals, and products of livestock, poultry, and aquatic animals;
- Issuance of certificates, inspection, management, and supervision for importation and exportation of animals and their products;
- Management and training of the personnel for animal health inspection and quarantine, as well as livestock and poultry slaughtered;
- Other issues concerning the health inspection and quarantine of animals and management of livestock and poultry slaughtered.

In addition, the Bureau has 4 branches (the Keelung Branch, Hsinchu Branch, Taichung Branch, and Kaohsiung Branch) near the international airports and harbours, with a total of 17 inspection stations (Figure 3).

Figure 3: Location of BAPHIQ Headquarters, 4 Branches, and 17 Inspection Stations

Figure 4: Organisation chart of Hsinchu Branch 1 of 4 BAPHIQ Branches



The main veterinary responsibilities of the Branches are:

- The quarantine of the importing and exporting animals, and their products as well as other quarantine items;
- Oversight of livestock and poultry slaughter operations and inspection services;
- Issuance, inspection and management of the quarantine certificate of animals and their products; the meat inspection certification of livestock and poultry slaughtered, and the inspection/certification of imported and exported meats;
- Inspection at the production sites for exporting animals and their products;
- Detection and reporting of animal diseases and information on livestock and poultry slaughtered;
- Assist in supervising the activities for health inspection on animals by the local agricultural competent authority;
- Other issues concerning health inspection and quarantine of animals; and the management of livestock and poultry slaughtered.

Information systems

1. Animal Health Information System (AHIS) (https://ahis.baphiq.gov.tw/app/)

AHIS serves BAPHIQ, LADIAs and their laboratories. A contact in each LADIA has been assigned to collect health information based on the diagnostic results from laboratories to provide the current disease information and early warning information for BAPHIQ and neighbouring LADIAs. This system is restricted to BAPHIQ, LADIAs and Laboratories personnel.

Sub-systems of AHIS are described as follows (PME1):

a. Animal disease reporting system

For the LADIAs to report current animal disease information, record the survey and receive testing results for the epidemiological studies. The system, built in 1997, has been continuously improved for the past decade. It facilitates the information exchange among BAPHIQ and LADIAs.

b. Farm Integrated Information management system

Built to integrate/ synchronize the farm information in 4 sub-systems of AHIS, which are:

i) Animal disease geographic information system,

Enable BAPHIQ and LADIAs to understand the geographic location of the infected premises (IP). All animal production units are registered. Lists of livestock or poultry farms located in control area of the IP can be taken from the system. Movement control and further epidemiological investigation can be implemented.

ii) Animal disease surveillance information management system,

Lists sampled livestock farms, the testing results and other relevant information. The surveillance data on AI including migratory birds, Rabies, FMD, and other major animal diseases are recorded.

iii) Livestock farm's disease inspection Information management system

The national survey data of livestock farms are recorded and updated regularly. This system can provide basic information of livestock farms for disease inspection, which facilitate follow-up data analysis, tracking and application.

iv) FMD vaccination management system.

This system Integrates with "livestock farm's disease inspection Information management system" and "pig farm information" from NAIF. LADIAs can record the current information on the distribution and vaccination of FMD.

c. Sheep pox and goat pox vaccination information system

To prevent the spread of an outbreak of sheep pox and goat pox in 2009, a vaccination programme was established. LADIAs keep records of vaccinations and manage the vaccine stocks.

d. Auction market hygiene and health management system

Built for implementing FMD control measures in the field, namely auction market's self-defence and disinfection procedures, this system simplifies communication and reporting. Auction markets and slaughterhouses enter information on hygiene management and animal health conditions in the slaughterhouse, and the information concerning FMD immune Certificate collection, false case reporting and handling.

e. Rabies vaccination management system

The system was built to support rabies vaccination and understanding of the distribution of dogs and cats in each Municipality/City/County. Information on pet animal owners and their pet's information on rabies vaccination can be retrieved. The monthly and

annual statistical data including the total number of vaccinated and unvaccinated pets in each Municipality/City/County can be generated automatically. This information can be used for LADIAs and BAPHIQ to track and control the rabies vaccination status.

f. Tracking management system for dogs and cats in and out of outlying islands

To reduce the probability of rabies invasion from mainland China through the "Mini-Three-Links" policy channel, it is necessary to strengthen the management and monitoring of dogs and cats entering and leaving the outlying islands. This system provides the basic information of dogs and cats in and out of Kinmen, Matsu and Penghu areas including their residences, vaccination status and photos for tracking management.

k. Management system for cattle selling to Chinese Taipei from Kinmen

The system is built in accordance with the “Directions of fresh boneless beef selling to Chinese Taipei from Kinmen” and “Directions of fresh bovine offal and its products selling to Chinese Taipei from Kinmen” to control the necessary procedures for sale of cattle carcasses and products to Chinese Taipei. The Kinmen County Government and BAPHIQ can file and manage the cattle information, disease testing results, batch number of beef cuts and packaging, quantity etc.

2. Food Safety Information Systems

There are two important but separate food safety information platforms (E110):

a) **Meat Inspection Information Web:** Also known as the Livestock and poultry slaughtering and meat inspection management system, it is managed by the Meat Inspection Division of BAPHIQ. Its components and users are described in Figure 5.

The web link is: https://miweb.baphiq.gov.tw/sso/SSOlogin.asp

A user password is required for access.

b) **Food Safety Cloud Platform:** This is managed by TFDA and the Food Safety Office.

Its components and users are described in Figure 6.

The web link is: https://www.fda.gov.tw/tc/fdadobook/index.html

Figure 5: Meat Inspection Information Web (E129a)

Food Safety Information system: Veterinary Public Health — Meat Inspection Information Web ●Access X Not available

Name of the System Source Inst.: BAPHIQ	Sub system/ Integrated system		User access / Inst. In charge						link
			Public	Specific user	Related Testing Inst.	Local Authority LADIA / Township	2nd level 4 Branches	1st level HQ BAPHIQ	
Livestock and poultry slaughtering and meat inspection management system (Meat Inspection Information Web)	A	Uniform Farm ID Number search platform	X	● Private veterinarians	X	●	●	●	https://nu.baphiq.gov.tw/ranchWS/login.do
	B	Poultry health certificate/ Livestock health declaration record system	X	● Meat Inspectors /Inspectors of auction markets	X	●	●	●	https://miweb.baphiq.gov.tw//sso/SSOlogin.asp
	C	Pathology sample delivery system	X	● Veterinarian-in-charge	● ATRI 4 Universities	X	X	●	
	d	Slaughterhouse Inspection Application and Fee Management System	X	● Meat Inspectors/ Slaughterhouses	X	X	●	●	
	e	Meat inspector's shift arrangement and information system	X	● Veterinarian-in-charge	● NAIF	X	●	●	
	f	"INSPECTED AND PASS" symbol register System	● (Through QR code)	● slaughterhouses	X	X	●	●	
	g	Meat Inspection Information System	X	●	X	X	●	●	

Figure 6: Food Safety Cloud Platform (E129b)

Food Safety Information system: Public Health — Food Safety Cloud Platform ●Access X Not available

Name of the System Source Inst. : TFDA	Sub system/ Integrated system		User access / Inst. In charge						link
			Public	Specific user Food Businesses	Related Inst.	Local Authority Local Health Bureau	2nd level Center for Regional Administration	1st level HQ TFDA	
Food Safety Cloud Platform https://www.fda.gov.tw/tc/fdadobook/index.html	1	The Registration Platform of Food Businesses (Fadenbook)	●	●	● Toxic and Chemical Substances Bureau, EPA (TCSB)	●	●	●	[Eng Search] https://fadenbook.fda.gov.tw/pub/search-En.aspx
	2	Food Traceability Management Information System (Ftracebook)	●	●	X	●	●	●	[dairy product] https://ftraceconsumer.fda.gov.tw/Mandatory/#/ProductQuery/Search/06000000
	3	Product Management Distribution System (PMDS)	X	X	X	●	●	●	http://pmds.fda.gov.tw/Login.aspx?ReturnUrl=%2f
	4	Imported Food Inspection System (IFI)	X	●	X	●	●	●	http://ifi.fda.gov.tw/ifi/main/ap/index.jsp
		Laboratory Information Management System	X	X	X	●	●	●	http://lims.fda.gov.tw/
		Laboratory Accreditation Management System	●	●	● Laboratory Applying for Accreditation	●	●	●	[keyword input] http://lams.fda.gov.tw/Default.aspx
		Sampling and Testing Management System	X	X	X	X	●	●	http://apinsp/INSPWeb/Default.aspx

Local Veterinary Authorities

There are twenty-two Local Animal Disease Inspection Authorities (LADIAs). Their locations are shown in Figure 7 and a typical organization chart is presented in Figure 8.

Figure 7: Locations of the 22 LADIAs

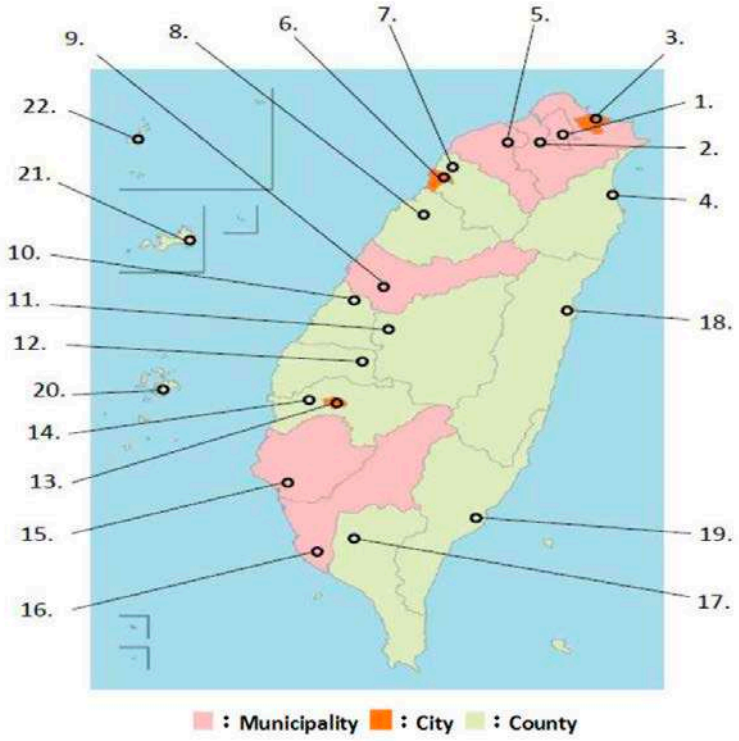
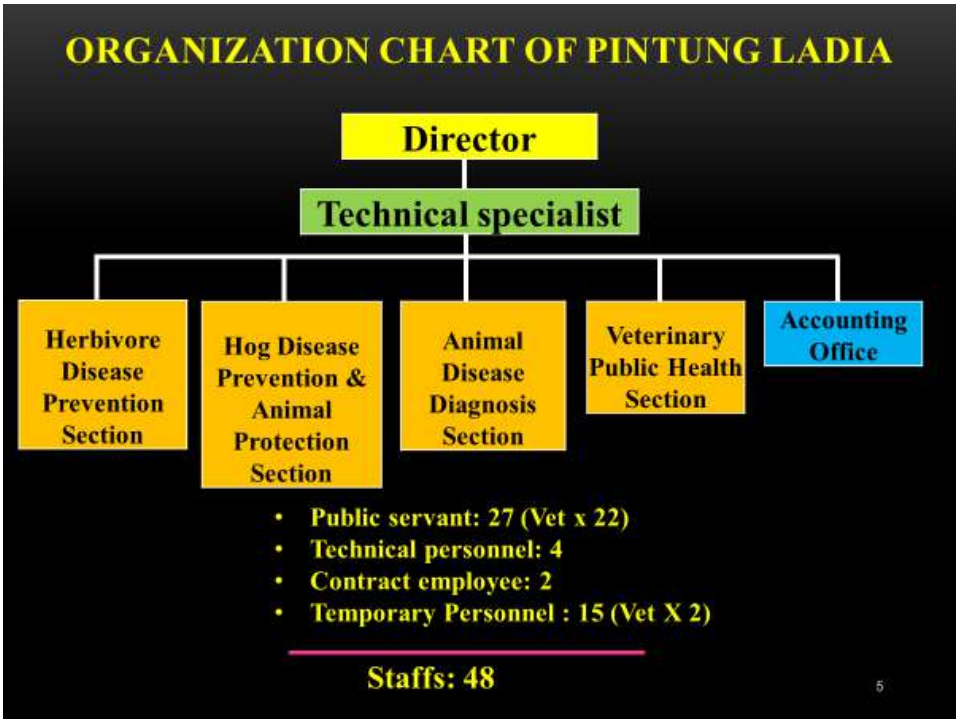


Figure 8: Organisation chart of Pintung Local Animal Disease Inspection Authority



Laboratories

Government Laboratories

The AHRI is the national veterinary laboratory responsible for a wide range of diagnostic and research activities on animal health and veterinary biologics. Through its Animal Drugs Inspection Branch, AHRI is mainly responsible for the inspection and assay of animal health products.

Eighteen of 20 Local Animal Disease Inspection Authorities (LADIAs) operate laboratories; the exceptions are Lienchiang County and Chiayi City. These laboratories collect samples and perform pathological and microbiological screening tests for diseases. In addition, 5 LADIAs (Changhua, Yunlin, Chiayi, Tainan, and Kaohsiung) have fish disease diagnostic centres.

The ATRI performs screening tests on quarantined imported animals for serum antibodies against Foot-and-mouth disease and is responsible for monitoring microbial contamination and antimicrobial resistance on slaughterhouses and farms.

Animal Disease Diagnostic Centers (ADDCs) in Departments of Veterinary Medicine at four Universities conduct screening tests for Avian Influenza and African Swine Fever.

The Department of Veterinary Medicine, College of Veterinary Medicine, National Chung Hsing University and the Department of Veterinary Medicine, College of Veterinary Medicine, National Pingtung University of Science and Technology are responsible for rabies screening tests.

Figure 9: Local Veterinary Authorities and Laboratories

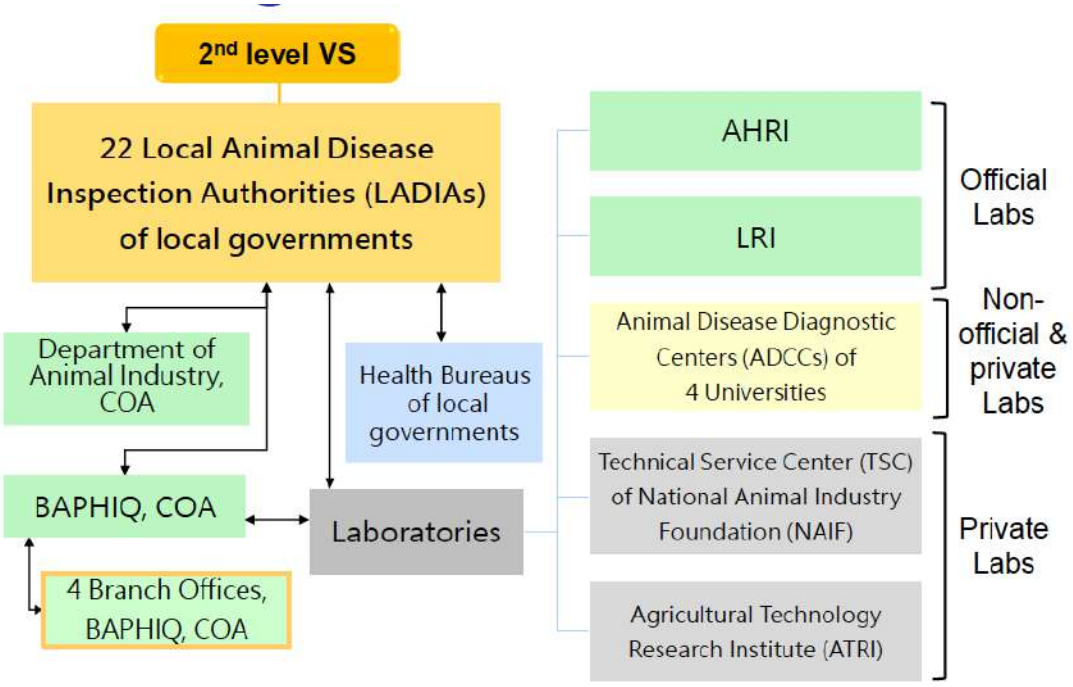
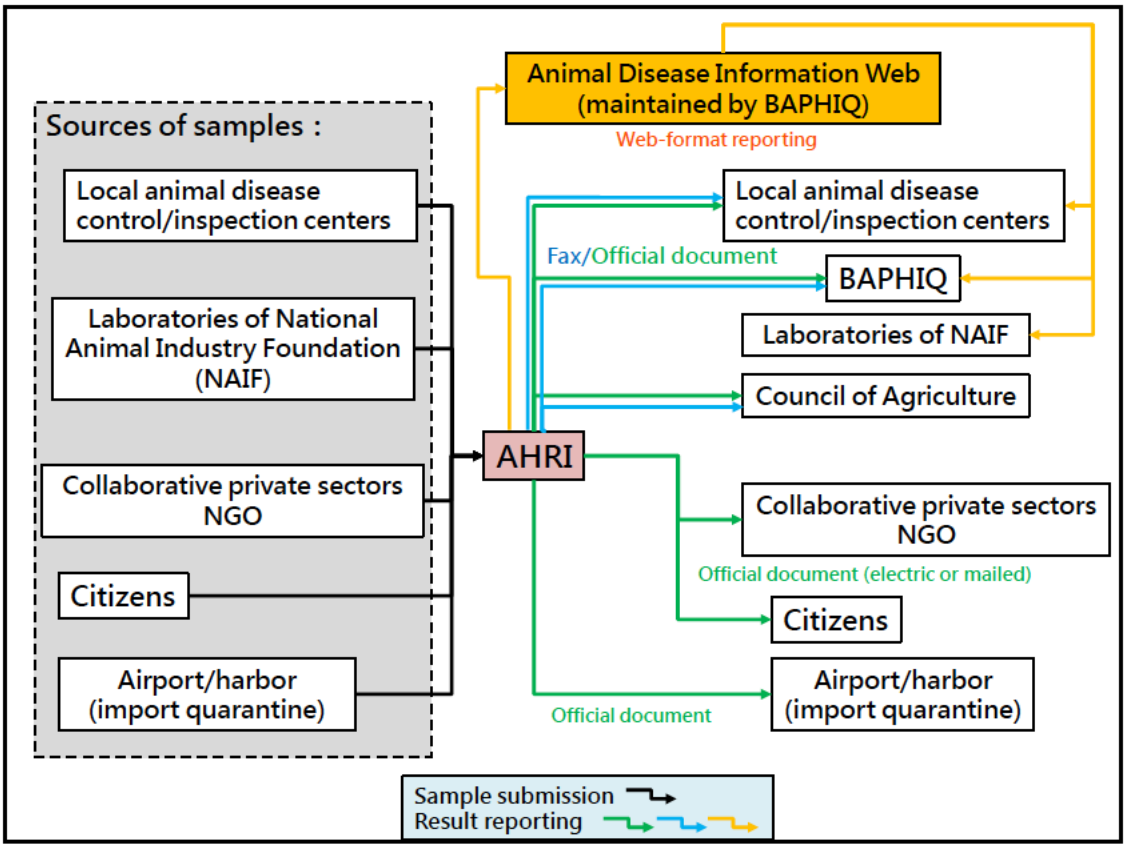


Figure 10: AHRI and Laboratory Network – with sample and reporting pathways



Laboratories authorized by the Veterinary Authority are operated by:

a. The National Animal Industry Foundation with its:

- Technical Service Centre and
- Poultry Health Centres located in 4 universities: Northern Division Laboratory at National Taiwan University (NTU), Central Division Laboratory at National Chung Hsing University (NCHU), Chianan Division Laboratory at National Chiayi University (NCYU) and Southern Division Laboratory at National Pingtung University of Science and Technology (NPUST)

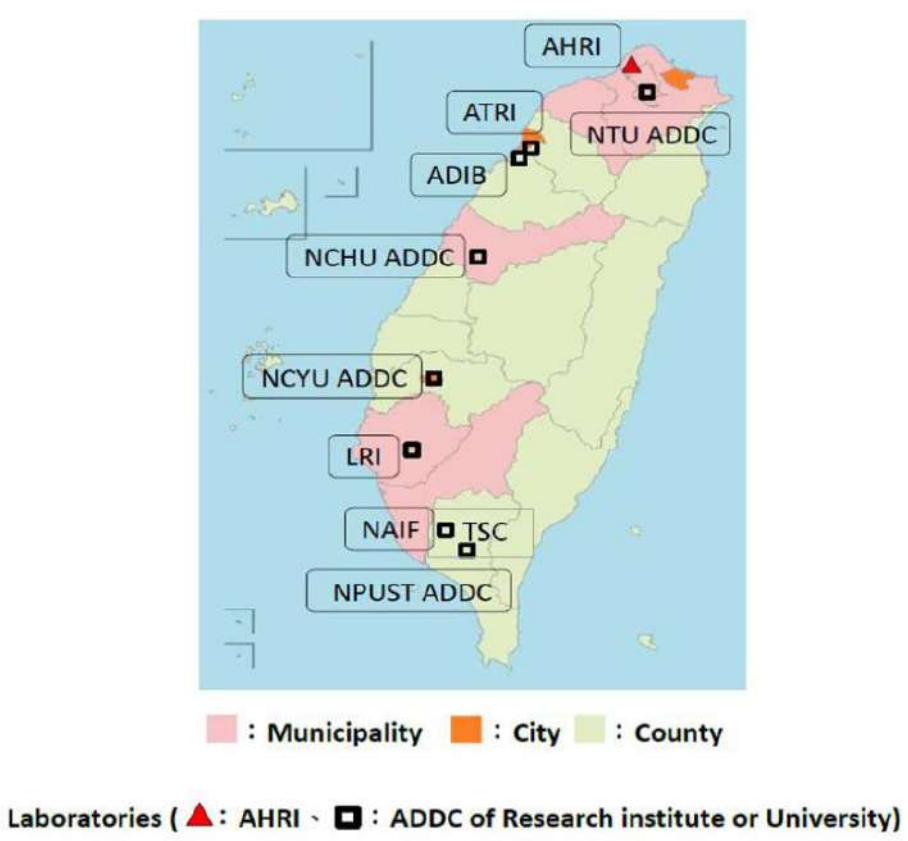
b. The Agricultural Technology Research Institute

There are three OIE Reference laboratories:

- Hog cholera reference lab in Hog Cholera Division, AHRI
- Shrimp White Spot Disease and shrimp Acute Hepatopancreas Necrosis Disease at National Cheng Kung University.

There are ADDCs in Departments of Veterinary Medicine in 4 Universities: NTU, NCHU, NCYU and NPUST.

Figure 11: Distribution of official and private laboratories in Chinese Taipei



1. Competent authorities for Food Safety in Chinese Taipei

The "Consumer Protection Act" and the "Act Governing Food Safety and Sanitation" provide the food safety regulatory framework implemented by several government agencies, including:

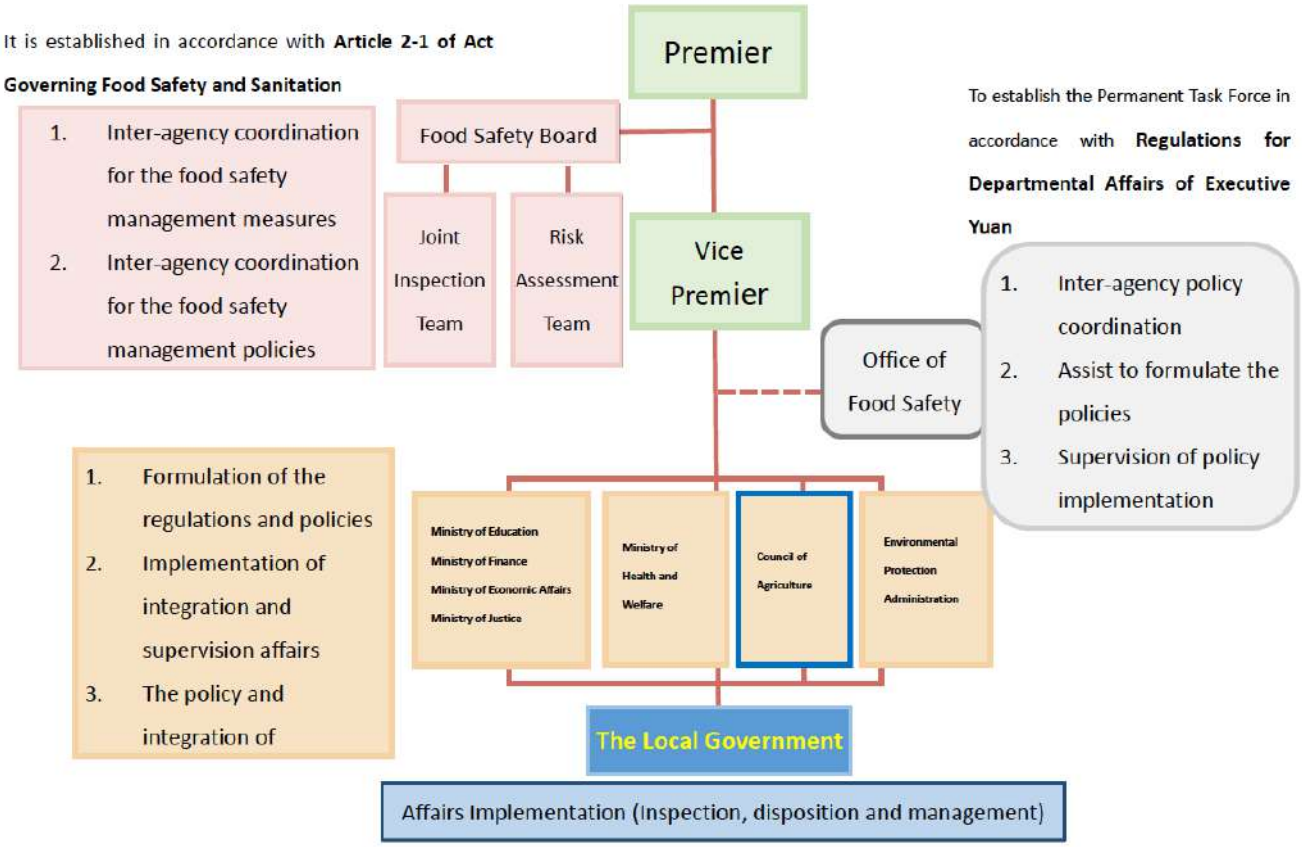
1) The Executive Yuan Office of Food Safety that was established following a major food safety scandal in 2014[12]. It operates at the highest level of government to coordinate the work of central and local authorities to prevent and handle major food safety incidents.

2) TFDA is the national competent authority for food safety administration and inspection services under the "Act Governing Food Safety and Sanitation". It cooperates with local governments on food safety issues and inspections and certifies fish products exported to the United States.

3) The Toxic and Chemical Substances Bureau (TCSB) convenes expert group meetings on chemical hazards in food according to the "Toxic Chemical Substances Control Act".

[12] https://en.wikipedia.org/wiki/Food_safety_incidents_in_Taiwan#2014:Gutter_oil_incident

Figure 12: Roles and relationships of official organizations in Food Safety

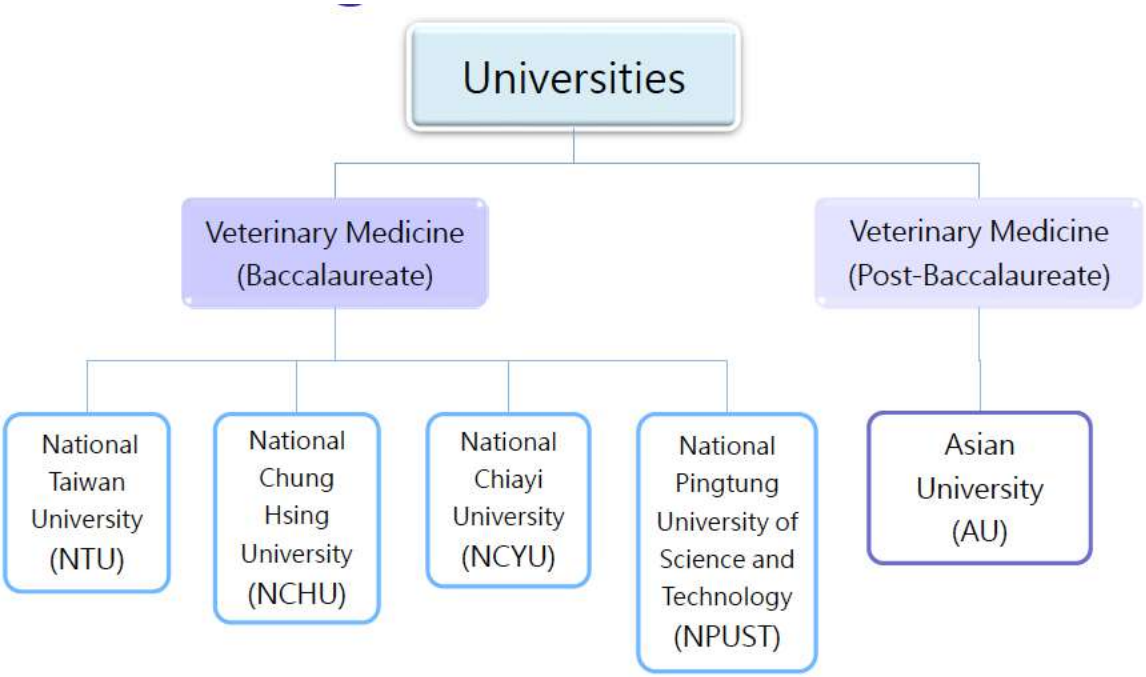


2. Veterinary Education System

Five universities offer training in Veterinary Medicine:

1. School of Veterinary Medicine, National Taiwan University (contains NTU-ADDC)
2. Department of Veterinary Medicine, College of Veterinary Medicine, National Chung Hsing University (contains NCHU-ADDC)
3. Department of Veterinary Medicine, College of Veterinary Medicine, National Chiayi University (contains NCYU-ADDC)
4. Department of Veterinary Medicine, College of Veterinary Medicine, National Pingtung University of Science and Technology (contains NPUST-ADDC)
5. Department of Post-Baccalaureate Veterinary Medicine, Asia University (4-year post-graduate programme)

Figure 13: The Five Veterinary Education Establishments



3. Border (Import/Export) and Internal Movement Controls

Figure 14: Relationship of BAPHIQ to the other border inspection agencies

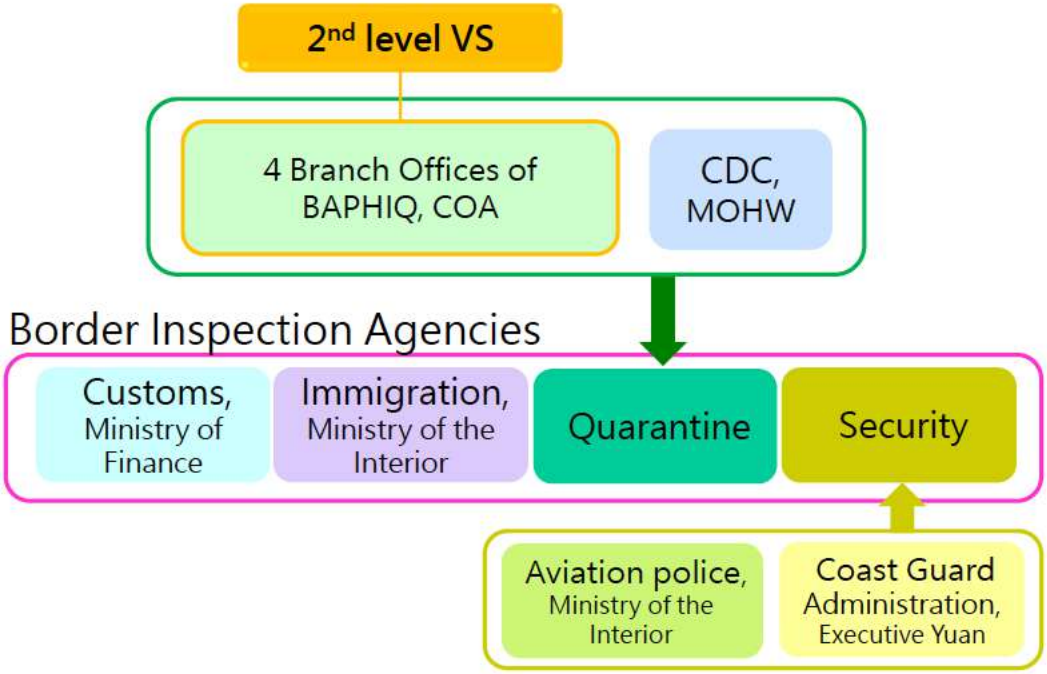
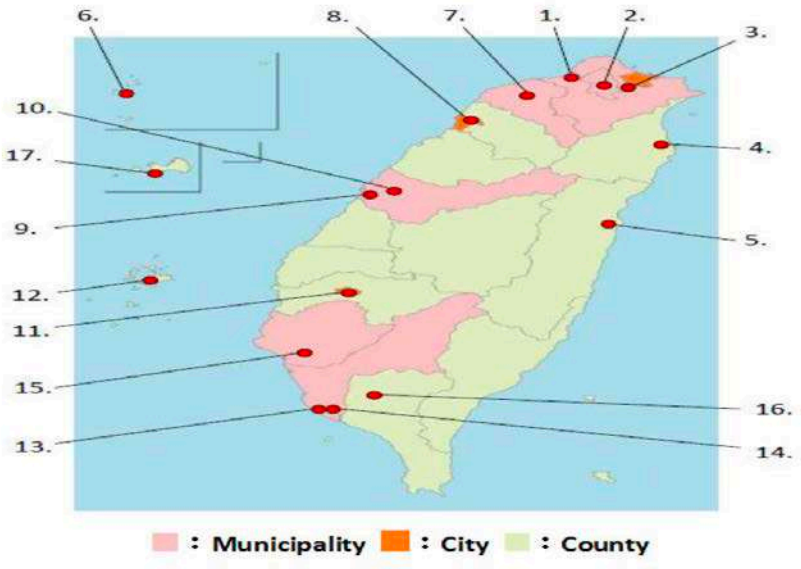


Figure 15: Location of Border inspection posts (airports, sea ports, land crossings)



A. The Keelung Branch has 6 inspection stations (1-6) including one airport (2)

B. The Hsinchu Branch has 2 inspection stations (7-8)

C. The Taichung Branch has 4 inspection stations (9-12) including one airport (9) and one seaport (10)

D. The Kaohsiung Branch has 5 inspection stations (13-17) including one seaport (13) and one airport (14)

Internal animal movement control points

All Poultry are required to have a "Poultry Health Certificate" before sale for slaughter. The certificate is issued by the farm veterinarian and the animals must be inspected by the veterinary inspector at arrival to the slaughterhouse.

Livestock (pig, cattle and sheep) transported to auction markets or to slaughterhouses must be accompanied by a "Livestock Health Statement" issued by the livestock farmer to the person-in-charge at the entrance of the auction market and/or to the slaughterhouse veterinary inspector. The livestock are then allowed for auction or slaughter, after the statement is inspected by the afore-mentioned officials.

Officially recognized disease control zones[13]

During the 85th General Session of the World Assembly of OIE Delegates in 2017, the zone covering Chinese Taipei's main island, Penghu and Matsu of Chinese Taipei was officially recognized by the OIE as free from FMD with vaccination.

During the 86th General Session of the World Assembly of OIE Delegates held in 2018, the zone covering Kinmen County of Chinese Taipei was officially recognized by the OIE as free from FMD with vaccination.

There are special provisions to control the movement of animals and animal products between these zones.

[13] see Map in CC IV-7

II.2.C Animal disease occurrence

At the time of this evaluation Chinese Taipei was on high alert for ASF due to the extraordinary outbreak in the region and most importantly its devastating effects on the People's Republic of China14. Risks to Chinese Taipei include the arrival of carcasses of piglets across the strait15.

Information on animal disease occurrence from the OIE website (see Table 3).

Table 3: Disease status of the country

Diseases present in the Country

	Domestic		Wild		
Disease	Notifiable	Status	Notifiable	Status	Note
Bovine tuberculosis	✓	Infection/infestation	✗	Absent (since 07/2009)	
Highly path. avian influenza	✓	Disease limited to one or more zones	✗		
Highly pathogenic influenza A viruses (infection with) (non-poultry including wild birds)	✓	Absent (since -)	✓	Disease limited to one or more zones	
Infectious hypodermal and haematopoietic necrosis	✓	Disease limited to one or more zones	✗	No information	
Koi herpesvirus disease	✓	Disease limited to one or more zones	✗	No information	
Low pathogenic avian influenza (poultry)	✓	Disease limited to one or more zones			
Porcine reproductive/respiratory syndr.	✓	Disease limited to one or more zones	✓	Absent (since Unknown)	
Rabies	✓	Absent (since 06/2014)	✓	Disease limited to one or more zones	
Red sea bream iridoviral disease	✓	Disease limited to one or more zones	✗	No information	
White spot disease	✓	Infection/infestation	✗	No information	
Yellow head disease	✓	Disease limited to one or more zones	✗	No information	

[14] E129: https://www.economist.com/china/2019/05/25/african-swine-fever-hits-china-home-of-half-the-worlds-pigs?frsc=dg%7Ce

[15] PME5: https://www.taiwannews.com.tw/en/news/3649343

Diseases never reported

Disease	Notifiable	Type of surveillance	Note
African horse sickness	✓	General Surveillance	
African swine fever	✓		
Bovine spongiform encephalopathy	✓	Targeted Surveillance	
Brucellosis (Brucella melitensis)	✓	Targeted Surveillance	
Camelpox	✗		
Contagious agalactia	✓		
Contagious bov. pleuropneumonia	✓	General Surveillance	
Contagious cap. pleuropneumonia	✗		
Contagious equine metritis	✓		
Crimean Congo haemorrhagic fever	✓		
Dourine	✓		
Echinococcus multilocularis (Infection with)	✓		
Encephalomyelitis (West.)	✓		
Enzootic abortion (chlamydiosis)	✓		
Epizootic haemorrhagic disease	✗		
Epizootic ulcerative syndrome	✓		
Equid herpesvirus-1 (EHV-1) (Infection with)	✗		
Equine encephalomyelitis (Eastern)	✓		
Equine influenza	✓		
Equine piroplasmosis	✓		
Equine viral arteritis	✓		
Heartwater	✓		
Leishmaniosis	✗		
Lumpy skin disease	✓		
Maedi-visna	✓		
Myxomatosis	✗		
N. w. screwworm (C. hominivorax)	✓		
Nairobi sheep disease	✗		
Nipah virus encephalitis	✓		
O. w. screwworm (C. bezziana)	✓		
Ovine epididymitis (B. ovis)	✓		
Peste des petits ruminants	✓	General and targeted surveillance	
Porcine cysticercosis	✗		
Rift Valley fever	✓		
Salmonellosis (S. abortusovis)	✓		
Scrapie	✓	Targeted Surveillance	
Surra (Trypanosoma evansi)	✗		
Trichinellosis	✓		
Trypanosomosis	✗		
Tularemia	✗		
Turkey rhinotracheitis	✗		
Venezuelan equ.encephalomyelitis	✓		
West Nile Fever	✓		

Diseases absent in 2017

	Domestic				Wild			
Disease	Notifiable	Last occurrence	Surveillance	Note	Notifiable	Last occurrence	Surveillance	Note
Anthrax	✓	11/1999			✓	Unknown		
Aujeszky's disease	✓	08/2013			✓	Unknown		
Avian chlamydiosis	✓	2008			✗	Unknown		
Avian infect. laryngotracheitis	✓	06/2016			✓	Unknown		
Avian infectious bronchitis	✓	09/2014			✓	Unknown		
Avian mycoplasmosis (M.synoviae)	✓	11/2014			✓	Unknown		
Bluetongue	✓	05/2003	Targeted Surveillance		✓	Unknown	Targeted Surveillance	
Bov. genital campylobacteriosis	✓	1996			✗	Unknown		
Bovine anaplasmosis	✗	08/2016			✗	Unknown		
Bovine babesiosis	✓	1990			✗	Unknown		
Bovine viral diarrhoea	✗	05/2008			✗	Unknown		
Brucellosis (Brucella abortus)	✓	1990	Targeted Surveillance		✗	Unknown	Targeted Surveillance	
Brucellosis (Brucella suis)	✗	1990			✗	Unknown		
Caprine arthritis/encephalitis	✓	02/2011			✗	Unknown		
Classical swine fever	✓	06/2005			✓	Unknown		
Crayfish plague (Aphanomyces astaci)	✓	09/2016			✗	Unknown		
Duck virus hepatitis	✓	10/2014						
Echinococcus granulosus (Infection with)	✓	06/2016			✗	Unknown		
Enzootic bovine leukosis	✓	11/2006			✗	Unknown		
Equine infectious anaemia	✓	-			✗	Unknown		
Foot and mouth disease	✓	10/09/2015	General and targeted surveillance		✓	Unknown	General and targeted surveillance	
Fowl typhoid	✓	2000			✓	Unknown		
Glanders	✓	1950			✓	Unknown		

II.3 Organisation of the evaluation

II.3.A Timetable of the mission

Appendix 4 provides a list of key persons met; the timetable and maps of the mission and details of the facilities and locations visited by the OIE PVS Team. Appendix 5 provides the air travel itinerary of team members.

II.3.B Categories of sites and sampling for the evaluation

Table 4 lists the categories of sites relevant to the evaluation and the number of each category of site in the country. It indicates how many of the sites were visited. While every effort was made to visit a representative sample of sites, by force of circumstance in a highly developed country there was a bias toward larger institutions and establishments, with small production units and retail markets underrepresented.

Table 4: Site sampling

	Terminology or names used in the country		Number of sites	Actual sampling
Climatic zone	Sub-tropical, tropical zones		**2**	**2**
Topographical zone	Mountains, hills, terraces, plains, basins		**5**	**5**
Agro-ecological zone	Zone (Köppen climate classification scheme)		**7**	**4**
1st administrative level	National		**1**	**1**
2nd administrative level	Municipalities		**6**	**6**
	Cities/ Counties		**16**	**5**
3rd administrative level	Districts/Townships		**368**	**23**
Central (Federal/National) VS	National/Central government Council of Agriculture (COA)		**1**	**1**
1st level of the VS	Bureau of Animal and Plant Health Inspection and Quarantine (BAPHIQ) of COA	Dept. of Animal Industry of COA	**2**	**2**
Internal division of the1st level of the VS	Divisions (Animal Health Inspection, Animal Quarantine, Meat Inspection)	Division (Animal Welfare)	**4**	**4**
2nd level of the VS	BAPHIQ-Branches		**4**	**2**
	Municipalities/Cities/Counties (Field level of VS)		**22**	**3***
3rd level of the VS	Township Office		**135/198**	**1**
Veterinary organisations (VSB, unions)	Taiwan Veterinary Medical Associations		**23**	**1**
Field level of the VS (animal health) (2nd level of VS)	Local Animal Disease Inspection Authorities (LADIAs) (Municipalities/Cities/Counties-Animal Disease Control Centers/ offices, etc.)		**22**	**3***
Private veterinary sector	Licensed Veterinary Hospitals		**1759**	**3***
Production sector	Licensed factories of manufacture		**42**	**2***
Import and wholesale sector	Licensed dealers of medicine for animal use		**216**	**2***
Retail sector	Licensed holders of medicine for animal use		**1915**	**4**
Other partners involved	Taiwan Veterinary Medicine & Health Industry Associations		**9**	**1**
National, Regional and local labs	Animal Health Research Institute (AHRI) AHRI- Animal Drugs Inspection Branch Livestock Research Institute (LRI) Animal Disease Diagnostic Centers of Veterinary universities		**3** **4**	**2*** **2**
Associated, accredited and other labs	Agricultural Technology Research Institute (ATRI) National Animal Industry Foundation (NAIF) Technical Service Center /NAIF-Poultry Health Center (4 Divisions) Screening laboratories of LADIAs		**1** **1** **4** **18**	**1*** **1** **1** **1**

ANIMAL AND ANIMAL PRODUCTS MOVEMENT CONTROL			
		Number of sites	Actual sampling
Bordering countries	None	-	-
Airports and seaports border posts	Inspection Stations (Airports, Harbours) *4 Branch offices of BAPHIQ – Quarantine sections	17 4	2 2
Main terrestrial border posts	None	-	-
Minor terrestrial border posts	None	-	-
Quarantine stations for import or export	BAPHIQ- Animal and Plant Quarantine Center (APQC) / Quarantine stations (live animals)	22	2*
Internal check points	Internal Inspection Stations (Outlying islands: Penghu/ Matsu/ Kinmen)	3	0 ※
Live animal markets	Livestock Auction Markets	23	2
Zones, compartments	Zones (Taiwan, Penghu and Matsu) / (Kinmen)	2	1
PUBLIC HEALTH INSPECTION OF ANIMALS AND ANIMAL PRODUCTS			
Export slaughterhouses	Export slaughterhouses	6	1*
National market slaughterhouses	Slaughterhouses	174	2*
Local market slaughterhouses	-	-	-
Slaughter areas/slabs/points	-	-	-
On farm or butcher's slaughtering sites	-	-	-
Processing sites (milk, meat, eggs, etc)	Processing sites meat milk egg	641 88 75	2* 1 1
Retail outlets (butchers, shops, rest.)	Retail outlets	17,714	3*
TRAINING AND RESEARCH ORGANISATIONS			
Veterinary university	Veterinary universities	5	2*
Veterinary paraprofessional schools	-	-	-
Veterinary research organisations	AHRI, ATRI, Endemic Species Research Institute (ESRI), Taipei Zoo, Livestock Research Institute (LRI)	5	4*
STAKEHOLDERS' ORGANISATIONS			
Agricultural Chamber / organisation	National Animal Industry Foundation (NAIF)	1	1
National livestock farmers organisations	Taiwan livestock/ poultry associations	39	2
Local livestock farmers organisations	Local livestock/ poultry associations	199	1
Other stakeholder/consumer organisations	Consumer foundations/ organizations	3	1
ANIMAL FEED SAFETY			
Animal feed production site	Licensed manufacturers of animal feed	147	1

※ Due to expected poor weather conditions during the monsoon season, sites located on outlying islands (Penghu/ Matsu/ Kinmen) are not scheduled to be visited.
※ Sites that have multiple roles in relation to the Sampling scale of PVS are marked with "*", which result in the overlap numbers in the column of Actual sampling

PART III: RESULTS OF THE EVALUATION & GENERAL RECOMMENDATIONS

This evaluation identifies the strengths and weaknesses of the veterinary services, and makes general recommendations, across the four main fundamental components of the PVS tool:

FUNDAMENTAL COMPONENTS	
1.	HUMAN PHYSICAL AND FINANCIAL RESOURCES
2.	TECHNICAL AUTHORITY AND CAPABILITY
3	INTERACTION WITH STAKEHOLDERS
4.	ACCESS TO MARKETS

The activities of the Veterinary Services are recognised by the international community and by OIE Members as a '**global public good**'. Accordingly, it is essential that each country acknowledges the importance of the role and responsibilities of its Veterinary Services and gives them the human and financial resources needed to fulfil their responsibilities.

This OIE PVS Evaluation examined each Critical Competency under the 4 fundamental components, listed strengths and weaknesses where applicable, and established a current level of advancement for each critical competency. Evidence supporting this level included interviews and field observations associated with the mission, and also documentary evidence, as listed in Appendix 6. General recommendations are provided where relevant.

The current level of advancement for each Critical Competency is shown in cells shadowed in grey (15%) in the table.

III.1 Fundamental component I: Human, physical and financial resources

This component of the evaluation concerns the institutional effectiveness and sustainability of the VS as demonstrated by the levels of human, physical and financial resources available and their efficient application. It comprises fourteen critical competencies:

Critical Competencies:

Terrestrial Code References:

Points 1-7, 9, 11 and 14 of Article 3.1.2. on Fundamental principles of quality: Professional judgement / Independence / Impartiality / Integrity / Objectivity / Veterinary legislation / General organisation / Procedures and standards / Human and financial resources.

Point 4 of Article 3.2.1. on General considerations.

Article 3.2.2. on Scope.

Points 1 and 2 of Article 3.2.3. on Evaluation criteria for the organisational structure of the Veterinary Services.

Point 2 of Article 3.2.4. on Evaluation criteria for quality system: “Where the Veterinary Services undergoing evaluation… than on the resource and infrastructural components of the services”.

Article 3.2.5. on Evaluation criteria for human resources.

Points 1-3 of Article 3.2.6. on Evaluation criteria for material resources: Financial / Administrative / Technical.

Article 3.2.10. on Performance assessment and audit programmes.

Article 3.2.12. on Evaluation of the veterinary statutory body.

Points 1-5 and 9 of Article 3.2.14. on Organisation and structure of Veterinary Services / National information on human resources / Financial management information / Administration details / Laboratory services / Performance assessment and audit programmes.

I-1 Professional and technical staffing of the Veterinary Services (VS) *The appropriate level of staffing of the VS to allow for veterinary and technical functions to be undertaken efficiently and effectively.* **A. Veterinary and other professionals (university qualified)** *The appropriate level of staffing of the VS to allow for veterinary and other professional functions to be undertaken efficiently and effectively.*	**Levels of advancement**
	1. The majority of positions requiring veterinary or other professional skills are not occupied by appropriately qualified professionals.
	2. The majority of positions requiring veterinary or other professional skills are occupied by appropriately qualified professionals at central and state/provincial levels.
	3. The majority of positions requiring veterinary or other professional skills are occupied by appropriately qualified professionals at local (field) levels.
	4. There is a systematic approach to defining job descriptions and formal, merit-based appointment and promotion procedures for veterinarians and other professionals.
	5. There are effective procedures for formal performance assessment and performance management of veterinarians and other professionals.

Terrestrial Code reference(s): Appendix 1

Findings:

The number of veterinarians by area of practice is presented in Figure 16 (E5). Sixty-four percent are employed in private practice, the vast majority serving companion animals. Nineteen percent perform public sector regulatory functions.

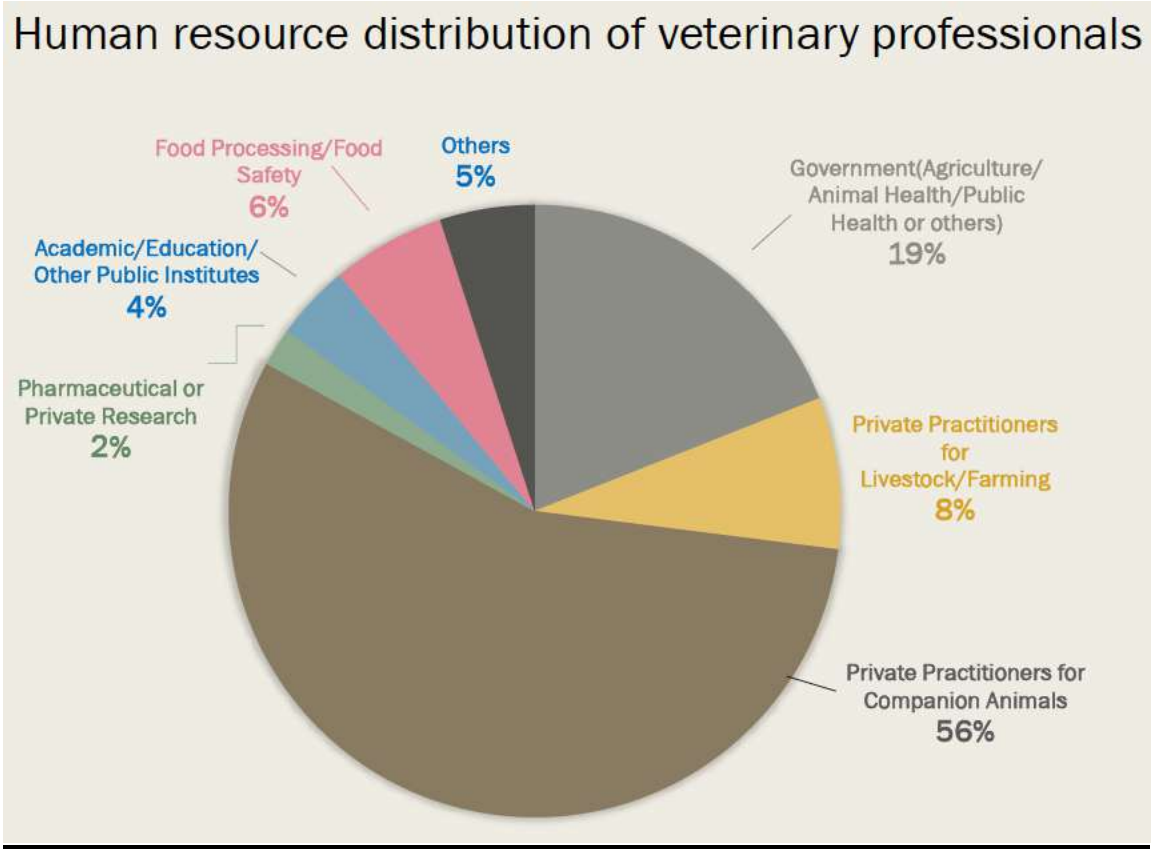
In the public sector, most positions for veterinarians are filled at BAPHIQ HQ, Branches and border posts (Baseline document PME1 (pages 74-76). The same is true for LADIAs despite a somewhat higher vacancy rate for certain counties, and for townships with 128 of 136 positions filled (E5; E82) as well as for Township levels (E82).

Each farm has a “contract veterinarian” to provide clinical services. In an emergency LADIAs have authority to conscript these veterinarians to assist with disease control activities.

Officials reported that new workload demands are placing strains on existing staff capacity. For example, a new post for X-ray screening of high-risk passenger hand luggage will need new staff at the international airport in Taipei. ASF surveillance/prevention and FMD zoning activities were reported to be straining the capacity of front-line field and border personnel while new demands for specialized expertise for information systems and to address issues such as AMR and One Health in collaboration with partners requires added expertise at central levels. BAPHIQ senior officials confirmed these observations in a note following discussions at the closing meeting (E108).

An interview with a BAPHIQ human resources officer and colleagues provided assurance that job descriptions and formal appointment/promotion procedures are in place for public servants and sample documents were provided (E44a-c). Appointments are made in three ways: 1. Entry Examinations, 2. Promotions and 3. Transfers. Examinations (veterinary and public service) are used for initial appointments. Promotions within the 13 levels are based on results of annual performance assessment ratings on annual assessments over at least a three-year period. Transfers are done through applications in response to advertised opportunities.

Figure 16:



Strengths:

- Well defined human resource management systems
- Data available on public sector positions staffed and vacant

Weaknesses:

- There are growing requirements as a result of region-wide epizootics (e.g. ASF) and plans for more stringent FMD zoning without vaccination (E108).
- No formal data on current and future workforce demands in the private sector.

Recommendations:

- A thorough study on evolving workforce needs[16] is a priority to inform BAPHIQ, TVMA and the veterinary faculties of current and future needs for veterinarians and VPP in both the public and private sectors, taking account of the need to address emerging regional and global pressures such as ASF, AMR and food safety traceability.
- *Meanwhile, urgent needs may need to be addressed by special new funding or reallocation of resources within the VS or VA.*

Evidence (as listed in Appendix 6): *PME1 (pages 74-76); E5; E44a-c; E82; E107; E108*

[16] An example of such a study is available from Australia:
https://www.voced.edu.au/content/ngv%3A77334
https://www.voced.edu.au/content/ngv%3A77335

B. Veterinary paraprofessionals	Levels of advancement
The appropriate level of staffing of the VS to allow for veterinary paraprofessional (according to the OIE definition) functions to be undertaken efficiently and effectively. *This covers OIE veterinary paraprofessional categories having trained at dedicated educational institutions with formal qualifications which are recognised by the government or the VSB.*	1. The majority of positions requiring veterinary paraprofessional skills are not occupied by personnel holding appropriate qualifications.
	2. Some positions requiring veterinary paraprofessional skills are occupied by personnel holding appropriate qualifications. There is little or no veterinary supervision.
	3. The majority of positions requiring veterinary paraprofessional skills are occupied by personnel holding appropriate qualifications. There is a variable level of veterinary supervision.
	4. The majority of veterinary paraprofessional positions are effectively supervised on a regular basis by veterinarians.
	5. There are effective management procedures for formal appointment and promotion, as well as performance assessment and performance management of veterinary paraprofessionals.

