



Chronology of Veterinary Services Delivery, Basic Infrastructure and Educational Institutions in Sudan*

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Abstract

Sudan is one of the countries in Africa, which received veterinary services early of the first decades of nineteenth century. Although a fixed date is not known, but what realized by many experts, those three veterinarians entered the country accompanying colonial military campaign; form the beginning of veterinary services, which were later diversified and known to include clinical services, veterinary extension and animal production. Furthermore, the governing authorities began to think of administrative organo-structures to manage animals and provide actual needs and requirements of veterinary services and animal health. Implementation of PARC ended in upgrading of field veterinary services and hence provoked eradication of Rinderpest and control of other Trans boundary Animal Diseases (TADs) and non-TADs incidences. It is clear that through the significant contributions of the international community, veterinary services were able to achieve much in short period. The achievement also supported by the national governments through provision of counterpart funds equivalent to and sometimes exceeding that provided by donors. The country started earlier in 1974 to develop the disease free zone with other basic infrastructures, which assisted the veterinary services to promote livestock trade. The concept of provision and distribution of mobile units all over the country contributed to the improvement of field veterinary services and consolidated relationship between the veterinary services and other livestock stakeholders including livestock owners and traders. Veterinary services in the country built strong base for legislation in different aspect of service delivery and standards.

Key words: *Chronology, veterinary services, delivery system, colonial period, Infrastructure, educational Institutions*

المستخلص

تميزت الخدمات البيطرية عن غيرها من الخدمات البيطرية في الدول الأخرى باصطحابها للحملة الغازية من الجيش الأنجليزى بداية القرن الماضى. قام ثلاثة أطباء بيطريين انجليز بمرافقة الحملة بغرض مراقبة حيوانات الحملة و العمل على رعايتها وعلاجها عند المرض وبالتالي اصبحوا النواة لتأسيس الخدمات البيطرية بالبلاد. بدأت الخدمات باتشاء وحدات علاجية بالخرطوم تابعة للجيش الأنجليزى و توسعت تدريجياً لتشمل المسالخ و الوحدات الإنتاجية ومن ثم انتقل النشاط الى الأقاليم والتي تعرف بالمديريات و المراكز الادارية فى ذلك الوقت. تطورت الخدمات البيطرية فى البلاد وذلك بعد انشاء البنيات التحتية فانطلقت الى مرحلة التشريعات لتنظيم العمل الإدارى والفنى و المهنى مستهدفاً مكافحة الأمراض الوبائية خاصة تلك ذات الأثر الأقتصادى ويأتى على رأسها الطاعون البقرى. اضافة الى تنظيم عمليات التسويق و التجارة الى خارج الحدود. بعد الاستقلال وامسك الحكومات الوطنية بزمام المبادرة سارت على نفس نهج الانجليز. ولكن بدأ التفكير فى أوجه تطوير الثروة الحيوانية و لكن هذا لا يتحقق الا من خلال السيطرة على الأمراض وترقية الخدمات الحقلية. و فى هذا الاطار انضمت البلاد للجهود الإقليمية لمكافحة الطاعون البقرى انطلاقاً من مبدأ الأمراض لا تعرف حدوداً و كان تنفيذ الحملة الأفريقية لمكافحة البقرى البقرى و تواجها من الحملات اللاحقة الى أن بلغ بنا الماف الى المشروع الأفريقى لمكافحة واستئصال الطاعون البقرى ذلك المشروع الذى حقق نجاحات باهرة تملئت فى تطوير وترقية الخدمات البيطرية لتتوج بمرحلة فاصلة استئصال الطاعون البقرى بعد عمل متواصل لمدة تجاوزت المائة عام. الجدير بالذكر ان البلاد فى عام 1974م أنشأت المنطقة الخالية من الأمراض بغرض مكافحة الأمراض الوبائية و الترويج للصادر اتساقاً مع المعايير الصحية العالمية. اسهمت الوحدات البيطرية المتحركة فى انتشار الخدمات البيطرية وترقيتها بصورة ملحوظة

