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Tool for the evaluation of Performance of Veterinary Services

OIE PVS Tool



**Human, Physical
and Financial
Resources**

**Technical
Authority and
Capability**

**Interaction
with
Stakeholders**

**Access
to
Markets**

January
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Belize

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OIE - PVS EVALUATION REPORT
OF THE
VETERINARY SERVICES OF

Belize

January 14 - 25, 2008

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May 14-18, 2009

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List of acronyms, abbreviations and/or special terms

AI	Avian Influenza
BAHA	Belize Agricultural Health Authority
BLPA	Belize Livestock Producers' Association
CE	Continuing Education
CIL	Central Investigations Laboratory
CSF	Classical Swine Fever
CVL	Central Veterinary Laboratory
CVO	Chief Veterinary Officer
DVS	Director of Veterinary Services – Chief Veterinary Officer (CVO)
FAO	Food and Agricultural Organization
FMD	Foot and Mouth Disease
HPAI	Highly Pathogenic Avian influenza
HR	Human Resources
IDB	Inter-American Development Bank
MAF	Ministry of Agriculture and Fisheries
MOH	Ministry of Health
MOU	Memorandum of Understanding
MI	Meat Inspection
NEMO	National Emergency Management Organization
OECD	Organization for Economic Cooperation and Development
OIE	World Organisation for Animal Health
OIE-PVS	OIE Performance of Veterinary Services Evaluation Tool
OIRSA	Organismo Internacional Regional de Sanidad Agropecuaria
PAHO	Pan American Health Organization
QA	Quality Assurance
RA	Risk Analysis
SPS	Sanitary and Phytosanitary
VS	Veterinary Service(s)
VPH	Veterinary Public Health
VSB	Veterinary Statutory Body (see OIE Code definition)
WTO	World Trade Organization

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PART I: EXECUTIVE SUMMARY

I.1 Introduction

Following a request to the OIE from the Government of Belize, an evaluation of the veterinary services of Belize based on the *OIE-PVS (Performance of Veterinary Services)* method was conducted January 14-25, 2008 and May 14-18, 2009 by three independent OIE-approved evaluators.

The evaluation began with meetings with the Chief Executive Officer of the Ministry of Agriculture and Fisheries, the Managing Director of the Belize Agricultural Health Authority, and the Director of the Animal Health Division (Chief Veterinary Officer), followed by meetings with senior staff in the headquarters of BAHA, and the Ministries of Agriculture and Fisheries, Finance and Health and the National Emergency Management Organization.

The OIE Team visited the public and private sector sites and institutions in urban and rural areas and met with government officials, veterinarians, and livestock and aquaculture producers.

The initial mission concluded in a meeting with public and private sector stakeholders on January 25, 2008 at which the overall findings were discussed. The supplemental mission concluded with a full day meeting at the Central Farm, Cayo, on May 18th, 2009 during which preliminary findings and ratings for each of the critical competencies were discussed with the Chief Veterinary Officer and his senior staff.

I.2 Key findings of the evaluation

I.2.A *Human, physical and financial resources*

BAHA employs a small cadre of well trained and respected veterinarians and technical personnel whose work is reasonably well distributed by function and geography to provide essential animal health and food safety services. There are issues to resolve in providing adequate coverage in the South where there is no dedicated veterinarian and to address growing workloads in the North. Given the limited number of staff a strategy of “multi-tasking” is required to cover all functions that must be exercised. This precludes a high degree of specialization in areas such as epidemiology and risk assessment. Looking to the future, nationals of Belize continue to study veterinary medicine abroad. The “para-veterinarians” and other technical personnel employed by BAHA are also well trained and supervised. On the other hand, “para-veterinarians” operating on a private basis in small communities have irregular training and are not currently overseen or sanctioned by the Veterinary Surgeon’s Board.

BAHA is a well managed organization. It has up-to-date and clear job descriptions and uses competency-based recruitment procedures. Performance evaluations are conducted semi-annually and the results influence salary increments. This said, there was some indication that merit may not always be the determining factor in the promotion of personnel to key positions.

Continuing education is supported through participation in technical and management training

opportunities. Staff have good internet access and computer literacy. A formal process is needed to link decisions on continuing education to performance evaluations and operational priorities.

Technical independence is favoured by BAHA's arm's-length relationship to its Minister. However members of the BAHA Board may find themselves in conflicts of interest and some staff have felt pressured by commercial interests on import decisions. The former issue will be addressed in part by proposed amendments to BAHA's legislation requiring Directors to disclose and reclude themselves from potential conflicts. A code of conduct is needed on potential for conflicts of interest for veterinarians employed by BAHA who operate private veterinary practices.

The current CVO was in office prior to the formation of BAHA in 2000. Programs and policies have remained relatively stable, changing as appropriate to meet evolving requirements.

The structure of BAHA and the cooperative attitudes that the Agency has fostered favour coordination amongst its Animal Health, Food safety and Quarantine programs. There is also good coordination amongst BAHA, NEMO, Customs, MAF and MOH on emergency planning, border control and other issues. Action is needed to consolidate meat inspection services under BAHA, to clarify the role of the MOH with respect to meat inspection and food safety, and to strengthen relationships between BAHA and the Fisheries Department (MAF) with respect to aquaculture.

BAHA enjoys good physical facilities with a few notable exceptions (aging fleet, inadequate equipment maintenance, residue laboratory inoperable due to building). It has a stable core budget allocation from the Government of Belize (1.1 million \$Belize per year on average from 2004 to 2008) plus significant revenues from fees for service (2.2 million \$Belize in 2008-9). Programs which primarily serve the public interest appear to be under-resourced due to the high dependence on fees for service.

A new Biosecurity Fund to fund emergency actions is proposed in a draft BAHA Bill to update the legislation that created BAHA. The Minister "may" approve compensation when warranted.

BAHA received significant funding from IDB when it was created and a further investment is under consideration in collaboration with MAF, FAO and IDB under a broad sectoral strategy.

1.2.B Technical authority and capability

Laboratory support is available from two small, well run laboratories in Belize while tests for other diseases are done at international laboratories. A residue testing laboratory has been out of operation for an extended period. As new disease control activities are undertaken corresponding domestic laboratory services will be needed. There is a need for a formal laboratory quality assurance program.

Animal health risk assessments are generally done in accordance with OIE norms and guidance. Capacity is limited by the small size of the organization that limits specialization.

BAHA has a well structured quarantine service that manages border controls for animal and plant health and food safety at several ports of entry. Procedures are well documented. Officials

acknowledge illegal movement across some borders. BAHA personnel at ports of entry face growing demands that will require addition of staff and/or the training of Customs personnel.

Passive surveillance is conducted for a number of livestock and poultry diseases. Active surveillance has been conducted periodically on CSF, FMD and AI.

Good systems and partnerships are in place for early detection and emergency response and simulation exercises have been conducted. Response capacity is limited by the size of institutions.

While the skills and most of the required legal authorities are in place, there are at present no national disease control or eradication programs. This is likely to change as the livestock and agriculture industries grow in size and sophistication. The current veterinary services of BAHA provide a sound platform on which to build future programs.

BAHA has the expertise and legal authority to play a strong role in food safety promotion and oversight from “gate to plate”. It is essential to clarify the respective roles and responsibilities of BAHA and the MOH especially with respect to the delivery of meat inspection at the local level. A model is suggested under which the Minister of Health would be responsible for the setting of food safety standards and for conducting audits to assure that these standards are achieved while BAHA under the Minister of Agriculture and Fisheries would deliver all inspection services.

Belize has adequate authority to register and control the use of veterinary drugs but its requirements are not being implemented. There is a need to exert control over the sale and use of powerful antibiotics and other veterinary drugs by requiring prescriptions issued by registered veterinary surgeons. BAHA officials are consulting stakeholders on how to address the issue.

A comprehensive residue testing program is operating for products of aquaculture exported to the European Union but there is insufficient funding to foods for domestic markets.

Considering its size and resources, BAHA is doing an excellent job of keeping abreast of new and emerging issues and scientific advances.

1.2.C Interaction with stakeholders

BAHA’s effective networks, the small size of the country and a number of initiatives favour good communications. Given the breadth of its activities BAHA needs a dedicated communications unit.

There are a number of venues for stakeholder engagement including the participation of selected stakeholders on BAHA’s Board of Directors, a multi-stakeholder Zoonoses Committee, sectoral food safety working groups and an annual SPS workshop.

Belize is active in key international fora including OIE, CODEX, WTO (SPS), with its current CVO serving in a regional executive capacity in the case of OIE.

There are currently no accreditation programs for private veterinarians or laboratories. Proposed amendments to the legislation under which BAHA operates would provide the required authority

for this approach which could prove useful in several ways.

The Belize Veterinary Surgeon's Board is established in law and has a reasonable degree of autonomy. The VSB should address the issue of non-registered "para-veterinarians" in small communities and more fully exercise its mandate to ensure the quality of veterinary practice.

BAHA has legal and administrative authorities to enter into partnerships and conduct joint programs with stakeholders and has done so in several instances.

1.2.D Access to markets

BAHA has a broad and modern legislative framework. Updates to the legislation are in preparation to further strengthening key areas. Unfortunately resource limitations constrain BAHA's ability to fully implement some provisions of the legislation.

BAHA's quarantine service provides inspection and enforcement action. There are some deficiencies with respect to application and enforcement of other regulations.

Belize has adopted a number of Codex and OIE standards, guidelines and codes of practice and BAHA officials review and participate in the development of standards at the regional and international levels.

BAHA has the authorities and competencies required to perform certification to the highest international standards for industries performing at that level. It has and applies equivalency authorities as illustrated in negotiations with Mexico.

While there is at present no national traceability system proposed amendment to BAHA's legislation would create the required authority.

Belize provides regular and timely notifications to OIE and stakeholders are notified of significant changes to trade requirements. The flow of information to stakeholders could be enhanced by a dedicated communications unit.

There are no disease control zones at this time and it is not apparent that this would be a cost-effective strategy given the size and geography of the country. The aquaculture (and possibly the poultry industry) has operations that might be amenable to and benefit from a compartmentalization approach.

I.3 Summary of OIE/PVS findings of Belize

PVS results summary of Belize	Global	Comments
I. HUMAN, PHYSICAL & FINANCIAL		
I-1. Professional and technical staffing		
I.1.A. Veterinarians and other professionals (university qualification)	4	HQ and field positions staffed with qualified personnel; effective HR management with performance evaluations tied to salary increments; promotion may be based on factors other than merit; need further staffing in South and to address growing workloads in the North
I.1.B. Veterinary paraprofessionals and other technical personnel	4	Most HQ and field positions are filled with qualified personnel; effective HR management as above; will need more staff in South, the North, in laboratories and at border points as programs and industry grow in scope and sophistication
I-2. Competencies of vets and technical personnel		
I.2.A. Professional competencies of veterinarians	3	highly competent personnel; students in veterinary training outside of Belize; multitasking needed but limits specialization
I.2.B. Competencies of technical personnel	4	specialized training, some on the job and through continuing education, includes laboratory testing or meat inspection
I-3. Continuing education	2	technical training through international agencies; no structured CE program; BAHA offers management training
I-4. Technical independence	3	BAHA structure reduces risk of inappropriate political influence; Board recently staffed top job by merit; potential conflicts of interest by Board members to be addressed by updated law; quarantine staff report commercial pressures; policy needed re potential conflicts of interest by BAHA veterinarians in private practice; OIE obligations are respected
I-5. Stability of structures and sustainability of policies	4	BAHA has been in place since 2000 and continues under new government; frequent turnover of Managing Director has been a challenge but CVO pre-dated BAHA as do most animal health policies and programs
I-6. Coordination capability of the sectors and institutions of the VS	3	Size and structure favours coordination amongst VS functions; good working level coordination with MOH, Customs and NEMO; Need to clarify division of labour with MOH on food safety generally and meat inspection in particular
I-7. Physical resources	3	Excellent HQ facilities, IT and tele-communications; good transport but need fleet renewal; food residue laboratory not functional due to delayed physical repairs renovations; need better incinerator maintenance at ports of entry
I-8. Funding	3	Over 50% of BAHA budget comes from fees for services; limited government funding constrains work for “public good” (e.g. domestic food residue testing and border control); recommend review of funding policies
I-9. Contingency and compensatory funding	2	BAHA has authority to reallocate funds; New BAHA Bill would create a “Biosecurity Fund” for use under conditions to be defined through regulations; compensation “may” be approved by Minister under current legislation
I-10. Capability to invest and develop	3	multiple ad hoc investments by donor agencies; possible IDB investments are under discussion
II. TECHNICAL AUTHORITY/CAPABILITY		
II-1. Veterinary laboratory diagnosis	4	Well trained technicians with facilities, equipment and records in good order; regularly use international laboratories; Food residue laboratory not functional due to building problems so limited testing is currently done outside the country
II-2. Laboratory quality assurance	2	Limited formal laboratory QA beyond individual test controls; recommend training and action plans
II-3. Risk analysis	3	Animal health RAs follow OIE norms; capacity limited by small size and need for multi-tasking by officers

II-4. Quarantine and border security	3	Trained staff; dedicated organization; good documentation; incinerators need better maintenance; BAHA personnel at borders are facing growing workloads; acknowledged illegal trans-boundary movement is an issue to address
II-5. Epidemiological surveillance		
II.5.A. Passive epidemiological surveillance	3	most disease surveillance is passive; effective field networks for reporting if suspect cases; regular OIE reporting
II.5.B. Active epidemiological surveillance	2	Active surveillance under international projects has included CSF, FMD and AI; No active surveillance at this time
II-6. Early detection and emergency response	4	field network, sampling systems and response plans in place; NEMO actively engaged; simulation exercises conducted Port arrival and public awareness (forms, posters); Limited resources to handle a major outbreak (see I-9)
II-7. Disease prevention, control and eradication	2	Legal authorities in place; Disease prevention promoted; No ongoing control or eradication programs (inadequate staff and budgets); sporadic time-limited control efforts under donor projects
II-8. Veterinary public health and food safety	3	Authorities and expertise are in place for a strong role in food safety; division of labour between BAHA and MOH should be clarified by renewal of the lapsed BAHA/MOH MOU and passage of the BAHA Food Safety Bill; Insufficient slaughter inspectors; MOH and BAHA both do MI to different standards
II-9. Veterinary medicines and veterinary biologicals	2	Good legal authority to control veterinary drugs and vaccines but limited capacity to implement these regulations: e.g powerful antibiotics are widely sold without prescription; there is little if any in-country verification of product quality
II-10. Residue testing	2	BAHA residue test laboratory not functional – tests done overseas thus increasing costs and limiting coverage
II-11. Emerging issues	3	OIE information checked and shared daily; preparation of selected plans – eg AI with stakeholders, and regional BSE surveillance effort; Animal welfare – new BAHA Bill provides authorities
II-12. Technical innovation	2	Good awareness but acquisition of new technologies limited by funding (eg luggage scanners at border points)
III. INTERACTION WITH STAKEHOLDERS		
III-1. Communications	2	Small size helps; no communications expert or focal point for BAHA
III-2. Consultation with stakeholders	4	Stakeholders sit on BAHA Board; multiple stakeholder working groups; opportunities to strengthen engagement
III-3. Official representation	3	Director of Animal Health (CVO) serves on OIE regional executive; staff have access to and use OIE tools
III-4. Accreditation/authorisation/delegation	1	Accreditation programs for private veterinarians and laboratories could be useful; new BAHA Bill would create authority
III-5. Veterinary Statutory Body (VSB)	3	VSB balances autonomy with national interests (3/5 Board members selected by veterinarians; Minister has controlling authorities; needs funds to fully exercise its mandate; should address issue of un-registered “para-professionals
III-6. Participation of producers and other stakeholders in joint programmes	4	BAHA has authorities for joint programs; several joint programs implemented or under development including negotiated designs for user-funded services
IV. ACCESS TO MARKETS		
IV-1. Preparation of legislation and regulations, and implementation of regulations	3	BAHA Act and regulations are modern and comprehensive; resources constrain full implementation; updates are in progress on overall governance, animal health and food safety; BAHA would benefit from in-house legal counsel
IV-2. Stakeholder compliance with legislation and regulations	2	Authorities exist to require compliance and enforce penalties; “quarantine” service has a track record but only at port of entry; in other areas compliance promotion, investigation and enforcement is ad hoc in absence of dedicated teams
IV-3. International harmonisation	4	OIE and Codex standards are generally used; BAHA’s Director Animal Health (CVO), Director of Food Safety and SPS coordinator are active in the review of international standards at regional and international levels
IV-4. International certification	3	authority and skills exist e.g.aquaculture products meet EU norms; meat inspection and drug/residue control need work
IV-5. Equivalence and other types of sanitary agreements	3	BAHA has and uses equivalency authorities – e.g. mutual recognition of veterinary services with Mexico; potential for increased application under SPS initiatives of CARICOM and other agreements

IV-6. Traceability	2	No national traceability program; new BAHA Bill would provide authority; some private sector initiatives (beef; fish)
IV-7. Transparency	4	Regular notifications to OIE; information flows to/from stakeholders; could be enhanced by a dedicated Communications unit
IV-8. Zoning	2	None now but could be done if needed – perhaps not warranted given size and geography of the country
IV-9. Compartmentalisation	2	No formal compartments at this time; aquaculture (and possibly the poultry) operations might meet requirements

I.4 Summary of conclusions

The veterinary services of Belize are fortunate to enjoy the support and operating environment provided by the Belize Agricultural Health Authority (BAHA). This well managed and highly professional organization was created under modern legislation in 2000 to provide animal health, plant protection, aquaculture and food safety inspection and quarantine services. It deservedly enjoys a strong reputation amongst its stakeholders.

Considering its small size (total of 94 staff including 5 veterinarians) BAHA delivers a remarkable range of high quality services covering all major roles of a national veterinary service. Many of the findings and suggestions that we will make for improvement reflect constraints inherent in the small size of the organization and/or policies that leave it highly dependent on funding through fees for service that account for over 50% of the total budget of BAHA. We anticipate that there will be opportunities to address these constraints to some extent as the economy of Belize and its aquaculture, poultry and livestock sectors grow in size and sophistication under emerging development strategies. BAHA offers an excellent platform for this development, one in which the Government of Belize and its partners can invest with confidence.

Human resources are managed in a professional manner with proper job descriptions, staffing procedures and performance evaluation. Training and development is also encouraged and we were pleased to note that this extends beyond technical and scientific matters to include the development of management skills. Investments in continuing education could be more formally managed by creating linkages to annual performance evaluations and to the priorities of the Agency.

In order to maintain and build upon its strengths BAHA must ensure that its future leaders are carefully selected and nurtured. In the near future BAHA will need to elect a successor to the present Director of Animal Health (CVO) who has made a very substantial contribution in fostering the afore-mentioned strengths of the national veterinary service. It will be important that this and other senior appointments continue to be made on the basis of merit. While this appears to be the intention of the current Managing Director and BAHA Board, a high level statement of principles ideally enshrined in law should institutionalize this commitment.

It will be important to ensure that there is a sufficient number of students training as veterinarians to meet future needs. This is a particular challenge as the training must be obtained outside of Belize and thus might be part of a national skills strategy to develop professionals and leaders for the future.

Belize has clearly demonstrated the capacity of its industry and veterinary services to build production systems of the highest standard with respect to product quality and food safety. Nevertheless some serious deficiencies were noted in areas that are not directly funded by export-driven revenues. This signals a weakness in funding from the government treasury which provides less than 50% of BAHA's total budget. We recommend that this matter be carefully reviewed.

In addition to seeking an increase in core funding the report recommends other management and

legal initiatives including a clearer division of labour with the Ministry of Health that could address some of the deficiencies we noted.

PART II: CONDUCT OF THE EVALUATION

At the request of the Government of Belize, the Director General of the OIE appointed an independent OIE-PVS initial team consisting of Dr. Linda Logan (Team Lead), Dr. Recaredo Ugarte (Technical expert) and then subsequently Dr. Barry Stemshorn (Special Expert) to undertake an evaluation of the veterinary services of Belize. The evaluation was carried out using the OIE standards contained in Chapters 3.1. and 3.2. of the OIE Terrestrial Animal Health Code, using the 2008 OIE PVS Tool to guide the procedures.

The evaluation was carried out on January 14-25, 2008 and May 14-18, 2009.

Figure 1: Map of Belize (regional context)

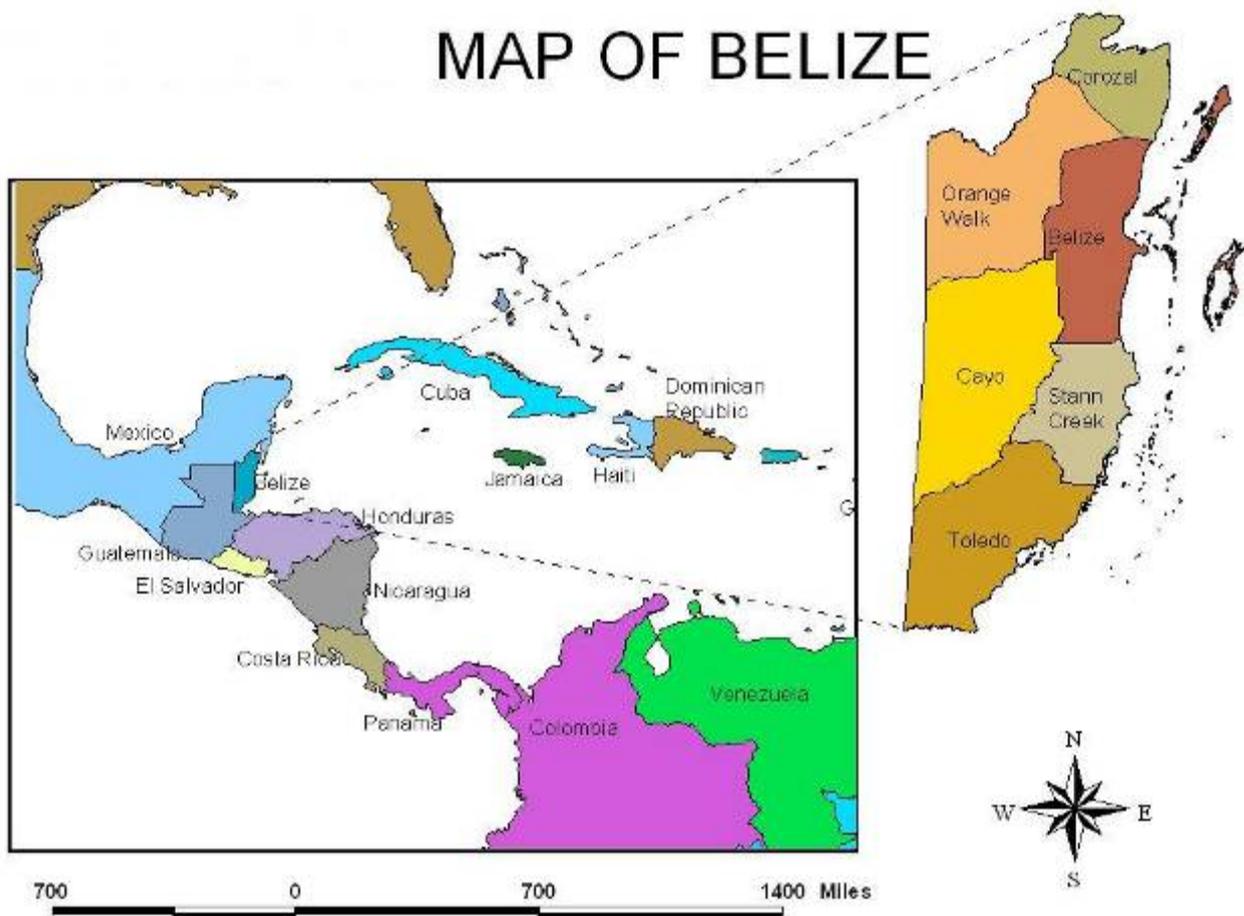


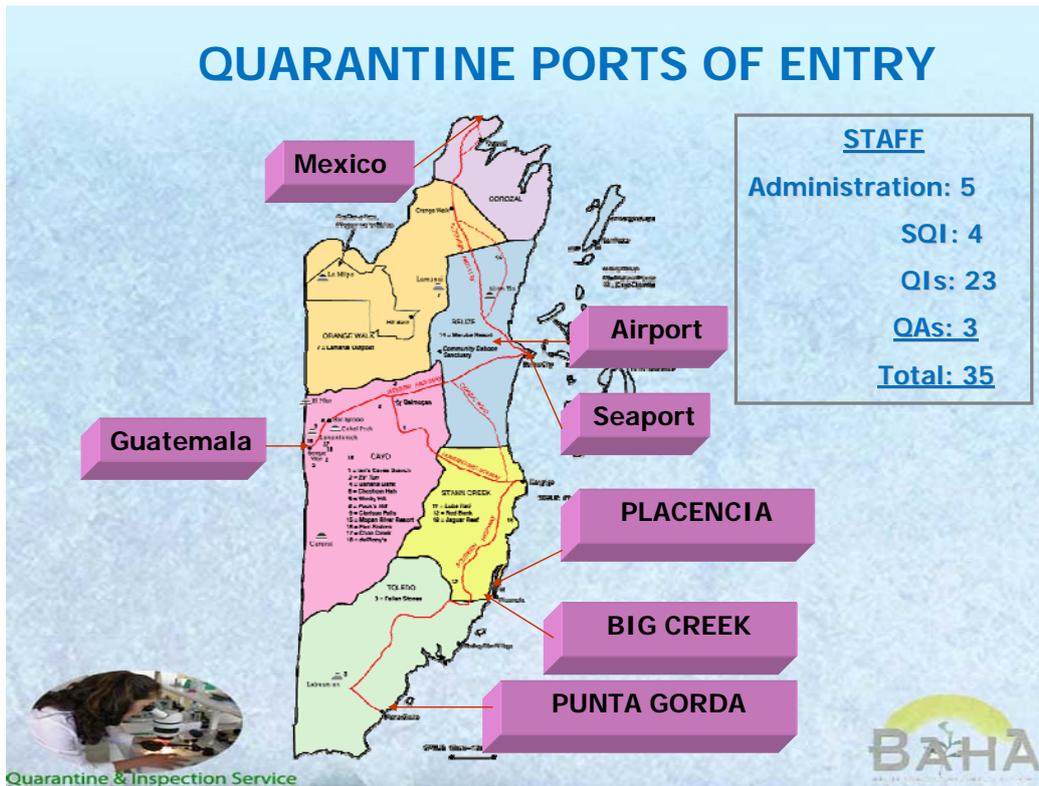
Figure 2: Map of Belize
(Administrative Districts and Highways)

BELIZE

Highways of Belize



Figure 3: Map of Belize (Ports of Entry)



II.1 The OIE PVS Tool

To help countries to establish their current level of performance, form a shared vision, establish priorities and carry out strategic initiatives, the OIE has developed an evaluation tool called the *OIE Tool for the Evaluation of Performance of Veterinary Services (OIE PVS Tool¹)* 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 41 *critical competencies*, for each of which five qualitative levels of advancement are described. For each *critical competency*, a list of suggested indicators was used by the OIE Evaluation 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* and the reader is encouraged to consult that document to obtain an understanding of the context in which the Tool is used.