Terrestrial Code reference(s): Appendix 1

Findings:

Most of 124 veterinary para-professional positions in the public sector at BAPHIQ HQ and Branches, border posts and LADIAs are filled by persons having had appropriate pre-employment and/or on the job training (PME1 pages 74-76; E136). In addition, 396 VPP employed by NAIF to perform meat inspection receive formal training from ATRI, certification by BAPHIQ (E106) and operate under the supervision of veterinarians (E51).

A significant number of veterinary assistants[17] provide support services[18] to the 56% of Chinese Taipei's veterinarians who work in private companion animal practice (E5, E131), the 8% who work in private food animal practice (E5) as well as public institutions such as university clinics and a large, well-equipped hospital at the Taipei Zoo. Of these:

- 1689 persons were issued a Veterinary Assistant Certificate by BAPHIQ on the basis of having passed a "Junior" Professional and Technical National Examination (PTNE) for veterinary personnel before 2009.
- 366 of the 1689 holders of Veterinary Assistant Certificates also obtained both a Certificate of Veterinary Assistant Practice Qualification (from BAPHIQ) and a Veterinary Assistant Practice License (from LADIAs), allowing them to "perform diagnosis, treatment, inspection; issue diagnosis certificates; and write prescriptions independently without the guidance of a veterinarian" (E134, E135). These licences are granted on the basis of work experience of 4 to 5 years or more under the guidance of veterinarians and as verified and confirmed by LADIAs (E130, E135). This authority does not include certification of documents issued by veterinarians on behalf of the Veterinary Authority.

[17] estimated as 4,000 to 5,000 based on 2013 statistics (E131)

[18] described as "counter registration, assisting in clinical diagnosis, assisting in instrument operation, caring for inpatient animals, and cleaning and maintaining hospitals." (E131

- The remaining 1,323 holders of Veterinary Assistant Certificates work only under the guidance of a veterinarian and "shall not issue diagnosis certificates, write prescriptions or issue certifications of relevant documents" (E135).
- No Veterinary Assistant Certificates have been issued by BAPHIQ since 2009 when the Junior PTNE for Veterinary Assistants was suspended (E134, E135, E137).
- Concerns have been expressed that "…there are no regulations concerning veterinary paraprofessionals in Taiwan, causing some veterinary paraprofessionals to accidentally violate the Veterinarian Act without knowing it, when they are assisting in veterinary services." (E131).

The PVS Team was advised that "BAPHIQ has collected information in response to veterinary and social demand and invited TVMA and veterinary schools to discuss 'How to establish a Veterinary Medical Assistant System' and the policies on veterinary paraprofessionals (VPPs)" (E131, 134, 135). As set out in a *Draft Policy and Discussion on VPP* (E131), reforms modelled upon examples from leading countries in Asia, Europe and the Americas would occur in three phases:

1. Establish a Veterinary Assistant Registration and Certification System (Initial Process)
2. Setting up departments or courses for veterinary assistants in universities with curricula emulating British and American systems (Mid-Term Process), and
3. Establish a national examination system for professional animal medical assistants (Late Process).

Strengths:

- Standardised veterinary supervision exists for VPP meat inspectors and other VPP in the public sector (E136).

Weaknesses:

- Since 2009 persons who graduated and began work as veterinary assistants have not been certified by BAPHIQ following suspension of the PTNE for Veterinary Assistants that was last held in 2008.
- On the basis of work experience 366 of the Veterinary Assistants certified by BAPHIQ prior to 2009 on the basis of a "Junior PTNE" (VPP1) went on the obtain Veterinary Assistant Practice Licenses to "perform diagnosis, treatment, inspection; issue diagnosis certificates; and write prescriptions independently without the guidance of a veterinarian".

Recommendations:

- Priority should be assigned to a national initiative to develop a "Veterinary Medical Assistant System" that would establish standardized training, accreditation and supervision for Veterinary Assistants and which should be consistent with OIE Guidelines[19].

[19] OIE Guidelines for Veterinary Paraprofessionals – see:
http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/A_Competence.pdf
and
http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/AF-CoreCV-ANG.pdf

Evidence (as listed in Appendix 6): PME1 (pages 74-76); E51; E74; E106; E130, 131, 134, 135, & 137); field visits to the Taipei Zoo and private clinics

I-2 Competency and education of veterinarians and veterinary paraprofessionals *The capability of the VS to effectively carry out their veterinary and technical functions, as indicated by the level and quality of the qualifications of their personnel in veterinary and veterinary paraprofessional positions.* **A. Veterinarians** *This references the OIE Day 1 and advanced competencies, and the OIE model core curricula for veterinarians*	**Levels of advancement**
	1. The veterinarians' knowledge, skills and practices, are of a variable standard that allow only for elementary clinical and administrative activities of the VS.
	2. The veterinarians' knowledge, skills and practices are of a uniform standard sufficient for accurate and appropriate clinical and administrative activities of the VS.
	3. The veterinarians' knowledge, skills and practices are sufficient for all professional/technical activities of the VS (e.g. surveillance, treatment and control of animal disease, including conditions of public health significance)
	4. The veterinarians' knowledge, skills and practices are sufficient for specialised technical activities (e.g. higher level epidemiological analysis, disease modelling, animal welfare science) as may be needed by the VS, supported by post-graduate level training.
	5. The veterinarians' knowledge, skills and practices are subject to regular updating, and are internationally recognised such as through formal evaluation and/or the granting of international equivalence with other recognised veterinary qualifications.

Terrestrial Code reference(s): Appendix 1

Findings:

There are 5 veterinary colleges (VEE) of which 4 offer a 5-year program, and the 5th offers a 4-year programme for students admitted with a baccalaureate. All graduates of VEE must complete a national professional and technical examination to be eligible for certification and licencing by their local veterinary association. Two universities visited have recognition from other countries in the region: Hong Kong and Malaysia (E35; E78), as well as Macau in the case of NTUVM (E35). Deans of the veterinary colleges are discussing proposals to increase the duration of DVM training to a 6-year programme and whether to seek formal accreditation under a broader European or North American regime.

Rigorous mandatory continuing education requirements exist for veterinarians in the public and private sectors (E5; E89) to ensure that regular updating occurs (see CC I-3).

The rich undergraduate curricula, post-graduate programmes and international partnerships of the VEE provide advanced training and expertise in many areas as evidenced by site visits and presentations from two of the five VEE (E35; E78).

State, University and NPO laboratories and research institutes provide rich scientific and technical capacity for advanced diagnostic services, epidemiology, risk analysis and production of veterinary biologicals (E8; E9; E10).

The VEE visited have excellent veterinary hospital teaching facilities and students follow a rotation program of internship during its undergraduate studies that gives the opportunity to complement theoretical teaching with practice in the various curriculum domains.

All veterinary graduates must pass a national exam to be certified by BAPHIQ and obtain a licence to practice.

Strengths:

- Advanced, internationally recognised VEE and veterinary science capacity at state institutions – notably AHRI.
- Mandatory CE for both public and private sector veterinarians

Weaknesses:

- None in evidence

Recommendations:

- Maximize the return on investment from the national science and management capacity by offering international support in veterinary science and programme management and leadership to less developed countries through international development programmes[20], including possible collaboration with OIE.
- Encourage an initiative of the VEE Deans to broaden international recognition of their VEE

Evidence (as listed in Appendix 6): E5; E8, E9, E10; E35; E38; E51; E78; E89; site visits and interviews with Deans of Veterinary Schools at NTUVM and NCHU

[20] Themes of Taiwan's International Cooperation and Development Fund cover all of the elements of "One Health": Environment, Public Health and Agriculture (including quarantine and certification). See: http://www.icdf.org.tw/ct.asp?xItem=5265&CtNode=29856&mp=2

B. Veterinary paraprofessionals	Levels of advancement
This references the OIE Guidelines on Competencies for Veterinary Paraprofessionals, including categories of animal health (on farm, at markets or borders), veterinary public health (in slaughter establishments) and laboratory diagnostics who are recognised by the government or the VSB, having received formal training and qualifications from dedicated educational institutions.	1. Positions requiring veterinary paraprofessional skills are generally occupied by those having no formal training or qualifications from dedicated educational institutions.
	2. The training and qualifications of those in positions requiring veterinary paraprofessional skills is of a variable standard and allows for the development of only basic competencies.
	3. The training and qualifications of veterinary paraprofessionals is of a fairly uniform standard that allows the development of some specific competencies (e.g. vaccination on farms, meat hygiene control, basic laboratory tests).
	4. The training and qualifications of veterinary paraprofessionals is of a uniform standard that allows the development of more advanced competencies (e.g. blood and tissue sample collection on farms, supervised meat inspection, more complex laboratory testing).
	5. The training and qualifications of veterinary paraprofessionals is of a uniform standard and is subject to regular evaluation and/or updating.

Terrestrial Code reference(s): Appendix 1

Findings:

Veterinary paraprofessionals in Chinese Taipei serve the VS in a number of specialized roles such as meat inspection, laboratory analyses, laboratory animal care, field inspections and sample collection for poultry health, veterinary medical products and residues (E136; E130: “Table of Personnel in reference to VPP categories”),

Approximately 400 veterinary para-professionals are employed by NAIF to perform meat inspection (CCI-1.B and CCII 7B) following standardized formal training from ATRI, an exam a certificate issued by BAPHIQ and continuing education (see CC II-7.B and E106).

Handlers involved in animal transportation and slaughter receive training on animal welfare.

BAPHIQ advises that “Veterinary Assistants in Chinese Tapei are educated and trained in vocational high schools, studying in the Department of Veterinary Medicine/ Animal Husbandry and Health Protection. Students receive 3 years of professional training related to animal husbandry and basic veterinary medicine.” (E-130).

Veterinary Assistants are also trained on the job perform important and, in some cases, specialized roles in private and public clinics, hospitals and other services to support veterinarians who work in private practice serving companion and food animals (E5) – see CCI-1.B.

Since the PTNE was suspended for Veterinary Assistants in 2009 (see CC I-1.B), “BAPHIQ has collected information in response to veterinary and social demand and invited TVMA and veterinary schools to discuss ‘How to establish a Veterinary Medical Assistant System’ and the policies on veterinary paraprofessionals (VPPs)” (E131, 134, 135).

Deans of veterinary colleges have since been discussing proposals to develop formal training programmes for VPP[21]. As set out in a *Draft Policy and Discussion on VPP* (E131; see CC I-1.B), reforms modelled upon examples from leading countries in Asia, Europe and the Americas would include setting up departments or courses for Veterinary Assistants in universities with curricula emulating British and American systems and establishing a national examination system for professional animal medical assistants.

Strengths:

- Systematic training and certification of meat inspectors by ATRI and BAPHIQ.
- Recognition by BAPHIQ, VEE Deans, TVMA and government officials that a need exists for a comprehensive, standardized approach to the training, accreditation and supervision of VAs.

Weaknesses:

- As reported by TVMA in 2014 (E-131 / VPP-6) there are needs for initial, mid-term and longer term actions to strengthen of the education, certification and supervision of veterinary medical assistants.

Recommendations:

- As set out under CCI-1.B, priority should be assigned to a national initiative to develop a "Veterinary Medical Assistant System" that would establish standardized training, accreditation and supervision (E131) and which should be consistent with OIE Guidelines [22].

Evidence (as listed in Appendix 6): E5; E34; E51; E106; E130 & 131; field visits to the Taipei Zoo and private veterinary clinics; interviews with Deans of VEE at NTUVM and NCHU.

[21] Discussion during briefing at NCHU April 22nd

[22] OIE Guidelines for Veterinary Paraprofessionals – see:
http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/A_Competence.pdf
and
http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/AF-CoreCV-ANG.pdf

I-3 Continuing education (CE) *The capability of the VS to maintain, update and improve the knowledge, attitudes and skills of their personnel, through an ongoing staff training and development programme assessed on a regular basis for relevance and targeted skills development.*	Levels of advancement
	1. The VS have no access to veterinary or paraprofessional CE.
	2. The VS have access to CE (internal and/or external training) on an irregular basis but it does not take into account needs, or new information or understanding.
	3. The VS have access to CE that is reviewed and sometimes updated, but it is implemented only for some categories of veterinary professionals and paraprofessionals.
	4. The VS have access to a CE programme that is reviewed annually and updated as necessary, and is implemented for all categories of veterinary professionals and paraprofessionals.
	5. The VS have up-to-date CE that is implemented or is a requirement for all relevant veterinary professionals and paraprofessionals and is subject to dedicated planning and regular evaluation of effectiveness.

Terrestrial Code reference(s): Appendix 1

Findings:

A robust and mandatory continuing education (CE) regime for all veterinarians in the public and private sectors and veterinary assistants who hold a license to practice is managed by the Taiwan Veterinary Medical Association (E5; E89). Veterinarians must complete more than 120 credits every 6 years for continuing education, with 80-90% being in their professional field and 10-20% in the areas of professional quality and/or management and related regulations (E89). Licensed veterinary assistants must also undertake continuing education (120 credits) and renew their practicing licenses every 6 years according to the “Veterinary Act” (E-130).

Meat Inspector Assistants, like the Veterinary Meat Inspectors, receive six hours of in-service training each year (E13).

An information system is available to manage training and record registration. The mandatory continuing education covers topics such as updates on regulatory requirements, ethical issues and animal welfare.

Strengths:

- Mandatory CE is administered by TVMA for all veterinarians and licensed Veterinary Assistants.
- Meat Inspector Assistants and Veterinary Meat Inspectors are provided with annual in-service training.

Weaknesses:

- As reported under CCs I-1.B and I-2.B there are needs to strengthen of the accreditation and education of veterinary medical assistants.

Recommendations:

- Strengthen the CE for veterinary assistants in concert with the proposed strengthening of the regime for training, accreditation and supervision of VPP (see CCs I-1.B, I-2.B and E131).

Evidence (as listed in Appendix 6): E5; E10; E12; E13; E20; E35; E78a; E89, E130, E131

I-4 Technical independence *The capability of the VS to carry out their duties with autonomy and without undue commercial, financial, hierarchical and political influences that may affect technical decisions in a manner contrary to the provisions of the OIE (and of the WTO SPS Agreement where applicable).*	Levels of advancement
	1. The technical decisions made by the VS are generally not based on scientific considerations.
	2. The technical decisions consider scientific evidence, but are routinely modified based on non-scientific considerations.
	3. The technical decisions are based on scientific evidence but are subject to review and occasional modification based on non-scientific considerations.
	4. The technical decisions are made and generally implemented in accordance with scientific evidence and the country's OIE obligations (and with the country's WTO SPS Agreement obligations where applicable).
	5. The technical decisions are based on a high level of scientific evidence, which is both nationally relevant and internationally respected, and are not unduly changed to meet non-scientific considerations.

Terrestrial Code reference(s): Appendix 1

Findings:

BAPHIQ has Civil Service Ethics Offices at Headquarters and Branch levels staffed by officers of the Executive Yuan that are independent of BAPHIQ (PME1; E6; E104). They serve as "observers" and play roles similar to that of an ombudsperson to ensure that ethical rules are respected as set out in a comprehensive regulatory framework (E103a-e). They also offer "promotional" activities to educate staff (E104).

The technical independence of meat inspectors employed by an arms-length NPO was evident in the establishment of an office separated from that of the inspected establishment and by inspector wearing clothing with a BAPHIQ logo.

The risk of outright corruption is relatively low as Chinese Taipei ranks a respectable 31st of 180 countries rated by Transparency International, just after Portugal in 30th place and ahead of some European countries.

OIE's experience with national reporting by Chinese Taipei is positive (PME8).

While there are strong and engaged industry interest groups (see CC III-6), top officials of BAPHIQ are well versed in the principles of providing honest advice to political leaders. In doing so they make regular use of the well-established national capacity for risk assessments (see CC II-2) that are supported by a strong national expertise in veterinary science that can offer nationally relevant advice (see CC II-1). The CVO observed that the OIE and other international standards and codes are helpful in making the case for technical independence on key decisions.

A policy of moving senior officials every 3 years to a new post in government departments supports technical independency and promotes awareness of needs of the broader service and interdepartmental collaboration.

As is appropriate in a functioning democracy, there are times when legitimate value judgements must be made by political authorities on decisions involving conflicting public interests, after taking due account of scientific advice regarding risks.

Strengths:

- Civil Service Ethics Offices
- Strong national track record on transparency as rated by OIE
- Experienced senior officials conscious of principles supporting technical independence
- Strong capacity in risk assessment supported by an internationally recognized veterinary science community.

Weaknesses:

- None in evidence

Recommendations:

- N/A

Evidence (as listed in Appendix 6): PME1; PME8; E6; E56; E103a-e; E104; visit to BAPHIQ Branch Office.

I-5 Planning, sustainability and management of policies and programmes *The capability of the VS leadership and organisation to develop, document and sustain strategic policies and programmes, and also to report on, review and evolve them, as appropriate over time.*	Levels of advancement
	1. Policies and programmes are insufficiently developed and documented. Substantial changes to the organisational structure and/or leadership of the VS frequently occur (e.g. annually) resulting in a lack of sustainability of policies and programmes.
	2. Some basic policy and programme development and documentation exists, with some reporting on implementation. Sustainability of policies and programmes is negatively impacted by changes in the political leadership or other changes affecting the structure and leadership of the VS.
	3. There is well developed and stable policy and programme documentation covering most relevant areas. Reports on programme implementation are available. Sustainability of policies and programmes is generally maintained during changes in the political leadership and/or changes to the structure and leadership of the VS.
	4. Policies or programmes are sustained, but also reviewed (using data collection and analysis) and updated appropriately over time through formal national strategic planning cycles to improve effectiveness and address emerging concerns. Planning cycles continue despite changes in the political leadership and/or changes to the structure and leadership of the VS.
	5. Effective policies and programmes are sustained over time and the structure and leadership of the VS is strong and stable. Modification to strategic and operational planning is based on a robust evaluation or audit process using evidence, to support the continual improvement of policies and programmes over time.

Terrestrial Code reference(s): Appendix 1

Findings:

Annual reports of BAPHIQ reflect a gradual and managed evolution of policies and plans over the 4-year period from 2014-2017 (E43a-d; E110a&b)

BAPHIQ has an internal audit unit that evaluates projects, for example annual assessments of epizootic prevention measures for 2015-2017 (PME1 Annexes 38-40). It also performed an assessment of Global Health Safety, an integrated approach to prevention and treatment of infectious diseases (PME1, Annex 41).

BAPHIQ officials advised that the regular evaluation reports lead to modifications to strategic and operational plans to optimize performance and adapt to emerging priorities such as securing and maintaining internationally recognized freedom from FMD without vaccination, preventing an incursion of ASF that is spreading through the region, and implementing a national AMR action plan (E109; E110b).

BAPHIQ's Deputy Director General and CVO also offered the perspective (E1, slide 30) that evaluation can be applied to "Establish systematic evaluations of policies/measures with feedback" and "Evaluate policies implemented with risk assessment and international standards". This approach calls for what has become known in some public sector

management circles as "value for money audits" [23]. This would support continuous improvement of the effectiveness and efficiency of programmes in areas such as disease prevention and control, food safety, border operations and law enforcement.

Strengths:

- Active audit and evaluation unit at BAPHIQ headquarters
- Consistency in polices and plans as they evolved over the period 2014-2017
- BAPHIQ perspective on expanded use of programme evaluation.

Weaknesses:

- No evidence of the use of formal cost-benefit analyses in decision making regarding regulatory policies or asset management.

Recommendations:

- Broaden and strengthen the use of programme evaluation as envisaged by the CVO to complement project evaluations and audits and to systematically review policies and measures to improve the effectiveness and efficiency of programmes in priority areas of disease prevention and control, food safety, border operations and law enforcement.
- Incorporate formal cost-benefit analysis as appropriate into high level decision making.

Evidence (as listed in Appendix 6): PME1 Annexes 38-40 and 41; PME3; E1 slide 30; E43a-d; E46; E47; E94; E109; E110b

[23] http://publications.gc.ca/collections/Collection/FA3-30-2000E.pdf
http://www.auditor.on.ca/en/content/annualreports/arreports/en16/v1_300en16.pdf

I-6 Coordination capability of the Veterinary Services **A. Internal coordination (chain of command)** *The capability of the Veterinary Authority to coordinate their mandated activities with a clear chain of command, from the central level (the Chief Veterinary Officer or equivalent), to the field level of the VS, as relevant to the OIE Codes (e.g. surveillance, disease control, food safety, emergency preparedness and response).*	**Levels of advancement**
	1. There is no formal internal coordination and the chain of command is not clear.
	2. There are internal coordination mechanisms for some activities but the chain of command is not clear.
	3. There are internal coordination mechanisms and a clear and effective chain of command for some activities, such as for export certification, border control and/or emergency response.
	4. There are formal, documented internal coordination mechanisms and a clear and effective chain of command for most activities, including surveillance (and reporting) and disease control programmes.
	5. There are formal and fully documented internal coordination mechanisms and a clear and effective chain of command for all activities, and these are periodically reviewed/audited and updated to re-define roles and optimise efficiency as necessary.

Terrestrial Code reference(s): Appendix 1

Findings:

The national veterinary authority (BAPHIQ) has a direct and effective chain of command within its own structure from headquarters to officers at border posts.

For animal health and food safety programmes an effective chain of command is in place from the CVO through its regional Branches to:

a) local government authorities (LADIAs) and hence to farm level veterinarians and local establishments for a wide range of animal health and food safety programmes, and

b) meat inspection staff employed by NAIF at slaughter plants under well-defined contracts, policies and procedures.

Ongoing work is required to maintain effective internal coordination linking these agencies, especially those with administrative independence such as local governments and NAIF. This is done by a number of systems and activities:

- Shared information systems (PME1 pages 116-119):
  - Animal Health Information Management System and 14 modules (PME1 pages E25; https://ahis.baphiq.gov.tw/app/)
  - Animal Drugs Management Service Platform (https://am.baphiq.gov.tw/AP/cLogin.aspx)
  - Animal Quarantine Management Platform for Imports and Exports
  - Livestock and Poultry Slaughtering and Meat Inspection Management System with seven modules
  - Veterinary Public Health (Meat Inspection)
  - Food Safety Cloud Platform (E110a)
- A well-defined disease reporting system (E2),

- Standardized protocols – e.g. for meat inspection: principles of supervision (E107a), distribution of responsibilities (E107b) and rules of the meat inspector (E107c),
- Branding and independent systems – (e.g. meat inspectors employed by NAIF wear lab coats with a BAPHIQ logo and operate from an office with a separate physical space and information system linked to BAPHIQ,
- Shared continuing education and coordination meetings as reported in PME-1 pages 201-202, E116.b
- Tasks Forces established under the Central Emergency Operations Centre (E116b)
- Project and program audits – e.g. for animal health, meat inspection and border control programs and supporting activities (surveillance, traceability and communications) (E109; E110b).

Strengths:

- Effective professional networks and supporting information systems
- Clearly defined animal health and food safety programmes and reporting protocols
- Active audit and evaluation programme.

Weaknesses:

- Administrative separation between BAPHIQ and delegated authorities (LADIA) and NAIF) will always require attention to maintain the effective chain of command.

Recommendations:

- Continue to invest in and strengthen systems and activities that support an effective chain of command, including formal reviews under an enhanced audit/evaluation regime (see CC I-5).

Evidence (as listed in Appendix 6): PME1; E1, E2; E80; E99; E107a-c; E109; E110a&b; E116 a&b (IR-Q15); E117

B. External coordination (including the One Health approach) *The capability of the Veterinary Authority to coordinate its resources and activities at all levels with other government authorities with responsibilities within the veterinary domain, in order to implement all national activities relevant to the OIE Codes, especially those not under the direct line authority of the Chief Veterinary Officer (or equivalent).* *Relevant authorities include other ministries and Competent Authorities, such as government partners in public health (e.g. zoonoses, food safety, drug regulation and anti-microbial resistance), environment (e.g. wildlife health), customs and border police (e.g. border security), defence/intelligence (e.g. bio-threats), or municipalities/local councils (e.g. local slaughterhouses, dog control).*	Levels of advancement
	1. There is no external coordination with other government authorities.
	2. There are informal external coordination mechanisms for some activities at national level, but the procedures are not clear and/or external coordination occurs irregularly.
	3. There are formal external coordination mechanisms with clearly described procedures or agreements (e.g. Memoranda of Understanding) for some activities and/or sectors at the national level.
	4. There are formal external coordination mechanisms with clearly described procedures or agreements at the national level for most activities (such as for One Health), and these are uniformly implemented throughout the country, including at state/provincial level.
	5. There are external coordination mechanisms for all activities, from national to field, and these are periodically reviewed and updated to re-clarify roles and optimise efficiency.

Terrestrial Code reference(s): Appendix 1

Findings:

Ongoing work is required to ensure effective coordination amongst many agencies that fall under the following Ministries: COA; Ministry of Health and Welfare (MOHW); Customs Immigration and Quarantine Service (CIQS); Ministry of Science and Technology (MOST); Finance; Economic Affairs and Industry. Of particular relevance are:

- COA with its responsibilities for BAPHIQ; AHRI/ADIB; DAI; CD/FB & EPA, and
- MOHW with responsibilities for TCDC & TFDA.

Other partners include local governments, the 5 veterinary colleges, not for profit organizations (ATRI and NAIF), other NGOs and actively engaged private sector stakeholders (see CC III_6).

Within COA a key relationship between BAPHIQ and AHRI provides scientific advice to support policy development by BAPHIQ (E23 slide 7) within a broader collaboration between these institutions on animal health and quarantine issues (E20, Table 7.1).

Chinese Taipei has an advanced organizational structure for its VS that includes two important not for profit agencies (ATRI and NAIF) to which key functions are delegated (see CC III-4). These arrangements offer many benefits but also adds a bit of complexity to the usual horizontal coordination requirements.

Building on the *Global Health Security Agenda*[24] and a review of its own capacity, Chinese Taipei's leadership moved to strengthen coordination amongst agencies of COA, the Ministry of Health and Welfare (MOHW), the Ministry of Science and Technology (MOST), and Academia, to develop a 4-year-program "Global Health Security – Integrated prevention and control research on infectious diseases". This was intended to combine the disease prevention ability and R&D ability of various departments, with goals to "prevent in advance", "early detection" and "quick and effective response" (E109). An evaluation report on the Global Health Security program documents the collaboration amongst 19 participating agencies (PME1b Annex 41).

A National AMR Action Plan has been drafted and a number of important initiatives have been launched (see CC II-9) but is the plan has not yet been formally approved (E101a).

Chinese Taipei organised and voluntarily received an unofficial Joint External Evaluation in 2016. The report observes that "Taiwan is doing an excellent job in meeting most of the IHR goals." However, after noting that "…for some indicators in which a lower capacity is evident, it is often only a small part of a criterion that is missing", it observes that "…closer collaboration between the human public health, animal health, and food inspection sectors at both the local and national levels would enhance food safety and improve outbreak investigation capabilities in Taiwan." In light of this JEE finding it must be noted that BAPHIQ's vision includes improving inter-sectoral collaboration and closing of gaps between agencies (E1, slide 30).

Strengths:

- Inter-agency commitment to the *Global Health Security Agenda*
- An unofficial JEE report was commissioned and offers constructive recommendations.
- A national AMR Action Plan has been drafted.

Weaknesses:

- There are opportunities to strengthen collaboration amongst public health, animal health, and food inspection officials at local and national levels as recommended by the unofficial JEE and to finalize and implement the draft AMR Action Plan.

Recommendations:

- Finalise and fully implement the National AMR Action Plan
- Continue to strengthen collaboration amongst public health, animal health, and food inspection officials at local and national levels to enhance food safety and improve outbreak investigations. This could include the use of relevant OIE tools.[25]

Evidence (as listed in Appendix 6): PME1 Annex 41; E3; E74; E84; E94; E99; E101a; E102; E109; E117; E127

[24] https://www.ghsagenda.org
[25] OIE coordination tools for inter-agency coordination:
https://www.oie.int/en/solidarity/options-for-targeted-support/one-health-integration/
http://www.oie.int/fileadmin/Home/fr/Media_Center/docs/pdf/WHO_OIE_Operational_Framework_Final2.pdf

I-7 Physical resources and capital investment *The access of the VS to functional and well-kept physical resources including buildings, transportation, information technology (e.g. internet access), cold chain, and other necessary equipment or structures. This includes whether major capital investment is available.*	Levels of advancement
	1. The VS have no or unsuitable physical resources at almost all levels and maintenance of existing infrastructure is poor or non-existent.
	2. The VS have suitable physical resources at national (central) level and at some state/provincial levels, but maintenance, as well as replacement of obsolete items, occurs rarely.
	3. The VS have suitable physical resources at national, state/provincial and some local levels but maintenance, as well as replacement of obsolete items, occurs irregularly.
	4. The VS have suitable physical resources at all levels and these are regularly maintained. Major capital investments occur occasionally to improve the VS operational infrastructure over time.
	5. The VS have suitable physical resources at all levels (national, state/provincial and local levels) and these are regularly maintained and updated as more advanced items become available. Major capital investments occur regularly to improve the VS operational capability and infrastructure.

Terrestrial Code reference(s): Appendix 1

Findings:

Site visits throughout the country confirmed that the physical infrastructure of offices, transportation, IT and laboratories at the national, regional and local levels of the public, academic and private sectors is for the most part exemplary. The OIE Team observed well equipped and maintained government and university facilities, private clinics and livestock production and slaughter facilities as well as offices, IT and transport systems of the national and local VA and laboratories of the state agencies, NPOs and academia (see CC II-B). At some regional and local establishments of the public sector there were signs of relatively minor needs for maintenance of well used facilities, but these were not such as to impede performance.

Details of the physical resources of BAPHIQ Headquarters and Branches are provided in PME1 pages 96-102 and Annexes 45-47. An inventory of major laboratory equipment and facilities for AHRI and ADIB are provided in E20, pages 20-24. All equipment and vehicles are barcoded to facilitate inventory updates.

Some laboratories visited were unusually well resourced, most notably an analytical chemistry laboratory with an array of expensive analytical equipment for residue detection, despite a relatively small volume of samples to be tested. This raised questions about the cost-effectiveness of the investment (which may be justified by maintenance of surge capacity required that would be required for a national emergency), and whether the sample volume was sufficient to maintain technical prowess (see CC II-1.B).

Vehicle maintenance costs for BAPHIQ (HQ and Branches), LADIAs and official laboratories are provided (PME1 pages 112-114)

An example of recent priority capital investment is provided with a 3-year programme to develop bird quarantine barns for NTD 22 million over the period 2015-2017 (PME1 page 111).

Strengths:

- Excellent facilities and equipment at national regional and local levels
- Inventory control and records in place

Weaknesses:

- Is the testing volume sufficient to warrant all capital investments and maintain expertise, or would a more centralized approach be warranted in some cases?

Recommendations:

- Continue to maintain and renew these important resources as required.
- Factor cost-benefit analysis into decision making regarding major capital investments.
- Review laboratory testing programmes to balance costs and workload while maintaining required technical excellence and surge capacity for responses to national emergencies (see CC II-1.B).

Evidence (as listed in Appendix 6): PME1 and Annexes cited; E20; E25; Visits to AHRI, ADIB, ATRI, NAIF, 2 universities, LADIAs and private sector establishments (see Appendix 4).

I-8 Operational funding	Levels of advancement
The ability of the VS to access operational resources adequate for their planned and continued activities (e.g. salaries, contracts, fuel, vaccines, diagnostic reagents, personal protective equipment, per diem or allowances for field work).	1. Operational funding for the VS is neither stable nor clearly defined and depends on irregular allocation of resources.
	2. Operational funding for the VS is clearly defined and regular, but is inadequate for their required baseline operations (e.g. basic disease *surveillance*, disease control and/or veterinary public health).
	3. Operational funding for the VS is clearly defined and regular, and is adequate for their baseline operations, but there is no provision for new or expanded operations.
	4. Operational funding for new or expanded operations is on a case-by-case basis, and not always based on *risk analysis* and/or benefit-cost analysis.
	5. Operational funding for all aspects of VS activities is generally adequate; all funding, including for new or expanded operations, is provided via a transparent process that allows for technical independence, based on *risk analysis* and/or cost-benefit analysis.

Terrestrial Code reference(s): Appendix 1

Findings:

Operational funding for the VA and programmes of the public, academic and private sectors is generally adequate. Budgets are approved annually by the Legislative Yuan based on submissions from the national VA (BAPHIQ) via the COA. There is a separate budget process for the local governments. The budget proposal includes items under 4 categories: Social development projects, public infrastructure, science and technology development and operational budget.

Budget allocations over the three years 2016-2018 for BAPHIQ, LADIAs and AHRI present a stable picture (PME1 pages 103-105; E1 slide 25).

Fees are collected for selected services such as drug registrations and meat inspection. Formulas for retention of revenues by BAPHIQ are set under regulations governing the different functions served and vary from case to case. In the case of meat inspection BAPHIQ can retain for its budget 70% of the annual overtime charges that are paid by the inspected establishments (E116 Q23).

BAPHIQ strategic plans over 4 years (2017-18) reflect evolving priorities that are in line with the changing issues and risks (see CC I-5). Together with regular project assessments this provide a sound management basis for risk- and performance-based budget decisions.

Important investments over the past 2 years include:

1. “One Health research project”
2. “Research Center for Avian Influenza Control and Prevention (RCAICP)”
3. “Rabies vaccine development programme”
4. “Research and development of animal medicine technology”
5. “New equipment and facilities for birds quarantine and isolation”
6. “Improvement program of animal quarantine technical skills”
7. “Improvement program of meat inspection technical skills

A current example of evolving functions that require new resourcing in the public sector is the new requirement for X-ray inspection at international airport arrivals of the luggage of high-risk passengers from countries with ASF. This has been addressed in the short term through partnerships and reallocations to provide the required additional personnel and operational funds – a need that should now be addressed through the regular budgeting process.

Strengths:

- Adequate funding that reflects evolving priorities and risks

Weaknesses:

- Increased use of formal cost-benefit analysis could be considered.

Recommendations:

- Continue to strengthen capacity to budget for evolving risks and optimum performance, including use of formal cost-benefit analyses (see CC I-5, I-7 and II-2).

Evidence (as listed in Appendix 6): PME1; E1; E116; interviews and evidence cited in CC I-5

I-9 Emergency funding	Levels of advancement
The capability of the VS to access extraordinary financial resources in order to respond to emergency situations or newly emerging issues, as measured by the ease with which contingency and related funding (i.e. arrangements for compensation of producers in emergency situations) can be made rapidly available when required.	1. No emergency funding arrangements exist.
	2. Emergency funding arrangements with limited resources have been established, but these are inadequate for likely emergency situations (including newly emerging issues).
	3. Emergency funding arrangements with limited resources have been established; additional resources may be approved but approval is through a political process.
	4. Emergency funding arrangements with adequate resources have been established; their provision must be agreed through a non-political process on a case-by-case basis.
	5. Emergency funding arrangements with adequate resources have been established and their rules of operation documented and agreed with interested parties.

Terrestrial Code reference(s): Appendix 1

Findings:

A well-defined regime for emergency funding is set out in law – a process that would have required stakeholder consultation (CC IV-1). There is an established pre-approved reserve and a contingency process with which it may be supplemented. There are three sources of funding (PME1 page 108):

1. The "Statute for Prevention and Control of Infectious Animal Disease" (PME1, Annex 49) stipulates that the loss of animals and other costs resulting from disease control measures shall be compensated at prices set by a valuation committee organized by the local competent authority (municipal, county or city).
2. Under the "Disaster Prevention and Protection Act", expenditures needed to implement disaster prevention and protection shall be duly funded. When the budget is insufficient adjustments can be made by local governments.
3. The Central Government can respond to a major natural disaster by providing relief funds to all levels of Local Government. When the budget for a major disaster is insufficient, the local Governments shall report it to the competent authority of the central government or Executive Yuan for assistance (BAPHIQ in the case of veterinary issues).

Compensation and Evaluation Standards for the valuation committees described under item 1 above are set out in regulations (PME1, Annex 50). Prescribed forms are available for evaluation of dairy cattle, pigs and poultry (PME1, Annexes 51-52). In the case of AI compensation is 100% of the valuation, providing an excellent incentive for reporting.

Strengths:

- Compensation for costs of disease control based on an evaluation that reflects local conditions.
- National and local funding that can adapt to extreme requirements.

Weaknesses:

- None in evidence.

Evidence (as listed in Appendix 6): PME1 and Annexes 49-53; interview with BAPHIQ Finance official April 18, 2019

III.2 Fundamental component II: Technical authority and capability

This component of the evaluation concerns the authority and capability of the VS to develop and apply sanitary measures and science-based procedures supporting those measures. It comprises eighteen critical competencies.

For all sections of this chapter, the critical competency includes collaboration with relevant authorities, including other ministries and Competent Authorities, national agencies and decentralised institutions that share authority or have mutual interest in relevant areas.

Critical Competencies:

Terrestrial Code References:

Chapter 1.4. on Animal health surveillance.
Chapter 1.5. on Surveillance for arthropod vectors of animal diseases.
Chapter 2.1. on Import risk analysis.
Chapter 2.2. Criteria applied by the OIE for assessing safety of commodities.
Chapter 6.11. on Risk analysis for antimicrobial resistance arising from the use of antimicrobial agents in animals
Points 6, 7 and 9 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation/General Organisation/Procedures and standards.
Point 1 of Article 3.2.4. on Evaluation criteria for quality systems.
Point 3 of Article 3.2.6. on Evaluation criteria for material resources: Technical.
Points 1 and 2 of Article 3.2.7. on Legislation and functional capabilities: Animal health, animal welfare and veterinary public health/Export/import inspection.

Points 1-3 of Article 3.2.8. on Animal health controls: Animal health status/Animal health control/National animal disease reporting systems.
Points 1-5 of Article 3.2.9. on Veterinary public health controls: Food hygiene/Zoonoses/Chemical residue testing programmes/Veterinary medicines/Integration between animal health controls and veterinary public health.
Sub-point f) of Point 4 of Article 3.2.10. on Veterinary Services administration: Formal linkages with sources of independent scientific expertise.
Article 3.4.12. on Human food production chain.
Points 2 and 5-7 of Article 3.2.14. on National information on human resources/Laboratory services/Veterinary legislation, regulations and functional capabilities/Animal health and veterinary public health controls.
Chapter 4.1. on General principles on identification and traceability of live animals.
Chapter 4.2. on Design and implementation of identification systems to achieve animal traceability.
Chapter 4.12. on Disposal of dead animal.
Chapter 6.2. on Control of biological hazards of animal health and public health importance through ante- and post-mortem meat inspection.
Chapter 6.3. on Control of hazards of animal health and public health importance in animal feed.
Chapters 6.7. to 6.11. on Antimicrobial resistance.
Chapter 7.1. Introduction to the recommendations for animal welfare.
Chapter 7.2. Transport of animals by sea.
Chapter 7.3. Transport of animals by land.
Chapter 7.4. Transport of animals by air.
Chapter 7.5. Slaughter of animals.
Chapter 7.6. Killing of animals for disease control purposes.

References to Codex Alimentarius Commission standards:

Code of Hygienic practice for meat (CAC/RCP 58-2005).
Code of Hygienic practice for milk and milk products (CAC/RCP/ 57-2004).
General Principles of Food Hygiene (CAC/RCP 1-1969; amended 1999. Revisions 1997 and 2003).
Guidelines for Risk Analysis of Foodborne Antimicrobial Resistance (CAC/GL 77-2011).
Code of Practice to Minimize and Contain Antimicrobial Resistance (CAC/RCP 61-2005).

II-1 Veterinary laboratory diagnosis A. Access to veterinary laboratory diagnosis *The authority and capability of the VS to access laboratory diagnosis in order to identify and report pathogenic and other hazardous agents that can adversely affect animals and animal products, including those relevant to public health.*	Levels of advancement
	1. Disease diagnosis is almost always conducted by clinical means only, with no access to or little use of a *laboratory* to obtain a correct diagnosis.
	2. For major animal *diseases* and *zoonoses* of national importance, and for the food safety of animal products, the VS have access to and use a *laboratory* to obtain a correct diagnosis.
	3. For animal *diseases* and *zoonoses* present in the country, and for animal feed safety and veterinary AMR surveillance, the VS have access to and use a *laboratory* to obtain a correct diagnosis.
	4. For animal *diseases* of zoonotic or economic importance not present in the country, but that exist in the region and/or that could enter the country, the VS have access to and use a *laboratory* to obtain a correct diagnosis.
	5. In the case of new and *emerging diseases* in the region or worldwide, the VS have access to and use a network of national or international reference laboratories (e.g. an OIE or FAO Reference Laboratory) to obtain a correct diagnosis.

Terrestrial Code reference(s): Appendix 1

Findings:

An effective diagnostic network spanning central, regional and local laboratories operates throughout the country – see Figures 9 & 10 in section II.2.B. It is anchored by AHRI and extends to local levels through 22 LADIAs with local laboratories that conduct basic screening tests (e.g. brucellosis RBPT and bacteriology). A very effective transport /road system facilitates rapid submission of samples to more specialised laboratories.

A diagnostic reporting system set out in Figure 10 feeds into the Animal Health Information System (see CC II-4).

The laboratory network includes OIE reference centres for CSF and two diseases of shrimp.

AHRI operates an Exotic Animal Disease Laboratory which is a strictly isolated and negative-pressurized P3 laboratory (E24).

Through AHRI the network has established linkages with international reference laboratories in Japan, France, Germany and the USA on new and emerging diseases (PME1; E8). In 2013 AHRI scientists and wildlife colleagues discovered and characterized a new strain of rabies virus in Formosan ferret badgers – that may have been present but undetected for 50-100 years. (E3; E4).

Strengths:

- Effective laboratory network spanning the country and able to diagnose existing and emerging diseases.

Weaknesses:

- None in evidence

Recommendations:

- The impressive scientific and diagnostic capacity of this network could be used to support less developed countries through collaborative arrangements, including with the OIE.

Evidence (as listed in Appendix 6): PME1; E1-4; E8; E9; E10; E11; E20-25; E32A&B; E35; E38; E78; E99; visits to AHRI, LADIA and university laboratories (see Appendix 4).

B. Suitability of the national laboratory system *The sustainability, effectiveness, safety and efficiency of the national (public and private) laboratory system (or network), including infrastructure, equipment, maintenance, consumables, personnel and sample throughput, to service the needs of the VS.*	Levels of advancement
	1. The national laboratory system does not meet the needs of the VS.
	2. The national laboratory system partially meets the needs of the VS, but it is not sustainable, as the management and maintenance of resources and infrastructure is ineffective and/or inefficient. Laboratory biosafety and *biosecurity* measures do not exist or are very limited.
	3. The national laboratory system generally meets the needs of the VS. Resources and organisation are managed effectively and efficiently, but funding is insufficient for a sustainable system, and limits throughput. Some laboratory biosafety and *biosecurity* measures are in place.
	4. The national laboratory system generally meets the needs of the VS, including for laboratory biosafety and *biosecurity*. There is sufficient sample throughput across the range of laboratory testing requirements. Occasionally, it is limited by delayed investment in certain aspects (e.g. personnel, maintenance or consumables).
	5. The national laboratory system meets all the needs of the VS, has appropriate levels of laboratory biosafety and *biosecurity*, and is efficient and sustainable with a good throughput of samples. The laboratory system is regularly reviewed, audited and updated as necessary.

Terrestrial Code reference(s): Appendix 1

Findings:

AHRI is extraordinarily well resourced and serves as a central hub for a system comprising other sophisticated and very well-resourced laboratories of ATRI, NAIF, universities (ADDCs) and the LADIAs (PME1; E20).

The management of infectious biomaterials in animal and inspection laboratories in AHRI, which includes a P3 facility for exotic animal diseases (E24), and its Branch ADIB, is based on the “Regulations for management of infectious biomaterials in animal” and “Regulations for management of inspection organization of animal infectious disease” announced by COA, are in accordance with Article 12-1 and Article 12-2 of the “Statute for Prevention and Control of Infectious Animal Disease”. In addition, the laboratory for zoonoses must comply with a regulation “Governing Management of Infectious Biological Materials”.

The range of laboratory tests available at AHRI is set out in an Institutional overview prepared for this evaluation (E20 pages12-15) including the work performed for passive and active surveillance and disease control programs many of which have been subject to audits (see CC I-5).

Some laboratories visited were unusually well resourced, most notably an analytical chemistry laboratory with an impressive array of expensive analytical equipment for residue detection, despite a relatively small volume of samples to be tested. This raised questions about the cost-effectiveness of the investment (which may be justified by maintenance of surge capacity required that would be required for a national emergency), and whether the sample volume was sufficient to maintain technical prowess.

Some might question the sustainability of such a sophisticated laboratory network for veterinary research and diagnostic work. Nevertheless, despite national financial challenges,

Chinese Taipei has managed to protect this important resource that meets significant national, regional and global needs, including a) capacity to respond to national or regional emergencies (e.g. a major food poisoning event requiring analytical chemistry or a new infectious disease requiring rapid vaccine development that might not be a viable commercial proposition), and b) contributes significantly to national GDP through its commercial development of research findings such as a new PRRS vaccine that created of 33 high paying jobs and generated millions of NTD in foreign exchange earnings (see CC II-8). Chinese Taipei and its VA are to be commended for maintaining this capacity. At the same time there may be room without compromising scientific excellence or capacity, to gain efficiencies to provide resources for other national priorities of the VS.

Strengths:

- A well-resourced network with AHRI serving as a central hub for a system comprising labs of ATRI, NAIF, universities (ADDCs) and the LADIAs

Weaknesses:

- Need to ensure the sustainability of a costly laboratory network.

Recommendations:

- As recommended under CCII-1, The impressive scientific and diagnostic capacity of this network could be used to support less developed countries through collaborative arrangements.
- Consider opportunities to gain efficiencies without compromising scientific excellence or the surge capacity required to respond to a major emergency.

Evidence (as listed in Appendix 6): PME1; E1-4; E8; E9; E10; E11; E20-25; E32A&B; E35; E38; E78; E99; visits to AHRI, LADIA and university laboratories (Appendix 4).

C. Laboratory quality management systems (QMS) *The quality and reliability of veterinary laboratory testing servicing the public sector VS as assessed by the use of formal QMS including, but not limited to, attainment of ISO 17025 accreditation and participation in proficiency testing programmes.*	Levels of advancement
	1. No laboratories servicing the public sector VS are using formal QMS.
	2. One or more laboratories servicing the public sector VS, including the major national animal health reference laboratory, are using formal QMS.
	3. Most major laboratories servicing the public sector VS are using formal QMS. There is occasional use of multi-laboratory proficiency testing programmes.
	4. All the laboratories servicing the public sector VS are using formal QMS, with regular use of multi-laboratory proficiency testing programmes.
	5. All the laboratories servicing the public sector VS are using formal QMS systems, which are regularly assessed via national, regional or international proficiency testing programmes.

Terrestrial Code reference(s): Appendix 1

Findings:

The laboratories of AHRI and its Animal Drugs Inspection Branch are ISO 17025 certified. These laboratories have had more than 50 analyses certified by the Taiwan Accreditation Foundation, including for example a test for serum antibodies against bovine brucellosis, a virus neutralization test for FMD, an hemagglutination-inhibition test for Newcastle Disease, and a test for Dried Lapinized Hog Cholera Vaccine (PME1).

The same is true for ATRI and NAIF that participate in testing for regulatory systems and formal disease control programmes.

As is often the case, formal QMS are lacking in many clinical and research laboratories in the private sector and at universities. Brucellosis RBPT screening tests performed by LADIAs are not subject to proficiency testing (on site interviews and correspondence with BIPAHQ).

LADIAs equipped with laboratories perform some basic analyses on site (e.g. Rose Bengal screening tests for brucellosis), depending on the needs of the livestock, poultry, and aquaculture farms. The majority of samples are sent directly to other relevant laboratories (ones with formal quality management systems) for testing (E111).

Strengths:

- Extensive use of accreditation and proficiency testing programmes by all central and regional laboratories that serve the VA.

Weaknesses:

- QA systems need to be developed for laboratories of the LADIAs.

Recommendations:

- LADIA laboratories providing veterinary services to agricultural-reliant cities/ counties should be prioritized and encouraged to join the quality management systems with provision of the required human, training and technical resources.

Evidence (as listed in Appendix 6): PME1 pg 125; E8-11; E26-27; E32a&b; E33e-h; E36; E35; E38; E39a-c; E54a&b; E55a&b; E78; E99; visits to AHRI, LADIA and university laboratories (see Appendix 4). Reports and site visits to central, regional and local laboratories of the state, universities and NPOs (see Appendix 4); Post mission correspondence with BAPHIQ re LADIA labs.

II-2 Risk analysis and epidemiology *The authority and capability of the VS to base its risk management and risk communication measures on risk assessment, incorporating sound epidemiological principles*	Levels of advancement
	1. Risk management and risk communication measures are not usually supported by risk assessment.
	2. The VS compile and maintain data but do not have the capability to carry out *risk analysis*. Some *risk management* and *risk communication* measures are based on *risk assessment* and some epidemiological principles.
	3. The VS compile and maintain data and have the policy and capability to carry out *risk analysis,* incorporating epidemiological principles. The majority of *risk management* and *risk communication* measures are based on *risk assessment*.
	4. The VS conduct *risk analysis* in compliance with relevant OIE standards and sound epidemiological principles, and base their *risk management* and *risk communication* measures on the outcomes of *risk assessment*. There is a legislative basis (e.g. legal instrument) that supports the use of *risk analysis*.
	5. The VS are consistent and transparent in basing animal health and sanitary measures on *risk assessment* and best practice epidemiology, and in communicating and/or publishing their scientific procedures and outcomes internationally.

Terrestrial Code reference(s): Appendix 1

Findings:

The Veterinary Services, under their legal authorities to protect animal health and food safety, implement risk analysis, particularly for exotic diseases and food safety, and use the results of risk assessment to prioritise risk management and risk communication measures. These include active surveillance sampling (HPAI sampling nearby poultry outbreaks, FMD sampling for official recognition of disease free zones, rabies sampling in wildlife), meat inspection (HACCP), and sampling at slaughterhouses for Salmonella, Campylobacter jejuni, Campylobacter coli and Listeria monocytogenes (for sanitary decision making on measures), and X-ray scanning of passenger's hand baggage at airports to prevent smuggling of pork products from ASF affected countries (see CC II-3). To minimise risks, Chinese Taipei adopts stringent mitigation measures specified by international standards, for instance prevention and control measures of FMD, HPAI, rabies, and ASF.

BAPHIQ officers responsible for risk analysis include 4 division chiefs, 9 technical officers in the Animal Health Inspection Division, and 10 technical officers in the Animal Quarantine Division. BAPHIQ has commissioned ATRI to conduct risk assessments for importing animals and animal products through a risk assessment expert team (Figure 17). In this way well-resourced and technically strong import risk assessments for animal health and food safety led by BAPHIQ draw upon the expertise of ATRI, AHRI, NAIF and universities as well as formal and informal discussions with consumers, industries and other stakeholders.

Scientists at AHRI and other institutions have published extensively on their work on diseases such as endemic rabies, CSF, and have contributed to OIE's recognition of FMD free-zones with vaccination. Chinese Taipei is also active in sharing information and assessments through international channels offered by OIE, WTO and WHO despite unique diplomatic challenges. Reporting to OIE is regular and thorough (see CC IV-5 and PME8). Regular meetings are held with trading partners under auspices of WTO (see CC III-3) and bilaterally (CC IV-2).

Figure 17: The procedures of risk assessment in VA of Chinese Taipei

Risk analysis principles are used to make decisions on imports and trade agreements with partners as well as to design surveillance programs (e.g. AI, FMD, rabies, and ASF active surveillance programmes).

The farm biosecurity programme uses a risk management approach to identify and manage on-farm risks. This is also supported by early notification of animal health issues. Farmer compliance with risk mitigation measures such as vaccination programmes and farm biosecurity is high.

In addition to the risk analysis procedure implemented by BAPHIQ for animal health and quarantine issues, TFDA conducts risk assessments for the importation of food products of animal origin. The results are regularly published on the TFDA website[26], including a list of the Risk Analysis Committee members as well as the meeting records.

While work on risk analysis is done at VEE and NPOs, there is no indication of a formal post-graduate training programme in risk analysis. Advanced training is acquired 'on the job' or through overseas training. Though effective, there may be benefits in developing a more formal advanced training programme in risk analysis to support all levels of the VS according to their needs.

Strengths:

- A committee of risk assessment experts is used to develop independent science-based risk assessments.
- Risk analysis is effectively used to manage animal quarantine risks by BAPHIQ.
- Robust risk-based disease surveillance and control programmes are in place.
- Highly transparent process implemented by TFDA for imports of food products of animal origin; Risk assessments are regularly published on the website, including the list of Risk Analysis Committee members and meetings records.

[26] https://www.fda.gov.tw/TC/siteList.aspx?sid=7725

Weaknesses:

- There may be opportunities to enhance advanced training in risk analysis including the use of cost-benefit analyses.

Recommendations:

- Consider enhancing capacity for advanced training on risk analysis
- Continue to apply risk analysis including cost-benefit analyses in reviewing disease control and food safety programmes as recommended in CCs I-5 and II-6.
- BAPHIQ should consider publishing risk assessment reports on a web site similar to the policy and process adopted by TFDA.

Evidence (as listed in Appendix 6): PME1 and Annexes 76 &135; E1; E2; E4; E7; E8; E10; E23; E32a; E32b; E35; E94.

II-3 Quarantine and border security *The authority and capability of the VS to operate to prevent the entry of diseases and other hazards of animals and animal and veterinary products into their country.*	Levels of advancement
	1. The VS cannot apply any type of quarantine or border security procedures for the entry of animals, animal products and veterinary products with their neighbouring countries or trading partners.
	2. The VS can establish and apply minimal quarantine and border security procedures, or the VS only apply quarantine and border security procedures effectively at some official entry points via *border posts*.
	3. The VS can establish and apply quarantine and border security procedures based on import protocols and international standards at all official entry points via *border posts*, but the procedures do not systematically address illegal activities relating to the import of animals, animal products and veterinary products.
	4. The VS can establish and apply effective quarantine and border security procedures which systematically address legal pathways and illegal activities (e.g. through effective partnerships with national customs and border police).
	5. The VS can establish, apply and audit quarantine and border security procedures which systematically address all risks identified, including through collaboration with their neighbouring countries and trading partners.

Terrestrial Code reference(s): Appendix 1

Findings:

Chinese Taipei has an effective animal quarantine and border security programme. BAPHIQ is the authority responsible for animal and plant health inspection and quarantine services. Quarantine and border security (including import and export permits) are centralized functions of the VA with a direct chain of command from BAPHIQ Branches to the Director General of BAPHIQ (see CC I-6.A).

Policies for live animal and animal product quarantine are developed by the BAPHIQ, with implementation by the BAPHIQ Branches and inspection stations. In addition, BAPHIQ cooperates with other border authorities including Customs Administration and Coast Guard Administration to prevent and investigate smuggling of animals and animal products into Chinese Taipei. BAPHIQ also works jointly with TFAD for food safety quarantine and inspection activities at airports and seaports. Collaboration with Customs, police, and TFDA is effective. Regular meetings are held between relevant institutions at provincial level and internationally with trading partners.

BAPHIQ has 4 Branches including Keelung Branch, Hsinchu Branch, Taichung Branch, and Kaohsiung Branch which are located near the international airports and seaports, with a total of 17 Inspection Stations throughout Chinese Taipei (Figure 3). BAPHIQ border inspectors benefit from appropriate physical resources including computers, as well as data management systems and continuing education.

