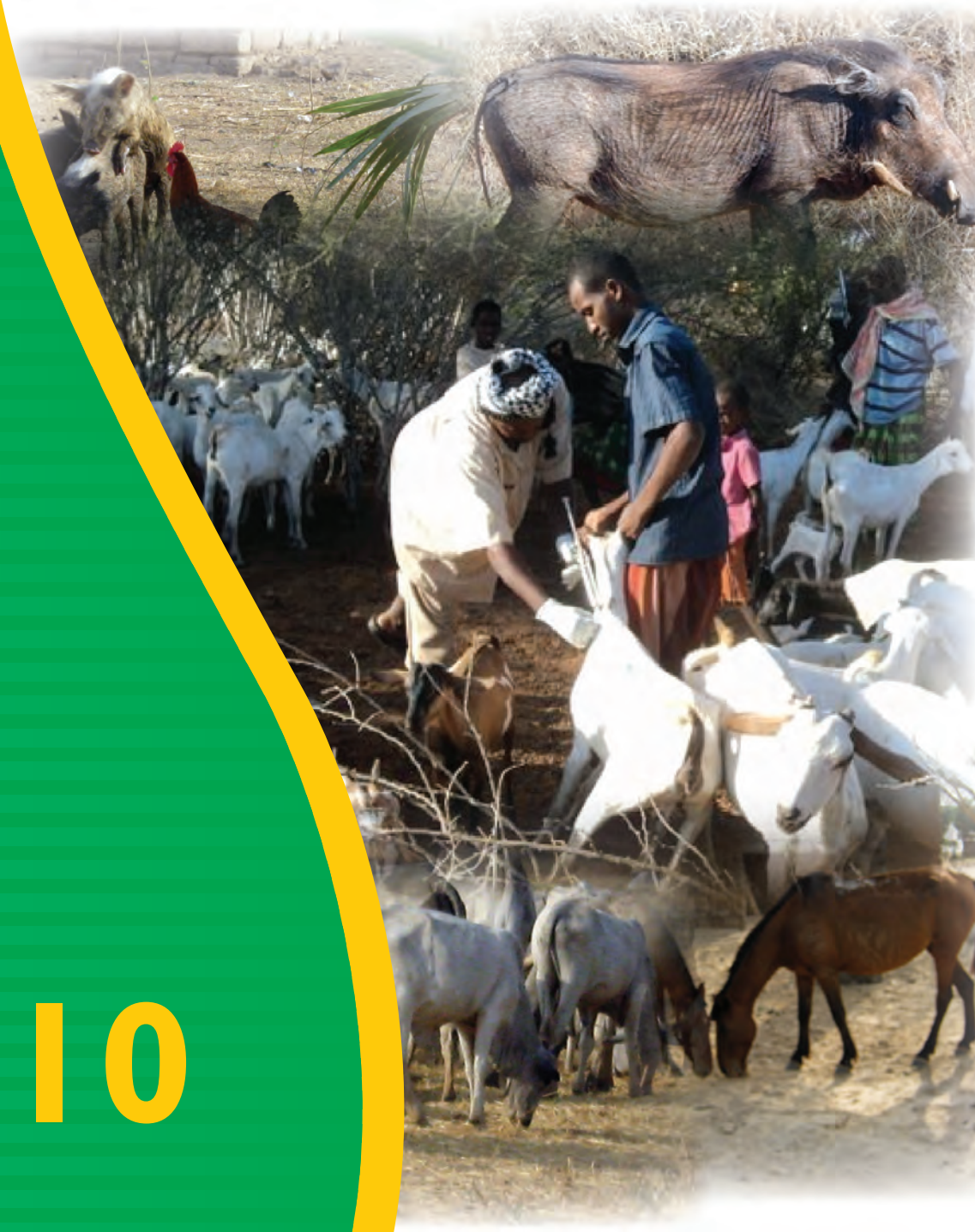
Pan African Animal Health Yearbook



2010

African Union
Interafrican Bureau for Animal Resources

Pan African Animal Health Yearbook

2010



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Pan African Animal Health Yearbook

An AU-IBAR Publication

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PREFACE v
ACKNOWLEDGEMENT vii
ABBREVIATIONS AND ACRONYMS viii
EXECUTIVE SUMMARY ix
1. INTRODUCTION 1
2. GENERAL STATUS OF MONTHLY ANIMAL DISEASE REPORTING 3
3. GENERAL STATUS OF DISEASES IN AFRICA IN 2010 6
3.1 Diseases reported 6
3.2 Disease situation by number of countries affected 6
3.3 Disease situation by number of reported outbreaks 8
3.4 Disease situation by number of cases in reported outbreaks 10
3.5 Disease situation by number of deaths in reported outbreaks 10
3.6 Disease situation by species affected in the reported outbreaks in 2010 11
3.7 Nature of disease outbreak investigation and confirmation by laboratory 12
4. SITUATION OF MAJOR ANIMAL DISEASES REPORTED IN AFRICA DURING 2010 14
4.1 African horse sickness 14
4.2 African swine fever 15
4.3 Avian Influenza 17
4.4 Bluetongue 18
4.5 Contagious bovine pleuropneumonia 19
4.6 Contagious Caprine Pleuropneumonia 21
4.7 Foot and mouth disease 22
4.8 Lumpy skin disease 25
4.9 Newcastle disease 27
4.10 Peste des petits ruminants 29
4.11 Sheep and goat pox 31
4. 12 Rift Valley fever (RVF) 33
5. SITUATION OF OTHER IMPORTANT DISEASES REPORTED IN AFRICA DURING 2010 35
5.1 Anaplasmosis 35
5.2 Anthrax 36
5.3 Babesiosis 38
5.4 Blackleg 40
5.5 Brucellosis 41
5.6 Dermatophilosis 43
5.8 Heartwater (Cowdriosis) 46
5.9 Mange 48
5.10 Pasteurellosis 49
5.11 Rabies 51
5.12 Theileriosis 53
5.13 Trypanosomosis 55
5.14 Tuberculosis 56
6. AU-IBAR INTERVENTIONS IN DISEASES CONTROL DURING 2010 59
6.1 Rinderpest eradication 59
6.2 Avian Influenza 59
6.3 PPR, NCD, CBPP, CCPP and Sheep and Goat pox 60
6.4 Trade facilitation and harmonization 61
6.5. Tsetse and trypanosomosis 62
6.6. Contribution to the terrestrial and aquatic animal health standards code commissions in 2010: Voice of Africa at the General Session of the World Assembly of OIE Delegates 62

7. DISEASE CONTROL INTERVENTIONS FOR 2011 65
7.1. Improving veterinary governance in Africa 65
8. CONCLUSION 71
ANNEX 1: STATUS OF MONTHLY DISEASE REPORTING BY COUNTRIES IN 2010 III
ANNEX 2: LIST OF DISEASES REPORTED IN AU-IBAR MEMBER STATES IN 2010 AND RELATED QUANTITATIVE DATA ARRANGED IN ORDER OF NUMBER OF OUTBREAKS V
ANNEX 3: COMMON POSITION OF AFRICA DELEGATES TO BE PRESENTED AT THE 78th GENERAL SESSION OF THE OIE: PARIS, FRANCE: 22 to 28 MAY 2010 VII
ANNEX 4: AU-IBAR FUTURE INTERVENTION IN DISEASE CONTROL IN AFRICA IN 2011 ... XIII
ANNEX 5: CONTACT ADDRESSES FOR DIRECTORS OF VETERINARY SERVICES XV

PREFACE

One of the biggest challenges that Africa still faces in the third millennium is how to ensure an adequate level of food security for a growing population while maintaining sustainable use of its natural resources. A key solution to this challenge is related to increasing animal productivity. Animals are an abundant resource and a major source of wealth of many African countries. The Livestock sector plays an important role in farming systems, which primarily provide food and income, and is a necessary prerequisite for poverty reduction and food security. Animal agriculture is also a major contributor to national economies in terms of export earnings. The Livestock sector is therefore an important driver for the development of the African continent.

However, in spite of this enormous potential, the development of the livestock sector and thus its contribution to poverty reduction and food security, the economic growth in Africa is still seriously impeded by animal diseases. The emergence and re-emergence of deadly strains of pathogens is affecting livestock production in many countries, causing serious economic losses and putting public health and food security at risk for the larger percentage of Africa's population. With frequent food scarcity being reported in many African countries, an increase in disease burden will only put more pressure on an already dire food secure and rural livelihood situation in the continent. In this context, it has become a major objective for African countries to improve livestock productivity and trade through the control of major diseases.