II.2 Objectives and scope of the evaluation

At the request of the Government of Belize, the Director General of the OIE appointed an independent OIE Evaluation Team comprising Drs. Linda Logan, Recaredo Ugarte (PVS Initial Team) and Barry Stemshorn (Special Expert) to undertake and complete an evaluation of the veterinary services of Belize.

The provisions of the *OIE Terrestrial Animal Health Code (the Terrestrial Code)*, specifically Chapter 3.1. on Veterinary Services and Chapter 3.2. on the Guidelines for the Evaluation of Veterinary Services set the framework for this evaluation. Relevant *Terrestrial Code* references are quoted for each critical competency.

For the purposes of this evaluation, the *Veterinary Services* includes The Belize Agricultural Health Authority (Department of Animal Health, Food Safety and Quarantine) and the Ministry of Health for its collaboration with BAHA on zoonotic diseases and food safety. Aquatic animal health and food safety systems were included.

This report identifies the strengths and weaknesses of the veterinary services of Belize as compared to the OIE criteria for performance. The report also makes some general recommendations for actions to improve performance.

The objective and scope of the evaluation are detailed in Appendix 1.

¹ Available at http://www.oie.int/eng/oie/organisation/en_vet_eval_tool.htm?e1d2

II.3. Country information² (geography, administration, agriculture and livestock)

Belize located in Central America bordering the Caribbean Sea, between Guatemala to the West and Mexico to the North. There are 516 km of land border (Guatemala 266 km and Mexico 250 km) and 386 km of coastline that features many cays and the world's 2nd largest barrier reef. It is the only country in Central America without a coastline on the Pacific Ocean. With a total area of 22, 966 sq km it is slightly smaller than Massachusetts.

The population density of Belize is low with about 308,000 people (July 2009), but the population growth rate is relatively high for the region at about 2.2% (2009 est.)³

Belize is a parliamentary democracy and a member of the Commonwealth.

The official language is English, but Spanish is the most commonly spoken.

The economy is small and largely in the hands of private enterprise. Tourism is the top foreign exchange earner, followed by exports of marine (including aquaculture) products and then citrus, cane sugar, bananas and garments. Agriculture accounts for 29% of GDP and employs about 20% of the labour force (2005). About 3% of the land is arable and 1.4% is devoted to permanent crops.

A 2006 FAO report (Appendix 4 reference EM 3) described livestock production as follows:

There is a growing *commercial livestock sector* based on moderately large family and/or corporate farms and processing units that are integrated with other farming enterprises such as crop production. Intensive poultry, beef and dairy cattle and pig production predominate in this commercial sector. The several Mennonite communities and other larger farming companies predominate in this non-fish livestock sector. The commercial livestock sector is relatively well organized, production figures are well documented and BAHA focuses most of its services on meeting the needs of this sector. Livestock producers and processors are generally well informed and aware of biosecurity issues, have invested in hazard analysis critical control point (HACCP) practices and they carry out the majority of the preventive vaccinations and treatments on their own animals. Quality assured inputs (veterinary remedies, vaccines and feeds) are readily available at retail outlets.

The *semi-commercial or smallholder livestock sector* is based on individual household units in predominately rural village settings. Livestock husbandry for the most part is not intensive and native forages are predominately grazed. Most smallholders raise a few (2 – 6) confined pigs fed balanced commercial mixed rations. A minority of village smallholder-produce pigs are kept under free range conditions plus fed household food wastes. Formal breed improvement is not practiced in the free range pigs while improved breeds are raised by smallholders raising confined pigs. Most of the poultry in this sector are confined only at night, fed some commercial balanced rations and raised for eggs. Spent (old) hens are also procured from the commercial poultry raisers for consumption and trading with neighbouring countries.

Commercial livestock producers and processors for the most part aim to meet the production demands for the domestic market including the growing tourist industry needs. Domestic

² Based largely on “The World Factbook - Belize” accessed 26/04/2009 from <https://www.cia.gov/library/publications/the-world-factbook/print/bh.html>

³ From Wikipedia accessed 26/04/2009 at <http://en.wikipedia.org/wiki/Belize>

production of livestock commodities, particularly poultry meat (+3.6%) and eggs (+4.1%), turkeys (+7.6%), milk (+1.3%), pork (+3.3%) and honey (+0.8%) all rose from 1990 to 2000. Human population in Belize rose 2.6 percent annually over most of the 1990s (“Placing People at the Centre of Our Development”, National Human Development Report, 1998, UNDP). Red meat production dropped over these 10 years (-0.6%) (see Appendix 3, Tables 1 and 2). The production and export of aquaculture products has grown by double digit rates over the last five years.

This FAO report also provided the following overview of fisheries and aquaculture:

The contribution of fisheries, including aquaculture, to GDP was five percent for 2003, a significant level considering that the contribution of fisheries to the GDP in the Caribbean was generally less than two percent.

Total export earnings for aquatic products (where shrimp farming contributes 96 percent or US\$ 42.14 million of export earnings) were estimated at US\$53.5 million in 2004, second only to sugar cane which earned US\$ 57 million. This represents 3.64x more than the amount earned from exports of traditional fishery products.

In terms of production, total capture fisheries production for 2005 was 1.3 million lbs; total aquaculture shrimp (*Litopennaeus vannamei*) production for 2004 was 24.3 million lbs. The main export markets for shrimp are the United States, the European Union and Mexico. As of 2000, Belize is ranked as the 20th among the 50 countries exporting shrimp to the US. Total aquaculture fish production for 2004 was 850 000 lbs, with exported tilapia fillet amounting to 215 888 lbs. In terms of resources for potential aquaculture development, as of 2001, only 14% of over-all area (44 304 acres) is utilized for shrimp aquaculture, while for inland aquaculture, it was estimated to have a potential for generating 675 million Belize \$. There is also huge potential for developing the small-scale aquaculture sector.

Summary table on livestock of Belize

Table 1. Production by Districts (2008)

Species	Belize	Cayo	Corozal	O/Walk	S/Creek	Toledo	Total 2008	Total 2007
BEEF	4,250	30,250	2,215	34,145	4,163	6,305	81,328	72,826
DAIRY	527	1,500	250	1,250	12	53	3,592	3,914
SWINE	1,309	4,025	800	5,050	1,018	944	13,146	12,403
SHEEP	1,142	3,081	705	3,700	642	641	9,911	9,645
Poultry		4,602,361	209,293	3,465,564			8,277,218	8,449,728

Table 2. VLU by Districts (2008)

Specie	Belize	Cayo	Corozal	O/Walk	S/Creek	Toledo	Total 2008
BEEF	4,250	30,250	2,215	34,145	4,163	6,305	81,328
DAIRY	527	1,500	250	1,250	12	53	3,592
SWINE	262	805	160	1,010	204	189	2,630
SHEEP	114	308	71	370	64	64	991
POULTRY		46,023	2,093	34,656			82,772
Total:	5,153	78,886	4,789	71,413	4,443	6,611	171,313

*VLU: veterinary livestock unit is an equivalence unit used to estimate the annual cost of veterinary care: Cattle = x 1.0; Swine = x 0.2; Sheep = x 0.1; Poultry = x 0.01

II.4 Data requested and provided

The Special Expert had access to considerable documentation in electronic format that was collected during the initial team visit. He also was provided with notes prepared by the initial team in January 2008 on each of the critical competencies – strengths, gaps and potential priority actions (Appendix 6).

A list of the most helpful documents received before and during the second PVS Evaluation mission by the Team is provided in Appendix 4. These documents are referenced in Appendix 4 to related critical competencies to help justify/explain the findings on levels of competency.

II.5 Organisation of the evaluation

The evaluation began with meetings with the Chief Executive Officer of the Ministry of Agriculture and Fisheries, The Managing Director of the Belize Agricultural Health Authority (BAHA), and the Director of the Animal Health Division (Chief Veterinary Officer). These were followed by meetings with senior staff in the headquarters of BAHA, and the Ministries of Agriculture and Fisheries, Finance and Health (including food safety) and the National Emergency Management Organization.

The OIE Evaluation Team visited sites and institutions of the public and private sectors in the cities and rural areas of Belize and discussed relevant matters with government officials, public veterinarians, livestock and aquaculture producers and other stakeholders.

The initial mission concluded with a meeting involving public and private sector stakeholders on January 25, 2008 at which the overall findings of the evaluation (Appendix 5) were discussed with government officials and private sector stakeholders.

The supplemental mission concluded with a full day meeting on May 18th, 2009 at the Central Farm, Cayo, at which the preliminary findings and ratings for each of the critical competencies were discussed with the CVO and his senior staff.

Appendix 3 contains the list of the locations and facilities visited and the main contacts with whom the Evaluation team held meetings.

II.6 Selection of sites and visits conducted

In order to conduct as broad an evaluation as possible in the time available, the OIE-PVS Team was able to visit five of the six administrative Districts, namely: Cayo, Corozol, Orange Walk, Stann Creek and Toledo. It visited the offices, a laboratory and border posts used by BAHA personnel, visited aquaculture, cattle, poultry and dairy operations, a retail outlet that sells veterinary drugs and a private zoo. It met with representatives and/or producers from the aquaculture, poultry and cattle industries

Appendix 3 provides the detailed list of visited sites and meetings actually conducted.

II.7 Veterinary Services Organisation in Belize

National Veterinary Service

The Belize Animal Health Authority employs all of the official veterinarians in Belize to deliver on its mandate that covers all essential animal and aquatic health, food safety and quarantine functions. The organisation of the VS within BAHA is described in the following organisation charts. Its staffing levels are set out in Table 3. An evaluation of the veterinary service was performed in 2006 by FAO as part of an assessment of biosecurity in Belize (see Appendix 4: reference EM 3).

Figure 4: Organogram of the Belize Agricultural Health Authority

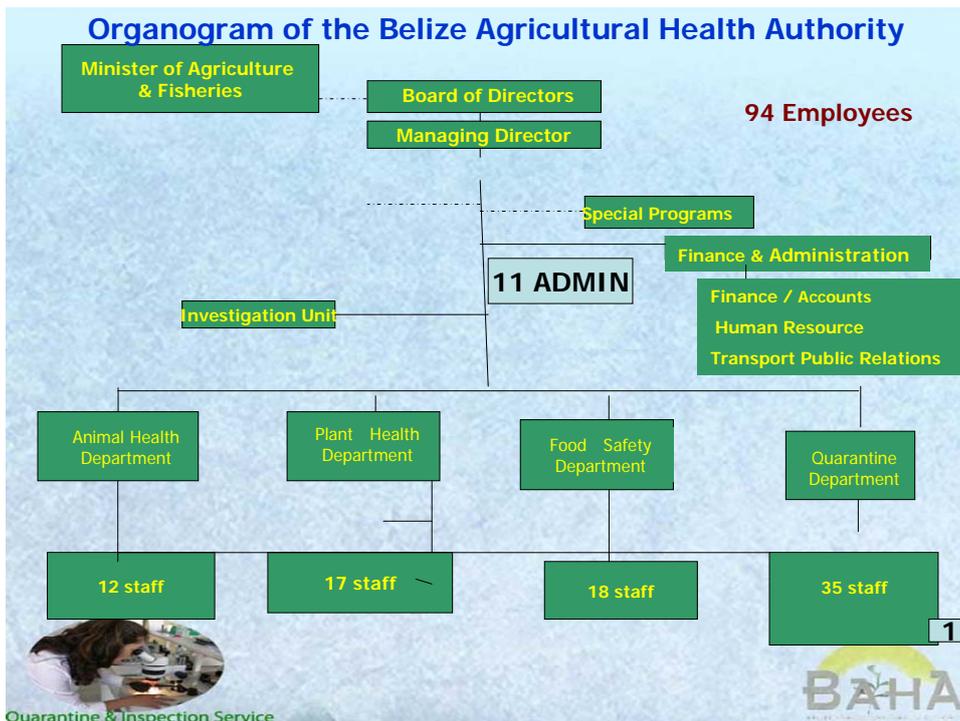


Figure 5: Organogram of BAHA’s Animal Health Department



Belize Agricultural Health Authority
Animal Health Department
Central Farm, Cayo, Belize

Tel: 501-824-4872/99 Fax:501-824-4889 E-mail: bahavs@gmail.com

ORGANOGRAM OF ANIMAL HEALTH DEPARTMENT

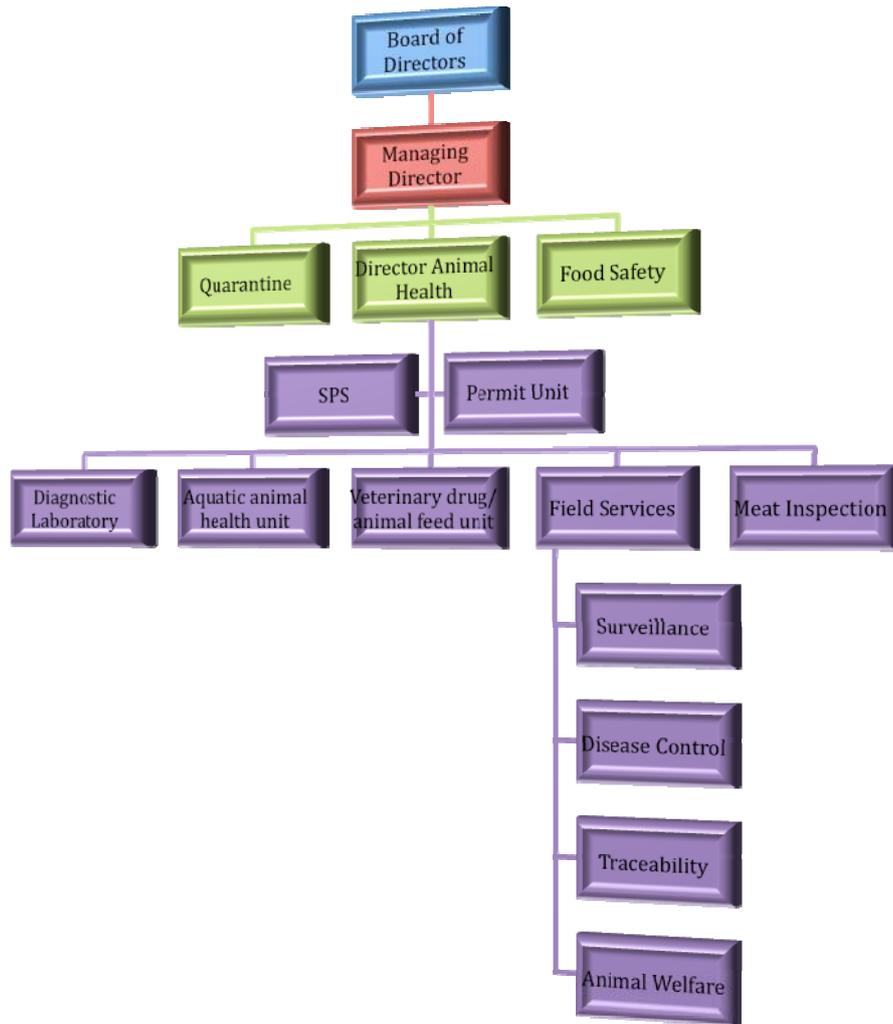


Figure 6: Organogram of BAHA’s Food Safety Department

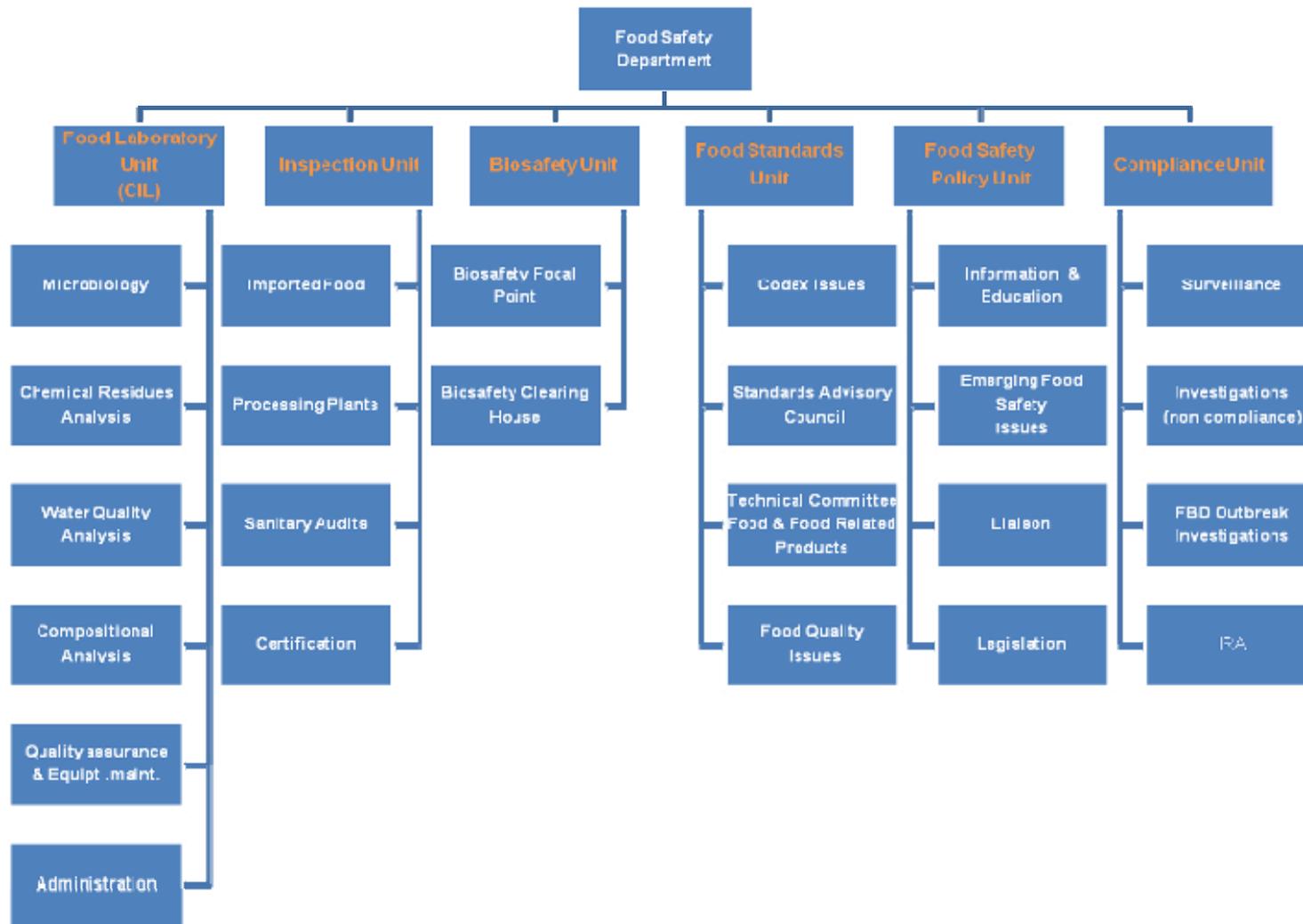


Figure 7: Organogram of BAHA’s Quarantine Department

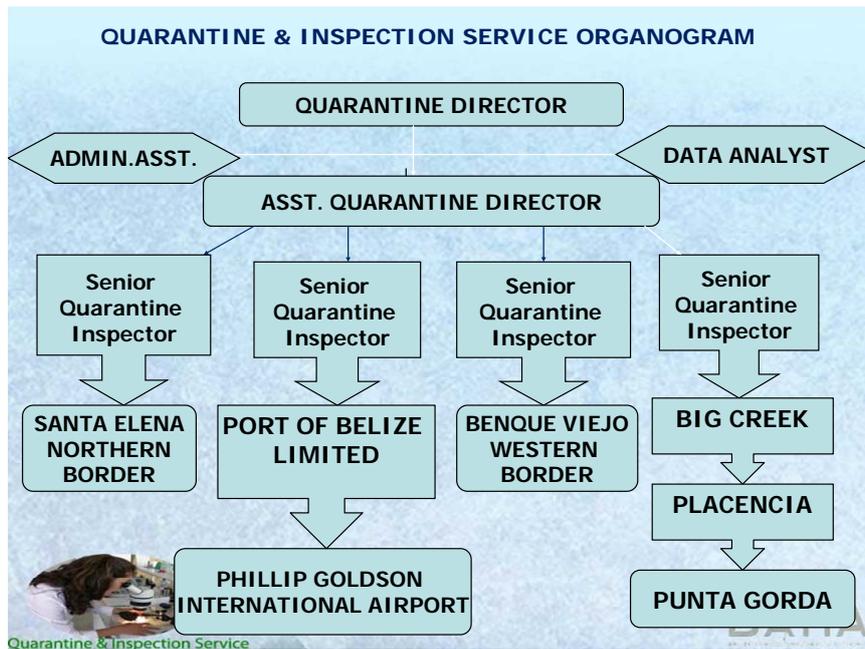


Table 3. VS Staff levels

District	Private Veterinarians	Government Veterinarians	Total veterinarians	Animal Health techs	Food Safety techs	Quarantine techs	LEOS ⁴ techs	Total Techs
Corozol	2	1	3	0	0	10	2	12
Orange Walk	1	0	1	1	3	0	1	5
Belize	7	2	9	2	7	12	1	22
Cayo	6	2	8	3	2	9	1	15
Stann Creek	2	0	2	0	9	2	1	12
Toledo	3	0	3	0	9	2	1	12
Total	21	5	26	6	30	35	7	78

⁴ LEOS = Livestock Extension Officers (Ministry of Agriculture and Fisheries)

II.8 Animal disease situation in Belize

Diseases present in the Country - 2008

Disease	Notifiable	Status	Note
Avian mycoplasmosis (M.synoviae)		Confirmed infection (no clinical disease)	
Bovine anaplasmosis		Clinical Disease	
Bovine babesiosis		Clinical Disease	
Equine infectious anaemia		Clinical Disease	
Equine piroplasmosis		Clinical Disease	
Infec bursal disease (Gumboro)		Clinical Disease	
Newcastle disease		Clinical Disease	
Rabies		Clinical Disease	
Varroosis of honey bees		Suspected (not confirmed)	

Diseases never reported

Disease	Notifiable	Type of surveillance	Note
Abalone viral mortality			
Acarapisosis of honey bees			
African horse sickness			
African swine fever		Targeted Surveillance	
Anthrax			
Aujeszky's disease			
Avian chlamydiosis			
Avian infect. laryngotracheitis		General Surveillance	
Bovine spongiform encephalopathy		General Surveillance	
Brucellosis (Brucella abortus)		General Surveillance	
Brucellosis (Brucella suis)		General Surveillance	
Camelpox			
Caprine arthritis/encephalitis		General Surveillance	
Contagious bov. pleuropneumonia			
Contagious cap. pleuropneumonia			
Contagious equine metritis			
Crayfish plague (Aphanomyces astaci)			
Crimean Congo haemorrhagic fever			
Dourine			
Duck virus hepatitis			
Echinococcosis/hydatidosis			
Epizoot. haematopoietic necrosis			
Epizootic ulcerative syndrome			

