PVS Pathway

OIE PVS Evaluation mission

Sudan

Human, Physical and Financial Resources

Technical Authority and Capability

Interaction with Interested Parties

Access to Markets

September 2013

Dr Cheryl French
Dr Eric Fermet-Quinet, Dr Alberto Mancuso, Dr Maud Carron

WORLD ORGANISATION FOR ANIMAL HEALTH
Protecting animals, preserving our future

OIE PVS EVALUATION

REPORT OF THE

VETERINARY SERVICES OF

The Republic of Sudan

(September 8 – 20, 2013)

Dr Cheryl French (Team Leader)

Dr Eric Fermet-Quinet (Technical Expert)

Dr Alberto Mancuso (Technical Expert)

Dr Maud Carron (Observer/Facilitator)

World Organisation for Animal Health
12, rue de Prony
F-75017 Paris, FRANCE

Table of contents

List of acronyms, abbreviations and/or special terms

AH&EDC	Animal Health and Epizootic Diseases Control
ARIS	Animal Resources Information System
ARRC	Animal Resources Research Corporation
AU/IBAR	African Union, Inter African Bureau of Animal Resources
CAHW	Community Animal Health Worker
CBPP	Contagious Bovine Pleuropneumonia
CE	Continuing Education
CVL	Central Veterinary Laboratory
CVO	Chief Veterinary Officer
DG	Director General
EU	European Union
FAO	Food and Agriculture Organization
FMLFR	Federal Ministry of Livestock, Fisheries and Rangelands
FMD	Foot and Mouth Disease
GDP	Gross Domestic Product
HPAI	Highly Pathogenic Avian influenza
HQ	Headquarters
IMF	International Monetary Fund
LESP	Livestock Epidemio-surveillance Project
MF&NE	Ministry of Finance and National Economy
MLF&R	Ministry of Livestock, Fisheries & Rangelands
MoH	Ministry of Health
NGO	Non-governmental Organization
NLSP	National Livestock Services Project
NMPB	National Medicines and Poisons Board
OIE	World Organisation for Animal Health
OIE PVS	OIE Performance of Veterinary Services Evaluation Tool
PACE	Pan African Campaign of Epizootics
PANVAC	Pan African Veterinary Vaccine Centre
PPR	Peste des Petits Ruminants
QA	Quality Assurance
QMHD	Quarantine and Meat Hygiene Department
RVF	Rift Valley Fever
SDG	Sudanese Pound
SOP	Standard Operating Practices/Procedures
SSMO	Sudanese Standards & Metrology Organization
SVMA	Sudanese Veterinary Medical Association
SVC	Sudanese Veterinary Council
U of K	University of Khartoum
VPH	Veterinary Public Health
VS	Veterinary Service(s)
VPH	Veterinary Public Health
VRI	Veterinary Research Institute
VSB	Veterinary Statutory Body (see OIE Code definition)
WHO	World Health Organization

Acknowledgements

The use of the OIE-PVS Tool for evaluation purposes by Dr. Cheryl French, Dr. Eric Fermet-Quinet, Dr. Alberto Mancuso and Dr. Maud Carron (hereinafter called the “OIE-PVS Team”) has been formally authorized by OIE.

The OIE-PVS Evaluation Team wishes to express its gratitude to the staff of the Sudan Veterinary Services Directorate and the other agencies and departments/ministries, and the individuals who freely gave of their time and experience to support this evaluation. We especially wish to express our sincere thanks to Minister Faysal Hassan Ibrahim, Dr. Khadir Elfaki, Dr. Isameldin Mageed, Dr. Elfatih Rahman and Dr. Hanan Mohammed.

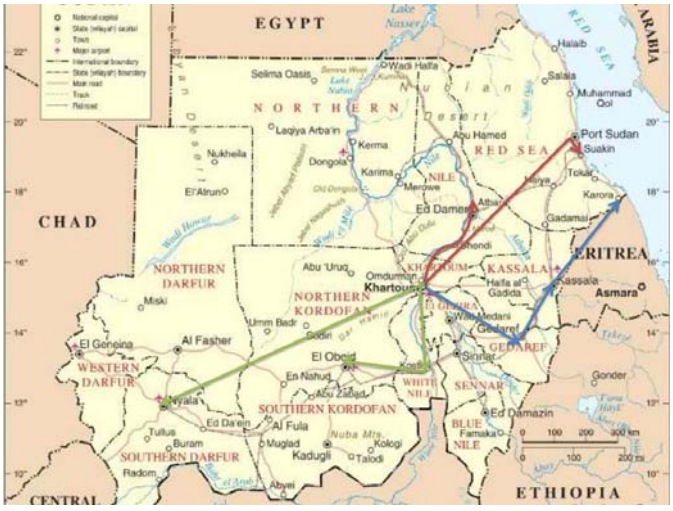
PART I: EXECUTIVE SUMMARY

I.1 Introduction

Following a request to the OIE from the Government of The Republic of Sudan, an evaluation of the Veterinary Services based on the *OIE PVS (Performance of Veterinary Services)* methodology was conducted in September 2013 by a team of four independent OIE certified PVS evaluators. It was agreed this follow up evaluation to the 2009 PVS would be conducted due to: changes in the political/administrative division of Sudan, improvements to the OIE-PVS evaluation tool (new competencies added), improved training and experience of PVS evaluation teams. The VS and the OIE-PVS mission team also agreed comparison of the results of the 2009 evaluation and of the current evaluation would not be appropriate due to changes in Sudan's political structure, impacts of the Pan-African Campaign of Epizootics (PACE) program and to the refinements made to the PVS tool. The follow up evaluation is also useful to gain an updated measure of the performance of the Veterinary Services in preparation for a PVS Gap Analysis mission which uses the PVS Evaluation as its baseline.

The evaluation began with meetings with the Dr Khadir Elfaki, Director General of Animal Health and Epizootic Disease Control and senior staff in the headquarters of the General Directorate of Animal Health and Epizootic Disease Control in Soba. This meeting was followed by meetings with the Undersecretary/CVO (Dr. Kamal Tagelsir Elsheikh) of the Ministry of Livestock, Fisheries and Rangelands, Director Generals of the Ministry of Livestock, Fisheries and Rangelands, Ministry of Health, and various other agencies and stakeholders.

The OIE PVS team visited sites and institutions (public and private) in the cities and rural areas of Sudan and discussed relevant matters with government officials, public and private sector veterinarians, livestock producers, traders, consumers and other stakeholders. Various documents (project proposals/evaluations, policy and planning documents, etc.) were also collected and analysed.



Map 1: Itinerary of OIE Teams A, B, & C during the mission field visits

A meeting was held with the Minister of Livestock, Fisheries and Rangelands (Dr. Faysal Hassan Ibrahim) to discuss the provisional findings of the OIE-PVS mission. The mission concluded in Khartoum with a closing meeting at which the overall findings of the evaluation were discussed. Participants in this closing meeting were the staff of the AH&EDC, Staff of Quarantine and Meat Inspection, a representative of the Sudanese Veterinary Council, a representative of NVRI/ARRC, and a State Director General representative.

I.2 Key findings of the evaluation

I.2.A Human, physical and financial resources

Sudan's Veterinary Services is composed of a large number of qualified veterinarians and technicians but analyses have not been conducted to determine the optimum numbers and distribution of the federal and state animal health workforce (veterinarians and technicians/veterinary para-professionals). There does not appear to be a standardized process to determine which animal health positions (field and laboratory) truly have the need for a qualified veterinarian and which competencies are required for specific positions.

Sudan's veterinary faculties and the Sudanese Veterinary Council developed a program for veterinary education to ensure that it responded to the needs of Sudan. Although technical training may be received via the veterinary faculties the activities of public sector veterinarians are mainly dedicated to administrative activities and vaccination. The activities of the veterinarians in the private sector are mainly related to the sale and distribution of veterinary drugs and products.

Although VS have a training plan and a national budget for training, many training needs are met based on external funds from donor financed projects. There is no continuing education (CE) program or a requirement for CE for private veterinarians.

The Sudan VS have demonstrated some level of technical independence by establishing a successful export certification program to neighbouring countries. However, concern was expressed about the absence of science in some VS decisions, especially in relation to imports. VS's lack of resources or ineffective use of existing resources does not allow them to fully comply with international standards. The low level of advancement of many critical competencies and the lack of resources in several fields does not provide the VS the means to be technically independent. In addition, the low level of remuneration for VS staff makes it difficult to sustain their technical independence when there is a need to seek additional income to sustain basic living expenses. The fact that the Chief Veterinary Officer (CVO) must manage animal production and rangeland management and extension in addition to animal health and veterinary public health, obligates the CVO to balance the duties and mandates of VS with other interests (commercial, financial, hierarchical and political aspects) which may influence the technical independence of decisions made by VS.

There have been numerous changes in the administrative structure of the country with the creation of new States and new localities, these changes, due to the division of Sudan, have negatively impacted the stability of the VS. Most current activities and planning of the VS are influenced by donor funding and Non-governmental organizations (NGOs) with little consideration of alignment with international standards. This externally driven system does not allow the VS to develop a comprehensive strategic plan for the development of their activities nor address adequately their needs and weaknesses.

The VS does well with the internal coordination of resources and activities related to import and export control. In contrast, the degree of coordination of resources and activities related to animal health and veterinary public health between federal and state levels varies according to the state. There appears to be no detailed formal MOUs/written cooperative agreements which would aid in coordinating federal/state activities for the control/eradication of animal diseases. Although the legislation tends to provide understanding of power sharing between federal and state level, the implementation is difficult as it lacks detailed regulations and procedures, adequate resources and technical competences

The VS does well with the external coordination in some domains (coordination with the Ministry of Health, the National Medicines & Poisons Board and the Ministry of Trade). VS are also represented on several multi-sectorial ministerial committees but there is no legislative framework to support such coordination. Although there are formal and informal external coordination with some Ministries or agencies, there is a lack of formal procedures, data management and data analysis for governing the external coordination.

The Federal VS headquarters in Soba appears to have adequate physical resources, but all other levels (State and Federal outside Soba) do not have adequate resources, except with special support from external funds. A comprehensive inventory system does not exist.

VS budget requests to the Ministry of Finance and National Economy (MF&NE) is never fully allocated. Often improvements/investments are based on receipt of donor funding (lab, vehicles, buildings), thus long term planning cannot be undertaken. The mission had access to the federal and some state operational budgets for the VS but the federal VS did not provide a comprehensive (line item) operational budget for the veterinary services (state & federal) of the country.

The July 18, 2012 “Policy Document of the Ministry of Livestock, Fisheries and Rangelands” emphasizes supporting the privatization of VS as a livestock sector development policy but there is no specific strategic plan for the development of the national VS. There was little evidence in the field for the effective facilitation of privatisation nor evidence of a clear understanding of privatisation policy for some VS activities.

The existing documentation system captures information from the field units on animal health and human and physical resources but there appears to be little or no internal analysis/compilation of the data. Collection of data is hampered by the level of competency of veterinary para-professionals and the lack of uniform procedures (standard operating procedures) and lack of resources.

I.2.B Technical authority and capability

Sudan’s animal health laboratories (Veterinary Research Institute, ELISA laboratory, laboratories of veterinary universities and state laboratories) have established a network. The recent transfer of the Veterinary Research Institute laboratories (VRI) back to the Ministry of Livestock, Fisheries and Rangelands is an excellent step in strengthening the national laboratory network. However the insignificant number of diagnostic samples entering this extensive laboratory system highlights the underutilization of the laboratories and the lack of field activities to determine the animal health status of the country.

The physical infrastructure of most laboratories is poorly maintained and was commonly observed to be in a poor state, with minimum equipment. Due to political sanctions most equipment and supplies have not been replenished. Although new investments are planned for the laboratories they are being done without consideration of the true needs of the animal health programs, which leads to a waste of resources (human and financial). Laboratory resources (human, physical and financial) are not managed effectively. The Central VRI and the ELISA laboratories have initiated a Quality Assurance (QA) system, but it is currently not implemented. All state laboratories and most of the VRI satellite laboratories lack a QA system and effective standard operating procedures. There are also no standards for the compilation and sharing of laboratory data between and among the Federal and the State laboratories in order to provide a credible analysis of information, at the national level, on diseases and field activities.

Although Sudan has not yet developed policies and a legislative framework relating to risk assessment, the export certification process, agreed to by Sudan and importing countries, is a good example of utilizing informal risk analysis to design risk management activities. But the current legislation, lack of risk assessment capability, and distribution of human resources (veterinarians and technicians) does not provide assurances that the VS can prevent the entry and spread of diseases.

VS Federal level (Central) maintains a network for the collection of information from the States which is compiled by the Information Unit and partially analysed by the Epidemiology Unit and the DG of AH&EDC. Nevertheless, the scarcity of veterinarians in the field with regular contact with livestock owners and their animals hampers the ability of the VS to establish a passive surveillance network in compliance with the OIE standards. Data is regularly compiled on “outbreak investigations” although reports do not clearly discriminate between what may qualify as an outbreak and early detection from regular clinical disease diagnostics and routine surveillance. There are very few reports from the field compared to the number of animals in the epidemiological context for passive surveillance and early detection. Active surveillance has been implemented for some priority diseases but the activities (which resemble basic disease surveys) depend on donor funding. Long term (multi-year) detailed budgets have not been developed to ensure continuation, monitoring, and success of programs for the five priority diseases. In addition, the legislative framework/regulations have not been developed to ensure that control of these diseases can be maintained or that successful eradication programs can be achieved for these diseases or other diseases. Currently disease control programs are implemented on a voluntary basis and against cost recovery for a wide range of diseases (irrespectively of their respective importance.

VS’s mandate on food safety is restricted to ante and post mortem inspections while the Ministry of Health has jurisdiction over food/meat hygiene. The ante and post mortem inspections and the infrastructure in the export slaughterhouses met requirements of the importing country where these plants were functioning. The non-export slaughterhouses and slabs collect data (number slaughtered, number condemned) but the data is not analysed. Also the quality of the veterinary inspection varies between establishments. All slaughterhouses visited had very poor hygienic practices for handling of carcasses as well as for the premise/facility (lack of good sanitary practices). Although outside of the mandate of this mission and Sudan VS, the infrastructure related to collection, processing and distribution of foods of animal origin do not meet appropriate hygienic standards.

The importation, registration and licensing of veterinary drugs are successfully regulated by the National Medicines and Poisons Board (NMPB). However once veterinary drugs enter the marketing chain there is a lack of compliance and enforcement to ensure their responsible and prudent distribution and use. Many private veterinary pharmacies/pharmacists act as merchants and do not respect professional veterinary training and ethics which requires providing oversight for drug use and the prevention of drug residues in food animals.

The Veterinary Research Institute produces 13 types of vaccines, some of which are produced or reconstituted at local vaccine production units. The production units visited demonstrated very poor quality management and inadequate labelling of the vaccines plus physical facilities were not adequate.

Although there is an OIE contact point for animal welfare issues, animal welfare legislation has not been developed and there does not appear to be plans for training VS staff on animal welfare.

I.2.C Interaction with interested parties

Sudan's VS has established an in-house Communication Unit to keep interested parties informed of VS activities and to provide information and training materials to explain the programs and activities of AH&EDC. Even with the existence of the Communication Unit stakeholders voiced concerns that VS had not informed them of disease outbreaks in their areas.

VS consultations and communications with stakeholders during the HPAI eradication campaign were cited as an example of how the stakeholders would appreciate VS interactions for future development of disease control programs. VS collaboration with other agencies or line Ministries does take place but it appears there are no formal memorandums of understanding or protocols for such collaborations.

Currently there is no official delegation of authority to private veterinarians or private laboratories. This norm does not support the MLF&R's policy for livestock sector development, which encourages privatization of some services of the Federal VS.

The Veterinary Council of Sudan (veterinary statutory body for Sudan) cannot act as an autonomous, independent body as it receives funds from the government and members of its board are appointed by the government. The VSB does not have clear legal procedures for penalties/disciplinary measures.

Formally there are no joint programs with farmers, but as all disease programs are voluntary, based on cost recovery, and supported by the training of farmers/livestock owners as Community Animal Health Workers (CAHWs), they might be qualified as joint programs if formalised.

I.2.D Access to markets

Currently VS's export certification program to the Gulf States meets the importing countries requirements.

Preparation of national legislation follows Sudan's License of Law[1]. There is a variety of legislation, but it is insufficient or inadequate compared to the usual amount of national veterinary legislation required, and it does not take into account international standards. It appears the only stage at which the proposed law is open for consultation with stakeholders is at the initial discussion with the competent authority, before the proposed law is drafted.

Additionally, impact studies (social and economic) are not conducted for new laws/legislation. Lack of such studies affect how well VS can implement compliance or enforce laws/legislation. Currently VS does not have the capability to implement compliance or enforcement policies.

VS regularly notifies the OIE of its sanitary status but; 1) the poor distribution of veterinarians in the field, 2) the lack of regular disease/surveillance programs, 3) reliance on tests from laboratories which are not accredited nor implementing quality assurance systems, leads to VS not being able to certify the health status of livestock outside the quarantine export station.

Zoning and compartmentalisation are not relevant in the current context.

[1] License of Law refers to Sudan's process for developing legislation

Table 1: Summary of OIE PVS evaluation results

PVS summary results of The Republic of Sudan	Result
I. HUMAN, PHYSICAL AND FINANCIAL RESOURCES	
I.1.A. Staffing: Veterinarians and other professionals	2
I.1.B. Staffing: Veterinary paraprofessionals and other	2
I.2.A. Professional competencies of veterinarians	3
I.2.B. Competencies of veterinary paraprofessionals	2
I-3. Continuing education	2
I-4. Technical independence	3
I-5. Stability of structures and sustainability of policies	2
I-6.A. Internal coordination (chain of command)	3
I-6.B. External coordination	3
I-7. Physical resources	2
I-8. Operational funding	2
I-9. Emergency funding	3
I-10. Capital investment	2
I-11. Management of resources and operations	2
II. TECHNICAL AUTHORITY AND CAPABILITY	
II-1.A. Access to veterinary laboratory diagnosis	2
II-1.B. Suitability of national laboratory infrastructures	2
II-2. Laboratory quality assurance	1
II-3. Risk analysis	2
II-4. Quarantine and border security	2
II-5.A. Passive epidemiological surveillance	2
II-5.B. Active epidemiological surveillance	3
II-6. Emergency response	3
II-7. Disease prevention, control and eradication	2
II-8.A. Regulation, authorisation and inspection of establishments	2
II-8.B. Ante and post mortem inspection	2
II-8.C. Inspection of collection, processing and distribution	2
II-9. Veterinary medicines and biological	2
II-10. Residue testing	1
II-11. Animal feed safety	1
II-12.A. Animal identification and movement control	2
II-12.B. Identification and traceability of animal products	1
II-13. Animal welfare	1
III. INTERACTION WITH INTERESTED PARTIES	
III-1. Communications	3
III-2. Consultation with interested parties	2
III-3. Official representation	3
III-4. Accreditation/authorisation/delegation	2
III-5.A. Veterinary Statutory Body Authority	2
III-5.B. Veterinary Statutory Body Capacity	2
III-6. Participation of producers and other interested parties in joint programmes	3
IV. ACCESS TO MARKETS	
IV-1. Preparation of legislation and regulations	2
IV-2. Implementation of legislation and regulations and compliance thereof	2
IV-3. International harmonisation	1
IV-4. International certification	3
IV-5. Equivalence and other types of sanitary agreements	3
IV-6. Transparency	3
IV-7. Zoning	2
IV-8. Compartmentalisation	1

I.3 Key recommendations

I.3.A Human, physical and financial resources

The Sudanese VS should:

- Analyse the personnel staffing patterns within VS to ensure the optimum number and distribution of the veterinary workforce at headquarters as well as in the field in all domains (AH, VPH, laboratories).
- Clarify roles and responsibilities of veterinarians and veterinary para-professionals (including effective supervision of activities by veterinarians) in VS (public or private sector).
- Develop defined work/job descriptions for each position and clarify the necessary competencies, skills and knowledge for optimum performance of duties. A clear understanding of the knowledge, skills and abilities needed for a position will provide guidelines to develop a quality training program which will strengthen the VS.
- Liaise with the VSB, the Veterinary Colleges and the Ministry of Higher Studies to perform a critical review of the future veterinary workforce needs, including establishing procedures for the accreditation process of all Veterinary Colleges. The same should be implemented for the institutes which train veterinary para-professional.
- Improve technical independence by improving education and revenues of staff, as well as legislation, procedures and data management in all domains.
- Restore the internal chain of command for all VS activities as well as changing the structure of the VS for better compliance to OIE standards.
- Develop a clear presentation of the VS physical and financial resources, with their geographical and functional distribution, in order to be more transparent and to better plan for future activities.
- Develop and implement systems for document management, data management, inventory management and standard operating procedures for all field activities.

I.3.B Technical authority and capability

There is a critical need to develop a strategic plan for the reorganization of the national laboratory infrastructure. All laboratories need to develop quality assurance for official tests.

The laboratories are underutilized, this may be corrected by (a) developing national animal health and veterinary public health programs with clearer targets in terms of laboratory analysis, (b) communicating with the private sector (industry and private veterinarians) about the need for laboratory analysis, (c) developing accreditation procedures for private laboratories and having the national laboratory provide oversight of accredited laboratories, (d) reassess the network structure to make it more efficient – e.g. merge some laboratories if needed.

VRI Central (Khartoum) should stop vaccine production at the VRI branches and concentrate investments on improving vaccine quality with Pan African Veterinary Vaccine Centre (PANVAC) support. VRI may also wish to focus on initiating residue analysis activities. Undertake a survey on residues in the different animal production systems to assess the situation in the country. VRI should work in collaboration with VS to develop residue control plans for live animals and animal product exports and poultry and poultry products.

It is essential that Sudan's VS have the appropriate policies and legislative framework for risk assessment in order to support the Sudan Investment Plan's strategy of increasing areas which can be classified with different sanitary status. Effective databases need to be built to support risk assessment activities.

Clear procedures should be established for passive surveillance and early detection programs, with robust strengthening of the veterinarian field network consistent with OIE standards. Clear technically sound national active surveillance programs need to be developed in order to ascertain the animal health status of the country. The priority disease action plans which have been developed should be reassessed to ensure that a clear technically sound national operational plan with adequate resources is in place. Emergency contingency plans should be reviewed on a regular basis.

If Sudan plans to continue the export of meat and meat products there is a need to strengthen procedures, data management and continuing education at all levels for ante and post mortem inspections, as well as meat hygiene. VS should seek to restore their chain of command on meat inspection and the authority of VS to supervise the hygiene of the slaughter process. VS should work to improve coordination with the MoH in order to guarantee appropriate uniform control over the whole food chain and to ensure compliance with OIE and Codex Alimentarius standards.

The Federal Ministry of Livestock, Fisheries and Rangeland (FMLF&R) & VS could consider proposing an extension of their slaughterhouse meat inspection mandate to cover milk and meat collection, processing and distribution, in order to cover the relevant food safety aspects of the food chain. The VS should also develop competencies, regulations, procedures and data management for accreditation of production premises relevant to the VS in the sense of OIE.

The VS should develop animal welfare legislation and regulations and implement them progressively.

I.3.C Interaction with interested parties

VS should develop and implement documented formalized consultation processes for stakeholders at all levels. Completion and maintenance of the VS website will be an excellent tool for keeping stakeholders aware of national programs on animal health and veterinary public health.

In support of the MLF&R and Ministry of Agriculture's strategic plan, develop regulations, procedures and compliance and enforcement capabilities for effective delegation of authority to private veterinarians for official activities (vaccination, surveillance, early detection and food safety) and to private laboratories for selected testing.

Remove "veterinary pharmacies" from the list of authorised premises held by veterinarians and promote "veterinary dispensary/practice/clinic" with a clearer link between clinical examination, advice, diagnosis and prescription by veterinarians who are required to be present on site for the provision and delivery of veterinary medicines.

The Veterinary Statutory Body should reform to become an autonomous and independent organization based on an elective process.

Clearly establish the role of CAHWs as belonging to their community and not as part of the VS, ensure their commitment and responsibility lies within their community or farmers' group, which itself should comply with veterinary legislation.

I.3.D Access to markets

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

In order to ascertain the national livestock health status, the surveillance systems (active and passive) should be strengthened by developing an efficient network of veterinarians in the field who have access to quality laboratory diagnostics.

To support Sudan's strategy to replace revenues from oil with revenues from agriculture and livestock exports, the VS must develop mechanisms to certify the health status of the nation's animal population.

To maintain current markets and for future expansion of export markets VS and stakeholders should collaborate to develop legislation and programs to meet future needs. This should be detailed partially during a PVS gap analysis.

PART II: CONDUCT OF THE EVALUATION

At the request of the Government of The Republic of Sudan, the Director General of the OIE appointed an independent OIE PVS team consisting of Dr Cheryl French (Team Leader), Dr Eric Fermet-Quinet (Technical expert), Dr Alberto Mancuso (Technical Expert), and Dr Maud Carron (Observer) to undertake an evaluation of the veterinary services of The Republic of Sudan. The evaluation was carried out on September 8 – 21, 2013.

The evaluation was carried out with close reference to the OIE standards contained in Chapters 3.1, 3.2, 3.3 and 3.4 of the OIE *Terrestrial Animal Health Code* (the Terrestrial Code) using the OIE *PVS Tool* (6th edition, 2013) to guide procedures. Relevant Terrestrial Code references are quoted for each critical competency in Appendix 1.

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

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

To assist countries to establish their current level of performance, form a shared vision, establish priorities and carry out strategic initiatives, the OIE has developed an evaluation tool called the OIE Tool for the Evaluation of Performance of Veterinary Services (OIE PVS Tool[2]) which comprises four fundamental components:

- Human, physical and financial resources
- Technical authority and capability
- Interaction with interested parties
- Access to markets.

These four fundamental components encompass 47 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 PVS Team to help determine the level of advancement.

A glossary of terms is provided in Appendix 2.

The report follows the structure of the OIE PVS Tool and the reader is encouraged to consult that document to obtain a good understanding of the context in which the evaluation was conducted.

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

II.2 Country information (geography, administration, agriculture and livestock)

Geography

Until 2012, The Republic of Sudan was the largest country in Africa and the ninth largest country in the world, with an area of approximately 1.8 million square kilometres. By public referendum, 2011, Sudan was divided into two countries, The Republic of Sudan and the Republic of South Sudan. The Republic of Sudan now has an area of approximately 1.5 million square kilometres (third largest in Africa), which includes tropical forests, marshlands,

[2] Available at http://www.oie.int/eng/oie/organisation/en_vet_eval_tool.htm?e1d2

mountains to savannah, stone and sand deserts, and mountains in the north, east and west. The Nile, runs throughout the country connecting its various parts.

Map 2: Republic of Sudan

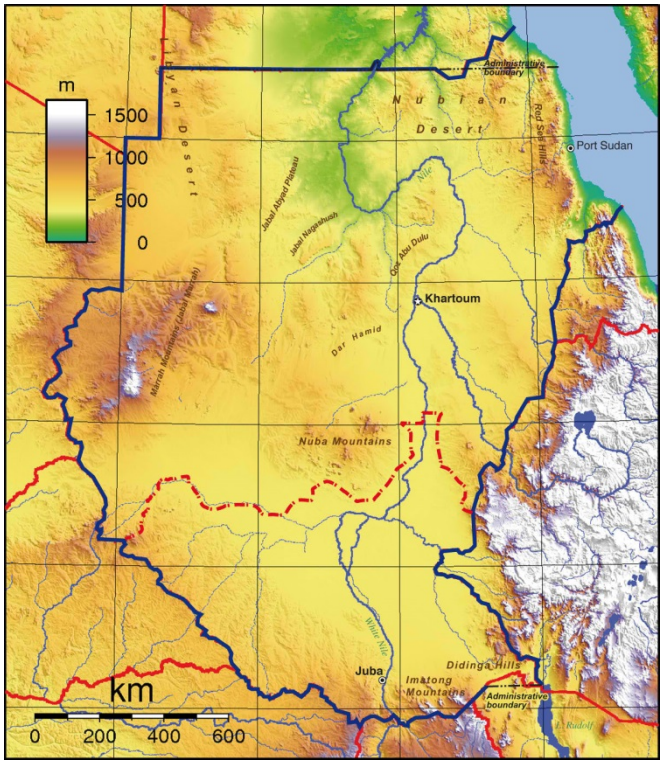
The five distinct geographic zones in the Republic of Sudan are the desert climate zone, the semi-desert zone, the dry zone, the semi dry zone and the semi wet zone. Northern Sudan, lying between the Egyptian border and Khartoum, has two distinct parts, the desert and the Nile Valley. To the east of the Nile lies the Nubian Desert, to the west, the Libyan Desert. There is virtually no rainfall in these deserts, and in the Nubian Desert there are no oases. In the west, there are a few small watering holes where the water table reaches the surface to form wells that provide water for nomads, caravans, and administrative patrols, although insufficient to support an oasis and inadequate to provide for a settled population. Flowing through the desert is the Nile Valley, whose alluvial strip of habitable land is no more than two kilometers wide and whose productivity depends on the annual flood.

Western Sudan is a generic term describing the regions known as Darfur and Kurdufan that comprise 850,000 square kilometers. Traditionally, this has been regarded as a single regional unit despite the physical differences. The dominant feature throughout this immense area is the absence of perennial streams; thus, people and animals must remain within reach of permanent wells. Consequently, the population is sparse and unevenly distributed. Western Darfur is an undulating plain dominated by the volcanic massif of Jabal Marrah; the drainage from Jabal Marrah onto the plain can support a settled population and a variety of wildlife. Western Darfur stands in contrast to northern and eastern Darfur, which are semidesert with little water either from the intermittent streams known as wadis or from wells that normally go dry during the winter months. Northwest of Darfur and continuing into Chad lies the unusual region called the *jizzu*, where sporadic winter rains generated from the Mediterranean frequently provide excellent grazing into January or even February. The

southern region of western Sudan is known as the *qoz*, a land of sand dunes that in the rainy season is characterized by a rolling mantle of grass and has more reliable sources of water with its bore holes and *hafri* than does the north.

The central clay plains (another distinct region of Sudan) stretch eastward from the Nuba Mountains to the Ethiopian frontier, broken only by the Ingessana Hills, and from Khartoum in the north to the far reaches of southern Sudan. The central clay plains provide the backbone of Sudan's economy because they are productive where settlements cluster around available water. This project grows cotton for export and has traditionally produced more than half of Sudan's revenue and export earnings.