The African Union Interafrican Bureau for Animal Resources (AU-IBAR) has as one of its core functions the coordination of animal disease control and eradication strategiesthe promotion, harmonization and effective implementation of disease control measures in Africa. Animal diseases data and information is essential for the development of the livestock sector in Africa. With the emergence and re-emergence of Transboundary Animal Diseases (TADs) such as Highly Pathogenic Avian Influenza (HPAI) Peste des Petits Ruminants (PPR), Rift Valley Fever (RVF) and African Swine Fever (ASF) etc, in recent years, it has become extremely important, that information flow within and between African countries be improved. The Pan African Animal Health Yearbook aims at monitoring the situation of animal diseases in Africa by collating, analyzing and disseminating disease information from member countries and thereby guide policy makers and investors in the identification of priority areas for resource allocation and investment.

In the year 2010, 49 out of the 53 African countries submitted their monthly disease reports to AU-IBAR, an improvement over the previous year where 47 countries reported. This high level of commitment in submission of monthly disease reports should be sustained and improved especially with the operationalization of AU-IBAR Animal Resource Information System (ARIS-2) in 2011. Filing and submitting of quality reports by Member States (MS) on timely basis enables AU-IBAR to generate quality monthly briefs which serve as an early warning tool for use by countries, Regional Economic Communities (RECs) and continental livestock authorities. ARIS-2 is also the primary source of data for the Yearbook.

I seize this opportunity to appeal the national veterinary services to sustain the current tempo of reporting and make additional efforts towards improving the quality and the frequency of reporting. I deeply appreciate the efforts of MS in sharing their disease data over the years through timely and regular reporting, and call on the few lagging behind to follow suit.

Professor Ahmed El-Sawalhy
Director of AU-IBAR, Head of Mission

ACKNOWLEDGEMENT

The Director of AU-IBAR hereby acknowledges the continued collaboration of the Heads of the Veterinary Services of AU Member States who regularly submit reports, and in particular the 49 countries who submitted reports in 2010. Their commitment to transparency and sharing of data towards the course of livestock development in the continent is appreciated.

The efforts and commitment of the AU-IBAR editorial team are appreciated.

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ABBREVIATIONS AND ACRONYMS

AHS	African Horse Sickness
ASF	African Swine Fever
AUC	African Union Commission
AU-IBAR	African Union- Interafrican Bureau for Animal Resources
CAC	Codex Alimentarius Commission
CAP	Caprine
CAR	Central Africa Republic
CBPP	Contagious Bovine Pleuropneumonia
CCPP	Contagious Caprine Pleuropneumonia
DRC	Democratic Republic of Congo
ECF	East Coast Fever
FAO	Food and Agriculture Organization
FMD	Foot and Mouth Disease
GDP	Gross Domestic Product
HPAI	Highly Pathogenic Avian Influenza
IBD	Infectious Bursa Disease
ILRI	International Livestock Research Institute
INAP	Integrated National Action Plans
IPPC	International Plant Protection Convention
IRCM	Integrated Regional Coordination Mechanism
LIMS	Livestock information Management System
LEISOM	Livestock Emergency Interventions to Mitigate food crisis in Somalia
LSD	Lumpy Skin Disease
MCF	Malignant Catarrhal Fever
MS	Member States
NCD	Newcastle Disease
OIE	World organization for animal health
PAAT	Program Against African Trypanosomiasis
PANVAC	Pan African Vaccine Center
PPR	Peste des Petites Ruminants
PATTEC	Pan African Tsetse and Trypanosomiasis Eradication Campaign
REC	Regional Economic Community
RP	Rinderpest
RVF	Rift Valley Fever
S&G	Sheep and goat
TADs	Trans-boundary Animal Diseases
TB	Tuberculosis
USAID	United States Agency for International Development
VSF	Vétérinaires Sans Frontières
WAHIS	World Animal Health Information System
WTO	World Trade Organization

EXECUTIVE SUMMARY

In 2010, 49 of the African Union (AU) Member States (MS) submitted their animal

disease reports to AU-IBAR. This was the highest number of reports since 2000. Out of the expected 636 monthly disease reports from all MS, 560 were received as compared to 551 reports received in 2009.

From the 2010 data analysis, a total of 59 different diseases were reported to have caused 17,708 outbreaks, 5,286,686 cases and 500,195 deaths. Of these, the avian species contributed the highest number of cases representing 67.5%, followed by bovine with 28.9% and small ruminants with 3.8%. The highest rate of mortality was observed on avian species with 78.9%, followed by bovine with 10.4%, small ruminants with 5.7% and swine with 3.9% .

For Trans-boundary Animal Diseases (TADs), the highest number of outbreaks was reported for Lumpy skin disease (LSD) (1141), sheep and goat pox diseases (964), Newcastle Disease (NCD) (735), Peste des Petits Ruminants (PPR) (583), Foot and Mouth Disease (FMD) (454), Rift valley Fever (RVF) (350), African Horse Sickness (AHS) (305), Contagious Bovine Pleuro-Pneumonia (CBPP) (218) and African Swine Fever (ASF) (145). For other diseases of economic and zoonotic importance, the highest number of outbreaks were reported for Rabies (1702), Blackleg (1136), Brucellosis (1090), Tuberculosis (915), Anthrax (902), Trypanosomosis (679) Anaplasmosis (646), and Cowdriosis (602).

The most widely distributed diseases that affected more than 20 countries were NCD (35), Rabies (32), LSD (31), Sheep and Goat Pox (26), PPR (25), CBPP (24), Pasteurellosis (23), Trypanosomosis (23), Blackleg (22), African Swine Fever (ASF) (22) and Anthrax (21).

Despite an increase in numbers and in quality of disease reports from MS, some challenges still remain that need due consideration. These include delay in submission, incomplete reports with missing key parameters such as geo-reference data (outbreak location), population at risk, application of laboratory methods for outbreak confirmation, control measures employed, indication of serotypes (for instance in the case of FMD, and specification of the particular or individual species affected in the case of zoonoses, or , the omission of the names of species affected in case of Rabies). Finally, in some instances, goat and sheep are often not identified separately and are referred to as small ruminants.

The operationalization of ARIS-2 in 2011 is expected to address some of the issues raised in this yearbook.

1. INTRODUCTION

Animals and animal resources are vital to the economies of many African countries. Livestock constitutes a source of food, more specifically protein for human consumption; income generation, employment and also contributes to foreign exchange earnings. It is well recognized in the African context that for low income producers, livestock serves as a store of wealth, provides draught power and organic fertilizer for crop production and a means of transport. Livestock production can be considered as a means of converting natural resources into a wide range of outputs such as milk, meat, traction power, energy, dung, hides, wool, fiber and animals.

Animal diseases are a major constraint in the process of converting animal resources into products and services useful to people. Animal diseases cause direct economic losses to the producer and are a threat to consumer safety. The major economic impacts of animal diseases include reduced production and productivity, reduced quality of products, loss of value and access to market, and high costs are associated with disease prevention and control both in humans and animals.

Experience has shown that if a new disease can be detected early enough and prompt action taken, the chances of containing, controlling and progressively eradicating it are markedly enhanced. Conversely, while detection may not be very difficult when the disease becomes widespread or established especially in wildlife reservoirs, control and/or eradication may be extremely difficult and very costly.

Animal disease reporting should be regarded as providing the key to mounting early effective action in the event of a disease emergency. Animal health data collection, collation, analysis and reporting should be recognized as one of the most important core function of a national animal health service.

The Pan African Animal Health Yearbook was established in an effort to document animal disease occurrence at a continental level with respect to temporal and spatial distribution and frequency of occurrence. The Yearbook constitutes part and parcel of the AU-IBAR continental animal health information system. The animal health information system is also designed to enable AU-IBAR to determine trends of disease occurrence over time. It therefore follows from the foregoing that the active participation of all African Union (AU) Member States (MS) in disease reporting is vital to ensuring that AU-IBAR is in a position to compile a complete animal health picture at continental level.

The 2010 edition of the Pan African Yearbook contains information on the number of outbreaks, cases and deaths due to various diseases within the year as well as the statistical analysis, spatial and temporal distribution of the outbreaks. To depict the impact of diseases, gross ranking was determined based on the number of outbreaks and cases.

2. GENERAL STATUS OF MONTHLY ANIMAL DISEASE REPORTING

2.1 Trend of Reporting by countries from 2000 to 2010

Since the year 2000, the number of countries submitting reports to AU-IBAR has steadily increased, and except for the slight decline between the years 2005 to 2007, this number increased from 10 in 2000 to 49 in the year 2010. In 2010, 49 out of the 53 African MS submitted their animal disease reports to AU-IBAR, compared to the 47 countries that reported in 2009. This represents the highest reporting rate (92.45%) so far achieved (Table 1). This good result can be attributed to the commitment and cooperation demonstrated by the Heads of the Veterinary Services, the sustained advocacy by AU-IBAR during conferences, workshops and meetings, as well as the constant alert messages and reminders sent by AU-IBAR.

While it is encouraging to see that almost all the countries in the continent are able to submit reports (Figure 1), the momentum should be maintained and MS should prioritize livestock disease reporting to AU-IBAR and other regional and international organizations as a matter of obligation and an indication of improvement in their communication capabilities.