There are 22 quarantine stations/facilities for importing live animals:

- *The Animal and Plant Quarantine Center* (APQC), BAPHIQ,

- 2 quarantine centres for dogs and cats at National Chung-Hsing University and NPUST, and
- 19 private quarantine premises for poultry (company owned farms).

The import of animals and animal products into Chinese Taipei shall be handled in accordance with the "Quarantine Requirements for the Importation of Animals and Animal Products". These stipulate conditions to be set out in the animal health quarantine certificate issued by the exporting country. When necessary, consultation with the exporting country on the contents of the quarantine certificate of animal health is carried out.

Risk analysis is conducted to determine allowed, managed or prohibited importation of animals and animal products into Chinese Taipei. BAPHIQ officials examine the animal disease status of the country of origin and the performance of the veterinary services as part of the risk assessment. They actively use the European Rapid Alert System for Food and Feed as a third country to notify of food safety risks.

Once animals arrive in Chinese Taipei, they shall be held at quarantine stations/facilities. The quarantine periods are stipulated in the "Statute for Prevention and Control of Infectious Animal Diseases". For example, cloven-hoofed animals shall be quarantined for 15 days, single-hoofed animals and fowls shall be quarantined for 10 days, carnivorous animals (except for dogs and cats) shall be quarantined for 21 days. Dogs and cats imported from rabies epidemic area shall be quarantined for 7 days. Moreover, samples shall be collected and tested for important diseases during the quarantine period as required by law.

A three-tiered quarantine audit control system at the Branch level was described as consisting of an annual external audit to supplement internal audit controls on top of routine supervision (E94). Annual reviews are conducted by the Risk Assessment Expert Team (see CC II-2) including visits to BAPHIQ Branches and inspection stations.

In addition, Taoyuan International Airport and Kaohsiung Harbour were designated as ports under the 2005 International Health Regulations (IHR), and were subject in 2011 and 2013 to reviews by experts from Japan and Australia to confirm that they meet or exceed IHR 2005 requirements (E94).

The serious epidemic of ASF in the region, and in particular the significant presence of the disease in mainland China[2], poses a serious challenge to the VA and VS of Chinese Taipei that will strain even the most robust safeguards (PME5; PME6).

Chinese Taipei's border control and quarantine service is supported by strong public awareness and information campaigns. The risk from the illegal import of products is mitigated by an active awareness campaign with posters, fliers, 'giant detector dog dress-up suits', and signage at entry/exit ports. Quarantine detector dogs operate at all major airports and seaports. The numbers of quarantine detector dogs are being increased and those dogs are well trained and tested regularly. Flights are risk-assessed, based on their origin and history of detections. Dog activity is increased as required.

During the visit at Taoyuan International Airport, hand baggage scanning was being carried out in a risk-based manner focused on passengers from ASF affected countries who must also walk across a disinfection carpet. BAPHIQ Branch officers and police at Taoyuan International Airport inspect all passengers to identify higher risk materials and pork products for inspection.

BAPHIQ has a history of suspending imports following changes to animal health status and assessed risk. For instance, poultry products and live bird imports have been prohibited

following outbreaks in HPAI affected countries. Likewise, imports of pig products have been prohibited after outbreaks of FMD and ASF. In addition, BAPHIQ effectively manages other quarantine threats, for example, by ensuring that all aircraft and ship waste is destroyed by incineration.

Strengths:

- Well-resourced and effective border security and quarantine services with supporting information systems.
- Strong public awareness and information campaigns at the border inspection posts and other media.
- Risk analysis is used to identify risk and implement mitigation measures.

Weaknesses:

- No specific docking areas for inspection of refrigerated trucks/containers to ensure continuity of the cold chain for frozen animal products.

Recommendations:

- Review and where warranted improve the inspection facilities and sample collection areas at warehouses to preserve an effective cold chain.
- Include border operations in the enhanced audit and evaluation approaches proposed under CC I-5.

Evidence (as listed in Appendix 6): PME1 and Annexes 8, 11, 16, 85; PME2; PME3 (a-d); PME6; E1; E2; E7; E14; E22; E32a&b; E35; E60-63; E64a&b; E71-73; E78; E94; E95; PAA5; PAA7

II-4 Surveillance and early detection *The authority and capability of the VS to determine, verify and report on the sanitary status of their animal populations, including wildlife, in a timely manner.* **A. Passive surveillance, early detection and epidemiological *outbreak* investigation** *A surveillance system based on a field animal health network capable of reliably detecting (by clinical or post mortem signs), diagnosing, reporting and investigating legally notifiable diseases (and relevant emerging diseases) in a timely manner.*	**Levels of advancement**
	1. The VS have very limited passive surveillance capacity, with no formal disease list, little training/awareness and/or inadequate national coverage. Disease outbreaks are not reported or reporting is delayed.
	2. The VS have basic passive surveillance authority and capacity. There is a formal disease list with some training/awareness and some national coverage. The speed of detection and level of investigation is variable. Disease outbreak reports are available for some species and diseases.
	3. The VS have some passive surveillance capacity with some sample collection and laboratory testing. There is a list of notifiable diseases with trained field staff covering most areas. The speed of reporting and investigation is timely in most production systems. Disease outbreak investigation reports are available for most species and *diseases.*
	4. The VS have effective passive surveillance with routine laboratory confirmation and epidemiological disease investigation (including tracing and pathogen characterisation) in most animal sectors, and covering producers, markets and slaughterhouses. There are high levels of awareness and compliance with the need for prompt reporting from all animal owners/handlers and the field VS.
	5. The VS have comprehensive passive surveillance nationwide providing high confidence in the *notifiable disease* status in real time. The VS routinely report surveillance information to producers, industry and other stakeholders. Full epidemiological disease investigations are undertaken in all relevant cases with tracing and active follow up of at-risk *establishments*.

Terrestrial Code reference(s): Appendix 1

Findings:

Chinese Taipei has an efficient disease reporting system from the city/county/township to central level, with obligations to notify that include farmers as well as veterinarians, and good evidence of negative and positive reports being generated and disseminated, including to the public health sector and other stakeholders and internationally through the OIE. The web-based reporting systems are currently operational and user-friendly,

The VS have an extensive field network of veterinarians and veterinary paraprofessionals operating at the different administrative levels – city/county/township level, slaughterhouses, and veterinary clinics with full national coverage with all livestock producers in regular contact with the high number of fully qualified field veterinarians.

Local Animal Disease Inspection Authorities (LADIAs)

The LADIAs are responsible for surveillance and risk management targeting Chinese Taipei's legally notifiable diseases, listed as Class A[27], B[28] and C[29] based on their socio-economic, health and trade impacts (PME1 pages 146-148). Together these cover 71 of the 116 OIE listed diseases.

There are clear legal provisions on these listed notifiable diseases and the requirement to report under the Statute for Prevention and Control of Infectious Animal Diseases. BAPHIQ has developed biosecurity and animal protection standards targeting each of the major livestock species and the LADIA and township veterinarians are responsible for conducting annual inspections of every cattle, pig and poultry farm for awareness and compliance, as well as conducting disease investigations and disease control activities for the listed diseases. LADIA veterinarians also undertake official inspections relating to veterinary drug distribution and use, drug residues in farm animals and feed safety. Additionally, there are 1-2 veterinarians who provide regular services at the township level (the lowest local authority) in most of townships in Chinese Taipei, and these include regular visits to all farms[30].

NAIF veterinary inspectors at slaughterhouse

BAPHIQ commissions the work on meat inspection to NAIF. Veterinary inspectors and meat inspectors (veterinary paraprofessionals) are employed by NAIF under supervision of the BAPHIQ Branch. Veterinary inspectors are responsible for the monitoring of slaughterhouses to ensure that their operations meet the required hygiene standards and that only meat fit for human consumption is released for sale in the market. Qualified veterinary inspectors are stationed at the slaughterhouses to perform meat inspection (ante- and post-mortem), animal welfare inspection and other related duties, including monitoring the operation of slaughterhouses.

Private veterinarians

Private veterinarians are also available at the city/county/township level in Chinese Taipei to provide services to farmers. Regulations require each poultry farm to have a contract

[27] Foot and Mouth Disease, Classical Swine Fever, Sheep Pox and Goat Pox, Newcastle Disease, Rinderpest, *Peste Des Petits Ruminants*, Contagious Bovine Pleuropneumonia, Lumpy Skin Disease, Rift Valley Fever, African Horse Sickness, African Swine Fever, Highly Pathogenic Avian Influenza (HPAI),

[28] Rabies, Bovine Brucellosis, Bovine Tuberculosis, Bovine Spongiform Encephalopathy, Caprine And Ovine Brucellosis, Anthrax, Pseudorabies (Aujeszky's disease), Leptospirosis, Q Fever, Paratuberculosis, Vesicular Stomatitis, Bluetongue disease, Bovine Anaplasmosis, Bovine Babesiosis, Bovine Genital Campylobacteriosis, Enzootic Bovine Leucosis, Haemorrhagic Septicaemia, Infectious Bovine Rhinotracheitis, Caprine Arthritis/Encephalitis, Maedi-Visna, Contagious Caprine Pleuropneumonia, Enzootic Abortion of Ewes (Ovine Chlamydiosis), Scrapie, Equine Encephalomyelitis (Eastern, Western, Venezuelan), Glanders, Japanese Encephalitis, Swine Transmissible Gastroenteritis, Swine Trichinellosis, Porcine Reproductive and Respiratory Syndrome (PRRS), Swine Vesicular Disease, Nipah Virus Encephalitis, Avian Infectious Bronchitis, Avian Infectious Laryngotracheitis, Duck Virus Hepatitis, Fowl Cholera, Fowl Typhoid, Infectious Bursal Disease (Gumboro disease), Marek's disease, Avian Mycoplasmosis (*M. Gallisepticum*), Avian Chlamydiosis, Pullorum disease, Low Pathogenic Avian Influenza (H5/H7 Subtype) (LPAI), West Nile Fever, Rabbit Haemorrhagic Disease, Red Sea Bream Iridoviral Disease, Taura Syndrome, White Spot Disease, Yellowhead Disease, Infectious Hypodermal and Hematopoietic Necrosis, White Tail Disease.

[29] Vesicular Exanthema, Bovine Ephemeral Fever, Malignant Catarrhal Fever, Contagious Pustular Dermatitis (Orf), Waterfowl Parvovirus Infection, Duck Virus Enteritis, Salmonella Enteritidis, Grouper Iridoviral Disease, Grouper Nervous Necrosis Virus Infection.

[30] Intervention from Yueh-Ping Lin (Augusta) during closing meeting.

veterinarian who provides animal health and inspection services regularly. A contract poultry veterinarian also issues the poultry health certificate when poultry are moved to a wholesale poultry market or slaughterhouse. Small animal clinics and hospitals are available and provide care to local pets.

With a large number of veterinarians operating at field level and in regular contact with producers, a strong compensation scheme, and excellent awareness amongst farmers, Chinese Taipei's passive surveillance system is generally strong. Livestock and poultry farmers monitor mortality, morbidity and production rates daily and are required to contact their veterinary service if changes occur above a certain threshold.

At slaughterhouse ante- and post-mortem livestock and poultry disease data is collected and reported through a web-based reporting system. This contributes to the animal health passive surveillance dataset as managed by BAPHIQ. Slaughterhouse surveillance is a rich source of animal health data, especially passive surveillance for tuberculosis and Avian Influenza. When combined with field surveillance reports the information gathered can provide a more complete picture of the nation's animal health status.

According to the Statute for Prevention and Control of Infectious Animal Diseases (Article 6), BAPHIQ as the central competent authority officially divides the notifiable animal infectious diseases into 3 categories (Types A, B and C) which total 71 of the current 116 OIE listed diseases.

According to Article 17 of the regulations on the "Statute for Prevention and Control of Infectious Animal Disease", a veterinarian who discovers an animal which is suspected or possibly infected of category A animal infectious diseases or category B and C of major zoonotic animal diseases, shall report to the LADIA-in-charge within 24 hours. Upon receiving the report, the LADIA shall take actions immediately and report to BAPHIQ. In case of a major zoonotic infectious disease, then the BAPHIQ should report to TCDC.

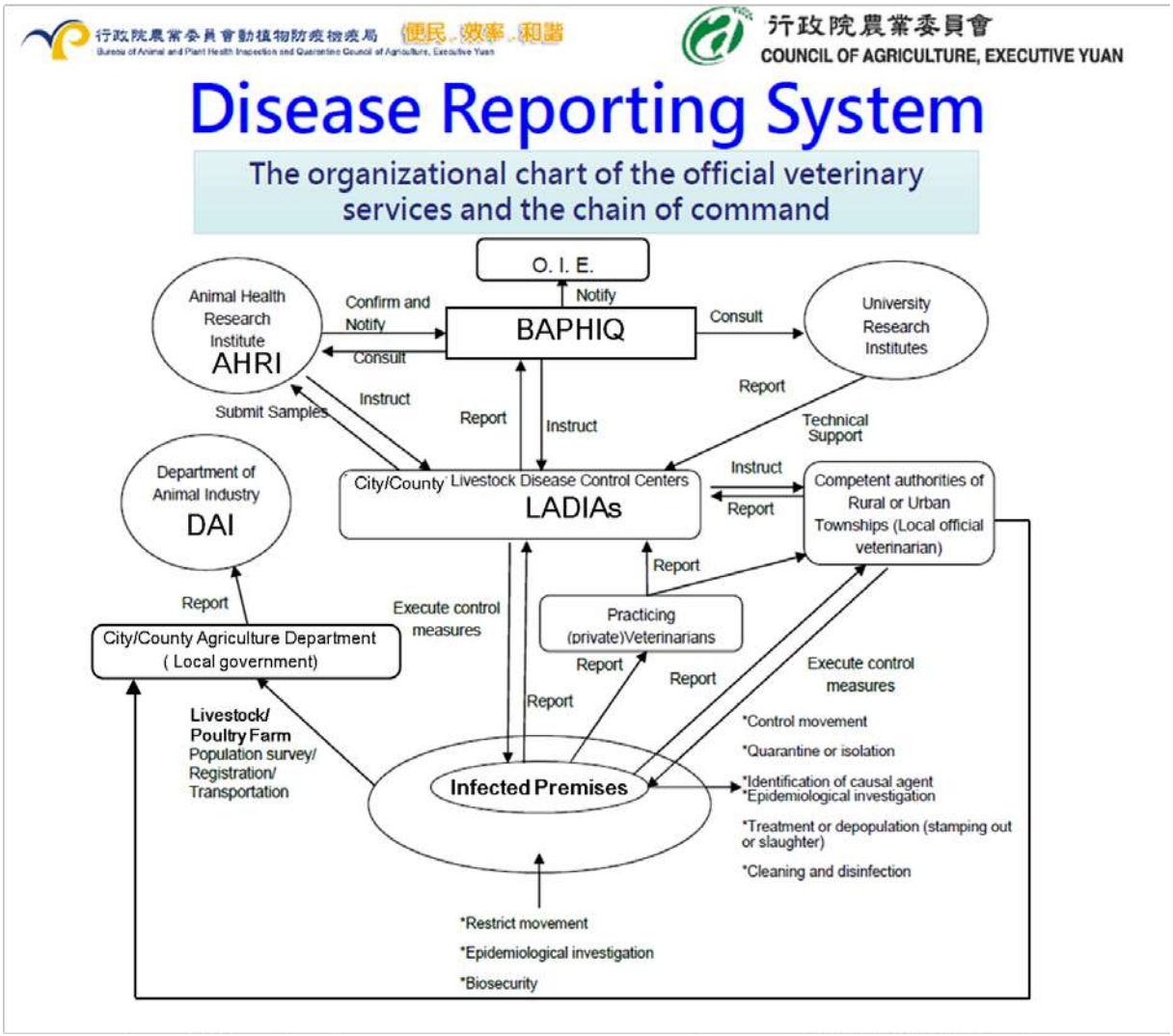
The Animal Health Information System (AHIS) (https://ahis.baphiq.gov.tw/app/) provides a nationwide surveillance and notification system of animal diseases at the city and county level to improve prevention, control or eradication programmes for priority diseases in Chinese Taipei. A contact person in each LADIA has been assigned to collect animal health information based on the diagnostic results from laboratories to provide the current disease information and early warning information for BAPHIQ and its neighbouring LADIAs. In addition, the animal disease geographic information system enables BAPHIQ and LADIAs to understand the geographic locations of the infected premises (IP). The list of livestock or poultry farms located in control area of the IP can be print out from the system. Movement control and further epidemiological investigation can be implemented.

In Chinese Taipei, several sub-systems of AHIS are also developed and used as follow:

- Animal disease reporting system for the LADIAs to report current animal disease information,
- Farm Integrated Information management system,
- Animal disease geographic information system enable BAPHIQ and LADIAs to understand the geographic locations of animal farms,
- Animal disease surveillance information system,
- FMD disease vaccination management system,
- Livestock farm's disease inspection Information management system,
- Sheep pox and goat pox vaccination information system,

- Auction market hygiene and health management system,
- Rabies vaccination management system,
- Tracking management system for dogs and cats in and out of outlying islands,
- Management system for cattle selling to the main island from Kinmen,
- Animal drugs management service platform,
- Animal quarantine management platform for imports and exports,
- Livestock and poultry slaughtering and meat inspection management system.

Figure 18: Disease reporting system and chain of command in Chinese Taipei



Strengths:

- A very impressive field veterinary network with full national coverage, regular farm visits, high levels of farmer awareness and the availability of compensation.
- Impressive early detection, as demonstrated particularly for AI in poultry.
- Well-resourced diagnostic laboratories.

Weaknesses:

- Several sub-systems of the Animal Health Information System (AHIS) are in use but it was not clear if they capture information from all databases at slaughterhouses, AHRI, ATRI and LADIAs.
- Slaughterhouse passive surveillance data may not feed into the national animal health surveillance/reporting system.

Recommendations:

- Review and enhance the AHIS to provide a fully integrated information system operating in real-time to capture the reporting and investigation of suspect diseases and the results of diagnostic testing.
- Continue to encourage immediate reporting, sampling and appropriate laboratory testing for any suspected category A disease, supported by stakeholder participation through training, awareness, joint programmes, communication and consultation building on the exemplary work on ASF vigilance.
- Review and as required strengthen passive surveillance at small-scale abattoirs, livestock markets, and poultry wholesale markets with clear guidelines for sampling of animals rejected on the basis of poor health, including veterinary presence at livestock and poultry markets with a focus on inspection and passive surveillance (roles that might be delegated to NAIF or private veterinarians with appropriate training and obligations for inspection and reporting).

Evidence (as listed in Appendix 6): PME1 and Annexes 19, 57, 58, 63, 63-66, 76-81, 122-124), PME5; E1; E2; E4; E7-E10; E17; E20; E22-E25, E32a&b; E35; E68; E71; E74; E78; E80; E84; E85; E86; E88; E94; E97; E98

B. Active surveillance and *monitoring*	Levels of advancement
Surveillance targeting a specific disease, infection or hazard to determine its prevalence, measure progress in disease control or support the demonstration of disease freedom (with passive surveillance), most often in the form of pre-planned surveys with structured sampling and laboratory testing.	1. The VS have no active surveillance programme.
	2. The VS conduct active surveillance for one or a few *diseases, infections* or *hazard*s (of economic or zoonotic importance), but the surveillance is not representative of the population and the surveillance methodology is not revised regularly. The results are reported with limited analysis.
	3. The VS conduct active surveillance using scientific principles and OIE standards for some *diseases, infections* or *hazard*s, but it is not representative of the susceptible populations and/or is not updated regularly. The results are analysed and reported to stakeholders.
	4. The VS conduct active surveillance in compliance with scientific principles and OIE standards for some *diseases, infections* or *hazard*s which is representative of all susceptible populations and is updated regularly. Results are routinely analysed, reported and used to guide further surveillance activities, disease control priorities, etc.
	5. The VS conduct ongoing active surveillance for most significant *diseases, infections and hazards* and apply it to all susceptible populations. The results are routinely analysed and used to guide disease control and other activities. The active surveillance programmes are regularly reviewed and updated to ensure they meet country needs and OIE reporting obligations.

Terrestrial Code reference(s): Appendix 1

Findings:

The VS implement national active surveillance programmes for a number of priority animal diseases in Chinese Taipei. This provides a strong and detailed understanding of the national animal health status. Priority diseases requiring active surveillance are those for which eradication/elimination is the target (e.g. FMD, rabies, HPAI, ASF, tuberculosis, brucellosis, CSF, bovine ephemeral fever, and BSE).

Active surveillance programmes are developed at the national level by BAPHIQ with clearly detailed procedures for sampling, laboratory diagnosis, data management and reporting. However, counties/cities also have the flexibility to conduct their own surveillance programmes for other diseases with guidance of BAPHIQ. BAPHIQ and AHRI develop sampling frames for the active surveillance programmes. For example, BAPHIQ currently implements active surveillance of farms for notifiable AI and FMD. LADIAs and township veterinarians divide the areas to identify which animal farms they will visit regularly. LADIAs and township veterinarians will then collect samples to achieve the required active surveillance of the target population.

The VS are seeking in the future to use their active surveillance programmes to recover official free status for several significant diseases: FMD, CSF, Avian Influenza, PRRS and rabies.

A summary of some key national active surveillance programmes, implemented in Chinese Taipei is as follows:

Foot-and-mouth disease:

Serological surveillance has been carried out since the outbreaks of foot-and-mouth disease of serotype O in 1997. Neutralizing antibodies and antibodies against non-structural proteins

in pigs, cattle, and goats are measured to monitor herd immunity and virus activity in the field, respectively. In 2017, OIE officially recognised the main island, Penghu and Matsu islands of Chinese Taipei as FMD free zones with vaccination, and in May 2018, Kinmen island was officially recognized as FMD free zone with vaccination (see CC IV-7).

African swine fever:

Surveillance has been carried out since the occurrence of ASF outbreaks in China in August 2018. Real-time polymerase chain reaction and polymerase chain reaction are used to detect specific viral DNA in smuggled pork products at ports of entry (airports and seaports) and dead pig carcasses washed ashore from the mainland (PME5).

Avian influenza:

Faecal samples of wild birds collected in wetlands are collected by non-governmental organizations and submitted to AHRI for isolation and subtype identification of avian influenza viruses. Birds found dead are also submitted to AHRI for detection of avian influenza virus. Serological surveillance of poultry and waterfowl is carried out to monitor the prevalence of avian influenza virus in the field.

Bovine ephemeral fever:

Serological surveillance is carried out to measure neutralizing antibody titers in cattle population, and thus to monitor herd immunity against bovine ephemeral fever.

Active surveillance of Rabies:

Brains of suspect rabid dogs, cats and other animals euthanized at animal shelters are sampled by local animal disease control centres (LADIAs) and submitted to the AHRI for rabies surveillance. Serological surveillance on sera sampled at veterinary clinics is conducted to monitor vaccination coverage and protective immunity among companion animals.

Bovine spongiform encephalopathy:

Cattle which are sick, weak, and showing neurological disorders are the target of sampling. The surveillance indicates that Chinese Taipei remains a risk-controlled country for BSE.

Strengths:

- Well-structured surveillance, prevention and control programmes for priority animal diseases based on strong public-private partnerships, with results analysed, reported and used to guide further surveillance activities, disease control priorities.
- Well-resourced for sampling and laboratory diagnosis.
- Routine active surveillance for priority diseases.
- Existence of a good disease reporting system.

Weaknesses:

- Sampling plans may not fully represent all sub-populations or production types (e.g. small holder farms) for all diseases such as lower priority endemic diseases.

Recommendations:

- Ensure that sampling plans cover the full spectrum of farm and production types, including smallholder farms.

- Review disease surveillance and control programmes for diseases such as salmonellosis in poultry production and at slaughter facilities to ensure that the design is scientifically sound and based on risk analysis.
- Consider reviewing the cost-benefit of undertaking high levels of active surveillance for endemic diseases of limited economic impact (see CC I-5).

Evidence (as listed in Appendix 6): PME1 and Annexes 19, 57, 58, 63-66, 76, 77-81, 122-124), PME5; E1-E4; E7-E10; E17; E20-E25; E32a&b; E35; E68; E71; E74; E78; E80; E84-E86; E88; E94; E97; E98

II-5 Emergency preparedness and response *The authority and capability of the VS to be prepared and respond rapidly to a sanitary emergency threat (such as a significant disease outbreak or food safety emergency).*	Levels of advancement
	1. The VS have no field network or established procedure to determine whether a sanitary emergency threat exists or the authority to declare such an emergency and respond appropriately.
	2. The VS have a field network and an established procedure to determine whether a sanitary emergency threat exists, but lack the legal and financial support to respond effectively. The VS may have basic emergency management planning, but this usually targets one or a few diseases and may not reflect national capacity to respond.
	3. The VS have the legal framework and financial support to respond rapidly to sanitary emergency threats, but the response is not well coordinated through an effective chain of command. They have national emergency management plans for some exotic *diseases*, but they are not updated/tested.
	4. The VS have the legal framework and financial support to respond rapidly to sanitary emergencies through an effective chain of command (e.g. establishment of a *containment zone*). The VS have national emergency management plans for major exotic *diseases,* linked to broader national disaster management arrangements, and these are regularly updated/tested such as through simulation exercises.
	5. The VS have national emergency management plans for all diseases of concern (and possible emerging infectious diseases), incorporating coordination with national disaster agencies, relevant *Competent Authorities*, producers and other non-government stakeholders. Emergency management planning and response capacity is regularly tested, audited and updated, such as through simulation exercises that test response at all levels. Following emergency events, the VS have a formal 'After Action Review' process as part of continuous improvement.

Terrestrial Code reference(s): Appendix 1

Findings:

Once initial detection and reporting of a significant disease outbreak has been made, emergency planning and response in Chinese Taipei is highly advanced with detailed contingency plans in place for FMD, HPAI, CSF, and ASF. Upon suspicion and after confirmation, emergency responses were effective as illustrated for HPAI and FMD.

Chinese Taipei has comprehensive and technically sound national contingency plans for the major emergency animal disease threats including FMD, CSF, ASF and HPAI. The contingency plans for prioritised diseases were made available and presented during the mission,

A disaster management and response plan for animal and plant diseases is formulated according to the "Disaster Prevention and Protection Act" and "Statute for Prevention and Control of Infectious Animal Diseases". Good legislative powers are available to take actions including mandatory reporting, investigation and sampling, movement restrictions and mobile checkpoints, quarantine, culling, seizing animals and animal products, compensation, carcass disposal and disinfection.

Multiple simulation exercises and training sessions have been conducted at the national and local levels by BAPHIQ, BAPHIQ Branches, and LADIAs.

Chinese Taipei has demonstrated capacity to rapidly respond to and successfully eradicate recent emergency disease outbreaks including HPAI (several outbreaks over the last decade). It has also dealt effectively with the discovery of a form of endemic rabies in ferret badgers (see CC II-6).

The discovery of rabies in Chinese Taipei led to "after-action" measures including the creation and work of a "Rabies Central Epidemic Command Centre" at the very highest level (the Executive Yuan. This led evaluations on "Strengthening animal epidemic prevention" in 2017 and meetings of a rabies epidemic prevention inter-ministerial team to "review effectiveness and appropriateness of the notification procedures" (PME1b, Annex 40; E109 item 30, page 18).

ASF has never been detected in Chinese Taipei, but the country is on high alert and would seem to be well prepared. However, it should remain vigilant and further enhance its preparedness (see Recommendations below).

A network of field veterinarians at the municipality/city/county/township level are available to assist emergency management and response. Networks exist with generic emergency response agencies and other groups such as the military, police, ATRI and NAIF to provide additional manpower. An effective national chain of command facilitates rapid and consistent decision making during an emergency response.

Emergency funding is available and a compensation mechanism in place as described in CC I-9 – Emergency funding.

Strengths:

- Demonstrated success in control/eradication of disease outbreaks (e.g. FMD, HPAI).
- Strong legislative provisions and financial arrangements, including for compensation.
- Regular simulation exercises in all municipalities/cities/counties.

Weaknesses:

- None in evidence

Recommendations:

- In light of current special risks such as ASF, consider strengthening training/simulation programmes on emergency preparedness/response for officials and staff at all levels: Executive Yuan, BAPHIQ and partner agencies, local authorities and stakeholders including small-holder farms according to their roles. This should assure that staff and partners at all levels fully understand their legal responsibilities and authority to act.
- Develop additional contingency plans for other key risks including possible emerging diseases as appropriate.

Evidence (as listed in Appendix 6): PME1 and Annexes 40; 60-72; PME5; E1- E4; E7; E8; E10; E17; E23; E26; E32a&b; E45; E71; E80; E88; E94; E98; E109

II-6 Disease prevention, control and eradication *The authority and capability of the VS to control or eradicate nationally important diseases present in the country, such as through a combination of vaccination, domestic movement control, establishing containment zones, biosecurity measures (including farm biosecurity), isolation and/or culling/stamping out.*	Levels of advancement
	1. The VS have no capability to implement animal disease prevention, control or eradication programmes.
	2. The VS implement prevention, control or eradication programmes for some diseases and/or in some areas or populations31, but with little or no epidemiological, risk-based planning or evaluation of their efficacy and efficiency.
	3. The VS implement prevention, control or eradication programmes for some priority *diseases* in some areas or populations. There is variable epidemiological, risk-based planning and evaluation of efficacy and efficiency, with limited progress towards programme goals.
	4. The VS implement nationwide prevention, control or eradication programmes for priority *diseases* with a high level of epidemiological, risk-based planning, and continual evaluation of efficacy and efficiency. They have or are progressing towards OIE official recognition of disease control programmes for relevant diseases. They can demonstrate some progress towards programme goals in reducing or eradicating disease.
	5. The VS implement national control or eradication programmes for all priority *diseases* with scientific evaluation of their efficacy and efficiency consistent with relevant OIE international standards. They can demonstrate clear progress towards programme goals in reducing or eradicating disease, including achieving or progressing towards official recognition of freedom from relevant diseases.

Terrestrial Code reference(s): Appendix 1

Findings:

Disease control planning and implementation in Chinese Taipei is well resourced and comprehensive. The VS has implemented animal disease prevention, control, and eradication programmes over the past decades. Diseases are categorised into Category A, B, and C diseases as described in CC II-4A. Priority diseases include rabies, FMD, CSF, ASF, Avian Influenza, tuberculosis, brucellosis, and BSE.

The VS has the authority and capability to control or eradicate nationally important diseases. Animal health legislation (Statute for Prevention and Control of Infectious Animal Diseases) provides the authority to prevent, control and eradicate diseases in Chinese Taipei. LADIAs conduct annual inspections to ensure biosecurity measures are in place on all livestock farms.

In Chinese Taipei, BSE, African Swine Fever (ASF), African horse sickness (AHS), *Peste des petits ruminants* (PPR), Contagious Bovine Pleuropneumonia (CBPP), Bluetongue, and Lumpy Skin Disease have never been detected.

A summary of the national disease control and eradication programmes, implemented in Chinese Taipei with the comprehensive surveillance programmes (see CC II.4) is described below:

[31] One may need to cross-reference this CC with CCs on Zoning and Compartmentalisation as appropriate.

FMD (Category A)

A zoning approach is used for the FMD control and eradication programme. Other tools used are: vaccination, farm biosecurity, movement controls, serological testing, passive and active surveillance, and clinical inspection. In 2017 the FMD vaccination rate was 97.3%. Since July 2018, Taiwan, Penghu and Matsu islands have ceased FMD vaccination. Although Kinmen island is a non-endemic area, the local government provides funds to farmers for vaccination. The vaccine is given to pigs at 12 weeks of age and to cattle at 4 months of age. In 2017, OIE officially recognized Taiwan, Penghu and Matsu islands as FMD free zones with vaccination. In May 2018, Kinmen island was officially recognized as FMD free with vaccination.

Brucellosis and Tuberculosis (Category B)

Cattle are regularly tested for brucellosis (serological) and TB (tuberculin skin test) with a frequency depending on the history of disease prevalence in the area. Positive animals are slaughtered, and laboratory confirmation undertaken. In 1947 brucellosis was detected in cattle in Chinese Taipei. Since 1962, the VS has implemented control strategies (test and removal) for eliminating serological positive cattle and goats. As a result, brucellosis has been controlled and eliminated since 1989. In 2017, 19,253 cattle on 503 farms and 8,995 goats on 250 farms were tested for brucellosis with negative results.

CSF (Category A)

In 1957 Chinese Taipei developed the Lapinized Philippines Cornell (LPC) strain vaccine. After using LPC vaccines in pigs the prevalence of CSF was reduced from 8-9% to 0.02%. According to the monitoring and surveillance data of AHRI, no case of CSF has been detected since 2007. Since then, passive surveillance for CSF has continued, and no CSF virus has been detected.

HPAI (Category A)

In 2015, H5 (subtypes H5N2, H5N3, and H5N8) of highly pathogenic avian influenza viruses of clade 2.3.4.4. were first identified in Chinese Taipei. Approximately, 5 million poultry on 1,004 farms were infected and culled. Goose was the main affected species and the industry was almost wiped out during the 2015 epidemic. The H5N2 virus is still being detected periodically. In February 2017, a highly pathogenic avian influenza of H5N6 virus was identified in a dead duckling in eastern Taiwan of Chinese Taipei and spread to 12 other poultry farms. No human case of H5 Avian influenza virus infection has been detected in Chinese Taipei. The Government of Chinese Taipei (Executive Yuan) has set up a Central Avian Influenza Command Centre chaired by the Premier. The members of the Centre include COA, TCDC and other related Authorities. Several stringent measures have been implemented to prevent and control HPAI in Chinese Taipei.

Rabies (Category B)

Since 1961 Chinese Taipei had been recognized as a rabies free country. In 2013, 3 cases of rabies were confirmed in ferret-badgers. Since then, the VS has launched targeted wildlife pathogen surveillance to study rabies in ferret-badger and other wild animals. Researchers conduct experiments air-dropping baits into broad-leaved forest and bamboo forest to study the ecology of ferret-badgers. Prevalence and transmission of rabies have been monitored continuously. Oral rabies vaccination for ferret-badgers has been developed.

Rabies vaccination has been provided to public and private animal shelters for dogs and cats. These activities can increase the overall rate of vaccination coverage.

Strengths:

- Strong, effective national disease control and eradication programmes with good government and industry partnerships in implementing disease control programmes.
- Successful control programmes have reduced the prevalence levels of a number of endemic diseases including bovine tuberculosis, brucellosis, CSF, and HPAI.
- Demonstrated success in control and eradication programme by obtaining OIE official recognition for FMD free zones with vaccination.

Weaknesses:

- None in evidence

Recommendations:

- Review the efficiency and effectiveness of priority disease control programmes, including cost-effectiveness (see CC I-5).

Evidence (as listed in Appendix 6): PME1 and Annexes 3, 4, 63, 64, 67, 70-81, 138, 139; PME2; PME4a-c; PME5; E1-E4; E7; E8; E10; E11; E16; E17; E21; E23-E26; E32a&b; E35; E48; E58; E60; E74; E78; E80; E81a-c; E83-E86; E88; E90; E91; E94; E96-E98

II-7 Animal production food safety *The authority and capability of the VS to assure the safety of food of animal origin for domestic and export markets* **A. Regulation, inspection (including audits), authorisation and supervision of establishments for production and processing of food of animal origin** *The authority and capability of the VS to establish and enforce sanitary and food hygiene standards for establishments that produce and process food of animal origin, including slaughter, rendering, dairy, egg, honey and other animal product processing establishments.* *Includes the regulation, initial authorisation of establishments, and the ongoing inspection of establishments and processes, including the identification of and response to non-compliance, based on HACCP principles. It includes external coordination between Competent Authorities as may be required.*	Levels of advancement
	1. Regulation, authorisation, and inspection of relevant establishments and processes are generally not undertaken in conformity with international standards.
	2. Regulation, authorisation and inspection of relevant establishments and processes are undertaken in conformity with international standards in some selected premises (e.g. export premises).
	3. Regulation, authorisation and inspection of relevant establishments and processes are undertaken in conformity with international standards in large premises supplying major cities and/or the national market.
	4. Regulation, authorisation and inspection of relevant establishments and processes are undertaken in conformity with international standards for premises supplying the national and local markets. There are some reports of dealing with non-compliance.
	5. Regulation, authorisation, inspection and audit of relevant establishments and processes (and coordination, as required) are undertaken in conformity with international standards at all premises. There are documented cases of the identification and effective response to non-compliance.

Terrestrial Code reference(s): Appendix 1

Findings:

Under the overall supervision of a national Office of Food Safety (Figure 12, Part II.2.B), BAPHIQ is responsible for the food safety aspects of raw agriculture materials on farms, registration and inspection of slaughterhouses, and registration of pesticides and VMP. The TFDA of the MOHW is responsible for all other aspects of food safety of products of animal origin. The Environment Protection Agency (EPA) is responsible for actions to prevent contamination of primary production environment. Interagency coordination is ensured by a food safety committee whose board is composed by MOHW, COA and EPA (Figure 12).

Food safety management principles are based on the registration of food business operators (FBO), food traceability and a three-tier control system consisting of: 1) self-testing and monitoring based on HACCP, 2) third party certification and 3) government inspection. A total number of 448,006 food businesses are registered: 3% import, 9% manufacturing, 48% retail and 40% catering.

The responsibilities of BAPHIQ and TFDA regarding approval and inspection of establishments for products of animal origin (excluding fish) are summarised in Table 5.

Table 5: BAPHIQ and TFDA competencies

	BAPHIQ -COA	TFDA – MOHW
Approval of establishments	Slaughterhouses Slaughterhouses with cutting plants	Meat cutting plants Processing (dairy, meat, eggs) Storage FBO Retail FBO
Inspection of establishments and supervision	Slaughterhouses Slaughterhouses with cutting plants	Meat cutting plants Processing (dairy, meat, eggs) Storage FBO Retail FBO

An annual plan for inspection of establishments is defined by TFDA and implemented at the local level. TFDA analyses the results of monitoring and violations over the years, adjusting the categories of animal products targeted annually and the corresponding inspection items.

All FBO must comply with the same provisions whether their products are for export or for the local market.

BAPHIQ advises that TFDA supervises local health bureaus to include traditional markets and retailers into the monitoring programs in the market in accordance with the principles and carries out random sampling (E130). “High-violation or high-risk manufacturers who have test results of unqualified products in the past are prioritized for inspection to confirm the compliance of their products.” (E130).

Regulations for Good Hygiene Practices and a legal requirement for HACCP systems is in place for almost all food safety businesses. An audit protocol (E133) and other relevant food safety material is available on the TFDA web site:

https://translate.google.com/translate?hl=en&sl=auto&tl=en&u=http%3A%2F%2Fwww.fda.gov.tw%2FTC%2Fsite.aspx%3Fsid%3D9409

“Certified Agricultural Standards” (CAS) is a third-party certification scheme based on traceability requirements, monitoring of supplies, and CAS inspection in marketed food.

Food import control is done at borders and consists of document verification followed by on-site inspection and sampling. Sampling (2-100%) is based on assessed risk (international alerts, post-market surveillance, etc). All food products are inspected by TFDA officers while meat products are inspected both by TFDA and BAPHIQ. Illegal products from cargo or passenger baggage are confiscated, burned or disinfected.

Documents required for export of animal products from Chinese Taipei are issued in accordance with Article 36 of the “Statute for Prevention and Control of Infectious Animal Diseases”, Article 36 of the “Enforcement Rules of Statute for Prevention and Control of Infectious Animal Diseases” and the “Standard operation procedures of quarantine animal and plant declaration”. If the importing country requires a veterinary certificate these are issued by BAPHIQ.

Food safety inspectors from TFDA and local health authorities are generally university graduates (microbiology, food technology…) hired through a civil service examination and trained in the job. A program for CE is in place.

Visits to a dairy products and egg processing (washing and packing) facilities provided evidence of authorities’ inspection for approval and visits performed by the TFDA and by local health authorities with adequate frequency. Detailed checklists to assess compliance with Good Manufacturing Practices (GMP) and HACCP requirements are used. Checklists and

report templates are available but are only sent to establishment when non-compliance is observed in which case corrective actions are requested. Timelines for corrections are given depending on severity of issues. Local health authorities have the authority to halt FBO activities. No reports were available on site during the visits but were provided after.

Adequate coordination mechanisms between on farm checks (e.g. dairy farms inspected by LADIAs) and FBO inspection and supervision are in place as well as records of traceability for suppliers. When an issue is identified by TFDA that may have origin in the primary production, BAPHIQ and LADIA officials are informed, LADIA will investigate and inform TFDA if there is the need to recall products. Coordination with other police and prosecutors is in place for food safety investigations and a "food safety communication platform" was created to support inter-agency collaboration (E110a).

Rendering facilities are inspected together by the livestock division of DAI, the public health bureau, EPA, Police and LADIA. The LADIA certifies plants and transport vehicles and ensures the daily inspection. The rendering facilities report all data daily to the BAPHIQ food safety information system. A monitoring of rendering plants for surveillance of emerging diseases in livestock is in place.

An active surveillance programme for monitoring of microorganisms in meat has been conducted in slaughterhouses since 2000. It includes isolation, identification and analysis of Salmonella, *Campylobacter jejuni* and *Listeria monocytogenes*. Coverage of high-risk slaughterhouses should be improved based on the value of the reference table in "the guidance mechanism of microorganism control in slaughterhouse".

Although case and epidemic management procedures are developed with the veterinary authorities, evidence of coordination amongst the relevant competent authorities regarding the occurrence of human foodborne illness and potential linkages to food of animal origin, including actions of the VA was scarce. For example, there was no evidence of joint foodborne outbreak investigations and recall despite the existence of procedures. A 2016 JEE report (E102) that also looked at this issue reported that while "TFDA and TCDC work well together, there seems to be less collaboration at both the national level between TCDC and COA and the local level between public health and agricultural authorities".
While a TFDA presentation on traceability of foods makes no mention of CoA (E110c slide 9) or a link to the information systems of the VA (BAPHIQ), BAPHIQ advises that in 2014, BAPHIQ, TCDC and TFDA established "PulseNet Taiwan"[32] - a platform to share the inspection information (E130, E132), and that:

> "It has been used as the basis for formulating appropriate prevention and control measures on mid-stream food processing catering and the downstream health care. Moreover, BAPHIQ could also benefit from the feedbacks of the platform and strengthen the biosecurity measures on upstream farms, while improving the microbiological monitoring and related disinfection procedure in slaughterhouses."

The monitoring of microbiological contamination at farms slaughterhouses and production facilities is ongoing however it is difficult to assess the surveillance reliability. A whole genome

[32] https://www.cdc.gov.tw/En/EpidemicTheme/Detail/hQ4XhaZAzUmNe2ksY4tjMA?archiveId=lh8powDu9kYudBT8kWIVTw

sequence database on foodborne pathogens from samples at farm and slaughter is being developed by ATRI and can contribute to faster and more effective investigations of foodborne outbreaks.

Strengths:

- A thorough regulatory framework for food safety focused on protection of public health and aspects of animal disease surveillance covers all FBO supplying the export, national and local markets.
- Clear definition of roles and responsibilities and coordination mechanisms in place
- Three-tier control systems involving self-controls (HACCP and GMP) and third-party certification

Weaknesses:

- Complex coordination mechanisms involve multiple authorities at both central and local levels
- Surveillance is mainly based on random rather than risk-based sampling for most products/FBO
- A programme for surveillance of foodborne zoonoses is still under development and does not yet adequately cover primary production.

Recommendations:

- Develop baseline studies of foodborne pathogens on farms.
- Continue to strengthen coordination and sharing of information between TCDC, TFDA, and CoA to facilitate rapid identification and control of foodborne illness and prevention of food contamination and outbreaks stemming from contamination.

Evidence (as listed in Appendix 6): PME1 and Annexes 11, 13, 41, 83, 86 & 89; E10; E11; E14; E16; E48; E58; E60; E65a-d, E66; E67; E85; E94; E97; E98; E102; E110a; E115 (19); E116 (IR-Q3); E119(Q36); E129a&b; E130; E132; E133

B. *Ante-* and *post mortem* inspection at slaughter facilities and associated premises	Levels of advancement
The authority and capability of the VS to implement and manage the ante-mortem inspection of animals destined for slaughter and the post-mortem inspection of carcases and meat products at slaughter facilities and associated premises, including to ensure meat hygiene and safety, and for the collection of information relevant to livestock diseases and zoonoses. *This includes standards relating to veterinary and veterinary paraprofessional supervision and inspection, and protocols applied for ante- and post-mortem inspection findings, based on HACCP principles. It includes external coordination between Competent Authorities as may be required.*	1. *Ante-* and *post-mortem* inspection is generally not undertaken in conformity with international standards. 2. *Ante-* and *post-mortem* inspection with collection of disease information is undertaken in conformity with international standards only in selected premises (e.g. export premises). 3. *Ante-* and *post-mortem* inspection with collection of disease information is undertaken in conformity with international standards for export premises and the major abattoirs in the larger cities and/or producing *meat* for distribution throughout the national market. 4. *Ante-* and *post-mortem* inspection with collection of disease information is undertaken in conformity with international standards for all slaughter facilities producing meat for export, national and local markets. 5. *Ante-* and *post-mortem* inspection with collection of disease information is undertaken in conformity with international standards at all premises (including municipal, community, and on farm slaughtering and distribution) and are subject to periodic audits.

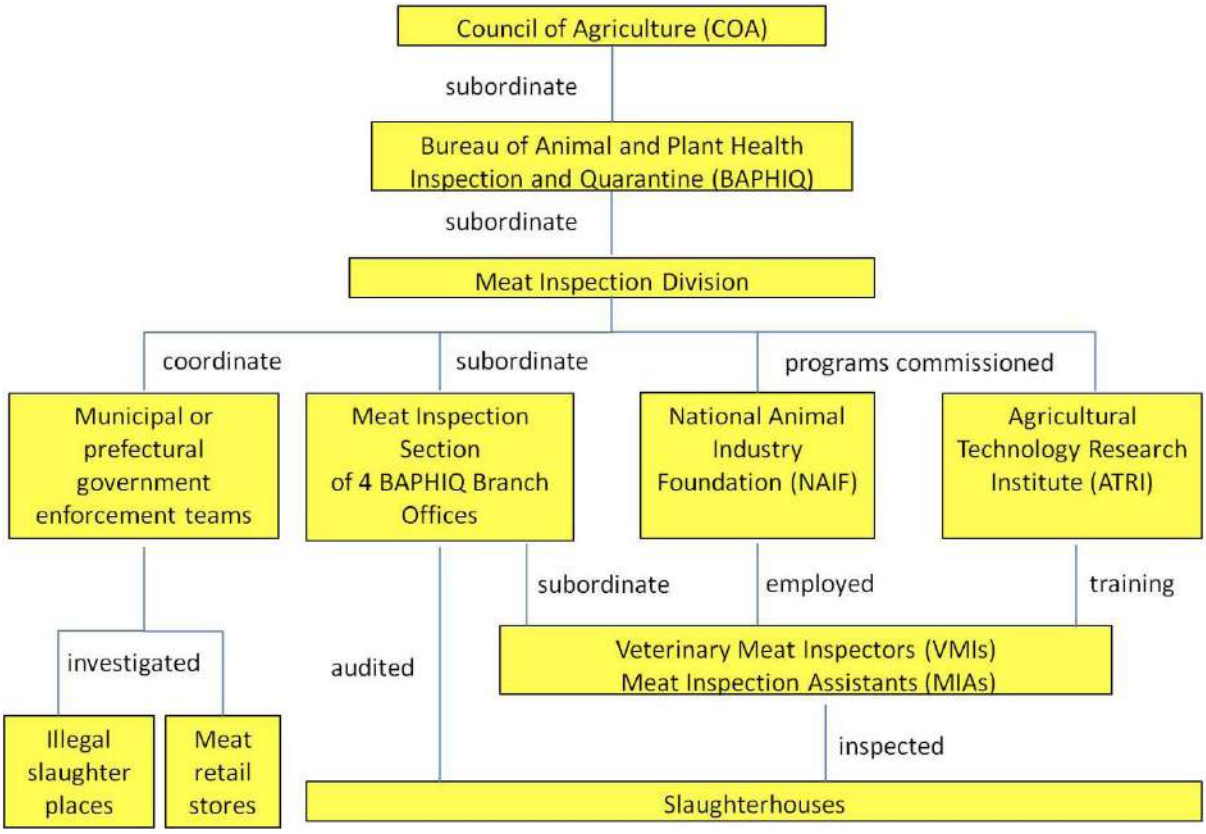
Terrestrial Code reference(s): Appendix 1

Findings:

Ante and post-mortem inspection at slaughter is regulated by the “Animal Industry Act”, “Establishment standards for slaughterhouse” (set by COA, Ministry of Economic Affairs (MOEA) and EPA), “Regulations for meat inspection” (set by COA and MOHW) and “Regulations for slaughter operation”.

The competent authority is BAPHIQ’s Meat Inspection Division, its 4 branches and 17 stations. The Division is responsible for the approval and registration of establishments, supervision of sanitary management, implementation of plant meat inspection, training and audit of staff performance and the investigation of illegal slaughtering, cutting, processing, transport and sale of uninspected meat.

Figure 19. Meat inspection framework



There are 174 slaughterhouses in Chinese Taipei (114 poultry, 58 livestock, 2 poultry and livestock). Please refer to Annex 1 of Document PM-1 (Appendix 6) for the locations of these slaughterhouses. A *Livestock and poultry slaughtering and meat inspection management system*[33] managed by Meat Inspection Division of BAPHIQ is available with the SH registration number, number of inspection staff, number of animals inspected per year, inspection fee overtime charged per year, and the number of branch office auditing for SH and supervision (PME1 page 118).

The TFDA and local health authority staff (70 TFDA food inspectors and 172 inspectors of the Municipal/City/County governments) inspect meat processing plant/cutting plants, the source of meat, and the meat inspection stamp on slaughtered carcasses and relevant documents. They ensure fresh meat products comply with HACCP, Good Hygiene Practices (GHP) and other relevant standards.

Hygiene inspectors are responsible for the collection of samples for monitoring of microorganisms in livestock and poultry slaughterhouses. ATRI performs the laboratory analysis and baseline investigation of carcass surface contamination (poultry, livestock) and water samples.

Local government health authorities are responsible for investigation of illegal slaughter and meat retail stores.

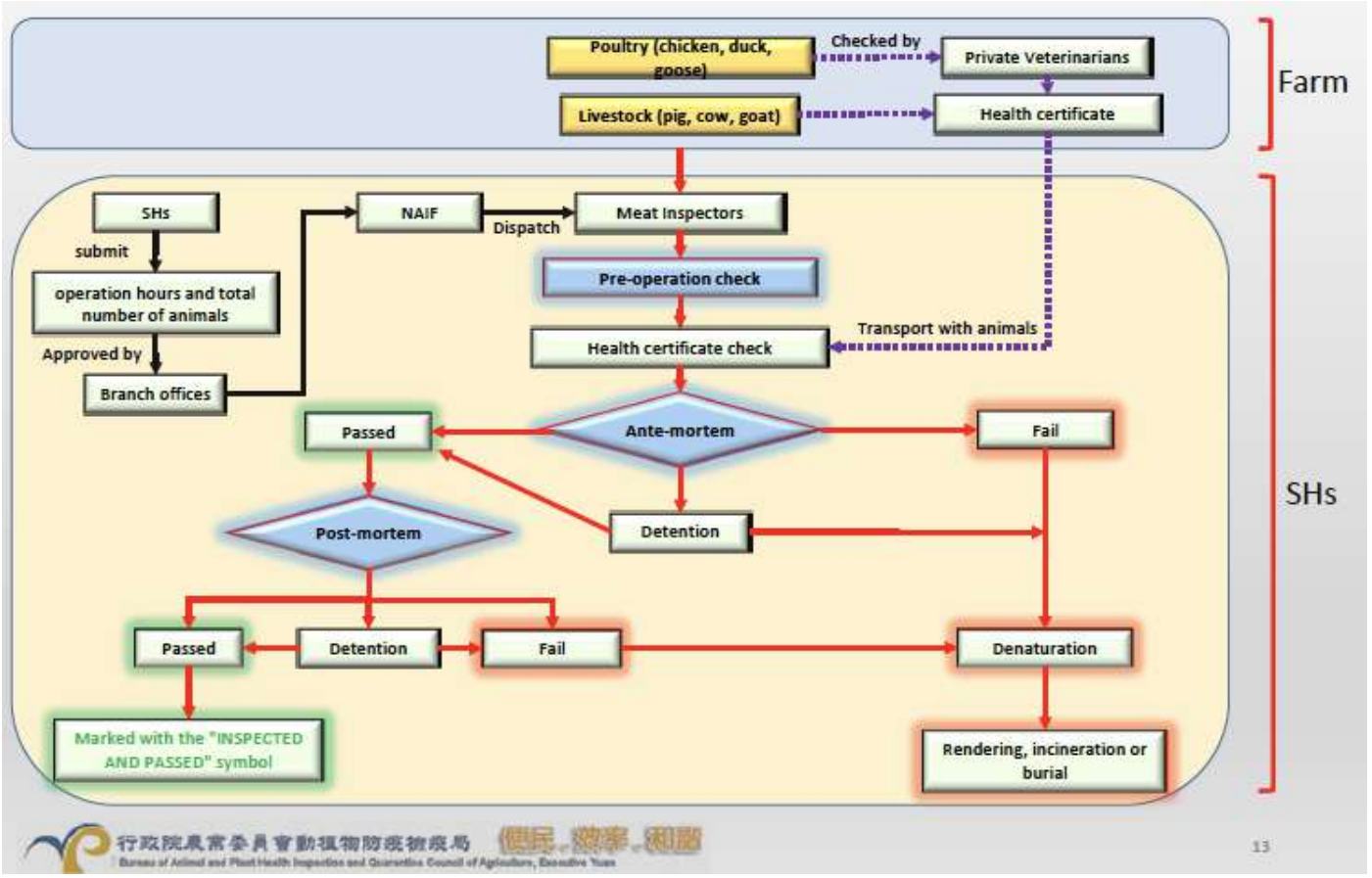
Meat inspection staff at slaughterhouses are: veterinary in charge (VIC) (selected by BAPHIQ to supervise the performance of all meat inspectors), veterinary meat inspector (VMI) (trained

[33] https://miweb.baphiq.gov.tw//sso/SSOlogin.asp (account/password required to access beyond opening page)

and certified by BAPHIQ), meat inspector assistant (MIA) (performs inspection under VMI control, trained and certified by BAPHIQ). Hiring of meat inspectors (248 VMIs and 420 MIAs) was formally delegated by BAPHIQ to NAIF. A program of training was formally delegated to ATRI.

Responsibilities for BAPHIQ, BAPHIQ Branch offices, NAIF, Chief Regional Inspector, VIC, VMI and MIA are described in official guidelines. Principles for BAPHIQ supervision for meat inspectors include a template for supervision. Detailed management rules for meat inspectors include rules for employment and dismission, task attribution and transfer, salary and bonus, working conditions, retirement, assessment and promotion, welfare safety and health.

Figure 20: Meat inspection flowchart



Animal movements to auction and/or slaughter are only possible with a health certificate for poultry (issued by the farm veterinarian) or a health declaration for livestock (issued by the farmer). Animals can move from an auction at one slaughterhouse to a distant slaughterhouse (PAA4). The farm data are linked to the BAPHIQ “Uniform Farm ID Number”. Before slaughtering, VIC shall check the construction and facilities, including hygiene and disinfection.

Some deficiencies regarding hygiene (common unloading and rendering material area, access to birds and other pests and open drainage) were observed in the SH visited.

Veterinarians check the health status, numbers of animals and health declaration or certificate of livestock and poultry waiting for slaughtering (ante-mortem). The process of slaughtering can only start after documentation and ante-mortem check. Meat inspectors examine the carcasses and viscera (post-mortem inspection). Rejections are recorded by hand and information is transferred to the BAPHIQ meat inspection IT system at the end of the slaughter

shift. In the case of poultry, labelling for slaughter inspection is based on each lot – a lot corresponding to 1 farm /pavilion/day, or approximately 3300 chickens. The BAPHIQ inspection label contains a QR code that provides information on the farm of origin. If the product is repacked (e.g. at a supermarket) the packer may replace the label with their own label but must preserve traceability. Carcases are chilled in chlorinated water 25-50ppm. Rejected carcasses are sprayed blue.