Equine rhinopneumonitis		
Equine viral arteritis		
Foot and mouth disease		General Surveillance
Glanders		
Gyrodactylosis (Gyrodactylus salaris)		
Haemorrhagic septicaemia		
Heartwater		
Highly path. avian influenza		General and targeted surveillance
Infect. haematopoietic necrosis		
Infection with Bonamia exitiosa		
Infection with Bonamia ostreae		
Infection with Marteilia refringens		
Infection with Perkinsus marinus		
Infection with Perkinsus olseni		
Infection with Xenohaliotis californiensis		
Infectious hypodermal and haematopoietic necrosis		Targeted Surveillance
Infectious myonecrosis		Targeted Surveillance
Infectious salmon anaemia		
Japanese encephalitis		
Koi herpesvirus disease		
Low pathogenic avian influenza (poultry)		Targeted Surveillance
Lumpy skin disease		
Maedi-visna		General Surveillance
Malignant catarrhal fever (Wildebeest only)		
Myxomatosis		
Nairobi sheep disease		
Nipah virus encephalitis		
O. w. screwworm (C. bezziana)		
Ovine epididymitis (B. ovis)		General Surveillance
Peste des petits ruminants		
Porcine reproductive/respiratory syndr.		General Surveillance
Pullorum disease		
Q fever		
Rabbit haemorrhagic disease		
Red sea bream iridoviral disease		
Rift Valley fever		
Rinderpest		

Salmonellosis (S. abortusovis)		
Scrapie		General Surveillance
Sheep pox and goat pox		
Small hive beetle infestation		General Surveillance
Spherical baculovirus (Penaeus monodon-type baculovirus)		
Spring viraemia of carp		
Surra (Trypanosoma evansi)		
Swine vesicular disease		
Tetrahedral baculovirus (Baculovirus penaei)		
Theileriosis		
Transmissible gastroenteritis		General Surveillance
Tropilaelaps infestation of honey bees		
Trypanosomosis		
Turkey rhinotracheitis		
Viral haemorrhagic septicaemia		
White spot disease		General Surveillance
White tail disease		Targeted Surveillance
Yellow head disease		

Diseases not reported in 2008

Disease	Notifiable	Last occurrence	Surveillance	Note
American foulbrood of honey bees		Unknown	General Surveillance	
Avian infectious bronchitis		2007		
Bluetongue		Unknown		
Bovine tuberculosis		1991	General Surveillance	
Bovine viral diarrhoea		2002		
Brucellosis (Brucella melitensis)		Unknown	General Surveillance	
Classical swine fever		1988	Targeted Surveillance	
Contagious agalactia		Unknown		
Encephalomyelitis (East.)		2005	General Surveillance	
Encephalomyelitis (West.)		Unknown	General Surveillance	
Enzootic abortion (chlamydiosis)		Unknown		
Enzootic bovine leukosis		Unknown		
Equine influenza		Unknown		
European foulbrood of honey bees		Unknown	General Surveillance	
Fowl cholera		Unknown		
Fowl typhoid		1986		

Inf.bov.rhinotracheit. (IBR/IPV)		2007	General Surveillance
Leishmaniosis		2004	General Surveillance
Leptospirosis		2003	General Surveillance
Marek's disease		Unknown	
Mycoplasmosis (M. gallisepticum)		Unknown	
N. w. screwworm (C. hominivorax)		1994	General Surveillance
Paratuberculosis		1998	
Porcine cysticercosis		Unknown	
Taura syndrome		2006	General Surveillance
Venezuelan equ.enkephalomyelitis		2007	General Surveillance
Vesicular stomatitis		2007	General Surveillance
West Nile Fever		2005	General Surveillance

Diseases for which no Information has been provided.

Disease	Notifiable	Note
Bov. genital campylobacteriosis		
Trichinellosis		
Trichomonosis		
Tularemia		

PART III: RESULTS OF THE EVALUATION

This evaluation identifies the strengths and weaknesses of the veterinary services in Belize.

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

Veterinary Services (VS) are recognised by the OIE as a 'global public good'. OIE Members, recognising the important role and responsibilities of VS, should provide the necessary human and financial resources so that the VS can effectively perform its functions.

This OIE-PVS Evaluation examined the critical competencies within the four fundamental components, listed strengths and gaps and established the current level of advancement for each critical competency. The rationale for deciding these levels of advancement is explained using referenced evidence (see Appendix 6).

Some general recommendations for action are also provided.

The level of advancement is highlighted in grey for each critical competency in the table.

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

This component of the evaluation appraises the institutional and financial sustainability of the Veterinary Services as evidenced by the level of professional/technical and financial resources available and the capacity to mobilize these resources. It comprises ten critical competencies:

Critical competencies

Section I-1	Professional and technical staffing of the Veterinary Services
	A. Veterinary and other professionals (university qualification)
	B. Veterinary para-professionals and other technical personnel
Section I-2	Competencies of veterinarians and veterinary para-professionals
	A. Professional competencies of veterinarians
	B. Competencies of veterinary para-professionals
Section I-3	Continuing education
Section I-4	Technical independence
Section I-5	Stability of structures and sustainability of policies
Section I-6	Coordination capability of the sectors and institutions of the VS
Section I-7	Physical resources
Section I-8	Funding
Section I-9	Contingency and compensatory funding
Section I-10	Capability to invest and develop

Terrestrial Code References:

Points 1-6, 8 and 13 of Article 3.1.2. on Fundamental principles of quality: Professional judgement / Independence / Impartiality / Integrity / Objectivity / General organisation / Procedures and standards / Human and financial resources.

Article 3.2.2. on Scope.

Point 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.

Points 3 and Sub-point d) of Point 4 of Article 3.2.10. on Performance assessment and audit programmes: Compliance / In-Service training and development programme for staff.

Article 3.2.12. on Evaluation of 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	Levels of advancement
<i>The appropriate staffing of the VS to allow for veterinary and technical functions to be undertaken efficiently and effectively.</i>	1. The majority of veterinary and other professional positions are not occupied by appropriately qualified personnel.
A. Veterinary and other professionals (university qualification)	2. The majority of veterinary and other professional positions are occupied by appropriately qualified personnel at central and state / provincial levels.
	3. The majority of veterinary and other professional positions are occupied by appropriately qualified personnel at the local (field) level.
	4. There is a systematic approach to defining job descriptions and formal appointment procedures for veterinarians and other professionals.
	5. There are effective management procedures for performance assessment of veterinarians and other professionals.

Terrestrial Code References (s):

Points 1-5 of Article 3.1.2. on Fundamental principles of quality: Professional judgement / Independence / Impartiality / Integrity / Objectivity.

Points 6 and 13 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.

Strengths:

- Most central and field positions are staffed by qualified veterinarians
- The small cadre of veterinarians is reasonably distributed considering size of country and nature of the industry (Table 3 in Part II.7)
- With only five veterinarians working for BAHA, a strategy of multi-tasking is appropriate, but it limits specialization in areas like risk assessment and epidemiology
- Job descriptions and formal staffing procedures are in place
- Performance evaluations conducted semi-annually influence decisions on annual salary increments
- Current BAHA Board exercised its authority to ensure merit-based staffing of top executive position

Weaknesses:

- Lack of a veterinarian in South (Stann Creek and Toledo Districts) and need for more coverage in the North as the workload grows with testing of cattle for export to Mexico
- Senior BAHA personnel were unable to point to a high level statement of human resource values and principles that would enshrine merit as the basis for selection and promotion of employees. While this appears to be the intention of the current Managing Director and BAHA Board, it would seem appropriate to institutionalize this with a high level statement of principles, and ideally to have it reflected in law as is the case in some countries.

Evidence (references for documents or pictures listed in Appendix 6):

- Table 3 (staff levels)
- job descriptions (E10, E11)
- Report of Performance Appraisal (E12)
- field visits and interviews by PVS Mission team members

General comments or recommendations:

- BAHA Managing Director and Board may wish to create a high level statement (ideally reflected in law) of human resource values to enshrine merit as the basis for staffing and promotion decisions, and to articulate other values (e.g. see point I.4 re conflict of interest). Examples may be available from other countries such as Canada (e.g. HR policies of the Canadian Food Inspection Agency).
- Consider use of accredited private veterinarian to strengthen coverage in the South and the North.
- Will need further coverage in South and North, laboratories and border points as programs and industry grow in scope and sophistication.

I-1 Professional and technical staffing of the Veterinary Services	Levels of advancement
<p><i>The appropriate staffing of the VS to allow for veterinary and technical functions to be undertaken efficiently and effectively.</i></p> <p>B. Veterinary para-professionals and other technical personnel</p>	1. The majority of technical positions are not occupied by personnel holding technical qualifications.
	2. The majority of technical positions at central and state / provincial levels are occupied by personnel holding technical qualifications.
	3. The majority of technical positions at local (field) levels are occupied by personnel holding technical qualifications.
	4. The majority of technical positions are effectively supervised on a regular basis.
	5. There are effective management procedures for formal appointment and performance assessment of <i>veterinary para-professionals</i> .

Terrestrial Code References (s):

Points 1-5 of Article 3.1.2. on Fundamental principles of quality: Professional judgement / Independence / Impartiality / Integrity / Objectivity.

Points 6 and 13 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.

Strengths:

- Most and field positions are staffed by well qualified persons
- Small cadre of technicians is reasonably distributed considering size of country and nature of the industry (Table 3 in Part II.7)
- Technical support is drawn from various divisions in BAHA (Animal Health, Food Safety, Quarantine) and Beyond (MAF extension officers and MOH for some meat inspection)
- Job descriptions and formal staffing procedures are in place
- Performance evaluations conducted semi-annually influence decisions on annual salary increments
- Current BAHA Board exercised its authority to ensure merit-based staffing of top executive position

Weaknesses:

- More staff are needed in South and elsewhere to address growing demands at Ports of Entry as well as illegal cross-border transit
- No high level statement of human resource values and principles

Evidence (references for documents or pictures listed in Appendix 6):

- Table 3 (staff levels)
- job descriptions (EM 1, EM 2)
- Report of Performance Appraisal form (H 3)
- field visits and interviews by PVS Mission team members

General comments or recommendations:

- Will need further staffing to support specialization as programs and industry grow in scope and sophistication.

I-2 Competencies of veterinarians and veterinary para-professionals	Levels of advancement
<p><i>The capability of the VS to efficiently carry out their veterinary and technical functions; measured by the academic qualifications of their personnel in veterinary, other professional and technical positions⁵.</i></p> <p>A. Professional competencies of veterinarians</p>	1. The veterinarians' practices, knowledge and attitudes are of a variable standard that usually allow for elementary clinical and administrative activities of the VS.
	2. The veterinarians' practices, knowledge and attitudes are of a uniform standard that usually allow for accurate and appropriate clinical and administrative activities of the VS.
	3. The veterinarians' practices, knowledge and attitudes usually allow undertaking all professional/technical activities of the VS (e.g. epidemiological surveillance, early warning, public health, etc.).
	4. The veterinarians' practices, knowledge and attitudes usually allow undertaking specialized activities as may be needed by the VS.
	5. The veterinarians' practices, knowledge and attitudes are subject to regular updating, or international harmonisation, or evaluation.

Terrestrial Code References (s):

Points 1-5 of Article 3.1.2. on Fundamental principles of quality: Professional judgement / Independence / Impartiality / Integrity / Objectivity.

Points 6 and 13 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.

Strengths:

- Experienced veterinarians were trained in different countries (e.g. Canada, USA, Cuba) thus bringing a diversity of knowledge to BAHA
- Students from Belize are attending veterinary training to prepare for the future

Weaknesses:

- Opportunities for specialization in areas like risk assessment and epidemiology are limited by the multitasking required for BAHA to operate effectively with only 5 veterinarians

Evidence (references for documents or pictures listed in Appendix 6):

- field visits and interviews by PVS Mission team members
- Meetings of Veterinary Services Board (E23, E24, E25)

General comments or recommendations:

- Consider formal tracking of veterinarians in training.

⁵ Not all professional positions require an academic degree. Nonetheless, the proportion of academic degrees serves as an indicator of professional excellence within the VS.

I-2 Competencies of veterinarians and veterinary para-professionals	Levels of advancement
<p><i>The capability of the VS to efficiently carry out their veterinary and technical functions; measured by the academic qualifications of their personnel in veterinary, other professional and technical positions⁶.</i></p> <p>B. Competencies of veterinary para-professionals</p>	1. The majority of <i>veterinary para-professionals</i> have no formal entry-level training.
	2. The training of <i>veterinary para-professionals</i> is of a very variable standard and allows the development of only limited animal health competencies.
	3. The training of <i>veterinary para-professionals</i> is of a uniform standard that allows the development of only basic animal health competencies.
	4. The training of <i>veterinary para-professionals</i> is of a uniform standard that allows the development of some specialist animal health competencies (e.g. meat inspection).
	5. The training of <i>veterinary para-professionals</i> is of a uniform standard and is subject to regular evaluation and/or updating.

Terrestrial Code References (s):

Points 1-5 of Article 3.1.2. on Fundamental principles of quality: Professional judgement / Independence / Impartiality / Integrity / Objectivity.

Points 6 and 13 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.

Strengths:

- Entry level education requirements range from post-secondary diploma to Bachelor's degree
- Specialized on-the job and developmental training supports specialization in areas such as laboratory work and meat inspection

Weaknesses:

- Small size of the country precludes formal institutional training programs for animal health technicians

Evidence (references for documents or pictures listed in Appendix 6):

- Job descriptions for laboratory and animal health technicians (EM 1, EM 2)
- field visits and interviews by PVS Mission team members

⁶ Not all professional positions require an academic degree. Nonetheless, the proportion of academic degrees serves as an indicator of professional excellence within the VS.

I-3 Continuing education (CE)⁷	Levels of advancement
<i>The capability of the VS to maintain and improve the competence of their personnel in terms of relevant information and understanding; measured in terms of the implementation of an annually reviewed training programme.</i>	1. The VS have no access to continuing veterinary, professional or technical education.
	2. The VS have access to CE (internal and/or external programmes) 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 annually and updated as necessary, but it is implemented for less than 50% of the relevant personnel.
	4. The VS have access to CE that is reviewed annually and updated as necessary, and it is implemented for more than 50% of the relevant personnel.
	5. The VS have up-to-date CE that is implemented for all relevant personnel.

Terrestrial Code References (s):

Points 1, 6 and 13 of Article 3.1.2. on Fundamental principles of quality: Professional judgement / General organization / 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.

Strengths:

- training on professional and technical topics is obtained through active participation in the work of regional and international agencies and donor projects
- BAHA offers a good range of training courses in management and office skills

Weaknesses:

- There is no formal continuing education program that links training activities to program priorities and employee performance appraisals

Evidence (references for documents or pictures listed in Appendix 6):

- Annual Report of the Animal Health Division (E15)
- Annual report of the CVL, 2007 (E 14)
- Documentation of Management Training (H4)
- E26, E27 (Course Syllabus)
- interviews of managers and staff by PVS Mission team members

General comments or recommendations:

We were advised that one of the factors limiting a more formal approach to the management of continuing education has been funding constraints and a reluctance of managers to make commitments that they might not be able to honour; this does not appear to be an insurmountable barrier.

- formalize continuing education to allow program priorities and needs identified through

⁷ Continuing education includes Continuous Professional Development (CPD) for veterinary, professional and technical personnel.

- performance appraisals to drive training investments and
- further support the development of leadership and team building abilities.

I-4 Technical independence	Levels of advancement
<i>The capability of the VS to carry out their duties with autonomy and free from 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).</i>	1. The technical decisions made by the VS are generally not based on scientific considerations.
	2. The technical decisions take into account the scientific evidence, but are routinely modified to conform to non-scientific considerations.
	3. The technical decisions are based on scientific evidence but are subject to review and possible modification based on non-scientific considerations.
	4. The technical decisions are based only on scientific evidence and are not changed to meet non-scientific considerations.
	5. The technical decisions are made and implemented in full accordance with the country's OIE obligations (and with the country's WTO SPS Agreement obligations where applicable).

Terrestrial Code References (s):

Point 2 of Article 3.1.2. on Fundamental principles of quality: Independence.

Strengths:

- BAHA governance structure provides arms length relationship to Minister thus reducing risk of inappropriate political influence on technical decisions
- OIE and WTO reporting requirements are being met (e.g. recent notification to OIE re outbreak of Newcastle Disease)

Weaknesses:

- Board members are not yet obligated to disclose potential conflicts and recuse themselves from certain decisions (these are requirements are propose in a draft BAHA Bill that has yet to be passed into law)
- Quarantine officers report feeling pressed by commercial interests on some issues
- There are no formal conflict of interest guidelines or procedures to be followed by veterinarians who work for BAHA and engage in private practice of veterinary medicine

Evidence (references for documents or pictures listed in Appendix 6):

- Draft BAHA Bill from 2006 (E4) and related explanatory note (E3)
- interviews of managers and staff by PVS Mission team members

General comments or recommendations:

- Pass the proposed BAHA Bill of 2006 into law
- Develop guidelines and procedures for BAHA staff with respect to potential conflict of interest. Examples may be obtained from other countries such as Canada and/or from BAHA's Food Safety Program (e.g. SI 173, schedule 5 regulation 39(2)(1)(4) "no inspector shall inspect any process or product in which he is directly or indirectly financially interested"

I-5 Stability of structures and sustainability of policies	Levels of advancement
<p><i>The capability of the VS to implement and sustain policies over time.</i></p>	<p>1. Substantial changes to the organisational structure and/or leadership of the public sector of the VS frequently occur (e.g. annually) resulting in lack of sustainability of policies.</p>
	<p>2. Substantial changes to the organisational structure and/or leadership of the public sector of the VS occur less frequently (e.g. biannually) resulting in lack of sustainability of policies.</p>
	<p>3. The organisational structure of the public sector of the VS is substantially changed each time there is a change in the political leadership and this has negative effects on sustainability of policies.</p>
	<p>4. There are generally only minor changes in the organisational structure of the public sector of the VS following a change in the political leadership and these have little or no effect on sustainability of policies.</p>
	<p>5. The organisational structure of the public sector of the VS generally remains stable for longer periods (e.g. 5 years) and is only modified based on an evaluation process, with little or no effect on the sustainability of policies.</p>

Terrestrial Code References (s):

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.

Strengths:

- BAHA has been in place since 2000 and continues with no significant change to the VS following a change of government
- The current CVO has been in office since before the creation of BAHA
- Animal health policies and programs have evolved with appropriate continuity over this period.

Weaknesses:

- There have been several Managing Directors of BAHA since 2000

Evidence (references for documents or pictures listed in Appendix 6):

- interviews of managers and staff by PVS Mission team members
- E 22 (2003 publication on Veterinary Services in Belize by the current CVO)

I-6 Coordination capability of the sectors and institutions of the Veterinary Services (public and private)	Levels of advancement
<p>The capability of the VS to coordinate national activities, including disease control and eradication programmes, food safety programmes and responses to emergency situations.</p>	1. There is no coordination.
	2. There are informal or irregular coordination mechanisms for some activities, with an unclear chain of command.
	3. There are coordination mechanisms with a clear chain of command for some activities, but these are not coordinated / implemented throughout the country.
	4. There are coordination mechanisms with a clear chain of command at the national level for most activities, and these are uniformly implemented throughout the country.
	5. There are agreed coordination mechanisms that can be implemented as necessary to address all activities.

Terrestrial Code References (s):

Points 6 and 8 of Article 3.1.2. on Fundamental principles of quality: 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.

Strengths:

- The structure and small size of BAHA as well as the skills and team work displayed by its senior officials favours coordination amongst its animal health, food safety and quarantine activities.
- Good working level coordination amongst BAHA, NEMO, Customs, MAF and MOH occurs on several issues (eg emergency planning).

Weaknesses:

- Work remains to be done to fully integrate all meat inspection activities under BAHA. Currently MOH and BAHA conduct this work and to different standards, with BAHA focusing on larger establishments that serve national and international markets and MOH conducting this activity at smaller establishments serving local markets.
- Relationships should be clarified and further developed between BAHA and the Fisheries Department of MAF and with other stakeholders as recommended by an FAO report “Strengthening the Biosafety Framework” (EM3).

Evidence (references for documents or pictures listed in Appendix 6):

- interviews of managers and staff by PVS Mission team members
- FAO Biosafety Evaluation (EM 3)
- E22 (2003 article on Veterinary Services in Belize)

General comments or recommendations:

- Complete development of proposed food safety legislation for BAHA, including clarification of the respective roles and responsibilities of BAHA and MOH generally (see section II.8) as well as with respect to meat inspection.
- Review and act upon the various recommendations of the FAO’s 2006 report on

“Strengthening the Biosafety Framework” (EM3).

I-7 Physical resources	Levels of advancement
<i>The access of the VS to relevant physical resources including buildings, transport telecommunications, cold chain, and other relevant equipment (e.g. computers).</i>	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 regional levels, and maintenance and replacement of obsolete items occurs only occasionally.
	3. The VS have suitable physical resources at national, regional and some local levels and maintenance and replacement of obsolete items occurs only occasionally.
	4. The VS have suitable physical resources at all levels and these are regularly maintained.
	5. The VS have suitable physical resources at all levels (national, sub-national and local levels) and these are regularly maintained and updated as more advanced and sophisticated items become available.

Terrestrial Code References (s):

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 Administrative details.

Strengths:

- Excellent HQ offices, laboratory and IT/communications support at BAHA facilities at Central Farm, Cayo and at BAHA HQ in Belmopan.
- Transport relatively well supplied

Weaknesses:

- Food Safety Laboratory in Belize City has been out of commission for an extended period due to physical plant failures
- Need improved maintenance of incinerators at ports of entry and elsewhere
- Aging fleet of vehicles – reinvestment is needed

Evidence (references for documents or pictures listed in Appendix 6):

- field visits and interviews by PVS Mission team members
- Photos P1-P3 (NEMO), P4 – P13 (BAHA offices and fleet), and P68-69 (BHA CIL)

General comments or recommendations:

- 1. Include facility, equipment and fleet maintenance needs in preparing investment proposal to IBD.

I-8 Funding	Levels of advancement
<i>The ability of the VS to access financial resources adequate for their continued operations, independent of political pressure.</i>	1. Funding for the VS is neither stable nor clearly defined but depends on resources allocated irregularly.
	2. Funding for the VS is clearly defined and regular, but is inadequate for their required base operations.
	3. Funding for the VS is clearly defined and regular, and is adequate for their base operations, but there is no provision for new or expanded operations.
	4. Funding for new or expanded operations is on a case-by-case basis.
	5. Funding for all aspects of VS activities is adequate; all funding is provided under full transparency and allows for full technical independence.

Terrestrial Code References (s):

Point 13 of Article 3.1.2. on Fundamental principles of quality: 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.

Strengths:

- BAHA has a stable core budget allocation from the Government of Belize of approximately \$B 1.1 million per year from 2004 to 2008 (approximately \$B 1.3 million FY 2008-09)
- This is supplemented by fees (approximately \$B 2.2 million for FY 2008-09) collected for a wide range of services that BAHA provides, bringing the total 2008-09 budget to approx \$B 4.2 million
- Just over 50% of the budgeted expenditures are for “staff costs” (\$B 2.4 million), leaving a healthy proportion for operating costs.

Weaknesses:

- Over 50% of BAHA’s 2008-09 budget is from fees collected for its services. While this has the desirable effect of encouraging a “client” focus in the delivery of services, there is a danger that resources will not be sufficient for the important “public goods” that BAHA must provide and which are not viewed as “services” that the regulated “clientele” is willing to fund (e.g. domestic residue testing, meat inspection, disease surveillance, border controls)
- MOH is less well endowed

Evidence (references for documents or pictures listed in Appendix 6):

- BAHA budget for FY 2008-09 (E13)
- interviews of BAHA managers by PVS Mission team members
- E22 (2003 article on veterinary services in Belize)

General comments or recommendations:

- Review policy and strategy regarding the proportion of BAHA’s funding provided by the central treasury. Compare the proportion of funding derived from user fees to the situation for BAHA-equivalent agencies in OECD agricultural exporting countries and other countries with emerging agricultural export industries. Competitors for export markets may offer a higher proportion of public funding for the services provided by BAHA which are allowed

under WTO rules.

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

Terrestrial Code References (s):

Point 13 of Article 3.1.2. on Fundamental principles of quality: 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.