Table 1: Trend of disease reports to AU-IBAR (2000-2010)

Year	No. of countries that reported	Expected number of Country reports	% of Countries reporting
2000	10	53	18.87
2001	11	53	20.75
2002	37	53	69.81
2003	40	53	75.47
2004	40	53	75.47
2005	37	53	69.81
2006	35	53	66.04
2007	37	53	69.81
2008	44	53	83.02
2009	47	53	88.68
2010	49	53	92.45

Figure 1: Trend of disease reports to AU-IBAR (2000-2010)



2.2 Status of monthly disease reporting in 2010

The reporting rate based on the actual number of monthly reports received has improved over the years. In 2010, a total of 560 (88.05%) monthly reports out of an expected 636 were received from MS (Annex 1). This represents an increase of 20% over the number of monthly reports received in 2004 (433 reports) and 3.14% over that of 2009 (540). However, a few countries did not report any disease outbreak during some months of the year as shown in Annex 1, indicating the absence of diseases during those periods. Even though the importance of zero reporting in situations where there may be no disease outbreaks is recognized, this indicator should be interpreted and/or used with caution and should not be confused with under reporting.

Although there is tremendous improvement in reporting by countries as shown above, the quality, standardization and the timeliness of submission of the monthly disease reports are still a major concern and often several reminders have to be sent to countries before reports are submitted.

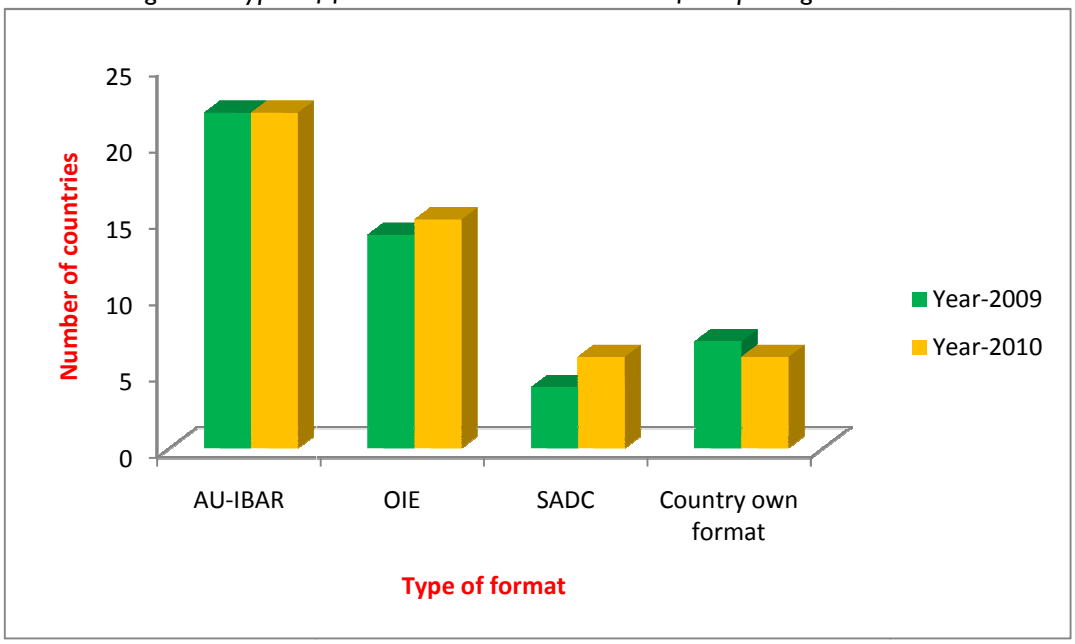
While some countries make effort to provide all the necessary information needed, some omit a few variables, or provide inaccurate data, making cleaning, aggregation and meaningful analysis and interpretation of the data challenging. Some of the key variables needed but are often left out include the population at risk, species affected, indication of the status of the report (i.e. whether it is new or a follow-up), details of laboratory diagnostic tests and results, and geo-reference data). These variables are very important in determining several epidemiological parameters, as the number of outbreaks alone is not a very good indicator of measuring the impact of a disease at country or regional level. As a consequence, the complete picture of the disease situation in Africa does not emerge as accurately as desired. Improving the quality of reports submitted would ensure better analysis and interpretation of results.

2.3 Reporting formats

Different types of formats are used by countries to submit monthly disease status reports to AU-IBAR. In 2010, 22 countries (44.9%) used the AU-IBAR format, 15 countries (30.6%) used the World Organization for Animal Health (OIE) format, 6 countries (12.24%) used Southern Africa Development Cooperation (SADC)'s Livestock Information Management System (LIMS) format, while another 6 countries (12.24%) used their own in-house format (Figure 2) to submit reports to AU-IBAR.

With the current effort being made by AU-IBAR to develop and roll out a new on-line and interoperable database and reporting system in 2011, the formats being used for reporting to OIE, AU-IBAR and LIMS will be unified and the conflict of choice of format to use would be completely eliminated.

Figure 2: Types of formats member countries use for reporting to AU-IBAR



3. GENERAL STATUS OF DISEASES IN AFRICA IN 2010

The general status of animal diseases described in this section and the details provided later for specific diseases are based on the reports received from countries between January and December 2010. All the reports received were analyzed and the summaries are presented in tables, figures and charts below. Some of the variables used include the number of countries affected, the species affected by disease outbreaks or events, the number of cases and deaths, the nature of the disease outbreak, investigation and confirmation by laboratories. Ranking of major diseases reported in 2010 was made separately for TADs and other important diseases based on the above variables.

Where possible, the disease situation in 2010 is compared with that of the previous year. The spatial distribution of outbreaks is also presented on maps. The specific location of disease outbreaks are used in mapping when the geo-reference data is provided.

3.1 Diseases reported

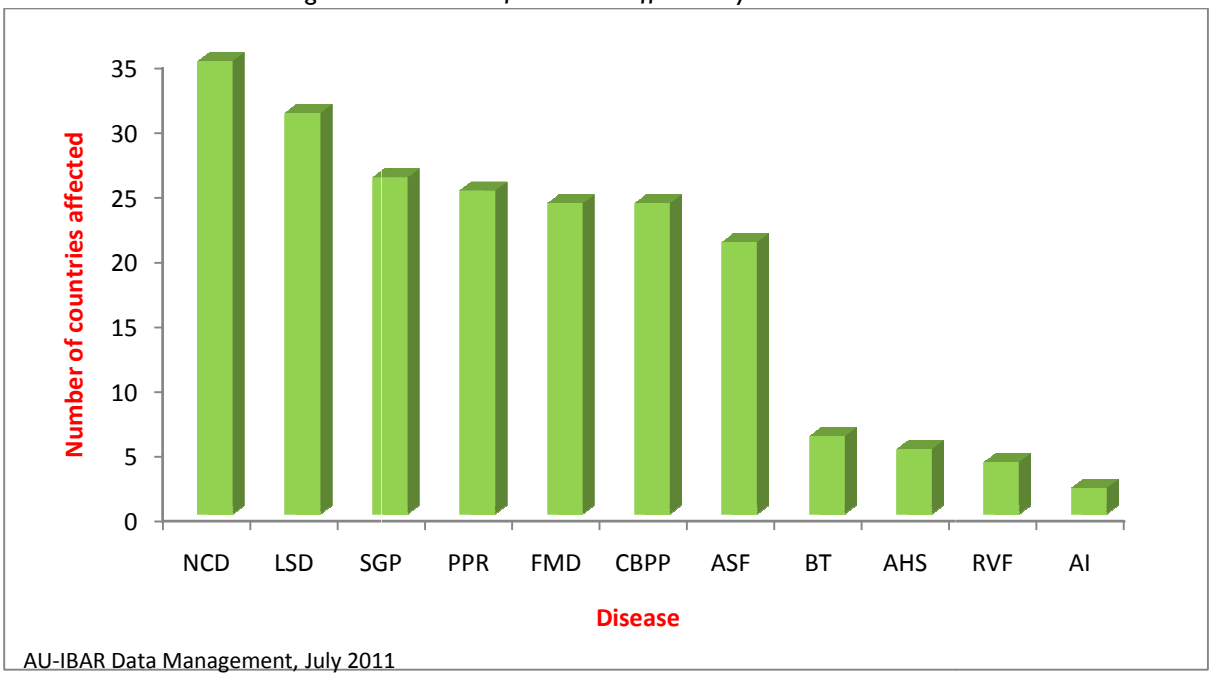
During 2010, a total 79 diseases, ranging from major TADs and Zoonoses, to parasitic diseases and other infections were reported. This is comparable to the 104 diseases, reported in 2009, but not necessarily an indication of improvement in the disease situation in the continent over the last one year.