Livestock are marked with an "INSPECTED AND PASSED" symbol. The inspection BAPHIQ code provides the number of the slaughterhouse and the inspection date. Those which do not pass the inspection are condemned according to the relevant regulations and marked.

If unknown pathological lesions are detected, meat inspectors can send the sample to the Veterinary Medicine Department of one of the 4 universities with an ADDC or ATRI for pathological examination and confirmation.

All information regarding: farm of origin, animals' ante and post-mortem inspection observations, slaughterhouse and staff management is recorded in the livestock and poultry slaughtering and meat inspection management system (Meat Inspection Information Web, a system accessible for registered staff). A slaughter certificate can be issued from this system.

A national program "strengthening and maintenance plan for livestock and poultry slaughtering management system" is available and audited yearly.

In none of the slaughterhouses visited were records of emergency slaughter available, although inspectors informed the team that a separate procedure is used when needed.

Strengths:

- Thorough regulatory framework covering all slaughterhouses supplying export, national and local markets.
- Technical competency and strategic vision of the Competent Authority – BAPHIQ's Meat Inspection Division
- Well-staffed body of meat inspectors through an innovative public private partnership (NAIF) with technical independence ensured by training, audit and management
- Clear definition of roles and responsibilities and coordination mechanisms in place amongst the different agencies involved and supported by interoperable IT systems.
- Continuous education of meat inspectors, laboratory and scientific technical support staff and validation processes for post mortem inspection in place.
- Three tier control systems involving self-controls (HACCP and GMP) and third party certification.
- High awareness of stakeholders about the need for biosecurity measures to prevent and control animal diseases.

Weaknesses:

- Livestock movement on the basis of a health declaration by livestock farmers instead of a health certificate by a veterinarian.
- Movement of animals between auction markets (concentration points) and slaughterhouses creates a disease transmission risk.

Recommendations:

- Assess risks for transmission of animal disease through current farm- auction - slaughter movements.
- Assess the risks for cross contamination of carcasses by automatic evisceration and inspection by cutting vs palpation.

Evidence (as listed in Appendix 6): PME1 and Annexes 1, 2, 19, 20, 55, 82,166,175-177; E1; E10; E11; E13; E32a; E34; E49; E50; E51; E52; E60; E85; E86; E91; E94; E96; E97; E98; E106; E107; E112; E115(16); E117 (M1-M2-M3); E118(M4-M5); E119(q11); E129a; PAA4; PAA6

II-8 Veterinary medicines and biologicals	Levels of advancement
The authority and capability of the VS to regulate veterinary medicines, and biologicals, in order to ensure their quality and safety, as well as their responsible and prudent use, including as medicated feed. *This includes the marketing authorisation/registration, import, manufacture, quality control, export, labelling, advertising, distribution, sale (includes dispensing) and use (includes prescribing) of these products.*	1. The VS cannot regulate veterinary medicines and biologicals.
	2. The VS have some capability to exercise regulatory and administrative control over the import, manufacture and market authorisation (registration) of veterinary medicines and biologicals to ensure their safety and quality, but cannot ensure their responsible and prudent use in the field.
	3. The VS exercise effective regulatory and administrative control for the market authorisation of veterinary medicines and biologicals and have some capacity to regulate to ensure their responsible and prudent use in the field, including reducing the risk from illegal imports.
	4. The VS exercise comprehensive and effective regulatory and administrative control of all aspects of veterinary medicines and biologicals, including market authorisation, responsible and prudent use in the field, and reducing the risks of illegal distribution and use.
	5. The control systems for veterinary medicines and biologicals are regularly audited, tested and updated when necessary, including via an effective pharmacovigilance programme.

Terrestrial Code reference(s): Appendix 1

Findings:

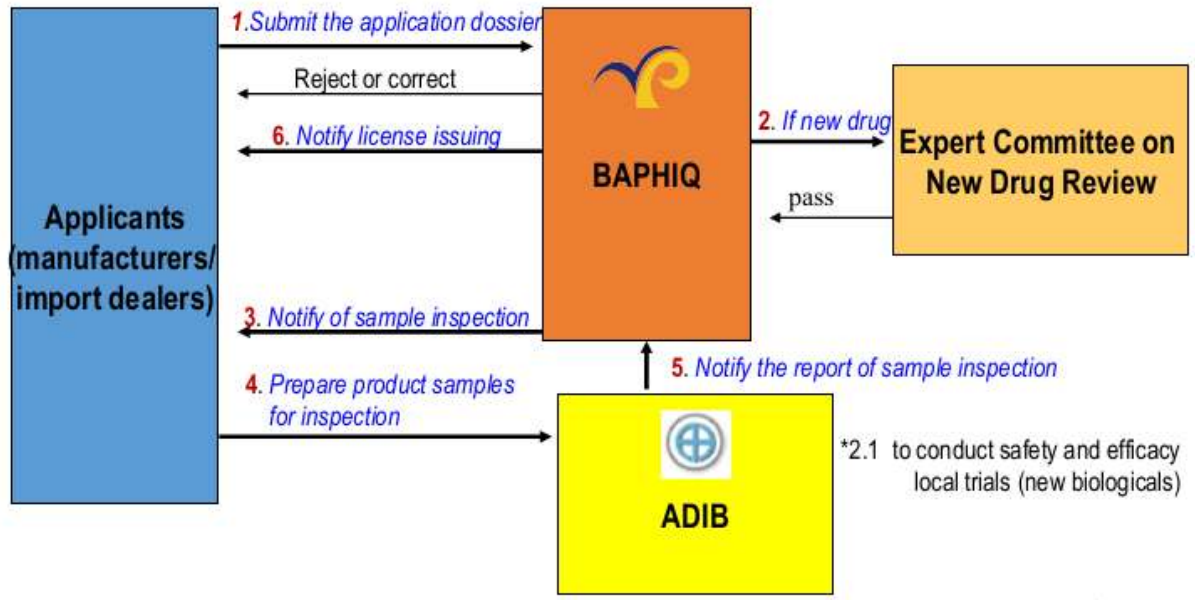
The “Animal Drug Administration”, “Regulations for Registration of Veterinary Drugs”, “Veterinary Drugs Use Regulations”, “Regulation of the sale and use of veterinary prescription medicines” and” Veterinarian Act” constitute the regulatory framework for the licencing, production, sale and use of VMP.

Market authorization

BAPHIQ is responsible for the inspection and registration of VMP. All VMP including drugs and vaccines must be approved by BAPHIQ (Article 12 of the “Animal Drug Control Act” and “Regulations for Registration of Veterinary Drugs”). New drugs applications are submitted to the Veterinary Drug Technology Review Committee for review of technical documents and clinical trials. The required submission must include documentation on ingredients, production procedure, quality control, safety, efficacy and relevant information, and a sample. In addition, VMP manufacturers must meet the standards: “Establishment Standards for Veterinary Drugs Manufacturers” and “Guidelines of Good Manufacture Practice (GMP) for Veterinary Drugs Manufacturers”.

ADIB cooperates with BAPHIQ to register animal health products, inspect ingredients and verify product’s specification, analysis certification, accelerated product stability test, and safety test for injection. If the sample and documentation are in conformity, BAPHIQ will approve the label, the packing insert, and issue the product license. Approximately 190 requests are processed every year. Authorization validity is 5 years. There is no mutual recognition of other country’s registration/authorization.

Figure 21: Market authorisation for VMP



An animal Drugs Management Service Platform (https://am.baphiq.gov.tw/AP/cLogin.aspx) has been established to record the local and imported animal health product license's information.

Labelling

Product package label and packing insert must describe the name of the drug, license number, ingredients and contents, efficacy, withdrawal period, expiration date, and the manufacturer's information including name and address.

Manufacturers GMP inspection

The animal health products manufacturers must conform to "Guidelines of Good Manufacture Practice (GMP) for Veterinary Drugs Manufacturers". Records of product manufacturing, processing, packaging, storage and distribution should be kept in a clear and easy-to-evaluate manner.

GMP requirements include the need to have a system to record customer complaints and investigations on complaints of adverse effects or reduced effectiveness but an official pharmacovigilance system is not implemented.

During manufacture, transport, national inspection, selling and use the vaccine and its diluents should be stored and transported within the required temperature range.

The Medical and Pharmaceutical Industry Technology and Development Centre was commissioned by BAPHIQ under the "Guidance and improvement for manufacture and quality control of animal health product manufacturer", to conduct annual GMP inspections of manufacturers.

Taipei has 37 pharmaceuticals and 7 biologicals manufacturers. All are inspected periodically.

Quality control

In 2016, a VMP assessment plan was implemented including preliminary review of the registration for animal drugs, risk assessment of approved veterinary drugs, collection and updating of the international standards for veterinary drug residues, and establishment of rapid tests for veterinary drugs and related compounds. The investment funds were NTD 19 million in 2016, NTD19.4 million in 2017, and NTD16.2 million in 2018.

BAPHIQ has established the "Enhance plan of animal medicine inspection, regulation enforcement, and awareness campaign", and the "Monitor programme for marketed animal medicines". These cover:

a**. Quality control**: Inspect general animal drugs and biologics in the market and check the label of these products.

b. **Veterinary drugs dealer management**: Handle the registration files and establish database on animal health product dealers' information and enforce regulations.

c. **Joint investigation & enforcement of counterfeit and banned veterinary drugs**: The LADIAs cooperate with the Judicial Authorities or the central competent authorities in the investigation and enforcement of illegal veterinary drug tracing, and enforce penalty or transfer it to the Judicial Authorities or the Central Competent Authorities, according to the law.

d. **Promotion of safe and proper medication:** Held seminars for proper medication, explain the harm of counterfeit drugs, educate on how to identify illegal drugs. The target audiences of the seminars were animal drug manufacturers, dealers (including ornamental fish non-prescription drug dealers), feed production industries as well as livestock, poultry and aquaculture farmers.

e. **Inspection on the location of animal drugs used**: The LADIAs visit animal drug manufacturers, dealers, feed establishments and other places where veterinary drugs are used. They inspect bulk chemicals, look for counterfeit and banned veterinary drugs (such as Nitrofuran, Chloramphenicol and Beta-agonists), and promote the proper use of prescription medicines. A system to reward whistle blowers is in place. Manufacturers provide data on production and sale as well as traceability documentation.

f. **ADIB analyses random samples** from the market collected every year by LADIAs to detect counterfeit and illegal ingredients in VMP.

g. **Yearly surveillance programme** for medicated feed additives: About 350 samples are collected by LADIAs and are analysed by AHRI.

The results of the inspection of VMP are submitted to the BAPHIQ for audit and administrative procedures (penalties).

Under the "Veterinary Drugs Control Act", the manufacturer or importer shall apply to the LADIAs-in-charge for batch-by-batch sampling tests of their veterinary biologics within 14 days after clearing the customs with all tariffs paid. The LADIAs-in-charge shall assign personnel to check the transport and storage conditions of the veterinary biologics. Randomly collected samples are sent to ADIB for inspection according to the category of veterinary biologics and the "Standards for Veterinary Drugs".

After the veterinary biologics have passed the sample testing, the LADIAs-in-charge shall check the quantities and identify the products with a seal of approval. The product then can be sold on the market.

All analytical procedures are certified by international quality standards and results recorded in electronic systems.

Management and use of the prescription and non-prescription VMP:

According to Article 10 of the “Veterinarian act”, a practicing veterinarian shall not issue a diagnosis certificate or write a prescription without personally performing the diagnosis and/or treatment.

In accordance with the "Veterinary Drugs Use Regulations", the use of veterinary prescription drugs prescribed by a veterinarian shall comply with the “Standards of veterinary prescription medicine sale and use”. Non-veterinarian prescription drugs can be used according to the product label and packing insert approved by the BAPHIQ.

Prescription drugs and their use are divided into 3 categories:

- Category A: is limited to be used by the licensed veterinarian.
- Category B: can only be used under the supervision of a licensed veterinarian. It includes vaccines and bacterins administered by injection.
- Category C: can be used by animal owners, animal producers and feed establishments based on veterinarian's prescription. It includes vaccine and bacterin with routes of administration other than injection (Intranasal, ocular and oral etc.).

Off-label use is permitted with veterinary prescription and is commonly used by small animal practitioners. Own formulation is not allowed.

Medicated feed additives used for growth promotion or improvement of feed efficiency are non-prescription drugs. The use of these additives shall comply with the target animal, purpose, administration route, dosage, withdrawal period and precautions described in the “Medicated Feed Additives Use Regulation”. According to Article 5 of “Veterinary Drugs Use Regulations”, the medicated feed additives can only be used by the registered animal feed establishments and feedstuffs for personal on-farm use which conform to the “Feeds Control Act.”

An education campaign for farmers is in place for safe drug use and includes information on the regulatory framework.

Sale and distribution

Prescription drugs shall not be bought or sold without the prescription of a practicing veterinarian except for:

a. The process of wholesale, import, export by veterinary drug manufacturers and wholesalers.

b. Purchases by animal hospitals, clinics, academic research units and LADIAs. Strict controls for legally regulated drugs were observed at the Taipei Zoo clinic (PAA1) and Pet hospitals visited (PAA2). All VMPs used in veterinary clinics and hospitals are recorded (PAA3) but it was not clear if they are included in LADIA’s inspections.

The veterinary drug distributors shall follow the product’s recommendation to store, deliver and handle the unstable or vulnerable products carefully. Moreover, the distributors should have

proper storage places and equipment for such products. Most farmers (livestock poultry) have fridge/freezer to store vaccines. The distributors shall inform the purchasers of the animal species, dosage, incompatibility, side effects, withdrawal period and other precautions of the product sold. Distributors should deal with any case of adverse drug reactions properly and notify the LADIAs-in-charge.

Although adverse reactions must be "properly handled" and notified to LADIAs by the VMP manufacturer there is no formal pharmacovigilance system.

Research and development:

In 2018, to support innovation in animal health, BAPHIQ formulated a draft "Standard of herbals for animal medicine and feed addictive inspection and registration" and "Chinese traditional herbals manufacturing". The investment fund was NTD 2.5 million in 2018.

ATRI's division of animal medicine conducts animal vaccine research and efficacy verification services for pig and poultry vaccines. Under this state-supported system of research and technology development vaccines that might otherwise not be available due to limited market size are developed in response to stakeholder demand including to face emergency epidemics. A positive spin-off is the development of products for international markets.

Several swine vaccines and testing methods were developed, leading to 9 Chinese Taipei patents and 17 foreign patents. The laboratory is currently developing a ferret badger oral rabies vaccine. In the case of a PRSS vaccine, after securing a US patent, sales in Chinese Taipei and the region have allowed employment of 33 staff in a modern production facility (E69) and generated export sales in 2016-18 of 7.7, 11.0 and 27.2 million NTD (E70).

Developments on international regulations related to veterinary biologicals and reports from EU CVMP, UK VMD and USA FDA pharmacovigilance are integrated on a platform for registration and document reviews of veterinary drugs.

All manufacturers with a legitimate registration certificate must join the TVMHA (http://tavm.industry.org.tw) within a month of start-up. The association represents 53 members who produce raw materials, biologicals and pharmaceuticals. The national government has co-financed the application of GMP in the industry. TVMHA is invited to review draft regulations and assess their suitability. It collaborates with government agencies on the dissemination and promotion of regulations, training and education, investigation of non-compliances and collection of data.

Strengths:

- Thorough regulatory framework on all aspects of authorisation/registration, import, manufacture, quality control, export, labelling, advertising, distribution, sale (includes dispensing) and use (includes prescribing) of VMP.
- Adequate systems and technical competence for control of manufacturing, distribution and use of VMP.
- Good coordination between local administration and central services.
- Research and development capability both in the government and private sector to develop VMP in high quality international recognised facilities.

Weaknesses:

- Lack of an official pharmacovigilance programme that can support registration and quality inspection of VMP.
- No mutual recognition of authorization/registration regimes of other countries.

Recommendations:

- Develop and implement a pharmacovigilance programme.
- Further promote its own technical excellence to support regional and international research and development in VMP.

Evidence (as listed in Appendix 6):

PME1, PME 1 Annexes 7, 12, 14/96; 15-16, 18, 92- 95; 97-105,108-118,125,127,131,161-162; E2; E6; E22; E32a; E38; E48; E57; E71; E87; E98, E115(12); E118(5-1, 5-2,7-2, 7-30; E119(Q13, Q52); PAA2-3

II-9 Antimicrobial Resistance (AMR) and Antimicrobial Use (AMU) *The authority and capability of the VS to manage AMU and AMR, and to undertake surveillance and control of the development and spread of AMR pathogens in animal production and animal origin food products, via a One Health approach.*	**Levels of advancement**
	1. The VS cannot regulate or control AMR and AMU, and have not developed or contributed to an AMR action plan covering the veterinary domain.
	2. The VS are contributing or have contributed to a national AMR action plan. The action plan has initiated some activities to collect AMU/AMR data or control AMR e.g. awareness campaigns targeting veterinarians or farmers on the prudent use of antimicrobials. The use of antimicrobials for growth promotion is discouraged.
	3. The VS have defined a national AMR action plan in coordination with the Public Health authorities and other stakeholders, and are implementing some AMU/AMR surveillance and regulations. The use of antimicrobials for growth promotion is prohibited.
	4. The VS are implementing a comprehensive AMR action plan based on risk, including AMR surveillance of the most important pathogens for animal health or food-borne diseases, the monitoring of AMU, and the prudent use of antimicrobials in animals (especially the use of critically important antimicrobials). The use of antimicrobials for growth promotion does not occur.
	5. An effective national AMR action plan covering the veterinary domain is regularly audited, reviewed and updated by the VS with the Public Health authorities and other stakeholders, using the results of AMR surveillance. The scale and type of antimicrobial usage in animals poses minimal risk of AMR and alternative solutions for the control of diseases in animals are being implemented.

Terrestrial Code reference(s): Appendix 1

Findings:

Antimicrobial Use

The Chinese Taipei regulation on VMP authorization requires that dossiers for registration of new antimicrobials provide information on annual sales/use in approved countries, side effects, mechanisms for cross resistance and AMR data, importance for treating animal diseases and comparable trial data using at least one common /effective antibiotic. Registration of new fluoroquinolones was recently suspended, and oral application banned.

A veterinary prescription is required for most antimicrobials, farmers are required to keep prescriptions for 2 years.

AMU data collection is conducted at customs (import of raw materials and VMP) and by pharmaceutical companies. Records of use of raw materials, production of final formulations (by product licence no. lot) and sale (by product licence no. lot, customer type and ID and quantity sold) are kept and reported to BAPHIQ's central electronic system every 6 months.

AMU can be estimated by using the formula:

AMU = (Previous period stock in manufacturer) + (Import) + (Domestically produced active principles) + (Stock in manufacturers) – (Export)

BAPHIQ produces annual reports (OIE reporting option 1)[34] and the information is reported to OIE.

BAPHIQ has produced various brochures, handouts, and promotional materials for animal producers, veterinarians and industry on prudent use of antimicrobials. BAPHIQ also holds lectures and launched an awareness campaign to enhance understanding of antibacterial agents and appropriate animal drug use.

An animal vaccine development roadmap and other initiatives such as improved biosecurity on farm are in place to promote AM alternatives.

Antimicrobials for growth promotion

In 2000, in order to control AMR in livestock and poultry, the COA and MOHW reached an agreement that COA shall start to gradually phase out animal antimicrobials in feed.

BAPHIQ priority delisting is based on a review of drug use in other countries, drugs having higher risk to human health (medically important drugs for human medical use) and information on drugs causing cross-resistance in both human and animal. 36 medicated feed additives have been banned to date.

According to Article 4 of the "Regulations of the use of drugs for animals", there are only 9 "animal use only" drugs that can be used as medicated feed additives: 1.Apramycin 2.Avilamycin 3.Bicozamycin 4.Enramycin 5.Flavomycin (Bambermycin) 6.Nosiheptide 7.Sulfamethazine 8.Tiamulin and 9.Tylosin.

Using the formula above, the total AMU in feed can be estimated but not the use by animal species.

The total of AM used in feed was 141,049 Kg in 2015, 126,389 Kg in 2016 and 136,192 Kg in 2017. A small reduction of Vancomycin Resistant Enterococcus has been observed after removal of Avoparcin, but resistance to Kanamycin is stable.

AMR surveillance

In 2006, to understand the effectiveness of the antimicrobial ban policy and to comply with the OIE code, COA initiated an animal AMR surveillance programme in poultry, swine and cattle, with a budget that ranged from NTD 3 million to 7.5 million per year.

Since 2017, BAPHIQ has collaborated with TCDC (MOHW), and MOST to carry out a "One Health Research Project". This conforms to the Global Health Security Agenda (GHSA) scheme and one of its goals is to fight AMR by developing intensive multidisciplinary collaborations and appropriate prevention strategies. In this inter-ministerial project, COA invested NTD 15.9 million per year to support a whole genome sequencing study of WHO priority pathogens that includes Salmonella, MCR-1 *Escherichia coli*, and Extended Spectrum Beta-Lactamase-producing microorganisms. It also supports AMR surveillance of Salmonella isolated from carcasses, risk assessment of animal drugs, and drug resistance in animal

[34] http://www.oie.int/fileadmin/Home/eng/Our_scientific_expertise/docs/pdf/AMR/A_AMUse_Guidance_2018.pdf

coccidiosis. A whole genome sequence (WGS) platform is available allowing for studies on phylogenicity (data sharing and outbreak response and a warning system for AMR genes).

In this surveillance programme, faecal samples are collected from pig, chicken and cattle farms for detection of drug resistant bacteria. *E. coli*, Enterococci and other indicator organisms, as well as zoonotic pathogens (such as Salmonella and Campylobacter) are monitored every year. Determination is made by minimum inhibition concentration in accordance with international standards of the Clinical and Laboratory Standards Institute[35]. To ensure the reliability of the test, ATRI has established a quality control system and participates in an interlaboratory minimal inhibition proficiency test each year.

Monitoring of drug resistance in livestock and poultry is based on the OIE's recommendation. The following antimicrobials are monitored: 1. Aminoglycosides, 2. Cephalosporin, 3. Glycopeptides, 4. Lincosamide, 5. Lipopeptides, 6. Macrolides, 7. Penicillins, 8. Phenicols, 9. Polypeptides, 10. Quinolones and 11. Tetracyclines

The annual surveillance results for animal drug resistance have been collected in the annual report of BAPHIQ[36] and are a reference for future policy development.

The unofficial 2016 IHR Joint External Evaluation recommended that Chinese Taipei further improve connections between surveillance systems for foodborne pathogens and AMR organisms and expand efforts to test for AMR in the animal sector prior to slaughter to ensure that resistance can be traced back to farms.

TCDC monitors and manages antibiotic resistance in humans and the use of antibiotics. For the monitoring of drug-resistant microorganisms, TCDC is currently focusing on the surveillance of drug-resistant microorganisms such as CRAB, CRKP, CRPA, VRE and MRSA.

TCDC has put in place several AMR control initiatives:

1) Multichannel surveillance on multi-drug resistant organisms - laboratory data from clinical isolates since 2017, surveillance at hospitals (more than 100 enrolled in 2018), a nosocomial infection surveillance system since 2007, the inclusion of AMR microorganisms(CRE, VISA, VRSA and *Candida auris*) in the national notifiable disease surveillance system and research projects focusing on WHO priority pathogens.
2) National Antimicrobial Stewardship Programme operating since 2013 that focuses on rational use of AM and infection control.
3) Hospital accreditation and inspection related to the management of AMR.
4) Communication and education including e-learning, guidelines and handbooks, targeting health care workers and the general public
5) Hosted the 2018 Asian Pacific Economic Cooperation (APEC) conference on strategies against evolving threats from AMR[37]
6) In response to emergent AMR (mcr-1, ST11 CR-HvKP) TCDC invited human and animal sectors to participate in response meetings and activities.

[35] https://clsi.org/standards/products/veterinary-medicine/documents/
[36] https://www.baphiq.gov.tw/view.php?catid=2962
[37] https://aimp2.apec.org/sites/PDB/Lists/Proposals/DispForm.aspx?ID=2102

National AMR control plan

To control the occurrence and spread of AMR, BAPHIQ and TCDC are finalizing a draft National Action Plan on AMR 2020-2024. The strategic National Action Plan on AMR aims to decrease the risk for AMR in a collaborative way with stakeholders.

Strengths:

- A system to collect information on AMU is in place and data is reported to the OIE.
- A gradual delisting of antimicrobials in feed as growth promoters is ongoing since 2006 and the policy is supported by the industry and public.
- Awareness regarding prudent use of antimicrobials and AMR is high among all involved stakeholders thanks to well-developed communication, and stakeholder engagement in the development and implementation of policies.
- Chinese Taipei has capacity for AMR detection and reporting, which began in 2006. There are multiple systems for surveillance of resistant organisms in the human health and animal health sectors and extensive laboratory capacity.
- Chinese Taipei uses OIE standards to conduct surveillance of AMR and to monitor indicator bacteria within the animal sector. Testing is conducted in accordance with ISO 17025 and the Clinical and Laboratory Standards Institute requirements.
- A Whole Genome Sequence platform is available allowing for studies on phylogenicity: data sharing and outbreak response and a warning system for AMR genes.

Weaknesses:

- Additional coordination at the laboratory level is needed between the human health and agricultural sectors.
- Sharing of data and bacterial isolates and susceptibility information could be improved among TCDC, Taiwan Food and Drug Administration (TFDA), and COA.
- As noted by the JEE (E102) monitoring for AMR at slaughterhouses and farms provides only a small window into resistance patterns. Trace-back to affected farms and removal of animals with resistant organisms from the food supply does not occur.
- Implemention of the National AMR action plan was adjusted to 2020-2024 due to budget considerations.

Recommendations:

- Approve and implement the National AMR action plan.
- Work to further improve connections amongst surveillance systems for foodborne pathogens and AMR organisms.
- Review robustness of the surveillance plan for AMR in the animal sector (prior to slaughterhouses).

Evidence (as listed in Appendix 6):

PME1, PME1 Annex 105; 106, 119,120,121; E16; E18; E32a; E76; E101; E102, E118(5), E119 (Q15, Q46, Q47

II-10 Residue testing, monitoring and management *The capability of the VS to undertake residue testing and monitoring programmes for veterinary medicines (e.g. antimicrobials and hormones), chemicals, pesticides, radionuclides, heavy metals, etc. and respond appropriately to adverse findings.*	**Levels of advancement**
	1. No residue testing for animal products is being undertaken.
	2. Some residue testing is being undertaken, such as for research or pilot purposes and/or it is conducted only on specific animal products for export.
	3. A comprehensive residue *monitoring* programme is conducted for all animal products for export and some for domestic consumption based on limited risk analysis. Documented protocols exist for preventing residue risks (e.g. withholding periods for veterinary drugs) and for responding to breaches of Maximum Residue Limits.
	4. A comprehensive residue monitoring programme is conducted for all animal products for export and domestic consumption based on risk analysis. Effective protocols both reduce residue risks and respond to breaches of Maximum Residue Limits, including traceback and follow up.
	5. The residue *monitoring* and risk management programme is subject to routine quality assurance and regular evaluation/audit.

Terrestrial Code reference(s): Appendix 1

Findings:

A comprehensive national residue testing, monitoring and management programme is in place through coordinated actions of several agencies with the following roles and responsibilities:

TFDA: is responsible for the chemical residues inspection methods and the "Standard operation procedure and regulations of chemical analysis methods for food". In recent years, TFDA has taken part in the Food Analysis Performance Assessment Scheme (FAPAS) led by the Central Scientific Laboratory of the United Kingdom. TFDA develops the annual post-market monitoring programmes for aquatic products, eggs, livestock, poultry meat and dairy products. These programmes include monitoring of heavy metals (methyl mercury, lead, cadmium, copper and tin), mycotoxins (aflatoxin M1) and veterinary drug residues in markets and are implemented by joint-inspections with the local government Public Health Bureaus. In the time available the PVS Team was unable to formally assess the sampling frame. The number of non-compliant cases is very small in products of animal origin. When a positive result is obtained increased sampling is done on products from the source of the positive sample.

Under the "Feed control act", the **Department of Animal Industry** is responsible for the feed residue monitoring plan. The Municipalities/Cities/Counties governments randomly sample premises according to the annual required sample size. Analyses include beta-agonists, sulpha drugs, pesticides, heavy metals (such as lead, arsenic, cadmium, and mercury), peroxide value, melamine, and aflatoxin. The DAI supervises the activities of local governments and is responsible for enforcing penalties when non-compliance is detected.

Laboratories that are certified by the Taiwan Accreditation Foundation (TAF), such as the Feed Analysis Centre, the Livestock Research Institute (LRI); the Taiwan Agricultural Chemicals and Toxic Substances Research Institute and the Technical Service Centre of NAIF were commissioned to perform chemical residue tests on animal feed.

BAPHIQ is responsible for drug quality monitoring in livestock and poultry farms, at slaughter and for the monitoring of β-agonists and drug residues from pig hair in pork auction markets and farms. The monitoring plan for veterinary drug residues in farms is defined by BAPHIQ using an expert panel taking account of previous non-compliant findings and relative risks of the chemical substances.

LADIA's inspectors collect samples from livestock and poultry farms, meat markets and slaughterhouses. These include pig serum, pig hair, cattle serum, goat serum, chicken meat, egg, duck meat, duck eggs, goose, and raw milk to be tested for target chemicals (e.g. tetracycline, chloromycetin, penicillin and β-agonists). In 2016, 38,820 samples were tested with an average pass rate of 99.94%. In 2017, 40,668 samples were tested.

A clear protocol for follow up of cases where drug residues are found either on farm animals or animal products is in place including retests and penalties along with evidence of implementation (E115(6)).

A meeting is held by BAPHIQ with LADIAs and NAIF twice a year to review the sampling program. BAPHIQ has created an expert working group to review the veterinary residues monitoring plan based on analytical results and the animal production status.

The **Technical Service Centre of NAIF** has 4 teams (document management, drug residue, biology, chemistry), state of the art laboratories and 86 staff including 17 livestock farm inspectors. It is fully accredited by TAF and TFDA and provides services to COA, BAPHIQ, Agriculture and Food Agency (AFA) and FA as well as private companies. Proficiency testing with international organizations is in place.

Drug residue surveillance is commissioned by BAPHIQ and includes 183 drugs and 126 pesticides residues, samples are collected by NAIF (Pig hair and blood from farms, auction markets and slaughterhouses or LADIAS from poultry farms and raw milk). Results are reported to BAPHIQ. When non-compliance is detected on animals or products they are held for investigation and retest. If the results are confirmed investigation on suppliers of illegal drugs are pursued.

Comprehensive testing programmes are in place for residue monitoring in both domestic and imported feeds. Feed samples are collected by NAIF (on farm feed) or Agriculture departments of municipalities (feed mills) or BAPHIQ branches (at ports).

TSC also provides training and education for on farm feed production households, farm owners and feed mills. TSC is an accredited laboratory (ISO/IEC 17025) for food and non-food testing.

Strengths:

- Residue testing programme includes all animal origin products (imports, domestic consumption and for export) and feed.
- Roles and responsibilities of various governmental agencies are clear and well defined.
- Excellent laboratory network and quality assurance systems in place.
- Protocols to recall products and investigate breaches of Maximum Residue Limits are in place.

Weaknesses:

- None in evidence

Recommendations:

- Review sampling frame for food and feed based on test accuracy and historical surveillance results to ensure effectiveness.

Evidence (as listed in Appendix 6): PME1 and Annexes 12. 16, 124-129; E12; E65a; E80; E93; E98; E99; E100; E115(6); E118(23-7); E118(23-7); E119(Q16); E119(Q24)

II-11 Animal feed safety	Levels of advancement
The authority and capability of the VS to regulate animal feed safety e.g. processing, handling, storage, distribution and use of both commercial and on-farm produced animal feed and feed ingredients. *This includes feed safety risks such as swill feeding, feeding by-products, ruminant feed bans, the use of antimicrobials in feed, as well as managing risks of microbial, physical and toxin contamination of feed.*	1. The VS cannot regulate animal feed safety. 2. The VS have some capability to exercise regulatory and administrative control over animal feed safety. 3. The VS exercise regulatory and administrative control for most aspects of animal feed safety. 4. The VS exercise comprehensive and effective regulatory and administrative control of animal feed safety. 5. The control systems are regularly audited, tested and updated when necessary.

Terrestrial Code reference(s): Appendix 1

Findings:

Regulatory framework:

Feed and feed additives shall comply with the “Feed Control Act”. Medicated feed shall comply with the “Veterinary Drugs Control Act”. Under these laws a comprehensive regulatory framework is in place for all aspects concerning animal feed safety (E15).

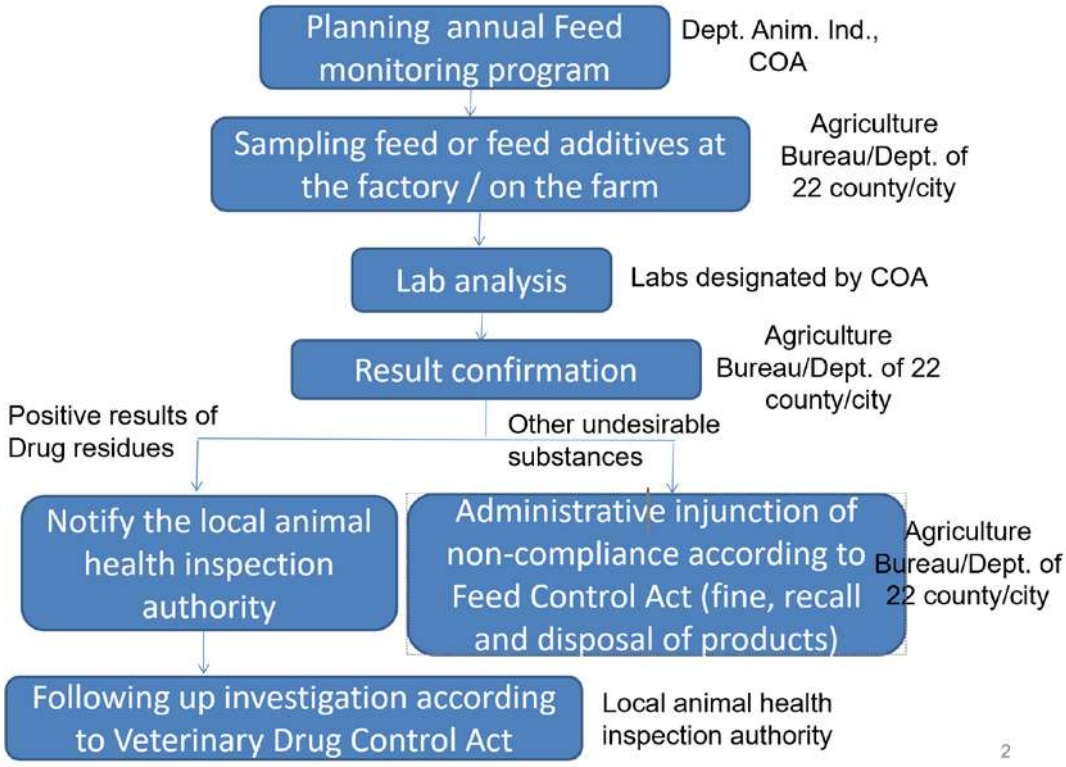
Feed management program

The feed management program includes the registration and inspection of feed production establishments/mills, registration of products, sampling and analysis of feed and raw materials and traceability requirements.

A feed mill standard is in place including GMP requirements. All feed production establishments, including on farm feed production, are registered. Feed mills producing medicated feed have special requirements to avoid cross contamination. The Local Agriculture offices audit feed mills for GMP certification every 2 years, corrective actions are recorded and communicated to the Department of Animal Industry that only reissues a certificate after guarantee that corrections were made. Establishments are inspected at least twice a year. The DAI is responsible for the inspection, identification and registration of genetically modified feeds and feed additives, and the management of the border inspection of imported feeds. Starting in 2019, the inspection of imported of feeds will be carried out by BAPHIQ.

Safety limits of contaminants are established and reviewed by experts and industry. According to the relevant provisions of the “Feed Control Act”, the DAI draws up the annual monitoring and sampling plan, and assigns the local agriculture office of the Municipality, County or City to carry out inspections according to the planned target numbers. Supervision and sampling are strengthened for high risk operators and products.

Figure 22: Feed monitoring program



Samples are sent to designated labs (E93) that report results to the local Agriculture Bureau. If samples are positive for drug residues the LADIA is informed and investigations are conducted according to the "Veterinary Drug Control Act". If other undesirable substances are detected the local Agriculture Bureau will execute an administrative order of non-compliance according to the Feed control act (fine, recall and destruction of products).

BAPHIQ is responsible for the monitoring of medicated feed based on the "Animal Drug Control Act", "Management measures for the sale and use of veterinary drugs", and "Veterinary Drugs Use Regulations". BAPHIQ supervises LADIAs to implement drug management, sets up annual inspection plans (priority is given to feed establishments having records of non-compliances, newly established feed establishments and feed establishments not been visited for a while), provides industry advice and produces a "Drug Safety Instruction manual" for feed establishments.

LADIAs are responsible for investigations of use of prescription and non-prescription drugs in feed establishments. Feed establishment that violate the regulations and cause cross-contamination of drugs due to mismanagement will receive penalties.

Traceability and record keeping

According to Article 8 of the "Feed Control Act", feed establishments and distributors should record the source of the feed additive used and records of feed and feed additives produced and sold. All evidence must be kept for 5 years according to the "Management measures for traceability and tracking of feed and feed additives".

Swill feeding

Kitchen waste can be used for pig feeding and must comply with EPA regulations. Swill feeding is still practiced for production of "black pig" (local breeds). The VA and producers are aware

of the risks associated with this practice and a policy to discourage it was put in place with support of the producers. Producers were provided with financial and technical support (Department of Animal Health Industries) to install on-farm thermal (90°C) treatment stations for swill. Nevertheless, the transition can be difficult for smallholder farms that may be assisted by government compensation to cease production. Producers that do not perform thermal treatment are prosecuted. Pingtung district has 140 farms that still use swill feeding, these farms were inspected 4 times since Nov 18 by LADIA, EPA and AHI.

Feeding by-products

Blood and bone meal are not used for ruminant feed production. About 100 samples of ruminant feed are taken for animal protein detection under the annual monitoring plan. There was no case of non-compliance in the last three years (2017-2019). Most animal protein sources are imported.

Ruminant feed bans

A ruminant feed ban has been in place since 2001. The feed monitoring program includes analytical controls for presence of mammalian protein in ruminant feed.

Strengths:

- Comprehensive regulatory framework for registration of animal feed production establishments and feed management program including traceability requirements.
- Regular inspections and controls are carried out with collaboration between different governmental agencies.
- Updated list of establishments.

Weaknesses:

- Swill feeding can constitute a risk for animal diseases transmission in spite of requirements for thermal treatment.

Recommendations:

- Continue to develop and implement policies and measures to eliminate risks of swill feeding.

Evidence (as listed in Appendix 6): PME1, PME1Annexes 18; 98; 99, 130-131; E8; E15; E38; E87; E92; E93; E97; E98; E99; E119(Q21, Q32, Q34)

II-12 Identification, traceability and movement control **A. Premises, herd, batch and animal identification, tracing and movement control** *The authority and capability of the VS, in coordination with producers and other stakeholders, to regulate the identification of animals, to trace their history and location(s), and to control domestic movements for the purpose of animal disease control, food safety, trade or other legal requirements under the VS mandate.*	**Levels of advancement**
	1. The VS do not have the authority or the capability to regulate the identification of animals, either individually, by batch, or by premises, or to trace and control their movements.
	2. The VS can identify some animals by premises or location and control some movements, using traditional methods, and can demonstrate the ability to deal with a specific problem (e.g. to trace sampled or vaccinated animals for follow up, or to prevent theft).
	3. The VS implement a system for *animal identification, traceability* and movement control for specific animal sub-populations (e.g. for export, at borders, specified zones or markets) as required for traceability and/or disease control, in accordance with international standards.
	4. The VS implement appropriate and effective *animal identification, traceability* and movement control procedures for some animal species at national level, in accordance with international standards.
	5. The VS carry out periodic audits of the effectiveness of their identification, traceability and movement control systems. They have been demonstrated as effective in dealing with a problem (e.g. tracing a disease *outbreak*, residue or other food safety incident).

Terrestrial Code reference(s): Appendix 1

Findings:

Identification and traceability are regulated by the following laws and regulations:

- "Statute for Prevention and Control of Infectious Animal Diseases" and the enforcement rules,
- "Animal Industry Act",
- "Agricultural Products Market Transaction Act", and
- "Verification Management Measures for Good/Traceable Agricultural Products.

The resulting programmes are as follows:

A. Animal production premises registration

All animal production premises are registered by the DAI. Registration of farms follows a common inspection by the appropriate local authority.

B. Livestock

(a) Beef Cattle

Since November 2012 DAI has implemented the "Domestic Beef Traceability System". The system connects the individual ear tag number of cattle with the farm of origin, slaughterhouse and market traceability system.

(b) Dairy cattle and dairy goats

All dairy cattle older than one year are tattooed at the livestock farm with an "epidemic prevention number" less than 7 digits. The first and second numbers are the year and

Country/City codes; the remaining numbers are the animal number. Calves are identified with ear tags with the same number within 1 week after birth.

A case of successful traceback of bovine TB is reported (E109).

All goats are either tattooed or marked with an ear tag. As with cattle, the first numbers are the year and County/City codes and the remaining digits are the goat number.

(c) Pigs

At auction market animals are tattooed with an 8-digit code that allows for individual identification. To identify the farm of origin, COA assists meat markets to collect the "certificate for pig from single farm" from farmers, based on the "Agricultural Products Market Transaction Act". All information on individual pigs and its farm of origin can be retrieved from a domestic fresh pork traceability information network (http://farm.naif.org.tw/).

The FMD vaccination program ended July 1st, 2018. Since then farmers must issue a "Livestock Health Statement" before transporting their animals (pigs, cattle, goats) to a meat market or slaughterhouse. If the contents of the statement are incomplete, the VIC shall notify the LADIAs. If the health certificate has not been attached or invalid, the farmer can be fined between NTD 50 thousand to 1 million, according to Article 28-1 of the "Statute for Prevention and Control of Infectious Animal Disease".

(d) Poultry

Starting from January 23, 2015, poultry farmers must submit a health certificate issued by the poultry farm veterinarian before transporting poultry to a slaughterhouse. If the health certificate has not been issued or is invalid, the farmer would be fined as described above for livestock.

The certificate includes information on the species, quantity and farm origin. A case of AI was found at slaughter, trace back investigations were made, and the farm of origin identified.

Furthermore, every batch of native chicken for slaughter must be transported with both the health certificate on the "cage" and a "farm of origin mark" since October 2017. The code on the "mark" is used to identify and track the source. There are three wholesale markets for native chicken in Chinese Taipei. Market management is done by local government and supervised by LADIAs.

The poultry health certificate must be checked by the VIC at the slaughterhouse. If the contents of the certificate are incomplete, the VIC notifies the LADIA to carry out the inspection.

Information on movement control is reported by fax and does not use the animal health management system.

(e) Dogs and cats

Under the Animal Protection Act, owners shall register the birth, acquisition, transfer, loss and death of a pet with the LADIA or certified non-governmental organization. After registration, the pet can receive an ID tag from the LADIA and a microchip is implanted.

According to the announcement of the Municipalities/Cities/Counties Government, dogs, cats, and artificially raised carnivores must be vaccinated for rabies when they reach 3-

months of age and booster vaccinations are required every year. The owner will receive a vaccination certificate and a tag. LADIAs manage the animal information through the "Rabies vaccination management system" and send a vaccination reminder to the pet owners every year.

Strengths:

- Effective identification system to trace animal history, location and distribution for purposes of animal disease control, food safety, and trade.
- Interoperability of animal/premises identification management systems with animal disease management systems and food product market traceability

Weaknesses:

- Livestock movement documents are declarations issued by farmers, not veterinarians

Recommendations:

- Integrate the information from movement documents (health certificates for poultry and health declaration for livestock) into the animal health management system.
- Consider the implementation of health certificates issued by veterinarians (not declarations by farmers) for livestock movement.

Evidence (as listed in Appendix 6): PME1, PME1 Annex 132,133; E13; E32a; E76; E81 a-c; E85; E86; E91; E96; E97; E118-(29); E119(Q30, Q50, Q55)

B. Identification, traceability and control of products of animal origin *The capability of the Veterinary Authority, in coordination with Competent Authorities (such as food safety authorities) and other stakeholders as appropriate, to achieve whole-of-chain traceability, including the identification, tracing and control of products of animal origin for the purpose of food safety, animal health or trade.*	Levels of advancement
	1. The VS do not have the capability or access to information to identify or trace products of animal origin.
	2. The VS can identify and trace some products of animal origin, by coordination between Competent Authorities, to deal with a specific problem (e.g. high risk products traced back to premises of origin).
	3. The VS have implemented procedures to identify and trace some products of animal origin, in coordination with Competent Authorities, for food safety, animal health and trade purposes, in accordance with international standards.
	4. The VS have implemented national programmes enabling them to identify and trace all products of animal origin, and respond to threats, in coordination with Competent Authorities, in accordance with international standards.
	5. The VS periodically audit the effectiveness of their identification and traceability procedures, in coordination with Competent Authorities. The procedures have been demonstrated as being effective for traceback and response to a relevant food safety incident (e.g. foodborne zoonoses or residue incident).

Terrestrial Code reference(s): Appendix 1

Findings:

Traceability of food products including traceability systems for raw materials, semi products, end products, the use of electronic uniform invoices, and the declaration of traceability information are regulated by the “Act Governing Food Safety and Sanitation” (Art. 9).

The obligation of food traceability relies on food businesses operators that must establish traceability systems and electronically share their traceability information to the official traceability system, “Ftracebook” (https://ftracebook.fda.gov.tw/). The food traceability system (E110c) is the result of an inter-ministerial collaboration between the MOHW, Ministry of Economic Affairs and Ministry of Finance. Every food business has a log in associated to its registration number. The information to describe product flow is defined by the competent authority. All trading information is included in electronic uniform invoices.

The food traceability management information system (“Ftracebook”), the registration platform of food businesses (“Fadenbook”), the Product Management Distribution system (PMDS), the Imported Food Inspection system (IFI) and the sampling and testing management system constitute the “**Foodcloud”;** an integrated system that covers all aspects of food safety (see Figure 6 and E129b).

Private operators such as supermarket chains have developed their own traceability and labelling standards as well as fidelity card systems that allow for quick recall if necessary.

All meat livestock and poultry carcasses, viscera or their packaging containers that were inspected and passed shall be marked with the “INSPECTED AND PASSED” (Annex 176), symbol at slaughterhouse. The inspection BAPHIQ code for livestock contains the number of the slaughterhouse and the inspection date. Livestock will also have the individual identifier

code per animal. Offal sold for human consumption does not have individual identification (animal identification).

The poultry inspection symbol contains a QR code with coded information on slaughterhouse number, line and date of slaughter, and information on the farm of origin. The labelling for slaughter inspection is placed for each lot. A lot corresponds to 1 farm /1 pavilion/1 day. If the product is repacked (e.g. at supermarket) the packing label must keep traceability. Rejected carcasses are sprayed blue.

Identification of all animals at slaughterhouse makes traceback of farm of origin possible if an animal disease is diagnosed at auction/slaughter.

The QR Code of poultry products can be scanned by mobile phone making all information (farm of origin, inspection information and any additional certifications such as Verification Management Measures for Good Agricultural Products or Verification Management, Measures for Traceable Agricultural Products) available to the consumer.

The inspection mark must be maintained for the products traceability along the supply chain even when meat is sold unpacked as in traditional markets. The team visited traditional markets and could observe that traceability was not always maintained.

Dairy and egg products establishments have access to the Ftracebook. Larger companies upload their information on origin and distribution once a month, smaller companies more often.

Strengths:

- Comprehensive traceability system for all food products of animal origin including information for raw materials, semi-products, and end products.
- Integrated food safety information system that allows for integration, analysis and audit of food safety data.
- Use of smart technologies to provide maximum access of information to consumers.

Weaknesses:

- Absence of traceability marks on meat products in traditional markets.

Recommendations:

- Conduct periodic audits of the effectiveness of identification and traceability procedures, in coordination with TFDA.
- Conduct simulation exercises and/or a review of a relevant food safety incident to verify the effectiveness of traceback/traceforward and product recall and learn lessons for improvement.

Evidence (as listed in Appendix 6): PME1 and Annexes 176; E85; E86; E91; E96; E97; E110c; E117; E118; E118(M8a-M8b-M9); E119(Q31)

II-13 Animal welfare	Levels of advancement
The authority and capability of the VS to legislate and implement the animal welfare standards of the OIE as published in the Terrestrial Code. *This requires consultation and coordination with Competent Authorities, non-governmental organisations and other stakeholders, as appropriate.*	1. There is no national legislation or regulations on *animal welfare*.
	2. There is limited national legislation or regulations on *animal welfare* covering some of the OIE standards, with limited stakeholder or public awareness.
	3. The national legislation and regulations on *animal welfare* cover most OIE standards, with some awareness programmes and implementation, but are in conformity with international standards in only some sectors (e.g. for the export sector).
	4. *Animal welfare* programmes, supported by suitable legislation and regulations, are being implemented in conformity with relevant international standards and are applied to most sectors and species with stakeholder and public awareness. Documented compliance programmes, including consequences for non-compliance are available.
	5. *Animal welfare* programmes, supported by suitable legislation and regulations, are being implemented in conformity with relevant international standards. Comprehensive national programmes are applied to all sectors and species with the active involvement of stakeholders. The animal welfare programmes, including non-compliance issues, are subject to regular audit and review, with documented cases of responding effectively to non-compliance.

Terrestrial Code reference(s): Appendix 1

Findings:

Legislative framework and responsibilities

The regulatory framework is the Animal Protection Act (last amended 2018/12/26) and 26 related sub-regulations and administrative rules [38] that establish general provisions, responsibilities and penalties. Enforcement rules are established for pets, wildlife animal rescues and management, animal transportation and management, standards for humane slaughter of livestock and poultry, and care and use of laboratory animals[39].

The VA are currently revising the regulatory framework to align with international standards.

The Animal protection section of the DAI is responsible for drafting, coordinating and supervising the implementation of animal protection policies and regulations and international cooperation and communication activities. The Forestry Bureau is responsible for management of issues related with wild and conservation animals.

The training of staff is mentioned in Article 13.3 of Animal Protection Act. ATRI is responsible for training of animal transport and livestock slaughterhouse staff (604 workers in 2018). An examination is obligatory to obtain the licence issued by Local Agriculture Council authorities. Continuous education is also required for VMI and MIA. The same procedure will be applied for poultry handlers for whom training but not certification has begun.

[38] https://law.coa.gov.tw/GLRSnewsout/EngLawContent.aspx?lan=C&id=305
[39] http://law.coa.gov.tw/GLRSnewsout/EngLawQuery.aspx

Compliance is verified by a variety of means such as use of checklists for inspection of transportation and slaughter operations, or review, approval and implementation of animal use protocols in laboratories. Consequences for non-compliance can include interruptions of slaughter operations, refusal of experimental protocols, and penalties consistent with regulations.

Animal Transportation and Management Regulations

Poultry and livestock are covered by the regulations on animal transport and management. Private standards are also available. Farmers that adhere to farm welfare standards can display it in the label of their products.

There are guidelines for 3 different types of egg production systems (environmental enriched cage, indoors on floor, and free range) and respective stocking density, guidelines for animal husbandry and space allowance for different stages in pig production (breeding-boar, pregnant/ lactation sow, gilt and meat production-suckling piglet, weaner, grower, and finisher).

The “Animal Transportation and Management Regulations” specify the means of transportation and related precautions for pigs, cattle, and sheep. Regulations include definitions of minimum space per animal, temperature limits and provision of water. Welfare during transport is less of a concern than in some countries due to short distances travelled.

Animal producers’ associations have been consulted on the drafting of regulations and support policy dissemination.

Humane slaughter

Regulations cover all aspects of the slaughter of livestock and poultry in slaughterhouses: loading, unloading, holding, restraint, stunning, and bleeding of animals. Inspection for approval of slaughterhouses includes inspection of animal welfare conditions. A check list for animal welfare at slaughterhouse is available and can be used for inspection for the various livestock and poultry species. The check list includes controls at unloading, holding pen, stunning bath, bleeding and others.

Controls during slaughtering include stunning equipment controls and animal-based indicators (e.g. pupilar reflex). Meat inspectors have the authority to stop slaughtering if conditions are not respected.

A few slaughterhouses are licenced for Halal religious slaughter. Stunning is still done even in Halal slaughter.

In the slaughterhouses visited there were no stunning inspection controls being performed.

Laboratory animals

According to Article 16 of the Animal Protection Act, institutions using animals for scientific applications shall set up a panel for the care and use of laboratory animals within the institution. The Institutional Animal Care and Use Committee (IACUC) of laboratory animals supervises all animal experiments. Copies of IACUC permits were available (E29, E30, E79). Training is available for laboratory animal management and care.

The guide for care and use of laboratory animals provides specifications for the welfare of laboratory animals, personnel for a laboratory animal facility, IACUC membership and supervision of care and use of laboratory animals.

Pet registration

Pets should be registered with microchips implanted within 4 months of age. An update of the registration is required if the pet is transferred to another owner, lost, or dies. The owner is legally responsible for the pet welfare and breeding control. Establishment of animal shelters is also included in the content of the regulation

Enforcement is ensured by LADIA offices in municipalities. Taipei animal protection inspectors specifically handle animal welfare issues, conduct inspections of pet clinics and hospitals, investigate cases of poor animal welfare and have the authority to prosecute offenders.

The animal facilities at the animal quarantine centre are designed to ensure good welfare for different animal species in quarantine (dogs, cats, cattle, pigs, birds, horses, ….). All animals undergo veterinary health checks and if any disease occurs are given clinical treatment at the quarantine, vet clinic or NTU depending on severity. No records from inspection or audits from the animal welfare unit.

Wild animals

In both visited rescue centres, a very high level of attention to animal welfare, management and environmental enrichment was observed. Animal handlers receive animal welfare training and the centres follow IACUC regulations. A protocol for euthanasia based on an AVMA guideline[40] is in place.

Working animals

Dogs working at airport quarantine services can only work up to 4,5h a day and must have a break every 30 min.

Strengths:

- An animal welfare regulatory framework covering all production animals, pets, wild animals and laboratory animals is in place.
- Regulations were developed in consultation with producers' associations.
- Private welfare certification systems are in place for some species/production systems.
- Roles and responsibilities on animal welfare protection are well defined.
- Checklists and enforcement rules are in place for most/all animal welfare situations.
- Training, certification and continuous education on animal welfare matters is available for animal handlers.

Weaknesses:

- Implementation of animal welfare regulations is ongoing but not completed.

Recommendations:

- Continue implementing animal welfare programmes, including action to address non-compliance issues and the establishment of regular audits and reviews.

Evidence (as listed in Appendix 6): PME1; E19; E28; E29; E30; E32a; E33; E38; E40a&b; E71; E74; E76; E77; E79; E80; E84; E85; E88; E96; E97; E111; E115; E123; E124; E125; E126

[40] https://www.avma.org/KB/Policies/Documents/euthanasia.pdf

III.3 Fundamental component III: Interaction with stakeholders

This component of the evaluation concerns the capability of the VS to collaborate with and involve non-government stakeholders including the private sector, Non-Government Organisations (NGOs) and civil society organisations (including consumer organisations) in the implementation of programmes and activities. This also includes relevant state-owned enterprises, research institutions, universities and other training establishments.