Introduction:

Sudan is one of the countries in Africa, which received veterinary services early of the first decades of twentieth century. Although a fixed date is not known, but by many experts realized, those three veterinarians who entered the country accompanying the colonial military campaign served as the basis of veterinary services delivery system. Those veterinarians were initially responsible of looking after horses and inspecting food of animal origin to guarantee freedom from any sanitary hazards. At the beginning, the services were provided mainly in Khartoum, where the colonial military concentrated. Then during the following years, the services extended to the rural areas where animals found in large numbers. In addition, services also diversified and included clinical services, meat hygiene, veterinary extension and animal production. Furthermore, the governing authorities began to think of administrative organo-structures to manage animals and provide actual needs and requirements for veterinary services and animal health.

The authorities started with formulation of legislative regulations, established foundation for drugs, vaccine production and clinical services. The national governments after the independence pursued the same plan with improvement and modernization.

The Ministry of Animal Resources (MOAR), developed strategic plans for development of veterinary services.

Historical review of structural development

The information in this paper relied on secondary data collected from previous reports issued by the Ministry of Animal Resources (MOAR). The colonial period extended for sixty-seven years after which the national government s took-over.

Data extracted from the reports since 1889 and others were collected from veterinary experts who were involved earlier in veterinary services delivery. The information was compiled and displayed in a chronological form. Most of the reports were lost during movement of MOAR offices from one place to another.

Evolution of veterinary services infrastructure and educational institutions

The following are the landmarks that constitutes the chronology of veterinary services delivery, infrastructure and educational institutions in Sudan from 1889- to date

1. Colonial period (1889 – 1956)

The outstanding features of this period is the concern of animal health and disease control particularly Rinderpest.

1899: Rinderpest introduced in Sudan through Eastern borders.

1901: The British Colonial Authorities issued the first animal diseases law. That law was addressed the problem of Rinderpest.

1906: The British Administration established a special police force to monitor control of Rinderpest.

1913: The first law regulating livestock import/export and quarantine stations was issued.

1914: The first cattle plague antiserum against the disease was produced in Malakal laboratory in Upper Nile; the larger quantities were produced in 1928.

1929: Establishment of Veterinary Tribal Organization for facilitation of field veterinary services delivery.

1937/38: The first School of Veterinary Science was established as part of Gordon Memorial College, which later upgraded to University of Khartoum. The Director of Department of Commerce and Trade in Khartoum provided funds for establishment of the Veterinary School in Khartoum due to excess of hard currency collected from animal exports to Egypt.

1939/40: The first batch of three Sudanese Veterinarians was graduated from School of Veterinary Science in Khartoum.

1946: Livestock and Veterinary Policy Commission was established as the first veterinary institution.

1949: That administration was able to vaccinate considerable number of cattle against Rinderpest, in South Darfur, using attenuated goat virus vaccine imported from Kenya.

1954: foundation of the veterinary council to regulate the veterinary profession.

2. First National Government (1956 – 1958)

This was the first government after the independence. Within that, short period, which did not exceed 2 years, the government involved in nationalization of all public offices. Thus, it maintained the same procedures and system of the colonial government. Its activities focused on animal health and disease control, availing professionals to fill gaps created by departure of expatriates. The country obtained global recognition to join the United Nations and its organizations (FAO and WHO) and the inter-governmental organization of OIE.

1956: Ministry of Animal Resources (MOAR) was one of the ministries established in the first national government.

1956: Sudan joined World Organization for Animal Health (OIE) as full country member

1956: Gordon Memorial College upgraded to University of Khartoum and all its schools were changed to faculties. Hence, veterinary school was named Faculty of Veterinary Science.

3. Second National Government (1958 – 1964)

During this period, the number of Sudanese veterinarians in public sector reached 42 (from University of Khartoum and Egyptian universities). The government concern was focused on animal health and disease control. MOAR received limited financial

support through implementation of regional Pan African campaign for control of Rinderpest. The ministry was able to dispose vaccination teams all over the country.