Among the major TADs reported, NCD, Peste des Petits Ruminants (PPR), African Swine Fever (ASF), CBPP, Sheep and Goat Pox and FMD continued recording high number of outbreaks, cases and deaths as well as spread within and between countries On the other hand Rabies, Brucellosis, Tuberculosis and Anthrax emerged as the most important zoonotic diseases with significant number of outbreaks and number of affected countries.

3.2 Disease situation by number of countries affected

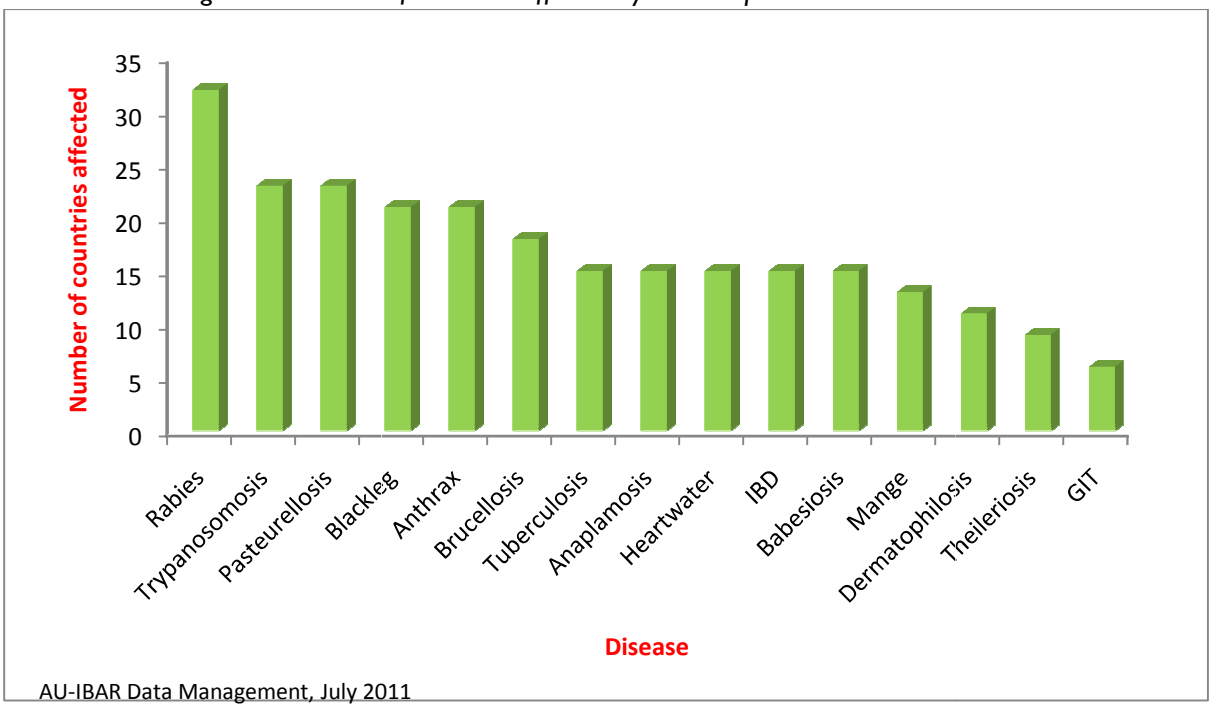
The spatial distribution of major TADs among African countries in 2010 mirrors that of the previous years with a significant number of countries affected by NCD (71.42%), followed by LSD (63.26%), SGP disease (53.06%), PPR (51.02%), CBPP (48.97%), FMD (48.97%) and ASF (42.85%). Figure 3 provides details on the number of MS affected by type of disease.

Figure 3: Number of countries affected by TADS in 2010



Among other important diseases, Rabies had the widest spatial distribution affecting 32 countries (65.30%), followed by Trypanosomosis and Pasteurellosis, (49.93% each), Blackleg (44.89%), Anthrax (42.85%) (%,), Brucellosis (36.73%) and Tuberculosis (30.61%).. Figure 4 shows the number of countries affected by other important diseases in 2010.

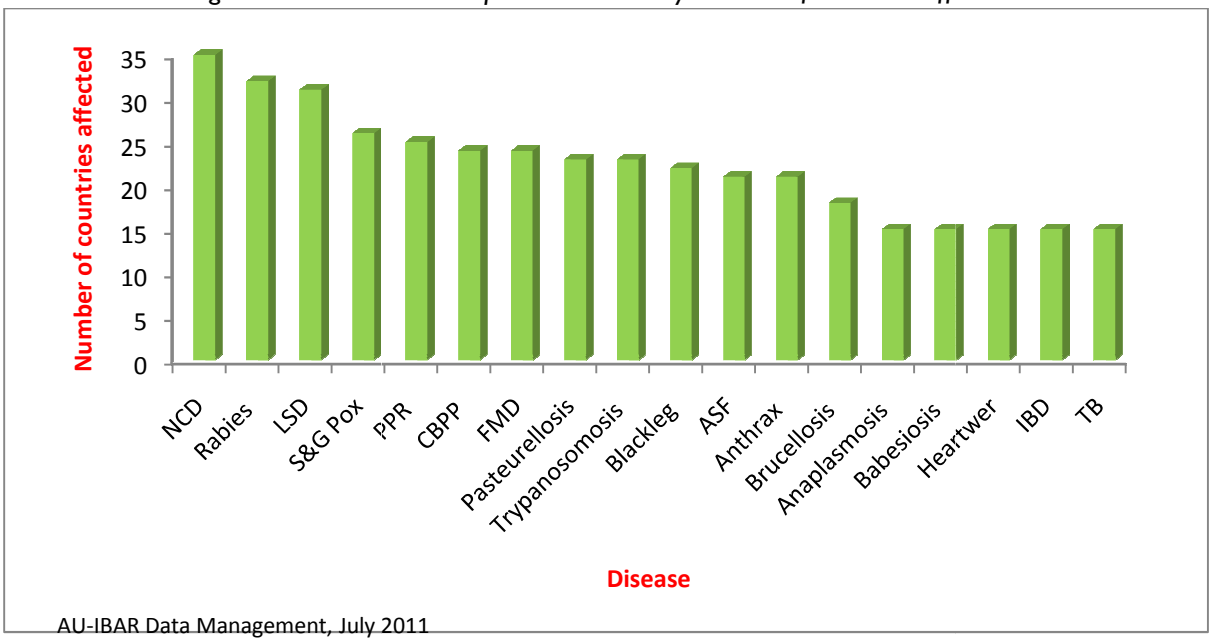
Figure 4: Number of countries affected by other important diseases in 2010



On the overall, the most widely reported diseases in the continent over the last few years have not changed significantly, which is an indication of their endemic status across many countries within the

continent, and a reflection of lack of concerted and coordinated effort in controlling these diseases. The 15 most widely reported diseases in the continent are shown in Figure 5 below.

Figure 5: Most common reported diseases by number of countries affected



3.3 Disease situation by number of reported outbreaks

A total of 17,708 outbreaks involving 79 animal diseases were reported in 2010. These outbreaks affected 5,286,686 animals out of which 500,195 died, 130,208 were slaughtered and 38,135 destroyed.

Like the previous year, Rabies had the highest number of outbreaks (1,702), followed by LSD (1,141), Blackleg (1,136) and Brucellosis (1090). The detailed number of outbreaks and other parameters for all the diseases is provided in Annex 2. Figure 6 shows the most common reported diseases, with outbreaks above 200.

Among the major TADs, LSD outbreaks were the most frequent with 1141 outbreaks while Avian Influenza (AI) had the lowest with only 4 outbreaks in 2010. Although there were minor variations, the general trend in number of outbreaks of TADs and other important diseases had not changed significantly between 2009 and 2010 as shown in Figures 7 and 8 respectively.

The general outlook of the outbreak situation especially in relation to the most frequently reported diseases is a reflection of the degree of inadequacy of control mechanisms for these diseases within affected countries, or a lack of coordination of control programmes and other actions between different countries at regional and continental levels. It is also suggestive of the fact that result oriented control strategies for the diseases have either not been developed or are not working properly.