Northeast of the central clay plains lies eastern Sudan, which is divided between desert and semidesert and includes Al Butanah, the Qash Delta, the Red Sea Hills, and the coastal plain. Al Butanah is an undulating land between Khartoum and Kassala that provides good grazing for cattle, sheep, and goats. Extending 100 kilometers north of Kassala, the whole area watered by the Qash is a rich grassland with cultivation long after the river has spent its waters on the surface of its delta. Trees and bushes provide grazing for the camels from the north, and the rich moist soil provides an abundance of food crops and cotton.



Map 3: Republic of Sudan – Topography (Source: FAO)

Alluvial soil (central), Desert, Semi desert (Northern), Wet and dry Savanna (clay soil) Torsional Hills (East, East Northern), Scattered Hills (Central, East, West), Volcanic Mountains (East, West), Rivers Valleys & Creeks.

Administration

The Republic of Sudan is a federal presidential republic, divided administratively into 18 states (wilayat, singular - wilayah). It is a decentralized system with independent governance at the state level. These are Al Bahr al Ahmar (Red Sea), Al Jazira (Gezira), Al Khartoum (Khartoum), Al Qadarif (Gedaref), An Nil al Abyad (White Nile), An Nil al Azraq (Blue Nile), Ash Shimaliyya (Northern), Gharb Darfur (Western Darfur), Janub Darfur (Southern Darfur),

Janub Kurdufan (Southern Kordofan), Western Kordofan (not shown on map), Kassala, Nahr an Nil (River Nile), Sharq Darfur (Eastern Darfur), Shimal Darfur (Northern Darfur), Shimal Kurdufan (Northern Kordofan), Sinnar, and Wasat Darfur (Central Darfur).

The States are further divided into localities and administrative units, currently there are 188 localities and 618 administrative units. With the creation of West Kordafan State there will be a future realignment of the existing localities and administrative units.

Map 4: Republic of Sudan – States

Agriculture

The Agricultural Revival Program (ARP) is a central pillar of Sudan's economic policy in the Quarter Centennial Strategy (2007-2032) Plan and the Second Five Year Plan (2012 -2016). In the agricultural sector, Sudan has a comprehensive set of policies and strategies, which reflect the importance of the sector in the nation's development.

Historically, agriculture has been the main source of income and employment in Sudan, employing over 80 % of Sudanese, and making up a third of the economic sector. Despite this strong agricultural orientation, oil production drove most of Sudan's post-2000 growth. In 2009 livestock exports was the second largest source of foreign income for Sudan (figure 1).

Sudan Merchandise Exports

(US$ millions)

	2007	2008	2009
Petroleum Products	8348.0	10988.5	7073.6
Livestock	51.4	71.5	249.7
Sesame	79.3	167.9	147.4
Gum Arabic	64.6	69.0	61.3
Cotton	68.1	58.3	40.2
Gold	63.2	112.1	85.5
TOTAL	8674.6	11467.3	7657.7
o/w non-oil (%)	3.8	4.2	7.6

Figure 1 Source: Central Bureau of Statistics (CBS) Sudan

Figure 1: Sudan Merchandise Exports

Sudan continues to grapple with the macroeconomic impact of the July 2011 secession of South Sudan and plans on the growth of the agricultural sectors (crops and livestock) to offset the loss from oil production. Real gross domestic product (GDP) growth is estimated at 2.8% in 2011 compared to 11.5% from before 2011. As a result of the oil loss, the growth of both industrial and service sectors fell into the negative in 2011 and 2012 while only the agriculture sector witnessed positive growth in both years. The GDP of agriculture in Sudan was last reported at 33.1% in 2011, according to the African Economic Outlook of 2012. (Source: http://www.afdb.org/fileadmin). Agriculture corresponds to the International Standard Industrial Classification (ISIC) divisions 1-5 and includes forestry, hunting, and fishing, as well as cultivation of crops and livestock production.

Agriculture and livestock play important roles in food security and employment opportunities that directly contribute to poverty alleviation and social development. It is estimated that agriculture contributes 35-40% of GDP. The agriculture sector in Sudan consists of four sub-sectors; livestock, irrigated agriculture, traditional rain fed agriculture and mechanized agriculture. The farming systems of non-livestock agriculture consist of three types. The first one is irrigated agriculture mainly found in Central Sudan which is devoted to the production of cash crops such as cotton and sugarcane and lately to wheat as well for the domestic markets. The size of land under irrigation is 4.2 million feddan (4.3 million acres) while the annual cultivation varies from 1.68 to 2 million feddan (2.1 million acres) depending on market, costs and other considerations. The second, known as semi-mechanized rain-fed agriculture, is found in the central clay plains of the Sudan. In these farms as much as 95 % of the output is sorghum. The third is the traditional rain-fed agriculture which is practiced mainly in the Western regions, Kordofan and Darfur. Traditional rain-fed agriculture is the dominant system accounting for well over 50 % of the value added in agriculture and supporting about 70 % of the population. Production in this farming system is diversified and includes mainly food crops such as sorghum, millet and cash crops such as sesame and ground nuts. Land tenure differs from one system to another, each with its own unique limitations. Livestock, which could be considered as a fourth system, is mixed in all the farming systems but also stands on its own on natural pasture with herdsmen operating in the arid areas.

Livestock

Livestock supports the livelihood of 14% to 20 % of the rural people and contributes 60% of the agricultural GDP, and 16 to 20 per cent of non-oil export revenues. The livestock sector is divided into three production systems: traditional production mainly dependent on the natural pasture, semi intensive production dependent mainly on the natural pasture and complimentary feeding and intensive system. (SOURCE: December 2012 Draft Agriculture Sector Investment Plan; Republic of Sudan Ministry of Agriculture and Irrigation)

Over one million live sheep are officially exported every year, mainly to the Gulf States, generating foreign earnings for the country. Livestock is also a key asset for some of the poorest pastoral and agro-pastoral households. Under the Interim Poverty Reduction Strategy Papers (I-PRSP) and the emergency economic recovery program, the government has identified the agriculture and livestock sector as a priority and has committed to spending 20% of public expenditure on agriculture and livestock infrastructure and technical innovations. (SOURCE: http://www.worldbank.org/en/country/sudan/overview).

The last official livestock census was completed in 1976. Sudan reportedly has the 3rd largest livestock population in Africa. The cattle population is estimated to be approximately 30 million head mainly of the Baqquara and Nilotic breeds. The Ministry of Livestock, Fisheries and Rangelands is encouraging the development of the dairy sector and new "modern" dairies and dairy complexes (with as many as 15,000 head) can be found in the eastern part of the Sudan. Many of the "modern" dairies import stock from Holland.

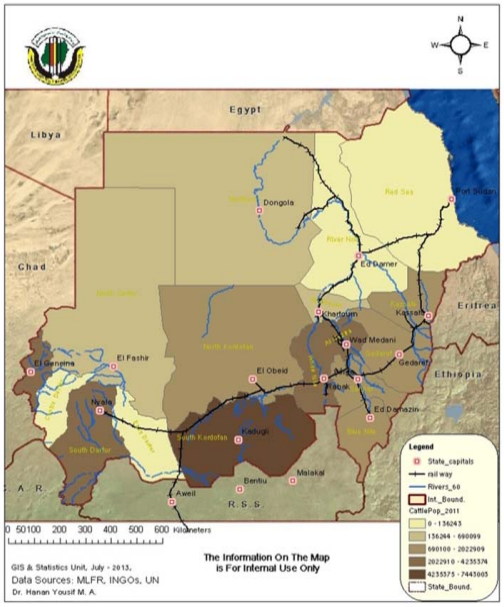
The highest density of cattle can be found in the southern and south-eastern area of Sudan. Rinderpest epidemics had a negative effect on the cattle population until vaccination campaigns were initiated in the late 1930s, after which the cattle population rapidly expanded. Sudan followed the OIE Pathway to Rinderpest freedom and was recognized in 2011 as officially free from Rinderpest.

The sheep population is estimated to be approximately 39.2 million head. Sudan's desert "Hamari" sheep are highly-sought after especially in Saudi Arabia and eastern Europe, where demand for kosher meat is high. More than 65% of the sheep in Sudan are of the Sudan Desert breed. Most of the sheep in Sudan are owned by traditional herders. While livestock provide villagers' income and contribute to the Sudanese economy, they are vital to the survival of rural Sudanese. The sheep provide skins, food and milk for people living in the arid desert regions where raising crops is highly dependent on rainfall. The number of sheep has grown at 2.8% per year, and so the proportion of sheep in Sudan's livestock population has remained constant at about 36%. Sheep therefore play an important social and economic role in the country, and are a valuable strategic resource for both local and export purposes.

Sudan sheep have been classified based on physical features and ecological distribution, four main local groups have been identified: Sudan Desert, Sudan Nilotic, Sudan Arid Upland and Sudan Equatorial Upland. Fused ecotype groups, resulting from non-systematic crossbreeding at the boundaries of the eco-zones of the pure types, have also been recognized.

The camel population of Sudan is estimated to be about 4.7 million head according to FAO statistics, the camel population in Sudan ranks the second in the world, after Somalia. In Sudan the camel population is concentrated in an area known as the "camel belt". This area includes the states of North and South-Darfur, North, West and South-Kordofan, Khartoum, Gezira, Kassala, Red Sea, River-Nile, Northern Sudan, White Nile, Blue Nile and Sennar State. North Kordofan state has the highest camel population with more than one million head, representing approximately 5% of the whole world camel population.

Sudan: Cattle Population and Distribution per State

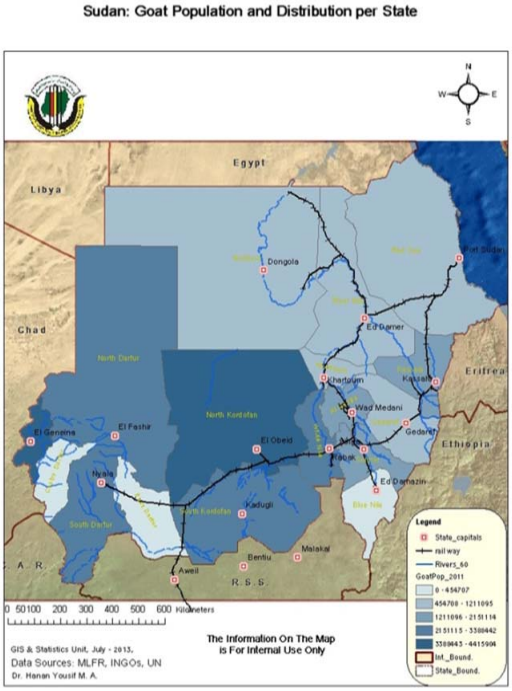


Map 5: Sudan - Cattle Population and Distribution per State

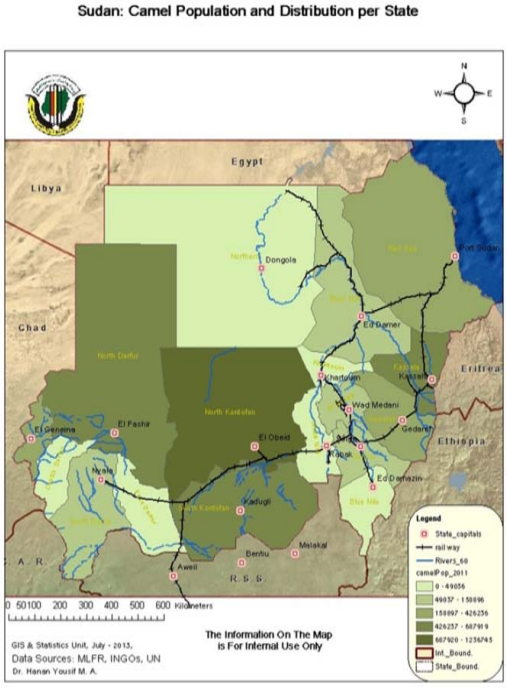
The export of camels for slaughter -mostly to Egypt, but also to the Libya and other countries, is an important source of foreign currency.

Sudan breeds distinctive types of camels. The Anafi and Bishareen, are prized for their racing and riding capacities, the Rashaidi, a sturdy transport camel with superior drought resistance, and the large whitish Lahaween, gives high meat yields. With a meat production of 49,880 tons and a milk production of 120,000 tons, camel production has future potential. Camel diseases such as trypanosomiasis and mastitis are the major constrains for production.

The goat population is estimated to be about 30.6 million head. Goats, of which there are three principal breeds (desert, Nubian, and Nilotic), are found throughout the country south of the northern desert areas. They were raised mainly by sedentary families for milk and meat. Goat meat, although less popular than mutton, formed part of the diet of most families, particularly those having low incomes. Goat milk is an important source of protein, and many families in urban areas keep a few goats for their milk.



Map 6: Sudan - Goat Population and Distribution per State



Map 7: Sudan - Camel Population and Distribution per State

Table 2: Data summary for geography, agriculture and livestock

Geographic features

Climatic and/or agro-ecological zones	Rainfall (mm/year)
Red Sea coastal area Desert climate	60 -80
Northern part Semi-arid to desert	0 – 30
Eastern part (Savannah grassland)	300 -700
Western part	300 – 650
Southwestern part	700–1000
Southern part (tropical rain forest)	700-1000

Topography	Km2	%
Total area	1,881998	100
Pasture lands	482767.7	25.6
Arable land	7312.8	0.4
Forest	187575.5	10
Agriculture	237408.6	12.6
Highlands & Deserts	954016.6	50.7
Water	1291.6	0.7

SOURCE: Ministry of Environment, Forestry and Physical Development, Metrological Authority & Sudan National Survey Authority & National Forest Authority (FAO)

Demographic data

Human population		Livestock households/farms	
Total number	36,163,778 (2013)	Total number	14,465,511
Average density / km2	19/km^2	% intensive	10%
% of urban	29.51 (2008)	% agro-pastoral (mixed)	72%
% of rural	70.49 (2008)	% extensive	90%

SOURCE: Central Bureau of Statistics (http://www.cbs.gov.sd) & Union pastoralists

Current livestock census data

Animals species	Total Number in 1000	Value per head	Intensive system (% or no.)	Mixed system (% or no.)	Extensive system (% or no.)
Bovines	29 840	2395	Not available	Not available	Not available
Small Ruminants	70 320	354	Not available	Not available	Not available
Pigs	-	-	Not available	Not available	Not available
Horses, Donkeys	786 - 7 525	1595 -667	Not available	Not available	Not available
Camels	4 751	2504	Not available	Not available	Not available
Poultry	45 550	25	Not available	Not available	Not available

SOURCE: General Directorate of Planning and Livestock Economics (MLFRL)

Animal and animal product trade data

Animals and animal products	Average annual import		Average annual export		Average annual production	
	Quantity	Value	Quantity	Value ($)	Quantity	Value ()
Poultry meat	0	0	0	0	45,000 ton	
Small rum. meat	0	0	4,455 ton	23,946,902.5 $	1,456,000 ton	
Milk	?	?			4,318,000 ton	
Eggs	11,243,300	2,380,777.6 $	50,200 ton	8465.8$	40,000 ton	
TOTAL	11,243,300	2,380,777.6 $	54,605 ton	23,955,368.3 $	5,859,000 ton	

SOURCE: AH&EDC

Economic data (4.5 SDG = 1$US)

National GDP	73.7 billions US $
National budget	25.2 millions SDG
Livestock GDP	20% contribution
Economic value of livestock population	312 millions SDG
Annual public sector contribution to agriculture	60%
Annual budget of the Veterinary Services	28.5 millions SDG

II.3 Context of the evaluation

II.3.A Availability of data relevant to the evaluation

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

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

Although most categories of documents are accessible, their availability depends on location and their reliability is sometimes questionable, e.g. last official animal census 1976 Moreover, most of documents are in Arabic and not available in other languages (i.e. OIE official languages). The mission could not translate these documents and had to rely on short explanations or quick translation of titles and sub-titles and could not analyse them in-depth.

Table 3: Summary of data available for evaluation

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

II.3.B General organisation of the Veterinary Services

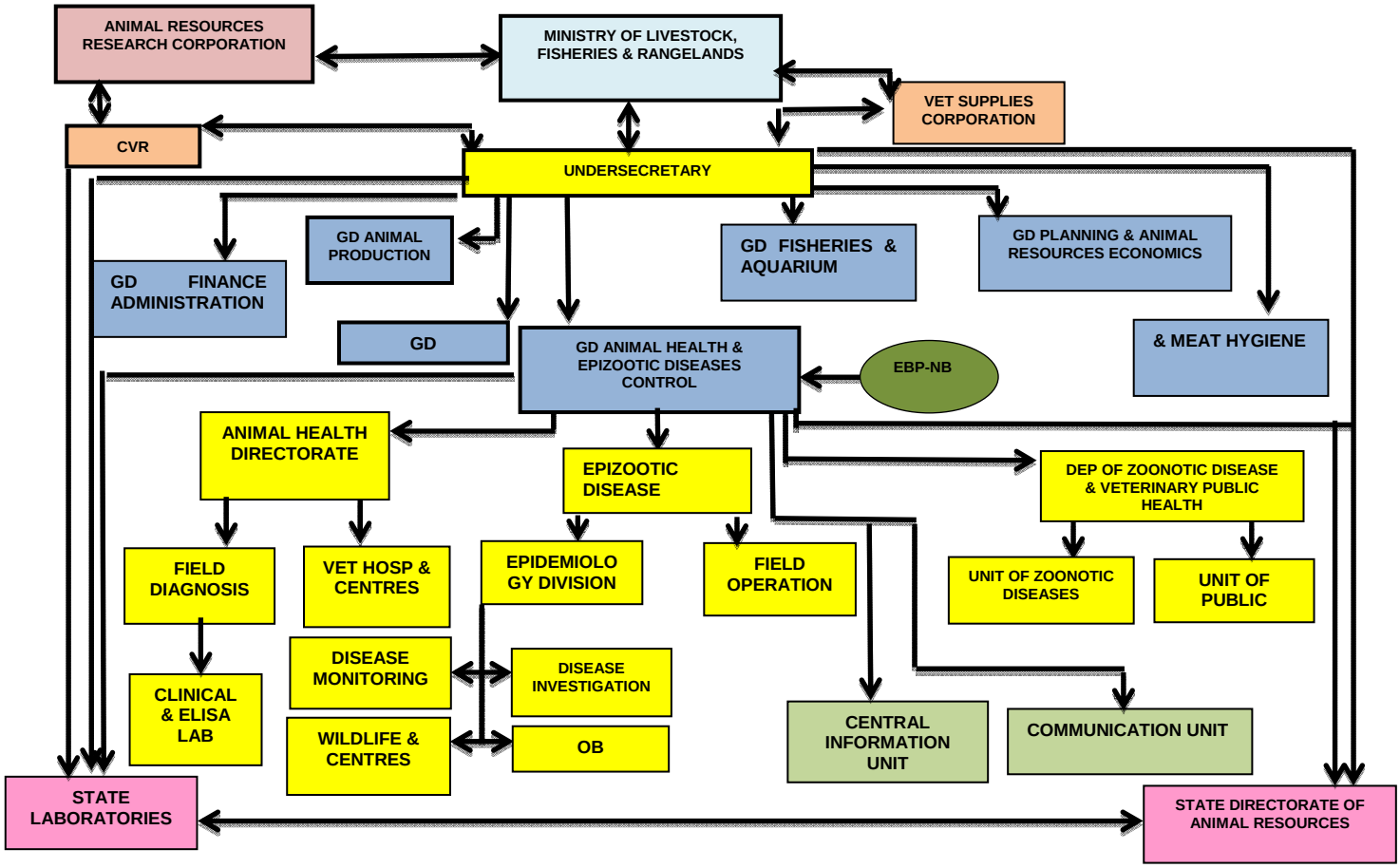


Figure 2: VS Organigramme SOURCE: AH&EDC PRESENTATION

The Ministry of Livestock, Fisheries, and Rangelands is composed of seven (7) General Directorates: Animal Health & Epizootic Disease Control (AH&EDC), Quarantine & Meat Hygiene (QMH), Animal Production Development, Planning and Livestock Economics, Extension, Technology Transfer and Pastoralists Development, Range and Pasture, and Fishes and Aquatic.

For the purposes of this evaluation, and taking into account the scope of VS defined in the OIE code, only AHEDC and QMH General Directorates will be considered, although the role of extension and finance and administration directorates have been considered when relevant to AH and VPH. Fishes and Aquatic may be relevant to another specific OIE PVS evaluation based on Aquatic Code.

Sudan has a large number of veterinarians, most of whom work within the government sector. Statistics from MLF&R show there are 2484 federal and state Veterinarians, 2150 private veterinarians, 1658 private independent veterinarians, 821 University and Institute veterinarians and approximately 1817 veterinary para-professionals (technicians).

Ministry of Livestock, Fisheries, and Rangelands	
AH&EDC and Quarantine & Meat Hygiene	
Veterinarians	745
Animal production specialist	135
Technicians	262
Clerks	697
Workers	697
Total	2106

Figure 3: Human Resources

According to information provided by the DG of AH&EDC the role of the Veterinary Services at the federal level is to: a) develop national strategies and policies for animal disease control, b) prepare agreements for animal health and epizootic diseases control between Sudan and other countries, c) develop training plans, scientific meetings, workshops, scientific seminars and coordination with other relevant scientific institutions, d) compile, store and analyze information and reports regarding epizootic diseases and the establishment of an information bank, e) exchange information on the national animal health status with regional and international organizations, f) develop disease maps and to review information dealing with animal health status and advise on consequent actions to be taken, g) solicit foreign aid by preparation and drafting of national program proposals for the control of epizootic diseases, h) strengthen relations with the line ministries and institutions and enhancement of coordination in the areas of infectious and communicable diseases control, i) prepare strategies and plans for the progress of the Sudan to declare freedom from priority epizootic, j) preparation, updating and review of laws and legislation regulating animal health, control and eradication of epizootic diseases, k) participation in scientific conferences, promoting the role of Sudan in regional and international organizations and maintaining close relationship with its neighboring countries, l) coordination of activities at national and states level to contain emergence of epizootic diseases, m) provide logistical support and needs to the states for the control of infectious and epizootic diseases, n) assist States in implementation of national strategies and plans to control animal diseases, o) utilization of communication technologies (extension) to facilitate procedures for the development of animal health and epizootic diseases control.

The federal VS oversee export slaughterhouses, ante and post mortem inspections only. In all other slaughterhouses and slabs, the ante and post mortem inspections are the responsibility of the state veterinarians and technicians. The role of hygienic inspections of all facilities and of animal products and byproducts belongs to the Ministry of Health.

Although data indicates that there are 100 mobile units, 100 hospitals, 225 dispensaries, the field visits completed during the mission show that these different entities are sometimes co-located or are not yet staffed or existing.

II.3.C Animal disease occurrence

Information on animal disease occurrence from the OIE website (see table 4)

Table 4: Disease status of the country 2012

	Domestic		Wild	
Disease	Notifiable	Status	Notifiable	Status
Bovine anaplasmosis	✓	Disease limited to one or more zones	✓	Not reported for this Period (since 2008)
Bovine babesiosis	✓	Disease limited to one or more zones	✓	Not reported for this Period (since 20/08/03)
Contagious bov. pleuropneumonia	✓	Clinical Disease	✗	No information
Foot and mouth disease	✓	Clinical Disease	✓	Not reported for this Period (since 20/07/06)
Haemorrhagic septicaemia	✓	Clinical Disease	✗	No information
Heartwater	✓	Disease limited to one or more zones	✗	No information
Infec bursal disease (Gumboro)	✓	Disease limited to one or more zones	✗	No information
Lumpy skin disease	✓	Clinical Disease	✓	Not reported for this Period (since 2007)
Newcastle disease	✓	Disease limited to one or more zones	✓	Not reported for this Period (since 20/08/12)
Peste des petits ruminants	✓	Clinical Disease	✓	Not reported for this Period (since 20/07/07)
Rabies	✓	Disease limited to one or more zones	✗	Not reported for this Period (since Unknown)
Sheep pox and goat pox	✓	Clinical Disease	✗	No information
Theileriosis	✓	Disease limited to one or more zones	✓	Not reported for this Period (since 2008)

II.4 Organisation of the evaluation

II.4.A Timetable of the mission

Appendix 3 provides a list of persons met; Appendix 4 provides the timetable of the mission and details of the facilities and locations visited by the OIE PVS Team and Appendix 5 provides the international air travel itinerary of team members.

II.4.B Categories of sites and sampling for the evaluation

Table 5 lists the categories of site relevant to the evaluation and the number of each category of site in the country. It indicates how many of the sites were visited, in comparison with the suggested sampling framework ("ideal" sampling) recommended in OIE PVS Manual.

Appendix 4 provides a detailed list of sites visited and meetings conducted.

During the field visit the mission was divided into three teams which visited about 75 sites, met with around 200 people for interviews and travelled approximately 3,700 km by road in addition to internal flights from Khartoum to Port Sudan and to Nyala.

At first glance, the actual sampling of different sites may appear to be low in quantity and not well distributed. This is mainly due to security issues which affect around two-thirds (2/3) of the country making these areas inaccessible to the mission. As these areas are affected by conflict the overall situation of the VS can only be worse than that described in the report. However, the OIE mission team was able to visit the headquarters of Darfur (Sudan's highest density of livestock) to get an overview of the area.

Time constraints (only five days for the field mission in one of the largest countries of Africa) and the rainy season also limited the ability of the team to go to the level of the VS closest to the field (e.g., only three administrative units out of 600 were visited). However, taking into account the national context and the interviews made during the visits it should be considered that the sampling is generally representative of the situation of the different entities. Given situations of conflict, poverty and remoteness, it is likely that more complete sampling of those areas not able to be visited would have resulted in poorer rather than better overall performance of the VS.

Table 5: Site sampling

	Terminology or names used in the country	Number of sites	"Ideal" sampling	Actual sampling
GEOGRAPHICAL ZONES OF THE COUNTRY				
Climatic zone	Desert climate; Semi desert; Dry; Semi dry; Semi wet	5	5	3
Topographical zone	*See description*	11	10	
Agro - ecological zone	1. Tropical rain forest 2. Savannah grassland 3. Desert plant& Semi desert	3	3	2
ADMINISTRATIVE ORGANISATION OF THE COUNTRY				
1st administrative level	*Federal : Sudan*	1	1	1
2nd administrative level	*States*	18	10	8
3rd administrative level	*Locality :*	188	13	13
4th administrative level	Administrative unit	618	25	3
VETERINARY SERVICES ORGANISATION AND STRUCTURE				
Central (Federal/National) VS	Federal Ministry of Livestock, Fisheries and Rangelands	**1**	1	1
Internal division of the central VS	General Directorates Corporations (supply/AARC)	8 2	82	8 1
1st level of the VS	State General Directorate	18	10	8
2nd level of the VS	Locality "VS Directorate"	188	13	10
Veterinary organisations	SVC; SVA	2	2	2
FIELD ANIMAL HEALTH NETWORK				
Public Sector Field level of the VS (animal health)/Administrative Unites	Mobile Clinic Hospitals Veterinary Clinics Veterinary centers Diagnostics Units	104 115 226 9 54	10 10 15 9 10	6
Private veterinary sector	Private veterinarians	729	27	7
VETERINARY MEDICINES & BIOLOGICALS				
Production sector	AARC (vaccines)	1	1	1
Import and whole sale sector	Private /government	46/1	10	1
Retail sector	Private /government	737	27	7
Other partners involved	Clinics	247	16	2
	Veterinary center	9	9	
VETERINARY LABORATORIES				
National labs	National Veterinary Research Institute (NVRI)	1	1	1
	Elisa lab	1	1	1
Regional and local labs	Regional Labs	17	10	6
	State labs	54	10	4
Associated, accredited and otherlabs	Private labs	5	5	2
ANIMAL AND ANIMAL PRODUCTS MOVEMENT CONTROL				
Bordering countries	Libya, Egypt, Eritrea, Ethiopia, South Sudan, Central African Republic, Chad	7	7	2
Airports and ports border posts	Khartoum, Kassala, Port Sudan air ports Sawakin, Kosti,Wadi Halfa ports	5	5	2
Main terrestrial border posts	See list in CCII.4	8	8	2
Minor terrestrial border posts	See list in CCII.4	31	10	
Quarantine stations for import	Khartoum airport, Sawakin, Wadi halfa, Gelabat, Hamdaite, Kosti	6	6	1
Internal check points	Greater Darfur, Genina, Kabkabya, Kotum, Boram, Forbranga, Zalingie, Rihaid	58	10	4

	elberdi, Gemelia, Greater Kordofan, Dalang, Elmeram, Babanosa, Altibon, Hamarat, Hamrat el sheikh, Elhjaz, Elmazroub, Abassia, Eyal bakheit, Markab, Ankowsh, Elmigesim om khirin, Shalota, White Nile, Kosti, Rabak, Blue Nile& Senar, Russairis, Elmazmoum, Wad elniell, Eldinder, Gabal yagout, ,Abu hojar, Wad el rikin, Wad el nimair, Wad el hadad, Elmagata, Boought, Aboghmy, Badows, Wadabook, River Nile, Elebaidia, Shendi, Sedoon, Gadarif, Elhwata, Bazora, Um kuraa, Elkhiary, Abu rukhum, Kassala, Aroma, Khasm el girba, Hamdayeet, Halfa elgadida, Shajarab, Eljazeera, Almanagil, Maatoug, Tamboul, Elhasahisa, Elkamleen, Khartoum, Abu delaig, B, , econdary markets:, Great Darfur, Malleet, Nyala, Fasher, Daeen, Great kordofan, Kadogly, Nihood, Sennar, Sennar, Singaa, Blue Nile, Damazeen, Gadarif, Gadarif, Red sea, Port Sudan, Eljazeera, Wad madni (Elkeraiba), River Nile, Damer, Northern, Dongola , White Nile, Eldoim, Eljabalien, Kenan, Tendelty, Tertiary Market, Greater Kordofan, Gebeish, Elkhway, Merkab, Obied, Gadarif, El , hawk, Khartoum , Elsalam, Elmoyeleh, Kassala, Kassala.			
Live animal markets	See list II.12 A	83	10	3
Zones, compartments, export quarantines	export quarantines, Khartoum air port, Sawakin, Wadi halfa, Kassala, Dongla, Shalatain	6	6	5
PUBLIC HEALTH INSPECTION OF ANIMALS AND ANIMAL PRODUCTS				
Export slaughter house	Elkadaro, Ganawa, Elsabaloga, Gimco, National Karary, Nyala, Elgadarif, Adbara, Radwan	9	9	3
National market slaughter houses	-	0		
Local market slaughterhouse	Elsalam, Elmowelih, Sinnar, Elobaied, Madani, Rabakk Madani, Rabak, Elmowelih, Nyala, Sinnar, Senja, Port Sudan, Elkhowi, Elnehood, Elfashir	16	10	5
Slaughter areas/slabs/points		343	18	4
On farm or butcher's slaughtering sites	Integrated poultry slaughterhouse and production companies	17	10	2
Processing sites (milk, meat, eggs, etc)	Milk production companies	7	If poss.	2
	Meat companies	15		

	Table eggs companies	22		
Retail outlets (butchers, shops, restaurants)	food shops and restaurants:		If poss.	
	Gazeira	22376		
	Khartoum	37710		1
	White Nile	6600		
	Blue Nile	2831		
	River Nile	4560		
	Northern	3453		
	Gadarif	5407		
	South Darfur	3000		
	South Kordofan	2918		
	Red Sea	854		
TRAINING AND RESEARCH ORGANISATIONS				
Veterinary university	Universities of Vetetrinary Medicine: Khartoum, Sudan, Butana, Bahri Kordufan, Nyala	6	6	2
Veterinary paraprofessional schools	Technical College for Animal Health and Animal Production Sciences in River Nile state	1	1	
Veterinary research organisations	Animal Resources Research Corporation (ARRC) at the Federal Ministry of Livestock, Fisheries and Range Lands compile many research bodies:		N/A	
	Veterinary Research Institute in Khartoum state (soba)	1	N/A	
STAKEHOLDERS' ORGANISATIONS				
Agricultural Chamber / organisation	Livestock Agricultural/ Chamber	17	10	
National livestock farmers organisations	Federal Farmers union Poultry Union	1	1	
Local livestock farmers organisations	States Pastoralist Union	17	10	
Other stakeholder organisations	Livestock Policy Hub	13	10	
Consumer organisations	The Association for the protection of Consumer	1	1	

PART III: RESULTS OF THE EVALUATION & GENERAL RECOMMENDATIONS

This evaluation identifies the strengths and weaknesses of the veterinary services, and makes general recommendations.