1958: MOAR continued as a separate national ministry.

4. Third National Government (1964 – 1969)

MOAR continued to support the field veterinary services after importation of number of mobile clinics/units. In addition, the country started to export livestock to gulf countries and Egypt.

1968: Importation of number of mobile clinics (yellow Bedford) and distributed to the provinces (later states).

Fourth National Government (1969 – 1985)

During the seventies and up to the eighties, MOAR was concerned with improvement of animal production through establishment of pilot farms for dairy and meat production. Basic infrastructure and regional projects in different localities of the country were underway. Those projects focused on rural development in areas of animal health and production. It worth mentioning that, the number of Sudanese veterinarians during this period reached to 136 including graduates from University of Khartoum, Egyptian universities and few from Eastern Europe.

For promotion and facilitation of livestock trade, the MOAR identified an area for disease free zone and built the required facilities like quarantine stations, border points, inspection centers and abattoirs. In addition, necessary legislations were approved.

The MOAR issued number of laws and legislation regulating activities in livestock sector. What characterized that period was the occurrence of drought all over the country. That natural event resulted in heavy losses of livestock and culminated in

Rinderpest outbreaks, which extended from Sudan to West Africa. Those outbreaks convinced high authorities to establish a separate ministry for animal resources.

During this period, government of Soviet Union donated Sudan loans through which the Central Veterinary Laboratory (Soba) was built which started its activities with the diagnosis of Pest des Petits Ruminants (PPR) and Rift Valley Fever (RVF) in Sudan for the first time in history of TADs in the country.

The Arab Organization for Agricultural Development funded a study on prospect of establishing pastoral farms in potentially livestock intensive areas. That study conducted by Hunting Group.

1971: first report of PPR case in Gedarif

1972: The ministry passed through different status, sometimes affiliated to ministry of agriculture and sometimes stood as independent ministry.

1973: beginning of JP-15 project for Rinderpest control

1973: Soviet Union donated Sudan a loan to build the Central Veterinary Research Laboratories (CVRL) in Soba. The Center started its activities with diagnosis of PPR and RVF in addition to production of Rinderpest Tissue Culture Vaccine (RTCV).

1973: first report of Rift Valley Fever in Sudan in White Nile.

1974: establishment of Kadro and Port Sudan veterinary quarantine stations

1974: establishment of disease free zone and issuance of the regulating law.

1974: Livestock Routes and Veterinary Inspection Law, meat inspection law and Rabies Control Act were issued.

1976: Implementation of first livestock census

1976: Establishment of Livestock Meat and Marketing Public Corporation (LMMC).

1976: Establishment of National Center for Artificial Insemination in Kuku (Khartoum North)

1976: International organizations (FAO and OIE) supported Sudan financially and technically in bid to formulate national project for control of Foot and Mouth Disease (FMD)

1977: Implementation of Tick and Tick-Borne Diseases Control Project funded by Danish Government and technically sponsored by Food and Agriculture Organization of United Nations (FAO)

1984: the country witnessed serious drought, which resulted in heavy losses of animal resources.

1983/84: FAO provided four mobile units two for Dar Fur and two for Kodofan in addition to veterinary assistance during drought period in 1983/1984

1983/84: outbreak of serious intercontinental Rinderpest started from South Kodofan, extended to West Africa, and ended in Nigeria was characterized with heavy losses.

5. Fifth National Government (1985 – 1989)

Due to its short period in office; there was little progress related to animal resources. The most outstanding achievement was the launching of Pan African Rinderpest Eradication Campaign (PARC), a project funded by European Union and coordinated by AU-IBAR.

1985: MOAR separated from ministry of agriculture

1989: launching of Pan African Rinderpest Campaign (PARC) by the Prime Minister and attended by European Union (EU) delegation in Khartoum and African Union – Inter African Bureau of Animal Resources (AU-IBAR) Nairobi.

6. Sixth National Government (1989 – 2019)

This period characterized by implementation of the most outstanding project, PARC, with the ultimate impact on eradication of Rinderpest. However, the MOAR remained affiliated to ministry of agriculture for

couple of years. That situation had negative impact on efficiency of service delivery particularly disease control.