Critical Competencies:

Terrestrial Code References:

Points 6, 7, 9 and 13 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation/General organisation/Procedures and standards/Communication.

Point 9 of Article 3.2.1. on General considerations.

Points 2 and 7 of Article 3.2.3. on Evaluation criteria for the organisational structure of the Veterinary Services.

Sub-point b) of Point 2 of Article 3.2.6. on Administrative resources: Communications.

Article 3.2.11. on Participation on OIE activities.

Article 3.2.12. on Evaluation of the veterinary statutory body.

Points 4, 7 and Sub-point g) of Point 9 of Article 3.2.14. on Administration details/Animal health and veterinary public health controls/Sources of independent scientific expertise.

Chapter 3.3. on Communication.

Point 4 of Article 3.4.3. on General principles: Consultation.

Article 3.4.5. on Competent Authorities.

Article 3.4.6. on Veterinarians and veterinary paraprofessionals.

III-1 Communication	Levels of advancement
The capability of the VS to keep non- government stakeholders aware and informed, in a transparent, effective and timely manner, of VS activities and programmes, and of developments in animal health, animal welfare and veterinary public health. *This competency includes communication with all non-government stakeholders, including livestock farmer, meat sector, dairy sector and trading groups, as well as relevant NGOs and the general public, such as via communication campaigns and the media, including social media.*	1. The VS do not inform stakeholders of VS activities and programmes. 2. The VS have informal communication mechanisms with some stakeholders e.g. with the larger commercial livestock or related companies. 3. The VS maintain a dedicated and specialist communications function which communicates with stakeholders occasionally, but it is not always up-to-date or pro-active in providing information. 4. The VS contact point or unit for communication provides up-to-date information to most relevant stakeholders. This information is aligned with a well developed communications plan, and accessible via the Internet and other appropriate channels targeted to the audience, and covers relevant events, activities and programmes, including during crises. 5. The VS have a well-developed communications plan, and regularly circulate information to all relevant stakeholders, well targeted to the audience via the full range of communications media, including social media. The VS regularly evaluate and revise their communications plan.

Terrestrial Code reference(s): Appendix 1

Findings:

According to Section 6 of the “Freedom of Government Information Law”, policy and other relevant governmental information related to people's rights must be openly available. Communication with stakeholders is required during both the drafting and implementation of policies. Stakeholders include internal and external agencies, professional representation organizations and the public. If a proposed regulation has an impact in either a government agency or a particular stakeholder group it must be discussed with the interested parties, including consultation of experts or holding seminars and public hearings when necessary. If an increase of the personnel or the budget of local self-governing groups occurs, they also must be consulted. As of January 1, 2017, the draft of any law or order must be openly available and be published on the “Public Policy Network Participation Platform” for at least 60 days to collect public opinion.

The VS have a well-structured communication strategy consistent with the OIE code, and a communications focal point has been appointed. Regular assessment of communication strategies and content efficacy are performed every 6 months.

Dedicated communication training is available for senior officials. Media lines are prepared, and good coordination mechanisms exist amongst various government agencies, including the Office of Food Safety of the Executive Yuan, TCDC, TFDA, EPA, Customs Administration, Coast Guard Administration, Prosecution Authority, and LADIAs. A protocol for crisis communication is established.

The food safety contact person for the COA is the Agriculture and Food Agency, responsible for the integration and transmission the relevant information for the COA. The Animal Health

Inspection Division of the BAPHIQ is responsible for collecting relevant information for BAPHIQ.

TFDA and food related associations hold regular meetings through the food industry alliance communication platform.

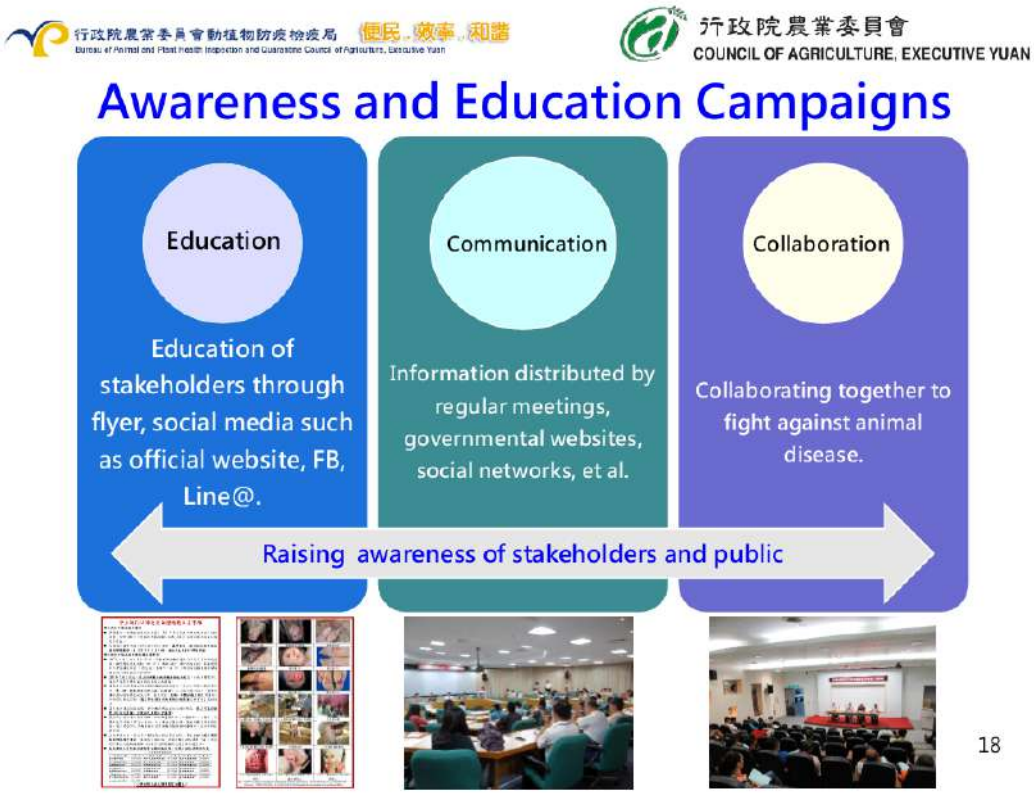
BAPHIQ's animal health inspection affairs unit is responsible for animal disease, veterinary affairs and animal drugs management. The unit communicates with local authorities, farmers, veterinarians, pharmaceutical manufacturers and public. Communication is through official documents, announcements, plans, reports, e-mails, telephone, faxes, newsletters, websites and social networks. The use of popular @Line groups is very common to ensure informal communication between the authorities but also with stakeholders. The BAPHIQ web site and other official pages are well organised, easy to search, regularly updated and provide information, links and access to official systems.

The BAPHIQ promotes a series of professionally designed public and animal health awareness campaigns, examples are the campaigns on ASF, rabies and AMR but also activities related with conservation of endemic species. Promotional signs, electronic boards, posters and disposal boxes for animal and animal products are placed at the passenger immigration office at international airports and ports. Brochures and folding guides are also available for the public at the offices of each BAPHIQ's branch. Provision of educational activities in schools educates students on the importance of animal and plant health and quarantine.

Regular or non-regular industry seminars, animal quarantine liaison meetings, national anti-epidemic liaison meetings, joint visits and various official meetings are held. In case of an emergent animal epidemic, experts and relevant agencies are invited to form a special panel to plan future strategy. When there is the need for communication with the public a discussion with LADIAs, industries, veterinary organizations and other relevant organizations is supported either through meeting or web-conferencing (online).

In case of animal health epidemics, a system for daily update of available information by an assigned specialist, a pipeline for quick release of information and the building and maintaining of a dedicated website and hotline are used to communicate with relevant departments and the public to ensure sustainable and effective communication.

Figure 23: Awareness and Education Campaigns



Strengths:

- A well-structured active communication programme consistent with all elements required of level 5.

Weaknesses:

- None in evidence

Evidence (as listed in Appendix 6): PME1 and Annexes 22, 30-32, 88, 90, 132-133, 135; PME3; E1; E2; E3; E6; E7; E31; E38; E60; E74; E75; E76; E77; E118(5-1, 5-2, M10, M11, 6-1); E119 (Q5); E127

III-2 Consultation with stakeholders	Levels of advancement
The capability of the VS to consult effectively with non-government stakeholders on VS policies and programmes, and on developments in animal health and food safety. *This competency includes consultation with all non-government stakeholders, including livestock farmer, meat sector, dairy sector and trading groups or associations, as well as interested NGOs and members of the public.* *Unlike communication (CCIII-1), consultation is two way and should involve mechanisms that not only inform, but actively seek views of consulted parties, for consideration and response.*	1. The VS have no mechanisms for consultation with non-government stakeholders. 2. The VS maintain informal channels of consultation with some non-government stakeholders (e.g. only the larger commercial livestock or related companies) 3. The VS hold formal consultations with non-government stakeholders, usually represented by industry groups or associations. 4. The VS regularly hold workshops and meetings with non-government stakeholders, who are organised to have broad representation, such as through elected, self-financed industry groups or associations. Consultation outcomes are documented and the views of stakeholders considered and occasionally incorporated. 5. The VS actively consult with all non-government stakeholders, including representatives of smaller producers, regarding current and proposed policies and programmes, developments in animal health and food safety, and proposed interventions at the OIE, Codex Alimentarius Commission, WTO SPS Committee, etc. The consultation results in improved, better adapted activities and greater stakeholder support.

Terrestrial Code reference(s): Appendix 1

Findings:

Extensive lists of national organizations are available for veterinarians, livestock owners, producers and others involved in livestock and poultry production, including minor species (PME1 pages 207-208). These are organized by area of interest:

A. Veterinary Drug Associations:

B. Veterinary Medical Associations:

C. Associations related to animal quarantine

D. National organizations, institutions involved in slaughter health inspection

E. National organization related to animal husbandry and the veterinary industry

As described in CC-III.1, consultation is mandatory if a new policy may have an impact on a group of stakeholders. The VA have established formal contact points with several stakeholder organizations and a schedule of regular meetings on issues related to the development of veterinary legislation, policies and programmes.

Regular meetings are scheduled with the following groups composed of experts, representatives of relevant associations and relevant authorities:

- The advisory group on swine fever, foot-and-mouth disease and important swine diseases
- Expert guidance group on herbivorous animal diseases
- High pathogenic avian influenza prevention and control working group

- Expert meeting on rabies epidemic prevention measures
- Counselling meeting of Animal Drug Control act
- Technical review committee for animal drugs
- Animal quarantine risk advisory group,
- Advisory committee on animal epidemic prevention and quarantine

Examples of stakeholders' contributions are:

1) participation of the Swine Producers association in the policy and implementation FMD-free zones without vaccination,

2) the CFCT contribution to the Consumers Protection Act of 1994 and the amendment of the Food Safety Act of 2014 and

3) the consultation with veterinary drug manufacturers, non-governmental veterinary medicine and breeding associations for an ongoing revision Veterinary Drug Act.

Animal producers are politically influential and have direct access to the Minister and other decision makers. The Swine producer's association also participates in the BAPHIQ review meetings for FMD (E48) and ASF on epidemiological monitoring, biosecurity and prevention.

The Consumers Association has an expert committee on food related issues and is active on issues such as the finding of Fipronil in eggs and the ban of beef from the USA - examples mentioned during the team visit. After the incident Fipronil was removed from the approved list of pesticides.

The Taiwan Feed Industry Association is responsible for a feed quality safety counselling group composed of industry and research experts. The group provides advice on management of medicated feed.

A Food Safety Coordination Task Force was organized by the Executive Yuan in accordance with Article 2-1 of the "Governing Food Safety and Sanitation Act". The president of the Task Force is the Prime Minister. The Office of Food Safety, TCDC, TFDA, COA, EPA, experts and non-government groups and consumer groups are members of the Task Force. Conferences are held routinely every 3 months. A special meeting may be held when there is need to coordinate an incident or crisis related to food safety. The task force coordinates food safety risk analysis and management, establishing early warning and audit systems of food safety and hygiene, and other coordination, supervision, promotion and investigations of food safety.

The Central Epidemic Control Centre produces minutes documenting joint rabies meetings (E115, Q8).

Stakeholders are also consulted on the development of international norms. BAPHIQ will study the draft of OIE's Terrestrial and Aquatic Animal Health Codes, distribute the information to relevant institutions, organizations and industrial associations and publish information on their website for public comments. Subsequently, the comments collected will be reflected in Chinese Taipei's submission to the OIE.

Strengths:

- Non-government stakeholders are consulted on VS policies and programmes, both during planning and drafting as well as implementation

- Legal provisions are in place for consultation of interested stakeholders and citizens in general
- The private sector is well organized and has capacity to provide relevant input to VS policies and programmes.

Weaknesses:

- None in evidence

Recommendations:

- As consultation is a legal requirement and the veterinary authorities actively seek input from many non-governmental stakeholders it is important to ensure that the views of smaller producers are adequately captured and considered.

Evidence (as listed in Appendix 6): PME1 and Annexes 13, 136 & 137; E2; E5; E32; E48; E57; E58; E59; E115 (Q8); E118(annex6.3); E119 (Q5); E127

III-3 Official representation and international collaboration *The capability of the VS to regularly and actively participate, coordinate and provide follow-up on relevant meetings and activities of regional and international organisations including the OIE, Codex Alimentarius Commission, WTO SPS Committee, WHO, FAO and Regional Economic Communities.*	Levels of advancement
	1. The VS do not participate in or follow up on relevant meetings or activities of regional or international organisations.
	2. The VS sporadically participate in relevant meetings or activities and/or make a limited contribution.
	3. The VS actively participate in the majority of relevant meetings and activities, and provide some feedback to national colleagues.
	4. The VS consult with non-government stakeholders and take into consideration their opinions in developing papers and making interventions in relevant meetings and in following up on meeting outcomes at national or regional level.
	5. The VS consult with non-government stakeholders to provide leadership, to ensure that strategic issues are identified, and to ensure coordination among national delegations as part of their participation in relevant meetings, and follow up on meeting outcomes at national and/or regional levels. The VS collaborate internationally by sharing information and assisting to build capacity where appropriate.

Terrestrial Code reference(s): Appendix 1

Findings:

Chinese Taipei is not a member of UN agencies such as Codex Alimentarius Commission, WHO and FAO. In the WTO, Chinese Taipei is called the “Separate Customs Territory of Taiwan, Penghu, Kinmen and Matsu (Chinese Taipei), and has been a member since 2002.

Chinese Taipei‘s VA delegation attended 6 regular meetings of the Committee on Sanitary and Phytosanitary (SPS) of the World Trade Organization (WTO) from 68th session to 73rd session in the last two years. Also, the officials attended relevant thematic meetings and workshops on the margins of the Committee meetings.

Although not a member of WHO Chinese Taipei undertook a separate, unofficial IHR Joint External Evaluation process in 2016.

BAPHIQ supports the Taiwan Veterinary Medical Association to represent Chinese Taipei in its ongoing participation in the World Veterinary Association (WVA), Federation of Asian Veterinary Associations (FAVA), Federation of Asian Small Animal Veterinary Associations (FASAV), and World Small Animal Veterinary Association (WSAVA).

Chinese Taipei has been an OIE member or participant since 1954 with active engagement at both regional (http://www.rr-asia.oie.int/about-us/members/list-view/) and global levels.

Chinese Taipei provides OIE reference laboratories for CSF and two aquatic animal diseases. It has a very high level of transparency with immediate notifications, follow-up reports, regular six monthly and annual reports. Chinese Taipei provides active contributions to the development and updated of the aquatic and terrestrial codes and manuals. A long list of events was organized with the OIE regional office including a recent event on ASF. Chinese Taipei has nominated 8 focal points who regularly participate in meetings and workshops for their respective areas.

Relations with many international partners are established both at scientific and commercial levels. Chinese Taipei proactively organizes annual meetings with trade partners.

Examples of scientific collaborations are the Taipei zoo's collaboration with international zoo associations, ADIB collaboration with veterinary drug authorities and inspection agencies from US, Australia, Japan, NL, South Korea, Vietnam and Thailand. International collaboration is also evident with international standards being applied and certified for examples in the production of veterinary vaccine and medicines, and standards for laboratory animal production facilities.

Links to international organizations are available at the BAPHIQ website (https://www.baphiq.gov.tw/en/view.php?catid=5950) along with updates on the disease situation in other countries and WTO/SPS agreements.

Strengths:

- Well organized, scientifically competent and active contributions to international activities in the veterinary domain.
- Consultation with other government agencies and non-governmental stakeholders when relevant and feedback provided.
- Updated policies and programs to ensure harmonization with international standards.

Weaknesses:

- None in evidence.

Recommendations:

- Chinese Taipei has the technical competency and capacity to provide an important contribution to animal health and welfare and should continue its international collaboration activities to this end.

Evidence (as listed in Appendix 6): PME1 and Annexes 138-158; E38; E74, E118(3), E119(Q17)

III-4 Accreditation/ authorisation/ delegation *The authority and capability of the public sector of the VS to accredit/authorise/delegate to private sector or NGO expertise (e.g. private veterinarians and laboratories, animal welfare NGOs), to carry out official tasks on its behalf, usually via a formal agreement (i.e. public-private partnership).*	Levels of advancement
	1. The public sector of the VS has neither the authority nor the capability to accredit/authorise/delegate official tasks to the private sector or NGOs.
	2. The public sector of the VS has the authority and capability to accredit/authorise/delegate official tasks to the private sector or NGOs, but there are currently no accreditation/authorisation/delegation activities.
	3. The public sector of the VS develops accreditation/authorisation/delegation programmes for certain tasks using formal agreements, but these activities are not routinely reviewed.
	4. The public sector of the VS develops and implements accreditation/authorisation/delegation programmes using formal agreements, and these activities are routinely reviewed to maintain standards and manage performance.
	5. The public sector of the VS carries out audits of its accreditation/authorisation/delegation programmes, in order to maintain the trust of their trading partners and other stakeholders.

Terrestrial Code reference(s): Appendix 1

Findings:

Baseline

The general legal provisions for entrusting activities from the veterinary authorities are included in more than one of the veterinary domain legal act, such as Article 29 of the “Animal Industry Act”.

Several programs have been delegated/commissioned to private sector or semi-governmental organizations:

- Yearly surveillance plan for avian influenza is performed by the 4 poultry health sections from NAIF that collect the serum samples, throat swabs and cloacal swabs, and do the screening test for Avian Influenza.
- ATRI carries out the screening tests of blood samples collected from auction markets and farms for monitoring FMD and CSF. About 40,000 samples are tested every year.
- ATRI is responsible for the foodborne pathogen monitoring programme and pulse net database maintenance as well as the platform for registration of veterinary drugs applications.
- The Medical and Pharmaceutical Industry Technology and Development Centre performs GMP inspections.
- The activities of detector dogs (detection of animal and plant and their products in international airports and post offices) are entrusted to the Animal and Plant Health Prevention and Quarantine and Inspection Development Association since January 1, 2019.
- The national Taiwan Veterinary Medical Association manages continuing education for veterinarians in accordance with the law.

- NAIF trains and hires meat inspectors (VI and MIA) for slaughter inspection (Article 29 of the "Animal Industry Act")
- NAIF's Poultry Health Section works on screening tests for avian influenza.

The delegation of meat inspection tasks to NAIF is a particularly interesting and effective manner to ensure meat inspection to all slaughterhouses and technical independence insurance by the veterinary authority. The NAIF tasks are as follows:

a. Hiring personnel to inspect the slaughter hygiene to ensure the meat hygiene for consumers.

b. Promoting in-service education for inspectors to improve the professional skills and surveillance effectiveness and to improve the level and system of slaughter by various trainings.

c. Conducting training courses for the qualification of veterinarians and assistants for slaughter hygiene.

d. Quality control of inspection for slaughter hygiene, pathological diagnosis, and monitoring of the safety process for slaughter hygiene.

e. Strengthening and maintaining the management system for slaughter hygiene.

f. Promoting of the "pass-mark" for slaughter hygiene.

The coordination and supervision of delegated tasks is ensured by clear procedures and effective information management systems such as the one for meat inspection record of findings and management of meat inspection personnel (Figure 5).

Supervision for meat inspection performance evaluation is conducted frequently.

Delegated animal health activities such as sampling and testing for AI, FMD or ASF is supervised by BAPHIQ and external quality system certification and proficiency testing is performed.

GMP inspections are also audited by ADIB-BAPHIQ.

Strengths:

- Regulatory framework in place for delegation/authorization/commissioning of official tasks.
- Supervision of delegated official tasks is ensured by clear protocols, regular inspections and coordination meetings and sophisticated information management systems.

Weaknesses:

- None in evidence.

Recommendations:

- To ensure the best performance of delegated tasks audit but also training of involved personnel is extremely important. Audit results and surveillance inspection data should continue to be analysed to guide policies and procedures reviews.

Evidence (as listed in Appendix 6): PME1 and Annexes 159-166; E32 a-b; E49; E50, E115(3)

III-5 Regulation of the profession by the Veterinary Statutory Body (VSB) *The authority and capacity of the VSB to effectively and independently maintain educational and professional standards for veterinarians and veterinary paraprofessionals.* *Regulation includes licensing or registration of those veterinarians and veterinary paraprofessionals that meet educational standards, and the ongoing oversight of their professional competence and conduct.*	Levels of advancement
	1. There is no *VSB*.
	2. The *VSB* regulates *veterinarians* only within certain sectors of the veterinary profession and/or does not systematically apply educational standards or disciplinary measures.
	3. The *VSB* regulates *veterinarians* in all sectors of the veterinary profession setting educational standards and applying disciplinary measures.
	4. The *VSB* regulates *veterinarians* in all sectors and some *veterinary paraprofessionals* in a transparent manner. It has defined one or more specific categories of veterinary paraprofessional and their qualifications for initial and ongoing registration.
	5. The *VSB* regulates and applies disciplinary measures to *veterinarians* and *veterinary paraprofessionals* in all sectors throughout the country. *Veterinarians* and *veterinary paraprofessionals* are required to undertake continuing education to maintain their professional registration.

Terrestrial Code reference(s): Appendix 1

Findings:

In Chinese Taipei the functions the certification and management of veterinarians and Veterinarian Assistants are carried out not by an autonomous VSB as described by OIE[41] but rather by government authorities, including the Examination Yuan (Ministry of Examination) BAPHIQ and LADIAs in collaboration with the Taiwan Veterinary Medical Association.

The Veterinarian Act (https://law.moj.gov.tw/ENG/LawClass/LawAll.aspx?pcode=M0130001) provides authority to register practicing veterinarians and veterinary assistants, establish practicing standards and establish the veterinary medical association, the operation of which is partially regulated by the “Civil Association Act”. (https://law.moj.gov.tw/ENG/LawClass/LawAll.aspx?pcode=D0050091

The authorities/functions of a VSB are performed by the above-mentioned government agencies, and principally BAPHIQ’s central services that provide certification and standards of professional conduct and competence for veterinarians. The Taiwan Veterinary Medical Association (TVMA) conducts continuing education (CE) and provides credit recognition with the involvement of 22 local, independent VMAs, in which a certified veterinarian or veterinary assistant must first be registered to acquire license to practice.

The Professional and Technical National Examination (PTNE) for veterinarians includes competency tests on veterinary pathology, pharmacology, laboratory diagnosis, general diseases, infectious diseases and veterinary public health. An average score of 60/100 is

[41] *Focus on Veterinary Statutory Bodies, Dec 2014 at:* *http://www.oie.int/fileadmin/vademecum/pdf/Veterinary%20statutory%20bodies.pdf*

required for accreditation. Once they are accredited, to comply with the Veterinarian Act veterinarians must apply to BAPHIQ for a veterinary certificate submitting their PTNE certificate. After certification the veterinarian can apply to a local veterinary association for membership and to local governments for practice registration.

A PTNE for Veterinary Assistants was suspended in 2009 (E134, E135). Consequently Veterinary Assistants have not been certified by BAPHIQ since that time (see CC I-1.B).

While the Taiwan Veterinary Medical Association (TVMA) is an independent institution, it does not exercise full authority over the registration and management of veterinarians. Veterinary registration and management of veterinarians are responsibilities shared by BAPHIQ and the TVMA. The legislated roles of the two organizations are summarized in the table 6.

Neither BAPHIQ nor TVMA have the authority or capacity to establish and apply educational and technical standards for veterinary paraprofessionals, with the exception of meat inspection in which case education has been delegated from BAPHIQ to ATRI and oversight of standards and conduct is exercised by NAIF as the employer and BAPHIQ as the regulatory authority.

Table 6: Authorities/functions in relation to VSB

● Authority ○Assistance/involvement

Authorities/functions in relation to "VSB"	BAPHIQ	TVMA	Local VMAs
A. Issue a certificate of veterinarians.	●	-	-
B. Provide training courses such as on animal disease prevention, veterinarians and assistants for slaughter hygiene inspection.	●	○	○
C. Review of continuing education course and the operation of credit recognition	○	●	○
D. Review and revise the relevant veterinary regulations.	●	Consultation	Consultation
E. Continue to participate in international veterinary organization activities.	● Government org.	● NGO	○ NGO (Taipei City VMA)

Professional conduct rules are defined by the Veterinary Act. No major violations have been recently reported. The main violations in the past have been incomplete procedures for issuing a poultry health certificate and in updating a practice registration. The number of cases in the last three years was 96 in 2016, 241 in 2017 and 140 in 2018.

Veterinarians must undergo continuing education and renew their practice licenses every 6 years. "Regulations of Governing Veterinary Practice Registration and Continuing Education" (RGVPRCE) was formulated in December 2016 according to Article 5.4 of the Veterinarian Act. BAPHIQ is responsible for implementing RGVPRCE. The TVMA is authorized by BAPHIQ to serve as the accreditation body for continuing education courses and credits.

The TVMA has played a role in solving legal issues between clients and veterinarians according to interview of a companion animal veterinarian.

Professional and technical examinations are only available for qualification of veterinarians. VPP are not certified through a national examination. MIA are trained and approved by NAIF under BAPHIQ delegation.

Strengths:

- Government authorities, including the Examination Yuan, the Ministry of Examination, BAPHIQ, and LADIAs regulate and can apply disciplinary measures to all veterinarians.
- Veterinarians and VPP are required to undertake continuing education (see CC I-3).

Weaknesses:

- The VSB is not an autonomous body as described by the OIE[38].
- Veterinary Assistants have not been certified by BAPHIQ since suspension of the PTNE in 2009.

Recommendations:

- As set out under CCI-1.B, priority should be assigned to a national initiative to develop a "Veterinary Medical Assistant System" that would establish standardized training, accreditation and supervision (E131) and which should be consistent with OIE Guidelines [42].
- Consider ways to strengthen the autonomy of the regime for regulating the veterinary profession in accordance with OIE guidance[38].

Evidence (as listed in Appendix 6): PME1 and Annexes 164-165 & 174; E5; E43a-d; E57; E89; E116(IR-Q12); E119(Q10), E131, E134, 135

[42] OIE Guidelines for Veterinary Paraprofessionals – see:
http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/A_Competence.pdf
and
http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/AF-CoreCV-ANG.pdf

III-6 Participation of producers and other stakeholders in joint programmes *The capability of the VS to develop joint programmes (public-private partnerships) with producers and non-government stakeholders to deliver animal health, veterinary public health, food safety and/or animal welfare outcomes.*	Levels of advancement
	1. Producers and other non-government stakeholders do not participate in joint programmes.
	2. Producers and other non-government stakeholders are informed of programmes by the VS and informally assist the VS in programme delivery in the field (e.g. industry groups helping to communicate the programme with their membership).
	3. Producers and other non-government stakeholders formally participate with the VS in the delivery of joint programmes and advise of needed changes and improvements.
	4. Representatives of producers and other non-government stakeholders actively partner with the VS to plan, manage and implement joint programmes.
	5. Producers and other non-government stakeholders contribute resources and may lead the development and delivery of effective joint programmes with the VS. They also actively participate in their regular review, audit and revision.

Terrestrial Code reference(s): Appendix 1

Findings:

Producers and other non-governmental stakeholders have an important role on the planning and delivery of joint programs in animal health. For example, the “Veterinary Management Plan” (PME1 Annex 168) includes the activities of the National Taiwan Veterinary Association and the role of the Swine Association in the plan for prevention of foot-and-mouth disease.

The Chinese Taipei Swine Association participates in the programme for disinfection of animal transport vehicles (under a programme co-financed by BAPHIQ and producers), organizes the transport of dead animals from members’ farms to rendering, contributes to their drafting of regulations and distribution of information from the VA and participates/co-organizes ASF simulation exercises. Training has been organized for farmers on emergency vaccination.

LADIAs and NAIF cooperate with Poultry Health Sections set up by four universities and the Poultry, Duck and Goose Associations Republic of China, the ROC Turkey Association, and the Wild Bird Society of Taipei, to assist in sampling of poultry and wild birds, and for the promotion and organization of conferences on various biosafety and avian health issues. Development of improved biosecurity (e.g. netting of open house farms) is financed 50% by farmers and 50% by government.

The Taiwan Veterinary Medicine & Health Industry Association, Taipei Commercial Association of Feed and Animal Health Products, Taoyuan Commercial Association of Feed and Animal Health Products, Taichung Commercial Association of Feed and Animal Health Products, Kaohsiung Commercial Association of Feed and Animal Health Products, and Kaohsiung Veterinary Association engage in disseminating regulations for animal health products.

Taipei zoo collaborates with authorities on a rescue centre (Forestry Bureau) and zoonotic and epidemiological diseases monitoring programmes for zoo quarantine and rescue animals (AI, ND, rabies, ferret distemper, MERS-CoV, TB, brucellosis and toxoplasmosis). When a disease is suspected it is communicated to the LADIA of Taipei City. Training for animal protection inspectors is provided by the Taipei zoo (120 person/yr.),

ATRI board members include government officials, academics and agricultural enterprise groups. Its budget is based on government grants and self-raised funds (fees for services).

ATRI's Animal Technology Laboratory is developing a ferret badger oral rabies vaccine in collaboration with four Chinese Taipei Universities, the Endemic Species Research Institute, AHRI, and Industry.

The Endemic Species Research Institute (ESRI) has joint programmes with local authorities, wildlife conservation groups and the general public for rescue of injured animals and training is provided by ESRI on rescue procedures. The institute is financed by government grants but also private funding, e.g. from religious organizations.

ESRI has an ongoing project for ASF (rewarding for hunters for survey of wild boars), and also for disease surveillance in bats (http://www.batinfo.org/home/members/join-bat-nanny) under which bats collected are sent to AHRI.

Strengths:

- Many examples of joint programmes between government agencies and non-governmental organizations, including farmers and NGOs.
- Some of the joint programs are co-financed.

Weaknesses:

- None in evidence.

Recommendations:

- Continue investing on education and engagement programmes that contribute to effective animal health surveillance.

Evidence (as listed in Appendix 6): PME1 and Annex 168; E32a -b; E35; E48; E57; E58; E74; E84, E115 (18)

III-7 Veterinary clinical services	Levels of advancement
The availability and quality of veterinary clinical services to meet the needs of animal owners, including their access to animal disease or injury diagnosis and treatment.	1. There are no/few clinical services provided from either the public or private sector.
	2. Clinical services are available to animal owners in some areas but the quality and coverage (i.e. access to qualified veterinarians and/or veterinary paraprofessionals) is highly variable.
	3. Clinical services are available to most animal owners via the public and/or private sector. In rural areas this is delivered mostly by veterinary paraprofessionals with some formal training and some veterinary supervision – but providing only basic clinical diagnosis and treatment.
	4. Clinical services are available to all animal owners via an efficient network of veterinary clinics, including in rural areas, serviced by qualified veterinarians assisted by veterinary paraprofessionals. Diagnoses are generally made prior to treatment, including with supporting laboratory tests where appropriate and professional standards are maintained by a well-functioning VSB.
	5. Clinical services are available to all animal owners through qualified veterinarians, with appropriate facilities, diagnostic equipment and treatments, and the opportunity for specialist referral if required.

Terrestrial Code reference(s): Appendix 1

Findings:

According to the baseline information provided, the number of practicing veterinarians in Chinese Taipei was 5,039 with a total of 1,759 animal clinics/hospitals up until December 25, 2018. Clinics and hospitals are well distributed across the country (PME1, Annex 167).

According to Article 5 of the “Veterinarian Act” and the Veterinary Registration and Continuing Education Measures, a veterinarian shall receive continuing education and renew his or her practice license every six years by presenting of credits from continuing education courses. This is done to ensure the quality of the practice.

All veterinary clinics are registered with local veterinary authorities – LADIAs that also perform regular inspections including controls of veterinary drugs use. The licence has 5 years validity and costs NTD 1000, renewal is free.

Referral centres for different clinical specialities for both large and small animals are available at universities and private hospitals. NTU veterinary hospital is a referral centre for oncology, rehabilitation, ophthalmology, exotic animals and orthopaedic surgery. Excellent facilities and equipment, are available in the private sector. Even for wild animals very specialised and well-equipped clinical service is available. Access to laboratory diagnosis is also very good

The coverage of veterinary services is enough for both pet and production animal population. The size of the country and a good transport network allows for easy access to referral centres.

Even in Pingtung county that has the largest farm animal population all farms have a contracted veterinarian. Some veterinarians provide service to large number of farms and clinical services are offered by feed companies but also by drug vaccine manufacturers. In case of need LADIAS can provide clinical services to support farmers. Feed companies (CCP and ELANCO)

provide clinical services for customers in collaboration with NAIF and or Universities for laboratory diagnostic

Strengths:

- Excellent clinical service coverage with world class equipment and facilities at top clinics for companion animals and wildlife.
- Continuous education requirement in place for registered veterinarians and inspection of clinics and hospitals

Weaknesses:

- None in evidence

Recommendations:

- Continue with collaboration between private public sector and academic/research institutions to reinforce referral centres that can provide service also at the international level

Evidence (as listed in Appendix 6): PME1, PME1 Annex 167; E35; E74; E76; E77

III.4 Fundamental component IV: Access to markets

This component of the evaluation concerns the authority and capability of the VS to provide support by demonstrating the overall integrity of its animal health and veterinary public health system in order to access, expand and retain regional and international markets for animals and animal products.

Critical Competencies:

Terrestrial Code References:

Points 6, 7 and 9 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation/General organisation/Procedures and standards.

Points 1 and 2 of Article 3.2.7. on Legislation and functional capabilities: Animal health, animal welfare and veterinary public health/Export/import inspection.

Points 1 and 3 of Article 3.2.8. on Animal health controls: Animal health status/National animal disease reporting systems.

Sub-point g) of Point 4 of Article 3.2.10. on Veterinary Services administration: Trade performance history.

Article 3.2.11. on Participation in OIE activities.

Points 6 and 10 of Article 3.2.14. on Veterinary legislation, regulations and functional capabilities/Membership of the OIE.

Chapter 3.4. on Veterinary legislation.

Chapter 4.3. on Zoning and compartmentalisation.

Chapter 4.4. on Application of compartmentalisation.

Chapter 5.1. on General obligations related to certification.

Chapter 5.2. on Certification procedures.

Chapter 5.3. on OIE procedures relevant to the Agreement on the Application of Sanitary and Phytosanitary Measures of the World Trade Organization.

Chapters 5.10. to 5.12. on Model international veterinary certificates.

IV-1 Legislation and regulations *The effectiveness of veterinary legislation and regulations.* **A. Integrity and coverage of legislation and regulations** *The authority and capability of the VS to develop or update veterinary legislation to ensure its quality and coverage of the veterinary domain.* *This competency covers the quality of legislation considering the principles of legal drafting, its impact, and suitability for implementation.* *This competency includes formal collaboration with other legal drafting professionals, other relevant ministries and Competent Authorities, national agencies and decentralised institutions that share authority or have mutual interest in relevant areas of the veterinary domain. It also covers stakeholder consultation relevant to veterinary legislation.*	**Levels of advancement**
	1. National veterinary legislation is lacking, out-dated or of poor quality. The VS do not have the authority or capability to develop or update legislation and regulations.
	2. Veterinary legislation and regulations cover some fields of the veterinary domain. The VS, working with legal professionals, have some authority and capability to develop or update national legislation and regulations.
	3. Veterinary legislation and regulations cover most fields, including in collaboration with relevant Competent Authorities. The VS, working in formal partnership with legal professionals, have the authority and capability to develop or update national legislation and regulations, including via consultation with stakeholders, to ensure its legal quality and applicability.
	4. The VS have national (and sub-national where relevant) veterinary legislation and regulations covering the entire veterinary domain. The VS have the authority and the capability to develop or update national (and sub-national) legislation and regulations, using a formal methodology which considers consultation with stakeholders, regulatory impact, legal quality and applicability, and international standards.
	5. The VS have comprehensive and current national (and sub-national where relevant) veterinary legislation and regulations that covers the entire veterinary domain. The VS regularly evaluate and update their legislation and regulations with reference to ongoing effectiveness and changing international standards and science.

Terrestrial Code reference(s): Appendix 1

Findings:

Veterinary legislation in Chinese Taipei is comprehensive, for the most part up to date and covers all major domains. BAPHIQ, as the National Veterinary Authority, has the required mandate and capacity to develop appropriate laws and regulations. The Legal Affairs Unit of BAPHIQ has two legal professionals as permanent staff responsible for drafting new legislation and regulations with support of veterinary and technical staff.

BAPHIQ has a number of committees that may be contacted in the drafting and review process. To draft new legislation, consultations and discussions are organized with the relevant industry associations and other stakeholders, providing an opportunity to modify the draft material. The legislation is then made available for public comment.

The committees for the drafting and review of veterinary legislation or regulations include:

- BAPHIQ legal and technical staff
- Scholars and experts
- Governments of Municipalities/Cities/Counties
- National Taiwan Veterinary Medical Association

- Other relevant authorities (e.g. TFDA, TCDC)

The process of drafting and reviewing veterinary legislation has several steps:

- Legal Affairs Committee of the COA
- Executive meeting of the COA
- Review meeting of Executive Yuan (Chaired by the Minister without Portfolio)
- Yuan Sittings of Executive Yuan
- Yuan Sittings of Legislative Yuan

The structure of the legislation is laws (Acts) with subordinate legislation (Regulations, Guidelines and Standards). The VS make full use of these legislative instruments to operate and control relevant veterinary activities.

The main Acts of Chinese Taipei and their subordinances in the veterinary domain are listed as follows. This list of legislation is available on the BAPHIQ's website.

- **Statute for Prevention and Control of Infectious Animal Diseases**
- **Veterinarian Act**
  - Specifications for registration of practicing veterinarians, practice standards and establishment of veterinary medical associations
- **Civil Associations Act**
  - General specifications for the establishment of the veterinary medical associations
- **Animal Industry Act**
  - Establishment Standards for Slaughterhouses (jointly by COA, MOEA & EPA)
  - Regulations for Meat Inspection (jointly by COA & MOHW)
  - Regulations for Slaughter Operation
  - Governing Food Safety and Sanitation Act
  - Regulations on Good Hygiene Practice for Food (GHP)
  - Regulations on Food Safety Control System
- **Feed Control Act**
  - Regulations for the Use of Feed Additives and for Traceability of Feed and Feed Additives
  - Standards for the establishment of a feed factory
  - Regulations for registration of feed vendor
  - Substances prohibited from use of animal feed and feed additives
- **Animal Protection Act**
  - Multiple regulations governing animal shelters, performing animals, working dogs, animal protection training, rewards reporting violation of the Animal Protection Act, and animal transportation and management
- **Disaster Prevention and Protection Act**
  - Executive regulations of central and local governments
  - Special regulations for the transportation of animals/products between islands

The VS work closely with the relevant competent authorities such as other line ministries and non-profit organizations, particularly MOHW, TFDA, Customs, specific agencies such as the Department of Animal Industry, AHRI, NAIF, and ATRI. Legislation is in place requiring

collaboration and cooperation of the respective ministries and non-profit organizations to support food safety related work.

Internal quality of legislation and regulation is satisfactory. However, the VS have not enough dedicated professional legal staff to regularly update the necessary regulations according to BAPHIQ officers. A larger pool of legal professionals is understood to be available in COA and might provide the required support.

External quality of new legislation and regulation is usually achieved by a process which includes consultation with stakeholders and publication/communication of drafts.

No legislation exists covering veterinary para-professionals which leads to a lack of standards except for meat inspectors at slaughterhouses who are trained by ATRI and employed and supervised by NAIF.

Veterinary legislation and regulations are generally updated as the national context changes and with reference to international standards.

All veterinary legislation affecting trade is submitted to WTO for review. Public hearings and target consultations are required during drafting stage (CC-III.2).

An example of updates of veterinary legislation to ensure harmonization with international standards was the revision of BSE standards in October 2018.

Strengths:

- Comprehensive legislation and supporting regulations and procedures.

Weaknesses:

- Insufficient dedicated legal human resources to regularly update legislation and regulations.

Recommendations:

- Develop/amend legislation to set standards for and require the registration of veterinary para-professionals (see CC III-5)
- Ensure sufficient legal professionals are available by drawing on resources of COA to keep current the Acts and regulations required by the VA.

Evidence (as listed in Appendix 6): PME1 and Annexes 4, 18, 95, 98, 99, 170-175, 17; PME2; PME3 (a-d); E1; E2; E5; E6; E7; E12; E13; E14; E15; E17; E19; E28; E49; E61; E62; E65c; E66; E80; E94; E98

B. Implementation of and compliance with legislation and regulations	Levels of advancement
The authority and capability of the VS to ensure compliance with legislation and regulations across the veterinary domain through communications and compliance inspection activities. *This competency includes formal collaboration with other relevant ministries and Competent Authorities, national agencies and decentralised institutions that share responsibility for implementation, or have mutual interest in relevant areas.*	1. The VS have no or very limited programmes or activities to communicate or ensure compliance with legislation and regulations. 2. The VS implement some programmes or activities comprising targeted communications and awareness raising on stakeholder legal obligations, but conduct few inspection and compliance verification activities. 3. *Veterinary legislation* is implemented through a programme of communications and awareness raising, and through formal, documented inspection and compliance verification activities. The VS undertake some legal action/initiate prosecution in instances of non-compliance in most relevant fields of activity. 4. *Veterinary legislation* is implemented across the entire veterinary domain and is consistently applied. The VS work to minimise instances of non-compliance through multiple means, including through targeted communications, incentives and appropriate legal processes. They have documented reports of dealing with non-compliance. 5. Legislative or regulatory compliance programmes are regularly subjected to audit and review by the VS or external agencies.

Terrestrial Code reference(s): Appendix 1

Findings:

In Chinese Taipei, veterinary legislation is generally well understood and implemented in the field by BAPHIQ staff, LADIA staff, other competent authorities responsible for food safety and customs, NPOs and relevant stakeholders with whom there is effective coordination (see CCs I-6.A&B). During the field mission it was observed (through reports, field visits, and interviews) that legislation is generally well implemented.

The Veterinary Authority and broader VS have strong programmes of communication at national and local levels to increase awareness and compliance with legislation. For example, the risk of illegal import of products is mitigated by an active awareness campaign with posters, fliers, 'detector dog dress-up suits', announcements by airline crew on arriving flights and signage at entry/exit ports (See CC II-3).

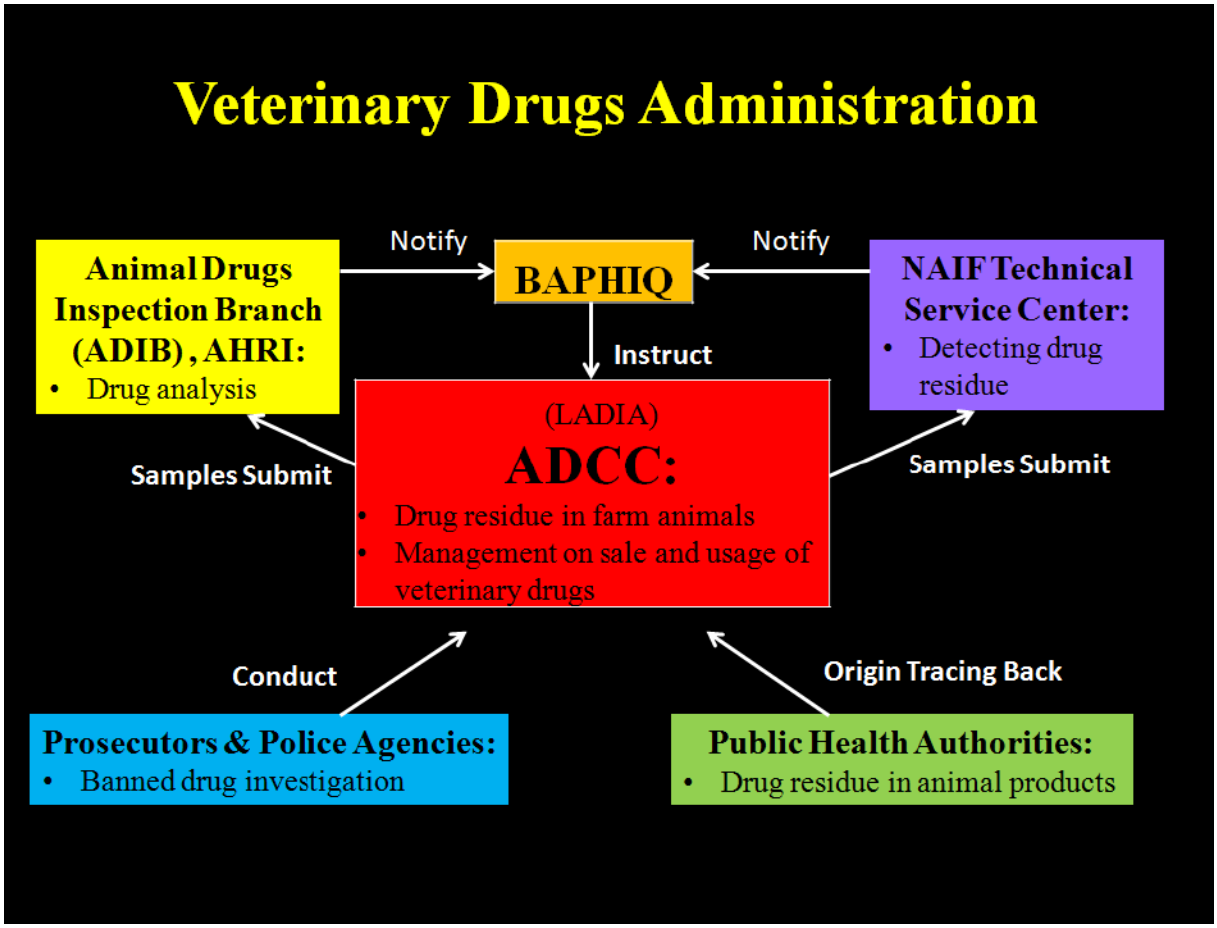
The Veterinary Public Health Sections of LADIAs regulate and control the local supply and distribution of veterinary drugs. To ensure the proper distribution and effective use of veterinary medicines, sites are visited and guidance provided on their storage, sale and use through veterinary clinics and drug stores for both livestock and companion animals. These distributors are inspected and their facilities licensed. Monitoring and control of veterinary drug residues in farm animals is carried out by ADDC and the veterinary drug residues are tested by an NAIF laboratory. Non-compliance of veterinary drug residues is infrequent.

LADIAs and Local Veterinary Medical Associations have authority to investigate and to suspend or prohibit practice by veterinarians at the local level.

According to the "Animal Industry Act", a person in violation of the illegal slaughter regulations shall be punished and fined accordingly by the Municipal/City/County government.

No regular audits of legislative compliance were reported by the VS or external parties.

Figure 24: Veterinary drug control inter-agency collaboration



Strengths:

- When and wherever necessary the VS implements legislation and apply penalties.
- High levels of public awareness and compliance with government programmes.
- VS staff have authority for entry, inspection and seizure and can obtain the order of a magistrate and be supported by the police if necessary.

Weaknesses:

- Audit and review of legislation could be strengthened in concert with initiatives proposed under CC I-5.

Recommendations:

- Consider strengthening audit and evaluation of compliance promotion and enforcement for priority programmes (e.g. ASF, AI, AMR) as part of the initiatives recommended under CC I-5

Evidence (as listed in Appendix 6): PME1 and Annexes 6, 10, 19, 125; PME2; PME3 (a-d); E1; E2; E5; E6; E7; E12 to 17; E19; E28; E49; E61; E62; E65c; E66; E80; E94; E98; E109; E118

IV-2 International harmonisation *The authority and capability of the VS to be active in the harmonisation of national regulations and sanitary measures to ensure they take into account international standards, and/or related regional directives or guidelines.*	Levels of advancement
	1. National regulations and *sanitary measures* under the mandate of the VS do not take into account international standards.
	2. The VS are aware of gaps, inconsistencies or non-conformities in national regulations and *sanitary measures* as compared to international standards, but do not have the capability or authority to rectify the problems.
	3. The VS monitor the establishment of new and revised international standards, and periodically review national regulations and *sanitary measures* in response.
	4. The VS harmonise their regulations and *sanitary measures*, and can demonstrate a level of alignment with changing international standards. The VS also review and comment on the draft standards of relevant intergovernmental organisations, and work through regional organisations, where available, to ensure better harmonisation with international standards.
	5. The VS actively and regularly participate at the international level in the formulation, negotiation and adoption of international standards, and use the standards to regularly harmonise national legislation, regulations and *sanitary measures*.

Terrestrial Code reference(s): Appendix 1

Findings:

BAPHIQ participates actively in relevant international meetings such as the OIE General Session and other OIE conferences or meetings. BAPHIQ monitors the establishment of new and revised international standards and periodically reviews national legislation, regulations and sanitary measures to harmonise these, as appropriate, with international standards. Chinese Taipei participates actively in the review of OIE documents and includes consultation with interested parties for input on proposed changes to the Code. Bilateral annual meetings are organized with trading partners, recently with Australia, Canada, EU, Finland, France, Hungary, Japan, Netherlands, New Zealand, Poland, UK, and the USA. Chinese Taipei actively negotiates with its trading partners over sanitary requirements. Generally, these are based on the OIE Codes.

Chinese Taipei is not a member of Codex Alimentarius.

Strengths:

- Active participation in international meetings such as the OIE.
- Active participation in a review of the OIE Code.
- Discusses issues with stakeholders if considered relevant and important.
- Independently conducted an unofficial JEE of IHR implementation in 2016.

Weaknesses:

- Limited legal staff dedicated to VS legislation and international standards may constrain comprehensive harmonisation and updating.

Recommendations:

- Consider strengthening BAPHIQ's legal unit to increase capacity to meet the needs of the VA (see CC IV-1).

Evidence (as listed in Appendix 6): PME1 and Annexes 3, 140, 141, 170 & 171; PME2; PME3 (a-d); E1; E2; E5; E6; E7; E38; E94; E98

IV-3 International certification	Levels of advancement
The authority and capability of the VS to reliably certify animals and animal products, and related services and processes under their mandate, for export, in accordance with national legislation and regulations, international standards and importing country requirements. *This refers to the country's veterinary export certification processes. Issues such as: the legislative basis, format and content of veterinary certificates; who signs certificates and the confidence they have in what they are certifying; and the outcome in terms of meeting international standards and/or importing country requirements to facilitate exportation should all be considered.*	1. The VS have neither the authority nor the capability to certify animals and animal products for export. 2. The VS have the authority to certify certain animals and animal products for export, but are not always in compliance with national legislation and regulations, and international standards. 3. The VS develop and carry out certification for certain animals, animal products, services and processes for export under their mandate in compliance with international standards. 4. The VS develop and carry out all relevant certification programmes for all animals, animal products, services and processes for export under their mandate in compliance with international standards. 5. The VS carry out audits of their certification programmes, in order to maintain national and international confidence in their system.

Terrestrial Code reference(s): Appendix 1

Findings:

The production of animals and animal products is mainly for domestic needs and exports are limited. International certification is carried out by BAPHIQ Branch offices under policies set by BAPHIQ Headquarters. TFDA is the competent authority for food safety and is responsible for food administration and inspection services in accordance with the "Act Governing Food Safety and Sanitation". TFDA is also responsible for the certification of exported food products of animal origin as agreed with importing countries. The "regulation for the on-site inspection of birds for exportation" is established by BAPHIQ. Based on this regulation, registration of farms, supervision, and testing of birds are required according to the requirements from the importing country. The animal quarantine certificate is issued if the farm has met the requirements of the importing country, after being confirmed by the BAPHIQ Branch office.

For exportation of livestock and poultry, BAPHIQ collaborates with the importing country to set up the quarantine requirements. AHRI and laboratories of the 4 veterinary colleges support BAPHIQ with the testing. The animal quarantine certificate is issued if the farm has met the requirements of the importing country, after being confirmed by the BAPHIQ Branch office. Import-export quarantine facilities are managed or owned BAPHIQ, universities or approved private sector operators. Three quarantine facilities were visited during the field mission. The quarantine premises have excellent physical resources, procedures and records. Quarantine facilities exist for all types of animals ranging from wildlife to reptiles and birds, including pets and livestock. All exporting quarantine premises are under the control of public veterinarians.

Animal products exported from Chinese Taipei are mostly processed food. BAPHIQ cooperates with the TFDA to issue the export certificate based on the requirements of the

importing country. BAPHIQ is responsible for animal health while the TFDA is responsible for food safety. The TFDA cooperates with local governments to inspect animal product manufacturers. The process includes self-inspection, traceability of food and related products, Hazard Analysis and Critical Control Points (HACCP) methods, Good Hygienic Practice, and product labelling.

In Chinese Taipei, an internationally approved certification system is in place for animals and animal products including livestock/poultry farms, slaughterhouses, and processing plants. Chinese Taipei has a comprehensive programme for animal disease surveillance with a list of notifiable diseases and requirements for early reporting. This programme is supported by ample resources to complete the necessary verification, examination and laboratory testing to support the certification of animals and products for international trade. All official tests are performed in accredited laboratories using accredited tests and all quarantine procedures comply with international standards (including international health certificate issuance).

Currently, Chinese Taipei exports pet birds, pigs, aquatic animals, processed meat, eggs and egg products, dairy products, and aquatic products to 18 countries.

All import certificate requirements are available on BAPHIQ website and changes are always communicated to traders and export countries.

Strengths:

- International certification process is well established.
- Accredited tests for official controls.

Weaknesses:

- Coordination is required amongst BAPHIQ, TFDA, local government VA and field veterinarians (see CCs I-6.A&B).
- Some indications of a shortage of veterinarians in the field (see CCI-1.A), both in animal and veterinary public health, that may limit the capacity of the VS to certify some products/activities to support an expanded export market.

Recommendations:

- Review the certification process to seek ways to enhance the coordination of work and flow information amongst inspection service agencies.
- Consider the development and introduction of e-certification.

Evidence (as listed in Appendix 6): PME1 and Annexes 42, 132, 133; PME2; E1; E2; E7; E22; E80; E94

IV-4 Equivalence and other types of sanitary agreements	Levels of advancement
The authority and capability of the VS to apply flexibility in negotiating, implementing and maintaining equivalence and other types of sanitary agreements with trading partners. *As a reference, Article 4 of the WTO SPS Agreement:* *Members shall accept the sanitary or phytosanitary measures of other Members as equivalent, even if these measures differ from their own or from those used by other Members trading in the same product, if the exporting Member objectively demonstrates to the importing Member that its measures achieve the importing Member's appropriate level of sanitary or phytosanitary protection. For this purpose, reasonable access shall be given, upon request, to the importing Member for inspection, testing and other relevant procedures.*	1. The VS have neither the authority nor the capability to negotiate or approve equivalence or other types of sanitary agreements with other countries. 2. The VS have the authority to negotiate and approve equivalence and other types of sanitary agreements with trading partners, but no such agreements have been implemented. 3. The VS have implemented equivalence and other types of sanitary agreements with trading partners on selected animals, animal products and processes. 4. The VS actively pursue the development, implementation and maintenance of equivalence and other types of sanitary agreements with trading partners on all matters relevant to animals, animal products and processes under their mandate. They publish their existing sanitary agreements in the public domain. 5. The VS actively work with stakeholders and take account of developments in international standards, in pursuing equivalence and other types of sanitary agreements with trading partners.