FUNDAMENTAL COMPONENTS

1.	**HUMAN PHYSICAL AND FINANCIAL RESOURCES**
2.	**TECHNICAL AUTHORITY AND CAPABILITY**
3	**INTERACTION WITH INTERESTED PARTIES**
4.	**ACCESS TO MARKETS**

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

This OIE PVS Evaluation examined each critical competency under the 4 fundamental components, listed strengths and weaknesses where applicable, and established a current level of advancement for each critical competency. Evidences supporting this level are listed in appendix 6. General recommendations were provided where relevant.

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

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

This component of the evaluation concerns the institutional and financial sustainability of the VS as evidenced by the level of professional/technical and financial resources available and the capacity to mobilize these resources. It comprises fourteen 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 VS**
	A. Internal coordination (chain of command)
	B. External coordination
Section I-7	**Physical resources**
Section I-8	**Operational funding**
Section I-9	**Emergency funding**
Section I-10	**Capital investment**
Section I-11	**Management of resources and operations**

Terrestrial Code References:

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

Point 4 of Article 3.2.1. on General considerations.

Point 1 of Article 3.2.2. on Scope.

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

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

Article 3.2.5. on Evaluation criteria for human resources.

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

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 the veterinary statutory body.

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

I-1 Professional and technical staffing of the Veterinary Services *The appropriate staffing of the VS to allow for veterinary and technical functions to be undertaken efficiently and effectively.* A. Veterinary and other professionals (university qualification)	Levels of advancement
	1. The majority of veterinary and other professional positions are not occupied by appropriately qualified personnel.
	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 local (field) levels.
	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 reference(s): Appendix 1

Evidence *(listed in Appendix 6)*: H003, H054, H073, H076, H083, H093, E001, PMC070, PMC073

Findings:

Currently there are 2484 veterinarians employed in the Government sector (federal and state), 821 University and Institutional veterinarians, 2150 private veterinarians, and 1658 private independent veterinarians. 164 federal veterinarians are employed at the headquarters in Khartoum. There have been no studies conducted to determine the optimum number and distribution of the veterinarians at federal or state level.

At field level veterinarians are usually working mainly in the 188 locality offices, export quarantine, border posts, export and municipal slaughterhouses; although government veterinarians appear to be present in the field within the vaccinations teams, very few of them are resident in the 618 administrative units. From interviews made in the field veterinarians not in close contact with the livestock owners is regularly reported as a deficiency. Taking into account animal populations, areas, socio-economical and epidemiological contexts, the AH field network of veterinarians does not allow enough direct contact with farmers and animals to be sensitive enough for an adequate surveillance.

During the field visits the majority of the veterinary services' employees did not have a work/position description available. The work/position descriptions which were available did not appear to have information on the competencies, knowledge or skill required for the duties of the position. There does not appear to be a standardized process to determine which animal health positions (central, field and laboratory) truly have the need for a qualified veterinarian. In some of the states, veterinary para-professionals are working in positions which have been designated as veterinary positions (veterinary clinics.)

The promotion and recruitment system for VS staff was not very clear. It appears that personnel are selected for a position or moved to different positions without formal procedures to select the best qualified candidate based on merit.

Strengths:

- Availability of a large veterinarian workforce

Weaknesses:

- Some positions/jobs designated for veterinarians are not staffed and duties are performed by veterinary para-professionals or veterinary technicians
- No clear mechanism to determine the number of staff needed
- No detailed description of staffing distribution per geographical area and functions
- Weak density of distribution of veterinarians in the field limiting ability of adequate surveillance in the national context

- No evidence of formal, non-biased appointment/ procedures

Recommendations

- Ensure each position (staff/job function) has a defined work/job description which includes the necessary competencies, skills and knowledge for optimum performance of duties.
- Analyse the staffing patterns in all veterinary domains and sectors to ensure the optimum number of veterinarians and other professionals. Define an adequate field network of veterinarians able to deal with all relevant aspects of animal health activities, taking into account the specificity of each area (e.g. disease prevalence, pastoralists movement patterns, level of accessibility of communities, etc.)
- Institutionalise a transparent system of merit-based recruitment and promotion within the government VS.

I-1. Professional and technical staffing of the Veterinary Services *The appropriate staffing of the VS to allow for veterinary and technical functions to be undertaken efficiently and effectively.* B. Veterinary para-professionals and other technical personnel	Levels of advancement
	1. The majority of technical positions are not occupied by personnel holding appropriate qualifications.
	2. The majority of technical positions at central and state / provincial levels are occupied by personnel holding appropriate qualifications.
	3. The majority of technical positions at local (field) levels are occupied by personnel holding appropriate 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 veterinary para-professionals.

Terrestrial Code reference(s): Appendix 1

Evidence *(listed in Appendix 6): H054, H066, H073, H093, E001*

Findings:

During visits to the states it was not always possible to find an accurate roster/register for the veterinary para-professionals (technicians, nurses or assistants) assigned to a locality or administrative unit. VS headquarters list a total of 1817 veterinary para-professionals. Position/job descriptions, with required competencies, skills and abilities, were rarely available. In several instances during the field visit, positions of veterinary para-professionals were occupied by personnel with very limited and variable training in animal health.

There is no documented procedure for effective supervision of veterinary para-professionals working in the administrative units. All field staff (veterinarians and technicians) have mobile telephones to contact supervisors, but there appears to be infrequent on site supervision of most technicians. Effective supervision is only done within the vaccination teams and in the export/holding quarantines and in the main slaughterhouses.

Strengths:

- Significant number of qualified veterinary para-professionals at field level
- Effective supervision of veterinary para-professionals in export quarantines and usually in vaccination teams.

Weaknesses:

- General lack of effective supervision
- Technicians acting as veterinarians especially in administrative units

Recommendations:

- Define clearly the categories of veterinary para-professionals including their level of education, their detailed activities (knowledge, skills and abilities) and effective modalities of supervision by veterinarians

I-2 Competencies of veterinarians and veterinary para-professionals *The capability of the VS to efficiently carry out their veterinary and technical functions; measured by the qualifications of their personnel in veterinary and technical positions.* A. Professional competencies of veterinarians including the OIE Day 1 competencies	Levels of advancement
	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 specialised 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 reference(s): Appendix 1

Evidence *(listed in Appendix 6): H014, H052, H055, H056-58, H068-70, H072, H082, E010*

Findings:

The Sudanese Veterinary Council and the six veterinary faculties cooperated to develop/plan a program for the education of all veterinarians. Every five years the curriculum is reviewed to ensure that it responds to the needs of Sudan. The curriculum is also decided on and voted in by the Arabian Veterinary College Society.

Two of the six Veterinary Colleges were visited by the mission team (University of Khartoum and University of Nyala). The six veterinary colleges (Khartoum, Sudan, Butana, Bahri, Kordufan, Nyala) produce 520 graduates per year after a 5-year programme with a Bachelor's degree in Veterinary Science.

Five of the six faculties require lecturing professors to hold PhDs. Most professors with PhDs received the degree outside Sudan (UK, US, China, Germany, etc.). On-going clinical training can be provided (upon request) by the Faculty of Veterinary Medicine of Khartoum University. Graduates from Sudan's Veterinary Universities are recognized by other countries (Egypt, Saudi Arabia).

The practice of the VS veterinarians (public sector) in the field are very limited and mainly dedicated to administrative activities and vaccination. Some clinical services such as minor surgery are also performed by the public sector veterinarians. Clinical examination and veterinary practice is limited to the 445 clinics and hospitals of the locality/administrative offices.

The practice of the veterinarians in the private sector is mainly related to the sale and distribution of veterinary drugs and products. There are approximately 729 veterinary pharmacies owned and operated by graduate veterinarians.

Strengths:

- Specialised training in public health, preventive medicine (MSc) at some veterinary universities
- Core curriculum is agreed by all faculties and the VSB and has also been approved by Arabian Veterinary College Society
- Most lecturing professors have PhDs

Weaknesses:

- Large number of graduate veterinarians with no consideration of needs; results in high levels of veterinary unemployment.
- Link with the Sudanese Veterinary Statutory Body (VSB) but no accreditation procedure.
- Routine administrative or vaccination activities in the public sector and merchandising of veterinary drugs in the private sector rather than on continual strengthening of clinical and diagnostic competencies. This contributes to compromising veterinarians' technical skills necessary for accurately diagnosing and treating diseases in the animal/livestock population. This enhances the risk of "underutilisation" of the profession and transferring responsibility in terms of sanitary control to the farmers.

Recommendations:

- Analyse needs of veterinarians in the different veterinary domains and sectors.
- Liaise with Ministry of Higher Studies, Sudanese Veterinary Council and the Veterinary Colleges/Universities to better define future veterinary workforce needs.
- Establish an accreditation process for all Veterinary Colleges/Universities.

B. Competencies of veterinary para-professionals	Levels of advancement
	1. The majority of veterinary para-professionals have no formal entry-level training.
	2. The training of veterinary para-professionals is of a variable standard and allows the development of only basic competencies.
	3. The training of veterinary para-professionals is of a uniform standard that allows the development of only basic specific competencies.
	4. The training of veterinary para-professionals is of a uniform standard that allows the development of some advanced competencies (e.g. meat inspection).
	5. The training of veterinary para-professionals is of a uniform standard and is subject to regular evaluation and/or updating.

Terrestrial Code reference(s): Appendix 1

Evidence *(listed in Appendix 6): H002, H052, H055-58, H068-70, H072, H082*

Findings:

A technical college for animal health and production science existed in River Nile state from which the older veterinary technicians/veterinary nurses received degrees. This technical college was closed in 1996. Since the closure of the technical college some technicians and veterinary para-professionals have been recruited from colleges with courses in animal production from which animal production technicians receive a 3 year diploma. These colleges provide some training in animal health and when employed by VS the positions are entitled "technical". Sudan University of Science and Technology still offers a Diploma of Veterinary Technology. There is apparently no formal involvement of VSB or VS in the definition of the curruricula and in determining the number of students related to the needs of VS. Over the last few years there has been an apparent degradation in the network of qualified veterinary para-professionals. Some "technicals" without formal training/qualifications are also recruited and provided in-house training. Currently there are approximately 1,817 veterinary para-professionals which include technicians, veterinary assistants and veterinary nurses.

The Veterinary Teaching Hospital in Khartoum also provides technical training three times per year for veterinary para-professionals. In-house training by VS is also provided to the veterinary para-professionals.

Non-Governmental Organizations (NGOs) have provided training (up to 7 days) to approximately 5700 community animal health workers (CAHWs) who now have a common curriculum agreed to by the VS. Officially CAHWs interact with the federal and state animal health officials when assisting with vaccinations and are not an official part of the VS. However during the field visit it appeared that they were sometimes employed by the VS as "manpower", but were clearly acting as veterinary para-professionals.

Strengths:

- Remaining graduates from the older technical college are well trained.

Weaknesses:

- Lack of strong training programs for the veterinary para-professionals, resulting in a variable level of qualifications among technical personnel.
- Possible confusion of activities and functions, and progressive replacement of veterinary para-professionals (technicians) by CAHWs with significant decrease of competence

Recommendations:

- Analyse needs of veterinary professionals in the different veterinary domains and sectors
- Ensure standardized training programs are developed and implemented for all veterinary para-professionals through the VSB as per the Code Chapter 3
- Clearly define the roles and responsibilities of the veterinary para-professionals, with different categories if required (i.e. meat inspectors, AH technicians, etc.) and required knowledge, skills and abilities

I-3 Continuing education (CE)[3]	Levels of advancement
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 a relevant training programme.	1. The VS have no access to veterinary, professional or technical CE.
	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 only for some categories of the relevant personnel.
	4. The VS have access to CE that is reviewed annually and updated as necessary, and it is implemented for all categories of the relevant personnel.
	5. The VS have up-to-date CE that is implemented for all relevant personnel and is subject to regular evaluation of effectiveness.

Terrestrial Code reference(s): Appendix 1

Evidence *(listed in Appendix 6): H015, H018, H050, H051,*

Findings:

The VS have a training plan and national budget for training programs. Since the documents were in Arabic it could not be ascertained if the training plan and the budget are sufficient for the continued development of VS. Many training needs are still met based on external funds from donor financed projects.

It was stated that at the state and federal level training is based on specific needs, such as surveillance, and delivered from the federal budget.

The job/position descriptions do not include the competencies (knowledge/skills/abilities) required for each position, without which it would be difficult to determine that personnel selected for the position have the appropriate training and/or background to carry out all the duties of the job/position. Also without clear understanding of the knowledge/skills/abilities which need to be developed it would be difficult to develop a continuing education program for veterinarians and veterinarian para-professionals.

During field visit interviews all personnel interviewed stated that more training was needed. Some of the para-professionals had not had training in over 10 years.

There is no continuing education for private veterinarians. The VSB is planning to develop a continuing education policy and programme.

Strengths:

- The veterinary faculties are available to provide continuing education.
- Some funds for training are in the national budget
- Funds for training have been provided via donor supported projects
- VSB intends to develop CE/CPD policy and programme.

Weaknesses:

- There is no long term development/training plan
- Necessary knowledge, skills and abilities have not been defined as a bases for outlining training needs

Recommendations:

- Support the VSB in developing continuing education for the private sector
- Reinforce CE programs established at Veterinary Universities
- Develop CE program in relevant domain for public sector

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

I-4 Technical independence	Levels of advancement
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).	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 made and implemented in general accordance with the country's OIE obligations (and with the country's WTO SPS Agreement obligations where applicable).
	5. The technical decisions are based only on scientific evidence and are not changed to meet non-scientific considerations

Terrestrial Code reference(s): Appendix 1

Evidence *(listed in Appendix 6):*

Findings:

Sudan VS have established a successful export certification program to neighbouring countries. Exported livestock must pass through a series of quarantine/holding facilities which currently meet importing country requirements for testing and vaccination.

But taking into consideration the low level of advancement of many critical competencies and the lack of resources in several fields, the VS do not have the means to be technically independent.

A few importers were concerned about the absence of science in some decisions made by the VS, especially in relation to allowing imports. Such decisions seemed to be based on VS not having adequate scientific knowledge (risk assessments) or resources (to enable site visits) to make appropriate science based decisions. VS's lack of resources (human, detailed regulations, financial, procedures and data management) does not allow them to fully comply with international standards.

Reportedly the Ministry imposed the inclusion of animal production technicians "technicals" in the VS when they did not have the required background and qualifications in animal health.

The level of remuneration ($50-$100 per month entry level) for VS staff is obviously too low to sustain their technical independence. The level of advancement on education (initial and continuing) also hampers technical independence of the staff.

The break of chain of command (see CC I.6.A) between federal and state levels has also a deleterious effect on the technical independence of the VS.

The fact that the Chief Veterinary Officer (CVO) must manage animal production, rangeland management and extension, in addition to animal health and veterinary public health, obligates him to balance the duties of the VS with other interest such as commercial, financial, hierarchical and political aspects which should be relevant to a ministerial decision and not to a CVO decision.

Strengths:

- Veterinarians in key decision-making positions.
- Acceptance of the export quarantine process by importing countries.

Weaknesses:

- Lack of regulations; lack of CE; no clear nomination process; gap in chain of command between HQ and State.
- Lack of SOPs; lack of job description which clearly outlines roles and responsibilities.
- Low level of remuneration (salaries) and high level of secondary jobs.

Recommendations:

- A general strengthening of the VS should be implemented to ensure a satisfactory level of technical independence. This plan should tackle all domains of resources and institutional organisation of the VS.

I-5 Stability of structures and sustainability of policies *The capability of the VS structure and/or leadership to implement and sustain policies over time.*	Levels of advancement
	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.
	2. Sustainability of policies is affected by changes in the political leadership and/or the structure and leadership of VS
	3. Sustainability of policies is not affected or is slightly affected by changes in the political leadership and/or the structure and leadership of VS.
	4. Policies are sustained over time through national strategic plans and frameworks and are not affected by changes in the political leadership and/or the structure and leadership of VS
	5. Policies are sustained over time and the structure and leadership of the VS are stable. Modifications are based on an evaluation process, with positive effects on the sustainability of policies.

Terrestrial Code reference(s): Appendix 1

Evidence *(listed in Appendix 6):*

Findings:

Since the 2009 PVS Evaluation the animal health laboratories, under the ARRC have been reintegrated into the Ministry of Livestock, Fisheries and Rangelands from the Ministry of Science and Technology. This can be seen as a positive change which strengthens VS's capabilities for disease prevention, control and eradication.

There have been numerous changes in the administrative structure of the country with the creation of new states and new localities, these changes, due to the division of Sudan, have negatively impacted the stability of the VS.

Some states of Sudan have reshuffled their Ministries sometimes resulting in a different reporting/line of command for the VS.

Some documents on strategic plan(s) and policies were provided, but remain general, appear partial, not developed into operational plans and are highly influenced by donor and project funding

Most current activities and planning of the VS are influenced by donor funding and NGOs with little consideration to the international standards. NGOs do not always provide funding for nationwide programs but are confined to specific areas which may create a patchwork of policies and activities.

Strengths:

- Transfer of animal health laboratories from the Ministry of Science and Technology to the MLF&RL

Weaknesses:

- Strategic and operational planning are very limited and influenced by donors and projects

Recommendations:

- Develop strategic and operational plans on the basis of the requested PVS gap analysis

I-6 Coordination capability of the Veterinary Services A. Internal coordination (chain of command) *The capability of the VS to coordinate its resources and activities (public and private sectors) with a clear chain of command, from the central level (the Chief Veterinary Officer), to the field level of the VS in order to implement all national activities relevant for the Codes (i.e. surveillance, disease control and eradication, food safety and early detection and rapid response programmes).*	Levels of advancement
	1. There is no formal internal coordination and the chain of command is not clear.
	2. There are internal coordination mechanisms for some activities but the chain of command is not clear.
	3. There are internal coordination mechanisms and a clear and effective chain of command for some activities.
	4. There are internal coordination mechanisms and a clear and effective chain of command at the national level for most activities.
	5. There are internal coordination mechanisms and a clear and effective chain of command for all activities and these are periodically reviewed/audited and updated.

Terrestrial Code reference(s): Appendix 1

Evidence *(listed in Appendix 6): H0068, H076, H080, H083, E002-3, E012, E017, PMC026, PMC030, PMC065, PMC067, PMC070, PMC073-75,*

Findings:

The federal and state VS hold formal meetings, usually twice per year, between the Director Generals of the Animal Health Directorate of each state and the Federal DG of Animal Health and Epizootic Disease Control. Once per year the federal and state Ministerial counterparts of the Animal Resources/Animal Health/Livestock sectors meet.

In relation to the HPAI outbreak of 2006, the VS were able to demonstrate an effective chain of command and were able to respond by managing and coordinating emergency measures which were effectively implemented with the private sector and the state VS, leading to the successful eradication of the disease.

A clear chain of command is effective for the export process for live animals and for border inspection.

For all other activities and/or programs in AH and VPH, the chain of command is not clear (regulations, procedures, data management, feedback, etc.). This fact is well known by most staff who acknowledged the difference between the current VS structure and the previous one, which used to be unified and provide a clearer framework.

The majority of interactions between the state and federal VS depend on informal agreements. The federal veterinary services have no authority over state veterinary services. There appears to be no formal MoUs/written cooperative agreements or legislative framework for coordination activities which would aid in the control/eradication of animal diseases.

Strengths:

- HPAI program was well coordinated
- Export certification program for exports to Gulf States are well coordinated

Weaknesses:

- CVO's focus is diluted
- Lack of MOUs or formalized agreements for VS activities between the State and Federal levels
- Weak coordination of national laboratory network

Recommendations:

- Re-establish a clear chain of command and/or formalised agreements with clear responsibilities in all relevant domains of VS activity

B. External coordination	Levels of advancement
The capability of the VS to coordinate its resources and activities (public and private sectors) at all levels with other relevant authorities as appropriate, in order to implement all national activities relevant for OIE Codes (i.e. surveillance, disease control and eradication, food safety and early detection and rapid response programmes). Relevant authorities include other ministries and Competent Authorities, national agencies and decentralised institutions.	1. There is no external coordination.
	2. There are informal external coordination mechanisms for some activities, but the procedures are not clear and/or external coordination occurs irregularly.
	3. There are formal external coordination mechanisms with clearly described procedures or agreements for some activities and/or sectors.
	4. There are formal external coordination mechanisms with clearly described procedures or agreements at the national level for most activities, and these are uniformly implemented throughout the country.
	5. There are national external coordination mechanisms for all activities and these are periodically reviewed and updated.

Terrestrial Code reference(s): Appendix 1

Evidence *(listed in Appendix 6): H046, H094, E015, E019, E020, E024, E025, E026, E027.*

Findings:

One veterinarian from the Ministry of Livestock is seconded to the Ministry of Health and is in charge of coordination of zoonotic disease activities. The office has been active since 2009. Every month there is a coordination meeting between both Ministries. VS are also represented on several multi-ministerial committees. There is a Technical Committee for Importation of Live Animals & Animal Products which includes ten members (VS, Trade, Health and the Sudanese Standards and Metrology Organization - SSMO). Other standing committees meet to coordinate decisions on legislation and veterinary drugs.

Some state VS have the capability to coordinate activities with the State Ministry of Health. Zoonotic disease findings are regularly reported to the MoH via slaughterhouse and slaughter slab reports, but there was no evidence as to whether or not action is taken when zoonotic diseases are detected.

VS coordination activities with the wildlife sector were not analysed due to time constraints and the security situation of Sudan.

Although Federal Veterinarians are not permanently stationed at all border post or international ports of arrival, it was mentioned that customs regulations obligates the customs officers to alert VS upon arrival of live animals.

Although there are formal and informal external coordination with some Ministries or agencies, there is a lack of formal procedures, data management and data analysis, for governing the external coordination.

The Ministry of Health mentioned there is collaboration in the implementation of the project related to brucellosis and some activities related to rabies control. The MoH has defined a list of 11 notifiable zoonotic diseases and will collaborate with VS in developing programs associated with these zoonotic diseases.

Strengths:

- Coordination of some activities at central and field levels
- Written guidelines for Technical Committee for Importation of Live Animals, Animal Products

Weaknesses:

- Formal meetings and formal decisions take place but there appeared to be few formal memorandums of understanding or agreements with all involved Ministries at all levels
- Lack of evidences of implementation of activities in the field related to zoonosis.

Recommendations:

- Develop regulations, procedures and data management between relevant institutions to implement external coordination up from the field in relevant domains

I-7 Physical resources *The access of the VS to relevant physical resources including buildings, transport, telecommunications, cold chain, and other relevant equipment (e.g. computers).*	Levels of advancement
	1. The VS have no or unsuitable physical resources at almost all levels and maintenance of existing infrastructure is poor or non-existent.
	2. The VS have suitable physical resources at national (central) level and at some 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 reference(s): Appendix 1

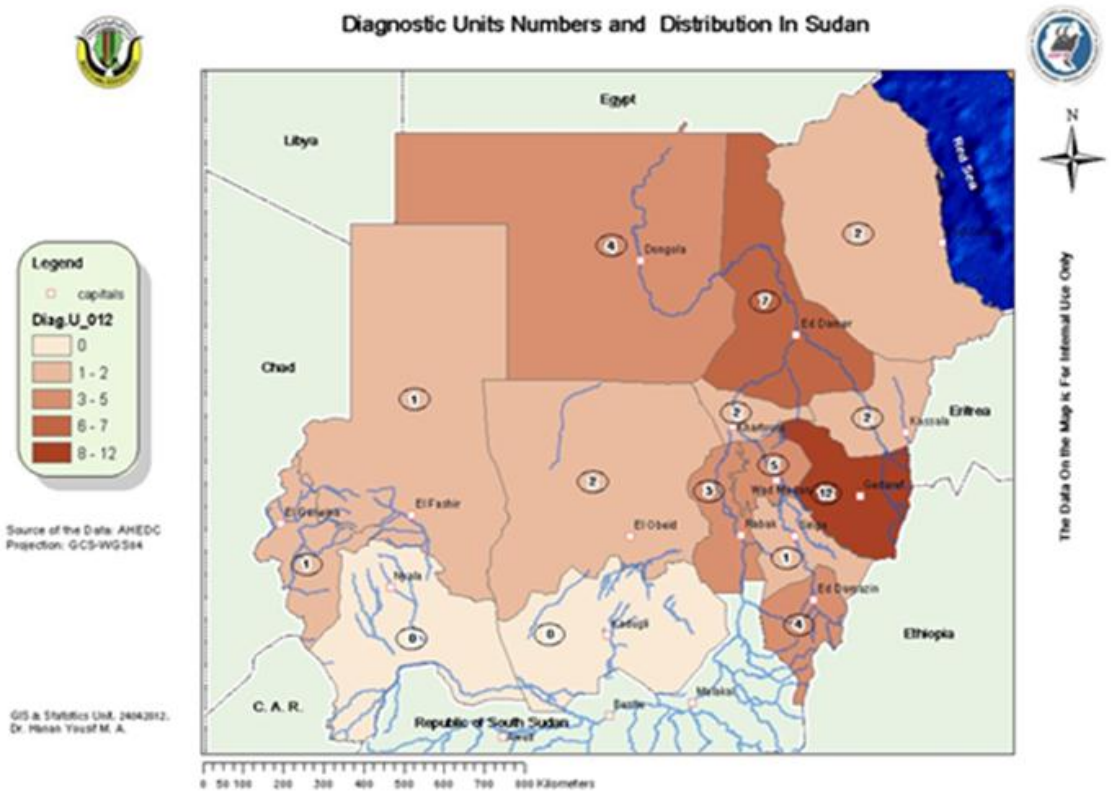
Evidence *(listed in Appendix 6): H084, H091, E001, PCF009, PCF012-21, PCF023-25, PCF028-29, PCF031, PCF033, PAM013-24, PAM025-36, PAM047-54, PAM056-58, PAM089-92, PMC002-5, PMC023-24, PMC027, PMC034, PMC058, PMC064, PMC066, PMC072, PMC076, PMC083*

Findings:

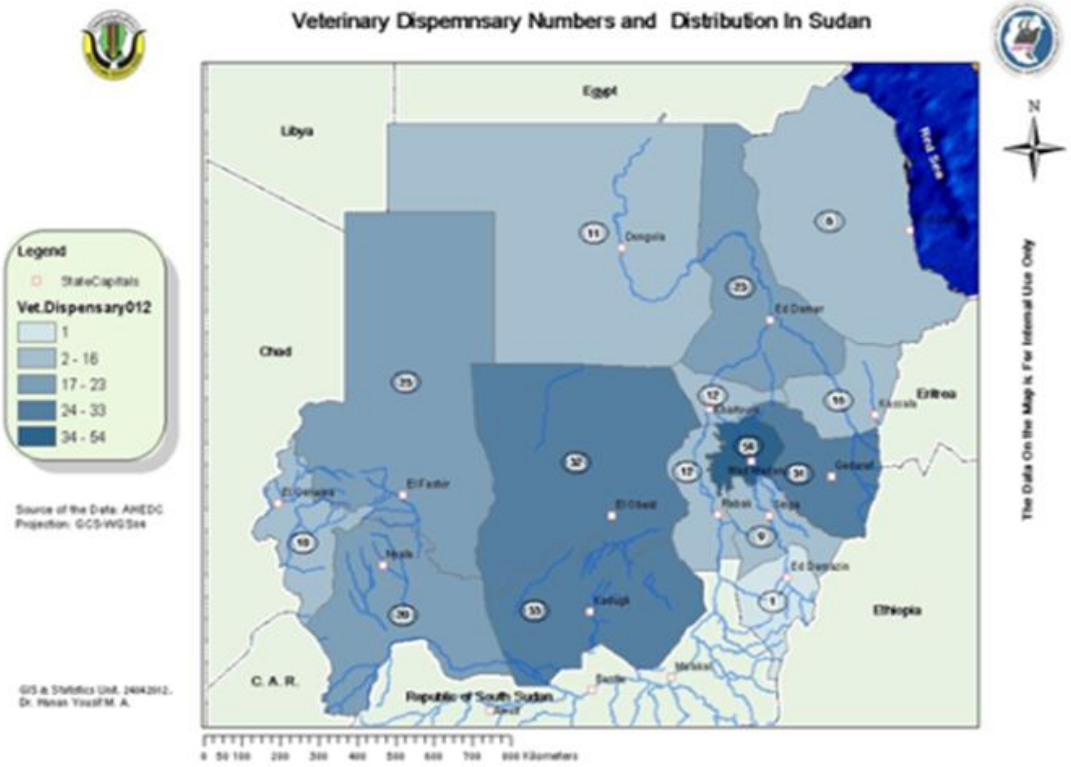
The VS headquarters in Soba appears to have adequate resources, but a detailed inventory was not provided.