Strengths:

- BAHA has authority to reallocate its funds internally to address emergency needs, but this is obviously only a short term solution to allow early action; this authority lies above the CVO thus requiring some internal coordination and negotiations before action is taken
- A draft BAHA Bill propose to create a “Biosecurity Fund” for use under conditions that would be defined through regulations
- Compensation “may” be approved by the Minister under current legislation

Weaknesses:

- Until the Biosecurity Fund is created and regulations for its use are established public agencies (BAHA, MAF, NEMO) will continue to face uncertainty about funding commitments for the management of any emergency situation.
- Not obvious that the new BAHA general and Animal Health Bills preserve the Minister’s current authority pay compensation

Evidence (references for documents or pictures listed in Appendix 6):

- Draft BAHA Bill (E2, E3)
- interviews of BAHA managers by PVS Mission team members

General comments or recommendations:

- Complete the BAHA legislative update to provide a more predictable funding for emergency responses.
- Review new BAHA Bill and associated Animal Health Bill to ensure that together they

preserve the Ministers current authority regarding compensation (“The Minister may approve.”)

I-10 Capability to invest and develop	Levels of advancement
<i>The capability of the VS to access additional investments, over time, that lead to a sustained improvement in the VS.</i>	1. There is no capability to improve the operational infrastructure of the VS.
	2. The VS occasionally develops proposals and secures funding for improvements in operational infrastructure through extraordinary allocations.
	3. The VS regularly secures funding for improvements in operational infrastructure, through extraordinary allocations from the national budget or from other sources, but these are allocated with constraints on their use.
	4. The VS secures adequate funding for the necessary improvements in operational infrastructure through extraordinary allocations, including from stakeholders.
	5. The VS routinely secures adequate funding for the necessary improvements in operational infrastructure.

Terrestrial Code References (s):

Point 13 of Article 3.1.2. on Fundamental principles of quality: 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.

Strengths:

- BAHA enjoyed significant funding from IDB in the years following its creation and is working in collaboration with MoFA to secure a second round of IDB funding
- A number of ad hoc investments have been made by donor and multilateral agencies (FAO, IAEA, OIRSA)
- A proposal is being developed for IAEA to provide funding for training and equipment to conduct pesticide residue testing.

Weaknesses:

- Limited internal capacity for development of proposals and management of major investment projects
- Partnerships with stakeholders have not reached a stage of securing private sector investments

Evidence (references for documents or pictures listed in Appendix 6):

- IDB funding proposal drafted by FAO for MAF (EM 4)
- interviews of BAHA managers by PVS Mission team members

Summary of the findings for the component “human, physical and financial resources”

The Belize Agricultural Health Authority (BAHA) employs a small cadre of well trained and respected veterinarians whose time is reasonably well distributed by function and geography to provide essential animal health and food safety services. While small, the number of veterinarians (5) is understandable considering the size of the country. There are issues to resolve in providing adequate coverage in the South (veterinarians and technical staff) as well as in the North as workloads grow. Given the limited number of veterinarians a strategy of “multi-tasking” is required to cover all functions that must be exercised. This precludes a high degree of specialization in areas such as epidemiology and risk assessment. Looking to the future, nationals of Belize continue to study veterinary medicine abroad.

The “para-veterinarians” and other technical personnel employed by BAHA are also well trained, supervised and reasonably well distributed. There is a second population of “para-veterinarians” operating on a private basis in some small communities and whose training is irregular and not currently overseen or sanctioned by the Veterinary Surgeon’s Board.

BAHA is generally a well managed organization including its handling of human resources. It has up-to-date and clear job descriptions and uses competency-based recruitment procedures. Performance evaluations are conducted semi-annually and the results are used in decisions about salary increments. This said, there was some indication that for a number of reasons merit (knowledge, skills and ability) may not always be the determining factor in the promotion of personnel to top positions.

Continuing education is supported through regular participation in opportunities offered by donor, regional and international agencies. Staff have good internet access and computer literacy. It was encouraging to note that a good range of courses on management and office skills are available – this could be enriched with further investment in management development and team building. A formal process should be developed to link decisions on continuing education to the results of performance evaluations and to operational priorities.

Technical independence is favoured by BAHA’s arm’s-length relationship to its Minister, operating as it does through a Board of Directors. On the other hand, it is recognized that Directors on the Board may find themselves conflicts of interest and some staff have felt pressured by commercial interests on import decisions. The former issue will be addressed in part by proposed amendments to BAHA’s legislation that would require Directors to disclose and reclude themselves from potential conflicts. There is a need for a code of practice and/or other measures to guard against possible conflicts of interest by veterinarians employed by BAHA who also operate private veterinary practices.

BAHA was created in 2000 by legislation reflecting advanced thinking of that time on the structure of public service operating agencies. The CVO who was in office prior to the formation of BAHA continue in that role to this day. Programs and policies have remained relatively stable, changing as appropriate to meet evolving requirements.

The structure of BAHA and the cooperative attitudes that the Agency has fostered favour

coordination amongst its Animal Health, Food safety and Quarantine programs. There is also good coordination amongst BAHA, NEMA, Customs, MAF and MOH on emergency planning, border control and other issues. Action is required to consolidate meat inspection services under BAHA, to clarify the role of the MOH with respect to meat inspection and food safety generally, and to strengthen relationships between BAHA and the Fisheries Department (MAF) with respect to aquaculture.

Overall BAHA enjoys good physical facilities (offices, laboratories, telecommunications, IT, cold chain and transportation). There are a few notable exceptions including an aging fleet, problems with accommodation that forced closure of a residue testing laboratory, and inadequate incinerator maintenance.

BAHA has a stable core budget allocation from the Government of Belize (on average, 1.1 million \$Belize per year between 2004 and 2008) plus significant revenues from fees for service (2.2 million \$Belize in 2008-9). While BAHA's relatively high dependence on revenues from fees (over 50% of funding) encourages responsiveness to clients, programs which primarily serve the public interest appear to be under-resourced. Resourcing shortfalls hamper food residue testing for purposes other than export, meat inspection, border inspection as well as disease surveillance and control.

A new Biosecurity Fund to support emergency actions is proposed in a draft BAHA Bill to update several aspects of the legislation that created BAHA in 2000. Meanwhile BAHA must reallocate funds internally to fund the initial phases of an emergency response while seeking supplemental funding. The Minister "may" approve compensation when warranted.

BAHA received significant funding from IDB when it was created and a further investment is under consideration in collaboration with MAF, FAO and IDB as part of a broad Agricultural Development Management and Operational Strategy (Appendix 4, reference EM 4). In addition a number of other investments have been made by donor and multilateral agencies.

Additional observations on strengths, gaps and possible priority actions are presented in Appendix 6.

Summary of general recommendations for the “human, physical and financial resources” (if appropriate)

On the basis of the findings for this component, the general recommendations for priority action are:

- BAHA Managing Director and Board may wish to create a high level statement of human resource values to enshrine merit as the basis for staffing and promotion decisions, and to articulate other values (e.g. see point I.4 re conflict of interest). Templates are available from other countries (e.g. HR policies of the Canadian Food Inspection Agency).
- Consider use of accredited private veterinarian and/or staffing to strengthen coverage in the South and the North.
- Provide further coverage in South and North, laboratories and border points to support specialization as programs and industry grow in scope and sophistication.
- Consider formal tracking of veterinarians in training to ensure a future supply of professionals.
- Formalize continuing education to allow program priorities and needs identified through performance appraisals to drive training investments
- Enhance the development of leadership and team building abilities.
- Pass the proposed BAHA Bill of 2006 into law.
- Develop guidelines and procedures for BAHA staff with respect to potential conflict of interest. Examples may be obtained from other countries such as Canada and/or from BAHA’s Food Safety Program (e.g. SI 173, schedule 5 regulation 39(2)(1)(4) “no inspector shall inspect any process or product in which he is directly or indirectly financially interested”).
- Complete development of proposed food safety legislation for BAHA, including clarification of the respective roles and responsibilities of BAHA and MOH generally (see section II.8) as well as with respect to meat inspection.
- Review and act upon the various recommendations of the FAO’s 2006 report on “Strengthening the Biosafety Framework” (EM3).
- Include facility, equipment and fleet maintenance needs in preparing investment proposal to IBD.
- Review policy and strategy regarding the proportion of BAHA’s funding provided by the central treasury. Compare the proportion of funding derived from user fees to the situation for BAHA-equivalent agencies in OECD agricultural exporting countries and other countries with emerging agricultural export industries. Competitors for export markets may offer a higher proportion of public funding for the services provided by BAHA which are allowed under WTO rules.
- Complete the BAHA legislative update to provide a more predictable funding for emergency responses.
- Review new BAHA Bill and associated Animal Health Bill to ensure that together they preserve the Ministers current authority regarding compensation (“The Minister may approve.”).

Some additional and more detailed suggestions from the initial review team for possible priority actions are presented in Appendix 6.

III.2 Fundamental component II: Technical authority and capability

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

Critical competencies:

Section II-1	Veterinary laboratory diagnosis
Section II-2	Laboratory quality assurance
Section II-3	Risk analysis
Section II-4	Quarantine and border security
Section II-5	Epidemiological surveillance
	A. Passive Epidemiological surveillance
	B. Active Epidemiological surveillance
Section II-6	Early detection and emergency response
Section II-7	Disease prevention, control and eradication
Section II-8	Veterinary public health and food safety
Section II-9	Veterinary medicines and veterinary biologicals
Section II-10	Residue testing
Section II-11	Emerging issues
Section II-12	Technical innovation

Terrestrial Code References:

Chapter 2.1. on Risk analysis: General considerations.
 Chapter 2.2. on Guidelines for import risk analysis.
 Points 6 and 8 of Article 3.1.2. on Fundamental principles of quality: 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 Functional capabilities and legislative support: Animal health 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.
 Points 2 and 5-7 of Article 3.2.14. on National information on human resources / Laboratory services / Functional capabilities and legislative support / Animal health and veterinary public health controls.
 Chapters 6.5. to 6.8. on Antimicrobial resistance.
 Chapter 6.2. on Control of biological hazards of animal health and public health importance through ante- and post-mortem meat inspection.

II-1 Veterinary laboratory diagnosis	Levels of advancement
<p><i>The authority and capability of the VS to identify and record pathogenic agents, including those relevant for public health, that can adversely affect animals and animal products.</i></p>	1. Disease diagnosis is almost always conducted by clinical means only, with laboratory diagnostic capability being generally unavailable.
	2. For major zoonoses and diseases of national economic importance, the VS have access to and use a <i>laboratory</i> to obtain a correct diagnosis.
	3. For other zoonoses and diseases present in the country, the VS have access to and use a <i>laboratory</i> to obtain a correct diagnosis.
	4. For diseases of zoonotic or economic importance not present in the country, but known to exist in the region and/ or that could enter the country, the VS have access to and use a <i>laboratory</i> to obtain a correct diagnosis.
	5. In the case of new and <i>emerging diseases</i> in the region or world, the VS have access to and use a network of national or international reference laboratories (e.g. an OIE Reference Laboratory) to obtain a correct diagnosis.

Terrestrial Code References (s):

Point 8 of Article 3.1.2. on Fundamental principles of quality: Procedures and standards.

Point 3 of Article 3.2.6. on Evaluation criteria for material resources: Technical.

Point 5 of Article 3.2.14. on Laboratory services.

Strengths:

- a small Central Veterinary Laboratory (CVL) at Cayo farm serves animal health programs has well trained technicians with facilities, equipment and records in good order
- samples are regularly submitted to laboratories in Guatemala, Panama and the USA (NVSL, Ames Iowa) to test for diseases in the country, that could enter the country and for new and emerging diseases (e.g. West Nile Virus).
- The Central Investigations Laboratory (CIL) in Belize City provides residues and food microbiology testing.

Weaknesses:

- limited funding and personnel precludes increased capacity within the country – this in turn reduces ability to serve national clients in a timely manner and is not adequate to support disease control work in the country
- submission and reporting protocols could be improved to better serve clients
- CIL has the required personnel and equipment for residue testing but has not been operating for an extended period due to problems with the building.

Evidence (references for documents or pictures listed in Appendix 6):

- site visits and interviews by PVS Mission team members
- FMD free submission (E 9)
- Annual report of the CVL, 2007 (E 14); Photos of CIL P68-69

General comments or recommendations:

- Address building issues required to bring CIL’s residue testing back into operation
- future plans for the laboratories should reflect national disease control plans and priorities (see II.7)

II-2 Laboratory quality assurance	Levels of advancement
<i>The quality of laboratories (that conduct diagnostic testing or analysis for chemical residues, antimicrobial residues, toxins, or tests for, biological efficacy, etc.) as measured by the use of formal QA systems and participation in relevant proficiency testing programmes.</i>	1. No laboratories used by the public sector VS are using formal QA systems.
	2. Some laboratories used by the public sector VS are using formal QA systems.
	3. All laboratories used by the public sector VS are using formal QA systems.
	4. All the laboratories used by the public sector VS and most or all private laboratories are using formal QA systems.
	5. All the laboratories used by the public sector VS and most or all private laboratories are using formal QA programmes that meet OIE, ISO 17025, or equivalent QA standard guidelines.

Terrestrial Code References (s):

Point 8 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.

Strengths:

- Small well organized laboratory and well trained personnel offers a good opportunity to introduce a formal QA program at this time

Weaknesses:

- Limited formal laboratory QA beyond controls performed as part of individual tests protocols and whatever the reference laboratories are doing

Evidence (references for documents or pictures listed in Appendix 6):

- site visits and interviews by PVS Mission team members
- CVL and CIL Annual Reports (E14, E28) – no mention of QA

General comments or recommendations:

- Provide ISO training and manuals for laboratory personnel and introduce this methodology before expanding laboratory operations
- Collaborate with an OIRSA initiative to develop a laboratory accreditation scheme based on ISO 17025.

II-3 Risk analysis	Levels of advancement
<i>The authority and capability of the VS to base its risk management decisions on a scientific assessment of the risks.</i>	1. Risk management decisions are not usually supported by scientific risk assessment.
	2. The VS compile and maintain data but do not have the capability to systematically assess risks. Some risk management decisions are based on scientific risk assessment.
	3. The VS can systematically compile and maintain relevant data and carry out risk assessment. Scientific principles and evidence, including risk assessment, generally provide the basis for risk management decisions.
	4. The VS systematically conduct risk assessments in compliance with relevant OIE standards, and base their risk management decisions on the outcomes of these risk assessments.
	5. The VS are consistent in basing sanitary decisions on <i>risk analysis</i> , and in communicating their procedures and outcomes internationally, meeting all their OIE obligations (including WTO SPS Agreement obligations where applicable).

Terrestrial Code References (s):

Chapter 2.1. on Risk analysis: General considerations.

Chapter 2.2. on Guidelines for import risk analysis.

Strengths:

- Animal health risk analyses are generally done in accordance with OIE norms and guidance

Weaknesses:

- Capacity is limited by small size of the organization which precludes making staff time available for specialization in this area

Evidence (references for documents or pictures listed in Appendix 6):

- interviews of BAHA managers and staff by PVS Mission team members
- Appendix 6 – report on preliminary findings January 2008

General comments or recommendations:

- future plans for risk assessment should reflect national disease control plans and priorities (see II.7) and
- consider staffing of a dedicated unit as industry scope and sophistication grows

II-4 Quarantine and border security	Levels of advancement
<p><i>The authority and capability of the VS to prevent the entry and spread of diseases and other hazards of animals and animal products.</i></p>	1. The VS cannot apply any type of quarantine or border security procedures for animals or animal products with their neighbouring countries or trading partners.
	2. The VS can establish and apply quarantine and border security procedures; however, these are generally based neither on international standards nor on a <i>risk analysis</i> .
	3. The VS can establish and apply quarantine and border security procedures based on international standards, but the procedures do not systematically address illegal activities ⁸ relating to the import of animals and animal products.
	4. The VS can establish and apply quarantine and border security procedures which systematically address legal pathways and illegal activities.
	5. The VS work with their neighbouring countries and trading partners to establish, apply and audit quarantine and border security procedures which systematically address all risks identified.

Terrestrial Code References (s):

Point 8 of Article 3.1.2. on Fundamental principles of quality: Procedures and standards.

Point 2 of Article 3.2.7. on Functional capabilities and legislative support: Export/Import inspection.

Points 6 and 7 of Article 3.2.14. on Functional capabilities and legislative support and Animal health and veterinary public health controls.

Strengths:

- BAHA has a well structured quarantine service (Figure 6) that manages border controls for animal and plant health and food safety at several ports of entry (air, land and sea) illustrated in Figure 3.
- Procedures are well documented.

Weaknesses:

- Officials acknowledge some illegal transboundary movement across porous borders; security and resource challenges need to be addressed if these are to be controlled
- BAHA personnel at ports of entry are facing growing demands that will require addition of staff and/or the training of Customs personnel
- Incinerators require maintenance

Evidence (references for documents or pictures listed in Appendix 6):

- Quarantine procedures manual (E21)
- site visits and interviews by PVS Mission team members
- Photos of land border points with Guatemala (P16-P33) and Mexico (P34-38)

⁸ Illegal activities include attempts to gain entry for animals or animal products other than through legal entry points and/or using certification and/or other procedures not meeting the country's requirements.

General comments or recommendations:

- Seek resources to ensure adequate border coverage in collaboration with other agencies and programs (e.g. plant protection) that share mandates to protect human and agricultural health (see also Section I-8)
- Develop a strategy in collaboration with other agencies (Customs, Health, Police) to address illegal transboundary movements

	Levels of advancement
II-5 Epidemiological surveillance <i>The authority and capability of the VS to determine, verify and report on the sanitary status of the animal populations under their mandate.</i> A. Passive epidemiological surveillance	1. The VS have no passive surveillance programme.
	2. The VS conduct passive surveillance for some relevant diseases and have the capacity to produce national reports on some diseases.
	3. The VS conduct passive surveillance for some relevant diseases at the national level through appropriate networks in the field, whereby samples from suspect cases are collected and sent for laboratory diagnosis with evidence of correct results obtained. The VS have a basic national disease reporting system.
	4. The VS conduct passive surveillance and report at the national level on most relevant diseases. Appropriate field networks are established for the collection of samples and submission for laboratory diagnosis of suspect cases with evidence of correct results obtained. Stakeholders are aware of and comply with their obligation to report the suspicion and occurrence of notifiable diseases to the VS.
	5. The VS regularly report to stakeholders and the international community (where applicable) on the findings of passive surveillance programmes.

Terrestrial Code References (s):

Points 6 and 8 of Article 3.1.2. on Fundamental principles of quality: 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 reference 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.

Strengths:

- effective field networks for reporting of suspected cases
- passive surveillance is conducted for a number of livestock and poultry diseases through investigations and slaughterhouse inspections
- regular reporting of significant findings to OIE
- USDA has supported periodic public education

Weaknesses:

- private veterinarians and drug distributors don't always report key observations

Evidence (references for documents or pictures listed in Appendix 6):

- Annual Report of the Animal Health Division (E15)
- Annual report of the CVL, 2007 (E 14)
- FMD free submission (E 9)
- site visits and interviews by PVS Mission team members

General comments or recommendations:

- Future surveillance plans should reflect national disease control plans and priorities (see II.7).

II-5 Epidemiological surveillance <i>The authority and capability of the VS to determine, verify and report on the sanitary status of the animal populations under their mandate.</i> B. Active epidemiological surveillance	Levels of advancement
	1. The VS have no active surveillance programme.
	2. The VS conduct active surveillance for some relevant diseases (of economic and zoonotic importance) but apply it only in a part of susceptible populations and/or do not update it regularly.
	3. The VS conduct active surveillance for some relevant diseases and apply it to all susceptible populations but do not update it regularly.
	4. The VS conduct active surveillance for some relevant diseases, apply it to all susceptible populations, update it regularly and report the results systematically.
5. The VS conduct active surveillance for most or all relevant diseases and apply it to all susceptible populations. The surveillance programmes are evaluated and meet the country's OIE obligations.	

Terrestrial Code References (s):

Points 6 and 8 of Article 3.1.2. on Fundamental principles of quality: 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 reference 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.

Strengths:

- Active surveillance conducted as and when funding has been available from international projects for work on CSF, FMD and AI.

Weaknesses:

- No active surveillance at this time

Evidence (references for documents or pictures listed in Appendix 6):

- FMD free submission (E 9)
- Interviews of BAHA managers and staff by PVS Mission team members

General comments or recommendations:

- Future surveillance plans should reflect national disease control plans and priorities (see II.7).

	Levels of advancement
II-6 Early detection and emergency response <i>The authority and capability of the VS to detect and respond rapidly to a sanitary emergency (such as a significant disease outbreak or food safety emergency).</i>	1. The VS have no field network or established procedure to determine whether a sanitary emergency 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 or not a sanitary emergency exists, but lack the necessary legal and financial support to respond appropriately.
	3. The VS have the legal framework and financial support to respond rapidly to sanitary emergencies, but the response is not coordinated through a chain of command.
	4. The VS have an established procedure to make timely decisions on whether or not a sanitary emergency exists. The VS have the legal framework and financial support to respond rapidly to sanitary emergencies through a chain of command. They have national contingency plans for some exotic diseases.
	5. The VS have national contingency plans for all diseases of concern through coordinated actions with all stakeholders through a chain of command.

Terrestrial Code References (s):

Points 6 and 8 of Article 3.1.2. on Fundamental principles of quality: 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.

Strengths:

- Field network, sample collection/testing and response systems are in place
- NEMO actively engaged in response planning
- Simulation exercises have been conducted (FMD, CSF, AI) in collaboration with regional and hemispheric initiatives (OIRSA, PAHO)
- Awareness promotion for the public and arriving travellers

Weaknesses:

- Response capacity is naturally limited by the small size of institutions

Evidence (references for documents or pictures listed in Appendix 6):

- FMD free submission (E 9)
- Interviews of BAHA managers and staff by PVS Mission team members
- Photos of NEMO operations centre (P1-P3)

General comments or recommendations:

- Consider building response capacity through creation of a veterinary reserve with accredited private veterinarians and regional partners

II-7 Disease prevention, control and eradication	Levels of advancement
The authority and capability of the VS to actively perform actions to prevent, control or eradicate OIE listed diseases and/or to demonstrate that the country or a zone are free of relevant diseases.	1. The VS have no authority or capability to prevent, control or eradicate animal diseases.
	2. The VS implement prevention, control and eradication programmes for some diseases and/or in some areas with little or no scientific evaluation of their efficacy and efficiency.
	3. The VS implement prevention, control and eradication programmes for some diseases and/or in some areas with scientific evaluation of their efficacy and efficiency.
	4. The VS implement prevention, control and eradication programmes for all relevant diseases but with scientific evaluation of their efficacy and efficiency of only some programmes.
	5. The VS implement prevention, control and eradication programmes for all relevant diseases with scientific evaluation of their efficacy and efficiency consistent with relevant OIE international standards.

Terrestrial Code References (s):

Points 6 and 8 of Article 3.1.2. on Fundamental principles of quality: 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.

Strengths:

- Most of the required legal authorities are in place
- Other are under development (e.g. for traceability, zoning, movement controls, animal welfare and a biosecurity fund)
- Disease prevention is promoted

Weaknesses:

- No ongoing disease eradication or control programs due to limited staff and funding
- There have been sporadic time limited efforts under specific donor projects

Evidence (references for documents or pictures listed in Appendix 6):

- CVO annual report
- FAO Biosafety Evaluation (EM 3)
- Interviews of BAHA managers and staff by PVS Mission team members

General comments or recommendations:

- Ensure passage of the new BAHA and Animal Health Bills into law to secure needed authorities for traceability, zoning, movement controls, animal welfare and a biosecurity fund.
- Future plans for specific disease control or eradication programs should reflect national plans and priorities for development of the livestock, poultry and aquaculture industries.
- In the case of cattle the identified priority goal to export cattle for slaughter to Mexico and Guatemala negotiation with the proposed importing countries have identified needs to develop basic programs for the control of brucellosis and tuberculosis.

II-8 Veterinary public health and food safety <i>The authority and capability of the VS to implement, manage and coordinate veterinary public health measures, including programmes for the prevention of specific food-borne zoonoses and general food safety programmes.</i>	Levels of advancement
	1. Management, implementation and coordination are generally not undertaken in conformity with international standards.
	2. Management, implementation and coordination are generally undertaken in conformity with international standards only for export purpose.
	3. Management, implementation and coordination are generally undertaken in conformity with international standards only for export purpose and for products that are distributed throughout the national market.
	4. Management, implementation and coordination are generally undertaken in conformity with international standards for export purpose and for products that are distributed throughout the national and local markets.
	5. Management, implementation and coordination are undertaken in full conformity with international standards for products at all levels of distribution (throughout the national and local markets, and direct sales).

[Note: This critical competency primarily refers to inspection of unprocessed animal products (e.g. meat, milk and honey). It may in some countries be undertaken by an agency other than the VS.]

Terrestrial Code References (s):

Points 6 and 8 of Article 3.1.2. on Fundamental principles of quality: General organisation / Procedures and standards.

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 / Functional capabilities and legislative support / 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.