Figure 6: Most common reported diseases by number of outbreaks

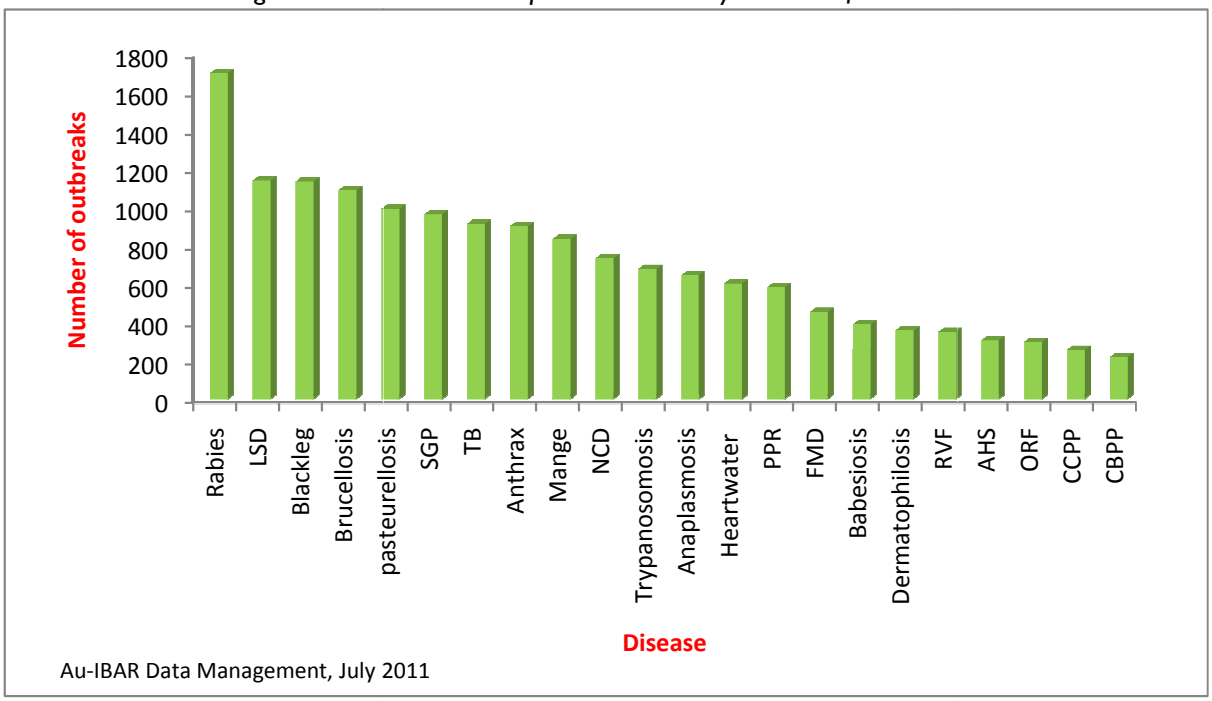


Figure 7: Comparison of the number of outbreaks in other important diseases in 2009 and 2010

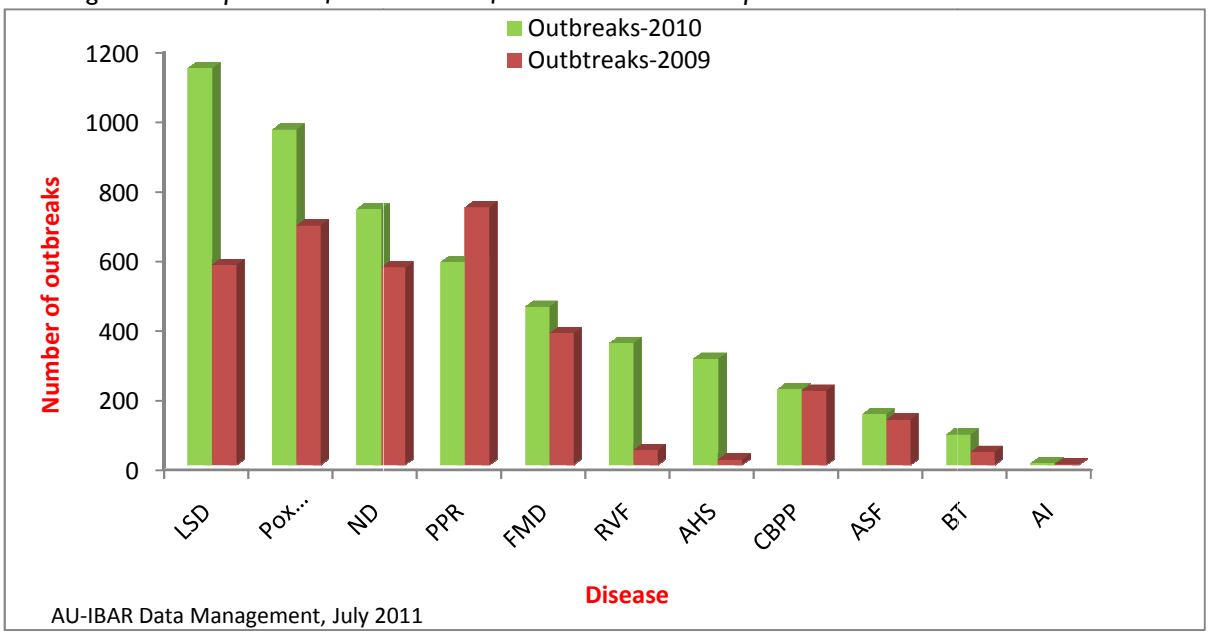
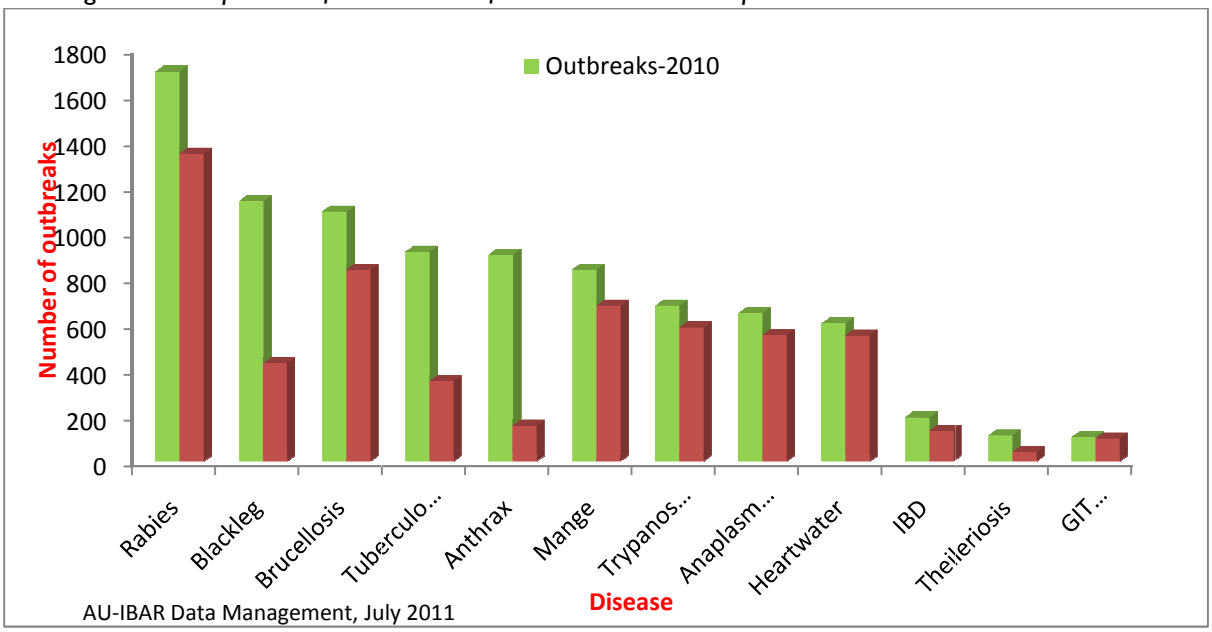


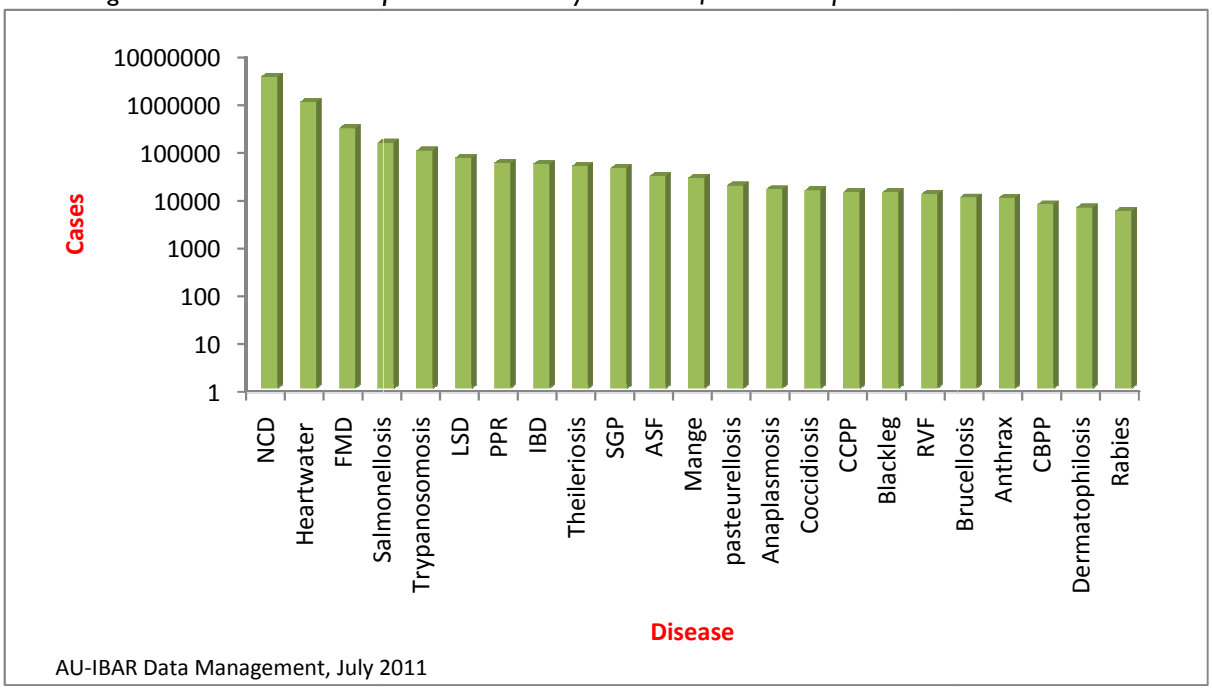
Figure 8: Comparison of the number of outbreaks in other important diseases in 2009 and 2010