At field level there are approximately 104 mobile clinics, 115 veterinary hospitals, 226 veterinary clinics/dispensaries, 9 veterinary centers, 54 diagnostic units, 95 slaughter houses and 248 slaughter slabs. Field units do not have adequate resources. During site visits to the administrative units many lacked transportation, proper storage for medicines, lack of a data management system, and were housed in poor physical facilities. All personnel in the administrative units and localities did have cell phones available.

Solar refrigeration units were available at some of the localities.



Map 8: Diagnostic Units Numbers and Distribution in Sudan



Map 9: Veterinary Dispensary Numbers and Distribution in Sudan

Strengths:

- Telecommunication network appears to provide broad coverage and be fully functional.

Weaknesses:

- Transportation is not available for all administrative units or localities
- Not all mobile units were fully functional
- Field units not well supplied
- Buildings are generally not well maintained
- Detailed inventory (with costs, acquisition dates and planned replacement, etc.) not available

Recommendations:

- Develop and implement inventory system of the overall VS, including geographical and functional distribution, which allows for efficient and effective control and monitoring of VS resources.

I-8 Operational funding *The ability of the VS to access financial resources adequate for their continued operations, independent of political pressure.*	Levels of advancement
	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 (i.e. disease surveillance, early detection and rapid response and veterinary public health).
	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, not always based on risk analysis and/or cost benefit analysis.
	5. Funding for all aspects of VS activities is adequate; all funding is provided under full transparency and allows for full technical independence, based on risk analysis and/or cost benefit analysis.

Terrestrial Code reference(s): Appendix 1

Evidence *(listed in Appendix 6): H012, H013, H074, H092*

Findings:

The mission had access to the federal and some state operational budgets for the VS but the VS did not provide a comprehensive (line item) operational budget for the veterinary services (state & federal) of the country. Nor were we provided with budgets from other Ministries in order to compare budgets. Under the new development plan for Sudan there is an emphasis on agriculture and livestock in order to replace the revenues which came from oil production. It is estimated that 20% of the national budget was to be dedicated to the agricultural and livestock sectors.

VS (Soba) provided budgets relating to salaries, purchasing of goods and services and development projects. The MLFR has one budget for all salaries. This arrangement facilitates mobilization of staff from one directorate to another. A document indicating the breakdown of salaries was provided in Arabic.

Year	Budget allocation for Salaries	
	SDG	US $
Year 2012	21000000	4,769,859
Year 2013	21600000	4,906,141

Figure 4: Budget Allocation for Salaries

There is a separate budget (below) for the purchase of goods and services. There has been a slight increase in the budget since 2012.

Budget for purchasing of goods and services	2011		2012		2013	
	SDG	US$	SDG	US$	SDG	US$
Ministry HQ	3,327,000	~755,682	2,750,000	~624,624	2,720,000	~617,810
AH&EDC	750,000	~170,352	650,000	~147,638	662000	~150,364
Quarantine & Meat Hygiene	1,100,000	~249,849	900,000	~204,422	934,000	~212,145
Total	5,177,000	~1,175,884	4,300,000	~976,685	4,316,000	~980,319

***conversion rate 4.5 SDG = $1US as of September 24, 2013**

Figure 5: Budget for purchasing of goods and services

A concise breakdown of budgets based on donor funded activities was not available.

The budget was not collated at Federal level to clearly illustrate the monetary distribution by geographic area, activity or per expenditures. The VS, in spite of a slight increase in budget, still depends on external/donor funding to implement disease control programs.

Strengths:

- Over the past three years the budget had been relatively stable

Weaknesses:

- No clear possibility to estimate and analyse the total operational budget of the VS as it would require collection of data from all states and then analyses of the budget lines that vary and may include different activities unrelated to VS activities (as defined by the OIE).

Recommendations:

- Develop a clear presentation of the overall VS operational budget with geographical and functional distribution

I-9 Emergency funding	Levels of advancement
The capability of the VS to access extraordinary financial resources in order to respond to emergency situations or 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.	1. No funding arrangements exist and there is no provision for emergency financial resources.
	2. Funding arrangements with limited resources have been established, but these are inadequate for expected emergency situations (including emerging issues).
	3. Funding arrangements with limited resources have been established; additional resources for emergencies may be approved but approval is through a political process.
	4. 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. Funding arrangements with adequate resources have been established and their rules of operation documented and agreed with interested parties.

Terrestrial Code reference(s): Appendix 1

Evidence *(listed in Appendix 6): H012, H092*

Findings:

The VS stated that funds can be mobilized from Ministry of Finance and National Economy in case of emergencies.

Strengths:

- Established process for the release of emergency funds
- Success of HPAI outbreak management

Weaknesses:

- Release of funding is not immediate

Recommendations:

- Develop clear procedures and records management for emergency funding related to epizootics, including compensation.
- Develop mechanism to provide compensation to producers who report emergency diseases

I-10 Capital investment *The capability of the VS to access funding for basic and additional investments (material and non material) that lead to a sustained improvement in the VS operational infrastructure.*	Levels of advancement
	1. There is no capability to establish, maintain or improve the operational infrastructure of the VS.
	2. The VS occasionally develops proposals and secures funding for the establishment, maintenance or improvement of operational infrastructure but this is normally through extraordinary allocations.
	3. The VS regularly secures funding for maintenance and improvements of operational infrastructure, through allocations from the national budget or from other sources, but there are constraints on the use of these allocations.
	4. The VS routinely secures adequate funding for the necessary maintenance and improvement in operational infrastructure.
	5. The VS systematically secures adequate funding for the necessary improvements in operational infrastructure, including with participation from interested parties as required.

Terrestrial Code reference(s): Appendix 1

Evidence *(listed in Appendix 6): H012, H013, H074,*

Findings:

When VS presents their budget request to the Ministry of Finance and National Economy, the full request is never allocated. Often improvements/investments are based on receipt of donor funding (lab, vehicles, buildings).

During the field visits it was evident that many of the physical structures were in need of repair and maintenance (federal & state), with poor maintenance of buildings, lack of vehicles and other equipment.

A separate budget is allocated for development projects. Of a total of 130,070,000 Sudanese Pound (SDG), animal health and quarantine projects receive 59,200,000 SDG (45 % of the allocation). AH&EDC receives approximately 35 % of the total allocation (see chart below).

Budget Allocation for Development Projects (2013)		
Animal Health	46,200,000 SDG	10,493,691 US$
Quarantine	13,000,000 SDG	2,952,770 US$
Animal production	28,500,000 SDG	6,473,381 US$
Veterinary Extension	3,200,000 SDG	726,835 US$
Rangelands	6,500,000 SDG	1,476,385 US$
Other projects	32,670,000 SDG	7,420,539 US$
Total	130,070,000 SDG	29,543,603 US$

***conversion rate 4.5 SDG = $1US as of September 24, 2013**

Figure 6: Budget Allocation for Development Projects (2013)

Strengths:

- Ability to access donor funds to support some projects

Weaknesses:

- General lack of funds for investments at all levels, especially at locality and administrative units

Recommendations:

- Develop a clear presentation of the overall VS capital investment budget with geographical and functional distribution

I -11. Management of resources and operations *The capability of the VS to document and manage their resources and operations in order to analyse, plan and improve both efficiency and effectiveness.*	Levels of advancement
	1. The VS do not have adequate records or documented procedures to allow appropriate management of resources and operations
	2. The VS have adequate records and/or documented procedures but do not use these for management, analysis, control or planning.
	3. The VS have adequate records, documentation and management systems and use these to a limited extent for the control of efficiency and effectiveness
	4. The VS regularly analyse records and documented procedures to improve efficiency and effectiveness
	5. The VS have fully effective management systems, which are regularly audited and permit a proactive continuous improvement of efficiency and effectiveness.

Terrestrial Code reference(s): Appendix 1

Evidence *(listed in Appendix 6): H019, H043, H045, H084, H091, E001, E018,*

Findings:

The last animal census was completed in 1976 which implies the current data is unreliable for planning animal health projects.

The existing documentation system captures a large quantity of information from the field units on animal health (outbreaks, slaughter, vaccination) and human and physical resources but there appears to be little or no internal analysis/compilation of the data. The same applies to the information captured at the federal and state laboratories. The laboratory registers are not always properly maintained and there appears to be little use, analysis or feedback from data collected from the laboratories. Analysis of this data could help with management decisions and planning field activities/operations.

At the field level (administrative unit, slabs, laboratories, etc.) documentation is not of a good uniform quality. Documentation is poorly maintained at some field units. Collection of data is hampered by the level of competency of veterinary para-professionals and the lack of uniform procedures (standard operating procedures) and lack of resources.

The VS have access to the African Union-InterAfrican Bureau of Animal Resources (AU-IBAR) forms Animal Resource Information System (ARIS) for reporting but the forms are not used at all levels in the field. Some reports are by means of informal documents or the information is transmitted verbally by mobile phones.

In all domains and at all levels there is a general lack of documented procedures.

Strengths:

- A large quantity of information/data is collected from the field on a monthly basis.

Weaknesses:

- limited analysis of information from laboratories and field operations
- Lack of procedures in all domains leading to inconsistent and poor quality data.

Recommendations:

- Develop and implement documentation system, data management and procedures (SOPs) for all activities in all domains and at all levels.

III.2 Fundamental component II: Technical authority and capability

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

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

Critical competencies:

Section II-1	**Veterinary laboratory diagnosis**
	A. Access to veterinary laboratory diagnosis
	B. Suitability of national laboratory infrastructures
Section II-2	**Laboratory quality assurance**
Section II-3	**Risk analysis**
Section II-4	**Quarantine and border security**
Section II-5	**Epidemiological surveillance and early detection**
	A. Passive Epidemiological surveillance
	B. Active Epidemiological surveillance
Section II-6	**Emergency response**
Section II-7	**Disease prevention, control and eradication**
Section II-8	**Food safety**
	A. Regulation, authorisation and inspection of establishments for production, processing and distribution of food of animal origin
	B. Ante and post mortem inspection at abattoirs and associated premises
	C. Inspection of collection, processing and distribution of products of animal origin
Section II-9	**Veterinary medicines and biological**
Section II-10	**Residue testing**
Section II-11	**Animal feed safety**
Section II-12	**Identification and traceability**
	A. Animal identification and movement control
	B. Identification and traceability of products of animal origin
Section II-13	**Animal welfare**

Terrestrial Code References:

Chapter 1.4. on Animal health surveillance.

Chapter 1.5. on Surveillance for arthropod vectors of animal diseases.

Chapter 2.1. on Import risk analysis.
Points 6, 7 and 9 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation / General Organisation / Procedures and standards.
Point 1 of Article 3.2.4. on Evaluation criteria for quality systems.
Point 3 of Article 3.2.6. on Evaluation criteria for material resources: Technical.
Points 1 and 2 of Article 3.2.7. on Legislation and functional capabilities: Animal health, animal welfare and veterinary public health / Export/import inspection.
Points 1-3 of Article 3.2.8. on Animal health controls: Animal health status / Animal health control / National animal disease reporting systems.
Points 1-5 of Article 3.2.9. on Veterinary public health controls: Food hygiene / Zoonoses / Chemical residue testing programmes / Veterinary medicines/ Integration between animal health controls and veterinary public health.
Sub-point f) of Point 4 of Article 3.2.10. on Veterinary Services administration: Formal linkages with sources of independent scientific expertise.
Points 2 and 5-7 of Article 3.2.14. on National information on human resources / Laboratory services / Veterinary legislation, regulations and functional capabilities / Animal health and veterinary public health controls.
Article 3.4.12. on Human food production chain.

Chapter 4.1. on General principles on identification and traceability of live animals.
Chapter 4.2. on Design and implementation of identification systems to achieve animal traceability.
Chapter 4.12. on Disposal of dead animal.

Chapter 6.2. on Control of biological hazards of animal health and public health importance through ante- and post-mortem meat inspection.
Chapter 6.3. on Control of hazards of animal health and public health importance in animal feed.

Chapters 6.6. to 6.10. on Antimicrobial resistance.
Chapter 7.1. Introduction to the recommendations for animal welfare.
Chapter 7.2. Transport of animals by sea.
Chapter 7.3. Transport of animals by land.
Chapter 7.4. Transport of animals by air.
Chapter 7.5. Slaughter of animals.
Chapter 7.6. Killing of animals for disease control purposes.

II-1 Veterinary laboratory diagnosis **A Access to veterinary laboratory diagnosis** *The authority and capability of the VS to have access to laboratory diagnosis in order to identify and record pathogenic agents, including those relevant for public health, that can adversely affect animals and animal products.*	Levels of advancement
	1. Disease diagnosis is almost always conducted by clinical means only, with no access to and use of a laboratory to obtain a correct diagnosis.
	2. For major zoonoses and diseases of national economic importance, the VS have access to and use a laboratory to obtain a correct diagnosis.
	3. For other zoonoses and diseases present in the country, the VS have access to and use a laboratory 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 laboratory to obtain a correct diagnosis.
	5. In the case of new and emerging diseases 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 reference(s): Appendix 1

Evidence *(listed in Appendix 6): H001, H040-41, H062, H065, E013, PMC009, PMC081-82 , PCF008*

Findings:

Sudan VS mainly utilizes two central laboratories, the Veterinary Research Institute and the ELISA laboratory for animal disease diagnostics. It may also request international laboratory analysis in some cases (confirmation).

During 2011 the VRI network processed 253,898 samples and 151,432 samples were processed in 2012. Currently the VRI laboratories (for the size of the network and the number of personnel involved) are processing few samples. The same applies for the ELISA laboratory and all state run laboratories. It was not clear why millions of Brucella tests (export certification testing and tests for purchase) were not accounted for in the presented results.

Taking into account the size of animal population and the epidemiological context of the country, this small number of samples shows that the VS field network does not have the capacity to initiate, process and send a credible number of laboratory samples for diagnostics.

The VRI is part of the Agriculture Resources Research Council (ARRC) reporting directly to the Minister of LF&R. According to the Director of VRI sanctions, which have stopped the importation of needed equipment and reagents, and reduced field activity have greatly restricted their laboratory activities and capacity to perform some diagnostics. The VRI and its 17 satellite laboratories engage in disease surveys, field investigations and diagnosis of animal & zoonotic diseases. The VRI Centre has the following diagnostic units; virology/rabies, molecular biology, bacteriology, mycology, parasitology, mycoplasma, pathology, poultry diseases, radioisotops, and entomology. During the visit an updated annual report on laboratory activities was not provided. At the time of the visit little or no activity was taking place in the laboratory. VRI produces Rose Bengal brucella tests for distribution to all other laboratories.

The ELISA laboratory was established in 2004 as a unit of Animal Health under the AH&EDC Directorate. The laboratory does diagnostics for FMD, RVF, CBPP, PPR, Brucella and performed the serology during the Rinderpest freedom pathway. According to the laboratory register the last testing activity took place in January/February of 2013 as part of the activities for one of the donor funded action plans.

In the regional and central branches of VRI data are available on types of samples and tests, but the information does not appear to be compiled at national level. In the states, public laboratory data collection is limited to a registry, sometimes with a monthly report. Some data

collected at the state public laboratories are included with the monthly ARIS report to the data collection unit in Soba. Public state laboratories are limited to Brucella testing (Rose Bengal), faecal analysis and detection of blood parasites.

None of the laboratories visited were operating at peak efficiency.

The private laboratories visited were well equipped with trained dedicated personnel.

There is a break in the CVO's chain of command in relation to the animal disease diagnostic network in that there appears to be two parallel federal laboratories involved in diagnostics. The ELISA laboratory, which is under the authority of AH&EDC, and the VRI which is under the authority of the Minister of LF&R. There is some coordination of activities between the two laboratories but there appears to be more duplication than coordination.

Strengths:

- The VRI infrastructure design appears to be adapted to provide access to laboratory analysis

Weaknesses:

- Lack of national AH and VPH surveillance programs
- Limitedcompilation of data from laboratory network to Central VRI laboratory
- Laboratory tests at State laboratories appear limited to Brucella (rose Bengal) and fecals

Recommendations:

- Develop national AH and VPH programs with clearer targets in terms of laboratory analysis
- Support communication about the need for laboratory analysis in the private sector
- Support communication about the need for the accreditation of private laboratories

II-1 Veterinary laboratory diagnosis B. Suitability of national laboratory infrastructures *The sustainability, effectiveness and efficiency of the national (public and private) laboratory infrastructures to service the needs of the VS*	Levels of advancement
	1. The national laboratory infrastructure does not meet the need of the VS.
	2. The national laboratory infrastructure meets partially the needs of the VS, but is not entirely sustainable, as organisational deficiencies with regard to the effective and efficient management of resources and infrastructure (including maintenance) are apparent
	3. The national laboratory infrastructure generally meets the needs of the VS. Resources and organisation appear to be managed effectively and efficiently, but their regular funding is inadequate to support a sustainable and regularly maintained infrastructure
	4. The national laboratory infrastructure generally meets the needs of the VS and is subject to timely maintenance programmes but needs new investments in certain aspects (e.g. accessibility to laboratories, number or type of analyses).
	5. The national laboratory infrastructure meets the needs of the VS, and is sustainable and regularly audited.

Terrestrial Code reference(s): Appendix 1

Evidence *(listed in Appendix 6): H020, H030, H040-41, H056, H060, H062, H065, H081, H086, E009, E014, PCF004, PCF008, PCF023, PCF028, PCF033, PAM001-6, PAM047-52, PMC006-8, PMC01-11, PMC017-18, PMC035, PMC050, PMC078, PMC08-83*

Findings:

Under the Ministry of Livestock, Fisheries and Rangelands, the Veterinary Research Institute (VRI) heads the Sudanese Federal laboratory network. 426 employees are based at the CVRI headquarters in Soba and 172 employees are distributed in the 5 Central Veterinary Research Institute Centres and the 12 Regional Laboratory Centres located throughout Sudan. In addition to the VRI network of laboratories, there are the ELISA laboratory operating within the AH&EDC Directorate, 54 laboratories managed/owned by the states and 5 private laboratories. During the field mission, 11 were visited (1 private, 4 National/Federal, 6 State laboratories).

Map 10: Laboratories

The Federal government does not have accreditation authority over the 55 public state veterinary laboratories and the five private laboratories. Depending on the state, their laboratories do very basic testing (Brucella, Theileria, fecal flotation), most of them being clinical laboratories supporting veterinary hospitals. The infrastructures in all laboratories are poorly maintained and usually in a poor state, with minimum equipment.

New investments are planned without taking into consideration the true needs of the animal health programs at national level. This leads to a waste of resources. For example, El Obeid VRI laboratory is planning investments and renovation based on the current testing level of 1.5 million brucella tests. Concurrently, the export quarantine station currently supplying samples to this laboratory also plans to establish its own laboratory for the same purpose. The Suakin quarantine station has a laboratory facility but also uses the VRI laboratory in Pt. Sudan for Brucella testing.

Currently for outbreak investigations and routine blood sampling, a team comprised of veterinarians from HQ, VRI laboratory, state veterinarians and state veterinary technicians collect samples. The VS does not utilize the field team in place at the locality to collect samples, this leads to waste of time, human and financial resources.

Laboratory resources (human, physical and monetary) are not managed effectively.

Private laboratories are starting to be developed mainly in response to demand from the poultry sector.

Strengths:

- National centralized system for VRI throughout the country
- Development of private laboratories with relevant investments and management

Weaknesses:

- The number of national and state laboratories are excessive compared to the number of samples tested. The VS has yet to develop adequate sampling plans which would fully utilize the laboratories.
- Overlapping and duplication of mandates at national level (ELISA & VRI laboratories)
- Overlapping of federal and state laboratories
- Overstaffing considering the low level of activity.

Recommendations:

- Develop a strategic plan for reorganisation of the national laboratory infrastructure
- Develop accreditation procedures for private laboratories

II-2 Laboratory quality assurance *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 including, but not limited to, participation in relevant proficiency testing programmes.*	Levels of advancement
	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 reference(s): Appendix 1

Evidence *(listed in Appendix 6): PMC029, PMC036,*

Findings:

The Central VRI and the ELISA laboratories have initiated a Quality Assurance (QA) system, but it is currently not implemented. The ELISA laboratory has a person who has been recently trained in the quality assurance and is the designated QA manager for the ELISA laboratory. The regional VRI laboratories visited did not have QA and very limited SOPs.

Some generic standard operating procedures (SOPs) have been written.

State laboratories did not have a QA system and very few utilize any type of SOPs. A laboratory accreditation system does not exist for governmental or private laboratories.

A private laboratory started developing SOPs and QA procedures.

During the field visits, the quality of laboratory processes was clearly questionable taking into account the poor infrastructure, poor management and sometimes unhygienic processes. Sample submission records could not be correlated with the laboratory results.

Strengths:

- A quality assurance process is being initiated.
- There is staff dedicated to quality assurance at central level.

Weaknesses:

- Lack of implemented quality assurance including for official tests
- Lack of standard operating procedures

Recommendations:

- Develop quality assurance for official tests at central and local levels

II-3 Risk analysis	Levels of advancement
The authority and capability of the VS to base its risk management measures on risk assessment.	1. Risk management measures are not usually supported by risk assessment.
	2. The VS compile and maintain data but do not have the capability to carry out risk analysis. Some risk management measures are based on risk assessment.
	3. The VS compile and maintain data and have the capability to carry out risk analysis. The majority of risk management measures are based on risk assessment.
	4. The VS conduct risk analysis in compliance with relevant OIE standards, and base their risk management measures on the outcomes of risk assessment.
	5. The VS are consistent in basing sanitary measures on risk assessment, and in communicating their procedures and outcomes internationally, meeting all their OIE obligations (including WTO SPS Agreement obligations where applicable).

Terrestrial Code reference(s): Appendix 1

Evidence *(listed in Appendix 6):*

Findings:

There is no legislative framework related to risk analysis. Informal risk assessments for importation are performed by the Technical Committee for Importation of Live Animals, Animal Products. This Committee's decisions are based on the OIE country status, and the submission of appropriate paperwork (certificates, registration, etc.)

An informal risk assessment was completed in conjunction with the FMD strategy document.

Strengths:

- Statement that some staff received risk assessment/analysis training

Weaknesses:

- There is no formal evidence of risk assessment/analysis policy/staff/training.
- The data collection system does not allow for proper risk assessment/analysis activities

Recommendations:

- Policies and legislative framework on risk assessment should be developed to support the Sudan Investment Plan's strategy of increasing areas which can be classified with different animal health status.
- Build effective databases which may be used to conduct risk assessments
- Provide the proper training to staff to ensure the quality of risk assessments

II-4 Quarantine and border security *The authority and capability of the VS to prevent the entry and spread of diseases and other hazards of animals and animal products.*	Levels of advancement
	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 risk analysis.
	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 4 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 reference(s): Appendix 1

Evidence *(listed in Appendix 6): E016, H027, H029, H094, PAM063-068,*

Findings:

Sudan VS' regulations for border control are very generic. Border agreements between Ethiopia and Eritrea exist but were not provided to the mission.

The legal entry points are limited. Sudan allows imports through three international airports, two seaport/riverports (Swaken-Wadi Halfa), eight major terrestrial border posts; Kassala (Hamdaiet), Red Sea (Shalatain), Northern (Dongla), Gadarif (Galabat), White Nile (Joda), North Kordofan (Hamrat Elshakh), North Darfour (Malit), South Darfour (Um Daffog), West Darfour (Elganana) and 31 minor terrestrial border post; Sennar (Um dlws, Guz Elnabag), White Nile (Judaa, Um Jalala, Elmeganis), Blue Nile (Yabus, Shalia, Abukharees), Gadarif (Elasera, Baraket noorain, Um kuraa), Kassala (Ellafa, Karaybet, Awad), Red Sea (Farora), Northern (Argin), South Kordofan (Kalek, Ellery, Elmairm, White Lake,Umbalael, Damboloia, Eltebon), North Darfur (Tiena), South Darfur (Fifi, Elradoum, Abu Jabra), West Darfur (Nowry Abu Jedad, Four Baranga, West Jogah, Arcon).

When live animals reach the border post into Sudan, the Customs official is required to inform the veterinarian on duty. Cross border movement in the conflict zones and the areas of transhumance movement are not controlled. However, the system of inland checkpoints along the main routes used for animal movement, have a bottle-neck effect which provides some additional control for the movement of animals.

Field visits were made to the International airport (Khartoum) and land borders with Eritrea (Kassala) and Ethiopia (Galabat). Veterinarians did not have copies of the import/quarantine regulations nor did they have equipment for taking samples if necessary. There did not appear to be documented SOPs. Mobile phones are used to contact HQ in case of problems or questions. Veterinarians at the airport monitor all incoming fights for live animals and work closely with Customs officials to ensure inspection at arrival.

There are six import Quarantine stations (Sawakin, Wadi halfa, Gelabat, Hamdaite, Kosti). Sawakin and Gelabat were visited by the OIE team. Although the areas are designated as "quarantine" stations the better terminology would be holding stations as they do not meet the OIE guidelines for quarantine facilities (lack of adequate fencing and procedures).

Often when livestock/poultry are imported the quarantine is performed on the premise of the importer. The importer's quarantine facility is approved by VS before the animals are introduced.

[4] 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.

Neither Federal nor State VS have a mandate to regulate the importation of animal products or by-products.

Strengths:

- Limited legal points of entry
- Effective control at airport and seaport, although lacking detailed SOPs

Weaknesses:

- Import stations do not have written SOPs and specifically trained staff
- Lack of quarantine where animals can be isolated
- Lack of procedures at terrestrial points, including for implementation of bilateral agreements (i.e. with Ethiopia)

Recommendations:

- Develop clear procedures and continuing education for staff at border posts
- Differentiate commercial imports and transhumance of live animals with relevant procedures to be implemented (see II.12.A)

II-5 Epidemiological surveillance and early detection *The authority and capability of the VS to determine, verify and report on the sanitary status of the animal populations, including wildlife, under their mandate.* **A. Passive epidemiological surveillance**	Levels of advancement
	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 in compliance with OIE standards 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 in compliance with OIE standards for most relevant diseases. Producers and other interested parties 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 producers and other interested parties and the international community (where applicable) on the findings of passive surveillance programmes.

Terrestrial Code reference(s): Appendix 1

Evidence *(listed in Appendix 6): H023, H045, H058, H087, H088, H089, E005, E011, E028*

Findings:

The federal level (Central) has established a network for the collection of information from the states. Reports from the Administrative Units are sent to Localities and then to the state Ministry and from there to the federal (Central) office in Soba. In Soba all information is compiled and presented to the Chief of AH&EDC and the epidemiology unit for analysis. Monthly reports are sent to AU-IBAR (ARIS) and to the OIE.

The network and procedures for passive surveillance programs are not clearly described. Case definitions have not been developed or described nor have procedures for case confirmation. Procedures for sample collections at slaughter establishments or markets have not been described.

The scarcity of veterinarians stationed strategically in the field with regular contact with animals and farmers hampers the ability of the VS to establish a passive surveillance network in compliance with the OIE standards. The linkages between the government and the private veterinarians are weak, providing minimum or no support for passive surveillance. Although data on “outbreak investigation” are regularly reported (with some disease mapping), very few samples are sent compared to the number of animals in the epidemiological context for passive surveillance and early detection. There is confusion between “routine or differential diseases laboratory diagnosis” and “outbreak investigation”: for instance haemo-parasites sometimes qualify as “outbreak investigation”. The VS report all “diagnostics” made for any disease. This reporting is seen as “surveillance” without any target or decision to take at the end. Moreover the disease diagnosed is qualified as an “outbreak” (i.e. if a Tick borne disease is diagnosed it is described as an “outbreak” although the disease is endemic and seasonal.

Strengths:

- Central federal unit for collation of collected field data.

Weaknesses:

- No organised collection of samples at abattoirs
- Deficiency in chain of command does not allow the passive surveillance to function properly (state-federal).
- Veterinarian interface with livestock owners is weak and does not allow VS to initiate effective passive surveillance and early detection.

Recommendations:

- Develop clear procedures for passive surveillance and early detection programs, based on an effective network of field veterinarians in regular contact with animals and livestock owners and effectively linked with the official VS.

II-5 Epidemiological surveillance and early detection *The authority and capability of the VS to determine, verify and report on the sanitary status of the animal populations, including wildlife, under their mandate.* **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 in compliance with scientific principles and OIE standards for some relevant diseases and apply it to all susceptible populations but do not update it regularly.
	4. The VS conduct active surveillance in compliance with scientific principles and OIE standards 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 reference(s): Appendix 1

Evidence *(listed in Appendix 6): H001, H003, H024, H087-90, H096, E011, E021, E028*

Findings:

Action plans for surveys of some diseases (FMD) have been implemented. Surveys were designed to determine the sero-prevalence of FMD serotypes in Sudan. This project was a sub-project of the Livestock Epidemio-Surveillance Project (LESP). Surveys and outbreak investigations were performed in Gezera, White Nile, North & south Kordofan, Kassal, Gedarif, Sennar, Blue Nile, Northern, River Nile, Khartoum, West Kordofan, North Darfur, South Darfur, West Darfur and Red Sea States. As a result of the active surveillance Sudan was able to determine the sero-types and the sero-prevalence of FMD in Sudan.

Four additional action plans detail planning for increased active surveillance of PPR, CBPP, Brucellosis, RVF. These action plans are not updated and have not yet led to disease control.

Some level of active surveillance for brucellosis is conducted (purchase testing) but no action is taken on the finding of a positive case

Strengths:

- VS were able to provide a one time "snapshot" of the FMD status for the country.
- Active surveillance is based on scientific processes.

Weaknesses:

- Unable to sustain long-term active surveillance programs: active surveillance consists one-time surveys, dependent on donor or irregular funding
- Unclear procedures, especially related to who is responsible for implementation and who controls effectiveness.

Recommendations:

- Develop clear technically sound national active surveillance programs.