Strengths:

- Legal authorities and expertise are in place for BAHA to play a strong role in food safety promotion and oversight
- Work is underway to clarify and extend BAHA’s existing legal mandate
- BAHA offers an integrated inspection service favouring coherence of inspection activities from “gate to plate”

Weaknesses:

- BAHA and MOH currently both conduct meat inspection, applying different standards. As a general rule BAHA focuses on establishments that export internationally or serve a country-wide market (approximately 80% of the market) while MOH focuses on slaughter operations for local markets (“under the tree” or municipal plants)
- There are insufficient HACCP-trained food inspectors, perhaps reflecting BAHA’s heavy reliance on user fees, a policy which may require review (see I.8)
- A draft Food safety Bill remains to be passed into law along with amendment renewed BAHA legislation that would clarify and extend BAHA’s mandate on food safety
- A Memorandum of Understanding setting out the respective roles of BAHA and MOH with respect to food safety has lapsed.

Evidence (references for documents or pictures listed in Appendix 6):

- De Shields paper (EM 5)
- New BAHA Bill (E2, E3)

- Draft Food Safety Bill (EM 6)
- Draft MOU between BAHA and MOH (EM 7)
- FAO Biosecurity Evaluation (EM 3)
- Interviews of BAHA managers and staff by PVS Mission team members
- Photos of processing facilities for meat (P39-P56) and milk (P57-P67)

General comments or recommendations:

- Define a clear division of responsibilities between the Minister of Health and the Minister of Agriculture and Fisheries as a basis for setting out the roles and responsibilities of the MOH and BAHA. One possible approach as followed in Canada when an agency very much like BAHA, the Canadian Food Inspection Agency (CFIA) was created, would be to assign to the Minister of Health responsibilities for the setting of food safety standards while assigning to the Minister of Agriculture responsibility for all inspection operations. In Canada the Minister of Health was also assigned audit oversight authority to ensure that food safety standards were being applied effectively by CFIA.
- Complete passage into law of the required legislation (e.g. the Draft BAHA Bill and the Draft Food Safety Bill), after ensuring that these Bills reflect an appropriate Division of Labour between the afore-mentioned Ministers.
- Complete renewal of the BAHA-MOH Memorandum of Understanding with respect to food safety.
- Address food safety resourcing issues: see recommendation in section I.8 and the FAO Biosecurity report (EM 3) regarding the percentage of the BAHA budget derived from fees for services.
- Strengthen staffing for meat inspection and improve facilities and procedures for meat slaughter and processing

II-9 Veterinary medicines and veterinary biologicals	Levels of advancement
<i>The authority and capability of the VS to regulate veterinary medicines and veterinary biologicals.</i>	1. The VS cannot regulate the usage of veterinary medicines and veterinary biologicals.
	2. The VS has only limited capability to exercise administrative control (including registration) over the usage, including import and production, of veterinary medicines and veterinary biologicals.
	3. The VS exercise quality control (technical standards) over the import, production and distribution of veterinary medicines and veterinary biologicals.
	4. The VS exercise complete control over registration, sale and usage of veterinary medicines and veterinary biologicals.
	5. The VS implement systems to monitor the use of veterinary medicines, veterinary biologicals and their side effects (pharmacovigilance).

Terrestrial Code References (s):

Point 8 of Article 3.1.2. on Fundamental principles of quality: 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".

Chapters 6.5. to 6.8. on Antimicrobial resistance.

Strengths:

- BAHA's Veterinary Drug regulations and the Veterinary Surgeon's Act when taken together provide sufficient authority for the registration and control of veterinary drugs and biologicals, including drugs whose use should be controlled by prescriptions as well as those identified under the regulations as prohibited for veterinary use.

Weaknesses:

- There is limited capacity to implement these regulations, leaving important gaps including:
- the availability of powerful antibiotics (e.g. tetracycline and amoxicillin) for sale by farm retail farm suppliers without a requirement for prescriptions, and
- limited if any domestic testing of imported products to ensure purity and potency.

Evidence (references for documents or pictures listed in Appendix 6):

- photos of antibiotics available off-the-shelf at a farm retail outlet (P15, PM1)
- Veterinary Drug regulations (E6)
- Veterinary Surgeon's Act (E5)
- Interviews of BAHA managers and staff by PVS Mission team members

General comments or recommendations:

- Use the Veterinary Drug Regulations and the Veterinary Surgeons Act to exert control over the sale and use of powerful drugs by requiring prescriptions issued by licensed veterinary surgeons. This will need to be implemented in concert with actions to ensure that an appropriate distribution arrangements are in place for drugs controlled by prescriptions. Senior officials of BAHA have taken note of this finding and launched

consultations with stakeholders on how to address the issue.

II-10 Residue testing	Levels of advancement
<i>The capability of the VS to undertake residue testing programmes for veterinary medicines (e.g. antimicrobials and hormones), chemicals, pesticides, radionuclides, metals, etc.</i>	1. No residue testing programme for animal products exists in the country.
	2. Some residue testing programme is performed but only for selected animal products for export.
	3. A comprehensive residue testing programme is performed for all animal products for export and some for domestic use.
	4. A comprehensive residue testing programme is performed for all animal products for export and/or internal consumption.
	5. The residue testing programme is subject to routine quality assurance and regular evaluation.

[Note: This critical competency may in some countries be undertaken by an agency or agencies other than the VS.]

Terrestrial Code References (s):

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.

Chapters 6.5. to 6.8. on Antimicrobial resistance.

Strengths:

- There is a comprehensive EU-compliant residue control plan for the aquaculture sector; some debate within BAHA over the significance of samples being taken at one time rather than in four batches (every 3 month)
- Samples are being sent to laboratories outside the country for testing – e.g. from aquaculture production units that export to international markets

Weaknesses:

- BAHA's residue testing laboratory at the CIL has been out of operation for over a year due to facility problems. Obviously this limits the extent of residue monitoring given the costs of procuring testing from out-of-country laboratories.
- Residue testing is largely funded by user fees and thus is primarily done for export purposes.

Evidence (references for documents or pictures listed in Appendix 6):

- Interviews of BAHA managers and staff during 2nd PVS Mission
- Appendix 6 (preliminary findings from January 2008)

General comments or recommendations

- An active national residue testing program for livestock and poultry would be a valuable tool to determine the efficacy of the enhanced control of drugs recommended above under competency II.9. The absence of both prescription controls and a residue testing program covering all major food species is a worrisome situation.
- Review BAHA's funding to ensure that it has an adequate base budget independent of user fees for issues of public good such as residue monitoring of the domestic food supply.

II-11 Emerging issues <i>The authority and capability of the VS to identify in advance, and take appropriate action in response to likely emerging issues under their mandate relating to the sanitary status of the country, public health, the environment, or trade in animals and animal products.</i>	Levels of advancement
	1. The VS do not have procedures to identify in advance likely emerging issues.
	2. The VS monitor and review developments at national and international levels relating to emerging issues.
	3. The VS assess the risks, costs and/or opportunities of the identified emerging issues, including preparation of appropriate national preparedness plans. The VS have some collaboration with stakeholders and other agencies (e.g. human health, wildlife, animal welfare and environment) on emerging issues.
	4. The VS implement, in coordination with stakeholders, prevention or control actions due to an adverse emerging issue, or beneficial actions from a positive emerging issue. The VS have well-developed formal collaboration with stakeholders and other agencies (e.g. human health, wildlife, animal welfare and environment) on emerging issues.
	5. The VS coordinate actions with neighbouring countries and trading partners to respond to emerging issues, including audits of each other's ability to detect and address emerging issues in their early stages.

Terrestrial Code References (s):

Points 6 and 8 of Article 3.1.2. on Fundamental principles of quality: General Organisation / Procedures and standards.

Point 1 of Article 3.2.7. on Functional capabilities and legislative support: Animal health and veterinary public health.

Strengths:

- BAHA participates in regional biosafety and GMO risk assessment working groups
- BAHA, MOH and other agencies as well as the poultry industry have been active in preparations for an avian influenza outbreak
- BAHA and MOH officials have kept abreast of the evolving situation with swine influenza and implemented monitoring procedures
- BAHA's draft Animal Health Bill would create authority for the Agency to establish animal welfare guidelines and powers to act on animal welfare issues

Weaknesses:

- Considerable work has been done considering the size of the VS and the animal and food industries; further advancement will be possible with growth in the scope and sophistication of the industry and its supporting programs

Evidence (references for documents or pictures listed in Appendix 6):

- Interviews of BAHA managers and staff by PVS Mission team members
- FAO Biosecurity evaluation (EM 3)
- Draft Animal Health Bill (E2)

II-12 Technical innovation ⁹	Levels of advancement
<i>The capability of the VS to keep up-to-date with the latest scientific advances and to comply with the standards of the OIE (and Codex Alimentarius Commission where applicable).</i>	1. The VS have only informal access to technical innovations, through personal contacts and external sources.
	2. The VS maintain a database of technical innovations and international standards, through subscriptions to scientific journals and electronic media.
	3. The VS have a specific programme to actively identify relevant technical innovations and international standards.
	4. The VS incorporate technical innovations and international standards into selected policies and procedures, in collaboration with stakeholders.
	5. The VS systematically implement relevant technical innovations and international standards.

Terrestrial Code References (s):

Points 6 and 8 of Article 3.1.2. on Fundamental principles of quality: General Organisation / Procedures and standards.

Point 3 of Article 3.2.8. on Animal health controls: National animal disease reporting systems.

Sub-point f) of Point 4 of Article 3.2.10. on Veterinary Services administration: Formal linkages with sources of independent scientific expertise.

Points 6 and 7 of Article 3.2.14. on Functional capabilities and legislative support / Animal health and veterinary public health controls.

Strengths:

- The VS has good awareness of technical innovations and evolving international standards and procedures due largely to the ready availability of electronic tools and their active engagement with international agencies (OIE, OIRSA, FAO).

Weaknesses:

- The awareness is impressive considering the size of the VS and the animal and food industries; further advancement will be possible with growth in the scope and sophistication of the industry and its supporting programs
- Acquisition of new technologies (e.g. luggage scanners for use at ports of entry) is constrained by the available funding.

Evidence (references for documents or pictures listed in Appendix 6):

- Interviews of BAHA managers and staff by PVS Mission team members

⁹ Technical innovation includes new disease control methods, new types of vaccines and diagnostic tests, food safety technologies, and connections to electronic networks on disease information and food emergencies.

Summary of the findings for the component “technical authority and capability”

Laboratory support for a number of indigenous diseases is available from two small, well run laboratories in Belize while tests for other diseases including some not present in the country and for new or emerging diseases are done at laboratories in Guatemala, Panama and the USA. A residue testing laboratory has been out of operation for an extended period due to problems with the building. As new disease control activities are undertaken it will be important to develop corresponding domestic laboratory services that will be more timely and economical than services from other countries. There is a need to develop formal laboratory quality assurance methods and an opportunity to do so starting with the existing laboratories in collaboration with an OIRSA initiative to develop a laboratory accreditation scheme based on ISO 17025.

Animal health risk assessments are generally done in accordance with OIE norms and guidance. Capacity is limited by the small size of the organization that limits specialization.

BAHA has a well structured quarantine service (Figure 6) that manages border controls for animal and plant health and food safety at several ports of entry (air, land and sea) illustrated in Figure 3.

Procedures are well documented. Officials acknowledge illegal movement across some porous borders. There are security and resource challenges to be addressed if these movements are to be controlled. BAHA personnel at ports of entry are facing growing demands that will require addition of staff and/or the training of Customs personnel.

Passive surveillance for a number of livestock and poultry diseases is conducted through a network for reporting suspected cases, slaughterhouse inspections and field and laboratory investigations. USDA has supported work to promote reporting through education of stakeholders. Active disease surveillance has been conducted periodically when funding has been available from international projects on CSF, FMD and AI.

All essential systems are in place for early detection and emergency response (field network, sample collection and testing, partnerships and public awareness). Simulation exercises have been conducted in collaboration with OIRSA and PAHO. Response capacity is limited by the small size of national institutions.

While the skills and most of the required legal authorities are in place (and others authorities are being developed - e.g. traceability, zoning and movement control, biosecurity fund, animal welfare), there are at present no national disease control or eradication programs due to limitations of staff and funding. This is likely to change as the livestock and agriculture industries grow in size and sophistication under an Agricultural Development, Management and Operational Strategy (Appendix 4, reference EM 4). The current veterinary services of BAHA provide a sound platform on which to build future disease control or eradication programs.

BAHA has the expertise and legal authority to play a strong role in food safety promotion and

oversight. It can offer an integrated “gate to plate” service spanning animal and aquatic health, drug control, as well as inspections of slaughter, processing and marketing. Work is required to clarify the respective roles and responsibilities of BAHA and the MOH generally and in particular with respect to the delivery of meat inspection at the local level (by whom and to what standard?).

Belize has adequate authority to register and control the use of veterinary drugs and pharmaceutical, but its legal requirements are not being implemented. There is a need to exert control over the sale and use of powerful antibiotics and other veterinary drugs by requiring prescriptions issued by registered veterinary surgeons. Senior officials of BAHA have taken note of this finding and launched consultations with stakeholders on how to address the issue.

A comprehensive residue testing program funded by user fees is operating for products of aquaculture exported to the European Union. There is insufficient public funding for a program to test for chemical residues in foods for domestic markets.

Considering its size and resources, BAHA is doing an excellent job of keeping abreast of new and emerging issues and scientific advances.

Additional observations on strengths, gaps and possible priority actions are presented in Appendix 6.

Summary of general recommendations for the “technical authority and capability”

On the basis of the findings for this component, the general recommendations for priority action are:

- Address building issues required to bring CIL’s residue testing back into operation.
- future plans for the laboratories should reflect national disease control plans and priorities (see II.7).
- Provide ISO training and manuals for laboratory personnel and introduce this methodology before expanding laboratory operations.
- Collaborate with an OIRSA initiative to develop a laboratory accreditation scheme based on ISO 17025.
- future plans for risk assessment should reflect national disease control plans and priorities (see II.7); consider staffing of a dedicated risk assessment unit as industry scope and sophistication grows.
- Seek resources to ensure adequate border coverage in collaboration with other agencies and programs (e.g. plant protection) that share mandates to protect human and agricultural health.
- Develop a strategy in collaboration with other agencies (Customs, Health) to address illegal transboundary movements.
- Future surveillance plans should reflect national disease control plans and priorities.
- Consider building response capacity through creation of a veterinary reserve with accredited private veterinarians and regional partners.
- Ensure passage of the new BAHA and Animal Health Bills into law to secure needed authorities for traceability, zoning, movement controls, animal welfare and a biosecurity fund.
- Future plans for specific disease control or eradication programs should reflect national plans and priorities for development of the livestock, poultry and aquaculture industries.
- In the case of cattle the identified priority goal to export cattle for slaughter to Mexico and Guatemala negotiation with the proposed importing countries have identified needs to develop basic programs for the control of brucellosis and tuberculosis.
- Define a clear division of responsibilities between the Ministers of Health and the Minister of Agriculture and Fisheries as a basis for setting out the roles and responsibilities of the MOH and BAHA. One possible approach as followed in Canada when an agency very much like BAHA, the Canadian Food Inspection Agency (CFIA) was created, would be to assign to the Minister of Health responsibilities for the setting of food safety standards while assigning to the Minister of Agriculture responsibility for all inspection operations. In Canada the Minister of Health was also assigned audit oversight authority to ensure that food safety standards were being applied effectively by CFIA.
- Complete passage into law of the required legislation (e.g. the Draft BAHA Bill and the Draft Food Safety Bill), after ensuring that these Bills reflect an appropriate Division of Labour between the afore-mentioned Ministers.
- Complete renewal of the BAHA-MOH Memorandum of Understanding on food safety.
- Strengthen staffing for meat inspection and improve facilities and procedures for meat

- slaughter and processing.
- Address food safety resourcing issues: see recommendation in section I.8 and the FAO Biosecurity report (EM 3) regarding the percentage of the BAHA budget derived from fees for services.
 - Use the Veterinary Drug Regulations and the Veterinary Surgeons Act to ensure that the sale and use of powerful veterinary drugs is controlled by requiring that sales and use be approved through prescriptions issued by licensed veterinary surgeons. This will need to be implemented in concert with actions to ensure that appropriate distribution arrangements are in place for drugs controlled by prescriptions. Senior officials of BAHA have taken note of this finding and launched consultations with stakeholders on how to address the issue.
 - Establish a national residue testing program for livestock and poultry to determine the efficacy of the enhanced control of veterinary drugs recommended above.
 - Review BAHA's funding to ensure that it has an adequate base budget independent of user fees for issues of public good such as residue monitoring of the domestic food supply.
 - Some additional and more detailed suggestions from the initial review team for possible priority actions are presented in Appendix 6.

III.3 Fundamental component III: Interaction with stakeholders

This component of the evaluation appraises the capability of the VS to collaborate with and involve stakeholders in the implementation of programmes and activities. It comprises six critical competencies.

Critical competencies:

Section III-1	Communications
Section III-2	Consultation with stakeholders
Section III-3	Official representation
Section III-4	Accreditation / Authorisation / Delegation
Section III-5	Veterinary Statutory Body
Section III-6	Participation of producers and other stakeholders in joint programmes

Terrestrial Code References:

Points 6, 8 and 12 of Article 3.1.2. on Fundamental principles of quality: 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 Administrative details / Animal health and veterinary public health controls / Sources of independent scientific expertise.

III-1 Communications	Levels of advancement
<i>The capability of the VS to keep stakeholders informed, in a transparent, effective and timely manner, of VS activities and programmes, and of developments in animal health and food safety.</i>	1. The VS have no mechanism in place to inform stakeholders of VS activities and programmes.
	2. The VS have informal communication mechanisms.
	3. The VS maintain an official contact point for communications but it is not always up-to-date in providing information.
	4. The VS contact point for communications provides up-to-date information, accessible via the internet and other appropriate channels, on activities and programmes.
	5. The VS have a well developed communication plan, and actively and regularly circulate information to stakeholders.

Terrestrial Code References (s):

Point 12 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 Administrative details.

Strengths:

- Small size of the country and BAHA's good connections with industry leaders and other institutions facilitates communications
- There are a number of communications products (brochures, web site)

Weaknesses:

- No communications expert or focal point in AHA

Evidence (references for documents or pictures listed in Appendix 6):

- Interviews of BAHA managers and staff by PVS Mission team members
- BAHA brochures (Appendix 4 ref E 19) and web site: www.baha.bz
- Photo of poster (P14)

General comments or recommendations:

- Develop a dedicated communications unit within BAHA

III-2 Consultation with stakeholders	Levels of advancement
<i>The capability of the VS to consult effectively with stakeholders on VS activities and programmes, and on developments in animal health and food safety.</i>	1. The VS have no mechanisms for consultation with stakeholders.
	2. The VS maintain informal channels of consultation with stakeholders.
	3. The VS maintain a formal consultation mechanism with stakeholders.
	4. The VS regularly hold workshops and meetings with stakeholders.
	5. The VS actively consult with and solicit feedback from stakeholders regarding proposed and current activities and programmes, developments in animal health and food safety, interventions at the OIE (Codex Alimentarius Commission and WTO SPS Committee where applicable), and ways to improve their activities.

Terrestrial Code References (s):

Point 12 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 Administrative details and on Sources of independent scientific expertise.

Strengths:

- Selected stakeholders sit on BAHA Board which VS may attend on invitation
- A Zoonoses Committee has served to bring together major stakeholders in a forum convened by BAHA's Animal Health Department
- BAHA's Food Safety Department meets with food safety "user groups" of which the poultry and aquaculture groups are the most active. Other groups include meat producers, importers (new) and tourism operators planned)
- There is an annual SPS workshop with stakeholders
- Stakeholder consultations were held on biosafety
- BAHA's service mandate and philosophy and its significant revenues from user fees supports active stakeholder engagement
- New BAHA Animal Health Bill would create a "National Advisory Committee on Animal Health"

Weaknesses:

- The Zoonoses Committee has seen reduced activity in recent times
- Some stakeholder organizations, for example the Belize Livestock Producer's Association (BLPA) which operates under a legal mandate spanning all livestock sectors, have limited capacity to engage BAHA effectively

Evidence (references for documents or pictures listed in Appendix 6):

- Interviews of BAHA managers and staff by PVS Mission team members
- New Animal health Bill (E4)
- FAO Biosecurity Evaluation (EM3)

General comments or recommendations:

- Review and update mandate and work program of the Zoonoses Committee to improve stakeholder engagement on animal health and food safety issues that cut across multiple sectors (e.g. control of veterinary drugs, animal welfare) as well as emerging zoonotic and other diseases. This Committee could serve as a starting point for a future “National Advisory Committee on Animal Health” to be created under the new Animal Health Bill.
- The beef production sector which envisages growth to serve export markets may wish to consider creating its own association along lines of what has been successfully done by the poultry and aquaculture sectors rather than operating through the BLPA if there are insurmountable legal or other impediments.
- Consider a review of impediments to the effectiveness of BLPA.

III-3 Official representation	Levels of advancement
<i>The capability of the VS to regularly and actively participate in, coordinate and provide follow up on relevant meetings of regional and international organisations including the OIE (and Codex Alimentarius Commission and WTO SPS Committee where applicable).</i>	1. The VS do not participate in or follow up on relevant meetings of regional or international organisations.
	2. The VS sporadically participate in relevant meetings and/or make a limited contribution.
	3. The VS actively participate¹⁰ in the majority of relevant meetings.
	4. The VS consult with stakeholders and take into consideration their opinions in providing papers and making interventions in relevant meetings.
	5. The VS consult with stakeholders to ensure that strategic issues are identified, to provide leadership and to ensure coordination among national delegations as part of their participation in relevant meetings.

Terrestrial Code References (s):

Article 3.2.11. on Participation on OIE activities.

Point 4 of Article 3.2.14. on Administrative details.

Strengths:

- BAHA's Director of Animal Health has served in an executive capacity in regional OIE activities
- BAHA staff have good awareness of OIE standards and tools and ready internet access
- BAHA officials are similarly active in the SPS work of WTO
- BAHA collaborates closely with the Bureau of Standards (the CODEX contact point for Belize), chairing the Standards Advisory Council and providing personnel to serve on technical committees (Food and Food Related Products; Labelling).

Weaknesses:

- Limited need for formal consultation of stakeholders and international engagement on trade policy matters at this time

Evidence (references for documents or pictures listed in Appendix 6):

- Interviews by PVS Mission team members of BAHA managers and staff including the focal points for OIE, CODEX and SPS work
- Reports to OIE (Appendix 4, E 20)
- E22 (paper by CVO for OIE publication)

General comments or recommendations:

- As exports of animal and aquaculture products develop there may be a need for formal consultation of stakeholders and increased international engagement on trade policy matters as reflected in level 4 and 5

¹⁰ *Active participation* refers to preparation in advance of, and contributing during the meetings in question, including exploring common solutions and generating proposals and compromises for possible adoption.

	Levels of advancement
III-4 Accreditation / authorisation / delegation <i>The authority and capability of the public sector of the VS to accredit / authorise / delegate the private sector (e.g. private veterinarians and laboratories), to carry out official tasks on its behalf.</i>	1. The public sector of the VS has neither the authority nor the capability to accredit / authorise / delegate the private sector to carry out official tasks.
	2. The public sector of the VS has the authority and capability to accredit / authorise / delegate to the private sector, but there are no current accreditation / authorisation / delegation activities.
	3. The public sector of the VS develops accreditation / authorisation / delegation programmes for certain tasks, but these are not routinely reviewed.
	4. The public sector of the VS develops and implements accreditation / authorisation / delegation programmes, and these are routinely reviewed.
	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 stakeholders.

Terrestrial Code References (s):

Points 6 and 8 of Article 3.1.2. on Fundamental principles of quality: General organisation / Procedures and standards.

Point 7 of Article 3.2.3. on Evaluation criteria for the organisational structure of the Veterinary Services.

Strengths:

- Draft BAHA bill would provide authority to accredit third parties under article 6 (2) (d)

Weaknesses:

- No current accreditation programs for private veterinarians or laboratories

Evidence (references for documents or pictures listed in Appendix 6):

- Draft BAHA bill (E 2)
- FAO Biosecurity Evaluation (EM3)
- Interviews of BAHA managers and staff by PVS Mission team members

General comments or recommendations:

- Establish authority for accreditation programs by moving ahead with proposed BAHA bill
- Develop capacity to administer accreditation programs to strengthen veterinary field services (e.g. need for service in the South where there is no dedicated veterinarian as well as in the North where workloads are growing, and to build emergency reserve capacity)
- Consider the possible merits of accrediting private laboratories to provide residue testing and services to the poultry and aquaculture sectors.

III-5 Veterinary Statutory Body <i>The Veterinary Statutory Body (VSB) is an autonomous authority responsible for the regulation of the veterinarians and veterinary para-professionals. Its role is defined in the Terrestrial Code.</i>	Levels of advancement
	1. There is no legislation establishing a <i>VSB</i> .
	2. There is a <i>VSB</i> , but it does not have legislated authority to make decisions nor to apply disciplinary measures.
	3. The <i>VSB</i> regulates <i>veterinarians</i> and <i>veterinary para-professionals</i> only within certain sectors of the VS (e.g. public sector but not private sector veterinarians).
	4. The <i>VSB</i> regulates <i>veterinarians</i> and <i>veterinary para-professionals</i> throughout the VS.
5. The <i>VSB</i> is subject to evaluation procedures in respect of autonomy, functional capacity and membership representation.	