Terrestrial Code reference(s): Appendix 1

Findings:

BAPHIQ has several sanitary agreements with trading partners for animals and animal products and negotiates health certificates for export and import requirements with other foreign authorities. An adequate system for reporting notifiable diseases and a strong laboratory network give good confidence to trading partners. Existing sanitary measures (import and quarantine requirements) and regulations are publicly available on BAPHIQ's website. A web-based information system is also in place and available for trading partners (including import/export/transit certification). The FMD free zones with vaccination have been officially recognized by OIE and trading partners, and Chinese Taipei can export pork and pork products to other countries.

Chinese Taipei imports large quantities of agricultural products and foods of animal origin and has in place risk mitigation measures. Control is based on agreements requiring appropriate standards and strict management of the import of live animals and animal products by BAPHIQ. Chinese Taipei has developed sanitary agreements with a number of countries for a range of products from several countries including many EU countries, USA, Canada, Australia, New Zealand, China, Japan, Thailand, Vietnam. In addition, BAPHIQ organizes regularly meetings with other countries including Australia, Canada, EU, Finland, France, Hungary, Japan, Netherlands, New Zealand, Poland, UK, US, etc.

However, equivalence agreements have not been negotiated with regional trading partners because of political constraints. Since Chinese Taipei is not a major exporter of terrestrial animals and animal products, the VS may not be driven to seek such agreements.

The import and quarantine requirements of Chinese Taipei are available in the public domain at the BAPHIQ's website[43].

Strengths:

- Strong policy protecting animal health status.
- Chinese Taipei has developed sanitary agreements with a number of countries for a range of products.

Weaknesses:

- More could be done in collaboration with stakeholders if warranted by trade needs and strategies, such as a possible the future use of compartments (see CC IV-8).

Recommendations:

- Enhance engagement of interested parties if and when required for expanded trade in the region and more broadly.

Evidence (as listed in Appendix 6): PME1; PME2; PME3 (a-d); E1; E2; E7

[43] https://www.baphiq.gov.tw/en/view.php?catid=5985

IV-5 Transparency	Levels of advancement
The authority and capability of the VS to notify the OIE, WTO, trading partners and other relevant organisations of its disease status, regulations and sanitary measures and systems, in accordance with established procedures, as applicable to international trade.	1. The VS do not notify.
	2. The VS occasionally notify.
	3. The VS notify in compliance with the procedures established by these organisations.
	4. The VS regularly and actively inform stakeholders of changes in disease status, regulations and sanitary measures and systems, as applicable to international trade.
	5. The VS, in cooperation with their stakeholders, carries out reviews or audits of their notification procedures.

Terrestrial Code reference(s): Appendix 1

Findings:

Chinese Taipei regularly fulfils its notification obligations with OIE (PME8), WTO and trading partners. Chinese Taipei also regularly communicates to stakeholders its animal health status and reports both immediately and routinely as required to the OIE World Animal Health Information System (PME8) and to other international partners. WTO has been notified of modifications to relevant regulations. The OIE focal point and WTO enquiry point have been appointed by BAPHIQ. Stakeholders are regularly informed about changes in regulations and decisions on the prevention and control measures of relevant diseases through the networks described in CC III-2. Relevant regulations, notifications, and disease status are available at the BAPHIQ's website[44].

With a strong field network of registered government and private veterinarians at the county and township levels having close regular contact with livestock farmers, as well as a very comprehensive active surveillance programme, BAPHIQ has a strong and constantly updated knowledge of its animal disease status for the purposes of national and international reporting.

Strengths:

- Staff formally appointed for notification roles.
- Strong animal health surveillance system.
- Strong field network of registered government and private veterinarians.

Weaknesses:

- None in evidence.

Recommendations:

- Enhance reviews of notification procedures in cooperation with relevant stakeholders in context of overall approach to audit and evaluation recommended under CC I-5.

Evidence (as listed in Appendix 6): PME1 and Annexes 3, 6, 8, 138, 139, 140, 141; PME2; PME3 (a-d); PME8; E1; E2; E7; E17; E94; E98

[44] https://www.baphiq.gov.tw/en/index.php

IV-6 Zoning	Levels of advancement
The authority and capability of the VS to establish and maintain disease free zones, as necessary and in accordance with the criteria established by the OIE (and by the WTO SPS Agreement where applicable). *Where a country has no need for or interest in developing disease free zones and has not initiated such a process, this critical competency should be assessed as "Non-Applicable" (N/A).*	1. The VS do not have the authority or capability to initiate the establishment of disease free *zones*.
	2. The VS have identified a geographical animal sub-population or sub-populations as candidates to target a specific health status suitable for zoning.
	3. The VS are implementing *biosecurity* and sanitary measures with the intention of establishing a disease free *zone* for selected animals and animal products.
	4. The VS have established at least one disease free zone of selected animals and animal products with collaboration from producers and other stakeholders in alignment with OIE standards.
	5. The VS can demonstrate the scientific basis for any disease free *zone* and have gained recognition by OIE and/or trading partners that they meet the criteria established by the OIE (and by the WTO SPS Agreement where applicable).

Terrestrial Code reference(s): Appendix 1

Findings:

Chinese Taipei has established two zones officially recognized by OIE as free of FMD with vaccination (Figure 25). In 2017 a zone covering Chinese Taipei's main island, Penghu and Matsu islands gained recognition as an FMD free zone with vaccination. In 2018, a second zone covering Kinmen County was recognized as free zone from FMD with vaccination.

Chinese Taipei (Chinese Taipei's main island, Penghu and Matsu) and Kinmen are two separate FMD free areas with vaccination. Movement control measures for animal and animal products between the 2 zones or areas are established to prevent and control the spread of animal diseases from animals and animal products.

The relevant regulations for movement control and inspection have been established including 1) the "Regulations for inspection of animals and animal products shipped in or out Kinmen or Lienchiang County" and 2) the "Regulations for inspection of cloven-hoofed animals in or out Penghu County".

Chinese Taipei is now in the process of seeking freedom from FMD without vaccination for Taiwan main island, Penghu and Matsu. This work is straining staff capacity for surveillance and supervision in the field and at movement and border control posts (E108).

Figure 25: Two zones recognized by OIE as free of FMD with vaccination

Strengths:

- Good surveillance programme for FMD.
- Movement control regulations governing the 2 FMD Zones.
- FMD vaccines are locally produced.

Recommendations:

- Maintain the FMD free zones with vaccination and establish/apply for official recognition for an FMD free zone without vaccination.
- Ensure that staffing at field levels and movement control posts is adequate to support an FMD-free zone without vaccination.
- Consider enhanced audit/evaluation of prevention and control measures to support the FMD free zones.

Evidence *(as listed in Appendix 6):* PME1 and Annexes 3, 140, 141, 170 & 171; PME2; PME4 (a-c); PME7; E1; E2; E94; E98; E108; E113; E114

IV-7 Compartmentalisation	Levels of advancement
The authority and capability of the VS to establish and maintain disease free compartments in accordance with the criteria established by the OIE. *Where a country or its relevant animal industries have no need for or interest in developing disease free compartments and neither party has initiated or considered such a process or partnership, this critical competency should be assessed as "Non-Applicable" (N/A)*	1. The VS do not have the authority or capability to initiate the establishment of disease free *compartments*.[45]
	2. The VS can identify animal sub-populations as candidate establishments with a specific health status suitable for compartmentalisation, in partnership with interested stakeholders.
	3. The VS, working in close partnership with interested stakeholders, ensure that planned *biosecurity* measures to be implemented will enable the establishment and maintenance of disease free *compartments* for selected animals and animal products.
	4. The VS collaborate with producers and other stakeholders to define responsibilities and undertake actions that enable the establishment and maintenance of disease free *compartments* for selected animals and animal products, including a national government certification and accreditation system.
	5. The VS can demonstrate the scientific basis for disease free *compartments* and have gained recognition by other countries that they meet the criteria established by the OIE (and by the WTO SPS Agreement where applicable).

Terrestrial Code reference(s): Appendix 1

Findings:

Not Applicable as compartmentalisation is currently not applied in Chinese Taipei.

Nevertheless, many of the key elements are in place:

- the VS has a registration system and database of animal census which can identify animal sub-populations as candidate establishments with a specific health status suitable for compartmentalisation.
- Some poultry and pig production facilities observed during field mission have very high biosecurity management systems that would make them good candidates for disease free compartments.
- The VS has close collaboration with the private sector, producers' associations and other stakeholders which can support establishment of compartments.

BAPHIQ has initiated discussion with stakeholders in the aquaculture sector including to advance the compartmentalisation concept.

Existing legislation would need to be reviewed and perhaps revised to ensure that it would support compartmentalisation.

Strengths:

- Available registration system and animal census database.

[45] If the VS has the authority and capability but chooses not to implement compartmentalization, this CC should be recorded as "not applicable at this stage"

- Strong private sector biosafety and management capacity in selected production facilities.
- Good collaboration with the private sector, producers' associations and other stakeholders.

Weaknesses:

- NA

Recommendations:

- Consideration should be given to a policy for compartmentalisation to protect domestic food production and export markets in case of an emergency disease outbreak.
- Review of relevant legislation to support implementation of compartmentalisation.
- Assess to what extent compartments might protect domestic and other markets from disease outbreaks.

Evidence (as listed in Appendix 6): PME1; PME7; E1; E2; E7; E97; E113

PART IV: APPENDICES

Appendix 1: Terrestrial Code references for Critical Competencies

Critical Competencies	Terrestrial Code references
I-1.A **I-1.B** **I-2.A** **I-2.B**	➢ Points 1-5 of Article 3.1.2. on Fundamental principles of quality: Professional judgement/Independence/Impartiality/Integrity/Objectivity. ➢ Points 7 and 14 of Article 3.1.2. on Fundamental principles of quality: General organisation/Human and financial resources. ➢ Article 3.2.5. on Evaluation criteria for human resources. ➢ Article 3.2.12. on Evaluation of the veterinary statutory body. ➢ Points 1-2 and 5 of Article 3.2.14. on Organisation and structure of Veterinary Services/National information on human resources/Laboratory services.
I-3	➢ Points 1, 7 and 14 of Article 3.1.2. on Fundamental principles of quality: Professional judgement/General organisation/Human and financial resources. ➢ Article 3.2.5. on Evaluation criteria for human resources. ➢ Sub-point d) of Point 4 of Article 3.2.10. on Veterinary Services administration: In-service training and development programme for staff. ➢ Point 9 of Article 3.2.14. on Performance assessment and audit programmes.
I-4	➢ Point 2 of Article 3.1.2. on Fundamental principles of quality: Independence.
I-5	➢ Point 1 of Article 3.2.3. on Evaluation criteria for the organisational structure of the Veterinary Services. ➢ Point 9 of Article 3.2.14. on Performance assessment and audit programmes.
I-6.A **I-6.B**	➢ Points 6, 7 and 9 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation/General organisation/Procedures and standards. ➢ Article 3.2.2. on Scope. ➢ Points 1 and 2 of Article 3.2.3. on Evaluation criteria for the organisational structure of the Veterinary Services. ➢ Point 4 of Article 3.2.10. on Performance assessment and audit programmes: Veterinary Services administration.
I-7	➢ Point 2 of Article 3.2.4. on Evaluation criteria for quality system: “Where the Veterinary Services undergoing evaluation… than on the resource and infrastructural components of the services”. ➢ Points 2 and 3 of Article 3.2.6. on Evaluation criteria for material resources: Administrative / Technical. ➢ Point 3 of Article 3.2.10. on Performance assessment and audit programmes: Compliance. ➢ Point 4 of Article 3.2.14. on Administration details.
I-8 **I-9**	➢ Points 6 and 14 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation / Human and financial resources. ➢ Point 1 of Article 3.2.6. on Evaluation criteria for material resources: Financial. ➢ Point 3 of Article 3.2.14. on Financial management information.

I-11	➢ Points 7, 11 and 14 of Article 3.1.2. on Fundamental principles of quality: General organisation / Documentation / Human and financial resources. ➢ Point 4 of Article 3.2.1. on General considerations. ➢ Point 1 of Article 3.2.2. on Scope. ➢ Article 3.2.6. on Evaluation criteria for material resources. ➢ Article 3.2.10. on Performance assessment and audit programmes.
II-1.A **II-1.B** **II-1.C**	➢ Point 9 of Article 3.1.2. on Fundamental principles of quality: Procedures and standards. ➢ Point 1 of Article 3.2.4. on Evaluation criteria for quality systems. ➢ Point 3 of Article 3.2.6. on Evaluation criteria for material resources: Technical. ➢ Point 5 of Article 3.2.14. on Laboratory services.
II-2	➢ Chapter 2.1. on Import risk analysis ➢ Chapter 6.11. on Risk analysis for antimicrobial resistance arising from the use of antimicrobial agents in animals
II-3	➢ Points 6 and 9 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation / Procedures and standards. ➢ Point 2 of Article 3.2.7. on Legislation and functional capabilities: Export/import inspection. ➢ Points 6 and 7 of Article 3.2.14. on Veterinary legislation, regulations and functional capabilities / Animal health and veterinary public health controls.
II-4.A **II-4.B**	➢ Points 6, 7 and 9 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation / General organisation / Procedures and standards. ➢ Points 1-3 of Article 3.2.8. on Animal health controls: Animal health status / Animal health control / National animal disease reporting systems. ➢ Sub-points a) i), ii) and iii) of Point 7 of Article 3.2.14. on Animal health: Description of and sample data from any national animal disease reporting system controlled and operated or coordinated by the Veterinary Services / Description of and sample reference data from other national animal disease reporting systems controlled and operated by other organisations which make data and results available to Veterinary Services / Description and relevant data of current official control programmes including:… or eradication programmes for specific diseases. ➢ Chapter 1.4. on Animal health surveillance. ➢ Chapter 1.5. on Surveillance for arthropod vectors of animal diseases.
II-5	➢ Points 6, 7 and 9 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation / General organisation / Procedures and standards. ➢ Points 1-3 of Article 3.2.8. on Animal health controls: Animal health status / Animal health control / National animal disease reporting systems. ➢ Sub-point a) of Point 7 of Article 3.2.14. on Animal health and veterinary public health controls: Animal health.
II-6	➢ Points 6, 7 and 9 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation / General organisation / Procedures and standards.

	➢ Points 1-3 of Article 3.2.8. on Animal health controls: Animal health status / Animal health control / National animal disease reporting systems. ➢ Sub-point a) of Point 7 of Article 3.2.14. on Animal health and veterinary public health controls: Animal health. ➢ Chapter 4.12. on Disposal of dead animal.
II-7.A **II-7.B**	➢ Points 6, 7 and 9 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation / General organisation / Procedures and standards. ➢ Article 3.4.12. on Human food production chain. ➢ Points 1-5 of Article 3.2.9. on Veterinary public health controls: Food hygiene / Zoonoses / Chemical residue testing programmes / Veterinary medicines/ Integration between animal health controls and veterinary public health. ➢ Points 2, 6 and 7 of Article 3.2.14. on National information on human resources / Veterinary legislation, regulations and functional capabilities / Animal health and veterinary public health controls. ➢ Chapter 6.2. on Control of biological hazards of animal health and public health importance through ante- and post-mortem meat inspection. ➢ Chapter 6.3. on Control of biological hazards of animal health and public health importance through ante- and post-mortem meat inspection. ➢ Chapter 6.6 – The role of VS in food safety systems.
II-8	➢ Points 6 and 9 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation/Procedures and standards. ➢ Points 3 and 4 of Article 3.2.9. on Veterinary public health controls: Chemical residue testing programmes/Veterinary medicines. ➢ Sub-point a) ii) of Point 6 of Article 3.2.14. on Animal health and veterinary public health: Assessment of ability of Veterinary Services to enforce legislation.
II-9	➢ Chapter 6.7. on Introduction to the recommendations for controlling antimicrobial resistance ➢ Chapter 6.8. on Harmonisation of national antimicrobial resistance surveillance and monitoring programmes ➢ Chapter 6.9. on Monitoring of the quantities and usage patterns of antimicrobial agents used in food-producing animals ➢ Chapter 6.10. on Responsible and prudent use of antimicrobial agents in veterinary medicine ➢ Chapter 6.11. on Risk analysis for antimicrobial resistance arising from the use of antimicrobial agents in animals References to Codex Alimentarius Commission standards: ➢ Guidelines for Risk Analysis of Foodborne Antimicrobial Resistance (CAC/GL 77-2011) ➢ Code of Practice to Minimize and Contain Antimicrobial Resistance (CAC/RCP 61-2005).
II-10	➢ Points 3 and 4 of Article 3.2.9. on Veterinary public health controls: Chemical residue testing programmes / Veterinary medicines. ➢ Sub-points b) iii) and iv) of Point 7 of Article 3.2.14. on Veterinary public health: Chemical residue testing programmes / Veterinary medicines.

	➢ Chapter 2.2 – Criteria applied by the OIE for assessing the safety of commodities. References to Codex Alimentarius Commission standards: ➢ Guidelines for the Design and Implementation of National Regulatory Food Safety Assurance Programmes Associated with the Use of Veterinary Drugs in Food Producing Animals (CAC/GL 71-2009) ➢ Glossary of Terms and Definitions (Residues of Veterinary Drugs in Foods) (CAC/MISC 5-1993) ➢ Maximum Residue Limits (MRLs) and Risk Management Recommendations (RMRs) for Residues of Veterinary Drugs in Foods (CAC/MRL 2) ➢ Code of Practice to Minimize and Contain Antimicrobial Resistance (CAC/RCP 61-2005) ➢ General Standard for Contaminants and Toxins in Food and Feed (CODEX STAN 193-1995) ➢ Code of Practice Concerning Source Directed Measures to Reduce Contamination of Foods with Chemicals (CAC/RCP 49-2001) ➢ Guidelines for Risk Analysis of Foodborne Antimicrobial Resistance (CAC/GL 77-2011). ➢ Code of Practice to Minimize and Contain Antimicrobial Resistance (CAC/RCP 61-2005).
II-11	➢ Chapter 6.3. on Control of hazards of animal health and public health importance in animal feed. ➢ Chapter 6.10.8 – Responsibilities of animal feed manufacturers
II-12.A **II-12.B**	➢ Point 6 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation. ➢ Chapter 4.1. on General principles on identification and traceability of live animals. ➢ Chapter 4.2. on Design and implementation of identification systems to achieve animal traceability.
II-13	➢ Section7 on Animal Welfare ➢ Farm animal welfare (including humane on farm, transport and slaughter conditions) - 7.2., 7.3., 7.4. 7.5., 7.6., 7.9., 7.10., 7.11, 7.13.; Use of animals in research and education- 7.8.; Stray Dog Population Control - 7.7.; Welfare of working equids- 7.12.
III-1	➢ Point 13 of Article 3.1.2. on Fundamental principles of quality: Communication. ➢ Sub-point b) of Point 2 of Article 3.2.6. on Administrative resources: Communications. ➢ Point 4 of Article 3.2.14. on Administration details. ➢ Chapter 3.3. on Communication.
III-2	➢ Point 13 of Article 3.1.2. on Fundamental principles of quality: Communication. ➢ Point 2 of Article 3.2.3. on Evaluation criteria for the organisational structure of the Veterinary Services. ➢ Point 4 and Sub-point g) of Point 9 of Article 3.2.14. on Administration details and on Sources of independent scientific expertise. ➢ Chapter 3.3. on Communication.
III-3	➢ Article 3.2.11. on Participation on OIE activities. ➢ Point 4 of Article 3.2.14. on Administration details.

III-4	➢ Points 6, 7 and 9 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation / General organisation / Procedures and standards. ➢ Point 7 of Article 3.2.3. on Evaluation criteria for the organisational structure of the Veterinary Services. ➢ Article 3.4.5. on Competent Authorities.
III-5	➢ Point 6 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation. ➢ Point 9 of Article 3.2.1. on General considerations. ➢ Article 3.2.12. on Evaluation of the veterinary statutory body. ➢ Article 3.4.6. on Veterinarians and veterinary para-professionals.
III-6	➢ Points 6 and 13 of Article 3.1.2. Fundamental principles of quality: Veterinary legislation / Communication. ➢ Points 2 and 7 of Article 3.2.3. on Evaluation criteria for the organisational structure of the Veterinary Services. ➢ Point 7 of Article 3.2.14. on Animal health and veterinary public health controls. ➢ Point 4 of Article 3.4.3. on General principles: Consultation.
III-7	➢ Chapter 1.4. on Animal health surveillance. ➢ Chapter 1.5. on Surveillance for arthropod vectors of animal diseases. ➢ Points 6, 7 and 9 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation/Procedures and standards. ➢ Points 1-3 of Article 3.2.8. on Animal health controls: Animal health status/Animal health control/National animal disease reporting systems. ➢ Points 4 of Article 3.2.9. on Veterinary public health controls: Veterinary medicines.
IV-1.A **IV-1.B**	➢ Points 6, 7 and 9 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation / General organisation / Procedures and standards. ➢ Points 1 and 2 of Article 3.2.7. on Legislation and functional capabilities: Animal health, animal welfare and veterinary public health / Export/import inspection. ➢ Point 6 of Article 3.2.14. on Veterinary legislation, regulations and functional capabilities. ➢ Chapter 3.4. on Veterinary legislation.
IV-2	➢ Point 6 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation. ➢ Article 3.2.11. on Participation in OIE activities. ➢ Points 6 and 10 of Article 3.2.14. on Veterinary legislation, regulations and functional capabilities/Membership of the OIE.
IV-3	➢ Points 6, 7 and 9 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation/General organisation/Procedures and standards. ➢ Point 2 of Article 3.2.7. on Legislation and functional capabilities: Export/import inspection. ➢ Sub-point b) of Point 6 of Article 3.2.14. on Veterinary legislation, regulations and functional capabilities: Export/import inspection. ➢ Chapter 5.2. on Certification procedures. ➢ Chapters 5.10. to 5.13. on Model international veterinary certificates.
IV-4	➢ Points 6 and 7 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation/General organisation.

	➢ Sub-point g) of Point 4 of Article 3.2.10. on Veterinary Services administration: Trade performance history. ➢ Chapter 5.3. on OIE procedures relevant to the Agreement on the Application of Sanitary and Phytosanitary Measures of the World Trade Organization.
IV-5	➢ Point 6 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation. ➢ Points 1 and 3 of Article 3.2.8. on Animal health controls: Animal health status/National animal disease reporting systems. ➢ Chapter 5.1. on General obligations related to certification.
IV-6	➢ Point 6 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation. ➢ Chapter 4.3. on Zoning and compartmentalisation.
IV-7	➢ Point 6 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation. ➢ Chapter 4.3. on Zoning and compartmentalisation. ➢ Chapter 4.4. on Application of compartmentalisation.

Appendix 2: Glossary of terms

Terms defined in the Terrestrial Code that are used in this publication are reprinted here for ease of reference.

Animal

means a mammal, reptile, bird or bee.

Animal identification

means the combination of the identification and *registration* of an *animal* individually, with a unique identifier, or collectively by its *epidemiological unit* or group, with a unique group identifier.

Animal identification system

means the inclusion and linking of components such as identification of *establishments* or owners, the person(s) responsible for the *animal(s),* movements and other records with *animal identification.*

Animal Traceability

means the ability to follow an *animal* or group of *animals* during all stages of its life.

Animal welfare

means the physical and mental state of an *animal* in relation to the conditions in which it lives and dies.

Antimicrobial agent

means a naturally occurring, semi-synthetic or synthetic substance that exhibits antimicrobial activity (kill or inhibit the growth of micro-organisms) at concentrations attainable in vivo. Antihelmintics and substances classed as disinfectants or antiseptics are excluded from this definition

Biosecurity

means a set of management and physical measures designed to reduce the risk of introduction, establishment and spread of animal diseases, infections or infestations to, from and within an animal population.

Border Post

means any airport, or any port, railway station or road check-point open to *international trade* of *commodities*, where import veterinary inspections can be performed.

Case

means an individual animal infected by a pathogenic agent, with or without clinical signs

Compartment

means an animal *subpopulation* contained in one or more *establishments* under a common *biosecurity* management system with a distinct health status with respect to a specific *disease* or specific *diseases* for which required *surveillance*, control and *biosecurity* measures have been applied for the purposes of *international trade.*

Competent Authority

means the *Veterinary Authority* or other Governmental Authority of a Member, having the responsibility and competence for ensuring or supervising the implementation of animal health and welfare measures, international veterinary certification and other standards and

recommendations in the *Terrestrial Code* and the OIE *Aquatic Animal Health Code* in the whole territory.

Containment Zone

means a defined *zone* around and including suspected or infected *establishments*, taking into account the epidemiological factors and results of investigations, where control measures to prevent the spread of the *infection* are applied.

Disease

means the clinical and/or pathological manifestation of *infection.*

Emerging disease

means a new occurrence in an animal of a disease, infection or infestation, causing a significant impact on animal or public health resulting from:

a. change of a known pathogenic agent or its spread to a new geographic area or species; or

b. previously unrecognised pathogenic agent or disease diagnosed for the first time.

Epidemiological Unit

means a group of *animals* with a defined epidemiological relationship that share approximately the same likelihood of exposure to a pathogenic agent. This may be because they share a common environment (e.g. *animals* in a pen), or because of common management practices. Usually, this is a *herd* or a *flock*. However, an *epidemiological unit* may also refer to groups such as *animals* belonging to residents of a village, or *animals* sharing a communal animal handling facility. The epidemiological relationship may differ from *disease* to *disease*, or even strain to strain of the pathogenic agent.

Establishment

means the premises in which *animals* are kept.

Feed

means any material (single or multiple), whether processed, semi-processed or raw, which is intended to be fed directly to terrestrial *animals* (except bees).

Hazard

means a biological, chemical or physical agent in, or condition of, an animal or animal product with the potential to cause an adverse health effect

International veterinary certificate

means a certificate, issued in conformity with the provisions of Chapter 5.2. of the *Terrestrial Animal Health Code*, describing the animal health and/or *public* health requirements which are fulfilled by the exported *commodities.*

Laboratory

means a properly equipped institution staffed by technically competent personnel under the control of a specialist in veterinary diagnostic methods, who is responsible for the validity of the results. The *Veterinary Authority* approves and monitors such laboratories with regard to the diagnostic tests required for *international trade.*

Meat

means all edible parts of an *animal*.

Monitoring

means the intermittent performance and analysis of routine measurements and observations, aimed at detecting changes in the environment or health status of a *population.*

Notifiable disease

means a *disease* listed by the *Veterinary Authority,* and that, as soon as detected or suspected, must be brought to the attention of this *Authority*, in accordance with national regulations.

Official Veterinarian

means a *veterinarian* authorised by the *Veterinary Authority* of the country to perform certain designated official tasks associated with animal health and/or public health and inspections of *commodities* and, when appropriate, to certify in conformity with the provisions of Chapters 5.1. and 5.2. of the *Terrestrial Code.*

Outbreak

means the occurrence of one or more cases in an epidemiological unit.

Risk analysis

means the process composed of *hazard identification*, *risk assessment*, *risk management* and *risk communication.*

Risk assessment

means the evaluation of the likelihood and the biological and economic consequences of entry, *establishment* and spread of a *hazard* within the territory of an *importing country*.

Risk communication

Means the interactive transmission and exchange of information and opinions throughout the risk analysis process concerning risk, risk-related factors and risk perceptions and risk assessors, risk managers, risk communicators, the general public and interested parties.

Risk management

means the process of identifying, selecting and implementing measures that can be applied to reduce the level of *risk*.

Sanitary measure

means a measure, such as those described in various Chapters of the *Terrestrial Code*, destined to protect animal or human health or life within the territory of the OIE Member from *risks* arising from the entry, *establishment* and/or spread of a *hazard*.

Surveillance

means the systematic ongoing collection, collation, and analysis of information related to animal health and the timely dissemination of information so that action can be taken.

Terrestrial Code

means the OIE *Terrestrial Animal Health Code.*

Veterinarian

means a person with appropriate education, registered or licensed by the relevant *veterinary statutory body* of a country to practice veterinary medicine/science in that country.

Veterinary Authority

means the Governmental Authority of a Member Country, comprising veterinarians, other professionals and paraprofessionals, having the responsibility and competence for ensuring or supervising the implementation of the animal health and welfare measures, international veterinary certification and other standards and recommendations in the Terrestrial Code in the whole territory.

(Veterinary) legislation

means laws, regulations and all associated legal instruments that pertain to the veterinary domain.

Veterinary paraprofessional

means a person who, for the purposes of the *Terrestrial Code,* is authorised by the *veterinary statutory body* to carry out certain designated tasks (dependent upon the category of *veterinary paraprofessional)* in a territory, and delegated to them under the responsibility and direction of a *veterinarian.* The tasks for each category of *veterinary paraprofessional* should be defined by the *veterinary statutory body* depending on qualifications and training, and according to need.

Veterinary Services

means the governmental and non-governmental organisations that implement animal health and welfare measures and other standards and recommendations in the Terrestrial Code and the OIE Aquatic Animal Health Code in the territory. The Veterinary Services are under the overall control and direction of the Veterinary Authority. Private sector organisations, veterinarians, veterinary paraprofessionals or aquatic animal health professionals are normally accredited or approved by the Veterinary Authority to deliver the delegated functions.

Veterinary statutory body

means an autonomous regulatory body for *veterinarians* and *veterinary paraprofessionals.*

Wildlife

means *feral animals*, *captive wild animals* and *wild animals*.

Zone

means a clearly defined part of a territory containing an animal subpopulation with a distinct health status with respect to a specific disease for which required surveillance, control and *biosecurity* measures have been applied for the purpose of international trade.

Appendix 3: Country information (geography, administration, agriculture and livestock)

Governance

Chinese Taipei is a democratic country with a directly elected President. The central government consists of five branches presenting the separation of five powers. The five branches are Executive Yuan, Legislative Yuan, Judicial Yuan, Examination Yuan, and Control Yuan (Figure 26). These are:

a. Executive Yuan: Executive Yuan is the highest administrative organization. It is politically responsible for Legislative Yuan in accordance with the Constitution. Executive Yuan conducts all administrative affairs. There are several central administrative ministries or councils under its jurisdiction. The Council of Agriculture (COA) is one of them at the ministry level and BAPHIQ belongs to it. The responsibility of BAPHIQ is veterinary administration. The Animal Health Research Institute (AHRI) COA is a national laboratory, responsible for animal disease diagnosis, setting up standard for disease diagnosis, evaluation of testing ability of other laboratories for disease diagnosis, and assay for animal health products.

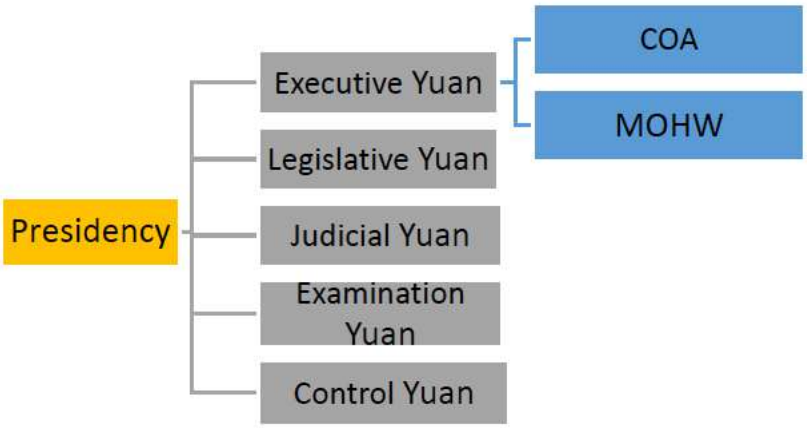
b. Legislative Yuan: Legislative Yuan is the highest legislative body, for resolutions of legal cases, budget proposals, treaties, and other important matters. The annual budgets, legal, acts, statutes and regulations must all be passed by Legislative Yuan.

c. Judicial Yuan: The Judicial Yuan is the highest judicial organization with 15 chief justices. They interpret the constitution and the regulations by conference method. Moreover, they constitute the constitutional court for cases of presidential and vice-presidential impeachment and the unconstitutional dissolution of political parties.

d. Examination Yuan: The Examination Yuan is the highest examination organization and the highest competent authority for the public sector personnel system. Moreover, it is in charge of the national professional and technical professional qualifications and also in charge of their training and education.

e. Control Yuan: The Control Yuan is the highest control organization of the Country and exercises the powers of impeachment, censure, and audit.

Figure 26: The 5 Branches of the Central Government of Chinese Taipei

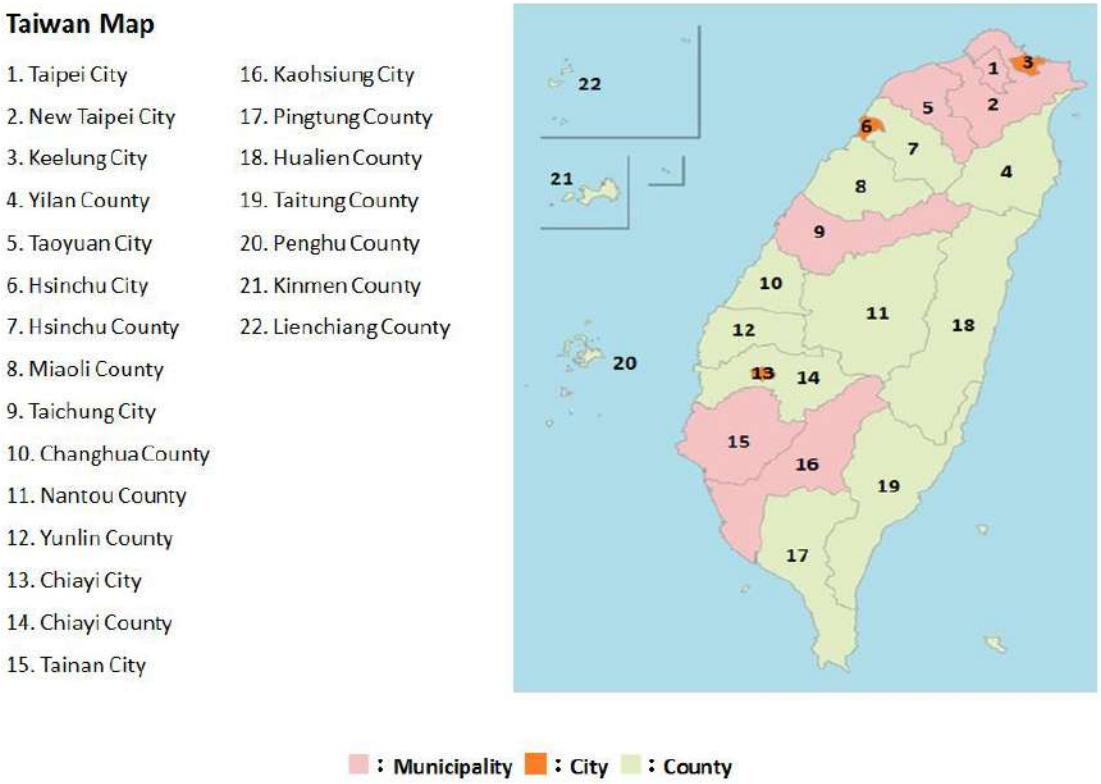


Political Administration

There are 6 municipalities, 3 cities, and 13 counties as shown in Figure 27:

- Municipalities: Taipei City, New Taipei City, Taoyuan City, Taichung City, Tainan City, and Kaohsiung City.
- Cities: Keelung City, Hsinchu City, and Chiayi City.
- Counties: Yilan County, Hsinchu County, Miaoli County, Changhua County, Nantou County, Yunlin County, Chiayi County, Pingtung County, Hualien County, Taitung County, Penghu County, Kinmen County, and Lienchiang County.

Figure 27: Political Administration – 22 local governments

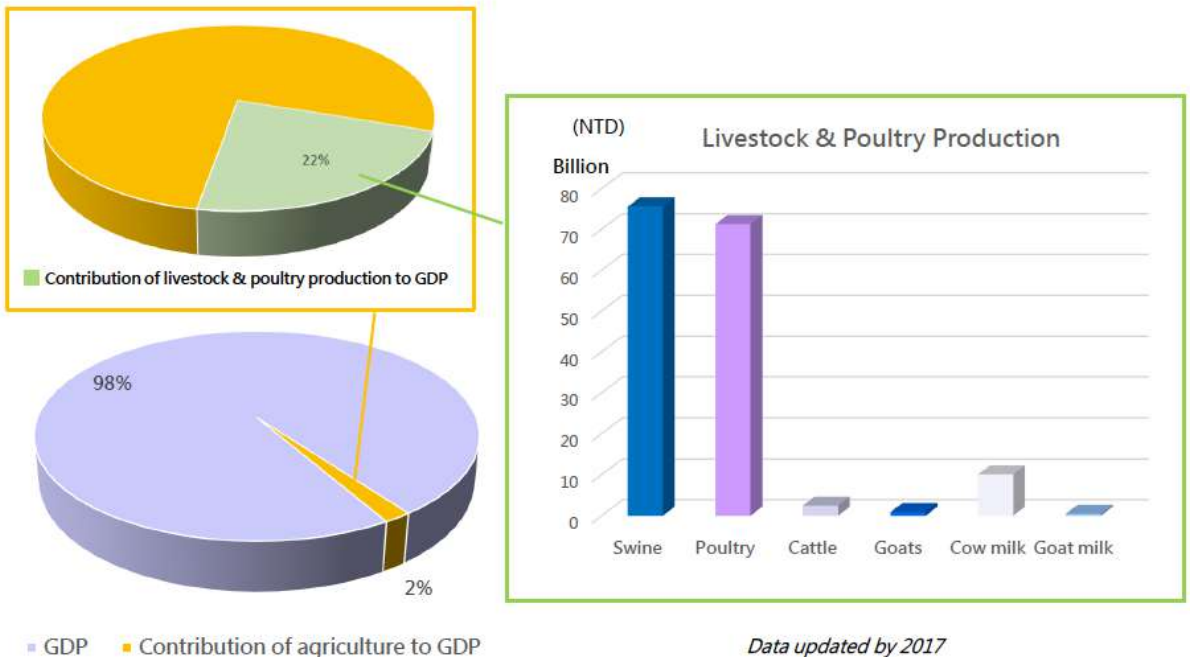


Livestock Production

Livestock farming in Chinese Taipei has grown steadily into a mainstay of the agricultural sector thanks to technical innovations and increased demand for animal-protein foods. In 2015, total production amounted to approximately NT$163 billion (US$5.11 billion), accounting for 34.32 percent of Chinese Taipei's total agricultural production value. Imports of livestock products, including meat and offal, increased by 19.92 percent year-on-year to 428,850 tonnes in 2015, while exports of these products plunged by 35.66 percent year-on-year to 6,740 tonnes.[46]

[46] ROC Year-Book 2016: https://english.ey.gov.tw/cp.aspx?n=D558EBF449B7C570

Figure 28: Value of livestock and poultry production to agriculture national GDP.



Over the past decade, the livestock industry has undergone restructuring to raise its global competitiveness through strategic business alliances, enhanced disease surveillance and meat inspection systems, and development of national brand names. Farmers have worked with the government to strengthen common procurement mechanisms for stock feed as well as to seek alternative feed ingredients and formulas. Accredited meat inspectors and veterinarians employed by the Bureau of Animal and Plant Health Inspection and Quarantine under the COA conduct inspections of slaughterhouses nationwide.[5]

Geography

Topography: Chinese Taipei has 5 major types of landforms: mountains, hills, terraces, basins, and plains, as shown in Figure 29**.** Mountain areas cover the majority of Chinese Taipei. The mountain ranges are parallel to the east coast. Hills are mostly located on the west side of Central Mountain Range. Terraces used to be alluvial fans, formed by ground lifting and river cutting. Terraces are mainly located in western Chinese Taipei. Basins are scattered among mountains, hills, and terraces. Plains were formed by river alluviation and are mainly located in western Chinese Taipei.

Figure 29: Topography of Chinese Taipei

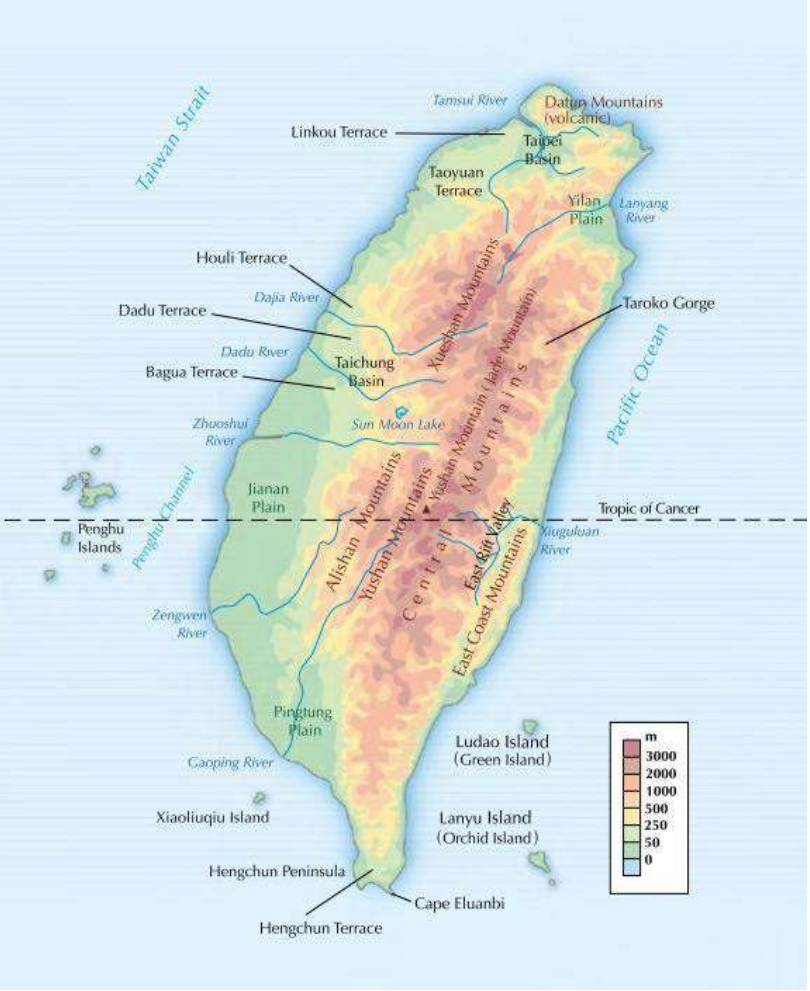


Figure 30: Chinese Taipei is divided into 7 agro-ecological zones

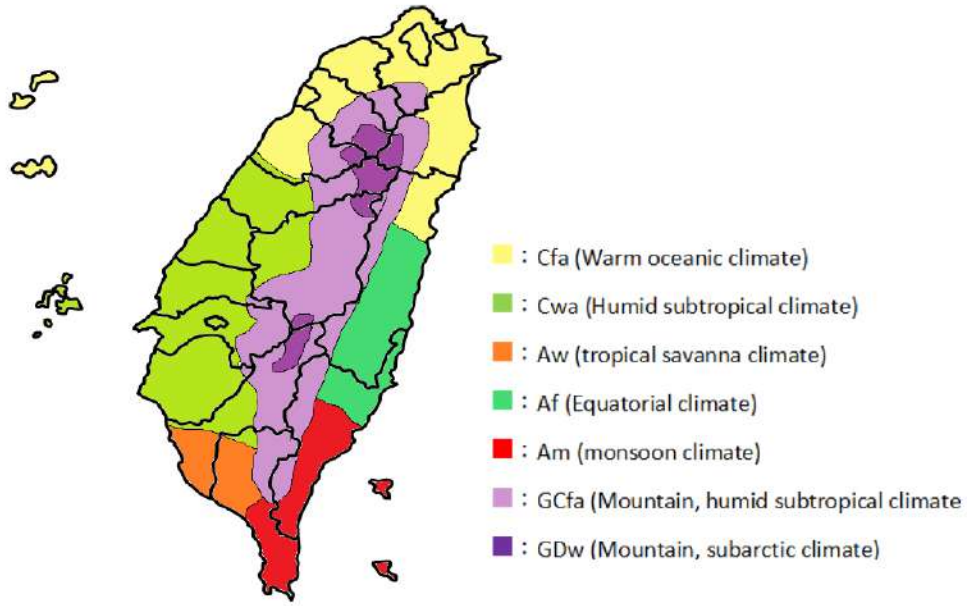


Table 7: Data summary for geography, agriculture and livestock

Geographic features: see Figures 29 and 30

Demographic data

- Human Population: 23,572,000
- Average density: 731 per km^2

Current livestock census data

Animals species	Total Number
Swine	5,432,676
Cattle	147,152
Goats	144,733
Deer	18,151
Chickens	96,001,000
Ducks	7,925,000
Geese	862,000
Turkeys	83,000

Animal and animal product trade data

Data for 2018 are available in Baseline Document PME1 pages 62-65

Economic data

National GDP	NTD 17,501,181 million (2017) [47]
National budget	N/A
Output value of livestock and poultry to GDP	0.53% (2017)
Economic value of livestock population	N/A
Annual public sector contribution to agriculture	NTD 178,460,468,000
Annual budget of the Veterinary Services	NTD 2,730,648,000

[47] Directorate General of Budget, Accounting and Statistics: https://www.dgbas.gov.tw/ct.asp?xItem=33338&ctNode=3099&mp=1

Appendix 4: Timetable of the mission; sites/ facilities visited and list of persons met or interviewed

Timetable of the mission

Part I. Northern area

The First Week (April 15, 2019 - April 21, 2019)

Assessor: Dr. Barry Stemshorn (BWS) / Dr. Ana Afonso (AA) / Dr. Thanawat Tiensin (TT)

Date	Time	Assessor	Route	Location	No.	Activities/ Presenter/ Institution/ Organiation/ Sites
4/15(Mon)	AM	All	W	Taipei		Courtesy meeting with the Minister of Council of Agriculture (COA)
					★	Opening Meeting Bureau of Animal and Plant Health Inspection and Quarantine (BAPHIQ)
					1	Forestry Bureau, COA
	PM				2	Animal Health Research Institute (AHRI)
					3	Agricultural Technology Research Institute (ATRI)
					4	National Animal Industry Foundation (NAIF)
					5	School of Veterinary Medicine of National Taiwan University (NTU)
					6	Taiwan Food and Drug Administration, MOHW (TFDA)
					7	Department of Animal Industry, COA
					8	Taiwan Centers for Disease Control, MOHW (TCDC)
4/16(Tue)	All day	All	W	New Taipei	2	AHRI
4/17(Wed)	AM	All	W	Taipei	5	School of Veterinary Medicine and Veterinary Teaching Hospital, NTU
	PM			Miaoli	9	Animal Drugs Inspection Branch, AHRI (ADIB)
				Miaoli	3	ATRI
4/18(Thr)	AM	All	W	Taipei	★	Meeting with BAPHIQ officers/ NAIF with Meat Inspection Division
				Taipei	10	R.O.C. Swine Association
	PM			Taipei	11	Taiwan Veterinary Medicine & Health Industry Association
				Taipei	12	Poultry Association Republic of China
				Taipei	13	Consumers 'Foundation, Chinese Taipei
4/19(Fri)	AM	All	W	Taoyuan	14	Hsinchu Branch, BAPHIQ (CIQS at Taoyuan Int. Airport)

	PM	AA/TT	A	Taoyuan	15	Kuang Chuan Dairy Co., LTD
		BWS	B	Taoyuan	16	Reber Genetics Co., Ltd -Manufacturer of animal vaccines
		All	W	Taoyuan	17	Animal and Plant Quarantine Center, BAPHIQ (APQC)
4/20(Sat)	AM	All	W	Taipei	18	Taipei Zoo
	PM			New Taipei	19	TZUOO-ANN Veterinary Hospital
4/21(Sun)	AM	All	W	Taipei	20	Carrefour Store

Site visits
- Whole team
- Route A
- Route B
- Opening/ Closing meeting
- Presentation only

Timetable of the mission (cont.)

Part II. Central / Southern area

The Second Week (April 22, 2019 - April 24, 2019)

Part III.