II-6 Emergency response *The authority and capability of the VS to respond rapidly to a sanitary emergency (such as a significant disease outbreak or food safety emergency).*	Levels of advancement
	1. The VS have no field network or established procedure to determine whether a sanitary emergency 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. They may have national contingency plans for some exotic diseases but they are not updated/tested.
	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 that are regularly updated/tested.
	5. The VS have national contingency plans for all diseases of concern, including coordinated actions with relevant Competent Authorities, all producers and other interested parties through a chain of command. These are regularly updated, tested and audited

Terrestrial Code reference(s): Appendix 1

Evidence *(listed in Appendix 6): H021, H038, HO40, H041, H045, E006*

Findings:

A contingency plan for HPAI is in existence. At the moment HPAI and RVF are the only diseases for which Sudan has planning to provide emergency response (although RVF plan was not provided).

In the past Sudan was able to contain and eradicate HPAI. Still the break in the chain of command, the lack of resources of the VS brings into question the current capacity of the VS to mount an adequate emergency response.

It was reported that there is an action plan for RVF which is vaccination focused.

There is a large number of veterinarians and animal health workers in the field, but it is difficult to determine if they are distributed in the most effective manner.

There are still conflict zones within the country which could impact on emergency response actions.

Strengths:

- Contingency plan for HPAI
- Legal authority to act in the States when there is an emergency
- Funds available for emergencies at the National level (Disaster Management funds)

Weaknesses:

- No contingency plans for other diseases
- Lack of training may hamper response to an emergency outbreak

Recommendations:

- Review/revise contingency plans on a regular basis
- Schedule simulation exercises for emergency outbreaks

II-7 Disease prevention, control and eradication *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.*	Levels of advancement
	1. The VS have no authority or capability to prevent, control or eradicate animal diseases.
	2. The VS implement prevention, control or 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 or eradication programmes for some diseases and/or in some areas with scientific evaluation of their efficacy and efficiency.
	4. The VS implement prevention, control or eradication programmes for all relevant diseases but with scientific evaluation of their efficacy and efficiency of some programmes.
	5. The VS implement prevention, control or eradication programmes for all relevant diseases with scientific evaluation of their efficacy and efficiency consistent with relevant OIE international standards.

Terrestrial Code reference(s): Appendix 1

Evidence *(listed in Appendix 6): H022, H024-25, H039, H042, H045, E021, PMC003-4, PMC021-22, PMC024-25, PMC027-28, PMC052-59, PMC067*

Findings:

Five Actions Plans have been formulated which have strategies to lower the incidence/prevalence of six diseases and to work towards their eventual control and/or eradication (PPR, FMD, Sheep and Goat Pox, Brucella, RVF, CBPP) in specific areas of the country. Long term (multi-year) detailed budgets have not been developed to ensure continuation and success of the programs. Although the basic rationale of most of these plans is relevant, many aspects are questionable and not detailed in operational terms.

Legislative frameworks/regulations have not been developed to make these programs compulsory. The action plans cannot be considered as true control and eradication programs as they remain implemented on a voluntary basis by livestock owners.

If the strategy remains to base disease control programs on voluntary vaccination and testing, they could be considered as joint stakeholder programs (see CCIII.6). Such programs might be considered relevant for private veterinary activities (implemented by the public or private sector). Some states are utilizing this approach to improve delivery of services by the private veterinarians.

Strengths:

- VS have six strategies for priority diseases (FMD - Sheep & goat pox – PPR Brucellosis- RVF- CBPP), and five action plans. PPR and Sheep & Goat pox have a harmonized strategy.).
- Basic elements to be included in an action plan have been identified

Weaknesses:

- No legislative framework to support the goal of control and/or eradication
- Lack of permanent animal identification
- Lack of official control for Rose Bengal reagents. Reagents should be distributed to persons accredited to perform the testing

Recommendations:

- Reassess the action plans and develop clear technically sound national operational plans with adequate resources

II-8 Food safety **A. Regulation, authorisation and inspection of establishments for production, processing and distribution of food of animal origin** *The authority and capability of the VS to establish and enforce sanitary standards for establishments that produce, process and distribute food of animal origin*	Levels of advancement
	1. Regulation, authorisation and inspection of relevant establishments are generally not undertaken in conformity with international standards.
	2. Regulation, authorisation and inspection of relevant establishments are undertaken in conformity with international standards in some of the major or selected premises (e.g. only at export premises).
	3. Regulation, authorisation and inspection of relevant establishments are undertaken in conformity with international standards in all premises supplying throughout the national market.
	4. Regulation, authorisation and inspection of relevant establishments (and coordination, as required) are undertaken in conformity with international standards for premises supplying the national and local markets.
	5. Regulation, authorisation and inspection of relevant establishments (and coordination, as required) are undertaken in conformity with international standards at all premises (including on-farm establishments).

Terrestrial Code reference(s): Appendix 1

Evidence *(listed in Appendix 6): H009, H044, H059, E015, PCF002-3, PMC014-16, PMC037, PMC043, PMC046, PMC051, PMC068, PMC077, PAM059-62, PAM070-78, PAM084-88, E015*

Findings:

The VS mandate is limited to the conduct of ante and post mortem inspection in slaughterhouses. Other facilities (processing) are under the mandate of the Ministry of Health. Even the controls on sanitary standards and conditions within the slaughterhouse fall under the responsibility of the Ministry of Health, except in export slaughterhouses. The establishment and renovation of slaughterhouses are under the authority of the State Ministries of Health and Ministries of Environment.

Currently there are nine export slaughterhouses identified by the VS in Sudan. The mission visited three export slaughterhouses, none of which were currently active.

The mission also visited eight of the 16 domestic slaughterhouses and six of the 343 slabs. Although some of the facilities have been renovated, the infrastructure is usually in a poor state and inadequate. Slaughtering hygiene is totally inadequate and premises and equipment are not maintained according to relevant good practice standards.

VS are currently in the process of revising regulations to authorize slaughterhouse facilities. Currently only the export facilities benefit from the federal VS inspection process. The stamps used by veterinary inspectors do not identify the establishment.

Although it was not the scope of the mission, a quick overview of all other systems and infrastructure for processing and distribution of food of animal origin was made. Except for very limited international standard restaurants, the general opinion was that premises do not comply with sanitary standards.

Strengths:

- The VS has initiated a process of accreditation of slaughterhouses

Weaknesses:

- Sanitary standards do not meet international standards or relevant good practice standards.

Recommendations:

- Develop competencies, regulations, procedures and data management for registration and approval of food premises relevant to the VS in accordance with OIE standards (from farm to fork, including necessary collaboration with MoH)
- Propose an extension of the mandate of the VS to milk and meat collecting, processing and distribution, in order guarantee appropriate control on the whole food chain.

B. Ante and post mortem inspection at abattoirs and associated premises (e.g. meat boning/cutting establishments and rendering plants). *The authority and capability of the VS to implement and manage the inspection of animals destined for slaughter at abattoirs and associated premises, including for assuring meat hygiene and for the collection of information relevant to livestock diseases and zoonoses.*	Levels of advancement
	1. Ante- and post mortem inspection and collection of disease information (and coordination, as required) are generally not undertaken in conformity with international standards.
	2. Ante- and post mortem inspection and collection of disease information (and coordination, as required) are undertaken in conformity with international standards only at export premises.
	3. Ante- and post mortem inspection and collection of disease information (and coordination, as required) are undertaken in conformity with international standards for export premises and for major abattoirs producing meat for distribution throughout the national market.
	4. Ante- and post mortem inspection and collection of disease information (and coordination, as required) are undertaken in conformity with international standards for export premises and for all abattoirs producing meat for distribution in the national and local markets.
	5. Ante- and post mortem inspection and collection of disease information (and coordination, as required) are undertaken in conformity with international standards at all premises (including family and on farm slaughtering) and are subject to periodic audit of effectiveness.

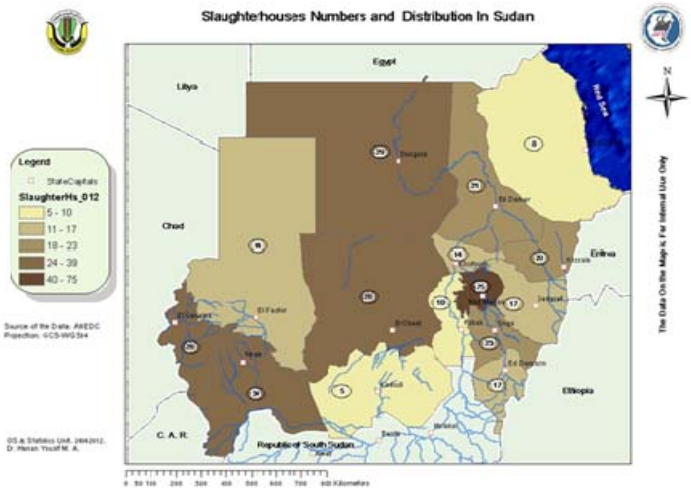
Terrestrial Code reference(s): Appendix 1

Evidence *(listed in Appendix 6): H058, H070, H077-78, PMC042-44, PMC046-49, PMC051*

Findings:

Although none of the visited export slaughterhouses were active the mission considers that the ante and post mortem inspection in those premises did respect the international standards to meet the requirement of the importing country at the time.

In the municipal slaughterhouse veterinarians and meat inspectors are present. At the slaughter slab the veterinary para professionals are present, many with very limited training on meat inspection.



Map 11: Slaughterhouses Numbers and Distribution in Sudan

Data collection on the number of animals and condemnation appears to be regularly done at all levels, but this data is not analysed. Moreover, relevance and accuracy of the data coming from slabs is questionable. There is no legal certification of a condemned carcass, owners are informed verbally. During the inspection process the heads, offal and the carcasses are often not linked by identification. At some slaughter houses the ante-mortem inspection is done at the livestock market the day before slaughter. Inspected animals are identified by a notch placed in the ear.

The VS are not responsible for meat hygiene in domestic slaughterhouses and slabs, this is the responsibility of the Ministry of Health. The slaughterhouses which were visited had very poor hygiene practices for handling of carcasses as well as for the premise/facility.

The VS mentioned that each slaughterhouse veterinary inspector uses an individual stamp which identifies a carcass to an establishment. However, during the field visit, the stamp did not appear to have a specific identification and seemed generic for all Sudan.

Strengths:

- Veterinarians present in export and municipal slaughterhouses
- Inspection process at slabs

Weaknesses:

- Lack of identification to link heads with carcass and offal
- VS has no mandate for the sanitary aspect of the slaughter house
- Poor competence of para-professionals assigned at slabs
- Break of chain of command between federal and state levels does not allow coherent policy
- Lack of individual stamps for slaughterhouses

Recommendations:

- Strengthen procedures, data management and continuing education at all levels for ante and post mortem inspection as well as for general hygiene
- Restore chain of command on inspections and the authority of the VS to supervise the hygiene of slaughter process

C. Inspection of collection, processing and distribution of products of animal origin *The authority and capability of the VS to implement, manage and coordinate food safety measures on collection, processing and distribution of products of animals, including programmes for the prevention of specific food-borne zoonoses and general food safety programmes.*	Levels of advancement
	1. Implementation, management and coordination (as appropriate) are generally not undertaken in conformity with international standards.
	2. Implementation, management and coordination (as appropriate) are generally undertaken in conformity with international standards only for export purposes.
	3. Implementation, management and coordination (as appropriate) are generally undertaken in conformity with international standards only for export purposes and for products that are distributed throughout the national market.
	4. Implementation, management and coordination (as appropriate) are generally undertaken in conformity with international standards for export purposes and for products that are distributed throughout the national and local markets.
	5. Implementation, management and coordination (as appropriate) are undertaken in full conformity with international standards for products at all levels of distribution (including on-farm establishments).

[Note: This critical competency primarily refers to inspection of processed animal products and raw products other than meat (e.g. milk, honey etc.). It may in some countries be undertaken by an agency other than the VS.]
Terrestrial Code reference(s): Appendix 1

Evidence *(listed in Appendix 6): H071, H078,*

Findings:

Not under the mandate of the VS. The Ministry of Health has produced a booklet on food/meat hygiene (Arabic).

Meats (chilled, deboned, packaged and frozen) were at one time exported to Gulf countries. Sudan VS had full control of the process and were able to satisfy the Gulf countries import requirements. Sudan is now exporting from Sabaloga to Jordan (sheep chilled carcasses only).

In some States (Khartoum & River Nile) the VS (state) undertakes the inspection activities with animal products and the process and distribution of the food chain, either with their own resources or in conjunction with the Ministry of Health.

There is formal communications with the Ministry of Health in regards to some zoonotic diseases but there is no record of action taken on such findings.

From the field visits it was obvious that animal product processing and distribution do not meet basic sanitary requirements.

Strengths:

- Sudan VS can meet the import requirements for meat of some importing countries

Weaknesses:

- Sanitary guidelines are deficient.
- VS has not the mandate to carry out official control over the whole food chain, therefore uniformity of official control is not guaranteed along the whole food chain

Recommendations:

- Request Ministry of Health to solicit OIE assistance in a more detailed evaluation of this Veterinary domain in regards to one health concept and with OIE delegate support.

- Ensure coordination between the two ministries in order to guarantee appropriate uniform control over the whole food chain and to ensure compliance with OIE standards and other international requirements (CODEX Alimentarius)
- Propose extension of the mandate of VS on milk and meat collection, process and distribution in order to cover more adequately food safety in these production chain

II-9 Veterinary medicines and biologicals	Levels of advancement
The authority and capability of the VS to regulate veterinary medicines and veterinary biologicals, in order to ensure their responsible and prudent use, i.e. the marketing authorisation, registration, import, manufacture, quality control, export, labelling, advertising, distribution, sale (includes dispensing) and use (includes prescribing) of these products.	1. The VS cannot regulate veterinary medicines and veterinary biologicals.
	2. The VS have some capability to exercise regulatory and administrative control over veterinary medicines and veterinary biologicals in order to ensure their responsible and prudent use.
	3. The VS exercise regulatory and administrative control for most aspects of the regulation related to the control over veterinary medicines and veterinary biologicals, including prudent use of antimicrobial agents in order to ensure their responsible and prudent use.
	4. The VS exercise comprehensive and effective regulatory and administrative control of veterinary medicines and veterinary biologicals.
	5 The control systems are regularly audited, tested and updated when necessary.

Terrestrial Code reference(s): Appendix 1

Evidence *(listed in Appendix 6): H031-35, H049, H053, H061, H063, H067, PCF032, PAM037-41, PAM055, PMC033, PMC038-39, PMC045, PMC052-57, PMC059-64,PMC071, PMC079, PCF001*

Findings:

The importation, registration and licensing of human and veterinary drugs is regulated by a federal committee within the National Medicines and Poisons Board (NMPB). A Veterinary Directorate staffed with 17 veterinary inspectors is charged with the inspection of veterinary products. Approximately 150 companies are authorized to import and must renew their registration every 5 years. 1500 products (medicines and biological) have been registered.

Distribution of veterinary drugs is only allowed by veterinarians and pharmacists. Many of the veterinary drugs are over the counter drugs (OTC) but prescriptions are required for some drugs. Interviews during field visits indicated that prescriptions are never required for any drug. The board does market surveillance to ensure the wholesomeness of drugs (detecting counterfeit drugs). The Board also inspects throughout the drug distribution chain mainly to track non-registered and expired drugs, and to ensure the presence of veterinarians or pharmacists on the premises.

VRI has a vaccine production laboratory which produces 13 types of vaccines (peste de petit ruminant, sheep & goat pox, contagious bovine pleuropneumonia, hemorrhagic septicemia (bivalent: E & B), black quarter, anthrax , brucellosis and african horse sickness, and poultry vaccines new castle disease (La Sota & Komorov), fowl pox & infectious bursal disease. It was not possible for the PVS experts to enter the Khartoum laboratory due to the on-going production of vaccines. The laboratory also validates the efficacy of the vaccine. VRI's vaccine production facility is routinely monitored by PANVAC.

The vaccine production unit was visited in the El Obeid and Nyala branches of VRI. In both facilities very poor facilities and quality management, and inadequate labelling were observed.

Drugs are sold directly to farmers without prescription by veterinarians who own veterinary pharmacies. During the field visit veterinarians were not always present in the veterinary pharmacy and veterinary drugs were sometimes sold by unqualified workers.

During the field mission there were obvious breaks in the cold chain at all levels.

Strengths:

- The registration process is documented and transparent.
- Reporting from state inspection is routine.

Weaknesses:

- There is no compilation or analyse of inspection processes in order to improve compliance
- The use and distribution of veterinary medical products seems to not be under the control of the veterinary services.
- There are few penalties applied as this is a state responsibility, and the process is not documented
- Although drugs are classified as OTC and prescription drugs there is no enforcement
- There is no link between veterinary clinical examination and diagnosis and the corresponding use of veterinary drugs.

Recommendations:

- Develop and implement comprehensive and progressive regulations on distribution and use of veterinary drugs
- Link clinical visits with the use of drugs either through having field veterinarians or technicians supply drugs on site or by developing and implementing a prescription system to link the two.
- Stop vaccine production in VRI branches and concentrate investments on quality with PANVAC support at central level

II-10 Residue testing	Levels of advancement
The capability of the VS to undertake residue testing programmes for veterinary medicines (e.g. antimicrobials and hormones), chemicals, pesticides, radionuclides, metals, etc.	**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 consumption.
	4. A comprehensive residue testing programme is performed for all animal products for export and domestic consumption.
	5. The residue testing programme is subject to routine quality assurance and regular evaluation.

Terrestrial Code reference(s): Appendix 1

Evidence *(listed in Appendix 6):*

Findings:

There is no residue testing for veterinary drugs. There is no laboratory in the Sudan for residue testing although a laboratory has been planned since 2009.

The NMPB has established MRLs for veterinary drugs.

From the field interviews there was an obvious lack of basic knowledge from the veterinarian and the farmers about residues (withholding periods).

Only one interview with an intensive dairy farmer indicated that they were knowledgeable on the use and withholding periods of veterinary medicines. Some intensive poultry companies recognize the importance of establishing residue regulations and controls in animal products as well as feeds. None of the interviewed exporters of live animals were aware of possible ban of exports if the importing countries applied bans due to residues.

Strengths:

- Plans exist to establish a laboratory for residue testing.

Weaknesses:

- No legislation developed in relation to drug residues in animal products
- No laboratory for residue analysis

Recommendations:

- Undertake a survey on residues in the different animal production systems to assess the situation in all the country
- Develop residue control plans for live animals and animal product exports and poultry and poultry products
- Develop communication and continuing education on residues, including informing veterinarians and producers on withholding periods.

II-11 Animal feed safety	Levels of advancement
The authority and capability of the VS to regulate animal feed safety e.g. processing, handling, storage, distribution and use of both commercial and on-farm produced animal feed and feed ingredients.	1. **The VS cannot regulate animal feed safety.**
	2. The VS have some capability to exercise regulatory and administrative control over animal feed safety
	3. The VS exercise regulatory and administrative control for most aspects of animal feed safety
	4. The VS exercise comprehensive and effective regulatory and administrative control of animal feed safety.
	5. The control systems are regularly audited, tested and updated when necessary.

Terrestrial Code reference(s): Appendix 1

Evidence *(listed in Appendix 6): H028, H036,*

Findings:

There are no regulations on animal feed safety. The VRI completed a survey on alfatoxins. There is a proposed legislation for feed safety.

Some private companies are in the process of establishing laboratories for the testing of feed quality through NIRS (near infrared spectroscopy).

Strengths:

- Proposed regulations on feed safety

Weaknesses:

- No laboratories are currently available to undertake feed safety testing

Recommendations:

- Progressively develop feed safety regulations and national surveys
- Accredit private laboratories for feed safety analysis

II-12. Identification and traceability A Animal identification and movement control *The authority and capability of the VS, normally in coordination with producers and other interested parties, to identify animals under their mandate and trace their history, location and distribution for the purpose of animal disease control, food safety, or trade or any other legal requirements under the VS/OIE mandate.*	Levels of advancement
	1. The VS do not have the authority or the capability to identify animals or control their movements.
	2. The VS can identify some animals and control some movements, using traditional methods and/or actions designed and implemented to deal with a specific problem (e.g. to prevent robbery).
	3. The VS implement procedures for animal identification and movement control for specific animal subpopulations as required for disease control, in accordance with relevant international standards.
	4. The VS implement all relevant animal identification and movement control procedures, in accordance with relevant international standards.
	5. The VS carry out periodic audits of the effectiveness of their identification and movement control systems.

Terrestrial Code reference(s): Appendix 1

Evidence *(listed in Appendix 6): H043, PAM042-46, PMC069, PMC019-20, PMC031, PMC040-41, E016*

Findings:

There is clear temporary individual identification with ear tags for all exported animals during the quarantine process. Animal identification regulations have not yet been developed for Sudan.

The VS have established 58 internal check points to control the commercial movement of livestock (four were visited by the mission). Internal checkpoints are Gezira state (Elkhiary, Major 6,Eljamosy,Dim Elmashikha, Garb Matoog, Elsenaat), Sennar (kobry Elkhiary, Goz Elnabg, Jalgny), Blue Nile (Eltroos, Elgrabeen, Jeraoh, Eldewaimah), White Nile (Tandalty Elgarbia, Hamary, Jar Elnaby, Elshiekh Elsedig, Elmeganus), North kordofan (Elshiekh Mokhtar), South Kordofan (Eltboon), Khartoum (Jabal Aolia, Soba Elbageer, Kotranj Elmahas, Kobry Shambat, Kobry Elingaz, Kobry Elhtana {Elmannarah}), River Nile (Elaoteeb Shendy locality, Elhognah Elmatmah locality, Elgelid Shendy locality, Seroon Eldamer locality, Um Shadidah), Northern (Elmoltaga, Marawy, Dalgo, Elduba), Gadarif, Kassala (kobry Elgash, kobry Elbotanah{um arab}, wad Elhelaoo{Um Ali}, Red Sea (Haia), North Darfur (Dar Bary, Milo, Dar Elsalam, Elleait, Um Kdadah, Um Fozin, Elmalha, Sraf Amo), South Darfur (Netagah, Shariah, Kassala, Adila, Ed Elfursan, Tolus, Geradah), West Darf (Bidah, Tandalty, Nertaty, Abu Jaradel).

Normally during transport of animals a vaccination certificate/movement certificate should be presented identifying the vehicle, the driver, the trader, the type of vaccinations and the number of animals. The internal checkpoints are staffed by a veterinarian from the locality and a technician, who review the paper work and when possible visually inspect the animals. Vaccination centres are usually near the main checkpoints, vaccination certificates are only issued by these centres linked to the lorry carrying the animals. The main role of these checkpoints is to vaccinate or to check that vaccination has been done at another checkpoint with identified animals in the lorry. Vaccination certificates are not issued during field vaccination campaigns as animals are not identified. All needed supplies are stored at these checkpoints.

There are 83 live animal markets (3 visited by the mission).

The VS mentioned that some staff do inspect animals at the markets, but still without specific procedures and records. Such inspection seems erratic and not systematic.

Strengths:

- Methodology of checkpoint inspections was developed during rinderpest campaign and could be applied for other programs

Weaknesses:

- Animals can easily be off-loaded and replaced during movement. There is no way to ensure that animals on the original movement certificate have reached destination.

Recommendations:

- Review the overall movement control policy with clearer procedures and data management in order to simplify and improve movement control; review/assess which options for animal identification are the most adequate for the national context/target activities.
- Implement transhumance movement control based on international certificate and identifications.

B. Identification and traceability of products of animal origin *The authority and capability of the VS, normally in coordination with producers and other interested parties, to identify and trace products of animal origin for the purpose of food safety, animal health or trade.*	Levels of advancement
	1. The VS do not have the authority or the capability to identify or trace products of animal origin.
	2. The VS can identify and trace some products of animal origin to deal with a specific problem (e.g. products originating from farms affected by a disease outbreak).
	3. The VS have implemented procedures to identify and trace some products of animal origin for food safety, animal health and trade purposes, in accordance with relevant international standards.
	4. The VS have implemented national programmes enabling them the identification and tracing of all products of animal origin, in accordance with relevant international standards.
	5. The VS periodically audit the effectiveness of their identification and traceability procedures.

Terrestrial Code reference(s): Appendix 1

Evidence *(listed in Appendix 6):*

Findings:

Not VS mandate and is not implemented

Strengths:

N/A

Weaknesses:

N/A

Recommendations:

- Study possibility of traceability of meat if required by importing countries

II-13 Animal welfare	Levels of advancement
The authority and capability of the VS to implement the animal welfare standards of the OIE as published in the Terrestrial Code.	**1. There is no national legislation on animal welfare**
	2. There is national animal welfare legislation for some sectors
	3. In conformity with OIE standards animal welfare is implemented for some sectors (e.g. for the export sector)
	4. Animal welfare is implemented in conformity with all relevant OIE standards.
	5. Animal welfare is implemented in conformity with all relevant OIE standards and programmes are subjected to regular audits.

Terrestrial Code reference(s): Appendix 1

Evidence *(listed in Appendix 6): H011, H079, H085, PMC032,*

Findings:

VS are currently working on legislation for animal welfare. OIE contact point for animal welfare has been established at national level.

Some states (River Nile) have developed, published and implemented animal welfare legislation. Animal Welfare Units have been established within the state Directorate and are financed by the state government.

Strengths:

- OIE contact point for Animal Welfare has been established

Weaknesses:

- No comprehensive national legislation is in place

Recommendations:

- Develop animal welfare legislation and regulation and implement progressively

III.3 Fundamental component III: Interaction with interested parties

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

Critical competencies:

Section III-1	**Communication**
Section III-2	**Consultation with interested parties**
Section III-3	**Official representation**
Section III-4	**Accreditation / Authorisation / Delegation**
Section III-5	**Veterinary Statutory Body (VSB)**
	A. VSB authority
	B. VSB capacity
Section III-6	**Participation of producers and other interested parties in joint programmes**

Terrestrial Code References:

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

Point 9 of Article 3.2.1. on General considerations.

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

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

Article 3.2.11. on Participation on OIE activities.

Article 3.2.12. on Evaluation of the veterinary statutory body.

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

Chapter 3.3. on Communication.

III-1 Communication	Levels of advancement
The capability of the VS to keep interested parties informed, in a transparent, effective and timely manner, of VS activities and programmes, and of developments in animal health and food safety. This competency includes collaboration with relevant authorities, including other ministries and Competent Authorities, national agencies and decentralised institutions that share authority or have mutual interest in relevant areas	1. The VS have no mechanism in place to inform interested parties of VS activities and programmes.
	2. The VS have informal communication mechanisms.
	3. The VS maintain an official contact point for communication but it is not always up-to-date in providing information.
	4. The VS contact point for communication 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 interested parties.

Terrestrial Code reference(s): Appendix 1

Evidence *(listed in Appendix 6): H016, H017, H085, H095, PMC001*

Findings:

The VS has an in-house Communication Unit which has worked with stakeholders to develop information and training materials to explain the programs and activities of AH&EDC. The communication program developed during the HPAI activities was a guide for establishing the current communication plan.

It was reported that a large number of leaflets and producer outreach materials produced by federal VS communication unit (no data was provided on the quantity of materials produced or their distribution) but during the field visits very few materials were evident. Some states also produce their own communications materials, specifically on animal welfare.

The Ministry of Livestock, Fisheries and Rangelands had developed a website and there is a section related to VS. As of this mission, only the Arabic language pages had been developed. Therefore the effectiveness of the website could not be evaluated.

During one of the stakeholder sessions it was brought to our attention that communications were not always timely in informing stakeholders of disease situations in affected areas.

The VS is a member of several inter-Ministerial committees and working groups, their involvement in these committees strengthens the communication between the different institutions.

Strengths:

- In-house Communication Unit

Weaknesses:

- Communication Unit is not yet utilized to produce bulletins or other materials to keep interested parties updated on VS activities and programs (public relations).

Recommendations:

- Develop communication tools to link with national programs on AH and VPH implemented in the field and ensure that they are placed in the field and distributed to stakeholders
- Complete development of VS web page

III-2 Consultation with interested parties	Levels of advancement
The capability of the VS to consult effectively with interested parties on VS activities and programmes, and on developments in animal health and food safety. This competency includes collaboration with relevant authorities, including other ministries and Competent Authorities, national agencies and decentralised institutions that share authority or have mutual interest in relevant areas	1. The VS have no mechanisms for consultation with interested parties.
	2. **The VS maintain informal channels of consultation with interested parties.**
	3. The VS maintain a formal consultation mechanism with interested parties.
	4. The VS regularly hold workshops and meetings with interested parties.
	5. The VS actively consult with and solicit feedback from interested parties 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 reference(s): Appendix 1

Evidence *(listed in Appendix 6): E008, E019, E022-27, H095*

Findings:

Poultry industry was consulted to establish the HPAI plan and the regulations on the approval and establishment of poultry facilities. Stakeholders express desire to have other regulations developed in similar fashion as the HPAI Plans.

There are various stakeholder groups with which the VS interacts (Livestock Agricultural/ Chamber, Federal Farmers union, Poultry Union, States, Pastoralist Union, Livestock Policy Hub, The Association for the Protection of Consumer). There is an informal consultation process with most stakeholders. These informal meetings are often at the national level on a regular timeframe and documented with minutes, but are not mandatory/compulsory under any legislative process.

There was no indication during the mission that small farmers/pastoralists groups were being consulted regularly.

VS are a member of the Joint Government Donor Livestock Forum (JGDLF) which consults with donors and states in an effort to coordinate program activities.

There was no evidence that OIE draft documents (standards or scientific papers) are shared with stakeholders for comments/inputs.

Strengths:

- Private sector does want involvement with VS
- Numerous stakeholder organizations at Federal and State levels

Weaknesses:

- No documented procedures for formal consultation with stakeholders
- No documented process for distribution of proceedings or outcomes of meetings to interested stakeholders
- Low level of awareness of the stakeholders about the five action plans

Recommendations:

- Develop and implement documented formalised consultation process for stakeholders at all levels.

III-3 Official representation *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).*	Levels of advancement
	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 participates in the majority of relevant meetings.
	4. The VS consult with interested parties and take into consideration their opinions in providing papers and making interventions in relevant meetings.
	5. The VS consult with interested parties 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 reference(s): Appendix 1

Evidence *(listed in Appendix 6): H037, H097, E008,*

Findings:

Sudan is a member of OIE and participates regularly in the international and regional meetings. The former Undersecretary of the Ministry of Livestock, Fisheries and Rangeland was an active member of the OIE Code Commission for 7 years. Sudan is also an active member in the AU-IBAR regional meetings and programs.

Sudan is an active member of IGAD and CODEX but is not yet a member of the WTO/SPS (observer status).

Strengths:

- Active member in many organisations

Weaknesses:

- There is no evidence of consultation with stakeholders prior to international/regional meetings.