Terrestrial Code References (s):

Point 9 of Article 3.2.1. on General considerations.

Article 3.2.12. on Evaluation of the veterinary statutory body.

Strengths:

- The Belize Veterinary Surgeon’s Board is established in law
- Although the Minister has controlling authorities, the VSB has a reasonable degree of autonomy as 3 of 5 Board members are selected by veterinarians.

Weaknesses:

- The VSB should address the issue of non-registered “para-veterinarians” who provide veterinary services in small communities.
- The VSB needs to generate funds to fully exercise its mandate to ensure the quality of veterinary practice in Belize

Evidence (references for documents or pictures listed in Appendix 6):

- Veterinary Surgeon’s Act (E 5)
- FAO biosecurity report (EM 3)
- Interviews of BAHA managers by PVS Mission team members

General comments or recommendations:

- Serious consideration should be given to implementation of a strategy proposed by FAO for the gradual regularization and training of currently unregistered “para-professionals”. This would allow the VSB to improve the quality of veterinary practice and the VS could improve its formal surveillance coverage and disease response capacity in remote communities.

	Levels of advancement
<p>III-6 Participation of producers and stakeholders in other joint programmes</p> <p><i>The capability of the VS and stakeholders to formulate and implement joint programmes in regard to animal health and food safety.</i></p>	1. Producers and other stakeholders only comply and do not actively participate in programmes.
	2. Producers and other stakeholders are informed of programmes and assist the VS to deliver the programme in the field.
	3. Producers and other stakeholders are trained to participate in programmes and advise of needed improvements, and participate in early detection of diseases.
	4. Representatives of producers and other stakeholders negotiate with the VS on the organisation and delivery of programmes.
	5. Producers and other stakeholders are formally organised to participate in developing programmes in close collaboration with the VS.

Terrestrial Code References (s):

Point 12 of Article 3.1.2. on Fundamental principles of quality: 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.

Strengths:

- BAHA has legal and administrative authorities to enter into partnerships and conduct joint programs.
- Stakeholders sit on BAHA Board
- Examples of joint programs:
 - AI surveillance conducted jointly by BAHA and Belize Poultry Association
 - Negotiation with meat producers user's group over fees led to negotiated adjustments to the delivery of services; similar experience with shrimp producers
 - Poultry industry is negotiating with BAHA for a USDA-style poultry improvement program and over movement permits with respect to Newcastle Disease
 - BAHA is now preparing for discussions with the Belize Livestock Producer's Association over programs to support the export of slaughter cattle to Mexico

Weaknesses:

- Level 5 would be in reach with a program of audit and evaluation to assess effectiveness and outcomes

Evidence (references for documents or pictures listed in Appendix 6):

- Interviews of BAHA managers and stakeholders by PVS Mission team members
- BAHA legislation (current and draft) E1, E2, E3 and E4

Summary of the results of the component “interaction with stakeholders”

BAHA’s effective networks and the small size of the country favour good communications. A number of brochures and other communications products have been produced, including BAHA “uniforms” (a range of attractive clothing). Given the breadth of its activities BAHA could make good use of a dedicated communications unit.

There are a number of venues for stakeholder engagement including the participation of selected stakeholders on BAHA’s Board of Directors. Other significant fora include a multi-stakeholder Zoonoses Committee, sectoral food safety working groups and an annual SPS workshop. The Zoonoses Committee has seen less activity in recent years and might be rejuvenated with a focus on emerging animal health issues. This Committee could serve as a starting point for a future “National Advisory Committee on Animal Health” to be created under the new Animal Health Bill. The Belize Livestock Producer’s Association has not been as effective as it might be in the view of some of its members and government officials.

Belize is active in key international fora including OIE, CODEX, WTO(SPS), with its current CVO serving in a regional executive capacity in the case of OIE.

There are currently no accreditation programs for private veterinarians or laboratories. Proposed amendments to the legislation under which BAHA operates would provide the required authority for this approach which could prove useful as officials seek to improve inspection coverage in remote districts, develop surge capacity for emergency responses and increase laboratory testing.

The Belize Veterinary Surgeon’s Board is established in law. Although the Minister has controlling authorities, the VSB has a reasonable degree of autonomy as 3 of 5 Board members are selected by veterinarians. The VSB should address the issue of non-registered “para-veterinarians” who provide veterinary services in small communities and needs to generate funds to more fully exercise its mandate to ensure the quality of veterinary practice in Belize.

BAHA has legal and administrative authorities to enter into partnerships and conduct joint programs with stakeholders. There have been some joint programs such as AI surveillance conducted jointly by BAHA and Belize Poultry Association. Negotiations with user groups over fees led to service adjustments for the inspection of meat and shrimp. Program designs are being negotiated with the poultry industry for a USDA-style poultry improvement program and the issuance of movement permits with respect to Newcastle Disease. BAHA is now preparing for discussions with the Belize Livestock Producer’s Association over programs to support the export of slaughter cattle to Mexico.

Additional observations on strengths, gaps and possible priority actions are presented in Appendix 6.

Summary of the recommendations for “interaction with stakeholders”

On the basis of the findings for this component, the general recommendations for priority action are:

- Develop a dedicated communications unit within BAHA
- Review and update mandate and work program of the Zoonoses Committee to improve stakeholder engagement on animal health and food safety issues that cut across multiple sectors (e.g. control of veterinary drugs, animal welfare) as well as emerging zoonotic and other diseases.
- The beef production sector which envisages growth to serve export markets may wish to consider creating its own association along lines of what has been successfully done by the poultry and aquaculture sectors rather than operating through the BLPA if there are insurmountable legal or other impediments.
- Consider a review of impediments to the effectiveness of BLPA.
- As exports of animal and aquaculture products develop there may be a need for formal consultation of stakeholders and increased international engagement on trade policy matters.
- Establish authority for accreditation programs by moving ahead with proposed BAHA bill.
- Develop capacity to administer accreditation programs to strengthen veterinary field services (e.g. need for service in the South where there is no dedicated veterinarian and in the North where workloads are growing, and to build emergency surge capacity).
- Consider the possible merits of accrediting private laboratories to provide residue testing and services to the poultry and aquaculture sectors.
- Serious consideration should be given to implementation of a strategy proposed by FAO for the gradual regularization and training of currently unregistered “para-professionals”. This would allow the VSB to improve the quality of veterinary practice and the VS could improve its formal surveillance coverage and disease response capacity in remote communities.

Some additional and more detailed suggestions from the initial review team for possible priority actions are presented in Appendix 6.

III.4 Fundamental component IV: Access to markets

This component of the evaluation appraises the authority and capability of the VS to provide support in order to access, expand and retain regional and international markets for animals and animal products. It comprises nine critical competencies.

Critical competencies:

Section IV-1	Preparation of legislation and regulations, and implementation of regulations
Section IV-2	Stakeholder compliance with legislation and regulations
Section IV-3	International harmonisation
Section IV-4	International certification
Section IV-5	Equivalence and other types of sanitary agreements
Section IV-6	Traceability
Section IV-7	Transparency
Section IV-8	Zoning
Section IV-9	Compartmentalisation

Terrestrial Code References:

Chapter 5.1. on General obligations related to certification.
 Chapter 5.2. on Certification procedures.
 Points 6 and 8 of Article 3.1.2. on Fundamental principles of quality: General organisation / Procedures and standards.
 Chapter 4.3. on Zoning and compartmentalisation.
 Chapter 5.3. on OIE procedures relevant to the Sanitary and Phytosanitary Agreement of the World Trade Organization.
 Points 1 and 2 of Article 3.2.7. on Functional capabilities and legislative support: Animal health 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 Functional capabilities and legislative support / Membership of the OIE.
 Chapter 4.1. on Identification and traceability of live animals: General principles.
 Chapters 5.10. to 5.12. on Model international veterinary certificates for international trade in live animals, hatching eggs and products of animal origin.

	Levels of advancement
<p>IV-1 Preparation of legislation and regulations, and implementation of regulations</p> <p><i>The authority and capability of the VS to actively participate in the preparation of national legislation and regulations, and to implement animal health and food safety regulations for animals, animal products and processes under their mandate.</i></p>	1. The VS have neither the authority nor the capability to participate in the preparation of national legislation and regulations, and implement resultant regulations.
	2. The VS have the authority and the capability to participate in the preparation of national legislation and regulations, but cannot implement resultant regulations nationally.
	3. The VS have the authority and the capability to participate in the preparation of national legislation and regulations, and to implement resultant regulations nationally.
	4. The VS consult their stakeholders in participating in the preparation of national legislation and regulations, and in implementing regulations to meet national needs.
	5. The VS consult their stakeholders in implementing regulations to meet international trade needs.

Terrestrial Code References (s):

Points 6 and 8 of Article 3.1.2. on Fundamental principles of quality: General organisation / Procedures and standards.

Points 1 and 2 of Article 3.2.7. on Functional capabilities and legislative support: Animal health and veterinary public health / Export/import inspection.

Point 6 of Article 3.2.14. on Functional capabilities and legislative support.

Strengths:

- BAHA has a broad and modern legislative framework created in 2000
- updates to the legislation are in preparation to address areas that are recognized as requiring further strengthening (e.g. food safety, traceability, emergency funding and potential conflicts of interest)
- National consultations on the proposed revisions were held in November 2008

Weaknesses:

- Resource limitations constrain BAHA's ability to fully implement provisions of the legislation (e.g. afore-mentioned weaknesses with respect to veterinary drugs, border controls and residue monitoring)
- BAHA would be well served by having its own in-house legal counsel 1) to provide continuity of advice (much reliance is currently placed on international consultants for the drafting of new legislation, with resulting risks of inconsistencies or deviations due to limited understanding of the legal context in Belize)

Evidence (references for documents or pictures listed in Appendix 6):

- Interviews of BAHA managers and staff by PVS Mission team members
- BAHA legislation (current and draft): E1 to E4 and regulations e.g. E6 to E8

General comments or recommendations:

- BAHA would be well served by having its own in-house legal counsel:
 - to provide continuity of advice (much reliance is currently placed on international consultants for the drafting of new legislation, with resulting risks of inconsistencies or deviations due to limited understanding of the legal context in Belize), and
 - to support BAHA in the enforcement of its regulations and in managing a variety of legal issues that will increasingly arise as the sector develops.

	Levels of advancement
<p>IV-2 Stakeholder compliance with legislation and regulations¹¹</p> <p><i>The authority and capability of the VS to ensure that stakeholders are in compliance with animal health and food safety regulations under the VS mandate.</i></p>	1. The VS have no programme to ensure stakeholder compliance with relevant regulations.
	2. The VS implement a programme consisting of inspection and verification of compliance with regulations relating to animals and animal products, report instances of non-compliance, but generally do not take further action.
	3. If necessary, the VS impose appropriate penalties in instances of non-compliance.
	4. The VS work with stakeholders to minimise instances of non-compliance.
	5. The VS carry out audits of their compliance programme.

Terrestrial Code References (s):

Points 6 and 8 of Article 3.1.2. on Fundamental principles of quality: General organisation / Procedures and standards.

Points 1 and 2 of Article 3.2.7. on Functional capabilities and legislative support: Animal health and veterinary public health / Export/import inspection.

Point 6 of Article 3.2.14. on Functional capabilities and legislative support.

Strengths:

- legal authorities are in place
- BAHA's quarantine service has a track record of compliance promotion, inspection and verification at ports of entry (reconciling import records against permits issued) and enforcement action

Weaknesses:

- some areas are deficient with respect to application and enforcement of regulations (e.g. veterinary drugs)
- insufficient capacity to address illegal trans-border movements
- limited audit, investigation and enforcement capacity

Evidence (references for documents or pictures listed in Appendix 6):

- Site visit and interviews of BAHA managers and staff by PVS Mission team members

General comments or recommendations:

- As national programs grow BAHA should consider developing an investigation and enforcement Department that could bring professional capacity to support all of its Departments.
- Similarly an audit and enforcement Department would be a valuable addition to BAHA's overall management capacity.

¹¹ Legislation is the basis for sanitary measures, and includes all relevant laws, regulations and decrees, and associated technical processes and procedures.

	Levels of advancement
<p>IV-3 International harmonisation</p> <p><i>The authority and capability of the VS to be active in the international harmonisation of regulations and sanitary measures and to ensure that the national legislation and regulations under their mandate take account of relevant international standards, as appropriate.</i></p>	1. National legislation, regulations and <i>sanitary measures</i> under the mandate of the VS do not take account of international standards.
	2. The VS are aware of gaps, inconsistencies or non-conformities in national legislation, regulations and <i>sanitary measures</i> 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 legislation, regulations and <i>sanitary measures</i> with the aim of harmonising them, as appropriate, with international standards, but do not actively comment on the draft standards of relevant intergovernmental organisations.
	4. The VS are active in reviewing and commenting on the draft standards of relevant intergovernmental organisations.
	5. The VS actively and regularly participate at the international level in the formulation, negotiation and adoption of international standards ¹² , and use the standards to harmonise national legislation, regulations and <i>sanitary measures</i> .

Terrestrial Code References (s):

Article 3.2.11. on Participation in OIE activities.

Points 6 and 10 of Article 3.2.14. on Functional capabilities and legislative support and on Membership of the OIE.

Strengths:

- Belize has referenced (adopted) a number of Codex standards, guidelines and codes of practice under its sanitary (food safety) legislation
- OIE norms are regularly used in developing policies, procedures and decisions on animal health
- BAHA officials (Directors of Animal Health and Food Safety and the SPS Coordinator) are active in the review and participate in the development of standards at the regional and international levels – e.g. for aquaculture production and exports

Weaknesses: Nil

Evidence (references for documents or pictures listed in Appendix 6):

- Food safety paper (EM 5)
- CVO's paper on VS in Belize (E22)
- Interviews of BAHA managers and staff by PVS Mission team members

¹² A country could be active in international standard setting without actively pursuing national changes. The importance of this element is to promote national change.

	Levels of advancement
<p>IV-4 International certification¹³</p> <p><i>The authority and capability of the VS to certify animals, animal products, services and processes under their mandate, in accordance with the national legislation and regulations, and international standards.</i></p>	1. The VS have neither the authority nor the capability to certify animals, animal products, services or processes.
	2. The VS have the authority to certify certain animals, animal products, services and processes, but are not always in compliance with the national legislation and regulations and international standards.
	3. The VS develop and carry out certification programmes for certain animals, animal products, services and processes under their mandate in compliance with international standards.
	4. The VS develop and carry out all relevant certification programmes for any animals, animal products, services and processes 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 References (s):

Chapter 5.2. on Certification procedures.

Points 6 and 8 of Article 3.1.2. on Fundamental principles of quality: General organisation / Procedures and standards.

Point 2 of Article 3.2.7. on Functional capabilities and legislative support: Export/import inspection.

Sub-point b) of Point 6 of Article 3.2.14. on Functional capabilities and legislative support: Export/import inspection.

Chapters 5.10. to 5.12. on Model international veterinary certificates for international trade in live animals, hatching eggs and products of animal origin.

Strengths:

- BAHA has required authorities and competency
- Aquaculture production and exports have gained EEC approval
- Animal health certifications reflect OIE standards
- Well documented procedures for import/export “quarantine” procedures

Weaknesses:

- Meat inspection is not fully meeting national and international standards (see section II.8)
- Limited personnel to track certificates and maintain databases

Evidence (references for documents or pictures listed in Appendix 6):

- Interviews of BAHA managers and staff by PVS Mission team members
- Annual reports e.g. E15

General comments or recommendations:

- See section II.8 with respect to food safety.

¹³ Certification procedures should be based on relevant OIE and Codex Alimentarius standards.

	Levels of advancement
<p>IV-5 Equivalence and other types of sanitary agreements</p> <p><i>The authority and capability of the VS to negotiate, implement and maintain equivalence and other types of sanitary agreements with trading partners.</i></p>	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.
	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 References (s):

Point 6 of Article 3.1.2. on Fundamental principles of quality: 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 Sanitary and Phytosanitary Agreement of the World Trade Organization..

Strengths:

- BAHA has and applies equivalency authorities
- Proposed mutual recognition of veterinary services with Mexico
- Potential for increased recognition under SPS initiatives of CARICOM and other regional/hemispheric agreements
- Jamaica accepted equivalency to USDA for beef exports

Weaknesses:

- Limited institutional capacity and developing state of the industry has required a focus on a limited number of priorities

Evidence (references for documents or pictures listed in Appendix 6):

- Interviews of BAHA managers and staff by PVS Mission team members

IV-6 Traceability <i>The authority and capability of the VS to identify animals and animal products under their mandate and trace their history, location and distribution.</i>	Levels of advancement
	1. The VS do not have the capability to identify animals or animal products.
	2. The VS can document the history of some animals and animal products.
	3. The VS have procedures in place to identify and trace selected animals and animal products as required for disease control and food safety purposes, in accordance with relevant international standards.
	4. The VS and their stakeholders have coordinated national procedures in place that can identify and trace animals and animal products as required for disease control and food safety purposes.
	5. The VS, in cooperation with their stakeholders, carry out audits of their traceability procedures.

Terrestrial Code References (s):

Chapter 4.1. on Identification and traceability of live animals: General principles.

Strengths:

- New BAHA Bill specifies traceability authority
- Branding is mandatory
- Some private sector initiatives (e.g. aquaculture can trace back to the pond; Running W Beef reports traceability)

Weaknesses:

- No national traceability system at present
- Most recent BAHA Bill not yet law and it is not clear that it makes adequate provision for mandatory identification beyond branding

Evidence (references for documents or pictures listed in Appendix 6):

- Interviews of BAHA managers, staff and stakeholders by PVS Mission team members
- BAHA Bill (E 2)
- FAO Biosecurity Evaluation (EM3)

General comments or recommendations:

- Review new BAHA Bill and associated Animal Health Bill to ensure that there is sufficient authority to mandate advanced forms of individual livestock ID (e.g. radio frequency tags).
- Complete planned updates of BAHA legislation.

IV-7 Transparency	Levels of advancement
<i>The authority and capability of the VS to notify the OIE of their sanitary status and other relevant matters (and to notify the WTO SPS Committee where applicable), in accordance with established procedures.</i>	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 inform stakeholders of changes in their regulations and decisions on the control of relevant diseases and of the country's sanitary status, and of changes in the regulations and sanitary status of other countries.
	5. The VS, in cooperation with their stakeholders, carry out audits of their transparency procedures.

Terrestrial Code References (s):

Chapter 5.1. on General obligations related to certification.

Points 1 and 3 of Article 3.2.8. on Animal health controls: Animal health status / National animal disease reporting systems.

Strengths:

- Regular notifications to OIE (e.g. recent Newcastle Disease case)
- Stakeholders are notified of significant changes to trade requirements (e.g. for significant ongoing trade in aquaculture products; emerging requirements for export of beef to Mexico)

Weaknesses:

- Effectiveness constrained by gaps in surveillance and compliance capacity
- Information flow to stakeholders could be enhanced by a dedicated communications unit within BAHA

Evidence (references for documents or pictures listed in Appendix 6):

- Interviews of BAHA managers and staff by PVS Mission team members
- Annual and semi-annual Reports to OIE

IV-8 Zoning	Levels of advancement
<i>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).</i>	1. The VS cannot establish disease free zones.
	2. As necessary, the VS can identify animal sub-populations with distinct health status suitable for zoning.
	3. The VS have implemented biosecurity measures that enable it to establish and maintain disease free zones for selected animals and animal products, as necessary.
	4. The VS collaborate with their stakeholders to define responsibilities and execute actions that enable it to establish and maintain disease free zones for selected animals and animal products, as necessary.
	5. The VS can demonstrate the scientific basis for any disease free zones and can gain recognition by trading partners that they meet the criteria established by the OIE (and by the WTO SPS Agreement where applicable).

Terrestrial Code References (s):

Chapter 4.3. on Zoning and compartmentalisation.

Strengths:

- Movement could be controlled at Blue Creek if necessary
- Proposed new Animal Health Bill would provide very clear authorities for designation of free-zones and movement controls

Weaknesses:

- No current disease control zones. It is not apparent that this would be a cost-effective strategy given the size and geography of the country

Evidence (references for documents or pictures listed in Appendix 6):

- Interviews of BAHA managers and staff by PVS Mission team members
- Draft legislation (E4)

General comments or recommendations:

- Secure passage of proposed Animal Health Bill to strengthen authorities for zoning.

IV-9 Compartmentalisation	Levels of advancement
<p><i>The authority and capability of the VS to establish and maintain disease free compartments as necessary and in accordance with the criteria established by the OIE (and by the WTO SPS Agreement where applicable).</i></p>	1. The VS cannot establish disease free <i>compartments</i> .
	2. As necessary, the VS can identify animal sub-populations with a distinct health status suitable for compartmentalisation.
	3. The VS have implemented biosecurity measures that enable it to establish and maintain disease free <i>compartments</i> for selected animals and animal products, as necessary.
	4. The VS collaborate with their stakeholders to define responsibilities and execute actions that enable it to establish and maintain disease free <i>compartments</i> for selected animals and animal products, as necessary.
	5. The VS can demonstrate the scientific basis for any disease free <i>compartments</i> and can gain recognition by other countries that they meet the criteria established by the OIE (and by the WTO SPS Agreement where applicable).

Terrestrial Code References (s):

Chapter 4.3. on Zoning and compartmentalisation.

Strengths:

- The aquaculture (and possibly the poultry industry) has operations that might be amenable to and benefit from a compartmentalization approach

Weaknesses:

- No formal compartments at this time

Evidence (references for documents or pictures listed in Appendix 6):

- Interviews of BAHA managers and staff by PVS Mission team members
- Photos of Belize Aquaculture (P73 – P97) illustrating potential to be managed as a compartment

Summary of the results of the component “access to markets”:

BAHA has a broad and modern legislative framework created in 2000. Updates to the legislation are in preparation to address areas that are recognized as requiring further strengthening (e.g. food safety, traceability, emergency funding and potential conflicts of interest). National consultations on the proposed revisions were held in November 2008. Unfortunately resource limitations constrain BAHA’s ability to fully implement provisions of the legislation (e.g. the afore-mentioned weaknesses with respect to veterinary drugs, border controls and residue monitoring).

BAHA’s quarantine service has a track record of compliance promotion, inspection, enforcement action and verification at ports of entry (e.g. by reconciling import records against permits issued). As noted previously there are some deficiencies with respect to application and enforcement of regulations (e.g. veterinary drugs), insufficient capacity to address illegal trans-border movements and limited audit, investigation and enforcement capacity.

Belize has referenced adopted a number of Codex and OIE standards, guidelines and codes of practice under its food safety and animal health legislation, regulations and practices. BAHA officials (Directors of Animal Health and Food Safety and the SPS Coordinator) are active in the review and participate in the development of standards at the regional and international levels – e.g. for aquaculture production and exports.

BAHA has the authorities and competencies required to perform certification to the highest international standards for industries performing at that level. Its aquaculture production and exports have gained EEC approval. Animal health certifications usually reflect OIE standards. There are well documented procedures for import and export permitting and certification work.

BAHA has and applies equivalency authorities as illustrated by a proposed mutual recognition of veterinary services with Mexico. There is potential for increased recognition under SPS initiatives of CARICOM and other regional/hemispheric agreements.

While there is currently no national traceability system, proposed legislation would create the required authority. Branding is mandatory but it is not clear whether existing or proposed legislation offers authority to make mandatory other forms of identification (e.g. bar coded or radio-frequency ear tags). There are private sector traceability initiatives for aquaculture and cattle.

Belize provides regular and timely notifications to OIE (e.g. its recent Newcastle Disease case). Stakeholders are notified of significant changes to trade requirements (e.g. for its significant trade in aquaculture products and emerging requirements for the export of beef to Mexico). The flow of information to stakeholders could be enhanced by a dedicated communications unit within BAHA.

There are no disease control zones at this time and it is not apparent that this would be a cost-effective strategy given the size and geography of the country. The aquaculture (and possibly the poultry industry) has operations that might be amenable to and benefit from a compartmentalization approach.

Additional observations on strengths, gaps and possible priority actions are presented in Appendix 6.

Summary of recommendations for “access to markets”

On the basis of the findings for this component, the general recommendations for priority action are:

- BAHA would be well served by having its own in-house legal counsel to provide continuity of advice (much reliance is currently placed on international consultants for the drafting of new legislation, with resulting risks of inconsistencies or deviations due to limited understanding of the legal context in Belize), and to support BAHA in the enforcement of its regulations and in managing a variety of legal issues that will increasingly arise as the sector develops.
- As national programs grow BAHA should consider developing and investigation and enforcement Department that could bring professional capacity to support all of its Departments.
- Similarly an audit and enforcement Department would be a valuable addition to BAHA’s overall management capacity.
- Complete planned updates of BAHA legislation with respect to zoning, movement controls and traceability.
- Review new BAHA Bill and associated Animal Health Bill to ensure that there is sufficient authority to mandate advanced forms of individual livestock ID (e.g. radio frequency tags).