The Second Week (Cont.) (April 25, 2019 - April 26, 2019)

Assessor: Dr. Barry Stemshorn (BWS) / Dr. Ana Afonso (AA) / Dr. Thanawat Tiensin (TT)

Date	Time	Assessor	Route	Location	No.	Activities/ Presenter/ Institution/ Organisation/ Sites
4/22(Mon)	AM	BWS/TT	A	Taichung	21	College of Veterinary Medicine and Veterinary Teaching Hospital, National Chung Hsing University (NCHU)
			A	Changhua	22	Animal Disease Control Center (ADCC) of Changhua County / Huatan Township office*
	PM	BWS/TT	A	Changhua	23	Changhua Chicken Association
			A	Chiayi	24	Agribiz Corporation (Chiayi wholesale sector)-Importer of VM
	AM	AA	B	Nantou	25	Endemic Species Research Institute (ESRI)
			B	Nantou	26	Nantou Meat Market Corporation – Live pig auction market
	PM	AA	B	Nantou	27	Charoen Pokphand Enterprise (CPE) (Taiwan) Co., Ltd. -Poultry slaughterhouse/ Poultry processing plant
4/23(Tue)	AM	AA	A	Tainan	28	China Chemical & Pharmaceutical (CCP) Co., Ltd. -Manufacturer/ Importer of pharmaceuticals
		BWS/TT	B	Tainan	29	Shanhua Animal Shelter, Animal Health Inspection and Protection Office of Tainan City
			B	Tainan	30	Taiwan Veterinary Medical Association (TVMA)
			B	Tainan	31	Loving Kindness Animal Hospital- including VM retail
	PM	BWS/TT	B	Kaohsiung	32	Kaohsiung City Gangshan Dist. Meat Market– Live pig auction market
		AA	A	Kaohsiung	33	Feed production plant of Charoen Pokphand Enterprise (CPE) (Taiwan) Co., Ltd.
		All	W	Kaohsiung	34	Kaohsiung Branch, BAPHIQ (CIQS at Kaohsiung Harbor)
					35	with Animal Quarantine Station and Animal Disease Control Center (ADCC) of Kinmen County
4/24(Wed)	AM	All	W	Pingtung	36	Cha I Shan Foods Co., Ltd.-Swine slaughterhouse/

						Pork export slaughterhouse/ Pork processing plant
				Pingtung	37	Dawushan Egg Farm
	PM			Pingtung	38	Animal Disease Control Center (ADCC) of Pingtung County
				Pingtung	39	NAIF- Technical Service Center (NAIF-TSC)
4/25(Thr)	All day	All	W	Taipei	-	Preparation of preliminary findings and draft summary by assessors
4/26(Fri)	AM/ PM	All	W	Taipei	★	Presentation of preliminary findings and draft summary by assessors Closing meeting

Site visits
- Whole team
- Route A
- Route B
- Opening/ Closing meeting
- Presentation only

Detailed itinerary of the PVS Mission in Chinese Taipei

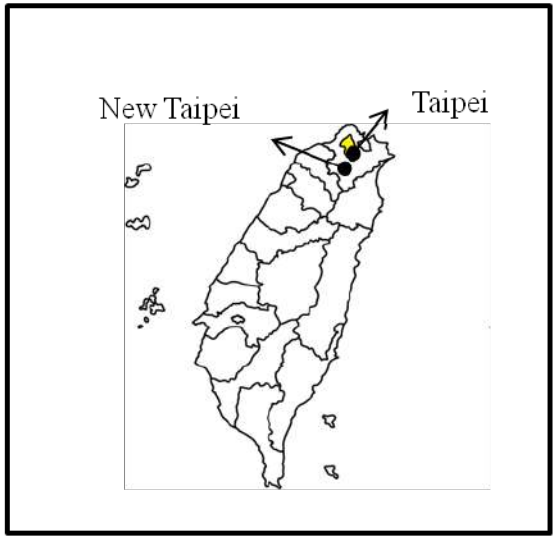
April 13 (Saturday)	
Arrival of the expert team	
April 14 (Sunday)	**Location**
18:00-20:00	Evening reception: Briefing of the objective and process of the mission
	Taipei

Part I. Northern area

The First Week (April 15, 2019 - April 21, 2019)

April 15 (Monday)		**Location**
08:30-09:00	Hotel to COA	Howard Civil Service International House/ Taipei
09:00-10:00	Courtesy meeting with the Minister of Council of Agriculture (COA)	COA/ Taipei
10:00-12:00	Opening Meeting: ● **Introductory presentation of the PVS Evaluation and overall PVS pathway of OIE** ● Presenter: expert team **1st session**: **Overall review of veterinary services (VS) in Chinese Taipei** ● Topic - the organizations and responsibility of VS in Chinese Taipei ● Presenter - Bureau of Animal and Plant Health Inspection and Quarantine (BAPHIQ) **2nd session**: **Animal health inspection and quarantine** ● Topics - VS regarding animal health inspection, animal quarantine, registration and verification of veterinarians and veterinary medicine, veterinary education as well as conservation and surveillance of wildlife ● Presenters - BAPHIQ 【Divisions of Animal Health Inspection, Animal Quarantine】, Forestry Bureau	BAPHIQ/ Taipei
12:00-13:30	Lunch	

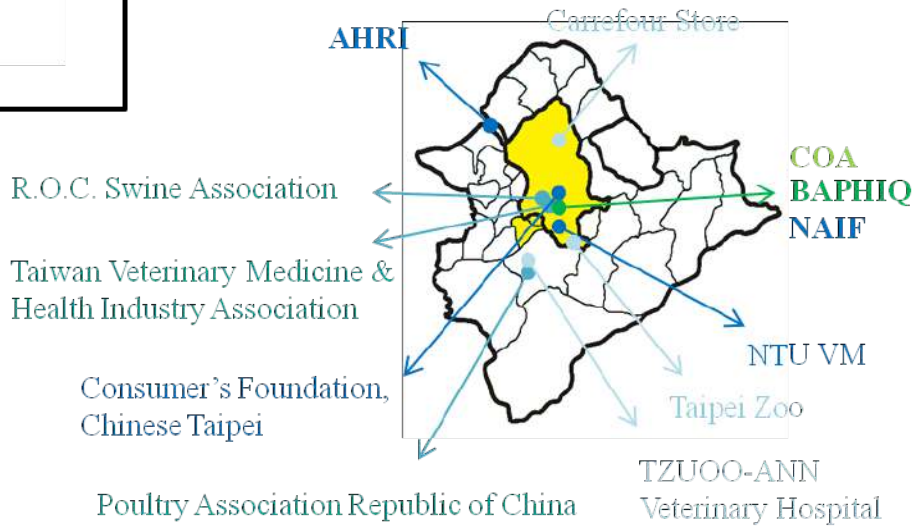
13:30-15:30	Opening meeting (Cont.): **3rd session**: **Introduction of laboratories (Lab) at all levels** ● Topics - VS regarding national labs, university labs and accredited labs ● Presenters - Animal Health Research Institute (AHRI), School of Veterinary Medicine of National Taiwan University (NTU), Agricultural Technology Research Institute (ATRI) and National Animal Industry Foundation (NAIF) ● Participator: Livestock Research Institute (LRI) **4th session**: **Food and feed safety** ● Topics - VS regarding food safety, feed safety, residue control, meat inspection ● Presenters - Taiwan Food and Drug Administration (TFDA), Department of Animal Industry, BAPHIQ 【Divisions of Animal Health Inspection and Meat Inspection】 ● Participator: Office of Food Safety, Executive Yuan	
15:30-16:00	Break	
16:00-17:30	Opening meeting (Cont.): **5th session**: **Zoonotic diseases and antibiotic resistance** (AMR) ● Topics - VS regarding prevention and surveillance of zoonotic diseases as well as AMR ● Presenters - Center for Disease Control (TCDC), BAPHIQ 【Division of Animal Health Inspection】 **6th session**: **Animal welfare** ● Topics - VS regarding animal welfare ● Presenter - Department of Animal Industry	
17:30-18:00	BAPHIQ to the hotel	
18:00-20:30	Welcome banquet	Howard Civil Service International House/ Taipei



Site visits
- Whole team
- route A
- route B

- Opening / Closing meeting
- Presentation only
- Weekend visits

Part I. Northern area
4/15-4/17
4/20-4/21
4/25-4/26



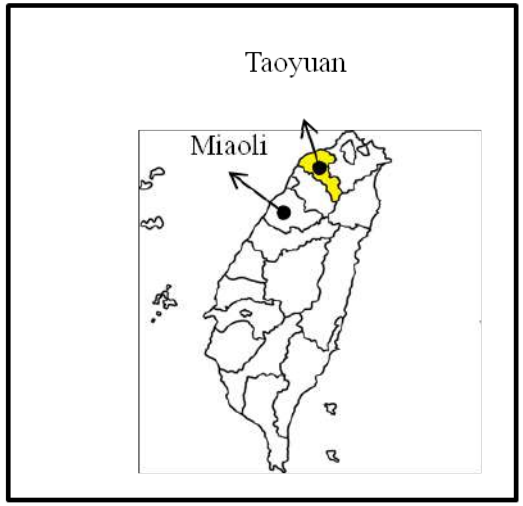
April 16 (Tuesday)		Location
09:00-10:30	Hotel to AHRI	Howard Civil Service International House/ Taipei
10:30-12:00	Animal Health Research Institute (AHRI)	New Taipei
12:00-13:30	Lunch	
13:30-15:30	AHRI (Cont.)	
15:30-16:00	Break	
16:00-17:30	AHRI (Cont.)	
17:30-19:30	Dinner	
19:30-20:30	AHRI to hotel	Howard Civil Service International House/ Taipei

April 17 (Wednesday)		Location
09:30-10:00	Hotel to NTU	Howard Civil Service International House/ Taipei
10:00-12:00	School of Veterinary Medicine and Veterinary Teaching Hospital, National Taiwan University (NTU)	Taipei
12:00-13:00	Lunch	
13:00-14:30	NTU to ADIB	Miaoli
14:30-16:00	Animal Drugs Inspection Branch, AHRI (ADIB)	
16:00-16:30	ADIB to ATRI	
16:30-18:00	Agricultural Technology Research Institute (ATRI)	
18:00-19:30	Dinner	
19:30-21:00	ATRI to hotel	Howard Civil Service International House/ Taipei

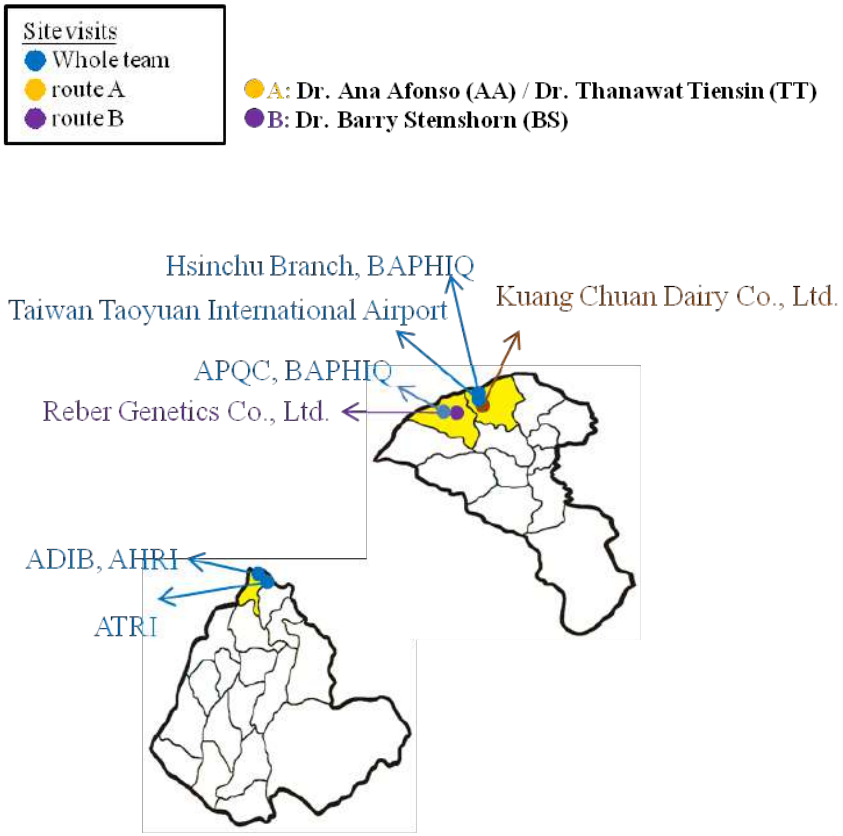
April 18 (Thursday)		Location
08:30-09:00	Hotel to BAPHIQ	Howard Civil Service International House/ Taipei
09:00-10:30	Meeting with BAPHIQ officers 1) human resources 2) internal audit/evaluation 3) budget/finances 4) capital assets management	BAPHIQ/ Taipei
10:30-11:30	R.O.C. Swine Association	NAIF/ Taipei
11:30-13:00	Lunch	
13:00-14:00	Taiwan Veterinary Medicine & Health Industry Association (TVMHIA)	
14:00-14:20	Break	
14:20-15:20	Poultry Association Republic of China (PARC)	
15:20-15:40	NAIF to Consumers' Foundation	Taipei
15:40-16:40	Consumers' Foundation, Chinese Taipei	
16:40-17:00	Consumers' Foundation to hotel	Howard Civil Service International House/ Taipei

April 19 (Friday)			Location
08:30-10:00	Hotel to Hsinchu Branch, BAPHIQ		Howard Civil Service International House/ Taipei
10:00-12:30	Hsinchu Branch, BAPHIQ (CIQS at Taoyuan Int. Airport)		Taoyuan
12:30-13:30	Lunch		
13:30-14:30	Hsinchu Branch, BAPHIQ (Cont.)		
14:30-15:00	Hsinchu Branch, BAPHIQ to visiting sites separately		
15:00-16:00	A	B	
	Kuang Chuan Dairy Co., LTD	Reber Genetics Co., Ltd.	
16:00-16:15	Transfer by car		
16:15-17:00	Animal and Plant Quarantine Center, BAPHIQ (APQC)		

17:00-18:30	Dinner	
18:30-19:30	Visiting sites to hotel	Howard Civil Service International House/ Taipei



Part I. Northern area
4/17
4/19



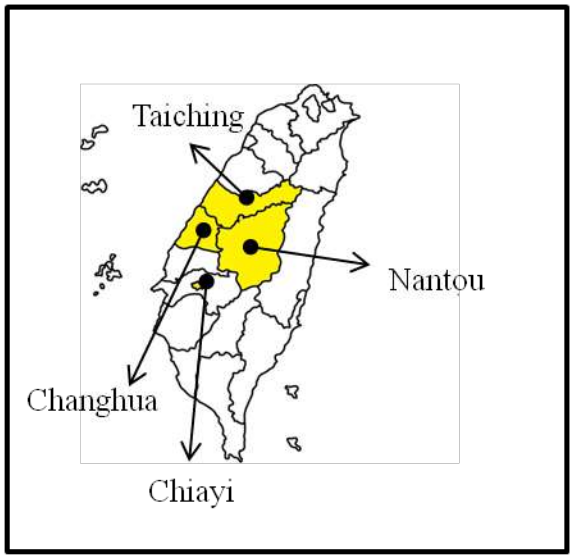
April 20 (Saturday)		Location
09:30-10:00	Hotel to Taipei Zoo	Howard Civil Service International House/ Taipei
10:00-12:00	Taipei Zoo	Taipei
12:00-13:30	Lunch	
13:30-14:10	Taipei Zoo to veterinary hospital	
14:10-16:10	TZUOO-ANN Veterinary Hospital	New Taipei
16:10-17:10	Arrive at hotel/ Dinner	Howard Civil Service International House/ Taipei
April 21 (Sunday)		
10:30-11:00	Hotel to Carrefour Store	Howard Civil Service International House/ Taipei
11:00-12:00	Carrefour Store in Nei-hu	Taipei
12:00-13:30	Lunch	
13:30-16:00	Carrefour to hotel in Taichung	
16:00	Arrive at hotel	Howard Prince Hotel/ Taichung

Part II. Central / Southern area

The Second Week (April 22, 2019 - April 24, 2019)

April 22 (Monday)				Location
B:08:30-09:30 A:08:50-09:30	Hotel to visiting sites separately			Howard Prince Hotel/ Taichung
	A	Route A	B	Route B
09:30-10:30	College of Veterinary Medicine and Veterinary Teaching Hospital, National Chung Hsing University (NCHU)	Taichung	Endemic Species Research Institute (ESRI)	Nantou

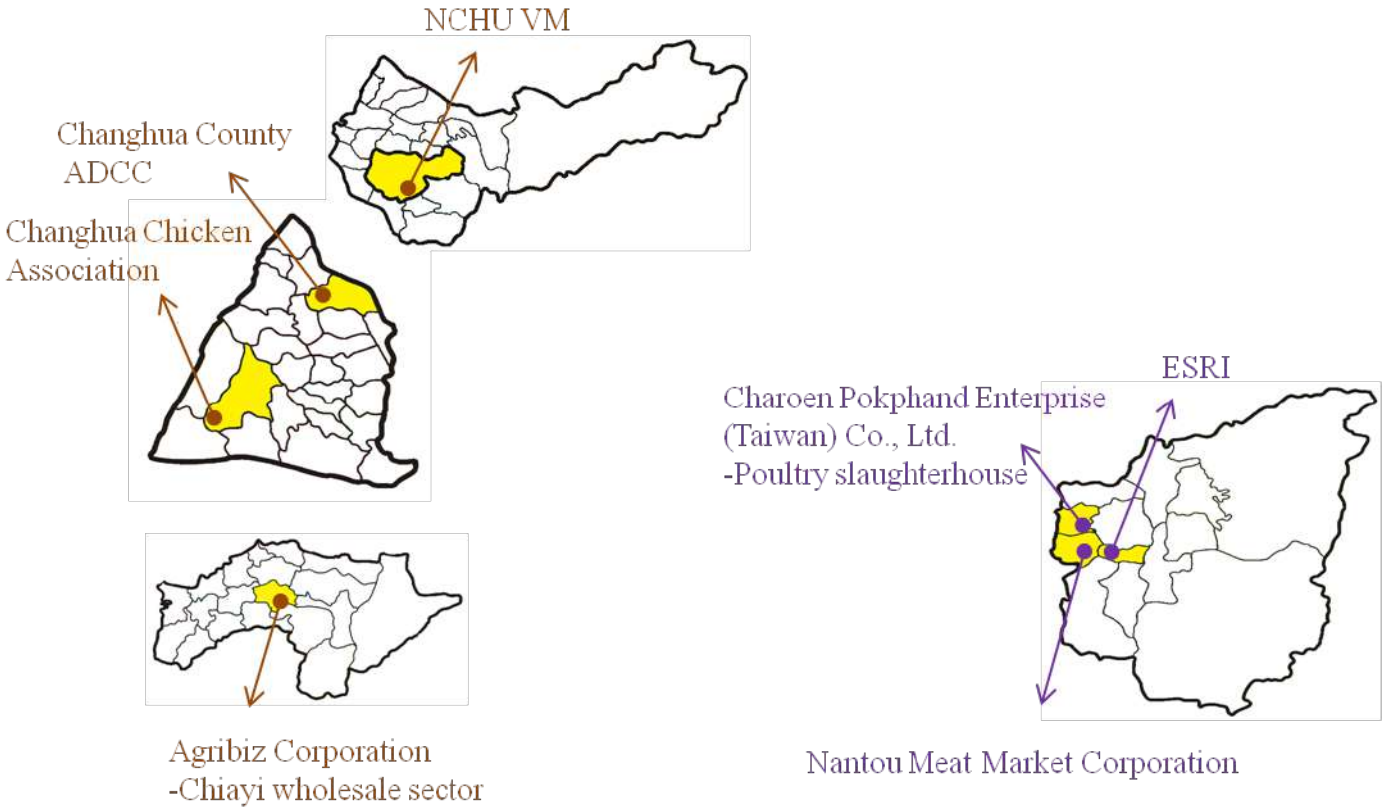
10:30-11:00	NCHU to ADCC			
11:00-12:00	Animal Disease Control Center (ADCC) of Changhua County	Changhua		
12:00-13:00	Lunch		Lunch	
13:00-13:40	ADCC to CCA		ESRI to auction market	
13:40-14:40	Changhua Chicken Association (CCA)		Nantou Meat Market Corporation (Live pig auction market)	
14:40-16:00	CCA to Agribiz Co.		Auction market to CPE Co.	
16:00-17:00	Agribiz Corporation (Chiayi wholesale sector)	Chiayi	Charoen Pokphand Enterprise (CPE) (Taiwan) Co., Ltd. -Poultry slaughterhouse/ Poultry processing plant	
17:00-18:00	Dinner		Dinner	
18:00-19:20	Restaurant to hotel			GUAN-ZI-LING TOONG MAO SPA Resort/ Tainan



Site visits
- Whole team
- route A
- route B

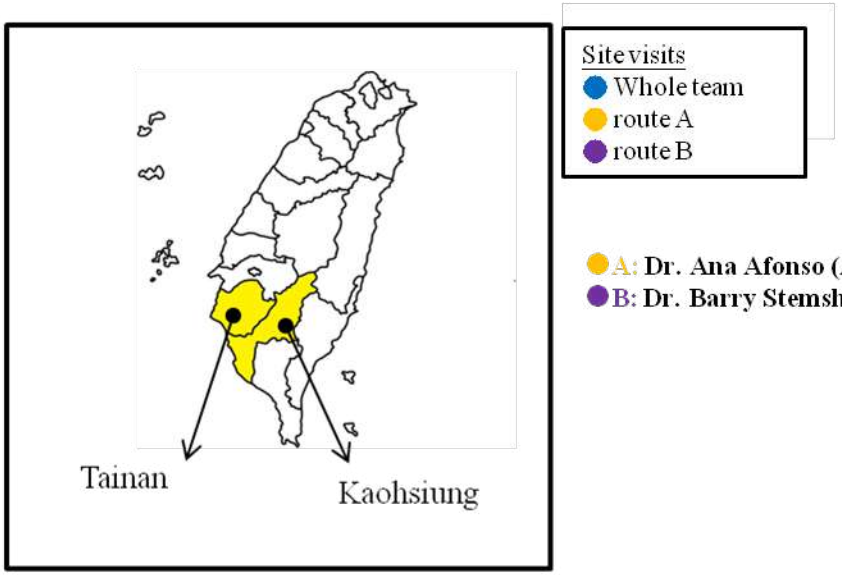
A: Dr. Barry Stemshorn (BS) / Dr. Thanawat Tiensin (TT)
B: Dr. Ana Afonso (AA)

Part II. Central / Southern area
4/22


NCHU VM
Changhua County
ADCC
Changhua Chicken
Association
Agribiz Corporation
-Chiayi wholesale sector
ESRI
Charoen Pokphand Enterprise
(Taiwan) Co., Ltd.
-Poultry slaughterhouse
Nantou Meat Market Corporation

<table>
<tr><th colspan="4">April 23 (Tuesday)</th><th>Location</th></tr>
<tr><td>B:07:50-08:30
A:09:20-10:00</td><td colspan="3">Hotel to visiting sites separately</td><td>GUAN-ZI-LING TOONG MAO SPA Resort/ Tainan</td></tr>
<tr><td rowspan="4">10:00-11:00</td><td>A</td><td colspan="2">B</td><td rowspan="4">Tainan</td></tr>
<tr><td rowspan="3">China Chemical & Pharmaceutical (CCP) Co., Ltd.</td><td>08:30
|
09:30</td><td>Shanhua Animal Shelter, Animal Health Inspection and Protection Office of Tainan City</td></tr>
<tr><td>09:30
|
10:20</td><td>Animal shelter to TVMA</td></tr>
<tr><td>10:20
|
11:10</td><td>Taiwan Veterinary Medical Association (TVMA)</td></tr>
<tr><td>11:00-12:00</td><td>CCP to TVMA
(meet up with route B for Lunch)</td><td>11:10
|
12:00</td><td>Loving Kindness Animal Hospital (including VM retail)</td></tr>
<tr><td>12:00-13:00</td><td colspan="4">Lunch</td></tr>
<tr><td>13:00-13:40</td><td colspan="4">Restaurant to visiting sites separately</td></tr>
<tr><td>13:40-14:40</td><td>A</td><td colspan="2">B</td><td>Kaohsiung</td></tr>
</table>

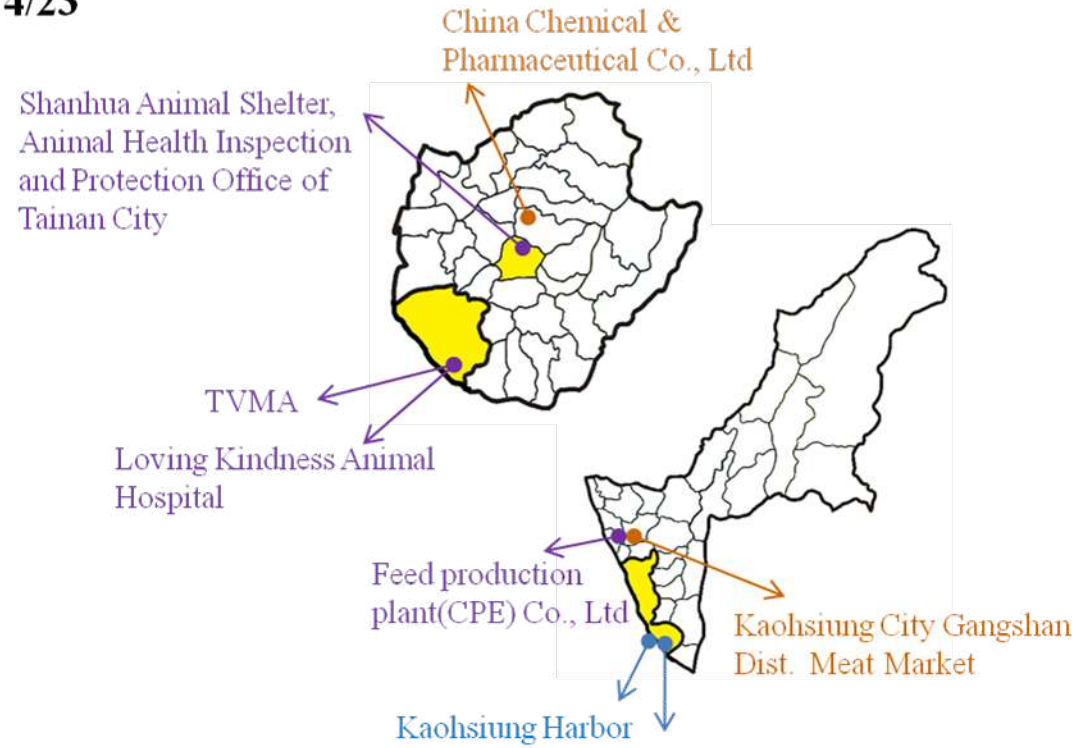
	Kaohsiung City Gangshan Dist. Meat Market (Live pig auction market)	Feed production plant of Charoen Pokphand Enterprise (CPE) (Taiwan) Co., Ltd.	
14:40-16:00	Auction market to Kaohsiung Branch, BAPHIQ	Feed production plant to Kaohsiung Branch, BAPHIQ	
16:00-17:00	Kaohsiung Branch, BAPHIQ (CIQS at Kaohsiung Harbor with Animal Quarantine Station and Animal Disease Control Center of Kinmen County)		
17:00-17:50	Arrive at hotel		The Ambassador Hotel/ Kaohsiung
18:30-20:30	Dinner		



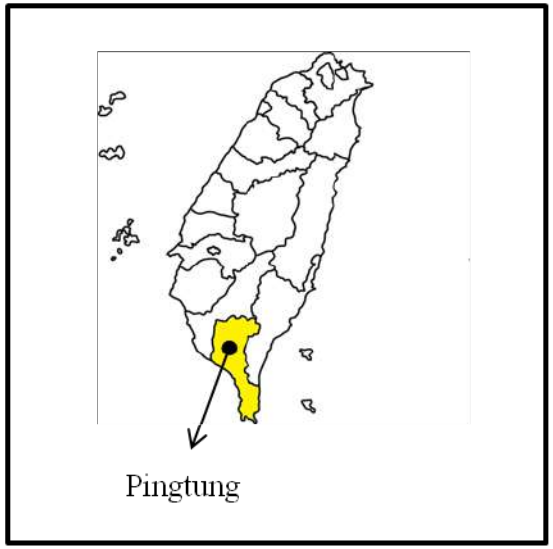
A: Dr. Ana Afonso (AA)
B: Dr. Barry Stemshorn (BS) / Dr. Thanawat Tiensin (TT)

Part II. Central / Southern area

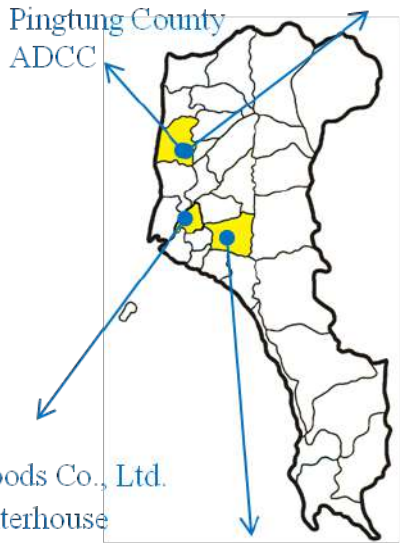
4/23



April 24 (Wednesday)		Location
07:30-08:30	Hotel to Cha I Shan Foods Co., Ltd.	The Ambassador Hotel/ Kaohsiung
08:30-09:30	Cha I Shan Foods Co., Ltd. -Swine slaughterhouse/ Pork export slaughterhouse/ Pork processing plant	Pingtung
09:30-10:00	Cha I Shan Foods Co., Ltd to Dawushan Egg Farm	
10:00-11:00	Dawushan Egg Farm	
11:00-13:30	Egg Farm to ADCC/ Lunch	
13:30-14:30	Animal Disease Control Center (ADCC) of Pingtung County	
14:30-14:40	ADCC to NAIF- Technical Service Center	
14:40-15:40	National Animal Industry Foundation (NAIF) - Technical Service Center	
15:40-20:30	Pingtung to Taipei/ Dinner	Howard Civil Service International House/ Taipei



Site visits
- Whole team
- route A
- route B



Part II. Central / Southern area
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Part III.

The Second Week (Cont.) **(April 25, 2019 - April 26, 2019)**

April 25 (Thursday)		**Location**
Whole day	Preparation of preliminary findings and draft summary by assessors	Howard Civil Service International House/ Taipei
-	PVS team on call at HQ	BAPHIQ/ Taipei
April 26 (Friday)		
09:00-09:30	Hotel to BAPHIQ	Howard Civil Service International House/ Taipei
09:30-12:00	**Presentation (**Brief preview**) of preliminary findings and draft summary by assessors**	BAPHIQ/ Taipei
12:00-13:30	Lunch	
13:30-15:00	**Presentation (**Brief preview**) of preliminary findings and draft summary by assessors** (cont.)	
15:30-17:30	Closing meeting (Cont.) ● Participators: Office of Food Safety, BAPHIQ 【Divisions of Animal Health Inspection, Animal Quarantine and Meat Inspection】, Department of Animal Industry, Forestry Bureau, AHRI, LRI, TFDA, TCDC, NTU, ATRI, and NAIF	BAPHIQ/ Taipei
17:30-18:00	BAPHIQ to restaurant	Taipei
18:00-20:00	Farewell banquet	La Marée/ Taipei
20:00-20:30	Restaurant to hotel	Howard Civil Service International House/ Taipei
April 27 (Saturday)		
Departure of the expert team		

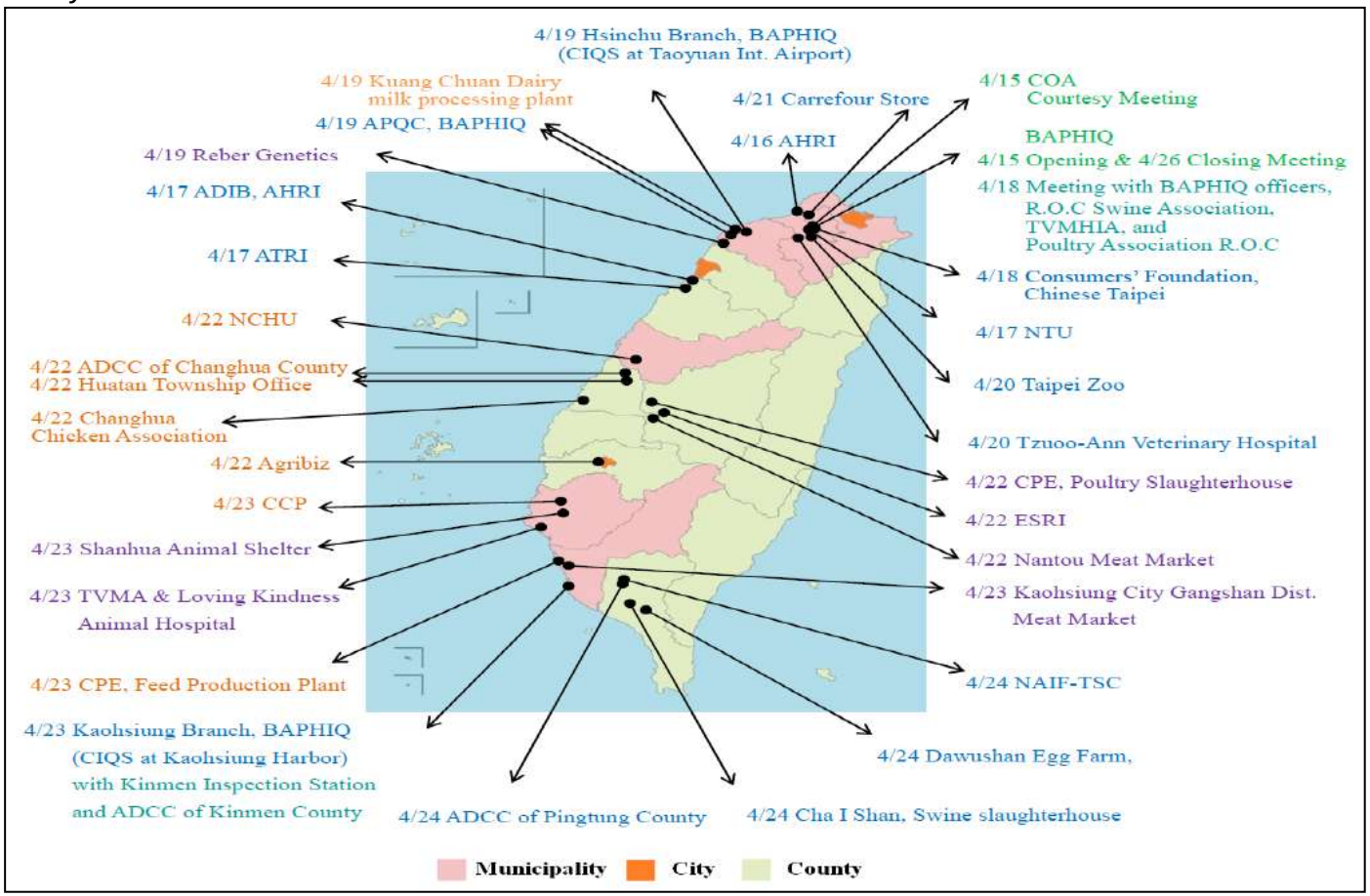
Map of the Sites/ facilities visited during the mission

Dates of the PVS Mission: April 15, 2019 - April 26, 2019

Site visits

- Whole team
- Route A
- Route B
- Opening/ Closing meeting
- Presentation only

MAP OF THE COUNTRY INDICATING TRAVEL AND FIELD VISITS MADE DURING THE MISSION BY THE TEAM (I.E. INCLUDING SPLITTING OF THE TEAM FOR TRAVEL TO THE FIELD)



Sites/ facilities visited and list of persons met or interviewed

Assessor: Dr. Barry Stemshorn (BWS) / Dr. Ana Afonso (AA) / Dr. Thanawat Tiensin (TT)

Assessor(s)	Location & Jurisdiction	Institution – Agency – Group - Association	Person(s) met and interviewed	Position
All	Taipei	Council of Agriculture, Executive Yuan (COA)	Chi-Chung Chen	Minister
All	Taipei	Council of Agriculture, Executive Yuan (COA)	Jin-Cheng Huang	Deputy Minister
All	Taipei	Bureau of Animal and Plant Health Inspection and Quarantine, COA (BAPHIQ)	Wen-Jane Tu	Deputy Director General
	Taipei	Bureau of Animal and Plant Health Inspection and Quarantine, COA (BAPHIQ)	Watson Sung	Consultant
	Taipei	Animal Health Inspection Division, BAPHIQ	Jung-Pin Hsu	Division Director
BWS	Taipei	Animal Health Inspection Division, BAPHIQ	Lucy Chow	Deputy Director
	Taipei	Animal Health Inspection Division, BAPHIQ	Yvonne Y.F. Liu	Senior Specialist
	Taipei	Animal Health Inspection Division, BAPHIQ	Chung-Hwei Yao	Senior Specialist
AA/TT	Taipei	Veterinary Administration Section, Animal Health Inspection Division, BAPHIQ	Cheng-Ta Tsai	Section Chief
	Taipei	Veterinary Administration Section, Animal Health Inspection Division, BAPHIQ	Hui-Mei Shih	Specialist
	Taipei	Veterinary Administration Section, Animal Health Inspection Division, BAPHIQ	Ying-Chen Tsai	Associate Specialist

BWS/TT	**Taipei**	**Animal Health Inspection Section, Animal Health Inspection Division, BAPHIQ**	**Nien-Nung Lin**	**Section Chief**
	Taipei	**Animal Health Inspection Section, Animal Health Inspection Division, BAPHIQ**	**Ching-Tzong Chen**	**Specialist**
TT	**Taipei**	**Animal Health Inspection Section, Animal Health Inspection Division, BAPHIQ**	**Yu-Bin Chou**	**Specialist**
	Taipei	**Animal Health Inspection Section, Animal Health Inspection Division, BAPHIQ**	**Yi-An Chen**	**Project Assistant**
	Taipei	**Veterinary Drug Section, Animal Health Inspection Division, BAPHIQ**	**Ying-Ping Ma**	**Specialist**
AA/TT	**Taipei**	**Veterinary Drug Section, Animal Health Inspection Division, BAPHIQ**	**Cheng-Jou Chan**	**Specialist**
TT	**Taipei**	**Veterinary Drug Section, Animal Health Inspection Division, BAPHIQ**	**Yi-Ming Huang**	**Associate Specialist**
AA/TT	**Taipei**	**Animal Quarantine Division, BAPHIQ**	**Ming-Hsing Peng**	**Division Director**
	Taipei	**Animal Quarantine Division, BAPHIQ**	**Huang-Lin Kao**	**Deputy Director**
	Taipei	**Animal Quarantine Technology Section, Animal Quarantine Division, BAPHIQ**	**Yueh-Ping Lin**	**Section Chief**
	Taipei	**Animal Quarantine Technology Section, Animal Quarantine Division, BAPHIQ**	**Yen-Ting Chan**	**Specialist**
	Taipei	**Meat Inspection Division, BAPHIQ**	**Rocky Lin**	**Division Director**
All	**Taipei**	**Meat Inspection Division, BAPHIQ**	**Chih-Hsien Lin**	**Deputy Director**

TT	Taipei	Meat Inspection Technical Section, Meat Inspection Division, BAPHIQ	Ying-Kai Chang	Section Chief
	Taipei	Meat Inspection Technical Section, Meat Inspection Division, BAPHIQ	Chuan-Wei Tung	Specialist
	Taipei	Conservation Division, Forestry Bureau, COA	Chia-Jun Weng	Technical Specialist
TT	Taipei	Conservation Division, Forestry Bureau, COA	Yu-Chang Yang	Associate Technical Specialist
	New Taipei	Animal Health Research Institute, COA (AHRI)	Chwei-Jang Chiou	Director general
BWS	New Taipei	Epidemiology Division, AHRI	Fan Lee	Research Scientist/ Division Chief
	Miaoli	Animal Technology Laboratories, Division of Animal Industry, ATRI	Shih-Ping Chen	Principal Researcher
	Miaoli	Animal Technology Laboratories, Division of Animal Industry, ATRI	Ming-Chang Lee	Associate Researcher
	Taipei	National Animal Industry Foundation (NAIF)	Chuang-Chin Chiu	CEO
TT	Taipei	National Animal Industry Foundation (NAIF)	Hsu-Chang Wang	Deputy CEO
BWS	Taipei	National Animal Industry Foundation (NAIF)	Jenny Huang	Senior Specialist
	Taipei	National Animal Industry Foundation	Ta-Jen Cho	Section Chief
	Taipei	National Animal Industry Foundation	Yu-Chen Yeh	Officer
	Pingtung	Technical Service Center, NAIF	Su-Lien Kuo	Chief of TSC
	Pingtung	Technical Service Center, NAIF	Tzu-Han Su	Technical Analyst

	Taipei	School of Veterinary Medicine, NTU	Chian-Ren Jeng	Professor & Dean
BWS	Taipei	School of Veterinary Medicine, NTU	Hui-Wen Chen	Associate Professor
	Taipei	School of Veterinary Medicine, NTU	Hui-Wen Chang	Assistant Professor
AA/TT	Taipei	Food Safety Division, TFDA, MOHW	Jen-Ting Wei	Deputy Director
AA/TT	Taipei	Food Safety Division, TFDA, MOHW	Ying-Hsien Fu	Section Chief
	Taipei	Food Safety Division, TFDA, MOHW	Yun-Hsiang Yang	Associate Reviewer
	Taipei	Northern Center for Regional Administration, TFDA, MOHW	Ya-Chun Yang	Section Chief
	Taipei	Animal Protection Section, Department of Animal Industry, COA	Peter C.H. Chen	Senior Technical Specialist
	Taipei	Farm Management Section, Department of Animal Industry, COA	His-Chia Chen	Technical Specialist
AA/TT	Taipei	Division of Acute infectious Diseases, TCDC, MOHW	Chin-Hui Yang	Director
	Taipei	Division of Planning and Coordination, TCDC, MOHW	Pei-Chun Chuang	Associate Researcher
	Taipei	Center for Diagnostics and Vaccine Development, TCDC, MOHW	Su-Lin Yang	Associate Researcher
	Taipei	Division of Infection Control and Biosafety, TCDC, MOHW	Wei-Hui Chou	Technical specialist
	Taipei	Epidemic Intelligence Center, TCDC, MOHW	Elle Shuwan Jian	Specialist
	Taipei	Division of Acute infectious Diseases, TCDC, MOHW	Hsiang-Tzu Li	Professional Nurse
	Taipei	Animal Industry Division, LRI, COA	Ming-Yang Tsa	Assistant Researcher

	Miaoli	**Agricultural Technology Research Institute (ATRI)**	**Sheng-Fu Hsu**	**Researcher**
	Miaoli	**Agricultural Technology Research Institute (ATRI)**	**Pao-Hsia Lin**	**Research Assistant**
	Miaoli	**Agricultural Technology Research Institute (ATRI)**	**Tsung-Hsun Hsieh**	**Research Assistant**
	Miaoli	**Agricultural Technology Research Institute (ATRI)**	**Chu-Ching Hsu**	**Research Assistant**
	Miaoli	**Agricultural Technology Research Institute (ATRI)**	**Chiung-Yin Hsu**	**Research Assistant**

Field visits, meetings and interviews

Assessor(s)	Location & Jurisdiction	Institution – Agency – Group - Association	Person(s) met and interviewed	Position
All	Taipei	Bureau of Animal and Plant Health Inspection and Quarantine, COA (BAPHIQ)	Wen-Jane Tu	Deputy Director General
All	Taipei	Bureau of Animal and Plant Health Inspection and Quarantine, COA (BAPHIQ)	Watson Sung	Consultant
All	Taipei	Animal Health Inspection Division, BAPHIQ	Lucy Chow	Deputy Director
All	Taipei	Animal Quarantine Division, BAPHIQ	Yueh-Ping Lin (Augusta)	Section Chief
All	Taipei	Animal Health Inspection Division, BAPHIQ	Yu-Bin Chou (Eileen)	Specialist
All	Taipei	Animal Health Inspection Division, BAPHIQ	Ying-Chen Tsai	Associate Specialist
All	Taipei	Animal Health Inspection Division, BAPHIQ	Yi-An Chen (Venus)	Project Assistant
	Miaoli	Agricultural Technology Research Institute (ATRI)	Sheng-Fu Hsu	Researcher
	Miaoli	Agricultural Technology Research Institute (ATRI)	Pao-Hsia Lin	Research Assistant
All	Miaoli	Agricultural Technology Research Institute (ATRI)	Ming-Chang Lee	Associate Researcher
	Miaoli	Agricultural Technology Research Institute (ATRI)	Tsung-Hsun Hsieh	Research Assistant

※During the field visits, PVS team (Listed above) accompanied the OIE expert team and participated in the discussions.

Asses-sor(s)	Location & Jurisdiction	Institution – Agency – Group - Association	Person(s) met and interviewed	Position
All	**New Taipei**	**Animal Health Research Institute (AHRI)**	**Chwei-Jang Chiou**	**Director general**
	New Taipei	**Animal Health Research Institute (AHRI)**	**Tsung-Wen Hsu**	**Deputy director general**
	New Taipei	**Animal Health Research Institute (AHRI)**	**Chien-Yuan Huang**	**Chief secretary**
All	**New Taipei**	**Biologics Division, AHRI**	**Chun-Hsien Tseng**	**Researcher and division chief**
All	**New Taipei**	**Biologics Division, AHRI**	**Ai-Ping Hsu**	**Associate researcher**
All	**New Taipei**	**Biologics Division, AHRI**	**Yen-Lin Li**	**Associate researcher**
All	**New Taipei**	**Biology Division, AHRI**	**Chien Tu**	**Researcher and division chief**
	New Taipei	**Biology Division, AHRI**	**Chien-Chih Wu**	**Associate researcher**
All	**Pingtung**	**Biology Division, AHRI**	**Yi-Ping Lu**	**Associate researcher**
All	**New Taipei**	**Epidemiology Division, AHRI**	**Fan Lee**	**Researcher and division chief**
	New Taipei	**Epidemiology Division, AHRI**	**Ming-Shiuh Lee**	**Researcher**
BWS/AA	**New Taipei**	**Epidemiology Division, AHRI**	**Yu-Ju Lin**	**Associate researcher**
	New Taipei	**Epidemiology Division, AHRI**	**Yen-Ping Chen**	**Associate researcher**
	New Taipei	**Epidemiology Division, AHRI**	**Jen-Chieh Chang**	**Associate researcher**
All	**New Taipei**	**Hog Cholera Division, AHRI**	**Ming-Chung Deng**	**Associate researcher and division acting chief**
	New Taipei	**Hog Cholera Division, AHRI**	**Chia-Yi Chang**	**Associate researcher**
	New Taipei	**Hog Cholera Division, AHRI**	**Chu-Hsiang Pan**	**Associate researcher**

Asses-sor(s)	Location & Jurisdiction	Institution – Agency – Group - Association	Person(s) met and interviewed	Position
All	Taipei	School of Veterinary Medicine	Chian-Ren Jeng	Professor & Dean
	Taipei	School of Veterinary Medicine	Chau-Hua Chi	Professor & Director
All	Taipei	School of Veterinary Medicine	Hui-Wen Chen	Associate Professor
All	Taipei	School of Veterinary Medicine	Hui-Wen Chang	Assistant Professor
AA	Taipei	School of Veterinary Medicine	Ya-Pei Chang	Assistant Professor
All	Taipei	School of Veterinary Medicine	Pin-Huan Yu	Assistant Professor
All	Taipei	School of Veterinary Medicine	Jin-Ming Liu	Chief Resident
All	Miaoli	Animal Drugs Inspection Branch, AHRI (ADIB)	Shiu-Ru Yeh	Director
All	Miaoli	Department of Biological Assay and Research, ADIB, AHRI	Chun-Ta Lin	Chief
	Miaoli	Department of Biological Assay and Research, ADIB, AHRI	I-Ting Ko	Assistant Research Fellow
TT/BWS	Miaoli	Department of Chemical Assay and Research, ADIB, AHRI	Wen-Hua Lin	Chief
All	Miaoli	Department of Chemical Assay and Research, ADIB, AHRI	Yu-Hsien Chen	Assistant Research Fellow
	Miaoli	Department of experiment animal and Research, ADIB, AHRI	Chia-Chen Chang	Chief
TT	Miaoli	Department of experiment animal and Research, ADIB, AHRI	Chun-Yi Chiang	Assistant Research Fellow
All	Miaoli	Department of experiment animal and Research, ADIB, AHRI	Jen-Hun Tsa	Assistant Research Fellow
All	Miaoli	Department of Biological Assay and Research, ADIB, AHRI	Chun-Ta Lin	Chief

All	**Miaoli**	**Agricultural Technology Research Institute (ATRI)**	**Jiunn-Horng Lin**	**Vice President**
AA	**Miaoli**	**Department of Animal Technology Laboratories, ATRI**	**Jyh-Shiun Lin**	**Director**
All	**Miaoli**	**Division of Animal Medicine, Department of Animal Technology Laboratories, ATRI**	**Zeng-Weng Chen**	**Chief**
	Miaoli	**Division of Animal Resources, Department of Animal Technology Laboratories, ATRI**	**Wen-Der Fang**	**Chief**
	Miaoli	**Division of Animal Resources, Department of Animal Technology Laboratories, ATRI**	**Jen-Wei Lin**	**Researcher**
All	**Miaoli**	**Division of Animal Industry, Department of Animal Technology Laboratories, ATRI**	**Shih-Ping Chen**	**Principal Researcher**
All	**Miaoli**	**Division of Animal Industry, Department of Animal Technology Laboratories, ATRI**	**Chen-Yuan Liao**	**Senior Researcher**
BWS/AA	**Miaoli**	**Division of Animal Industry, Department of Animal Technology Laboratories, ATRI**	**Ming-Chang Lee**	**Associate Researcher**
	Miaoli	**Division of Animal Technology, Department of Animal Technology Laboratories, ATRI**	**Sheng-Fu Hsu**	**Researcher**
All	**Miaoli**	**Division of Animal Industry, Department of Animal Technology Laboratories, ATRI**	**Kai-Chun Chang**	**Associate Researcher**

Asses-sor(s)	Location & Jurisdiction	Institution – Agency – Group - Association	Person(s) met and interviewed	Position
BWS/AA	Taipei	Planning Division, BAPHIQ	Chih-Hung Lin	Director
AA	Taipei	Planning Division, BAPHIQ	Wan-Ju Lee	Senior Executive Officer
	Taipei	Diagnosis and Identification Section, Planning Division, BAPHIQ	Sheng-Kuang Wang	Section Chief
	Taipei	Diagnosis and Identification Section, Planning Division, BAPHIQ	Jiunn-Yaw Lin	Specialist
	Taipei	Research and Evaluation Section Planning Division, BAPHIQ	Luo-Sheng Huang	Officer
All	Taipei	Personnel office, BAPHIQ	Pang-Hsin Tang	Secretary
	Taipei	Accounting office, BAPHIQ	Chao-Hui Chen	Director
	Taipei	Accounting office, BAPHIQ	Jia-Chun Zhang	Executive Officer
	Taipei	Secretariat, BAPHIQ	Zhu-Jing Deng	Clerk
TT	Taipei	National Animal Industry Foundation (NAIF)	Jenny Huang	Senior Specialist
	Taipei	National Animal Industry Foundation (NAIF)	Ren-Jheng Fang	Director
	Taipei	National Animal Industry Foundation (NAIF)	You-Ci Yang	Chief
TT	Miaoli	Agricultural Technology Research Institute (ATRI)	Huo-Yuan Chou	Associate Researcher
	Taipei	Meat Inspection Division, BAPHIQ	Rocky Lin	Director
BWS/TT	Taipei	Meat Inspection Division, BAPHIQ	Chih-Hsien Lin	Deputy Director
	Taipei	Meat Inspection Division, BAPHIQ	Ying-Kai Chang	Section Chief
	Taipei	Animal Health Inspection Division, BAPHIQ	Yvonne Y.F. Liu	Senior Specialist
	Taipei	Animal Health Inspection Division, BAPHIQ	Ching-Tzong Chen	Specialist
AA	Taipei	R.O.C. Swine Association	Jin- Sheng Jhang	Secretary general
AA	Taipei	R.O.C. Swine Association	Chien-Yung Pan	Vice Secretary general

AA	Taipei	Animal Health Inspection Division, BAPHIQ	Nien-Nung Lin	Section Chief
All	Taipei	Taiwan Veterinary Medicine & Healthcare Industry Association	Hsien-Ta Li	Chairman
All	Taipei	Taiwan Veterinary Medicine & Healthcare Industry Association	Kelvin Chen	Special Assistant To Chairman
All	Taipei	Taiwan Veterinary Medicine & Healthcare Industry Association	Chih-Chang Kuo	General Secretary
	Taipei	Animal Health Inspection Division, BAPHIQ	Yvonne Y.F. Liu	Senior Specialist
	Taipei	Animal Health Inspection Division, BAPHIQ	Cheng-Jou Chan	Specialist
All	New Taipei	Poultry association republic of china	Chien-Pei Wang	Secretary general
BWS	New Taipei	Poultry association republic of china	Yu-Chen Ho	Director
	New Taipei	Poultry association republic of china	Tzu-Jung Chung	Commissioner
AA	Taipei	National Animal Industry Foundation	Jenny Huang	Senior Specialist
AA/TT	Taipei	Animal Health Inspection Division, BAPHIQ	Ching-Tzong Chen	Specialist
All	Taipei	Consumers' Foundation, Chinese Taipei	Li-Fen Lei	Chairman
	Taipei	Consumers' Foundation, Chinese Taipei	Rong-Dar Wu	Secretary General
All	Taipei	Consumers' Foundation, Chinese Taipei	Ming-Ju Chen	Food committee
	Taipei	Consumers' Foundation, Chinese Taipei	Lily Ou Yang	Executive Secretary

Asses-sor(s)	Location & Jurisdiction	Institution – Agency – Group - Association	Person(s) met and interviewed	Position
	Taoyuan	HC-BAPHIQ	Jung-Huei Ko	Director
	Taoyuan	HC-BAPHIQ	Song Lin	Deputy Director
TT/AA	Taoyuan	HC-BAPHIQ	Wan-Te Hsu	Secretary
	Taoyuan	Animal Quarantine Section, HC-BAPHIQ	Chung-Yu Lee	Section Chief
TT/AA	Taoyuan	Animal Quarantine Section, HC-BAPHIQ	Jenn-Haur Chiou	Technical Specialist
	Taoyuan	Animal Quarantine Section, HC-BAPHIQ	Dai-Yen Lee	Technical Specialist
	Taoyuan	Animal Quarantine Section, HC-BAPHIQ	Hui-Chuan Pan	Associate Technical Specialist
	Taoyuan	Customs Administration, Ministry of Finance Taipei Customs	Xin-Ping Wen	Officer
	Taoyuan	Customs Administration, Ministry of Finance Taipei Customs	Ruei-Shiang Tsai	Officer
	Taoyuan	National Immigration Agency	Hung-Chieh Lin	Caption
	Taoyuan	Aviation Police Bureau, National Police Agency, Ministry of the Interior	Jeng-Mei Su	Officer
	Taipei	Northern Regional Center, Centers for Disease Control	Kun-Bin Wu	Center Director
	Taipei	Northern Regional Center, Centers for Disease Control	Mei-Jung Chen	Section Chief
	Taipei	Northern Regional Center, Centers for Disease Control	Sue-Jing Chang	Medical Officer
AA	Taipei	Northern Center for Regional Administration, Food and Drug Administration	Shih Chun Nan	Associate Technical Specialist

TT/AA	Taipei	Animal Quarantine Division, BAPHIQ	Chun-Yao Chiu	Specialist
TT/AA	Taoyuan	KUANG CHUAN DAIRY CO.,LTD Ta-Yuan Plant	jaho-jo-Ku	Assistant Manager
TT/AA	Taoyuan	KUANG CHUAN DAIRY CO.,LTD Ta-Yuan Plant	Eric Hsu	Assistant Project Manager
TT/AA	Taoyuan	Animal Protection Office,	Tao-Ming Chu	Section Chief
	Taoyuan	Animal Protection Office,	De-Chi Wang	Section Chief
AA	Taoyuan	Animal Protection Office,	Chuan-Chuan Lin	Associate technical specialist
TT/AA	Taipei	Northern Center for Regional Administration, Food and Drug Administration	Hung-Shin YI	Officer
AA	Taoyuan	Department of Public Health, Taoyuan	Chien -Min Lee	Public Health Inspector
	Taipei	Animal Health Inspection Division, BAPHIQ	Heng-Yi Wu	Specialist
BWS	Taoyuan	Reber Genetics Co., Ltd.	Tsung-Yen Wu	Assistant Manager
BWS	Taoyuan	Reber Genetics Co., Ltd.	Carol Wu	Manager
	Taoyuan	Reber Genetics Co., Ltd.	Yao-Ting Tseng	Section Manager
BWS	Taoyuan	Animal Protection Office	Ying-Hao Chan	Director
	Taipei	Animal Health Inspection Division, BAPHIQ	Cheng-Jou Chan	Specialist
All	Taoyuan	Animal and Plant Quarantine Center, BAPHIQ	Shian-Jyue Du	Director
	Taoyuan	Animal and Plant Quarantine Center, BAPHIQ	Huang-Pin Yang	Specialist
	Taoyuan	Animal and Plant Quarantine Center, BAPHIQ	Chung-Yu Huang	Specialist
All	Taoyuan	Animal and Plant Quarantine Center, BAPHIQ	Shih-Hung Chang	Associate Specialist
	Taoyuan	Animal and Plant Quarantine Center, BAPHIQ	Shu-Chun Hsieh	Associate Specialist
	Taoyuan	Animal and Plant Quarantine Center, BAPHIQ	Yow-Yang Lai	Associate Specialist

	Taoyuan	Animal and Plant Quarantine Center, BAPHIQ	Yi-Mei Ouyang	Associate Specialist
	Taoyuan	Animal and Plant Quarantine Center, BAPHIQ	Mu-Chuan Hsu	Associate Specialist
	Taipei	Planning Division, BAPHIQ	Chih-Hung Lin	Director
Asses-sor(s)	**Location & Jurisdiction**	**Institution – Agency – Group - Association**	**Person(s) met and interviewed**	**Position**
All	Taipei	Taipei Zoo	Jason SC Chin	Director
All	Taipei	Taipei Zoo	Joe JC Guo	Chief Vet
	Taipei	Taipei Zoo	Sera YH Lai	Assistant researcher
All	Taipei	Taipei Zoo	Tina TY Chen	Research Assistant
	Taipei	Taipei Zoo	Li-Hsin Wu	Laboratory technician
All	Taipei	Taipei City Animal Protection Office	Ching-Ann Wu	Team Chief
	Taipei	Department of Education, Taipei City Government	Yi-Cheng Huang	Sub-division Chief
	Taipei	Department of Education, Taipei City Government	Susan Kuo	Section Assistant
All	New Taipei	Tzuooann animal hospital - Minimally invasive surgery center	Sian-Jie Ciou	Director
All	New Taipei	Tzuooann animal hospital - Minimally invasive surgery center	Yu-Jui Chang	Doctor
	New Taipei	Tzuooann animal hospital - Minimally invasive surgery center	Roya Chen	Doctor
	New Taipei	Tzuooann animal hospital - Minimally invasive surgery center	Yung-Wen Mo	Manager

AA/TT	**New Taipei**	**New Taipei City Government Animal Protection and Health Inspection Office**	**Shu-Yun Yin (Saron Yin)**	**Section Chief**
	New Taipei	**New Taipei City Government Animal Protection and Health Inspection Office**	**Meng-Chien Lin**	**Associate Technical Specialist**
	Taipei	**Animal Health Inspection Division, BAPHIQ**	**Cheng-Ta Tsai**	**Section Chief**
Asses-sor(s)	**Location & Jurisdiction**	**Institution – Agency – Group - Association**	**Person(s) met and interviewed**	**Position**
	Taipei	**Carrefour TM Store**	**Angel Chiu**	**Store Manager**
AA/TT	**Taipei**	**Carrefour TM Store**	**Michelle Mc Chen**	**Regional Hygiene Manager**
All	**Taipei**	**Carrefour Public Affairs and Services Division**	**Matthew CHANG**	**Taipei North Region Manager**
All	**Taipei**	**Department of Health Taipei City Government**	**Ching-Yao Huang**	**Specialist**
	Taipei	**Department of Health Taipei City Government**	**Nien-Pin Tsou**	**Sanitation Inspector**
Asses-sor(s)	**Location & Jurisdiction**	**Institution – Agency – Group - Association**	**Person(s) met and interviewed**	**Position**
BWS/TT	**Taichung**	**College of Veterinary Medicine, National Chung Hsing University**	**Chao-chin Chang**	**Dean**
BWS/TT	**Taichung**	**Department of Veterinary Medicine, College of Veterinary Medicine, National Chung Hsing University**	**Peng-Wen Chan**	**Chairman**
BWS/TT	**Taichung**	**Animal Disease Diagnosis Center, College of Veterinary Medicine, National Chung Hsing University**	**Jiunn-Wang Liao**	**Director**

TT	**Taichung**	**Department of Veterinary Medicine, College of Veterinary Medicine, National Chung Hsing University**	**Hui-Ying Chiu**	**Assistant Professor**
	Taichung	**Radiology, Veterinary Medical Teaching Hospital, College of Veterinary Medicine, National Chung Hsing University**	**Kuan-Sheng Chen**	**Head**
	Taichung	**Veterinary Medical Teaching Hospital, College of Veterinary Medicine, National Chung Hsing University**	**Ming- Yuan Wang**	**Veterinarian**
	Taichung	**Animal Quarantine Section, TCBAPHIQ**	**Ling-Jhuan Ju**	**Associate Technical Specialist**
	Taichung	**Animal Quarantine Section, TCBAPHIQ**	**Ting Lo**	**Associate Technical Specialist**
BWS/TT	**Changhua**	**Animal Disease Control Center of Changhua County**	**Meng-Chin Tung**	**Director**
	Changhua	**Animal Disease Control Center of Changhua County**	**Yi-Mei Hsieh**	**Secretary**
	Changhua	**Animal Disease Control Center of Changhua County**	**Mei-Jhu Chen**	**Chief**
	Changhua	**Animal Disease Control Center of Changhua County**	**Tsang-Wei Cheng**	**Chief**
	Changhua	**Animal Disease Control Center of Changhua County**	**Chia-Ling Weng**	**Chief**
	Changhua	**Animal Disease Control Center of Changhua County**	**Ming-Hsing Liao**	**Chief**
	Changhua	**Animal Disease Control Center of Changhua County**	**Shu-Hua Huang**	**Chief**
	Changhua	**Animal Disease Control Center of Changhua County**	**Jia-Lin Lai**	**Associate Technical Specialist**
	Changhua	**Animal Disease Control Center of Changhua County**	**Sih-Ting Hong**	**Associate Technical Specialist**