Recommendations:

- Ensure regular participation, consult relevant stakeholders and communicate results of these international meetings to relevant staff and stakeholders.

III-4 Accreditation / authorisation / delegation *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.*	Levels of advancement
	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 interested parties.

Terrestrial Code reference(s): Appendix 1

Evidence *(listed in Appendix 6):*

Findings:

There is currently no official delegation of authority to private veterinarians or private laboratories. Although interviews of representatives of private veterinarians showed that they would be willing to participate and benefit from such measures.

North Kordofan State initiated a pilot program to allow the private veterinarians to implement vaccinations. This may be considered in the future as an official delegation of authority.

In the MLF&R one of the policies for sector development (livestock) is to encourage the privatization of some services of the Veterinary Services.

Strengths:

- Privatization of some of the activities/services of the Veterinary Services is encouraged by the 2012 MLF&R livestock development policy

Weaknesses:

- By not promoting a policy for delegation of authority, the VS are losing the opportunity to utilize the 2500 private veterinarians as manpower for the VS and to utilize new current private investments in laboratories (i.e. poultry sector).

Recommendations:

- Develop regulations, procedures and compliance and enforcement capabilities for effective delegation of authority to private veterinarians for official activities (vaccination, surveillance, early detection and food safety) and to private laboratories for selected testings.

III-5 Veterinary Statutory Body (VSB) A. VSB authority *The VSB is an autonomous regulatory body for veterinarians and veterinary para-professionals.*	Levels of advancement
	1. There is no legislation establishing a VSB.
	2. The VSB regulates veterinarians only within certain sectors of the veterinary profession and/or does not systematically apply disciplinary measures.
	3. The VSB regulates veterinarians in all relevant sectors of the veterinary profession and applies disciplinary measures.
	4. The VSB regulates functions and competencies of veterinarians in all relevant sectors and veterinary para-professionals according to needs.
	5. The VSB regulates and applies disciplinary measures to veterinarians and veterinary para-professionals in all sectors throughout the country.

Terrestrial Code reference(s): Appendix 1

Evidence *(listed in Appendix 6): H004-7, H010, H053, H061, H064, E011, PMC012-13*

Findings:

Sudan's Veterinary Statutory Body (VSB) is referred to as the Veterinary Council of Sudan (VCS). It was created in 1955 and was revised by the Veterinary Council Act of 1995. The VCS registers all veterinarians from the private and the public sector. Although the VCS is in charge of registration of private veterinarians, the private veterinarian still needs authorization from the VS to establish their practice.

The VSB also registers veterinary paraprofessionals (technicians) and has been directed/imposed to register animal production technician ("technicals") although these people have no specific competence in animal health. The VSB mandates cover animal health and animal production personnel (registers).

The VSB has developed a set of regulations and is currently elaborating a code of ethics. It participates in the development of the curriculum of the faculties and envisions working on continuing education. The VSB also succeeded in convincing the government to allow new graduates to perform their national service within the veterinary field.

The authorisation for establishing "veterinary pharmacies" with veterinarians as owners (where pharmaceuticals are distributed without clinical evaluation of the animals, where unqualified stock keepers can distribute any products and where the veterinarian is not required to be present) weakens the ability to establish a credible private practice veterinary network and challenges the ethics of the veterinary profession.

Although the VCS can apply penalties there was only one case mentioned in 2009 with a reprimand/warning.

Strengths:

- Registry of veterinarians which is updated every five years
- The VSB has the legal power to impose five sanctions (draw attention, reprimand, warning for a period not exceeding one year, temporary suspension from the practice of the profession, write-off of the record).
- VSB is involved in developing veterinary curricula.

Weaknesses:

- Penalties are not implemented (one case in five years in a population of 7000)
- Lack of clear legal procedures for penalties
- Lack of annual updating of registration of veterinarians
- Registration of veterinary paraprofessionals not updated
- Existence of veterinary pharmacies as defined by the VSB

- Registration of non-relevant degrees or categories of personnel for veterinary profession (animal production technical which have no relevant knowledge in animal health and CAHWs which are farmers trained for five days)

Recommendations:

- Develop relevant legal procedures for imposing penalties which are in line with the legal principals of the Republic of Sudan.
- Remove “veterinary pharmacies” from the list of authorised premises held by veterinarians and replace the name with “veterinary dispensary/practice/clinic” with link between clinical examination, advice, diagnostic and prescription by veterinarians who are required to be present on site for the delivery of veterinary medicines (pharmaceutical activity of the veterinarian as a segment of his clinical competency)
- Develop detailed procedures of effective supervision (employment) of veterinary para-professionals.

B. VSB capacity	Levels of advancement
The capacity of the VSB to implement its functions and objectives in conformity with OIE standards.	1. The VSB has no capacity to implement its functions and objectives.
	2. The VSB has the functional capacity to implement its main objectives.
	3. The VSB is an independent representative organisation with the functional capacity to implement all of its objectives.
	4. The VSB has a transparent process of decision making and conforms to OIE standards.
	5. The financial and institutional management of the VSB is submitted to external auditing.

Terrestrial Code reference(s): Appendix 1

Evidence *(listed in Appendix 6): H008, E011*

Findings:

The VSB was established in 1955 as an independent, neutral and autonomous institution but the act was amended in 1995 and now its 17 members are partially nominated by the government and partially nominated by members of the Veterinary Medical Association (4).

The VSB plans to develop branches in each state. Its annual budget and facilities are provided by the government and appears to be adequate for the current activity (primarily professional registration, permanent registration and renewal of registry every four years). Fees are collected only for registration but are very limited and there are no annual fees.

Strengths:

- Central infrastructure and staff

Weaknesses:

- No elective process
- No financial or institutional independence

Recommendations:

- Reform the VSB to become an autonomous and independent organization based on an elective process
- Establish annual fees
- Ensure the development of state branches does not break the unity of the VSB
- Improve the resources of the VSB to allow for the development of planned activities such as CE, Code of Ethics, updating of the registry, etc.

III-6 Participation of producers and other interested parties in joint programmes *The capability of the VS and producers and interested parties to formulate and implement joint programmes in regard to animal health and food safety. This competency includes collaboration with relevant authorities, including other ministries and Competent Authorities, national agencies and decentralised institutions that share authority or have mutual interest in relevant areas*	Levels of advancement
	1. Producers and other interested parties only comply and do not actively participate in programmes.
	2. Producers and other interested parties are informed of programmes and assist the VS to deliver the programme in the field.
	3. Producers and other interested parties are trained to participate in programmes and advise of needed improvements, and participate in early detection of diseases.
	4. Representatives of producers and other interested parties negotiate with the VS on the organisation and delivery of programmes.
	5. Producers and other interested parties are formally organised to participate in developing programmes in close collaboration with the VS.

Terrestrial Code reference(s): Appendix 1

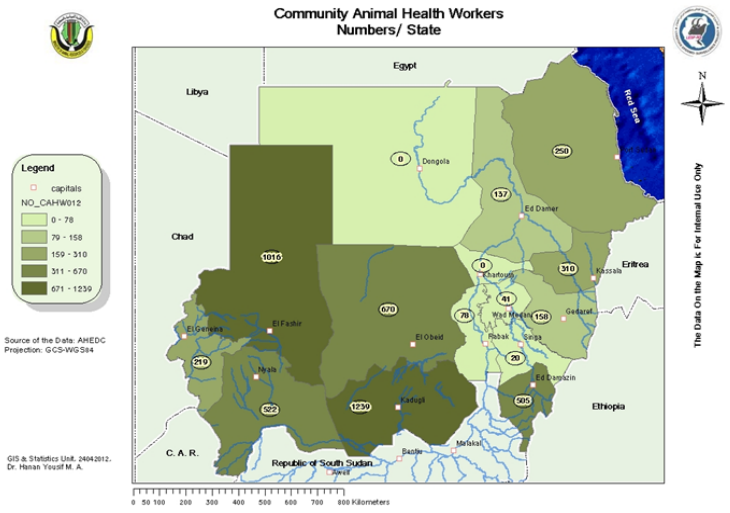
Evidence *(listed in Appendix 6): H016,H017, H037,*

Findings:

Currently all vaccinations done by VS are on a voluntary basis and in most states via cost recovery. These programs may thus be qualified as joint programs as they are not compulsory programs (regulatory).

The Communications Unit of the VS has developed basic training programs for farmers. The VS is trying to be more inclusive of farmers, bringing them into the disease reporting network and not being as reliant on the community animal health workers.

NGOs have trained around 5700 CAHWs who can support the implementation of VS programs by participation as stakeholders for organisation of campaigns and early detection.



Map 12: Community Animal Health Workers Numbers/State

Strengths:

- Training of farmers, in lieu of CAHWs, to provide the VS with a better interface and active engagement with the farmers.

Weaknesses:

- CAHWs considered part of the VS by some projects and sometimes official documents, in contradiction with quality standards of VS. (The VS recognised this as an issue.)
- CAHWs sell their services as veterinarians, introducing confusion and lowering standards.

Recommendations:

- Develop clear joint programs
- Clearly establish the role of CAHWs as belonging to their community and not as part of the VS, ensure their commitment and responsibility lies within their community or farmers' group, which itself should comply with veterinary legislation

III.4 Fundamental component IV: Access to markets

This component of the evaluation concerns 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 eight critical competencies.

Critical competencies:

Section IV-1	**Preparation of legislation and regulations**
Section IV-2	**Implementation of legislation and regulations and compliance thereof**
Section IV-3	**International harmonisation**
Section IV-4	**International certification**
Section IV-5	**Equivalence and other types of sanitary agreements**
Section IV-6	**Transparency**
Section IV-7	**Zoning**
Section IV-8	**Compartmentalisation**

Terrestrial Code References:

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

Points 1 and 2 of Article 3.2.7. on Legislation and functional capabilities: Animal health, animal welfare and veterinary public health / Export/import inspection.

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

Sub-point g) of Point 4 of Article 3.2.10. on Veterinary Services administration: Trade performance history.

Article 3.2.11. on Participation in OIE activities.

Points 6 and 10 of Article 3.2.14. on Veterinary legislation, regulations and functional capabilities / Membership of the OIE.

Chapter 3.4. on Veterinary legislation.

Chapter 4.3. on Zoning and compartmentalisation.

Chapter 4.4. on Application of compartmentalisation.

Chapter 5.1. on General obligations related to certification.

Chapter 5.2. on Certification procedures.

Chapter 5.3. on OIE procedures relevant to the Agreement on the Application of Sanitary and Phytosanitary Measures of the World Trade Organization.

Chapters 5.10. to 5.12. on Model international veterinary certificates.

IV-1 Preparation of legislation and regulations *The authority and capability of the VS to actively participate in the preparation of national legislation and regulations in domains that are under their mandate, in order to guarantee its quality with respect to principles of legal drafting and legal issues (internal quality) and its accessibility, acceptability, and technical, social and economical applicability (external quality). This competency includes collaboration with relevant authorities, including other ministries and Competent Authorities, national agencies and decentralised institutions that share authority or have mutual interest in relevant areas*	Levels of advancement
	1. The VS have neither the authority nor the capability to participate in the preparation of national legislation and regulations, which result in legislation that is lacking or is out-dated or of poor quality in most fields of VS activity.
	2. The VS have the authority and the capability to participate in the preparation of national legislation and regulations and can largely ensure their internal quality, but the legislation and regulations are often lacking in external quality.
	3. The VS have the authority and the capability to participate in the preparation of national legislation and regulations, with adequate internal and external quality in some fields of activity, but lack formal methodology to develop adequate national legislation and regulations regularly in all domains.
	4. The VS have the authority and the capability to participate in the preparation of national legislation and regulations, with a relevant formal methodology to ensure adequate internal and external quality, involving participation of interested parties in most fields of activity.
	5. The VS regularly evaluate and update their legislation and regulations to maintain relevance to evolving national and international contexts.

Terrestrial Code reference(s): Appendix 1

Evidence *(listed in Appendix 6): H026, H047, H048, H075, H098, E004*

Findings:

It was difficult for the mission to analyse Sudan's animal health/veterinary legislation due to language. Legislation is drafted without economic or other types of impact studies. The Ministry does have a lawyer, two clerks and five secretaries dedicated to ensure the internal quality of legislation.

Federal regulations and laws supercede the state laws. The regulations at state level called "laws" seem very generic.

There is a variety of legislation, but they appeared very insufficient or inadequate compared to the usual necessary amount of national veterinary legislation. Legislation/laws were found for animal hides, internal check points, epizootic diseases, fisheries, disease free zones, meat inspection, quarantine for import/export, rabies, laws for aquatic species, etc. Legislation for veterinary drugs and biological are developed by the National Medicines & Poisons Board.

Preparation of national legislation follows Sudan's License of Law. As the Competent Authority, VS/MLF&R proposes a law which is then discussed with stakeholders and passed to the legal department of MLF&R. The new law/regulation is proposed and passes to the Ministry of Justice (MoJ) where it undergoes legal drafting. From the MoJ it passes to the Cabinet then to the Sudan National Council where it is reviewed three times to (a) make certain it does not violate the Constitution, (b) ensure the actual requirement for the law and prepare the proposed amendment and (c) license the proposal as law. Then it is passed to the President and if approved released to the media.

It appears the only stage at which the proposed law is open to discussion with stakeholders is at the initial discussion with the competent authority, before the proposed law is drafted.

Strengths:

- VS are involved in the drafting of legislation for animal health activities within their mandate.

Weaknesses:

- Lack of economic or social impact studies when laws/regulations are drafted
- Limited stakeholder input during development of laws/regulations

Recommendations:

- Progressively develop the veterinary legislation in all relevant domains which should be detailed partially during the gap analysis.

IV-2 Implementation of legislation and regulations and compliance thereof *The authority and capability of the VS to ensure compliance with legislation and regulations under the VS mandate.*	Levels of advancement
	1. The VS have no or very limited programmes or activities to ensure compliance with relevant legislation and regulations.
	2. The VS implement a programme or activities comprising inspection and verification of compliance with legislation and regulations and recording instances of non-compliance, but generally cannot or do not take further action in most relevant fields of activity.
	3. Veterinary legislation is generally implemented. As required, the VS have a power to take legal action / initiate prosecution in instances of non-compliance in most relevant fields of activity.
	4. Veterinary legislation is implemented in all domains of veterinary competence and the VS work to minimise instances of non-compliance.
	5. The compliance programme is regularly subjected to audit by the VS or external agencies.

Terrestrial Code reference(s): Appendix 1

Evidence *(listed in Appendix 6):*

Findings:

No compilation or analysis or documented system for non-compliance. At some state levels compliance and enforcement does take place but no documentation was presented.

Condemned animals /parts in abattoirs are written in registers, when registers exist, and compiled in data bases. There are no official condemnation reports provided to the owner.

There is no evidence of penalty applied for non- compliance.

Strengths:

- Nil

Weaknesses:

- VS does not have the capacity to implement compliance and enforcement policies

Recommendations:

- Develop a documentation system for analyse of compliance in all domains.

	Levels of advancement
IV-3 International harmonisation *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.*	**1. National legislation, regulations and sanitary measures 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 sanitary measures as compared to international standards, but do not have the capability or authority to rectify the problems.
	3. The VS monitor the establishment of new and revised international standards, and periodically review national legislation, regulations and sanitary measures 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 standards5, and use the standards to harmonise national legislation, regulations and sanitary measures.

Terrestrial Code reference(s): Appendix 1

Evidence *(listed in Appendix 6):*

Findings:

No evidence of harmonization (legislation, authority, sanitary measures etc.) with international standards.

Strengths:

- nil

Weaknesses:

- appropriate legislations have not been developed

Recommendations:

- Ensure that the development of veterinary legislation and related sanitary measures is harmonised with international standards

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

IV-4 International certification[6]	Levels of advancement
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.	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 reference(s): Appendix 1

Evidence *(listed in Appendix 6): H060, PMC080*

Findings:

The Mission was not provided with an example of an international export certificate. However it is expected that the substantial exports from Sudan need to comply with importing country requirements.

During 2012 Sudan exported approximately 3,599,250 animals to Egypt and Saudi Arabia. As of September 2013, approximately 2,358,700 animals had been exported to Saudi Arabia and Egypt. These exports are facilitated through six quarantine stations (three were visited). The current export certification process agreed to by trading partners only imposes vaccination against some diseases and Brucellosis testing. The purpose of the quarantine is to guarantee the required vaccination response and negative Brucella tests. In this context the quarantine stations currently do not need to meet requirements and costs of quarantine isolation, such as; sound fencing, provision of safe feeding, an animal exclusion zone, etc.

Sudan's certification program, for exports to the Gulf States, enables the VS to issue export certificates. Export certificates completed in the export quarantine meet the requirements of currently importing countries (Gulf States).

Strengths:

- Export facilities meet importing country requirements
- Knowledgeable, dedicated staff managing export facility

Weaknesses:

- Reliance on tests from laboratories which are not accredited, nor applying any quality assurance system.
- In absence of field veterinarians, VS would not be able to certify any event/animal from the origin or historical point of view, if requirements of importing countries change. VS are only able to certify what is done directly by vets in "on road vaccination parks or quarantine stations".

Recommendations:

- Strengthen export certification process to be in compliance with international standards in order to secure current and develop new export markets.

[6] Certification procedures should be based on relevant OIE and Codex Alimentarius standards.

IV-5 Equivalence and other types of sanitary agreements *The authority and capability of the VS to negotiate, implement and maintain equivalence and other types of sanitary agreements with trading partners.*	Levels of advancement
	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 interested parties and take account of developments in international standards, in pursuing equivalence and other types of sanitary agreements with trading partners.

Terrestrial Code reference(s): Appendix 1

Evidence *(listed in Appendix 6): E016,*

Findings:

Although sanitary agreements were not provided to the mission and are probably in Arabic, it is a fact that these agreements exist as Sudan is exporting to some countries.

Strengths:

- History of trade with Gulf countries

Weaknesses:

- Lack of formal and detailed agreements that could secure the trade

Recommendations:

- Formalise and translate these agreements to secure trade.

IV-6 Transparency	Levels of advancement
The authority and capability of the VS to notify the OIE of its sanitary status and other relevant matters (and to notify the WTO SPS Committee where applicable), in accordance with established procedures.	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 interested parties 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 interested parties, carries out audits of their transparency procedures.

Terrestrial Code reference(s): Appendix 1

Evidence *(listed in Appendix 6):*

Findings:

Notifications to OIE are regular.

Currently Sudan is an observer to the WTO. There is a SPS focal point.

Strengths:

- Regular notifications to OIE and to AU-IBAR

Weaknesses:

- Lack of any official program for surveillance
- The scarcity of veterinarians in the field hampers the overall system of surveillance, as very few events are notified compared to the animal population and epidemiological context.

Recommendations:

- Develop an efficient network of veterinarians in the field
- Strengthen passive and active surveillance activities

IV-7 Zoning	Levels of advancement
The authority and capability of the VS to establish and maintain disease free zones, as necessary and in accordance with the criteria established by the OIE (and by the WTO SPS Agreement where applicable).	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 producers and other interested parties 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 reference(s): Appendix 1

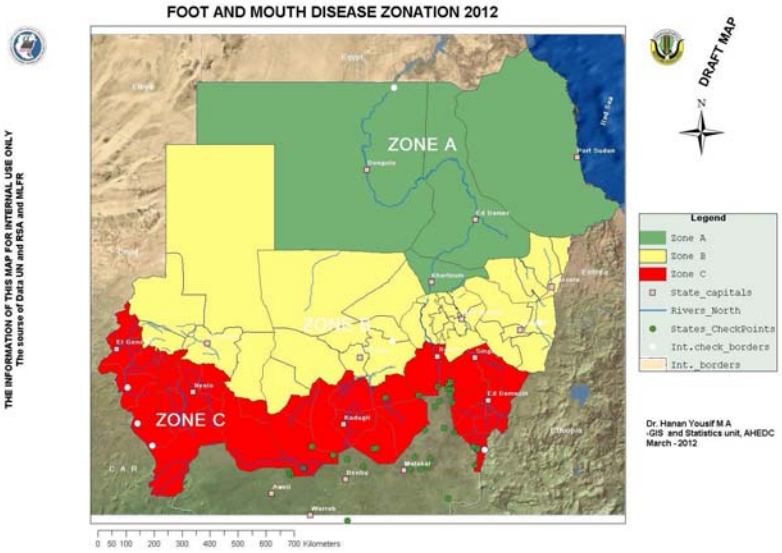
Evidence *(listed in Appendix 6):*

Findings:

The geographical features and the national boundaries of Sudan would not facilitate the establishment of free zones in the sense of full alignment with the OIE standards. Current legislation and regulations would not support the establishment and maintenance of disease free zones or zones with low disease prevalence.

The concept of zoning is very often discussed and not clearly understood by the stakeholder/ partners/other institutions working with VS. For instance the mission heard several times that Sudan has or will establish a “free zone for all diseases in all animals”. The 2012 document “Policy of Ministry of Livestock, Fisheries & Rangelands” refers to the expansion of disease free zones in support of improving Sudan’s ability to export.

Sudan VS wish to initiate an FAO/OIE progressive control pathway against FMD in which the VS will need to define different zones where different activities will be progressively developed. The zoning plans/activities envisioned by Sudan (see map below) do not refer to the zoning concept measured in this critical competency but rather to CC II.7 prevention, control and eradication programs.



Map 13: Foot and Mouth Disease Zonation 2012

Strengths:

- Understanding of the correct OIE zoning concept by senior staff

Weaknesses:

- Lack of communication with stakeholders on the concept of zoning may negatively impact future plans for expanding export markets (could lead to unreasonable expectations).

Recommendations:

- Reassess the possibilities of zoning for some diseases in Sudan.
- Develop the legislative framework necessary to establish and maintain zones.

IV-8 Compartmentalisation *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).*	Levels of advancement
	1. The VS cannot establish disease free compartments.7
	2. As necessary, the VS can identify animal sub-populations with a distinct health status suitable for compartmentalisation.
	3. The VS ensure that biosecurity measures to be implemented enable it to establish and maintain disease free compartments for selected animals and animal products, as necessary.
	4. The VS collaborate with producers and other interested parties to define responsibilities and execute actions that enable it to establish and maintain disease free compartments for selected animals and animal products, as necessary.
	5. The VS can demonstrate the scientific basis for any disease free compartments 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 reference(s): Appendix 1

Evidence *(listed in Appendix 6):*

Findings:

For the future, the poultry producers may want to consider this concept to facilitate exports. Currently there is no compartmentalisation in Sudan nor do they have regulations and laws to support compartmentalisation.

Strengths:

- Nil

Weaknesses:

- Nil

Recommendations:

- Provide relevant stakeholders with adequate information on compartmentalisation.

[7] If the VS has the authority and capability but chooses not to implement compartmentalization, this CC should be recorded as “not applicable at this stage”

PART IV: CONCLUSIONS

Although this evaluation was requested as a follow-up of the 2009 OIE-PVS evaluation, it was agreed between the OIE-PVS mission team and the VS that comparison of the results of both evaluations would not be appropriate for the following reasons:

- 2009 Sudan, by referendum, separated into The Republic of Sudan and The Republic of South Sudan – this country was therefore not the same country which was evaluated in 2009. The security situation has improved somewhat but around two-thirds of The Republic of Sudan is still not easily accessible.
- The results from the 2009 evaluation, partially based on the impacts of the PACE program and the rinderpest eradication activities, was a "snapshot" of a stronger more centralized VS with active field programs.
- The 2009 evaluation utilized OIE PVS version 2007 which is quite different to the current OIE PVS Version 2013 which is more detailed and refined.
- Levels of certain critical competences were overestimated without evidences provided, due to possible misunderstanding by experts.

It should be remembered that the activities of the Veterinary Services are a global public good and are consequently eligible for appropriate national, regional and/or international funding support. The VS must have the ability to access adequate financial resources for their continued operations. Funding should lead to sustained improvements in the VS operational infrastructure, including sufficient funds to support VS's role in safeguarding the health of the livestock population, thus creating greater food security and food safety and increasing the economic potential for livestock commodities.

By developing the appropriate legislation, following OIE standards, Sudan's VS will have the foundation for improving animal health and public health and improving compliance with SPS standards. There is a crucial need for appropriate legislation in the animal health field and its tight implementation through appropriate national animal health systems. In particular, a field network of veterinarians should be developed in order to ensure regular contact between veterinarians and animals or livestock owners to develop adequate surveillance of and response to animal diseases. As a key initial step, the sale and distribution of veterinary drugs by veterinarians needs to be linked to the performance of veterinary clinical examinations in the field. This could be achieved via a prescription system.

There are many challenges in bringing Sudan's VS into compliance with OIE standards. A key point to remember is appropriate legislation and activities will help secure and develop the export market for livestock and animal products (one of the main income earners for the Republic of Sudan) and assure food safety and food security for domestic consumers. Among these challenges are restoring the chain of command and technical independence of the VS, with proper resources, legislation and procedures and data management.

As a consequence, the VS of Sudan have already requested that OIE provide a PVS Gap Analysis Mission based on the outcomes of this evaluation report.

There are two programs which function well by providing services that respond to the needs and the expectations of the stakeholders; the veterinary drug registration program (under the authority of NMPB) and the VS quarantine export process. Both programs are centralized with a clear mandate and chain of command, clear procedures and data management. Staffing is adequate (no overstaffing) and all staff are appropriately and properly trained.

PART V: APPENDICES

Appendix 1: Terrestrial Code references for critical competencies

Critical Compe-tences	Terrestrial Code references
I.1.A **I.1.B** **I.2.A** **I.2.B**	Points 1-5 of Article 3.1.2. on Fundamental principles of quality: Professional judgement / Independence / Impartiality / Integrity / Objectivity. Points 7 and 14 of Article 3.1.2. on Fundamental principles of quality: General organisation / Human and financial resources. Article 3.2.5. on Evaluation criteria for human resources. Article 3.2.12. on Evaluation of the veterinary statutory body. Points 1-2 and 5 of Article 3.2.14. on Organisation and structure of Veterinary Services / National information on human resources / Laboratory services.
I.3	Points 1, 7 and 14 of Article 3.1.2. on Fundamental principles of quality: Professional judgement / General organisation / Human and financial resources. Article 3.2.5. on Evaluation criteria for human resources. Sub-point d) of Point 4 of Article 3.2.10. on Veterinary Services administration: In-service training and development programme for staff. Point 9 of Article 3.2.14. on Performance assessment and audit programmes.
I.4	Point 2 of Article 3.1.2. on Fundamental principles of quality: Independence.
I.5	Point 1 of Article 3.2.3. on Evaluation criteria for the organisational structure of the Veterinary Services. Point 9 of Article 3.2.14. on Performance assessment and audit programmes.
I.6.A **I.6.B**	Points 6, 7 and 9 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation / General organisation / Procedures and standards. Article 3.2.2. on Scope. Points 1 and 2 of Article 3.2.3. on Evaluation criteria for the organisational structure of the Veterinary Services. Point 4 of Article 3.2.10. on Performance assessment and audit programmes: Veterinary Services administration.
I.7	Point 2 of Article 3.2.4. on Evaluation criteria for quality system: “Where the Veterinary Services undergoing evaluation… than on the resource and infrastructural components of the services”. Points 2 and 3 of Article 3.2.6. on Evaluation criteria for material resources: Administrative / Technical. Point 3 of Article 3.2.10. on Performance assessment and audit programmes: Compliance. Point 4 of Article 3.2.14. on Administration details.
I.8 **I.9** **I.10**	Points 6 and 14 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation / Human and financial resources. Point 1 of Article 3.2.6. on Evaluation criteria for material resources: Financial. Point 3 of Article 3.2.14. on Financial management information.
I.11	Points 7, 11 and 14 of Article 3.1.2. on Fundamental principles of quality: General organisation / Documentation / Human and financial resources. Point 4 of Article 3.2.1. on General considerations. Point 1 of Article 3.2.2. on Scope. Article 3.2.6. on Evaluation criteria for material resources. Article 3.2.10. on Performance assessment and audit programmes.
II.1A **II.1B** **II.2**	Point 9 of Article 3.1.2. on Fundamental principles of quality: Procedures and standards. Point 1 of Article 3.2.4. on Evaluation criteria for quality systems. Point 3 of Article 3.2.6. on Evaluation criteria for material resources: Technical. Point 5 of Article 3.2.14. on Laboratory services.
II.3	Chapter 2.1. on Import risk analysis
II.4	Points 6 and 9 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation / Procedures and standards. Point 2 of Article 3.2.7. on Legislation and functional capabilities: Export/import inspection. Points 6 and 7 of Article 3.2.14. on Veterinary legislation, regulations and functional capabilities /

	Animal health and veterinary public health controls.
II.5.A **II.5.B**	Points 6, 7 and 9 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation / General organisation / Procedures and standards. Points 1-3 of Article 3.2.8. on Animal health controls: Animal health status / Animal health control / National animal disease reporting systems. Sub-points a) i), ii) and iii) of Point 7 of Article 3.2.14. on Animal health: Description of and sample data from any national animal disease reporting system controlled and operated or coordinated by the Veterinary Services / Description of and sample reference data from other national animal disease reporting systems controlled and operated by other organisations which make data and results available to Veterinary Services / Description and relevant data of current official control programmes including:… or eradication programmes for specific diseases. Chapter 1.4. on Animal health surveillance. Chapter 1.5. on Surveillance for arthropod vectors of animal diseases.
II.6	Points 6, 7 and 9 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation / General organisation / Procedures and standards. Points 1-3 of Article 3.2.8. on Animal health controls: Animal health status / Animal health control / National animal disease reporting systems. Sub-point a) of Point 7 of Article 3.2.14. on Animal health and veterinary public health controls: Animal health.
II.7	Points 6, 7 and 9 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation / General organisation / Procedures and standards. Points 1-3 of Article 3.2.8. on Animal health controls: Animal health status / Animal health control / National animal disease reporting systems. Sub-point a) of Point 7 of Article 3.2.14. on Animal health and veterinary public health controls: Animal health. Chapter 4.12. on Disposal of dead animal.
II.8.A **II.8.B** **II.8.C**	Points 6, 7 and 9 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation / General organisation / Procedures and standards. Article 3.4.12. on Human food production chain. Points 1-5 of Article 3.2.9. on Veterinary public health controls: Food hygiene / Zoonoses / Chemical residue testing programmes / Veterinary medicines/ Integration between animal health controls and veterinary public health. Points 2, 6 and 7 of Article 3.2.14. on National information on human resources / Veterinary legislation, regulations and functional capabilities / Animal health and veterinary public health controls. Chapter 6.2. on Control of biological hazards of animal health and public health importance through ante- and post-mortem meat inspection. References to Codex Alimentarius Commission standards: Code of Hygienic practice for meat (CAC/RCP 58-2005). Code of Hygienic practice for milk and milk products (CAC/RCP/ 57-2004). General Principles of Food Hygiene (CAC/RCP 1-1969; amended 1999. Revisions 1997 and 2003).
II.9	Points 6 and 9 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation / Procedures and standards. Points 3 and 4 of Article 3.2.9. on Veterinary public health controls: Chemical residue testing programmes / Veterinary medicines. Sub-point a) ii) of Point 6 of Article 3.2.14. on Animal health and veterinary public health: Assessment of ability of Veterinary Services to enforce legislation. Chapters 6.6. to 6.10. on Antimicrobial resistance.
II.10	Points 3 and 4 of Article 3.2.9. on Veterinary public health controls: Chemical residue testing programmes / Veterinary medicines. Sub-points b) iii) and iv) of Point 7 of Article 3.2.14. on Veterinary public health: Chemical residue testing programmes / Veterinary medicines.
II.11	Chapter 6.3. on Control of hazards of animal health and public health importance in animal feed.
II.12.A **II.12.B**	Point 6 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation. Chapter 4.1. on General principles on identification and traceability of live animals. Chapter 4.2. on Design and implementation of identification systems to achieve animal traceability.
II.13	Section7 on Animal Welfare
III.1	Point 13 of Article 3.1.2. on Fundamental principles of quality: Communication.