3.4 Disease situation by number of cases in reported outbreaks

During 2010, the diseases with the highest number of cases resulting in outbreaks, in order of importance were NCD (3,330,491), Heartwater (980,063), FMD (276,628), Salmonellosis (138,957), Trypanosomosis (94,760), LSD (66,559)and PPR(52,019) . Figure 9 details the 15 most common reported diseases by number of cases in 2010.

Figure 9: Most common reported diseases by number of cases in reported outbreaks in 2010

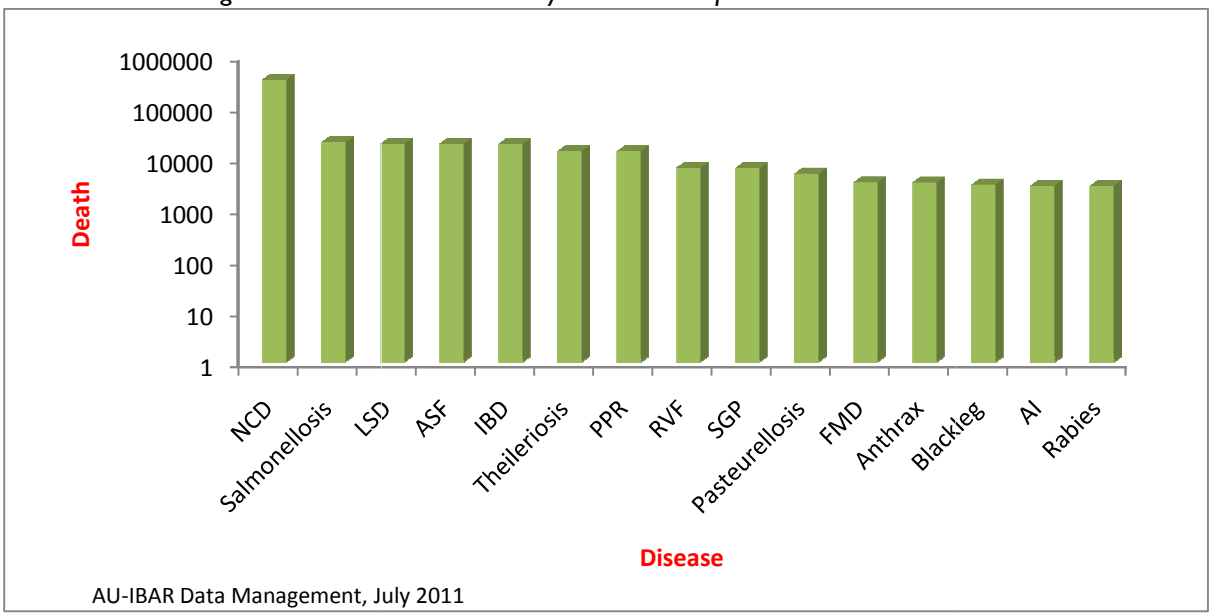


3.5 Disease situation by number of deaths in reported outbreaks

The disease situation by the number of deaths resulting from the reported outbreaks in 2010 was NCD (346,548) followed by Salmonellosis (20,447), LSD (19.198), ASF (19,156), Infectious Bursal Disease (IBD) (Gumboro) (319,095), Theileriosis (13,772) PPR (13,624)and RVF (6,391). Figure 10 presents

diseases with the highest mortality rates in 2010.

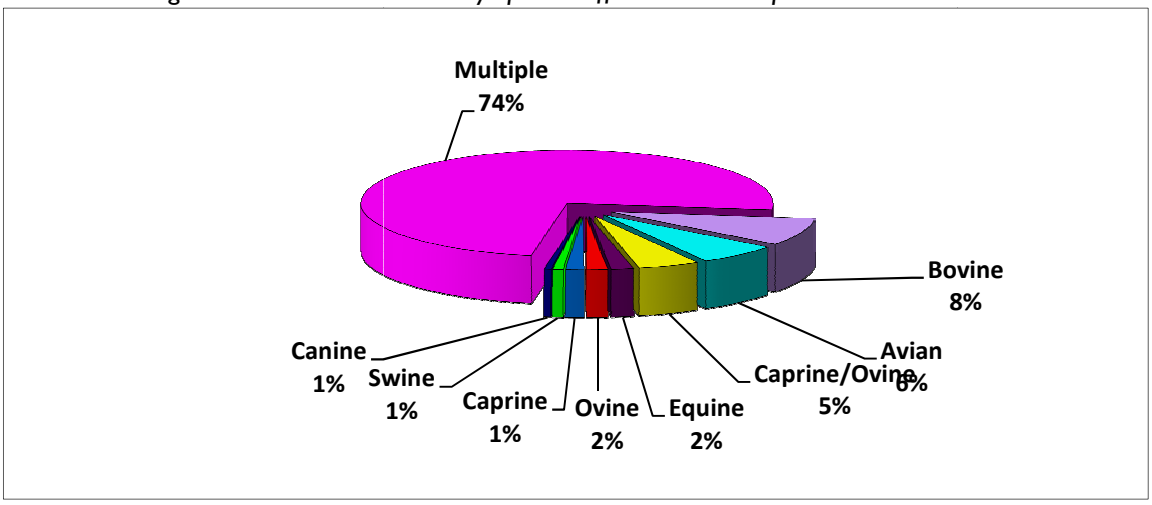
Figure 10: Most common deadly diseases in reported outbreaks in 2010



3.6 Disease situation by species affected in the reported outbreaks in 2010

The disease outbreaks reported in 2010 affected six species of farm animals, two species of companion animals, wildlife, human beings and bees. Multispecies diseases accounted for 74% of the outbreaks, followed by Bovine (8%), Avian (6%), Small Ruminants (5%), Ovine and Equine (2%), while Canine, Swine and Caprine diseases accounted for 1% of the outbreaks.

Figure 11: Disease situation by species affected in the reported outbreaks in 2010



Figures 12 and 13 show the proportion of cases by species affected in the outbreaks and death respectively. Avian species constituted 67.5% of cases with 78.9% of all the deaths. Bovine species came second with 28.9% of cases and 10.4% of reported mortalities. Other species with high proportion of cases and deaths included Ovine (1.2% of all the cases and 2.2% of all the deaths), Caprine (0.8% of all the cases and 2.1% of all the

deaths) and Swine (0.6% of all the cases and 3.9%of all the deaths).