	Changhua	Changhua County Government	Chen-Kou Lai	Secretary General
	Changhua	Department of Agriculture, Changhua County Government	Ping-Sen Chen	Director
	Changhua	Beidou Township office, Changhua County	Yu-Fen Cheng	Veterinarian
BWS/TT	Changhua	Huatan Township office, Changhua County	Chien-I Huang	Veterinarian
	Changhua	Animal Farms in Changhua	Ching-Ching Chen	Farm contract veterinarian
	Changhua	Animal Farms in Changhua	Feng-Yuan Chen	Farm contract veterinarian
	Taichung	Animal Quarantine Section, TCBAPHIQ	Ling-Jhuan Ju	Associate Technical Specialist
	Taichung	Animal Quarantine Section, TCBAPHIQ	Ting Lo	Associate Technical Specialist
BWS/TT	Changhuai	Changhua Chicken Association	Wen-Long Hsieh	President
	Changhuai	Changhua Chicken Association	Johnson Hsiao	Executive Secretary
BWS/TT	Chiayi	Agribiz Corporation	Chien-Tai Chuang	Vice General Manager
	Chiayi	Agribiz Corporation	Chin-He Kuo	Manager
	Chiayi	Agribiz Corporation	Wei-Sheng Chou	Assistant Manager
	Chiayi	Chiayi Inspection Station, TCBAPHIQ	Mei-Jy Shush	Specialist
	Taipei	Animal Health Inspection Division, BAPHIQ	Wei-Lun Chen	Associate Specialist
AA	Nantou	Endemic Species Research Institute	Jia-Dong Yang	Director
	Nantou	Endemic Species Research Institute	Hsi-Chi Chang	Chief of division and Senior researcher
AA	Nantou	Endemic Species Research Institute	Fang-Tse Chan	Associate researcher

		Wildlife Rescue and Research Center (WRRC)		
AA	Nantou	Endemic Species Research Institute Wildlife Rescue and Research Center (WRRC)	Kuei-Hsien Lin	Assistant researcher
AA	Nantou	Endemic Species Research Institute Wildlife Rescue and Research Center (WRRC)	Chi-Feng Tsai	Assistant researcher
AA	Nantou	Endemic Species Research Institute Wildlife Rescue and Research Center (WRRC)	Shun- Ting Hsiao	Project assistant/veterinarian
	Nantou	Endemic Species Research Institute Wildlife Rescue and Research Center (WRRC)	Tong-Pei Hsieh	Project assistant
AA	Nantou	Endemic Species Research Institute Wildlife Rescue and Research Center (WRRC)	Yun-Ling Tsai	Project assistant
AA	Chiayi	Department of Forestry and Natural Resources, National Chiayi University	Jian-Nan Liu	Assistant Professor
AA	Miaoli	Division of Animal Industry, Department of Animal Technology Laboratories, ATRI	Chen-Yuan Liao	Senior Researcher
	Nantou	Nantou Meat Market Corporation	Yi-Hsiung Chou	General Manager
AA	Nantou	Nantou Meat Market Corporation	Tien-Kuei-Yang	Manager
AA	Nantou	Nantou Meat Market Corporation	Chen-Cheng Chien	Veterinarian
	Nantou	Nantou Meat Market Corporation	Su-Chiu Chiang	Chief

	Nantou	Nantou Meat Market Corporation	Wen-Yi Tu	Clerk
	Nantou	Nantou Meat Market Corporation	Ying-Ju Chen	Clerk
	Nantou	Nantou Meat Market Corporation	Chieh-Ling Chen	Technician
	Nantou	Nantou Meat Market Corporation	Shu-Hui Liao	Technician
AA	Nantou	Nantou County Animal Disease Control Center	Chia-Yung Tang	Director
	Nantou	Nantou County Animal Disease Control Center	Kuo-Hsiang Chang	Chief
	Nantou	Nantou County Animal Disease Control Center	Jhih-Rong Liao	Chief
	Nantou	Nantou County Animal Disease Control Center	Kuo-Hui Hsu	Chief
	Nantou	Nantou County Animal Disease Control Center	Lin-Chu Tsai	Technical Specialist
AA	Taichung	Meat Inspection Section, TCBAPHIQ	Kuo-Yang Chen	Specialist
	Taichung	National Animal Industry Foundation	Pei-Erh Lin	Director
AA	Taipei	Meat Inspection Division, BAPHIQ	Chih-Hsien Lin	Deputy Director
	Taipei	Meat Inspection Division, BAPHIQ	Ying-Kai Chang	Section Chief
AA	Nantou	Charoen Pokphand Taiwan	Wei-Yueh Chang	Senior Vice President
	Nantou	Charoen Pokphand Taiwan	Chatree Rachatasomboon	Senior Vice President
AA	Nantou	Charoen Pokphand Taiwan	Shu-Chang Liao	Vice President
	Nantou	Charoen Pokphand Taiwan	Yu-Sheng Hsiao	General Manager
	Nantou	Charoen Pokphand Taiwan	Yi-ching Chen	General Manager
	Nantou	Charoen Pokphand Taiwan	Jui-Ming Yang	Assistant Manager

	Nantou	Charoen Pokphand Taiwan	Chien-De Sung	Veterinarian
AA	Nantou	Charoen Pokphand Taiwan	Chun-Hsiung Wu	Veterinarian
AA	Nantou	Nantou County Animal Disease Control Center	Chia-Yung Tang	Director
AA	Taichung	Central Center for Regional Administration, Food and Drug Administration	Liang-Zi	Technical Specialist
	Nantou	Nantou county government Public Health Bureau	Hsieh Ling Hua	Section chief
AA	Nantou	Nantou county government Public Health Bureau	Lin Su Sui	Technical Specialist
Asses-sor(s)	**Location & Jurisdiction**	**Institution – Agency – Group - Association**	**Person(s) met and interviewed**	**Position**
AA	Tainan	CCPC Tainan Plant I	Tien-Pao Chen	Adviser
AA	Tainan	CCPC Tainan Plant I	Ming-Sheng Chan	Vice President
AA	Tainan	CCPC Animal Health Division Sales Department	Jason Wang	Director
AA	Tainan	CCPC Quality Assurance Division	Jhong-You Yen	Director
	Tainan	CCPC Tainan Plant I	Tun-Jen Tu	Plant Director
AA	Tainan	CCPC Tainan Plant I Inj & Sol Section	Ming-Hsun Wu	Section Manager
AA	Tainan	CCPC Animal Health Division Marketing Department	Chester Hou	Specialist
AA	Tainan	Tainan City Animal Health Inspection and Protection Office	Hong-Ming Chen	Associate Technical Specialist
BWS/TT	Kaohsiung	Kaohsiung City Gangshan Dist. Meat Market	Ying-Po Lin	Director
	Kaohsiung	Kaohsiung City Gangshan Dist. Meat Market	Jung-Pei Chiang	Deputy director

	Kaohsiung	Kaohsiung City Gangshan Dist. Meat Market	Lee-Chieh Huang	Veterinarian
BWS/TT	Kaohsiung	National Animal Industry Faundation(NAIF)	Nan-Hong Lee	Veterinarian Director
	Kaohsiung	Kaohsiung City Animal Protection Office	Yun-Yen Huang	Project Assistant *at auction market
	Kaohsiung	Kaohsiung City Animal Protection Office	Kun-Sung Yeh	Director
	Kaohsiung	Kaohsiung City Animal Protection Office	Chia-Hung Sun	chief
	Kaohsiung	Kaohsiung City Animal Protection Office	Hsin-Yi Yeh	Technician
	Kaohsiung	Kaohsiung City Animal Protection Office	Cheng-Ching Lee	Technician
	Kaohsiung	Meat Inspection Section, KH-BAPHIQ	Tsung-Jen Lee	Section Chief
	Kaohsiung	Meat Inspection Section, KH-BAPHIQ	Sheng-Yu Ho	Technical Specialist
	Kaohsiung	Meat Inspection Section, KH-BAPHIQ	Chia-Chuan Tseng	Associate Technical Specialist
BWS/TT	Taipei	Meat Inspection Division, BAPHIQ	Chih-Hsien Lin	Deputy Director
	Taipei	Meat Inspection Division, BAPHIQ	Ying-Kai Chang	Section Chief
TT	Tainan	Tainan City Animal Health Inspection and Protection Office	Ming-Pin Wu	Director
	Tainan	Tainan City Animal Health Inspection and Protection Office	Wei-Chao Chuang	Deputy Director
	Tainan	Tainan City Animal Health Inspection and Protection Office	Kun-Chou Yen	echnical Specialist
	Tainan	Tainan City Animal Health Inspection and Protection Office	Jhen-Kai Hong	Technical Specialist

	Tainan	Tainan City Animal Health Inspection and Protection Office	Jia-Ling Chang	Chief
BWS/TT	Tainan	Tainan City Animal Health Inspection and Protection Office	Chun-Nan Chou	Chief
TT	Tainan	Tainan City Animal Health Inspection and Protection Office	I-Chang Chou	Chief
	Tainan	Tainan City Animal Health Inspection and Protection Office	Hsing-Chun Hsu	Chief
	Tainan	Tainan City Animal Health Inspection and Protection Office	Chien-Ning Hung	Chief
	Tainan	Tainan City Animal Health Inspection and Protection Office	An-He Xu	Associate Technical Specialist
	Tainan	Tainan City Animal Health Inspection and Protection Office	Chun Hoi Tik Heidi	Employed Translator
TT	Tainan	Tainan City Animal Health Inspection and Protection Office	Chao-I Chiang	Chief
BWS/TT	Tainan	Taiwan Veterinary Medical Association	Pei-Chung Chen	President
	Tainan	Loving Kindness Internation Technology CO.,LTD.(L.K Group)	Pei-Chung Chen	President
	Tainan	Taiwan Veterinary Medical Association	Chin-Ching Lee	Secretary General
	Tainan	Taiwan Veterinary Medical Association	Ping-Hsuan Liu	Secretary
	Tainan	Loving Kindness Internation Technology CO.,LTD.(L.K Group)	Hui-Ping Yan	Director of management
	Tainan	Tainan City Animal Health Inspection and Protection Office	Hui-Gi Xie	Associate Technical Specialist
	Tainan	Tainan City Animal Health Inspection and Protection Office	Hsiu-Hua Yang	Officer
BWS/TT	Taipei	Animal Health Inspection Division, BAPHIQ	Cheng-Ta Tsai	Section Chief
	Kaohsing	Charoen Pokphand Enterprise Kaohsing Plant	Yu-Ching Chen	General Manager

	Kaohsing	Charoen Pokphand Enterprise Kaohsing Plant	Chao-Ren Chen	General Manager
AA	Kaohsing	Charoen Pokphand Enterprise Kaohsing Plant	Clare P.Y.Feng	General Manager
	Kaohsing	Charoen Pokphand Enterprise Kaohsing Plant	Ko-Chi Liu	Associate
	Kaohsing	Charoen Pokphand Enterprise Kaohsing Plant	Wen-Hua Liu	Associate
AA	Kaohsing	Charoen Pokphand Enterprise Kaohsing Plant	Yen-Der Chou	Associate
	Kaohsing	Charoen Pokphand Enterprise Kaohsing Plant	Lih-Feng Ueng	Manager (Veterinarian)
	Kaohsing	Charoen Pokphand Enterprise Kaohsing Plant	Wen-Chu Chang	Manager (Veterinarian)
	Kaohsing	Charoen Pokphand Enterprise Kaohsing Plant	Chin-Chuan Tsai	Manager
	Kaohsing	Kaohsiung City Government Agriculture Bureau	Yi-Chun Chen	Associate Specialist
	Kaohsing	Kaohsiung City Government Agriculture Bureau	Chiu-Mei Yu	Associate Specialist
AA	Taipei	Farm Management Section, Department of Animal Industry, Council of Agriculture, Executive Yuan	His-Chia Chen	Technical Specialist
	Kaohsiung	KH-BAPHIQ	Shuei-li Fu	Director General
AA	Kaohsiung	KH-BAPHIQ	Shun-His Ning	Deputy Director
	Kaohsiung	KH-BAPHIQ	Tzu-Ching Wang	Secretary
	Kaohsiung	Animal Quarantine Section, KH-BAPHIQ	Kang-Ming Mo	Section Chief
AII	Kaohsiung	Animal Quarantine Section, KH-BAPHIQ	Tsung-Hsiu Fang	Associate Technical Specialist
AA	Kaohsiung	Kaohsiung Harbor Inspection Station, KH-BAPHIQ	Pei-Yu Wu	Chief of Inspection Station

AA	Kaohsiung	Kaohsiung Harbor Inspection Station, KH-BAPHIQ	Meng-Chih Shen	Technical Specialist
AA	Kaohsiung	Meat Inspection Station, KH-BAPHIQ	Tsung-Jen Li	Section Chief
BWS	Kaohsiung	Kinmen Inspection Station, KH-BAPHIQ	Bing-Tsai Chen	Chief of Inspection Station
	Kinmen	Kinmen County Animal and Plant Disease Control Center	Tsui-Ling Wang	Section Chief
	Kaohsiung	Southern Branch, CGA, OAC	Chih-Yuan Wang	Officer of CGA
	Kaohsiung	Coast Patrol Corps 5 of Southern Branch, CGA, OAC	Chen-Wei Yu	Squard Leader
	Kaohsiung	Coast Patrol Corps 5 of Southern Branch, CGA, OAC	Tzu-Pei Wang	Officer
TT	Kaohsiung	Xiaokang Branch of Kaohsiung Customs	Shih-Jay Chang	Section Head
AA	Kaohsiung	Southern Center for Regional Administration, TFDA	Ya-Hsiang Wang	Associate Technical Specialist
	Kaohsiung	Kaohsiung Harbor Police Department (KHPD), National Police Agency, Ministry of the Interior	Chung- Yi Chen	Officer of KHPD
	Kaohsiung	Gaoming Container Terminal	Ching-Shun Hsu	Manager
All	Taipei	Animal Quarantine Division, BAPHIQ	Chun-Yao Chiu	Specialist
Asses-sor(s)	**Location & Jurisdiction**	**Institution – Agency – Group - Association**	**Person(s) met and interviewed**	**Position**
All	Pingtung	CHA I SHAN FOODS CO., LTD.	Kuo-Hsun Chen	President
	Pingtung	CHA I SHAN FOODS CO., LTD.	Chi-Hung Hsu	Director
	Pingtung	CHA I SHAN FOODS CO., LTD.	Wei-Ping Chang	Factory Sub-Chief
TT	Pingtung	CHA I SHAN FOODS CO., LTD.	Ssu-Chi Lin	Assistant Manager

	Pingtung	CHA I SHAN FOODS CO., LTD.	George Chang	Vice General Manager
	Pingtung	CHA I SHAN FOODS CO., LTD.	Kiratamekin Panuwat	Technician
	Pingtung	Taiwn Frozen Meat Packers Association	Ming-Sui Kao	Superintendent
All	Kaohsiung	National Animal Industry Faundation(NAIF)	Tsai-Fang Chen	Veterinarian Director
	Kaohsiung	Food And Drug Administration South Center for Regional Administration	Ching-Chia Chang	Associate Technical Specialist
	Pingtung	Food Safety section, Public Health Bureau, Pingtung County Government	Shu-Ying Lee	Section chief
	Pingtung	Food Safety section, Public Health Bureau, Pingtung County Government	Shu-Chen Tang	Associate Technical Specialist
	Pingtung	Food Safety section, Public Health Bureau, Pingtung County Government	Yu-Lin Cho	Santitary inspector
	Kaohsiung	Meat Inspection Section, KH-BAPHIQ	Tsung-Jen Lee	Section Chief
	Kaohsiung	Meat Inspection Section, KH-BAPHIQ	Sheng-Yu Ho	Technical Specialist
	Kaohsiung	Meat Inspection Section, KH-BAPHIQ	Chia-Chuan Tseng	Associate Technical Specialist
All	Taipei	Meat Inspection Division, BAPHIQ	Chih-Hsien Lin	Deputy Director
	Taipei	Meat Inspection Division, BAPHIQ	Ying-Kai Chang	Section Chief
BWS/TT	Taipei	Animal Health Inspection Division, BAPHIQ	Jung-Pin Hsu	Division Director
TT/AA	Pingtung	DAWUSHAN EGG FARM	Chao-Cheng Wang	Assistant Manager
All	Pingtung	DAWUSHAN EGG FARM	Jenny Chen	Supervisor

All	Pingtung	DAWUSHAN EGG FARM	Hunter Chuang	Manager
	Pingtung	DAWUSHAN EGG FARM	Shang-Chiang Wei	General Manager
TT/AA	Pingtung	DAWUSHAN EGG FARM	Neng-Heng Wei	Manager
	Pingtung	Pingtung County Government Animal husbandry	Kai-Yuan Shih	Section Chief
TT	Pingtung	Pingtung County Government Agriculture Office	Chen-Chia Chang	Associate Specialist
	Pingtung	Pingtung County Animal Disease Control Center (ADCC)	Yu-Shiang Peng	Section chief
All	Pingtung	Pingtung County Animal Disease Control Center (ADCC)	Wen-Hui Lin	Section chief
	Pingtung	Pingtung County Animal Disease Control Center (ADCC)	Pei-Hung Tsai	Associate technical specialist
	Taipei	Animal Health Inspection Division, BAPHIQ	Ching-Tzong Chen	Specialist
	Pingtung	Pingtung County Animal Disease Control Center (ADCC)	Yung-Wen Lee	Director
TT	Pingtung	Pingtung County Animal Disease Control Center (ADCC)	Cheng-Mao Chen	Section chief
AA	Pingtung	Pingtung County Animal Disease Control Center (ADCC)	Hsiao-Chun Hui	Section chief
TT	Pingtung	Pingtung County Animal Disease Control Center (ADCC)	Wen-Hui Lin	Section chief
TT/AA	Pingtung	Pingtung County Animal Disease Control Center (ADCC)	Yu- Hisiang Peng	Section chief
TT	Pingtung	Pingtung County Animal Disease Control Center (ADCC)	Y-Hong LI	Associate technical specialist
TT	Pingtung	Pingtung County Animal Disease Control Center (ADCC)	Chia-jung Liang	Associate technical specialist
	Pingtung	Pingtung County Animal Disease Control Center (ADCC)	Yu-Ju Chen	Associate technical specialist
	Pingtung	Pingtung County Animal Disease Control Center (ADCC)	Chi-Hsien Tsai	Associate technical specialist

	Pingtung	**Pingtung County Animal Disease Control Center (ADCC)**	**Cai-Ling Chen**	**Associate technical specialist**
TT	**Pingtung**	**Pingtung County Animal Disease Control Center (ADCC)**	**Pei-Hung Tasi**	**Associate technical specialist**
	Pingtung	**Chaozhou Township Offices**	**Ying-Chong Lu**	**Township Veterinarian**
TT/AA	**Pingtung**	**Animal Farms in Pingtung**	**Ming-Lien Lee**	**Farm contract veterinarian**
TT/AA	**Pingtung**	**Animal Farms in Pingtung**	**You-Der Chen**	**Farm contract veterinarian**
All	**Pingtung**	**Technical Service Center, NAIF**	**Su-Lien Kuo**	**Chief of TSC**
AA/TT	**Pingtung**	**Technical Service Center, NAIF**	**Yueh-E Chen**	**Manager**
All	**Pingtung**	**Technical Service Center, NAIF**	**Tzu-Han Su**	**Analyst**
TT	**Pingtung**	**Technical Service Center, NAIF**	**Wei-Hsin Wang**	**Assistant**
	Taipei	**National Animal Industry Foundation**	**Chuang-Chin Chiu**	**CEO, NAIF**
All	**Taipei**	**National Animal Industry Foundation**	**Jenny Huang**	**Senior specialist, NAIF**
	Taipei	**National Animal Industry Foundation**	**Ta-Jen Cho**	**Section Chief**
	Taipei	**National Animal Industry Foundation**	**Yu-Chen Yeh**	**Officer, NAIF**

Asses-sor(s)	Location & Jurisdiction	Institution – Agency – Group - Association	Person(s) met and interviewed	Position
	Taipei	Bureau of Animal and Plant Health Inspection and Quarantine, COA (BAPHIQ)	Wen-Jane Tu	Deputy Director General
	Taipei	Bureau of Animal and Plant Health Inspection and Quarantine, COA (BAPHIQ)	Watson Sung	Consultant
	Taipei	Animal Health Inspection Division, BAPHIQ	Jung-Pin Hsu	Division Director
	Taipei	Animal Health Inspection Division, BAPHIQ	Lucy Chow	Deputy Director
	Taipei	Animal Health Inspection Division, BAPHIQ	Yvonne Y.F. Liu	Senior Specialist
	Taipei	Animal Health Inspection Division, BAPHIQ	Chung-Hwei Yao	Senior Specialist
	Taipei	Veterinary Administration Section, Animal Health Inspection Division, BAPHIQ	Cheng-Ta Tsai	Section Chief
	Taipei	Veterinary Administration Section, Animal Health Inspection Division, BAPHIQ	Hui-Mei Shih	Specialist
	Taipei	Veterinary Administration Section, Animal Health Inspection Division, BAPHIQ	Ying-Chen Tsai	Associate Specialist

	Taipei	Animal Health Inspection Section, Animal Health Inspection Division, BAPHIQ	Nien-Nung Lin	Section Chief
	Taipei	Animal Health Inspection Section, Animal Health Inspection Division, BAPHIQ	Ching-Tzong Chen	Specialist
	Taipei	Animal Health Inspection Section, Animal Health Inspection Division, BAPHIQ	Yu-Bin Chou	Specialist
	Taipei	Animal Health Inspection Section, Animal Health Inspection Division, BAPHIQ	Yi-An Chen	Project Assistant
	Taipei	Veterinary Drug Section, Animal Health Inspection Division, BAPHIQ	Ying-Ping Ma	Specialist
	Taipei	Veterinary Drug Section, Animal Health Inspection Division, BAPHIQ	Cheng-Jou Chan	Specialist
	Taipei	Veterinary Drug Section, Animal Health Inspection Division, BAPHIQ	Yi-Ming Huang	Associate Specialist
	Taipei	Animal Quarantine Division, BAPHIQ	Ming-Hsing Peng	Division Director
	Taipei	Animal Quarantine Division, BAPHIQ	Huang-Lin Kao	Deputy Director

BWS	**Taipei**	**Animal Quarantine Technology Section, Animal Quarantine Division, BAPHIQ**	**Yueh-Ping Lin**	**Section Chief**
	Taipei	**Animal Quarantine Technology Section, Animal Quarantine Division, BAPHIQ**	**Yen-Ting Chan**	**Specialist**
	Taipei	**Meat Inspection Division, BAPHIQ**	**Rocky Lin**	**Director**
	Taipei	**Meat Inspection Division, BAPHIQ**	**Chih-Hsien Lin**	**Deputy Director**
	Taipei	**Meat Inspection Technical Section, Meat Inspection Division, BAPHIQ**	**Ying-Kai Chang**	**Section Chief**
	Taipei	**Meat Inspection Technical Section, Meat Inspection Division, BAPHIQ**	**Chuan-Wei Tung**	**Specialist**
	Taipei	**Conservation Division, Forestry Bureau, COA**	**Chia-Jun Weng**	**Technical Specialist**
	Taipei	**Conservation Division, Forestry Bureau, COA**	**Yu-Chang Yang**	**Associate Technical Specialist**
	New Taipei	**Animal Health Research Institute, COA (AHRI)**	**Chwei-Jang Chiou**	**Director general**
BWS	**New Taipei**	**Epidemiology Division, AHRI**	**Fan Lee**	**Research Scientist/ Division Chief**
	New Taipei	**Hog Cholera Division, AHRI**	**Ming-Chung Deng**	**Associate researcher and division acting chief**

BWS	**Miaoli**	**Division of Animal Medicine, Department of Animal Technology Laboratories, ATRI**	**Zeng-Weng Chen**	**Chief**
	Miaoli	**Animal Technology Laboratories, Division of Animal Industry, ATRI**	**Shih*Ping Chen**	**Principal Researcher**
	Miaoli	**Animal Technology Laboratories, Division of Animal Industry,ATRI**	**Ming-Chang Lee**	**Associate Researcher**
	Taipei	**National Animal Industry Foundation (NAIF)**	**Chuang-Chin Chiu**	**CEO**
	Taipei	**National Animal Industry Foundation (NAIF)**	**Hsu-Chang Wang**	**Deputy CEO**
BWS	**Taipei**	**National Animal Industry Foundation (NAIF)**	**Jenny Huang**	**Senior Specialist**
	Taipei	**National Animal Industry Foundation**	**Ta-Jen Cho**	**Section Chief**
	Taipei	**National Animal Industry Foundation**	**Yu-Chen Yeh**	**Officer**
	Pingtung	**Technical Service Center, NAIF**	**Su-Lien Kuo**	**Chief of TSC**
	Pingtung	**Technical Service Center, NAIF**	**Tzu-Han Su**	**Technical Analyst**
	Taipei	**School of Veterinary Medicine, NTU**	**Chian-Ren Jeng**	**Professor & Dean**
	Taipei	**School of Veterinary Medicine, NTU**	**Hui-Wen Chen**	**Associate Professor**

BWS	**Taipei**	**School of Veterinary Medicine, NTU**	**Hui-Wen Chang**	**Assistant Professor**
	Taipei	**Food Safety Division, TFDA, MOHW**	**Jen-Ting Wei**	**Deputy Director**
	Taipei	**Food Safety Division, TFDA, MOHW**	**Ying-Hsien Fu**	**Section Chief**
	Taipei	**Food Safety Division, TFDA, MOHW**	**Yun-Hsiang Yang**	**Associate Reviewer**
	Taipei	**Northern Center for Regional Administration, TFDA, MOHW**	**Ya-Chun Yang**	**Section Chief**
	Taipei	**Animal Protection Section, Department of Animal Industry, COA**	**Peter C.H. Chen**	**Senior Technical Specialist**
	Taipei	**Farm Management Section, Department of Animal Industry, COA**	**I-Hsin Su**	**Specialist**
BWS	**Taipei**	**TCDC, MOHW**	**Jen-Hsiang Chung**	**Deputy Director General**
	Taipei	**Division of Planning and Coordination, TCDC, MOHW**	**Pei-Chun Chuang**	**Associate Researcher**
	Taipei	**Center for Diagnostics and Vaccine Development, TCDC, MOHW**	**Su-Lin Yang**	**Associate Researcher**
	Taipei	**Division of Infection Control and Biosafety, TCDC, MOHW**	**Wei-Hui Chou**	**Technical specialist**

	Taipei	Epidemic Intelligence Center, TCDC, MOHW	Elle Shuwan Jian	Specialist
	Taipei	Division of Acute infectious Diseases, TCDC, MOHW	Hsiang-Tzu Li	Professional Nurse
	Taipei	Animal Industry Division, LRI, COA	Ming-Yang Tsa	Assistant Researcher
	Miaoli	Agricultural Technology Research Institute (ATRI)	Sheng-Fu Hsu	Researcher
	Miaoli	Agricultural Technology Research Institute (ATRI)	Pao-Hsia Lin	Research Assistant
	Miaoli	Agricultural Technology Research Institute (ATRI)	Tsung-Hsun Hsieh	Research Assistant

Appendix 5: Air travel itinerary

Assessor	Date	From	To	Flight no.	Departure	Arrival
Ana Afonso	April 13	Milan	Bangkok	TG 941	14:05	05:55
	April 14	Bangkok	Taipei	TG 634	07:10	11:50
	April 26	Taipei	Bangkok	TG 635	20:05	22:50
	April 27	Bangkok	Milan	TG 940	00:40	07:35
B. Stemshorn	April 12	Ottawa	Vancouver	AC 357	07:00	09:11
	April 12	Vancouver	Taipei	AC 017	11:00	14:15
	April 27	Taipei	Vancouver	AC 018	15:55	11:50
	April 27	Vancouver	Calgary	AC 216	15:15	17:38
	April 28/29	Calgary	Ottawa	AC 352	19:15	00:58
T. Tiensin	April 12	Rome	Bangkok	TG 945	13:55	05:45
	April 13	Bangkok	Taipei	TG 634	07:10	11:50
	April 27	Taipei	Bangkok	TG 635	20:05	22:50
	April 28	Bangkok	Rome	TG 944	00:20	06:50

Appendix 6: List of documents used in the PVS evaluation

E = Electronic version H = Hard copy version P= Digital picture

Ref	Title	Author / Date / ISBN / Web	Related Critical Competencies
	PRE-MISSION DOCUMENTS		
PME1 a	*Baseline Documents to be Provided in Advance of a PVS Mission*	BAPHIQ, 2019/03/18 246 pp	All
PME1 b Annexes	*177 Annexes to the Baseline Documents PME1*	BAPHIQ, 2019/03/18 Index provided on PME1 pages 14-24 Files are mostly available in Mandarin, and with Google Translation for those listed below	All
PME1 b Annex 38	*Strengthening animal epidemic prevention in 2015 - Project evaluation report*	Animal Epidemic Prevention Team	I-5
PME1 b Annex 39	*Strengthening animal epidemic prevention in 2016 - Project evaluation report*	Animal Epidemic Prevention Team	I-5
PME1 b Annex 40	*Strengthening animal epidemic prevention in 2017 - Project evaluation report*	Animal Epidemic Prevention Team	I-5
PME1 b Annex 41	*Global Health Safety-Integrated Prevention and Treatment of Infectious Diseases Project 2017 self-assessment report*	Animal Epidemic Prevention Team	I-5 I-6.B
PME2	*BAPHIQ HQ Division Responsibilities*	Web site[48]	I-5 II-3 II-6 III-1 IV-1 to IV-6
PME3 a-d	*BAPHIQ regional web sites*	BAPHIQ	I-5 II-3 III-1 IV-1, IV-2 IV-4; IV-5
PME4 a-c	*FMD Zoning reports*	BAPHIQ and OIE	II-6 IV-6
PME5	*Dead piglet found on New Taipei beach amid fears of African Swine Fever*	Taiwan News 2019/03/02 https://www.taiwannews.com.tw/en/news/3649343	II-4 II-5 II-6
PME6	*Taiwan[49] tightens border inspections against African swine fever*	Taiwan Today 2019/01/18 https://taiwantoday.tw/news.php?unit=2,6,10,15,18&post=148991	II-3 III-1

[48] https://www.baphiq.gov.tw/en/view.php?catid=11612

[49] Although the official OIE terminology is Chinese Taipei, as these are the country's own reference documents, we have retained their actual name in referencing them. This applies to all of Appendix 6.

PME 7 a-o o	*FMD Zoning reports*	BAPHIQ/OIE	IV-6 IV-7
PME8	*Summary on disease reporting and transparency. Diseases of terrestrial animals*	OIE World Animal Health Information and Analysis Department. 08/02/2019	I-4 IV-5
	MISSION DOCUMENTS		
E1	*Overall Review of Veterinary Services (VS) in Taiwan*	Dr. Wen-Jane Tu, Chief Veterinary Officer & Deputy Director General, BAPHIQ 2019/04/15	All
E2	*Overview of Animal Health Inspection in Taiwan*	Nien-Nung Lin, Section Chief of Animal Health Inspection Division, BAPHIQ, 2019/04/15	All
E3	*Forestry Bureau Briefing*	Nien-Nung Lin, Section Chief of Animal Health Inspection Division, BAPHIQ 2019/04/15	I-6.B II-1.A II-2 II-4, II-6,III1
E4	*Surveillance programs of Wildlife & Strategic Plan for Rabies Management in Taiwan*	Cheng-Ta Tsai 2019/04/15	II-1.A II-2 II-4 to II-6
E5	*Veterinary Administration in Taiwan*	Ying-Chen Tsai, Associate Specialist, Animal Health Inspection Division, BAPHIQ 2019/04/15	I-1.A&B I-2.A&B I-3 III-5 III2, IV2 IV-1A&B
E6	*Introduction to Management and Recent Activities on Veterinary Medicinal Products*	Dr. Yvonne Y. F. Liu Animal Health Inspection Division, BAPHIQ 2019/04/15	I4 III1 II-8 II-9 IV-1A&B IV2
E7	*Animal Quarantine System in Taiwan*	Ming-Hsing Peng, Director, Animal Qurantine Division	I2 II-2 to II-6, II11 III1 IV-1 to IV-6
E8	*Animal Health Research Institute: The National Veterinary Laboratory*	AHRI 2019/04/15	II-1 A,B&C II-2 II-4 to II-6 II-8
E9	*Diagnostic System*	School of Veterinary Medicine, National Taiwan University	II-1 A,B&C II-4
E10	*Introduction of ATRI (Agricultural Technology Research Institute)*	Ming-Chang Lee, DVM, ATRI, 2019/04/15	I-2, I-3 II-1 A,B&C II-2 II-4 to II-8 II-1a&b, III-6
E11	*Presentation for the Evaluation of Performance of Veterinary Services*	National Animal Industry Foundation, 2019/04/15	I-1, I-2 II-1a&b, II-6, II-7, III-6
E12	*Veterinary Drug Residue Program for Livestock Serum, Swine Hair, Poultry Meat, Milk and Eggs on Farms*	Yi-Ming Huang, BAPHIQ 2019/04/15	I-3 II-10 IV-1A&B

E13	*Management of meat inspection in Taiwan*	Chih-Hsien Lin, Deputy Director, Meat Inspection Division BAPHIQ 2019/04/15	II-7B II12A IV-1A&B
E14	*Food Safety Management in Taiwan*	Jen-Ting Wei, Deputy Director, Food Safety Division, Taiwan Food and Drug Administration 2019/04/15	II-3 II-7 II-13 IV-1A&B
E15	*Feed Hygiene and Safety Management*	Hsi-Chia Chen, Department of Animal Industry, Council of Agriculture 2019/04/15	II-11 IV-1A&B
E16	*Zoonoses & AMR Control*	Centers for Disease Control, Taiwan, 2019/04/15	II-6 II-7 II-9
E17	*Current Notification Mechanism for Zoonoses-Take AI as an Example*	Ching-Tzong Chen, Animal Health Inspection Division, BAPHIQ, 2019/04/15	II-4, II-5, II-6, IV-1A&B IV-5
E18	*Antimicrobial Resistance (AMR) and Antimicrobial Use (AMU) in Animals*	Ying-Ping Ya, BAPHIQ, 2019/04/15	II-9
E19	*Current Situation of Animal Welfare Promotion and Governance Priorities*	Animal Protection Section, Department of Animal Industry, COA, 2019/04/15	II-13 IV-1A&B
E20	*An institutional overview for the Evaluation of Performance of Veterinary Services*	Animal Health Research Institute, Council of Agriculture (AHRI) 2019/04/15 41 pp	I-3 I-7 II-1.A&B II-4, II-5 II-6b
E21	*Introduction of Biologic Division for the Evaluation of Performance of Veterinary Services*	(AHRI) 2019/04/16	II-1.A&B II-4 to II-6
E22	*Biology Division, Animal Health Research Institute*	Chien Tu, Senior Researcher & Chief, AHRI, 2019/04/16	II-1.A&B II-3, II-4, II-5 IV-3
E23	*Epidemiology Division, AHRI and Animal Disease Diagnostic Center*	AHRI, 2019/04/16	II-1.A&B, II-2 II-4 to II-6
E24	*Hog Cholera Division AHRI*	AHRI, 2019/04/16	II-1.A&B, II-4, II-6
E25	*Responses to the questions and List of evidence requested by the OIE experts of PVS evaluation in Taiwan*	AHRI, 2019/04/25	I-6A&B I-7 II-1.A&B, II-4, II-5 II-6, II-8
E26	*Procedures for wearing personal protection equipment*	AHRI, 2019/04/25	II-1.C II-5. II-6
E27	*Laboratory Accreditation Certificates AHRI Biologics Division: for ISO 17025 plus numerous products and assays*	2019/04/25	II-1.C
E28	*Animal Protection Act*	Amended 2018-12-26 Laws and Regulations Database of the republic of China	II-13 IV-1A&B
E29	*Affidavit of Approval of Animal Use Protocols:*	AHRI, 2019	II-13

	a) Manufacture of lapinized Hog Cholera vaccine *b) Quality control of vaccine test*		
E30	*Application for animal experiment - A sample of application form*	AHRI, 2019	II-13
E31	*Pig important disease* *Immune planning (a presentation for producer education)*	AHRI, 2019	III-1 III-6
E32a	*Agricultural Technology Research Institute (ATRI), 2014-2017 Annual Report*	ATRI	II-1.A,B & C II-2 to II-9 II-12 II-13 (product labelling) III- 1 to III4, III-6
E32b	*ATRI: an Institutional Overview*	Shih-Ping Chen, ATRI, 2019/04/17	Idem
E33 a-h	*Quality Certification Documents from TAF (ISO), TFDA, IACUC and AAALAC*	ATRI, various dates	II-1.C II-13
E34	*Slaughter hygiene inspection veterinarian and assistant qualification training course*	ATRI, 2019	I-2.B II-7.B
E35	*Overview: School of Veterinary Medicine, National Taiwan University (NTUVM)*	NTUVM 2019/04/17	I-2.A, I-3 II-1.A-C II-2. II-3 II-4B, II-6 III-6
H35	*School of Veterinary Medicine, National Taiwan University. Brochure on curriculum and senior faculty*	NTUVM http://www.vm.ntu.edu.tw/DVM_Eng/	I-2.A II – 2 II - 6
E36	*ISO 17025 Certificate for NTUVM Zoonoses Research Centre P2-Plus Core Laboratory*	TAF dated Sept 22, 2019 and valid until May 6, 2021	II-1.C
E37	*IACUC Crtificate for NYUVM*	Unable to translate	II-13
E38	*Animal Drugs Inspection Branch, AHRI (introduction), including:* *-Department of Biologics Assay and Research* *Department of Chemical Assay and Research* *Department of Experimental Animal Research*	IADIB/AHRI 2019/04/17	I-2.A I-3 II-1.A,B&C II-11 II-13 III-1 III-3 III_6 II-8 IV-2
H38	*Registration of Veterinary Biologicals – summary of regulatory requirements*	ADIB 8 slides, 2019/04/17	II-8
E39 a-c	*ISO Certificates for ADIB from TAF for ISO 17025 (medicines) and AFNOR (France) for ISO 9000 (SPF eggs and rabbits)*	TAF	II-1.C
E40 a&b	*Copies of a) IACUC audit meeting minutes and b) Approval of an animal use protocol*	ADIB (*not translated) 2109/04/18	II-13
E41	*Inspection flow using LIMS for a veterinary vaccine*	ADIB 2019/04/18	II-8
E42 a&b	*Definition of a new vaccine and fee structure for a new vaccine*	ADIB 2019/04/18 (fee structure not translated)	II-8

E43a-d	*BAPHIQ Annual Reports 2014-2017 (a-d)* *Summaries of Policy & Strategic Plans translated for 2016 and 2017*	BAPHIQ https://www.baphiq.gov.tw/view.php?catid=2962	I-5
E44 a-c	*Human Resource documents:* *Job Description Level 3* *Job posting internal* *Performance review form*	BAPHIQ, 2019/04/18 English translations	I-1.A
E45	*Animal and plant epidemic disaster prevention and rescue business plan:Emergency and Disaster Contingency Planning for Animal and Plant Disease Epidemics*	Executive Yuan Agricultural Committee. Undated	II-5
E46	*List of Performance Check Projects*	BAPHIQ Internal Audit Unit 2019/04/18	I-5
E47	*Performance Check Project Report: Techniques and warnings for monitoring wild waterfowl and avian influenza virus surveillance in high-risk areas*	BAPHIQ Internal Audit Unit 2019/04/18	I-5
E48	*Current Situation of Swine Industry in Taiwan*	ROC Swine Association 2019/04/18	II-6 III-2, III-6 II-7 A&B
E49	*Animal Industry Act*	Council on Agriculture 2010/11/24	II-7.B III-4 IV-1 A&B
E50	*Principles of Responsibility Distributions for Meat Inspection System*	BAPHIQ	II-7.B III-4 IV-1
E51	*Principles of BAPHIQ Supervision for Meat Inspectors*		I-!,A&B I-2.A&B II-7.B III-4
E52	*The "INSPECTED AND PASSED" Symbol (Livestock)*	BAPHIQ 2019/04/18	II-7.B
E53	*NAIF Annual Report*		
E54 a&b	*NAIF Poultry Health Center ISO Certifications (Chinan & Northern)*	TAF current dates	II-1.C
E55 a&b	*NAIF Technical Services Center TFDA and TAF (ISO) Certfications*	TAF current dates	II-1.C
E56 a&b	*NAIF Funding Transparency Project (identifies sources of funds, NAIF Directors and projects funded)*	2019/03/08	I-4 III-4
E57	*Taiwan Veterinary Medicine & Healthcare Industry Association: Introduction*	Kelvin Chen, Special Assistant 2019/04/18	II-8 III-2 III-5 III-6
E58	*Introduction, Service and Cooperative Relationship between Government Agencies of Poultry Association Republic of China*	WANG JIAN PEI Serves as Secretary-General of Poultry Association Republic of China 2019-04-18	II-6 II-7 II-8 III-2 III-6
E59	*Consumer's Foundation, Chinese Taipei*	Li-Fen Lei, Chairperson Consumer's Foundation 2019/04/18	III-2

E60	*Veterinary Services In BAPHIQ Hsinchu branch*	Alfred Chiou, Technical specialist, DVM, BAPHIQ 2019/04/19	II-3 II-6 II-7A&B III-1
E61	*Oral replies from TFDA to questions regarding airport inspections*	TFDA 2019/04/19	II-3 IV-1
E62	*Regulations of Inspection of Imported Foods and Related Products*	MOHW 2018/10/19	II-3 IV-1A&B
E63	*Inspection & Sampling Quantity of Foods and Related Procedures*	TFDA 2019/04/19	II-3
E64 a&b	*TFDA Protocols for inspection of:* • *Imported foods* • *Imported beef*	MOHW 2018/10/19 (not translated)	II-3
E65a	*Kuang Chuan Dairy Introductory presentation*	Kung Chung Dairy 2018/04/19	II-7.A II-10
E65b	*The Establishment Standards of Construction and Equipment of a Food Factory*	MOHW 2018/09/27	II-7.A
E65c	*Act Governing Food Safety and Sanitation*	MOHW 2018/10/24	II-7.A IV-1A&B
E65d	*TFDA HACCP Checklist*	TFDA 2019/04/19 (not translated)	II-7.A
E65e	*The food traceability system – notes from TFDA*	TFDA 2019/04/19	II-12.B
E66	*Factory Management Act*	Ministry of Economic Affairs 2018/10/18	II-7.A IV1A&B
E67	*Food processing plant_GHP (Good hygiene practice for foods) checklist*	Taoyuan Local Health Authority (not translated) 2019/04/19	II-7.A
E68	*Surveillance of Dairy Farms for Tuberculosis and Brucellosis*	BAPHIQ 2019/04/19	II-4
E69	*Reber Genetics Co., Ltd Taoyuan Plant. Introductory Presentation*	Tsung-Yen Wu, Reber Genetics 2019/04/19	II-8
E70	*Export sales data for Reber Genetics PRRS vaccine*	Reber Genetics 2019/04/19	II-8
E71	*Animal and Plant Quarantine Center (APQC): An Introduction to the Animal Isolation and Quarantine*	APQC, BAPHIQ, 2019/04/19	II-3, II-4, II-5 II-13
E72	*Statistics of quarantined animals (species and numbers) in 2018*	APQC 2019/04/19	II-3
E73	*Fees charged by APQC*	APQC 2019/04/19	II-3
E74	*Taipei Zoo Veterinary Office Introductory Presentation*	Taipei Zoo 2019/04/20	I-1.B, I-6.B II.4, II-6, II-13 III-, III-3, III-6 III-7
E75 a-e	*Zoo Welfare Check-lists for five separate facilities*	New Taipei City LADIA. 2019/04/20 (illustrated but not translated)	II-13 III-1
E76	*Tzuoo-Ann animal hospital minimally invasive surgery center New Taipei City, Taiwan*	Dr. Hsien-chieh Chiuien-chieh 2019/04/20	II-9, II-13, III-1, III-7
H76	*Projects with our Government: Tzuoo-Ann animal hospital minimally invasive surgery center*	Dr. Jeff Chang 2019/04/20j	II-7 II-13

E77 a-f	*Documents regarding supervision of veterinary clinics*	New Taipei City LADIA. 2019/04/20 (not translated)	III-5 II-13
E78 a-d	*National Chung-Hsing University College of Veterinary Medicine* *Introductory Presentation:* *Disease surveillance in rescued and road-killed wildlife Rabies Screening Laboratory* Government Funding	NCHU CVM Dean 2019/04/22	I-2.A I-3 II-1.A-C II-3 II-4A&B II-6
E79	*National Chung-Hsing University Laboratory Animal Care and Use Committee Establishment and Management Measures*	NCHU 2019/04/22	II-13
E80	*Animal Disease Control Center of Changhua County* *Introductory presentation*	Chia-Lin Lai 2019/04/22	I-6.A II-4 to II-6 II-10, II-13 III-4 IV-1.A&B IV-3
E81 a-c	*Forms used by LADIA for* *a. Animal health inspection* *b. Livestock health statement* *c. Poultry health certificate*		II-6 II-12.A
E82	*Human Resource Investigation of Townships in 13 Counties*	BAPHIQ April 2019	I-1.A
E83	*AgriBiz Corporation presentation on wholesale import and distribution of veterinary medicines and vaccines*	AgriBiz CEO 2019/04/22	II-6 II-8
E84	*Performance of Veterinary Services (PVS) on Wildlife Rescues and Research Center*	Endemic Species Research Institute (ESRI) 2019/04/22	I-6.B II-4A&B, II-6 II-13
E85	*Nantou County Agricultural Products Marketing Co., Ltd. – presentation*	2019/04/22	II-4A&B, II-6 II-7.A&B II-12.A&B II-13 III-6
E86	*Charoen Pokphand Poultry Slaughterhouse*	2019/04/22	II-4A-B, II-6 II-7.A&B II-12.A&B II-13 III-6
E87	*China Chemical & Pharmaceutical Co.,Ltd. Animal Health Division* *Introductory presentation*	CCPC 2019/04/23	II-8 II-11 IV-1
E88	*Shanhua Animal Shelter* *Introductory presentation*		II-4A&B, II-5, II-6, II-13
E89	*Introduction of Taiwan Veterinary Medical Association* *Introductory presentation*	Dr. Pin-Jung Chen Chairman, TVMA	I-2A I-3 III-5
E90	*Loving Kindness Animal Hospital* *Introductory presentation*	Pei-Chung Chen 2019/04/23	II-6 III-7
E91	Kaohsiung City Gangshan Dist. Pork Meat Market	Director 2019/04/23	II-6 II-7.A&B

	Introductory presentation		II-12.A&B II-13
E92	*Feed production plant of Charoen Pokphand Enterprise (CPE) Introductory presentation*	CPE 2019/04/23	II-9 II-11
E93	*Feed Hygiene and Safety Monitoring Flowchart*	Department of Animal Industry 2019/04/23	II-10 II-11
E94	*Kaohsiung Branch of BAPHIQ Introductory presentation*	BAPHIQ 2019/04/23	I-5, I-6.B II-2, II-3 II-4&5 II-6, II-7A&B IV-1 to IV-3 IV-5, IV-6
E95	*Kao Ming Container Terminal Introductory presentation*	Kao Ming Container Terminal Corp 2019/04/23	II-3
E96	*Cha I Shan Foods Co., Ltd Pingtung Factory, swine slaughterhouse and processing. Introductory Presentation*	Cha I Shan Foods Co., Ltd 2-19/04/24	II-6 II-7.A&B II-12.A&B II-13
H96	*Cha I Shan Foods Co., Ltd Corporate Brochure*	*Cha I Shan Foods Co., Ltd* undated	II-6 II-7A&B II-12A&B II13
E97	*Dawushan Egg Farm*	Dawushan Livestock Products Co. Ltd 2019/04/24	II-4A&B, II-6 II-7.A&B II-11 II-12.A&B II-13 IV-7
E98	*Introduction of the Pingtung County Animal Disease Control Center (ADCC)*	Pingtung ADCC 2019/04/24	1-6.A&B II-4 to II-8, II-10 IV-1A&B, IV-2 IV-5, IV-6
E99	*Introduction of Technical Service Center, NAIF*	Tzu-Han, Su 2019.04.24	II-1.A,B,C I-6.A&B II-8 II-10 II-11
E100	*VM Residue Traceback report on goat milk*	NAIF TSC 2019/04/24 (Not translated)	II-10
E101a	*National AMR action plan 2019-2023 (draft)*	BAPHIQ, 2019	I-6B II-9
E101b	*Table of Contents (English) National AMR action plan 2019-2023 (draft)*	BAPHIQ, 2019	II-9
E102	*IHR Joint External Evaluation of Taiwan*	University of Pittsburgh Medical Center, Center for Health Security June 21 – July 1, 2016	I-6.B II-7A II-9
E103 a-e	*Regulations regarding public service ethics:* *a. Ethics Units and Officers* *b. Conflicts of Interest* *c. Property Declaration* *d. Integrity and Ethics Directions*	Laws and Regulations Database of the Republic of China	I-4

	e. *Enforcement Rules*		
E104	*Q/A on Civil Service Ethics Offices*	BAPHIQ 2019/05/08	I-4
E105	*Reduction of Concomitant Infections in Pigs by the use of PCV2 Antigen*	United States Patent (10) Patent No.: US 7,829,274 B2 Fachinger et al. (45) Date of Patent: Nov. 9, 2010	II-8
E106	*Training course for the qualification of meat inspection assistant.*	ATRI 2019/04/30	I-1.B I-2.B II-7B
E/H?/107	*Management Rules of Meat Inspector under Meat Inspection Program*	BAPHIQ 2019/04/xx	I-6.A II-7.B
E108	*Human Resource requirement of Taiwan VS*	BAPHIQ 2019/05/13	I-1.A&B IV-6
E109	*Use of project and program audit and evaluation reports for planning purposes*	*BAPHIQ 2019/05/13*	I-5, I-6A&B, IV1B
E110 a,b&c	*a. Report on Food Safety Cloud (IT system)* *b. Report on use of programme evaluation as a basis for modficiations to strategic and operational plans (English translation of excerpt from BAPHIQ 2019 Strategic Plan)* *c. Introduction of Taiwan's Food Traceability System*	a & b BAPHIQ 2019/05/15 c Tsung Hsi Wu, TFDA	a&b: II-7.A b: I-5 I-6A II-7B c: II-12.b
E111	*Q/A re quality assurance in LADIA Laboratories*	APHIQ 2019/05/13	II-1.C II-13
E112	*Information of slaughterhouses in Taiwan (total 174)*	BAPHIQ information system	II-7.B
E 113	*Oral replies from BAPHIQ to questions regarding compartmentalisation and zoning*	BAPHIQ officers *(during the field mission)*	IV-6 IV-7
E114	*Update on FMD and Avian Influenza*	Ming-Hsing Peng BAPHIQ April 2018	IV-6 IV-7
E115	*Document requests_checklist with DropBox links*	BAPHIQ PVS Team 2019/05/03	Multiple II7A&B II-10 II-13 III-2 III-4
E116 a&b	a. *Responses to multiple Information Requests* b. *Supplement re chain of command*	BAPHIQ PVS Team *2019/05/20*	Multiple I-6A III-5
E117	*Response to Food Safety Information request*	BAPHIQ PVS Team *2019/05/23*	I-6.A&B I-7 II-7A&B II-12B
E118	*Responses to questions about audit and evaluation, compliance cases, chain of command (field implementation)…*	BAPHIQ PVS Team *2019/05/13*	1.5, IV-1.B II-7B II-9 II-10

			II-12A&B III-1 III-2
E119	*Respones to questions from Ana…*	BAPHIQ PVS Team *2019/05/20*	II-7A&B II-10 II-11 II-12A III-1 to 3 III-5
E120	*Food Borne Disease Surveillance (Chinese)*	TCDC 20180201	II-7.A
E121	*Food Borne Disease Surveillance; Table of contents in English*	TCDC 20180201	II-7.A
E122	*Regulation for_Management of Veterinary Prescription Drugs* *a: Chinese* *b: English Google Translation*	BAPHIQ 1999/11/03	II-8
E123	*Guidelines for animal welfare-friendly Production System_Laying hens. Chinese*	DAI *2015/12/31*	II-13
E124	*Guidelines for animal welfare-friendly Production System Swine. Chinese*	DAI *2017/06/13*	II-13
E125	*Guidelines for the Humane Slaughter of Livestock and Poultry. Chinese*	DAI *2008/09/25*	II-13
E126	*Regulation for Animal Transportation; Animal Protection Act. Chinese*	DAI *2019/03/14*	II-13
E127	List of Regular Meetings held by BAPHIQ (Animal Health Inspection Division)	BAHIQ, 2019/0523	I-6.B III-2 III-6
E128	*Food borne disease ppt excerpt (English)*	TFDA staff	II-7.A
E129 a&b	*Food Safety Information systems: a. Meat Inspection* *b. TFDA*	BAPHIQ	II-7.A, II-7.B
E130	*Complementary Information Regarding CC Level. Comments and Suggestions*	BAPHIQ 2019/11/08	I-1.B, I-2.B, I-3 I-7.A, III-5, IV-7
E131 / VPP-6	*Draft Policy and Discussion on VPP*	Anon and undated (most recent reference 2016). 40 pp. Translation provided by BAPHIQ 2020/01/07.	I-1.B, I-2.B III-5
E132	*Introduction to PulseNetTaiwan*	BAPHIQ December 2019	I-7.A
E133	*Food Safety Monitoring Program-* *Internal Audit Operation Procedures*	TFDA undated	I-7.A
E134	*Replies to e-mail dated 23 November 2019*	BAPIQ 2020/01/07	I-1.B, I-2.B, III-5
E135	*Replies to e-mail dated 03 December 2019*	BAPIQ 2020/01/07	I-1.B, I-2.B, III-5
E136	*Table of Personnel in reference to VPP categories in Chinese Taipei*	BAPHIQ VPP-18 2019/11/07	I-1.B, I-2.B, III-5
E137	*Regulations for the Senior and Junior PTNE of Veterinary Personnel*	BAPHIQ. Amended Oct. 18th 2006	I-1.B, I-2.B, III-5
PAA1	*Locked drug cabinet at Taipei Zoo*	Ana Afonso, April 2019	II-8
PAA2 &3	*Drug storage and records at private veterinary clinic*	Ana Afonso, April 2019	II-8

PAA4	*Transit Document from auction to slaughter point*	Ana Afonso, April 2019. Nantou pig auction market.	II-7.B
PAA5	*Custom's seal for shipping containers*	Ana Afonso, April 2019 #3533	II-3
PAA6	*Checklist for poultry slaughter inspections*	Ana Afonso, April 2019 #3495	II-7.b
PAA7	*On line application for import permit*	BAPHIQ web site Ana Afonso, April 2019 #3277	II-3

Appendix 7: Organisation of the OIE PVS evaluation of the VS of Chinese Taipei

Assessors Team:

- Team leader: Dr. Barry Stemshorn
- Technical expert: Dr. Ana Afonso
- Observer/Trainee: Dr. Thanawat Tiensin

References and Guidelines:

- Terrestrial Animal Health Code (especially Chapters 3.1. and 3.2.)
- OIE PVS Tool for the Evaluation of Performance of VS
  - → Human, financial and physical resources,
  - → Technical capability and authority,
  - → Interaction with stakeholders,
  - → Access to markets.

Dates: 15-26 April 2019

Language of the report: English

Subject of the evaluation: VS as defined in the Terrestrial Animal Health Code

- Not Inclusive of aquatic animals
- Inclusive of other institutions / ministries responsible for activities of VS

Activities to be analysed: All activities related to animal and veterinary public health:

- Field activities:
  - → Animal health (epidemiological surveillance, early detection, disease control, etc)
  - → quarantine (all country borders),
  - → veterinary public health (food safety, veterinary medicines and biological, residues, etc)
  - → control and inspection,
  - → others
- Data and communication
- Diagnostic laboratories
- Research
- Initial and continuous training
- Organisation and finance
- Other to be determined…

Persons present and sites visited: see Appendix 3

Procedures:

- Consultation of data and documents
- Field trips subject to national circumstances
- Interviews and meetings with VS staff and stakeholders,
- Analyse of practical processes

Provision of assistance by the evaluated country

- Completion of missing data as possible
- Translation of relevant document as possible
- Administrative authorisation to visit designated sites to extent possible
- Logistical support if possible

Reports:

- a fact sheet or PowerPoint will be presented at the closing session
- a report will be sent to the OIE for peer-review no later than one month after the mission

- the current levels of advancement with strengths, weaknesses and references for each critical competence will be described,
- general recommendations may be made in agreement with the VS.

Confidentiality and publishing of results

The results of the evaluation are confidential between the country and the OIE and may only be published with the written agreement of the evaluated country.