	Sub-point b) of Point 2 of Article 3.2.6. on Administrative resources: Communications. Point 4 of Article 3.2.14. on Administration details. Chapter 3.3. on Communication.
III.2	Point 13 of Article 3.1.2. on Fundamental principles of quality: Communication. Point 2 of Article 3.2.3. on Evaluation criteria for the organisational structure of the Veterinary Services. Point 4 and Sub-point g) of Point 9 of Article 3.2.14. on Administration details and on Sources of independent scientific expertise. Chapter 3.3. on Communication.
III.3	Article 3.2.11. on Participation on OIE activities. Point 4 of Article 3.2.14. on Administration details.
III.4	Points 6, 7 and 9 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation / General organisation / Procedures and standards. Point 7 of Article 3.2.3. on Evaluation criteria for the organisational structure of the Veterinary Services. Article 3.4.5. on Competent Authorities.
III.5.A **III.5.B**	Point 6 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation. Point 9 of Article 3.2.1. on General considerations. Article 3.2.12. on Evaluation of the veterinary statutory body. Article 3.4.6. on Veterinarians and veterinary para-professionals.
III.6	Points 6 and 13 of Article 3.1.2. Fundamental principles of quality: Veterinary legislation / Communication. Points 2 and 7 of Article 3.2.3. on Evaluation criteria for the organisational structure of the Veterinary Services. Point 7 of Article 3.2.14. on Animal health and veterinary public health controls. Point 4 of Article 3.4.3. on General principles: Consultation.
IV.1	Points 6, 7 and 9 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation / General organisation / Procedures and standards. Points 1 and 2 of Article 3.2.7. on Legislation and functional capabilities: Animal health, animal welfare and veterinary public health / Export/import inspection. Point 6 of Article 3.2.14. on Veterinary legislation, regulations and functional capabilities. Chapter 3.4. on Veterinary legislation.
IV.2	Points 6, 7 and 9 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation / General organisation / Procedures and standards. Points 1 and 2 of Article 3.2.7. on Legislation and functional capabilities: Animal health, animal welfare and veterinary public health / Export/import inspection. Point 6 of Article 3.2.14. on Veterinary legislation, regulations and functional capabilities.
IV.3	Point 6 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation. Article 3.2.11. on Participation in OIE activities. Points 6 and 10 of Article 3.2.14. on Veterinary legislation, regulations and functional capabilities / Membership of the OIE.
IV.4	Points 6, 7 and 9 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation / General organisation / Procedures and standards. Point 2 of Article 3.2.7. on Legislation and functional capabilities: Export/import inspection. Sub-point b) of Point 6 of Article 3.2.14. on Veterinary legislation, regulations and functional capabilities: Export/import inspection. Chapter 5.2. on Certification procedures. Chapters 5.10. to 5.12. on Model international veterinary certificates.
IV.5	Points 6 and 7 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation / General organisation. Sub-point g) of Point 4 of Article 3.2.10. on Veterinary Services administration: Trade performance history. Chapter 5.3. on OIE procedures relevant to the Agreement on the Application of Sanitary and Phytosanitary Measures of the World Trade Organization.
IV.6	Point 6 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation. Points 1 and 3 of Article 3.2.8. on Animal health controls: Animal health status / National animal disease reporting systems. Chapter 5.1. on General obligations related to certification.
IV.7 **IV.8**	Point 6 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation. Chapter 4.3. on Zoning and compartmentalisation. Chapter 4.4. on Application of compartmentalisation.

Appendix 2: Glossary of terms

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

Animal

means a mammal, bird or bee.

Animal identification

means the combination of the identification and registration of an animal individually, with a unique identifier, or collectively by its epidemiological unit or group, with a unique group identifier.

Animal identification system

means the inclusion and linking of components such as identification of establishments/owners, the person(s) responsible for the animal(s), movements and other records with animal identification.

Animal welfare

means how an animal is coping with the conditions in which it lives. An animal is in a good state of welfare if (as indicated by scientific evidence) it is healthy, comfortable, well nourished, safe, able to express innate behaviour, and if it is not suffering from unpleasant states such as pain, fear and distress. Good animal welfare requires disease prevention and veterinary treatment, appropriate shelter, management, nutrition, humane handling and humane slaughter/killing. Animal welfare refers to the state of the animal; the treatment that an animal receives is covered by other terms such as animal care, animal husbandry, and humane treatment.

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 and the OIE Aquatic Animal Health Code in the whole territory.

Disease

means the clinical and/or pathological manifestation of infection.

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 unrecognised 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.

Meat

means all edible parts of an animal.

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

means a programme which is approved, and managed or supervised by the Veterinary Authority of a country for the purpose of controlling a vector, pathogen or disease by specific measures applied throughout that country, or within a zone or compartment of that country.

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 the operations whereby the Veterinary Services, knowing the location of the animals and after taking appropriate actions to identify their owner or responsible keeper, are able to apply appropriate animal health measures, as required. This does not exclude other responsibilities of the Veterinary Services e.g. food safety.

Risk analysis

means the process composed of hazard identification, risk assessment, risk management and risk communication.

Risk assessment

means the evaluation of the likelihood and the biological and economic consequences of entry, establishment and spread of a hazard within the territory of an importing country.

Sanitary measure

means a measure, such as those described in various Chapters of the Terrestrial Code, destined to protect animal or human health or life within the territory of the OIE Member from risks arising from the entry, establishment and/or spread of a hazard.

Surveillance

means the systematic ongoing collection, collation, and analysis of information related to animal health and the timely dissemination of information 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 an OIE 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 territory.

(Veterinary) legislation

means the collection of specific legal instruments (primary and secondary legislation) required for the governance of the veterinary domain.

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 territory, and delegated to them under the responsibility and direction of a veterinarian. The tasks 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 and the OIE Aquatic Animal Health Code in the territory. The Veterinary Services are under the overall control and direction of the Veterinary Authority. Private sector organisations, veterinarians, veterinary paraprofessionals or aquatic animal health professionals are normally accredited or approved by the Veterinary Authority to deliver the delegated functions.

Veterinary statutory body

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

Wildlife

means feral animals, captive wild animals and wild animals.

Zoonosis

means any disease or infection which is naturally transmissible from animals to humans.

Appendix 3: List of persons met or interviewed

Date	Name	Position/Institution	Location
KHARTOUM MEETINGS AND VISITS			
General Directorate of Animal Health and Epizootic Diseases Control (AHEDC), Ministry of Livestock, Fisheries and Rangelands (MLFR), Soba			
08/09	CF, EFQ, AM, MC	OIE	
	Isameldin Abdel Mageed	Director of Epizootic disease control	Khartoum, Soba
	Abuobeida Mohamed Elemar	Head of Field unit	
	Hanan Yensil	Veterinary epidemiologist	
	Abdel Rahman Ajabha Beigi	Wildlife unit	
	Nisreen Ahmed Hamid	International collaboration, technical office	
	Fatima Elzahra Mohamed	Head of Communication unit	
	Zainab Talha Osman	Head, Drug residues division	
	Amina Awad Salih	Disease monitoring and evaluation unit (DMEU)	
	Elfatih Ahmed Abdel Raham	Epidemiology division	
	Alemia Ahmed	Elisa unit	
	Hanan Abd Elgadil	Veterinary Hospital	
	Haitham Fadlalla	DG of Animal Health	
	Amel Mahgoub Abbes	Head of Report and information	
	Sabah Hassan	Head of veterinary drug	
	Hassan Ali Abbas	Head of technical office	
	Khidir Mohamed Elfaki	Director General, AHEDC	
Union of Sudanese Veterinarian (Veterinary Association)			
8/09	CF, EFQ, AM, MC	OIE	Khartoum
	Mohamed Ahmed	Veterinary researcher, VRI	
	Mohamed Musa	Private, Khartoum	
	Muhamed Salih	NGO, Khartoum	
	Ala Eldin Ahmed	Economic Investment, veterinary union, Khartoum	
	Altahir M Haronn	President, Veterinary Union, Khartoum	
Veterinary Research Institute (VRI), Animal Resource Research Corporation (ARRC)			
09/09	CF, EFQ, AM, MC	OIE	Khartoum, VRI
	Prof. Fayza Ahmed Oman	Ass. for Director of diagnosis center	
	Abdelgadir Bakal	Ass. for Director of vaccine production	
	Nagwa Abdel Cinawi	Director Public relation	
	Muna Osman Elhag	Head of department, associate professor	
	Yazeed Al Raouf	Ass. research professor	
	Iman Mohamed El Nassi	Head department, Avian pathology and diagnosis	
	Yahia Ali Sbel	Bacteriology department	
	Elhan A Suleiman	Ass. Professor	
	Amira Mahgoub	Department of Mycoplasma	
	Tamador MA Elhassan	Assistant professor, RVF	
	Aisha Abbas Slsadig	Ass. professor, radio isotops	
	Tageldiem Aballa	Ass. professor viral vaccines	
	Fahad Eltayeb	Ass. professor, Molecular biology	
	Ali Abdel Ahani Elgaddal	Ass. Professor	
	Ali MS El Eragi	Ass. Professor	
	Magali Badawi	Ass. Professor	

	Ahmed Elghali Ahmed	Deputy director	
	Ibtisam Amin Goreish	Director general, ARRC	
	Abbas Mohamed Ahmed	Ass. Director for Administrative and finance services	
	Salva Mohamed Elbashir	Head, depart. Biochemistry	
	Wedgdan Hassan Ali	Virology department	
	Osman Mukhtar	Parasitology department	
	Tageldin Abdallah	Viral vaccine production	
	Aisha Abbas Elsadig	Department of isotops	
	Elham Agdelhasit	Department of mycology	
	Dahia Ahmed	Quality control department	
Ministry of Livestock, Fisheries and Rangelands (MLFR), Undersecretary Technical Office			
9/09	CF, EFQ, AM, MC	OIE	Khartoum
	Diab AlRahman	Planning livestock Economics	
	Suleiman Grabil Agib	Quarantine and Meat Hygiene	
	Nadia M A Saad	Vet. Supplies corporation	
	Mohamed Obied Saed	Director Range and pasture	
	Khalid Eltigani M zein	General Affairs	
	Nagwa Yousif Adam	Extension Directorate	
	Nadia El Drdiry	Fisheries directorate	
	Hassan Yousif Morkaz	Veterinary Quarantine	
	Ibtisan Amin Croveish	ARRC	
	Ibrahim Hassan Ahmed	MLFR	
	Elham Alsayed Merghani	Undersecretary, Technical office	
Quarantine and Meat Hygiene Department (QMHD), MLFR			
9/09	CF, EFQ, AM, MC	OIE	Khartoum
	Suliman Gabir Asib	DG of QMHD	
	Ali Al Razig ali Lutf	Director of Quarantine and meat Hygiene	
	Hassan Yousif Markos	Veterinarian, QMHD	
	Nagri Eldin Shoubi Osman	QMHD	
	Afaf Abdellatif Ahmed	Technical office	
	Suhair Shanki	Slaughter house	
	CF, AM, EFQ, MC		
Faculties of Veterinary Medicine (FMV), Universities of Khartoum, Sudan and Bahri			
10/09	CF, AM	OIE	Khartoum
	Mohamed A. Abdalla	CVM sust.	
	Iman M. Hamad	University of Bahri, FMV	
	Abdelwahab A Mahmoud	Univ. of Bahri, FMV	
	Prof Afaf Izzeldin Abuelgasim	Univ. of Khartoum, FMV	
	Abdel Baiz Osman Ahmed	Ass. professor, Head of clinical medicine department	
	Osama Hassan	Ass. professor, Head of department of physiology	
	Nabiela Musa Bagir	Ass. prof, Head of biochemistry	
	Samia MA Elbadi	Ass. professor , Univ. Khartoum, FMV	
	Rasha Sidaliy	Ass. professor , Head of department of anatomy, Univ. Khartoum	
	Ghada Hasan	Ass. professor, Head of department of parasitology, Univ. Khartoum	
	Eltahir Haroum	Professsor, Pathology department, Univ. Khartoum	
	Elgailani Alamin	Dean, Khartoum Univ.	
	Abdelhay M Ali	Ass. professor, deputy dean, Khartoum University	
	Ayman Elwahas	Assistant professor, Head of	

		department of surgery and anaesthesia, Univ. of Khartoum	
ELISA Unit			
10/09	CF, AM	OIE	Khartoum
	Hiatham Fadlalla	AHEDC	
	Alamia Ahmed	Head of Elisa Unit, AHEDC	
	Ishraga Hassan	Analyst, AHAEDC, Elisa Unit	
	Omiema Ahmed	AHAEDC, Elisa Unit	
	Rihab Mohamed	Elisa analyst, AHEDC, Elisa Unit	
National Veterinary Hospital			
10/09	CF, AM	OIE	Khartoum
	Hanan Abdeljalil	Manager of veterinary hospital	
	Safaa Ali Awad El Karim	Head of large and small animal Unit, Khartoum vet hospital	
FAO			
10/09	EFQ, MC	OIE	Khartoum
	El Mardi Osman Ibrahim	Senior Livestock Programme Officer for Darfur	
	Jimmy Owani	Emergency Programme Officer	
	Fatima Elzahra Mohamed	AHEDC, Soba	
Sudanese Veterinary Council (VSB)			
10/09	Khitma Hassan Elmalik	Chairman of Education and Examination committee, VSB	Khartoum
	Samir Abdel Rasaul Ali	Secretary general, VSB	
	Beshir Taha	Chairperson of the VSB	
Development Technology and Services International (DETASI) company			
10/09	CF, EFQ, AM, MC	OIE	Khartoum
	Israa Avdelrahman	Deputy technical manager, DETASI	
	Shemaa Abd Hassan	Technical services, DETASI	
	Ayman Abusamra	Khartoum North Branch manager, DETASI	
	Mohmmed Omer Sulieman	General director, DETASI	
European Union (EU) Delegation to Sudan			
11/09	CF, EFQ, AM, MC	OIE	Khartoum
	Khidir Mohamed Elfaki	Director General, AHEDC	
	Nisreen Ahmed Hamid	International collaboration, AHEDC	
	Nada Alkheir Migani	Project manager, Rural development and food security section	
	Alvaro Ortega Aparicio	Programme Manager, Rural development and food security section, EU	
	Isameldin Abdel Mageed	Director Epizootic disease control, AHEDC	
Khartoum State Ministry of Agriculture, Animal Resources and Irrigation			
11/09	CF, EFQ, AM, MC	OIE	Khartoum
	Isameldin Abdel Mageed	Director EDC, AHEDC	
	Awatif Ahmed	Khartoum State, Animal health	
	Ahahim Atiz	Eastern locality, Khartoum state	
	Nadia Mostafa	Quality control, Khartoum state	
	Fatima Mohagad	Animal resources, Khartoum State	
	Nagal El Amin	Animal resources, Khartoum state	
	Sahar bedi ehar Ballal	Animal resources, Khartoum state, Ambada locality	
	Moheildan Sadih	DG of Administration of Animal	

		resources, Khartoum	
	Ilnahim Malor	Khartoum State, Buhari	
	A Mahmoud Sabih	Manager, Khartoum State, Bahri	
	Ahmed Abdelraheim	Veterinarian, Administration of animal health, Khartoum	
	Haga abdlgah	Veterinarian, Omdurman locality	
	Faisal Mustafa	Administrator, Omdurman locality	
	Fakhreldeen Mohamed	Khartoum Services and export co.	
	Khalid M Elkhalil	Manager of animal health, Khartoum locality	
	Salma Osman	Animal health, Khartoum	
DETASI Company Lab			
	CF, EFQ, AM	OIE	Khartoum
	Fatima Elzahra	GD AHEDC, Soba	
12/09	Ayman Ahmed Abusamra	Detasi Company	
	Elwaleed AA Ibrahim	Veterinarian, Detasi	
	Isameldin Abdel Mageed	DG EDC, AHEDC	
National Medicine and Poison Board (NMPB)			
	CF, EFQ, AM	OIE	Khartoum
	Waad Faisal	Veterinarian, NMPB	
	Esraa Elnaiem	Veterinarian, NMPB	
	Eman Mohamed El Hassan	Veterinarian, NMPB	
12/09	Lubna Ibrahim	Head of Reg of Vet. Med.	
	Ismaeldin Abdel Mageed	DG EDC, AHEDC	
	Naha Ab. Elabbas	Veterinarian, NMPB	
	Faima Elzahra Mohamed	DG, AHEDC	
	Zuhour Yahga	Director, NMPB	
	Mohamed El Hassan	Secretary General NMPB	
Sudanese Businessmen and employers federation			
	CF, EFQ, AM	OIE	Khartoum
	Eltahir Mahm	Private, Khartoum	
	Ahmed Idrissi Youssif		
	Mohammed Aldel Ageed	Member, Khartoum	
	Ali Islamin	Meat exporter, Omdurman	
	Ahmed Mahmoud	Member, fisheries chamber , Khartoum	
	Mohamed Hassan Khalil	Member, fisheries chamber , Khartoum	
12/09	Ahmed Suliman	Dairy chamber, Khartoum	
	Hassan Mubarak	Dairy chamber, Khartoum	
	Alsheih Ahmed	Dairy chamber, Khartoum	
	Mohamed TaiAlsfia	Dairy chamber, Khartoum	
	Husam Eltayes	Dairy chamber, Khartoum	
	Murtada Kamal	Poultry chamber	
	Mahmoud Hussein	General manager Elasima Vet Drug Ltd, Khartoum	
	Ouada A Galil	Secretary	
FIELD VISITS (3 groups)			
Dr Alberto Mancuso / Dr Hanan Yousif Mohammed / Mr Khalid Osman (driver)			
	Imtihal Taha	DG Animal Resources	Kassala State
	Mohamed Ali Algadio	Animal Health and epizootic disease control, Animal resources	
	Hanah Yousif	Veterinarian, Epidemiology, AHEDC	
14/09	Mohamed Ahmed	GIS	
	Ibrahim Osman Awad	Owner of Almavai, Kassala	
	Samis Abovle	Veterinarian, Kassala research lab	Kassala Research Lab

	Mohammed Mustafa	Researcher and Director, Kassala research lab	
	Elhadi Abdalla	Veterinarian	Poultry Farm
	Fareed Mustafa Ismail	Director General, Kassala poultry farm	
	Allah	Manager Dairy farm	Dairy Farm
	Nada Awad	Veterinarian in charge, Shamboob slaughter house	Rural Slaughterhouse
	n/a	Border check point	AWAAD border with Eritrea
	Suliman Ali	Head of Exporters in Kassala/Gedaref	Kassala State
	Alaziz Abdalla	Private veterinarian	
	Mulaz Asman Alden	Veterinarian, Ministry of Agriculture, Kassala	
	Mohamed Ahmed Osman	Veterinary technician, animal resources	
	Zana Haidar Bukader	Veterinarian, MARF	
	Mohamed Ali Aladin	Veterinarian, Animal Health	
	(names in Arabic)	Pharmacy	
	Ahmed Ali Osman	Animal resources	
	Anwar Mohamed Osman	Planificiation department, Animal resources	
15/09	Mohamed Ali Al Gadir	Head of Department of Animal Health and Epizootic Disease Control, Animal reslurces Kassala	Kassala State
	Nihal Mohamed Nour	Veterinary Officer	
	Mona Hassan	Officer	
	Wegdan Mohamed	Veterinarian	
	Mashaen Ali	Veterinarian	
	Alhadi Abdalla	Locality veterinarian	Kassala locality
	Mohammed Salah	Pharmacy owner	Private Pharmacy, Kassala
	Hanan Yousif	MLFR, Khartoum	
	Mohamed Ali Algadio	Animal Health and epizootic disease control, Animal resources	Animal Market Kassala
	Hanan Yousif	MLFR, Khartoum	
	Hanan Yousif	MLFR, Khartoum	Gedaref State
	Iman Ahmed Ibrahim	AHED, MARF (Gedaref)	
	Mahasinm Ahmed	AHED, MARF	
	Alagib Abu Seum	GD MARF Gedaref	
	Mohammed Abdel	MARF, Gedaref	
	Mohammed Salah	Pharmacy owner	
	Hatim Hamad	Head of research lab, VRI	Gedaref State Vet lab.
	Mahas in M Ahmed		
	Hanan Yousif	MLFR, Khartoum	
	Hanan Yousif	MLFR, Khartom	Gedaref State
	Abdeirahm	AH, MARF, Gedaref	
	El Shiedeh Allatif	Veterinarian	
16/09	Baheldeen Abdelgadir	AHEC, MARF, Gedaref	Gedaref State
	Mohammed Assir Ali	AHEC, MARF, Gedaref	

	Maha Sin M Ahmed	AHEC, MARF, Gedaref	
	Faiha Omer Elbashir	AHEC, MARF, Gedaref	
	Iman Ahmed Ibrahim	AHEC, MARF, Gedaref	
	Hanan Yousif	MLFR, Khartoum	Private vet pharmacy, Gedaref
	Hanan Yousif	MLFR, Khartoum	Drugs Distribution, Gedaref
	Hanan Yousif	MLFR, Khartoum	Quarantine, Gedaref
	Hanan Yousif	MLFR, Khartoum	State Slaughterhouse, Gedaref
	Safur Ahmed Seba	DG Animal	Ministry of Agriculture, Gezira State
	Adam Dawould Abaka	Professor, University of Gezira	
	Ahmed Ismail	Fishing director	
	Eihab Mustafa	Epizootic control, AH GD, Gezira	
	Sirag Eldin suliman	Epizootic control, AH GD, Gezira	
	Abden Salih	Director of Veterinary hospital, Gezira	
	Ihssan Khalid	Animal Health directorate, Gezira	
	Samia A Saham	Director Epizootic control, Medani	
	Abbas Ibrahim	Training, Animal Health, Medani	
	Abdel Saad Mohamed	Gezira State, Medani	
17/09	Rasha Osman	Meat Inspector, Medani locality	Gezira Slaughterhouse
	Mekki A Krim	Reporter	
	Sanfar Ahmed	Animal health	
	Abdallah Ahmed	Animal health Medani	
	Ihsan Khalid	Manager, MALN, Madani	
	Hanan Yousef	Veterinarian, MLFR, Khartoum	
	Samia A Salam	Manager, MALN, Madani	
	Asuad Nan	Poultry farm MLFR, Khartoum	Eggs production
	Hana Yousif		
	Ihsah Khaled	Manager Animal health	Dairy Farm Gezira State
	Samia A Salam	Manager DG	
	Gaafer Ahmed		
	Abo Baker	Vet office supervisor	
	Hana Yousif	MLFR, Khartoum	
	Ghader Ahmed	Animal Health	Ministry of Agriculture Gezira state
	Samarja Salam	Director epizootic control, animal health	
	Saf Aldean Hassan	DG of Ministry of Agriculture, Gezira state	
	Ihssan Kalid	AH, State	
	Hanan Yousif	Veterinary epidemiology, MLFR Khartoum	
Dr. Cheryl French/ Mr Aymed Hajo (driver)			
13/09	Amel Mahgoub Abbes	Head of Report and information Unit	Soba/AH&EDC
Dr Cheryl French / Dr Isameldin Abdel Mageed / Mr Aymed Hajo (driver for part of the trip)			
14/09	Sonia Mohamed Khalf Alla	Veterinarian –Quarantine	Khartoum International Airport
	Mawwa Isamedin abd Allah	Veterinarian – Quarantine	Khartoum IA

	Daoud Hamad Mohammed	Head of Dairy Complex	Pt. Sudan, El Barka Dairy complex
15/09	Dr. El Hasain Mohammed El Hadi	Directorate of Animal Resources	DG Rea Sea State
	Dr. Hanadi Hakim	DG of AH & DC	Red Sea State - Directorate
	Dr. Kamal	Mgr VRI/ARRC	
	Dr. Osman Soukatti	Federal Directorate Suakin Quarantine Station	Pt. Sudan
	Ahmed Shehadriz	Dir. Pasteur & Forage	Pt. Sudan
	Mohammed El hadi	State Vet Tech Assist	Pt. Sudan
	Dr. Intasar Hasam Mohammed	Dir. Extension and Pasture	
	Dr. Mahmoud Elhadj Salih	German Agro Action/Private sector	
	Nula Ali Moukhtar	Animal production and Extension	
	A.A Qhari	EFAD	Stakeholder meeting – Port Sudan, Red Sea State
	Abdel Wakil	CAHW	
	Rashid Awad	CAHW	
	A Al Athm	Pastoralist union	
	Alamin	Animal production chamber	
	Hashim Al Hafyan	Vet. Association	
	Abdin Balikin	Department Head	
	El Hassien Mohammed Zein	Fish Exporter	
	Saiid Juma	Director of Fisheries	
	Mohammed Basir Yasin	Chairman Chamber of Commerce	
	Dr. Mohammed Majid	Head of Red Sea Vet Union	
	Madani Adroup	Pastoralist Union	
	Abdul Bebrkek		Directorate Red Sea State- Pt. Sudan
	Sawsan Abd Alliham	Veterinarian	
	Ahmed Aboulgassra	Animal administration and tourism	
	Abdalla Abdul		
	Sawsan Abd Allriham	VRI Lab	
	Abdalla bdul Hamain Ahmed		
	Hashim Osman ahmed	DG of animal production	
	Badr Edin Mohamed	DG animal health and epizootic disease control	
	Mona Abdallah Hamed	Aldamer locality	
	Dr. Kamal	Manager VRI Lab	Pt. Sudan
	Osman Eissa	Vet Assistant	Suakin Adm Unit
	Abu Ahmed	Pharmacy	Suakin
	Dr. Osama Sid Ahmed	Veterinarian	Suakin Quar.
	Dr. Talab	Veterinarian	
	Dr. Omar	Veterinarian	
	Dr. Adam	Veterinarian	
	Dr. Saluma	Veterinarian	
16/09	Dr. Murtasir Mohamed Abdellah	Veterinarian	Shendi Ckpt
	Dr.Mabd-Al Azeem Ahmed Moh	Veterinarian	
	Dr. Abdullah Ahmed	Veterinarian/farm manager	FAAPY Dairy
	Dr. Amir Bashir	Vet	
	Bushan Bushra	Food technologist	
	Dr Wefag Al Fouz	Veterinarian	Shendi Locality
	Dr, Iptisam	Laboratory Veterinarian	

	Dr. Nagwa Abdelgadir	Veterinarian	Al Matama Locality
	Dr. Saiid Abdul Basit	Private vet	Production Family Project
	Dr. Mora	Director	El Damar Locality
17/09	Abd Alazeem Ahmed Mohamed	Shenoti slaughter house	Al Bara
	Dr Abdin Babikir Siddig	Head of Dept L/S & Range	River Nile State/El Damar
	Yasir Osman Al Fadil	Veterinarian	River Nile State Directorate
	Nagda Elzobeir Arhah	Vet, manager of general administration of planning and extension	
	DG		
	Hythem Abdelatef	Animal Production, manager of department of finance and administrative issues	
	Fadel Mula Alwahab	Manager of general directorate of fisheries development	
	Badir eldin Mohamed	GD of Animal health and epizootic disease control	
	Tageshir Ahmed M Omer	Range department	
	Mawwahib Bader Aldeen	Public relation unit and information center	
	Badr Eldin Mohamed	DG of AH and epizootic disease control, River Nile	Stakeholder mtg River Nile State
	Hashim Osman Ahmed	DG of animal production	
	Elsyed Mohamed Altahir Shendi	Locality veterinarian	
	Mohamed Seed Ahmed	Stakeholder	
	Hashim Osman Ahmed	DG Animal production	
	Badr Edin Mohamed	DG of animal health and epizootic disease control	
	Abd Acazeem Mohamed	Shendi slaughter house manager	
	Al Said Mohamed Al Tahn	Shendi veterinarian, head	
	Osman Ahmed Mohamed	Fisheries section	
	Hassan Mohamed	Veterinarian	
	Salwa Abed Ellatif Salih	Veterinarian, Shendi lab	
	Intesar Ahmed Ali	Food safety	DG office El Damar, River Nile State
	Mania Khalifa cushi	Food safety	
	Badr Edin Mohamed Alagih	DG of animal health and epizootic disease control	
	Omeima Ajmed Abdalla	Epizootic disease control	
	Samah Abdel Monaim	Food safety	
	Eiman Hassan Mahjoob	Animal welfare	
	Entesar Osman Saeed	Animal welfare	
	Omnia El Galei Bhar	Animal health	
	Fatima Khil salih	Animal welfare	
Dr Eric Fermet-Quinet / Dr Maud Carron / Dr Elfatih Ahmed Abdel Rahman / Mr Aymen Hajo (driver for part of the trip)			
13/09	Mohammed Abdullah	Veterinary inspector, Internal checkpoint	Kosti
	Mirgheni Gummer	Veterinarian, Vaccination center	Kosti
	Said Oussein Mahmoud	Technician, Internal checkpoint	Al Wasa
	Manahil Abdallah Sarah Abdulmunim	Veterinarian, Locality Office Veterinarian, Locality Office	El Rahad