Figure 12: Proportion of cases by species affected in the reported outbreaks in 2010

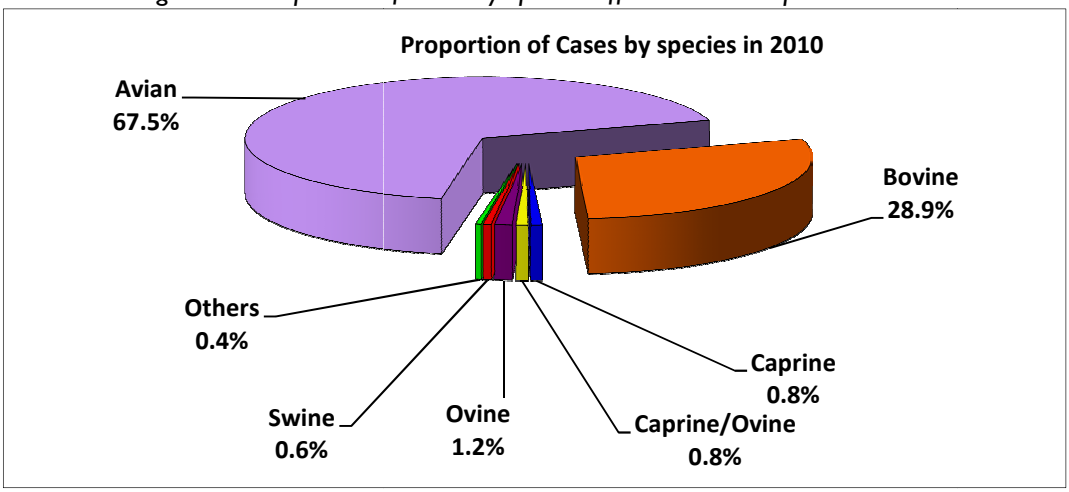
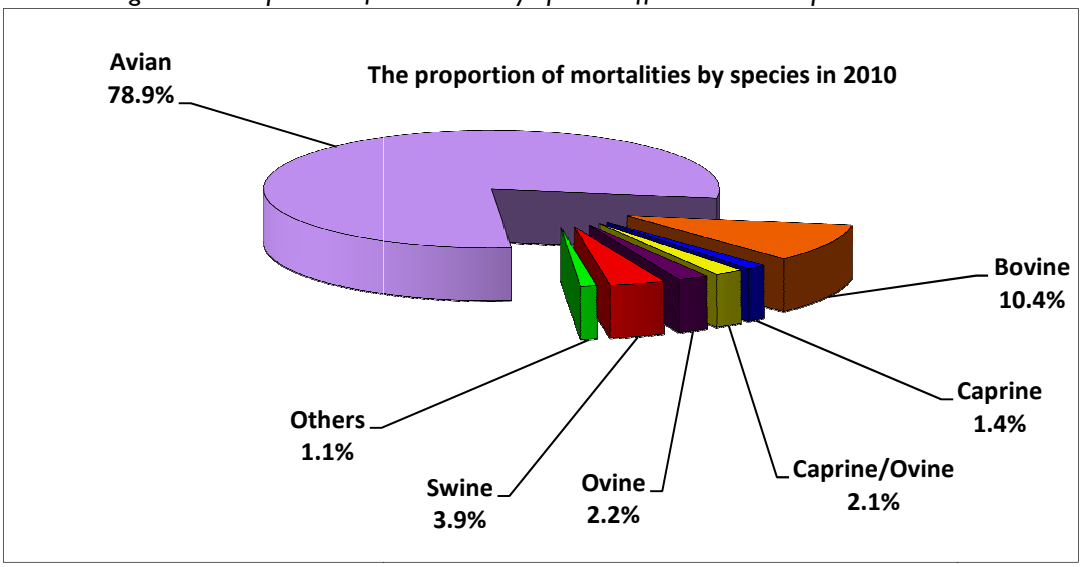


Figure 13: Proportion of mortalities by species affected in the reported outbreaks in 2010

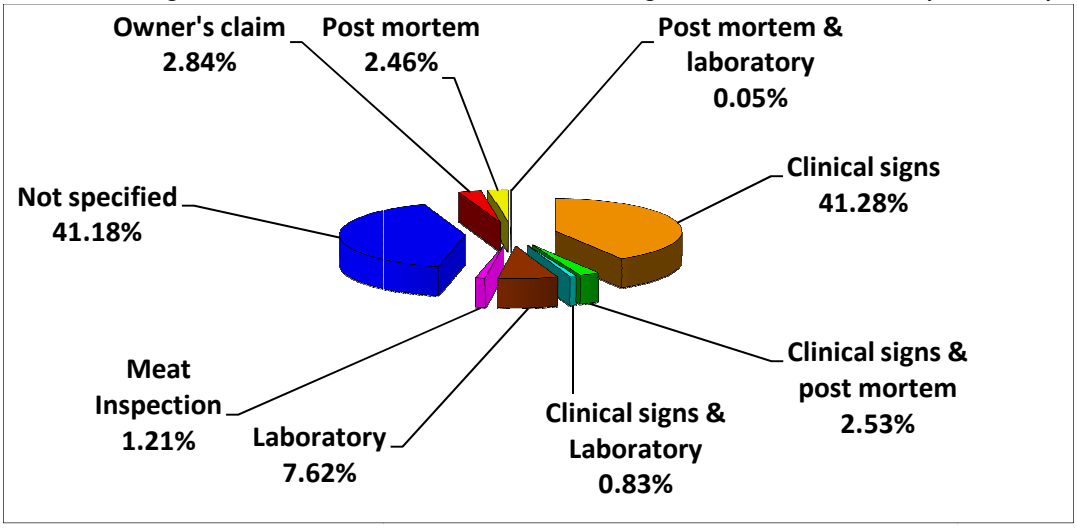


3.7 Nature of disease outbreak investigation and confirmation by laboratory

The precision of the methods used in disease outbreak investigation for establishment of definitive diagnosis is essential in disease reporting and control. A full disease outbreak investigation should normally include both epidemiological and laboratory confirmation. In Africa, most of the animal disease outbreaks or disease events are never or poorly investigated with little or no laboratory involvement. During the 2010 reporting period, most of the reports received did not provide details about the diagnostic methods used to investigate and confirm disease outbreaks, making it difficult to analyze the laboratory involvement in supporting field disease investigations and the reliability of diagnostic methods used. From all the disease reports received in 2010 from MS, 41.18% did not specify the diagnostic method used. However, another 41.28% indicated clinical diagnosis as the basis of determining the diseases involved in the outbreaks (Figure 14).

Confirmation of outbreaks that were supported by laboratory diagnosis accounted for only 8.5% calling for the need to strengthen linkages between field epidemiology and laboratory services. This situation also highlights the urgent need to improve the capacities of laboratories and strengthen access to laboratory services for African countries. The diagnostic methods used for disease outbreak investigations in 2010 are presented in Figure 14.

Figure 14: Nature of disease outbreak investigation and confirmation by laboratory



4. SITUATION OF MAJOR ANIMAL DISEASES REPORTED IN AFRICA DURING 2010

4.1 African horse sickness

A total of 305 outbreaks of AHS were recorded in five countries in 2010, compared to 15 outbreaks reported from 7 countries in 2009. A possible reason for the dramatic increase in the number of outbreaks might be the improvement in reporting by countries especially Ethiopia and South Africa. The highest number of AHS outbreaks was recorded from Ethiopia with 224 outbreaks followed by South Africa reporting 71 outbreaks (Table 2). Map 1 shows that the spatial distribution of AHS outbreaks in South Africa was widespread while in Ethiopia it was confined to the highlands (. Overall, the outbreaks of AHS affected a total of 2,394 horses and approximately half (1,143) were reported dead. The number of horses affected and those that died in 2009 were 1321 and 413 respectively.

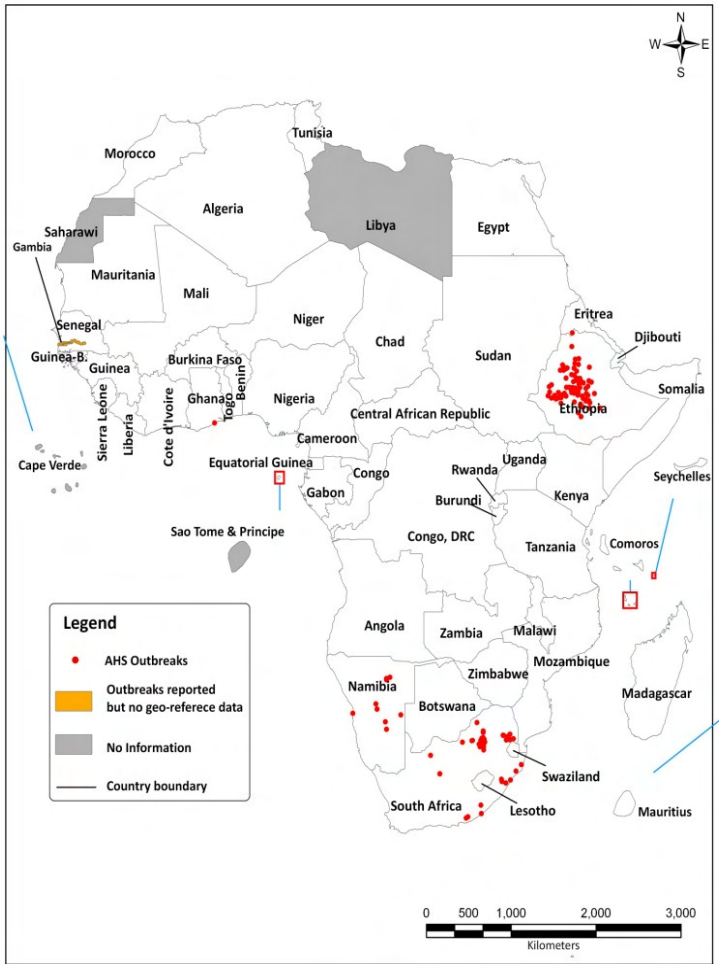
Table 2: Countries reporting African horse sickness in Africa in 2010

Country	Outbreaks	Cases	Deaths	Slaughtered	Destroyed
Ethiopia	224	2,200	1,098	NS	NS
Ghana	1	38	9	NS	NS
Namibia	9	36	9	NS	NS
South Africa	71	116	23	NS	1
The Gambia		4	4	NS	NS
Total (5)	**305**	**2,394**	**1,143**	**NS**	**1**

NS: Not specified

Ethiopia, Namibia, South Africa and the Gambia also reported the disease in 2008 and 2009.