1989: the government offered PARC vehicles special plates for protection

1990: Establishment of Nyala faculty of veterinary science

1991: Inauguration of PARC headquarters in Khartoum, Soba by H.E. the President.

1992: Implementation of Screw worm monitoring and surveillance project sponsored by FAO

1993: liquidation of LMMC

1993: Establishment of Animal Resources Bank on the auspice of dissolved LMMC.

1993: development of 25-years strategic economic plan within the national development strategy.

1995: Amendments in the Sudan Veterinary Council Law

1995: OIE in collaboration with the Government of Sudan (GOS) organized a meeting in Khartoum for Regional Commission for Middle East, attended by member countries, OIE Director General, President of OIE General Session, Regional Commission Bureau, and number of international and regional organizations.

1996: United Nation Children Fund (UNICEF) supported livestock diseases control activities in Southern Sudan (OLS: Operation Lifeline Sudan) within children immunization against small pox and other diseases.

1996: Implementation of zoning in preparation to start Rinderpest eradication

1998: last Rinderpest focus eliminated from Sudan from Southern Sudan

2001: Implementation of project for monitoring and surveillance of Tse-Tse and diseases transmitted by the fly.

2001: Development and Implementation of the Drugs and poisons Act

2001: Updating Animal Diseases Act

2003: Development of five-year development strategic plan (2003 – 2007) within the 25-years plan

2003: Arab Organization for Agricultural Development (AOAD) started financing disease control projects dealing with Transboundary Animal Diseases (TADs).

2003: Government of Sudan funded importation of 68 fully equipped mobile units

2004: Islamic Development Bank (IDB) funded the importation of 10 mobile units.

2004: The entire zone A declared free of Rinderpest disease

2004: Implementation of Contagious Caprine Pleuropneumonia (CCPP) control project funded by FAO

2004: Implementation of Community Based Animal Health Workers (CBAHW) within PARC project

2004: VS launched free immunization against the most prevalent diseases for coming three years. Cost covered by GOS)

- **2005:** OIE in collaboration with GOS organized a meeting in Khartoum for regional Commission for Africa attended by 34 member countries, OIE Director General, Regional Commission Bureau and number of international and regional organizations.

2005: issuance of the national constitution, which divided responsibilities between the central and state governments in all services delivery.

2006: The entire country was declared free from Rinderpest disease and a dossier was submitted to OIE for recognition of freedom from infection.

2006: Outbreaks of High Pathogenic Avian Influenza (HPAI) in Khartoum, Jazeera and River Nile states reported for the first time in Sudan.

2007: development of five-years development plan (2007- 2011)

2007: establishment of two faculties of veterinary science in Butana and Ghibaish.

2007: remerging of RVF in central states for the second time in Sudan

2007: OIE PVS tool mission assessed Sudan veterinary services.

2008: OIE recognized Sudan free of Rinderpest infection

2009: The Government provided 50 mobile units for MOAR.

2009: implementation of Technical Cooperation Program (TCP) project funded by FAO for surveillance and diagnosis of FMD

2010: MOAR supported by EU developed a national control strategy for five priority TADs (FMD, PPR, RVF, SGP and Br).

2011: Establishment of the faculty of veterinary science at the Sudan University for Science and Technology.

2011: Implementation of Livestock Identification and Traceability System (LITs) pilot project sponsored jointly by AU-IBAR and Intergovernmental Agency for Development (IGAD).

2012: development of five-years development plan (2012 – 2016)

2012: FAO funded technical cooperation program for FMD surveillance and diagnosis in the country.

2013: Establishment of two faculties of veterinary science in Gedarif and Fula

2015: FAO funded technical cooperation program for Pest des Petits Ruminants (PPR) surveillance and diagnosis in the country.

2015: Establishment of Faculty of Veterinary Medicine in Bahari

2015: Development of five-year development plan (2016- 2019)

2016: Second OIE PVS tool mission assessed Sudan veterinary services.