	Zein Abrabdim	Technician, Slaughter slab	
	Sarah Abdulmunim Rachid Abdelmem	Veterinarian, pharmacy Seller, pharmacy	El Rehad
	Maaz Mohamed Mohamed Elmaki Amin Hussein Habani Adam Abdel Laliefm Hozeyfa Mohamed Ibrahim	Planning director Director Animal health Animal production GD, Animal resources Epidemiology , disease control	El Obeid, State DG
14/09	2 veterinarians	Meat Inspectors, Municipal slaughter house	El Obeid
	Dr Idris Ahmed	Director, VRI	El Obeid
	Dr Said Makki	Private veterinarian, pharmacy	El Obeid
	2 veterinarians	Public veterinarians, vet. hospital and laboratory	El Obeid
	Dr Ahmed	Public vet, export quarantine	El Obeid
	Dr Azahari	Locality veterinarian	Khowe Locality
15/09	Dr Sarah Abdulmunim Zein Alarabdin Public veterinarian	Public vet, Vet hospital and lab in El Obeid Worker in El Obeid Locality Vet office	El Rahad
	Bechir Ahmed Alnazer Hafiz	Technicians, Administrative unit vet. Dispensary	Sameh
	El Murtada Mohamed Zahr Mohamed Emitha Mohamed	Public vet, Locality vet office Private pharmacy Private pharmacy	Umrawaba
16/09	Dafaha Khatid Ibrahim M Adam O Mohamed Sonia Wafa Hannah Fatima Mogboul I. Adam M. Kabashi Zienab	Animal Health, epizootics Animal Health, epizootic disease control Animal Production Extension officer Animal Health Animal Health Animal Health Animal Health Animal Health Animal Health Animal Health Vet. officer animal health Vet. reporting officer	Nyala, General Directorate
	Dr Ahmed	Public vet, Municipal slaughter house	Nyala
	Amul Alphadia Adam Abdallah Abdul Raman	Public vets, Export quarantine	Nyala
	Hachim Ahmed Elfaki	Private owner, Export slaughter house	Nyala
	Kheder Mustafa Ahmed Nyla Nour Alhuda V.	Private pharmacy	Nyala
	Mohamed Isma Elban jdid	Private vet., Private pharmacy	Nyala
BACK TO KHARTOUM			
18/09	AM, MC	OIE	Federal Ministry of Health (MOH), Khartoum
	Khidir Elfkaki	MLFR, AHEDC, Soba	
	Isameldin Abdel Mageed	AHDEC, MLFRL, Soba	
	Nisreen Ahmed Hamid	International collaboration office, Soba	
	Hanadiawad	MOH, EPR	
	Dina A Mohamed	MOH, Epidemiology	
	Hayat Khogali	MOH	

	Salaheldin Mubarak	MOH, Environmental health	
	Ali El Kararar Eltayeb	Zoonosis unit, EPR, MOH	
Closing meeting			
19/09	CF, EFQ, AM, MC	OIE	
	Suheir Awad	Veterinarian- zoonosis	Soba, Khartoum
	Maissa Mohammed	Veterinarian- zoonosis	
	Leila Mohammed	Veterinarian, DG of Animal Health and Epizootic disease control (AHEDC)	
	Amel Ismail	Veterinarian DG of Animal Health and Epizootic disease control	
	Alassai Ahmed	Elisa Unit	
	Nagla Abdel Ghafour	DG of Animal Health and Epizootic disease control	
	Salma Idris Adam	Field Investigation unit	
	Tag Sir Mohamed	Expert, DG Quarantine and Meat Hygiene	
	Elfatih A. Abdel Rahman	Head of DIME, AHEDC	
	Hassan Youssif	Veterinary Quarantine	
	All Mahmoud Shamat	VRI	
	Ahmed Elghali	VRI	
	Samir Abdel Rasoul	Secretary general SVC, Khartoum State	
	Halima Sulih	Veterinarian, Epidemiology, Ministry of Agriculture and Animal Health, Khartoum State	
	Alavia Ahmed	Head of Elisa Unit, AHEDC	
	Hassan Saeed Abubakr		
	Abdel Rahman Ajabna Beigi	Wildlife and aquatic health	
	Abdin Babikir	Department of Livestock and Rangeland, River Nile State	
	Zainab Talha Osman	Head of Drug Residues Department AHEDC	
	Isameldin A. Mageed	Director EDC, AHEDC	
	Khidir Elfaki	Director General, AHEDC	
	Nisreen Ahmed Hamid	International collaboration and technical office AHEDC	
	Amira Awad Sah	H of DMU, AHEDC	
	Hanan Mohamed	Communication Unit AHEDC	
	Mahassin Rahmatalla	Communication unit AHEDC	
	Nadia Kamal Aldhi	Field operation AHEDC	
	Marwa Awal Seed Ahmed	Head of QCU	
	Faiza Awadelkain	Head of Field Operation	

Appendix 4: Timetable of the mission and sites/ facilities visited

Date	Assessor	Time	Location	Activities
08/9	CF, EFQ, AM, MC	12 noon	Soba	GD of AH EDC
08/9	CF, EFQ, AM, MC	14:00	Khartoum	Union of veterinarians
09/9	CF, EFQ, AM, MC	09:00	Khartoum	NVRI laboratories
09/9	CF, EFQ, AM, MC	11:00	Khartoum	ARRC
09/9	CR, EFQ, AM,MC	14:00	Khartoum	Undersecretary MLFR and staff
10/9	CF, AM	09:00	Khartoum	Teaching Hospital
10/9	CF, AM	11:00	Khartoum	ELISA laboratory
	CF, AM	12:00	Khartoum	Khartoum University
	CF, AM, EFQ, MC	2:30	Khartoum	D'tasi office (poultry)
	EFQ, MC	09:00	Khartoum	Slaughterhouse export
	EFQ, MC	10:30	Khartoum	FAO
	EFQ, MC	12:00	Khartoum	SVC
11/9	CF, AM, EFQ, MC	09:00	Khartoum	EU
	CF, AM, EFQ, MC	10:30	Khartoum	Khartoum State Directorate
	CF, AM, EFQ, MC	13:00	Khartoum	Khartoum State Lab and epidemiology center
12/9	CF, AM, EFQ,	09:00	Khartoum	National Council for Drug and Poisons
12/9	CF, AM, EFQ,	11:00	Khartoum	D'tasi
12/9	CF, AM, EFQ	13:00	Khartoum	Sudanese Producers association/Sudanese Businessmen's Union
13/9	CF	8	Khartoum	SOBA – AHEDC Information Unit
14/9	CF	11:00	Khartoum	Khartoum International airport Vet Quarantine Station
14/9	CF	16:30	Pt. Sudan	Pt Sudan Dairy Complex
15/9	CF	09:00	Pt Sudan	DG Animal Resources
15/9	CF	11:00	Pt. Sudan	Private Sector Stakeholders Red Sea State
15/9	CF	13:00	Pt. Sudan	NVRI Lab Red Sea State
15/9	CF	15:00	Suakin	Administrative Unit Suakin Vet. clinic
15/9	CF	16:00	Suakin	Private Veterinary Pharmacy
15/9	CF	17:00	Suakin	Suakin Quarantine Station
16/9	CF	08:00	River Nile State	Internal Checkpoints
16/9	CF	10:00	Shendi	FAABY Dairy Unit
16/9	CF	11:00	Shendi	Shendi locality
16/9	CF	13:00	Al Matma	Al Matma locality
16/9	CF	16:00	Sofor	Sofor Admin Unit
16/9	CF	18:00	Sofor	Productive Family Project (poultry farm)
16/9	CF	20:00	El Damar	El Damar locality
17/9	CF	06:00	Al Bara	Al Bara Slaughter house

17/9	CF	09:00	El Damar	Director River Nile State
17/9	CF	10:00	El Damar	Stakeholder meeting River Nile State
17/9	CF	13:00	El Damar	Final meeting with DG of AH&EDC
Date	**Assessor**	**Time**	**Location**	**Activities**
13/09	EFQ/MC 650km	08h 11h30 15h30 16h30 20h-23	Khartoum Kosti Um Rawaba El Rahada El Obeid	Departure Internal checkpoint White Nile Port border post to South Sudan Vaccination center and secondary market Internal checkpoint Al Ouassa Locality veterinary office Slaughter slab Locality veterinary office slaughter slab private vet pharmacy General directorate North Kordufan State
14/09	EFQ/MC 300km	5h 8h45 9h30 10h30 11h30 12h30 12h45 13h45 15h30 16h00 16h30 18h00	El Obeid El Khowe El Obeid	Municipal slaughter house VRI Laboratory and vaccine production Private veterinarian Stock of vaccines and veterinary medicines at DG (State) Secondary animal market Veterinary hospital State veterinary laboratory Export quarantine Locality veterinary office Loading and checkpoint of animals for export Camel owners' interview
15/09	EFQ/MC 650 km	7h30 10h45 11h30 12h30 20h00	El Rahad Sameh Um Rawaba Khartoum	Vaccination of cattle by State veterinarian Locality vet office Administrative unit vet dispensary Locality vet office
16/09	EFQ/MC Internal flight	06h00 13h00 13h30 14h00 14h30 15h00 15h30 16h00 17h00 17h30	Khartoum Nyala " " " " " " " "	Plane departure General Directorate Regional VRI diagnostic and vaccine production Veterinary Hospital Municipal slaughterhouse Export quarantine Export slaughterhouse Veterinary faculty (meeting with students) Private pharmacy Private pharmacy
16/09	EFQ/MC Internal flight	09h00 14h00	Nyala Khartoum	Departure Arrival
Date	**Assessor**	**Time**	**Location**	**Activities**
14/9	AM		Kassala	Camel Farm
				General Directorate of the State
				Veterinary Research Laboratory, Branch of NVRI
				Poultry Farm and Lab

				Dairy Farm
				Quarantine
				Rural Slaughterhouse
				BIP with Eritrea/ CAHW office
				Meeting with Stakeholders
15/9	AM		Kassala	Kassala Veterinary clinic locality & lab
				Private Vet pharmacy
				Livestock market
15/9	AM		Gedaref	General directorate of the State
				VRI Branch
				Head of veterinarian union
16/9	AM		Gedaref	Veterinary Pharmacy
				Private drug distribution company
				Quarantine office
				Animal Market
				State slaughterhouse
				Head of Pasturalist union
				BIP with Ethiopia, Gallabat
16/9	AM		Gezira	General Directorate of the State
				VRI branch
				State Clinic
17/9	AM		Gezira	Meeting with Minister
				State Slaughterhouse
				Dairy farm
				Poultry farm, egg sorting/packaging
				Slaughterhouse of Barakat
				Locality of Barakat

Appendix 5: Air travel itinerary

ASSESSOR	DATE	From	To	Flight No.	Departure	Arrival
Dr. Cheryl French	Sept 6, 2013	Cincinnati Ohio (CVG)	JFK	DL 3339	16:10	18:17
	Sept 6, 2013	JFK	Ataturk	TK 012	23:55	Sept 7 16:45
	Sept 7	Ataturk	Khartoum	TK 680	21:00	01:10
	Sept 20, 2013	Khartoum	Dubai	EK 734	19:10	00:20
	Sept 21, 2013	Dubai	JFK	EK 203	02:55	08:25
	Sept 21, 2013	La Guardia	Cincinnati	DL 3299	13:05	15:15
Dr. Alberto Mancuso	Sept 7, 2013	Rome	Ataturk	TK 1866	15:40	19:05
	Sept 7	Ataturk	Khartoum	TK 680	21:00	01:10
	Sept 20	Khartoum	Ataturk	TK 681	02:25	06:35
	Sept 20	Ataturk	Rome	TK 1861	08:20	10:00
Dr. Maud Carron	Sept 7, 2013	Paris	Ataturk	TK 1824	14:55	19:20
	Sept 7	Ataturk	Khartoum	TK 680	21:00	01:10
	Sept 20	Khartoum	Ataturk	TK 681	02:25	06:35
	Sept 20	Ataturk	Paris	TK 1821	07:35	10:15
Dr. Eric Fermet-Quinet	Sept 7	Lyon	Istanbul	TK 680	12:05	16:10
		Istanbul	Khartoum	Tk 1806	21:00	01:10
	Sept 20	Khartoum	Istanbul	TK 681	02:25	06:35
	Sept 20	Istanbul	Lyon	TK 1807	08:50	11:05

Appendix 6: List of documents used in the PVS evaluation

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

Ref	Title	Author / Date / ISBN / Web	Related critical competences
	PRE-MISSION DOCUMENTS		
E001	*General information on VS, demographics, animal census*	VS	I.1, I.7, I.11
	MISSION DOCUMENTS		
E002	*Presentation of the AH&EDC*	DG	I.6.A
E003	*AH&EDC Organogram*	DG	I.6.A
E004	*Legislation of Sudan VS*	DG	IV.1
E005	*LESP Program reports*	DG	II.5.A
E006	*Contingency plan for HPAI*	DG	II.6
E007	*Policy for Promotion (Sudan Investment Plan) CAADP*	DG	
E008	*Proposal Policy Hub Animal Resources Documentation + Decision + Joint Government and L/s forum (GDLF)*	DG	III.3
E009	*Presentation VRI*	NVRI	II.1.B
E010	*Vet Faculty*	University of Khartoum	I.2.A
E011	*VSB*	VSB	III.5.A & B
E012	*Presentation DG Khartoum*	Khartoum State VS	I.6.A
E013	*ELISA LAB*	NVRI	II.1
E014	*Presentation ARRC*	NVRI	II.1.B
E015	*Ministry of Health*	MoH	II.8, I.6.B
E016	*Suakin Quarantine presentation*	Suakin	II.4,II.12,IV.5
E017	*Red Sea State presentation*	Red Sea State Vet	I.6
E018	*Red Sea State annual rpt*		I.11
E019	*2nd mtg of Joint Donor L/S forum*	DG	I.6B, III.2
E020	*Program Estimate Rpts*	DG/EU	I.6B
E021	*Disease mapping information*	DG	II.5B, II.7
E022	*Agriculture Revival Program (ARP)-Sudan CAADP*	DG	III.2
E023	*Policy of MLFR*	DG	III.2
E024	*Policy Workshop*	DG	I.6B, III.2
E025	*Rpt from Ministry policy mtg*	DG	I.6B, III.2,
E026	*Rpt from L/S policy committee*	DG	I.6B, III.2
E027	*Rpt from L/S policy Committee*	DG	I.6B, III.2
E028	*Outbreak Mapping Files*	AH&EDC	II.5
	Mission Photos		
PCF001	National Medicine & Poison Board	12/9	CC II.9
PCF002-003	Meat Inspection Stamp	12/9	CC II.8
PCF004	Dtasi Private lab	12/9	CC II.1
PCF005-007	Pt Sudan Dairy Complex	14/9	
PCF008	Pt. Sudan VRI Laboratory	15/9	CC II.1A&B
PCF009	Adm Unit Pt. Sudan	15/9	CC I.7
PCF010-011	Vet Pharmacy	15/9	
PCF012-021	Suakin Quarantin Station	15/9	CC I.7,
PCF022	Modern Dairy	16/9	
PCF023	Locality Laboratory	16/9	CC I.7, II.1B
PCF024-025	Locality office	16/9	CC I.7
PCF026-027	Modern Poultry facility	16/9	
PCF028	Locality laboratory	16/9	CC I.7, II.1B

PCF029	Admi Unit Pt. Sudan	16/9	CC I.7
PCF030	State Slaughter house	17/9	
PCF031	Admin Unit Pt. Sudan	14/9	CC I.7
PCF032	National Medicine & Poison Board Repository	12/9	CC II.9
PCF033	Pt Sudan VRI lab	12/9	CC I.7, II.1B
PAM001-006	Veterinry Research Laboratory, branch of NVRI	14/9	CC II.1B
PAM 007-008	Poultry Farm and attached small laboratory	14/9	
PAM 009-012	Dairy Farm	14/9	
PAM 013-024	Quarantine	14/9	CC I.7
PAM 025-027	Rural Slaughterhouse	14/9	CC I.7
PAM 028-036	Kassala veterinary clinic (locality) and attached small laboratory	15/9	CC I.7
PAM 037-041	Private veterinary pharmacy in Kassala	15/9	CC II.9
PAM 042-046	Livestock Market	15/9	CC II.12
PAM 047-052	Veterinary Research Laboratory, branch NVRI	15/9	CC II.1, I.7
PAM 053-054	General directorate of the State Kassala	15/9	CC I.7
PAM 055	Veterinary Pharmacy	16/9	CC II.9
PAM 056-058	Quarantine office and relevant area	16/9	CC I.7
PAM 059-062	State slaughterhouse (Gedaref)	16/9	CC II.8
PAM 063-068	BIP with Ethiopia	16/9	CC II.4
PAM 069	Meeting with Minister	17/9	
PAM 070-078	State Slaughterhouse (Had Medani)	17/9	CC II.8
PAM 079-080	Dairy Farm	17/9	
PAM 081-083	Poultry farm, egg sorting / packaging	17/9	
PAM 084-088	Slaughterhouse of Barakat	17/9	CC II.8
PAM 089-092	Locality of Barakat	17/9	CC I.7
PMC 001	Communication Unit		CCIII.1
PMC 002	Field Unit		CCI.7, II.7
PMC 003-004	Mobile clinics		CCI.7
PMC 005	Inventory		CCI.7
PMC 006	VRI- National Lab		CCII.1.B
PMC007	VRI		CCII.1.B
PMC 008	VRI – Inventory		CCII.1.B
PMC 009	VRI DVF Unit		CCII.1.A
PMC 010	VRI		CCII.1.B
PMC 011	VRI		CCII.1.B
PMC 012	Vet Council		CCIII.5
PMC 013	VSB		CCIII.5
PMC 014	Jemko Slaughter		CCII.8.a
PMC 015	Jemko Slaughter Plant		CCII.8.a
PMC 016	Jemko Slaughter		CCII.8.a
PMC 017	Khartoum State lab		CCII.1.b
PMC 018	Khartoum State Lab		CCII.1.b
PMC 019	Checkpoint		CCII.12.A
PMC 020	Records checkpoint		CCII.12.A
PMC 021	Vaccination center record		CCII.7
PMC 022	Vaccines		CCII.7
PMC 023	Vaccination center generator		CCI.7
PMC 024	Vaccination Center Freezer		CCI.7, II.7
PMC 025	Vaccination Center		CCII.7
PMC 026	Locality Vet Office		CCI.6.a
PMC 027	Field Unit		CCI.7, II.7
PMC 028	Field Investigation rpt		CC II.7
PMC 029	VRI No Quailty Assurance		CC II.2

PMC 030	Locality Office		CC I.6.a
PMC 031	Ankimal ID for Export		CC II.12.a
PMC 032	Animal Welfare		CC II.13
PMC 033	Fake vaccine		CC II.9
PMC 034	Locality Vet Equip		CC I.7
PMC 035	RBT		CC II.1.b
PMC 036	Quality Assurance		CC II.2
PMC 037	Abattoir Office Records		CC II.8.a
PMC 038	Vaccine Production		CC II.9
PMC 039	Vet Pharmacy		CC II.9
PMC 040	Animal Transport		CC II.12.a
PMC 041	Market		CC II.12.a
PMC 042	Slab		CC II.8.b
PMC 043	Slaughter Plant		CC II.8.a&b
PMC 044	Slab		CC II.8.b
PMC 045	Vet Pharmacy		CC II.9
PMC 046	Slaughter Plant		CC II.8.a&b
PMC 047	Meat Stamp		CC II.8.b
PMC 048	Incinerator		CC II.8
PMC 049	Outside Abattori		CC II.8.b
PMC 050	Test Tube cleaning		CC II.1.b
PMC 051	Slab		CC II.8.a&b
PMC 052	Vaccination by State		CC II.7 & 9
PMC 053	Vaccination by State		CC II.7 & 9
PMC 054	Vaccination Cert		CC II.7&9
PMC 055	Vaccination record		CC II. 7&9
PMC 056	Vaccination Box		CC II.7&9
PMC 057	Vaccines Nodate		CC II.7&9
PMC 058	Vaccine Storage		CC I.7 & II.7
PMC 059	Vaccines Market		CC II 7&9
PMC 060	Vaccine Certification		CC II.9
PMC 061	Vaccine Production		CC II.9
PMC 062	Vaccine Production		CC II.9
PMC 063	Vaccine Production		CC II.9
PMC 064	Cold Chaine Vaccines		CC I.7, II.9
PMC 065	Adm Unit		CC I.6.a
PMC 066	Adm Unit Vetsupplies		CC I.7
PMC 067	Disease Reports locality		CC I.6.a, II.7
PMC 068	Export Abattoir		CC II.a&b
PMC 069	Export Quarantine		CC II.12
PMC 070	Vet Faculty		CC I.1.a & I.2.a
PMC 071	Vet Pharmacy		CC II.9
PMC 072	Vet Clinic		CC I.7
PMC 073	Vet Hospital Records		CC I.1.a
PMC 074	Locality Animal Health Records		CC I.6.a
PMC 075	Locality office		CC I.6.a
PMC 076	Locality Vet Supplies		CC I.7
PMC 077	Abattoir records		CC II.8
PMC 078	State Lab		CC II.1.b
PMC 079	Records of vaccine distribution		CC II.9
PMC 080	Certification		CC IV.4
PMC 081	SOP VRI		CC II.1.a&b
PMC 082	Khartoum State Gov Lab rec		CC II.1.a&b
PMC 083	Newer lab equipment		CC I.7, II.1.b
H001	*ELISA lab results for brucella*	ELISA Lab	II.1.A, II.5.B
H002	*Trainees from Vet Teaching Hospital*	Veterinary Teaching Hospital	I.2.B

H003	*ELISA Lab results two documents*	ELISA Lab	I.1.A, II.5.B
H004	*VSB regulations*	VSB	III.5.A
H005	*Regulations*	SVC	III.5.A
H006	*Veterinary Council Act 1995*	SVC	III.5.A
H007	*Presentation of the SVC*	SVC	III.5.A
H008	*SVC Project and Plan for the future*	SVC	III.5.B
H009	*Procedures for Approval of Slaughterhouse*	DG	II.8.A
H010	*Sudan Vet Council Permanent Register – Veterinarians*	SVC	III.5.A
H011	*Proposed Animal Welfare Act*	DG	II.13
H012	*Ministry of Livestock Fisheries and Rangelands Annual Budget and other budget documents*	DG	I.8, I.9, I.10
H013	*5 year plan*	DG	I.8, I.10
H014	*Khartoum University Vet. College Academic Plan*	Khartoum University	I.2.A
H015	*Training from ELISA Lab*	ELISA Lab	I.3
H016	*Training for Farmers Manual*	Communication of DG	III.1, III.6
H017	*Training Document for Farmers*	Communication of DG	III.1, III.6
H018	*Animal Health Epizootic and Disease Control Training Plan*	DG	I.3
H019	*Monthly Report of Locality Directorate*	Khartoum State Ministry of Livestock	I.11
H020	*Summary of Positive samples concerning survey of 2011 Brucella*	Khartoum	II.1.B
H021	*Action Plan for the control of RVF*	DG	II.6
H022	*Action Plan for the control of FMD*	DG	II.7
H023	*Action Plan for the Control of CBPP*	DG	II.5.A
H024	*Action Plan for the Control of Brucellosis*	DG	II.5.B, II.7
H025	*Final Report for the control of PPR and Sheep and Goat Pox and Action plan for the control of PPR and sheep and goat pox*	DG	II.7
H025b	*The Presentation of the Detasi Company*	DETASI	
H026	*Summary of procedures about infected animals*	DG	IV.1
H027	*Number of cattle imported through Gelabat and Hamdaiet*	DG	II.4
H028	*Residue Survey Project Summary for monitoring of Veterinary drugs*	DG	II.11
H029	*Veterinary Quarantine on Exports and Imports of Live Animals and Meat Act 2004*	DG	II.4
H030	*Standard Operating Procedure for RVF*	DG	II.1.B
H031	*2009 Drug Legislation Act*	NMPB	II.9
H032	*Certificate of registration of pharmaceutical products (3)*	NMPB	II.9
H033	*Post marketing surveillance report*	NMPB	II.9
H034	*Monthly Inspection Report from vet pharmacy2013*	NMPB	II.9
H035	*State Monthly of Vet Med Inspection Gedaref State*	NMPB	II.9
H036	*Feed Analysis report of D'Tasi lab*	D'Tasi	II.11
H037	*Leaflet Sudanese business Federation*	Sudanese Business	III.3, III.6

		Federation	
H038	*Laboratory results*	River Nile State	II.6
H039	*Vaccination results*	River Nile State	II.7
H040	*Laboratory results*	River Nile State	II.6, II.1.A & B
H041	*Laboratory results*	River Nile State	II.6, II.1 A & B
H042	*Vaccination records at State level*	River Nile State	II.7
H043	*National vaccination certificate in the pack of Kosti*	Kosti	I.11, II.12.A
H044	*License for slaughterhouse*	Kosti	II.8.A
H045	*AU-IBAR Surveillance form*	North Kordafan State	I.11, II.5.A, II.6, II.7
H046	*Rpt for modifiable disease MoH*	MoH	I.6 B
H047	*Food monitoring law 1973*	MoH	IV.1
H048	*Public health law*	MoH	IV.1
H049	*Godarfa State Supervision of vet pharm*	Godarfa State	II.9
H050	*Monthly rpts*	Kassala State	I..3
H051	*Monthly rpt form locality*	Kassala State	I.3
H052	*Record for vet interventions*	Gedaref	I.2
H053	*Form for lic of vet pharm*	Gedaref	II.9, III.5.A
H054	*Number of Vet establishments*	Gedaref	I.1
H055	*Form for collection of info in village*	Gezira	I.2
H056	*Monthly rpt lab*	Gedaref	I.2, II.1.B
H057	*Monthly rpt form locality*	Kassara	I.2
H058	*Monthly rpt form slaughterhouse*	Kassal	II.8.B, II.5.A, I.2
H059	*Approval of poultry farm and slaughterhouse*	Kassala	II.8.A
H060	*Form of test results for export*	Kassa	II.1.B, IV.4
H061	*Request for vet pharmacy*	Kassala	II.9,III.5.A
H062	*Test result from research institute Soba*	Soba	II.A,II.B
H063	*Authorization for private vet phar*	Kassala	II.9
H064	*Authorization private hospital*	Kassala	III.5.A
H065	*Test result*	Kassala State Lab	II.1.A & B
H066	*Community animal health worker register of activity*	Kassala	I.1.B
H067	*Authorization for vet pharm*	Gedaref	II.9
H068	*Summary of presentation*	Gezira	I.2, I.6.A
H069	*Monthly rpt from locality*	Gedaref	I.2
H070	*Monthly rpt form slaughterhouse*	Kassala	I.2, II.8.B
H071	*Manual for inspection*	MoH	II.8.C
H072	*Annual rpt*	River Nile state	I.2
H073	*Manpower in L/s sector*	River Nile	I.1.A & B
H074	*Trg budget*		I.8 & 10
H075	*Laws and regulations*	River nile	IV.1
H076	*Job descriptions*	River Nile	I.6.A, I.1
H077	*Reg on ante/post mortem*	River Nile State	II.8 B
H078	*Reg for food safety*	River Nile State	II.8.B & C
H079	*Animal Welfare Law*	River Nile State	II.13
H080	*Organization of Dept*	River Nile State	I.6.A
H081	*Results of brucella test*	River Nile State	II.1.B
H082	*Shendi locality monthly rpt*	River Nile State	I.2
H083	*Organization Chart at locality*	River Nile State	V.6.A
H084	*Al Damar locality census and staffing*	River Nile State	I.11, I.7
H085	*Leaflet on animal welfare*	River Nile State	II.13, III.1
H086	*Nyala Regional VRI lab*	South Darfur	II.1.B
H087	*FMD surveil/epi*	AD& EDC	II.5.A&B
H088	*SMP project*	Dec 2012	II.5.A &B

H089	*Fmd surveillance*	Gedarif gezira Khartoum river nile s. kordofan	II.5.A&B
H090	*FMD:Epidemiology, Role of small ruminants and geographical distribution*	AH&ED	II.5.b
H091	*Equipment table*	AH&ED	I.7, I.11
H092	*MLFR Annual Budget*	AH&ED	I.8, I.9
H093	*MLFR Personnel Department manpower*	AH&ED	I.1
H094	*Technical Committee for importation of live animals and animal products*	AH&ED	I.6B, II.4
H095	*Proposed national ministerial task force for brucellosis control test- Khartoum State*	AH&ED	III.1, III.2
H096	*PPR survey*	AH&ED	II.5B
H097	*OIE correspondence*	AH&ED	III.3
H098	*License of Law*	AH&ED	IV-1

Appendix 7: Organisation of the OIE PVS evaluation of the VS of Sudan

Assessors Team:

- Team leader: Dr. Cheryl French
- Technical expert: Dr. Eric Fermet-Quinet
- Technical expert: Dr. Alberto Mancuso
- Observer/Facilitator: Dr. Maud Carron

References and Guidelines:

- Terrestrial Animal Health Code (especially Chapters 3.1. and 3.2.)
- OIE PVS Tool for the Evaluation of Performance of VS
  - → Human, financial and physical resources,
  - → Technical capability and authority,
  - → Interaction with stakeholders,
  - → Access to markets.

Dates: September 8-20, 2013

Language of the audit and reports: English

Subject of the evaluation: VS as defined in the Terrestrial Animal Health Code

- Inclusive / Not Inclusive of aquatic animals
- Inclusive / Not inclusive of other institutions / ministries responsible for activities of VS

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

- Field activities:
  - → Animal health (epidemiological surveillance, early detection, disease control, etc.)
  - → quarantine (all country borders),
  - → veterinary public health (food safety, veterinary medicines and biological, residues, etc.)
  - → control and inspection,
  - → others
- Data and communication
- Diagnostic laboratories
- Research
- Initial and continuous training
- Organisation and finance
- Other to be determined…

Persons to be present: see provisional Appendix 3

Sites to be visited: see provisional Appendix 4

Procedures:

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

Provision of assistance by the evaluated country

- Completion of missing data as possible
- Translation of relevant document if required
- Administrative authorisation to visit designated sites
- Logistical support if possible

Reports:

- a fact sheet or powerpoint will be presented at the closing session
- a report will be sent to the OIE for peer-review no later than one month after the mission
- the current levels of advancement with strengths, weaknesses and references for each critical competence will be described,
- general recommendations may be made in agreement with the VS.

Confidentiality and publishing of results

The results of the evaluation are confidential between the country and the OIE and may only be published with the written agreement of the evaluated country.