Some additional and more detailed suggestions from the initial review team for possible priority actions are presented in Appendix 6.

PART IV: CONCLUSIONS

The veterinary services of Belize are fortunate to enjoy the support and operating environment provided by the Belize Agricultural Health Authority (BAHA). This well managed and highly professional organization was created under modern legislation in 2000 to provide animal health, plant protection, aquaculture and food safety inspection and quarantine services. It deservedly enjoys a strong reputation amongst its stakeholders. In this matter our findings are consistent with those of an FAO Team that conducted a Biosecurity Assessment of Belize in 2006 (EM 3).

Considering its small size BAHA (total of 94 staff) and its cadre of 5 veterinarians deliver a remarkable range of high quality services covering all major roles of a national veterinary service. Many of the findings and suggestions that we will make for improvement reflect constraints inherent in the small size of the organization and/or policies that leave it highly dependent on funding through fees for service that account for over 50% of the total budget of BAHA. We anticipate that there will be opportunities to address these constraints to some extent as the economy of Belize and its aquaculture, poultry and livestock sectors grow in size and sophistication. BAHA offers an excellent platform for this development, one in which the Government of Belize and its partners can invest with confidence.

Human resources are managed in a professional manner with proper job descriptions, staffing procedures and performance evaluation. Training and development is also encouraged and we were pleased to note that this extends beyond technical and scientific matters to include the development of management and leadership skills. Investments in continuing education could be more formally managed by creating linkages to annual performance evaluations and to the animal health and food safety priorities of the Agency. We were advised that one of the factors limiting this action has been funding constraints and a reluctance of managers to make commitments that they might not be able to honour; this does not appear to be an insurmountable barrier. It is also important to note an atmosphere that favours teamwork and cooperation both within BAHA as well as with key partner institutions and organizations.

In order to maintain and build upon its strengths BAHA must ensure that its future leaders are carefully selected and nurtured. This is particularly so in the case of such a small organization where the pool from which to select leaders is small. We were encouraged to learn that BAHA's Board of Directors exerted its authority to insist upon merit as a basis for the recent selection of its top executive, the Managing Director. In the near future BAHA will need to appoint a successor to the present Director of Animal Health (CVO) and Delegate to the OIE who has made a very substantial contribution in fostering the afore-mentioned strengths of the national veterinary service. It will be important that this and other senior appointments continue to be made on the basis of merit (knowledge, skills and ability). While this appears to be the intention of the current Managing Director and BAHA Board, we were unable to locate a high level statement of principles that would institutionalize this commitment, and ideally enshrine it in law as is the case in some countries.

It will be important to ensure that there is a sufficient number of students training as veterinarians to meet future needs. This is a particular challenge as the training must be obtained outside of Belize, one that is no doubt shared with other highly specialized professions. It might be addressed as part of a national skills management strategy to train and develop professionals and leaders for the future.

Belize has clearly demonstrated the capacity of its industry and veterinary services to build food production systems of the highest standard with respect to both product quality and food safety – witness the performance of its aquaculture sector that exports product into the most demanding markets. At the same time a number of serious deficiencies were noted in important areas that do not directly benefit from an export-driven revenue stream. Our findings with respect to the acknowledged illegal trans-border movements of agricultural products, gaps in meat inspection for the domestic market, as well as weaknesses in the control of veterinary drugs and in monitoring for chemical residues in food for the domestic market all illustrate this point.

Lack of adequate funding was a factor common to all of these and other cases in which services in the public interest are operating at less than desired levels. This signals a weakness in BAHA's funding allocation from the Government of Belize, which is less than 50% of its total budget. We recommend that this matter be carefully reviewed, not with a view to weakening the fee-for-service regime that seems to be working to good effect, but rather to determine whether there should not be an enhanced allocation of public funds. Comparisons with other agricultural exporting countries – that is competitors – countries from the OECD as well as countries with developing economies would likely reveal that they provide a much higher proportion of public funding for these animal health and food safety activities that are allowed under WTO disciplines.

In addition to seeking an increase in core funding there are other actions that will need to be taken to address some of the deficiencies we noted:

- 1) Define a clear division of responsibilities between the Ministers of Health and the Minister of Agriculture and Fisheries as a basis for establishing the roles and responsibilities of the MOH and BAHA on food safety generally and meat inspection in particular. Suggestions are made based on experience with a Canadian agency similar to BAHA.
- 2) Use existing authorities to ensure that the use of powerful drugs is properly controlled by requiring that sales be approved through prescriptions issued by licensed veterinary surgeons. This will need to be implemented in concert with actions to ensure that appropriate distribution arrangements are in place for drugs controlled by prescriptions.
- 3) Establish a national residue testing program for livestock and poultry to determine the efficacy of the enhanced control of drugs recommended above.
- 4) Address maintenance issues to bring the residue testing laboratory at CIL back on line, to renew the fleet of vehicles and to get incinerators operating at ports of entry and elsewhere.
- 5) Address the issue of non-registered “para-veterinarians” possibly through a strategy of regularization and training of the currently unregistered “para-professionals”. This would improve the quality of veterinary practice and assist the VS to increase surveillance coverage and disease response capacity in remote communities.
- 6) Develop a program to accredit private veterinarians and laboratories to strengthen veterinary field services (e.g. need for service in the South where there is no dedicated veterinarian and in the North where workloads are growing, and to build emergency reserve capacity) and possibly to provide residue testing and other services.
- 7) Increase staff at border points, in the South, the North and in laboratories in accordance with evolving workloads.
- 8) Develop a laboratory quality assurance program in collaboration with an OIRSA initiative to develop a laboratory accreditation scheme based on ISO 17025.
- 9) Develop guidelines and procedures for BAHA staff with respect to potential conflict of interest. Examples may be obtained from other countries such as Canada and/or from

BAHA's Food Safety Program.

- 10) Develop a strategy to address illegal transboundary movements in collaboration with other agencies (Customs, Health).
- 11) Establish plans for specific disease control or eradication programs to support national plans and priorities for development of the livestock, poultry and aquaculture industries. In the case of cattle, the identified priority goal is to export cattle for slaughter to Mexico and Guatemala. Negotiations with the proposed importing countries have identified needs to develop basic programs for the control of brucellosis and tuberculosis.
- 12) Strengthen key functions in BAHA by establishing:
 - A dedicated communications unit
 - An internal legal service
 - An enforcement group, and an
 - Audit and evaluation unit

To support this work it will be important to carry on with initiatives already underway to update BAHA's legal Authorities through draft Bills on BAHA, Food Safety, Animal Health). In moving this legislation forward it will be important to

- 1) Reaffirm and strengthen BAHA's role and responsibilities on food safety and to clarify the complementary roles and responsibilities of the MOH,
- 2) Establish a Biosecurity Fund,
- 3) Create authority to accredit private entities to work on behalf of BAHA, including veterinarians and laboratories,
- 4) Establish authorities to require traceability systems including modern forms of livestock identification, and
- 5) Manage potential conflicts of interest for BAHA's Board members and employees.

PART V: APPENDICES

Appendix 1: Organisation of the OIE/PVS evaluation of the VS of Belize

Assessors Team:

- Team leader: Dr. Linda Logan
- Technical expert: Dr. Recaredo Ugarte
- Special Expert and corresponding author: Dr. Barry Stemshorn

References and Guidelines:

- OIE *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 the market.

Dates: January 14-25, 2008 and may 14-18, 2009

Language of the evaluation and reports: English

Services to be evaluated: Veterinary services as defined in the OIE *Terrestrial Animal Health Code*.

- Inclusive of aquatic animals
- Not inclusive of other institutions / ministries beyond the Belize Agricultural Health Authority

Activities to be analysed: All activities related to animal and veterinary public health:

- Field activities:
 - Animal health
 - Quarantine (all country borders)
 - Epidemiology
 - Control and inspection
 - Others
- Data and communication
- Diagnostic laboratories
- Research
- Initial and continuous training
- Organisation and finance
- Other to be determined.

Persons present: see appendix 3

Sites visited: see appendix 3

Checklist:

- Consultation of data and documents
- Comprehensive field trips
- Interviews and meetings with VS staff and stakeholders,
- Analysis of processes

:

Assistance to be provided by the evaluated country

- Provision of missing data if possible
- Administrative authorisation to visit sites
- Logistic arrangements

Reports:

- A fact sheet or power point summary will be presented at the closing session.
- A final report by one month after completion of the field visit will be sent to OIE for peer-review.

- The current levels of advancement of each critical competence will be described by assessors and references provided as appropriate to justify findings.
- General recommendations may be provided depending on the context of the evaluation.

Confidentiality and publishing of results

- The results of the evaluation are confidential between the country and the OIE. They can be released only with formal agreement of the evaluated country.

Appendix 2: Glossary of terms

Terms defined in the Terrestrial Code that are used in this publication are reprinted here for ease of reference.

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.

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 in the whole country.

Emerging disease

means a new infection resulting from the evolution or change of an existing pathogenic agent, a known infection spreading to a new geographic area or population, or a previously unrecognized pathogenic agent or disease diagnosed for the first time and which has a significant impact on animal or public health.

Equivalence of sanitary measures

means the state wherein the sanitary measure(s) proposed by the exporting country as an alternative to those of the importing country, achieve(s) the same level of protection.

International veterinary certificate

means a certificate, issued in conformity with the provisions of Chapter 5.2., 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.

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 control programme of live animals

means the operations whereby the Veterinary Services, knowing the location of the animals and the identity of their owner or responsible keeper, are able to apply appropriate animal health measures, as required.

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.

Official veterinary control

means that the Veterinary Authority knows the location of the animals and the identity of their owner or responsible keeper and is able to apply appropriate animal health measures, as required.

Risk analysis

means the process composed of hazard identification, risk assessment, risk management and risk communication. [See Section 2 of the Terrestrial Code.]

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 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 to those who need to know so that action can be taken.

Terrestrial Code

means the OIE Terrestrial Animal Health Code.

Veterinarian

means a person 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, comprising veterinarians, other professionals and para-professionals, 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 in the whole country.

Veterinary para-professional

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 para-professional) in a country, and delegated to them under the responsibility and direction of a veterinarian. The tasks authorized for each category of veterinary para-professional 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 in the territory. The Veterinary Services are under the overall control and direction of the Veterinary Authority. Private sector organisations, veterinarians or veterinary paraprofessionals are normally accredited or approved to deliver functions by the Veterinary Authority.

Veterinary statutory body

means an autonomous authority regulating veterinarians and veterinary para-professionals.

Appendix 3: List of facilities, locations visited and persons met or interviewed

A. PVS Team #1 (Drs. Logan and Ugarte) January 14-25, 2008¹⁴

14th January 2008 (Day 1)

Place: Central Farm, Cayo
Facility: Office of the Director of Animal Health, BAHA
Personnel: Dr. Recaredo Ugarte (OIE) and
 Dr. Victor Gongora, Director, Animal Health, BAHA and
 Delegate to the OIE for Belize
TOPIC: General information and final draft of proposed itinerary

15th January 2008 (Day 2)

Place: Central Farm, Cayo
Facility: Office of the Director of Animal Health, BAHA
Personnel: Drs. Linda Logan (OIE), R. Ugarte, V. Gongora and Miguel DePaz
TOPIC: General information and finalize itinerary

Place: Belmopan
Facility: Ministry of Agriculture and Fisheries (MAF)
Personnel: Deputy Minister, MAF
TOPIC: Briefing on the PVS mission

Place: San Ignacio
Facility: Belize Poultry Association (BPA)
Personnel: Members of the BPA
TOPIC: Relationships between BPA and the VS; surveillance for HPAI

Place: Central Farm, Cayo
Facility: Offices of the Animal Health Division, BAHA
Personnel: Staff of the Animal Health Division
TOPIC: Briefing on the mission and its information requirements; introduction of the officers

16th January 2008 (Day 3)

Place: Belmopan
Facility: Ministry of Finance
Personnel: Ms. Betty-Ann Jones, Deputy Financial Secretary
TOPIC: Public and user-fee funding for veterinary services

Place: Belmopan
Facility: National Emergency Management Organization
Personnel: Colonel Shelton Defour
TOPIC: Role of NEMO and support it can offer in an animal health emergency

Place: Belmopan
Facility: Headquarters, Belize Animal Health Authority (BAHA)
Personnel: Nerie Sanz, Managing Director
TOPIC: Structure, roles, financing and challenges facing BAHA

¹⁴ Drawn from notes prepared by Dr. Ugarte (Appendix 4, E 16)

Place: Central Farm, Cayo
Facility: Offices of the Quarantine Department
Personnel: Mr. Margarito Garcia, Quarantine Director
TOPIC: Overview of the Quarantine Department

Place: Benque Viejo-Cayo
Facility: Belize-Guatemala border post
Personnel: Mr. Margarito Garcia and Dr. Miguel De Paz (veterinarian)
TOPIC:

17th January 2008 (Day 4)

Place: Central Farm, Cayo
Facility: Central Veterinary Laboratory, BAHA
Personnel: Donaldo Yah and Dona Dougall (laboratory technicians)
TOPIC: Operations and financing of the laboratory

Place: Central Farm, Cayo
Facility: Offices of the Animal Health Division, BAHA
Personnel: Ms. Delilah Cabb, SPS Coordinator
TOPIC: Risk analysis

Place: Central Farm, Cayo
Facility: Offices of the Animal Health Department, BAHA
Personnel: Dr. Miguel De Paz (veterinarian)
TOPIC: Disease surveillance and epidemiology

Place: Belmopan
Facility: Offices of an International Agency
Personnel: Crispin Blanco (USDA)
 Wilmot Garnett and Salvador Monge (IICA)
 Fermin Blanco (OIRSA)
TOPIC: Roles and activities of international agencies in Belize with respect to animal health and food safety

18th January 2008 (Day 5)

Place: Central Livestock Market, at Mile 47 1/2 Western Highway
Facility: Boardroom of the Belize Livestock Producer's Association
Personnel: BLPA Board Members
TOPIC: Opportunities and challenges for the production and export of meat

Place: Spanish Lookout
Facility: Mennonite Community – various facilities
Personnel: Mennonite community representatives
TOPIC: Modern approaches to poultry, milk and cattle production, feeding and hygiene

19th January 2008 (Day 6)

Place: Upper Barton Creek
Facility: Mennonite Community – various facilities
Personnel: Mennonite community representatives
TOPIC: Traditional livestock and poultry production systems

21st January 2008 (Day 8)

Place: San Ignacio
Facility: Running W Food Products: slaughter and processing facility
Personnel: Owner and operators
TOPIC: Site visit, plans for expansion and exports

Place: Belmopan
Facility: Ministry of Health (MOH)
Personnel: Dr. Jorge Polanco, Director of Health Services
TOPIC: Cooperation between MOH and BAHA on zoonoses, e.g. rabies;
 Division of responsibilities between MOH and BAHA on food safety

Place: Spanish Lookout
Facility: Dairy Plant
Personnel: David F. Wolfe, Manager
TOPIC: Site visit; laboratory testing; exports to Guatemala and USA

22nd January 2008 (Day 9)

Place: Central Farm, Cayo
Facility: Offices of the Animal Health Department
Personnel: Ms. Delilah Cabb, SPS Coordinator
TOPIC: roles, information flow and sectoral coordination on SPS issues

Place: Belize City
Facility: Private zoo
Personnel: Zoo officials
TOPIC: international cooperation in the preservation of wild species

Place: Cayo
Facility: Central Farm
Personnel: Dr. Michael De Shield, Director, Food Safety
 Dr. Miguel Figueroa, Veterinary Drugs Registrar
TOPIC: Food Safety and registration of biologics

23rd January 2008 (Day 10)

Place: Stann Creek
Facility: Kendal Paradise Farm
Personnel: Santiago Juan, Farm Manager
TOPIC: Beef cattle breeding and production in Belize

Place: Toledo
Facility: Belize Aquaculture Limited
Personnel: Company officials
TOPIC: modern large scale production and export of shrimp; aquaculture health issues, inspection and laboratory testing

24th January 2008 (Day 11)

Place: Orange Walk and Corozol Districts
Facility: various facilities (slaughter plants and border crossings)
Personnel: Dr. Joe Anthony Myers, Supervisor Orange Walk Office
TOPIC: Production and slaughter of cattle and poultry; control of border crossings

Place: Santa Elena, Corozal
Facility: Belize-Mexico breeder point
Personnel: Mr. Margarito Garcia and eight border officials
TOPIC: site visit, facilities and documentation

25th January 2008 (Day 12)

Place: Belmopan, Cayo District
Facility: George Price Centre
Personnel: Over 40 persons from different spheres who had been interviewed during this first mission
TOPIC: Presentation of the preliminary report (Appendix 4, item E 17)

B. PVS Mission #2 (Barry Stemshorn) May 14-18, 2009**13th May 2009 (Day 0)**

Place: en route from airport to Central Farm, Cayo
Facility: BAHA vehicle
Personnel: Dr. Miguel Figueroa
TOPIC: Registration and control of veterinary drugs and biologics

Place: Central Farm, Cayo
Facility: Office of the Director of Animal Health, BAHA
Personnel: Dr. Victor Gongora, Director Animal Health, BAHA and Delegate to the OIE for Belize
TOPIC: General information and plan itinerary

14th May 2009 (Day 1)

Place: Central Farm, Cayo
Facility: Office of the Director of Animal Health, BAHA
Personnel: Ms. Delilah Cabb, SPS Coordinator and special project officer
Dr. Victor Gongora
TOPIC: Finalize plans for the week
 Briefing on status of proposed new Bills, emergency funding plans, IDB investment project, SPS work and BAHA/MOH roles

Place: Central Livestock Market, at Mile 47 1/2 Western Highway
Facility: Boardroom of the Belize Livestock Producer's Association
Personnel: Dr. Erroll Vanzie, President,
Harold Parham, CEO, and seven BLPA Board Members
TOPIC: Livestock development strategies, traceability, requirements for the export of slaughter cattle to Mexico, costs of laboratory testing, stakeholder engagement

Place: Belmopan
Facility: BAHA Headquarters
Personnel: Edwin Martinez, Ph.D., Managing Director, BAHA
TOPIC: Technical independence, funding, sectoral strategies and priorities;
 Roles and responsibilities of BAHA and MOH on food safety

Place: Belmopan
Facility: Ministry of Health
Personnel: Dr. Michael Pitts, Director, Health Services
TOPIC: Roles and responsibilities of BAHA and MOH on food safety; meat inspection;
 residue testing; control of veterinary drugs; zoonoses

Place: Belmopan
Facility: Ministry of Agriculture and Fisheries
Personnel: Eugene Waight, Chief Agriculture Officer
 Phillip Tate, Trade Policy Analyst
TOPIC: Sectoral strategies and priorities; proposed FAO/IDB investment project

15th May 2009 (Day 2)

Place: Belmopan
Facility: BAHA Headquarters
Personnel: Sherlett Ferguson, Director Human Resources, BAHA
TOPIC: Job descriptions, performance evaluation, staffing, training, managing potential conflicts
 of interest.

Place: Belmopan
Facility: BAHA Headquarters
Personnel: Emile Mena, executive with the Mena Group (includes Fresh Catch Belize Ltd.)
TOPIC: BAHA's relations with stakeholders; fees for laboratory services, residue testing,
 international certification

Place: Sibun River near Belmopan
Facility: Fresh Catch Belize Ltd.
 Tilapia Aquaculture Farm and Processing Plant
See: <http://www.aquaculture.co.il/projects/Belize.html>
Personnel: Foreman and staff of Fresh Catch Belize Ltd.
 Ms. Andrea Budd, Aquaculture and food safety specialist, BAHA
TOPIC: Site visit to this facility which is approved for exports by USFDA and the EU

16th May 2009 (Day 3)

Place: St. Ignacio
Facility: Running W Food Products: slaughter and processing facility
Personnel: Mr. Abdala Bedran, Owner
TOPIC: Traceability and cattle identification, export strategies, effectiveness of BLPA,
 User fees, access to and quality of private veterinary services

Place: Spanish Lookout (Mennonite Community)
Facility: Agricultural supply retail outlet
Personnel: Clerk
TOPIC: retail sale of antibiotics without prescription, and out-of date drugs

Place: Central Farm, Cayo
Facility: Board Room

Personnel: **Dr. Gongora, CVO, and staff of the Animal Health Division, BAHA**
TOPIC: Detailed review of preliminary findings: strengths, weaknesses and proposed ratings for each of the 40 critical competencies

Place: **Central Farm, Cayo**
Facility: **Office of the Director, Animal Health**
Personnel: **Dr. Michael De Shields, Director Food Safety, BAHA**
TOPIC: Food safety, roles and responsibilities of BAHA and MOH, Residue testing, Funding for BAHA, meat inspection, CODEX, stakeholder engagement

Appendix 4: List of documents used in the PVS evaluation Belize

E = Electronic version H = Hard copy version P= Digital picture

Ref	Title	Author / Date	ISBN / Web	Related critical competences
	PRE-MISSION DOCUMENTS (From January 2008)			
E 1	Belize Agricultural Health Authority Act. Chapter 211.	Government of Belize Revised Edition 2000		I.9, II.6&7, IV.1
E 2	Draft Belize Agricultural Health Authority Bill	Government of Belize Draft 27 Nov 2006		I.9, II.6&7, II.8, II.9, IV.1, IV.6
E 3	Explanatory Note (re Draft Belize Agricultural Health Authority Bill)	Government of Belize Draft 27 Nov 2006		I.9, II.6, 7, 8, &9, IV.1&6
E 4	Draft Animal Health Bill	Government of Belize Draft 28 December 2006		I.9, II. 4,6,7,8,9&11, IV.1, 6&8
E 5	Belize Veterinary Surgeons Act. Chapter 326	Government of Belize Revised Edition 2000		III.5
E 6	Veterinary Drugs and Animal Feed Registration and Control (Statutory Instrument no. 84 of 2001)	Belize Agricultural Health Authority		II.9
E 7	Animals Ante Mortem Inspection Regulations (Statutory Instrument no. 23 of 2001)	Belize Agricultural Health Authority		II.5, 6,7&8
E 8	Food Safety Regulations (Statutory Instrument no. 25 of 2001)	Belize Agricultural Health Authority		II.8, IV.x (accreditation)
E 9	FMD Free Country where vaccination is not practiced (submission to the OIE)	Belize Agricultural Health Authority (Undated but evidently 2006 or later)		
E 10	Job Description - Vet Technical Director Animal Health Services	Belize Agricultural Health Authority		I.1.A & I.2.A
E 11	Job Description - Veterinary Officer	Belize Agricultural Health Authority		I.1.A & I.2.A
E 12	Directory of Veterinarians			I.1.A, III.5
E 13	Annual Budget Fiscal Year 2008-09	Belize Agricultural Health Authority	OIE BAHA Budget copy.pdf	I.8
E 14	Annual Report - January To December 2007. Central Farm Veterinary Laboratory	Belize Agricultural Health Authority		II.1

E 15	Animal Health Department, Annual Report 2006	Belize Agricultural Health Authority		II.3
E16	Belize: Daily Observations, OIE Mission	Recaredo Ugarte, January 2008	Translated by OIE	All
E17	OIE Evaluation of Veterinary Service: PVS. Preliminary Observation	Linda L. Logan and Recaredo Ugarte January 2008	PowerPoint Presentation	All
E18	Appendix 12: Template for the summary of Preliminary Findings; notes of Team 1	Linda L. Logan and Recaredo Ugarte January 2008		All
E19	BAHA Brochures -a) BAHA Overview -b) Biosecurity (poultry) -c) HACCP	BAHA (various dates)		III.1
E20	Belize Annual and Semi-annual Reports to the OIE	BAHA 2005 & 2006		III.3, IV.7
E 21	Quarantine and Inspection Service Procedures Manual	BAHA July 2004 104 pp		II.4
E 22	Veterinary Services in Belize: adapting organisational models to the needs of small economies	V. Gongora, 2003	Rev. sci. tech. Off. Int Epiz 22(2) 463-471	I.4, I.5, 1.6, I.8, III.3, IV.1
E 23- E 25	Minutes of Meetings of the Veterinary Services Board: May 2004, August 2007, and December 2007	Veterinary Services Board		I.2.A
E 26- E27	Course Syllabus ASCI 105 – Exploring Animal Health and Disease ASCI 110 – Exotic Animals of Belize	Galen University, San Ignacio Belize, with Global Learning Semesters, Reston, VA 20190	www.globalsemesters.com	I.3
E 28	CIL Annual Report 2006	BAHA 2006,		II.1, II.2
photo no.	Photos from January 2008 (see PDF File)			
P1- P3	National Emergency Management Organization	PVS Mission Team 2008		II.6
P4- P13	BAHA Offices and Vehicles	PVS Mission Team 2008		I.7
P14	Public Awareness Poster	PVS Mission Team 2008		III.1
P15	Agricultural product store that sells veterinary drugs	PVS Mission Team 2008		II.9
P16- P33	Port of Entry from Guatemala	PVS Mission Team 2008		II.4
P34 – P38	Port of Entry from Mexico	PVS Mission Team 2008		II.4
P39 – P56	Running W Brand Processed Meats	PVS Mission Team 2008		II.8
P57 – P67	Dairy Processing Facility	PVS Mission Team 2008		II.8
P68 – P69	Central Investigation Laboratory	PVS Mission Team 2008		I.7, II.1

P70 – P72	Private veterinary clinic operated by a senior BAHA official	PVS Mission Team 2008		I.4
P73 – P97	Belize Aquaculture Limited	PVS Mission Team 2008		IV.5, IV.9
	MISSION DOCUMENTS (obtained in May 2009)			
H 1	Fish and Fishery Products Inspection Regulations (Amendment) (Statutory Instrument no. 88 of 2002)	Belize Agricultural Health Authority		II.8, IV.4&5
H 2	Service Fees Regulations) (Statutory Instrument no. 182 of 2004)	Belize Agricultural Health Authority		I.8
EM 1	Job Description - Animal Health Technician	Belize Agricultural Health Authority		I.1.B & I.2.B
EM 2	Job Description – Laboratory Technician	Belize Agricultural Health Authority		I.1.B & I.2.B
EM 3	BELIZE: Strengthening the Biosecurity Framework	FAO 2006		I.6
EM 4	Agricultural Development, Management and Operational Strategy (ADMOS) (TCP/BELIZE/2003A)	FAO, in preparation		
EM 5	Improving the effectiveness of national food control systems in the Americas and the Caribbean	Michael De Shield, Director, Food Safety Services Central Investigation Laboratory, Belize Agricultural Health Authority		II.8
EM 6	Draft Food Safety Bill	Belize Agricultural Health Authority		II.8
EM 7	Memorandum Of Understanding Between The Ministry Of Health And The Belize Agricultural Health Authority (draft)	Government of Belize		II.8
H 3	Report of Performance Appraisal	Belize Agricultural Health Authority		I.1.A&B
H 4	Documentation on Management Training	Belize Institute of Management and Belize Agricultural Health Authority		I.3
PM 1	Photo of injectable tetracycline and amoxicillin in a retail outlet	BWS May 2009		

Appendix 5: Preliminary Findings from January 2008

Adapted from a Power Point presentation by:

Linda L. Logan DVM, MS, PhD
and
Recaredo Ugarte DVM

Official OIE Mission to Belize
January 12-29, 2008

Preliminary observations

We wish to thank you for hosting this OIE mission

The partition of what we know as veterinary services is different in BAHA than other countries models with which we are familiar

We are not clear on what the government's strategy is for animal production for Belize.