2016: Third OIE PVS tool mission assessed Sudan veterinary services and legislation

8. Seventh National Government (from 2019):

The new national government was just started its work in the last trimester of the year. Thus, there was little to be done during this short period.

2019: The MOAR continued as a separate ministry in the Federal Government in Khartoum.

Analytical overview

The findings by OIE PVS tool missions resulted in identification of gaps need be filled and strengths to be maintained in structures of veterinary services. Field veterinary services delivery need to be improved through provision of logistical and financial resources in addition veterinary staff to be trained in epidemiology and management of animal health. Disease control modalities need to be improved and was upgraded through introduction of newly developed technologies such as Epidemio-surveillance and community based animal health workers (CBAHW).

Finally, Rinderpest was completely eradicated from Sudan within the context of global effort (Global Rinderpest Eradication Pathway, GREP), following OIE Rinderpest Eradication Pathway sponsored by FAO/OIE and other international potential donors. However, the experience gained, resources availed and the capacities built should be directed to support other TADs control and eradication. Veterinary services considered as public good agreed by all global partners. The country developed control strategies for priority TADs that, adversely affect public health and trade addition to the development of National Development Strategic Plan (1993 – 2018).

The implementation of PARC ended in upgrading of field veterinary services and hence provoked the eradication of Rinderpest and control of other TADs and non-TADs incidences. It is clear that

through the significant contribution of international community, veterinary services were able to make achievements in short period. The achievements were also supported by the national government through availability of counterpart funds equivalent to or sometimes exceeding that provided by donors.

The period of sixth national government which was extended for more than 29 years, witnessed proper implementation of disease control programs and hence introduction of epidemio-surveillance tool, distribution of mobile units, strengthening relationship with international standards-setting organizations (like OIE, FAO, WHO, IAEA, WTO etc.) and regional institutions (like AU-IBAR, EU, ADB, USAID etc.), which supported veterinary services projects financially and improved it technically.

The concept of provision and distribution of mobile units all over the country contributed to improvement of the field veterinary services and consolidated relationship between the veterinary services and other livestock stakeholders including livestock owners and traders. Veterinary services in the country built strong base for legislation in different aspects of services delivery and standards.

In 1974, the country started establishing the disease free zone accompanied by other basic infrastructure, which assisted the veterinary services to promote livestock trade; however, the veterinary services were affected by two factors, which negatively challenged their performance in the field. The first factor was the affiliation to Ministry of Agriculture (MOA). In that inappropriate situation, the MOAR always dominated by MOA and unable to compete equally for the limited public financial resources from ministry of treasury, despite

that MOAR mandate planning to contain disease outbreaks all over the country.

The second factor is the article in the national constitution, 2005, divided the responsibilities between the two levels of government (central and local/state). Disease control and containment of disease outbreaks usually are not priority to the local governments. Thus, disease transfers from one state to another quickly due to lack of necessary control measures at the initial focus. In other experiences, such approach African countries south of Sahara.

Conclusions

Most outstanding achievements were attained during the term of the sixth national governments. This period which extended for more than 30 years, witnessed proper implementation of disease control programs and hence introduction of epidemio-surveillance technique, distribution of mobile units, strengthening relationship with international standards-setting organizations (like OIE, FAO, WHO, IAEA, WTOetc.) and regional institutions (like AU-IBAR, EU, ADB, USAIDetc.), which supported veterinary services projects technically and financially.

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References

Animal Health and Epizootic Disease Control (MOAR) (2005).

Veterinary Services in Sudan (1901 – 2004), booklet issued by Department of Animal Health and Epizootic Disease Control (MOAR) information section, 2005.

Ministry of animal Resources annual reports (1901 – 2017).

Ministry of Animal Resources (1993) National Development Strategic Plan (1993 – 2018).

Sudan National Constitution (2005).

Sudan veterinary Association (1970 - 1999).

Sudan Veterinary Journal.

- www.au-ibar.org
- www.fao.org
- www.oie.int