We appreciate this is election time and the country strategy may change!

The BAHA staff have a high level of professional training and high level of empowerment through the BAHA model

If the government is committed to increasing self sufficiency and gaining export markets in livestock and livestock products:

1. Increase the number of BAHA staff
2. Provide more Government budgetary commitment for livestock and poultry services
3. Review the BAHA structure to improve the coordination of the existing programs that provide services for public health and animal health.

If the government is committed to increasing self sufficiency and gaining export markets (continued):

4. Premise identification of farms for all livestock and poultry species
5. Livestock census
6. Animal movement control
7. Zoonotic disease surveillance is needed
8. General emergency contingency plans for livestock

9. Specific contingency plans for each livestock species
10. Zoonotic disease control programs such as rabies, tuberculosis, Brucellosis etc
11. Strengthen the laboratory diagnostic capacity with more staff and diagnostic tests for producers
12. Increase surveillance along border to protect livestock for illegal movement of livestock and poultry and their products. This will help prevent introduction of exotic livestock diseases
13. Current slaughter houses would not meet standards for export to potential international trading partners.
14. Slaughter houses need to upgrade their design and processes to meet export market demands
15. Shrimp production for export has an excellent facility and quality assurance program that is world class
16. Emphasis on animal welfare needs to be further developed

Appendix 6: Notes on Critical Competencies from January 2008

I. HUMAN AND FINANCIAL RESOURCES

Institutional and financial sustainability as evidenced by the level of professional/technical and financial resources available

Critical competencies	Strengths	Gaps	Potential priority action
I-1 Professional and technical competence of the personnel of the VS A. Veterinary and other professionals (university qualification)	Professional staff are highly competent and have been trained in different countries which provides a diversity of technical knowledge.	Because of the small number of professional veterinary staff employed by BAHA, 4 in animal health and 1 in public health individuals are having to serve in 3-4 key roles for animal health and this makes it impossible for them to concentrate or gain the in depth knowledge base of the field needed for all of these areas of expertise. Too much multitasking required and this can be counterproductive.	More BAHA veterinary coverage is needed to cover the south and North of the country and to provide staff for central administrative functions such as risk assessment and epidemiology campaigns.
B. Veterinary para-professionals and other technical personnel	Staff are motivated to do their jobs and receive most of their training on the job .	Very few para professionals employed by BAHA	BAHA needs a public information officer to help create more public awareness of their programs, to develop materials to send to stakeholders by email or fax, and public service announcements for TV and radio.
I-2 Continuing education (CE)¹⁵	International organizations have provided intermittent opportunities for training in the region and abroad over the years which has strengthened the veterinary services.	BAHA does not have an organized program of continuing education for professionals or technical staff. Likewise the Veterinary Surgeons Board and the Belize Veterinary Association do not presently offer continuing education. .	BAHA should develop a plan for continuing education and should allocate funding for this activity. Training should be provided to both veterinary and technical staff in order for them to better serve the stakeholders. Administrative management and Leadership training and teamwork training would provide staff new skills in how to better function as a member of the BAHA team.
I-3 Technical independency	High level of technical independence under BAHA model	The staffing number is so low that it is hard to have all technical areas needed well covered.	BAHA administrative management and section heads of the services should participate in team building exercises. Likewise all staff in individual sections would benefit from similar training.
I-4 Stability of policies and programmes	Policies are stable and there is a structure to provide new legislation and	Due to lack of funding there are very few programs being	Stakeholders should work with BAHA to prioritize what programs they need and

¹⁵ Continuing education includes Continuous Professional Development (CPD) for veterinary, professional and technical personnel.

	regulations when needed.	delivered to the stakeholders.	develop strategic plans for these programs. BAHA veterinarians need to develop a forum for regular meetings with stakeholders.
I-5 Coordination capability of the sectors and institutions of the VS (public and private)	Small number of staff that need to coordinate their activities amongst themselves and private veterinarians	Veterinary Service function is not well documented in written form as to what programs it delivers. No strategic plan for animal health exists at present. No proposals for Animal Health priorities or future needs have been developed.	Work with livestock, poultry and aquaculture industry stakeholders to identify the highest priority needs. Work with stakeholders to develop 1-2 disease control programs that are needed to protect public health and promote export.
I-6 Funding	Core budget for all of BAHA is \$4.2 m Belize dollars. About 50% core funding from Ministry of Agriculture and remainder is from revenue. Flexibility to charge user fees to stakeholders.	BAHA was expected to charge stakeholders fees before stakeholders could see the benefits of having such a service. Cost recover charges to stakeholders is high and consequently services are often not used. IT is too expensive. Much of what BAHA does is for the public good and this is not properly recognized and financially supported by the Central Government.	Stakeholder strategic planning sessions followed by stakeholders seeking more financial core budgetary support for BAHA activities is needed.
I-7 Contingency funding	BAHA has no contingency funding but has flexibility to move funds as needed from one budget category to another in case of an emergency.	In such a case a medfly emergency would result in no animal health operating funds and diversion of staff to medfly control. There is no emergency funding to deal with an emergency transboundary disease outbreak such as HPAI or foot and mouth disease. No compensation fund to allow veterinary services to quickly depopulate animals that are infected.	Create a specific contingency fund for animal health emergencies to allow quick control and stamping out of exotic diseases.
I-8 Capability to invest and develop	None	Due to very small staff there is no possibility for staff to go away on advanced training for masters or PhD degrees or even extended training of a few months. There is no continuing education funds within BAHA to improve the level of education of its staff. Due to low operational budgets there is no funding to renew equipment such as that needed in the laboratory, vehicles, computers and other important emergency equipment.	Create a budget line item for equipment and material upgrades. Need an information technology specialist to create backup drives and servers for the important databases of BAHA. No government service dedicated email system exists and thus provides little security for government information.

II. TECHNICAL AUTHORITY AND CAPABILITY

The authority and capability of the VS to develop and apply sanitary measures and science-based procedures supporting those measures.

Critical competencies	Strengths	Gaps	Potential priority action
II-1 Veterinary laboratory diagnosis	<p>Laboratory technical staff (2) are well trained to execute the diagnostic tests offered by the Central Veterinary Laboratory. Staff have a broad understanding of the services they provide. Staff have had opportunities to themselves participate in some continuing education abroad in international laboratory courses.</p> <p>Equipment available is in good working order and the laboratory is tidy and clean.</p> <p>Good log books for daily submissions. Monthly reports for disease diagnostics are done.</p> <p>Recognize when they do not have diagnostic capacity and they work with international organizations to get samples quickly to international reference laboratories.</p> <p>Well organized serum bank in freezers.</p>	<p>Budget requested and allocated are seldom realized thus limiting the laboratories capacity to buy needed diagnostic kits and supplies.</p> <p>Very few diagnostic tests are offered for livestock and poultry.</p> <p>Insufficient laboratory staff (2).</p> <p>The system for sample submission is not conducive to practicing veterinarians or producers. Veterinarians are expected to submit and pay for samples in person. Results are held at the laboratory for pick up instead of calls to practitioners or emailing or faxing results.</p> <p>Management practices that include rapid turn around of results through telecommunications would possibly increase case load and thus revenue.</p>	<p>Develop a method to provide clients rapid results or updates by email or phone.</p> <p>Develop a better way to move samples to the lab instead of expecting vets to deliver them and pick up results. Limit the services offered by the laboratory to concentrate on national programs of disease surveillance and control. Develop one specific program per year and concentrate on this.</p>
II-2 Laboratory Quality Assurance	<p>Some of the diagnosis of diseases is done using diagnostic kits produced by internationally reputable companies that meet OIE diagnostic standards.</p>	<p>The number of laboratory technicians (2) is inadequate to carry a higher case submission rate.</p> <p>No evidence in the veterinary diagnostic laboratory of standard quality control practices such as log sheets on incubators, safety cabinets or refrigerators.</p>	<p>Seek funding for laboratory staff to attend an international training course on laboratory quality assurance. Based on this training initiate a laboratory quality assurance program.</p>
II-3 Risk analysis	<p>Strong science-based risk analysis for live animals and products has been performed on several products seeking import licenses.</p>	<p>All risk analysis is conducted by a single veterinarian who actually serves as the Cayo district veterinarian. A dedicated epidemiologist with risk analysis experience is needed at the central office level.</p> <p>Regular risk assessment for exotic disease outbreaks are not being</p>	<p>One veterinarian is assigned to be the national epidemiology coordinator and risk assessor.</p> <p>One person does a daily check of the OIE website and news for exotic disease outbreaks. Important disease outbreak information is shared</p>

		done to help prevent introduction of exotic diseases through meat products and eggs due to staff shortage of qualified veterinarians. .	with BAHA staff and with the livestock and poultry producers
II-4 Quarantine and border security	<p>Staff are committed and well trained.</p> <p>Good documentation of incoming animals and products are kept.</p> <p>Have a refrigerator for confiscated products and an incinerator.</p>	<p>Limited number of staff at border and only at the designated official border crossings.</p> <p>No technical equipment such as radiographic scanners to detect illegal products. All inspection is done visually by the customs not the quarantine staff. This would require that customs staff receive extensive training to recognize illegal agricultural products.</p> <p>No livestock holding facilities are functional at border crossings with Mexico and Guatemala. This is an animal welfare issue and import export issue that needs attention.</p> <p>Incinerator at Mexican border is non-functional and thus illegal products are being burned in open pits. This pit is not secure and confiscated meat products could be scavenged by dogs or birds resulting in disease outbreaks.</p> <p>Border system of spraying vehicles fails to recognize that tires are a primary method of spread of animal diseases. The outside of vehicles was sprayed with a very light mist that did not cover some vehicles well and tires were neglected.</p>	<p>Increase the number of staff engaged by BAHA to protect the border and they should be actively working inspecting luggage with customs officials.</p> <p>Staff needed to check both personal luggage, vehicles and cargo in containers as well as a supervisors. A full time person to review and record paper work. A minimum of 6 persons at each post is recommended.</p> <p>Develop training for custom officials so they are recognizing the illegal products.</p>
II-5 Epidemiological surveillance	<p>There have been surveillance programs conducted with international funding assistance for Classical Swine Fever, Foot and Mouth Disease, and Avian Influenza.</p> <p>Documents have been presented to the OIE requesting freedom for FMD and CSF.</p> <p>Several Staff have attended international epidemiology and exotic disease diagnosis training courses.</p>	<p>Most disease surveillance is passive.</p> <p>Lack sufficient staff to carry out active disease surveillance programs.</p> <p>A OIRCA Database was used for capturing information on CSF surveillance.</p> <p>Serosurveillance for CSF has stopped for several years and thus does not allow the veterinary</p>	<p>Designate one veterinarian to be the national epidemiology coordinator and to work with international agencies and producers to set up surveillance programs.</p> <p>Consider increasing the number of field veterinarians to get better coverage for all 6 districts through use of part time vets or accredited private</p>

		<p>services a means to rapidly respond to outbreaks.</p> <p>No evidence of any active surveillance program at the present time.</p>	<p>veterinarians working on contract.</p> <p>Reinitiate a program of surveillance both slaughter house and village level for CSF.</p> <p>Initiate a tuberculosis and brucellosis surveillance program at slaughter houses.</p> <p>Step up AI surveillance in poultry and encourage better biosecurity at farms and distribution points as well as slaughter house and farm works changing clothes and shoes when entering farms with poultry.</p>
<p>II-6 Early detection and emergency response</p>	<p>Staff have been well trained at recognition of exotic livestock and poultry diseases through veterinary education and attendance at international training courses.</p> <p>Airport forms and posters make visitors aware of regulations on importation of meat and poultry products.</p> <p>PPE available and sample boxes ready to send samples to international reference laboratories.</p> <p>Animal health emergency response plan has been developed.</p> <p>The Belize National Emergency Management Organization (NEMO) has incorporated animal health as a part of their national plan.</p> <p>The director of NEMO was very knowledgeable about the importance of animal health emergencies and was monitoring some international news on avian influenza outbreaks.</p> <p>There is a plan which has been delayed to have a disease simulation exercise.</p>	<p>Early detection depends on field veterinarians and producers reporting disease situations.</p> <p>BAHA after hours answering system found to be in operational.</p> <p>Lack sufficient veterinary staff to respond to an animal health emergency.</p>	<p>Need for a 24 hour hotline that connects quickly to a veterinarian on call.</p> <p>All staff need cell phones and an allowance from BAHA to carry out their official communications.</p> <p>Simulation exercise of disease outbreak needed to test robustness of emergency plans. This simulation exercise must include the livestock and poultry and aquaculture industry as well as other important ministries such as health, agriculture, environment, police, NEMO etc.</p>
<p>II-7 Disease prevention, control and eradication</p>	<p>BAHA Act and Animal Health Act give Animal Health Authorises to act</p> <p>Disease prevention is promoted through products at feed stores and pharmacies.</p>	<p>BAHA Animal Health lacks sufficient staff to deliver needed disease control and eradication programs. Lack sufficient resources to fund such programs.</p> <p>BAHA totally dependant</p>	<p>Based on livestock producers needs to expand markets to exporting their animals and products and for public good that new zoonotic disease programs are</p>

		on international donor community to provide funding for disease control programs. This is often short term and lacks continuity.	established. Recommend that for public good that the Ministry of Agriculture agree to fund a new program for zoonotic disease control in livestock and poultry. Additional funding for such programs should be sought from international donors.
II-8 Veterinary public health and food safety	BAHA Act gives authority to conduct meat inspection and product inspection. BAHA is developing a new program of food safety which is expanding.	Do not have sufficient Food Safety inspectors to visit slaughter facilities on a daily basis. Meat and poultry inspection is split between Min of Health and BAHA and they use different sets of standards. Parts of the laboratory for chemical analysis for pesticides and residues of antibiotics and heavy metals is totally non-functional. No plan to get the laboratory re-established in another site or different location in current laboratory is being met. This seems to be an urgent priority for food safety.	Use the conference room or veterinarians offices to get the analytical laboratories re-established as a very high priority. Laboratory security is inadequate at the current site. Consider for the long term consolidating both the Central Farm and the Belize City laboratory into one new facility elsewhere. Or rent space for a new lab in a commercial building.
II-9 Veterinary medicines and veterinary biologics	BAHA Act gives veterinary authority to require registration of veterinary drugs and biologics.	No documentation was shared and no staff to really carry out the program to assure that quality drugs and vaccines are available in the country.	Suggest IICA, OIRSA or FAO bring in a technical team to review the service and make suggestions of how to strengthen this important program to make sure that only quality vaccines and products are sold to producers and veterinarians. Develop a plan of what vaccines should be used and how they would be obtained in an emergency for all transboundary diseases.
II-10 Residue testing	Although BAHA has this authority one of the areas of importance, pesticide residues is being carried out by another Ministry of Environment (?)	Laboratory for food safety at CLI is non functional due to a leaky roof in the area of the former laboratory. All equipment has been moved but not reinstalled in a new site.	Suggest either office space or conference room is immediately turned into the analytical laboratory to fill this important gap in food safety assurance.
II-11 Emerging issues	Internet DSL allows staff access to international information on new disease outbreaks.	Lack of sufficient field staff to interact on a regular basis with stakeholders or to visit village level	Encourage development of national and regional

	<p>Respond to stakeholders requests to investigate outbreaks</p> <p>BAHA staff attend stakeholder meetings and visit slaughter houses which gives them some opportunities to learn about new outbreaks.</p> <p>Posters have been made for Avian Influenza to educate producers. Posters to educate people about illegal imported agricultural products have been developed by quarantine staff to place at the borders to elevate travellers awareness.</p>	<p>producers.</p> <p>Lack of time to educate producers about new disease issues</p> <p>Lack of email lists to share information news releases with stakeholders.</p>	<p>contingency plans.</p> <p>Provide more public information on emerging issues and disease outbreaks using email lists serves for producers.</p>
<p>II-12 Technical innovation¹⁶</p>	<p>All veterinary staff is fully aware of the OIE international standards and have access via internet to these standards.</p> <p>The CVO is very active in the Western Hemisphere OIE counties in the Americas and serves as its Secretary which very prestigious for Belize.</p>	<p>Lack of staff and operational budget for animal health programs limits ability to apply new technical innovations being used in other countries such as scanners for agricultural product detection in travels luggage.</p>	<p>Coordinate with customs and immigration to develop strategies for use of new technologies.</p> <p>Public awareness at school levels of dangerous diseases by working in the communities along the borders.</p>

III. INTERACTION WITH STAKEHOLDERS

The capability of the VS to collaborate with and involve stakeholders in the implementation of programmes and activities

Critical competencies	Strengths	Gaps	Potential priority action
<p>III-1 Communications</p>	<p>Small country with low population so people know each other. Stakeholders sit on BAHA board. Veterinarians attend stakeholder board meetings when invited.</p>	<p>Because of only 4 veterinarians and no animal health inspectors, service to the livestock and poultry community is limited. Coverage of the country is inadequate with southern districts having no full time veterinarian to consult about emerging issues.</p>	<p>Work with the industry and Livestock and Poultry association to develop a strategic plan for animal health and communication. Set priorities and seek funding to deliver animal health disease surveillance and control programs that promote public health, food safety and export markets.</p>
<p>III-2 Consultation with stakeholders</p>	<p>Small country with low population so people know each other. Stakeholders sit on BAHA board. Veterinarians attend stakeholder board meetings when invited.</p>	<p>No strategic plans for animal health in place. Develop a better method to seek participation of stakeholders to develop plans for disease surveillance and control.</p>	<p>Develop a stakeholder working group representing all the major industries such as beef cattle, dairy cattle, horse industry, poultry, fisheries, aquaculture, wildlife, apiculture and</p>

¹⁶ Technical innovation includes new disease control methods, new types of vaccines and diagnostic tests, food safety technologies, and connections to electronic networks on disease information and food emergencies.

			consumers.
III-3 Official representation	Chief Veterinary Officer and Head of Veterinary Services of BAHA serves as the OIE Secretary for the Americas and is very familiar with operations of OIE. BAHA SPS coordinator works closely with Min of Ag and Min of Finance and stakeholders to develop Belize positions for WTO.	SPS needs more staff and funding for their representation and for participation on WTO international committees.	Set aside travel funds to allow Belize leadership in these critical international governing bodies such as OIE, Codex and WTO.
III-4 Accreditation / Authorisation / Delegation	None	There are no current accreditation or authorization programs for the use of private veterinarians to participate in government animal disease control programs.	If and when a Tuberculosis and brucellosis program is developed there are many good models in other countries that can be adapted to include private veterinarians in government disease control programs.
III-5 Veterinary Statutory Body	There is a legal act in place that has established the Belize Veterinary Surgeons Board	The board is planning to require all vets to be registered and pay an annual fee in order to practice veterinary medicine. There are no part time or full time staff to initiated this program. It requires veterinarians who are otherwise fully occupied to carry out this function as well.	Need a part time staff member who is paid to follow up on notification and collection of fees and to initiate continuing education requirements. In order to register all legal veterinary certificates and licences should be provided to the board for verification.
III-6 Implementation of joint programmes	BAHA Animal Health has the authority to enter into joint programs with livestock and poultry producers There is a small joint surveillance program between BAHA and the Belize Poultry Association for Avian Influenza.	BAHA lacks funds for delivery of any animal health program.	Develop a strategic plan for the country for animal health prioritizing which disease control programs if any should be initiated.

IV. ACCESS TO MARKETS

The authority and capability of the VS to provide support in order to access, expand and retain regional and international markets for animals and animal products

Critical competencies	Strengths	Gaps	Potential priority action
IV-1 Preparation of legislation and regulations, and implementation of regulations	BAHA Act enables Veterinary Service to work with Stateholders to develop new veterinary regulations for animal health and food safety	BAHA does not have its own legal counsel No public forum to get stakeholder input and get regulations posted in a Gazette and published and enacted in a timely fashion. Some Legislations and Acts are posted for long periods on BAHA web	BAHA would benefit from a part time or full time lawyer to review their legislation and regulations for gaps. Create a forum for public to provide comment at Board meetings and through a

		page and receive no public comment.	Gazetted process.
IV-2 Stakeholder compliance with legislation and regulations¹⁷	BAHA has the authority to require compliance and to fine offenders.	Due to lack of staff and no disease delivery program compliance actions are seldom taken. Veterinary services are the last to learn of situations concerning illegal movement of animals and products.	Establish working groups with livestock industry to raise level of awareness of risk. Initiate a public awareness program of risks of illegal movement of animals and products.
IV-3 International harmonisation	Veterinary services is very active in review of international standards and serving in areas to harmonize regional and international trade . The Chief Veterinary Officer has been active in the OIE at a regional and international level.	Shortage of staff to support domestic issues while Chief Veterinary Officer carries out his international leadership role as Secretary for the Americans for the OIE.	Provide more funding and staff for participation of key individuals in the OIE meetings and WTO SPS meetings from BAHA. Suggest taking a couple of stakeholders to the OIE meeting as part of Belize delegation.
IV-4 certification¹⁸ International	BAHA has full authority to carry out international certification.	Lack of staff to track health certificates and establish needed databases to support this activity.	More information on their website as to how to apply for animal health certificates. Need to provide a contact for the stakeholders to contact for such health certificates.
IV-5	The vet service has selectively initiated certification or equivalencies and risk assessments on certain live animals and animal products.	Limited capacity to meet with other countries regularly to discuss equivalencies and trade issues.	Develop more contact with neighboring countries in order to discuss issues and develop agreements on policies related to trade of live animals and animal produces.
IV-6 Traceability	No BAHA traceability program some industries driven traceability programs in produces from dairy, beef, poultry and aquaculture.	No program in place for traceability at the BAHA level for animals and animal products. Animal ID and movement control are not mandatory. Limited program in dairy and some slaughter houses. Well developed program for aquaculture industry	BAHA through work with livestock groups stimulate development of traceability programs.
IV-7 Transparency	BAHA notifies OIE on a regular basis through annual reports and specific notifiable diseases	The veterinary service has a limited capacity to know what field situations are ongoing at producer levels due to limited contact with stakeholders.	Sustain Belize leadership and notification system to the OIE through better veterinary infrastructure in BAHA.
IV-8 Zoning	None	Insufficient staff to initiate such a program	The country is small and lack staff to do a zoning program if there was a

¹⁷ Legislation is the basis for sanitary measures, and includes all relevant laws, regulations and decrees, and associated technical processes and procedures.

¹⁸ Certification procedures should be based on relevant OIE and Codex Alimentarius standards.

			disease emergency.
IV-9 Compartmentalization	None	Insufficient staff to initiate such a program.	The country is small and lack of staff to carry out the monitoring needed for compartmentalization of any disease.