Map 1: Spatial distribution of African horse sickness in Africa in 2010



4.2 African swine fever

During 2010, ASF affected 21 countries (Table 3). Even though not all the affected countries provided the exact number of outbreaks within the year, a total of 154 outbreaks were recorded by 12 countries. Out of the 27,529 cases reported, 19,156 died. Rwanda registered the highest number of outbreaks accounting for about 32% of the reported outbreaks, followed by Burkina Faso (23%), Malawi (11%), Benin (7.5%) and Mozambique (7%) in descending order.

Table 3: Countries reporting African swine fever in Africa in 2010

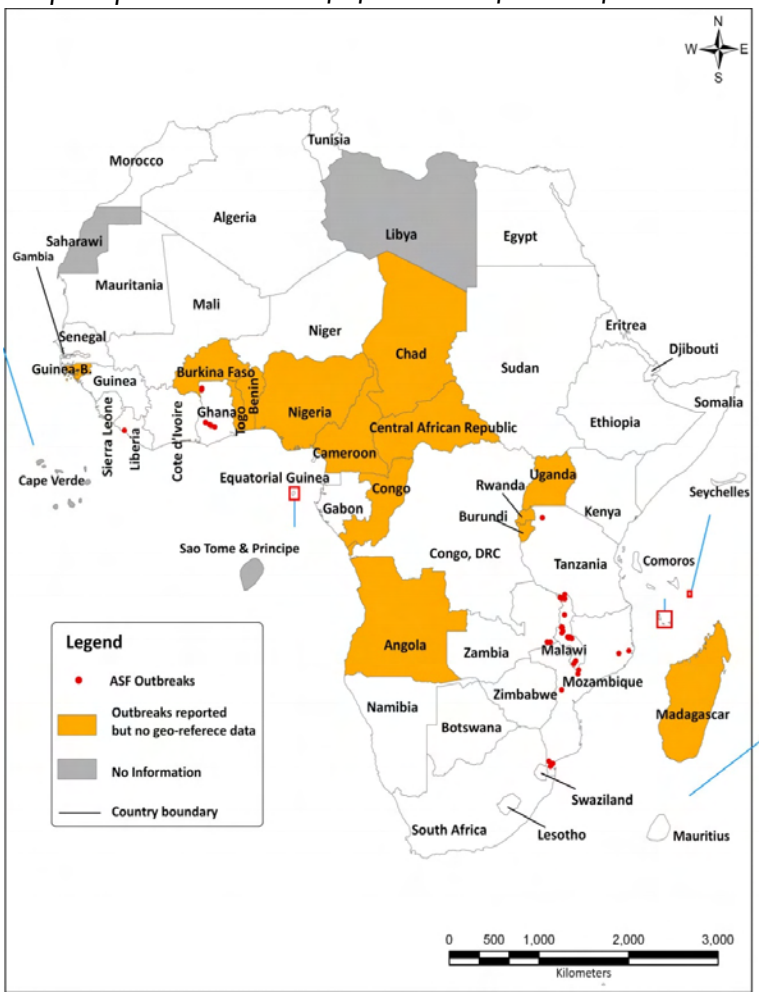
Country	Outbreaks	Cases	Deaths	Slaughtered	Destroyed
Angola	NS	161	161	20	161
Benin	11	895	545	290	NS
Burkina Faso	33	2,668	1,966	NS	NS
Burundi	NS	6,874	4,992	NS	NS
Cameroon	NS	1,451	938	7	NS
Central African Republic	1	66	66	NS	NS
Chad	NS	6,241	2,607	3,626	16
Congo/Brazzaville	NS	28	31	NS	5
Ghana	8	530	295	50	190
Guinea-Bissau	3	427	427	NS	NS
Liberia	1	4	NS	NS	3
Madagascar	NS	181	174	NS	NS
Malawi	16	5,433	5,080	70	31
Mauritius	NS	30	NS	NS	NS
Mozambique	10	455	245	280	592
Nigeria	6	93	39	38	1
Rwanda	46	612	547	1,778	597
Tanzania	NS	5	3	NS	NS
Togo	NS	998	795	9	23
Uganda	7	130	42	60	51
Zambia	3	247	203	NS	NS
Total (21)	**145**	**27,529**	**19,156**	**6,228**	**1,670**

NS: Not specified

ASF has been widely reported across the continent in the past few years in all the countries listed, except Chad which reported the disease for the first time in 2010. From the pattern of reporting over the past three years, the disease would appear to have spread to Chad, Liberia and Mauritius within the reporting year. Reports from Chad confirm that the disease was reported for the first time in that country in 2010. The epidemiology of the disease needs to be carefully documented in order to understand its mode of introduction and the potential factors that may lead to or stop its establishment.

Map 2 shows the spatial distribution of the disease during 2010. Fourteen countries reported outbreaks without giving geo-references.

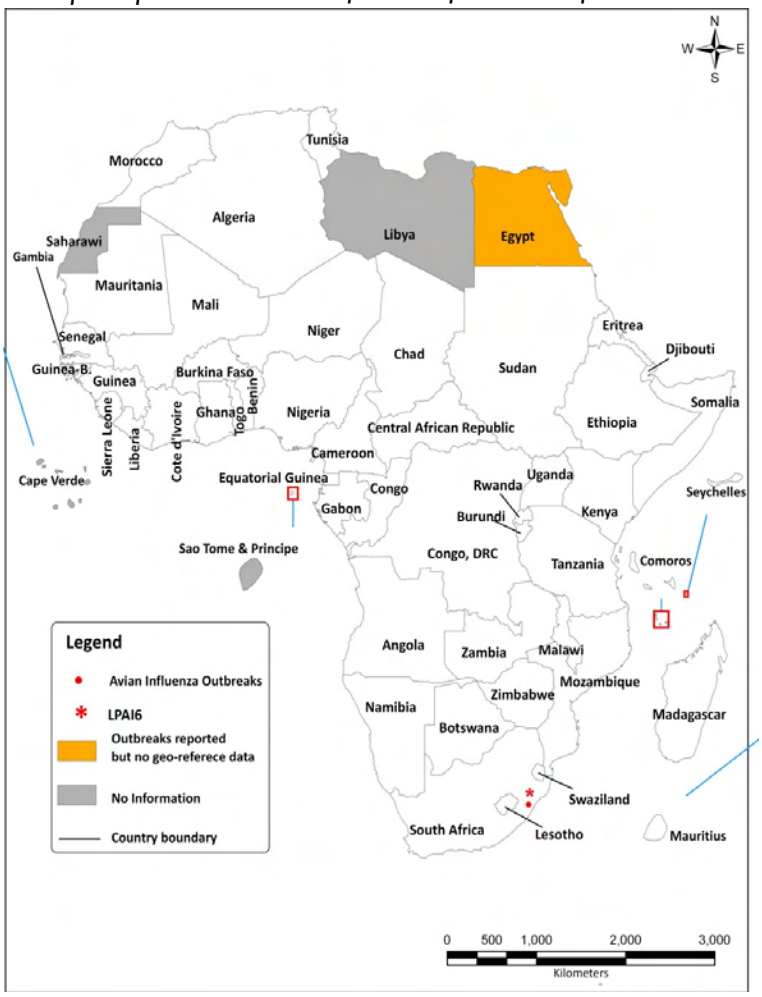
Map 2: Spatial distribution of African swine fever in Africa in 2010



4.3 Avian Influenza

Highly Pathogenic Avian Influenza (HPAI) was reported from Egypt where the disease is currently entrenched (Map 3). South Africa reported AI (H5N2) strain LPA16 in ostriches where 2899 cases and the same number of deaths were recorded. Considering control measures that have been employed in the past during similar outbreaks, it is likely that the cases reported as deaths were actually the number of ostriches destroyed to stop the spread of the disease. In the last 2 years, only Togo reported HPAI in 2008 and Egypt in 2009.

Map 3: Spatial distribution of avian influenza in Africa in 2010



4.4 Bluetongue

Six countries reported Bluetongue during 2010 and in 2009. Only Lesotho and South Africa reported the disease before 2009. The highest number of bluetongue outbreaks was reported in Algeria followed by South Africa, Lesotho and Tunisia. Out of a total of 87 outbreaks, 744 cases and 80 deaths were recorded (Table 4).

Table 4: Countries reporting blue tongue in Africa in 2010

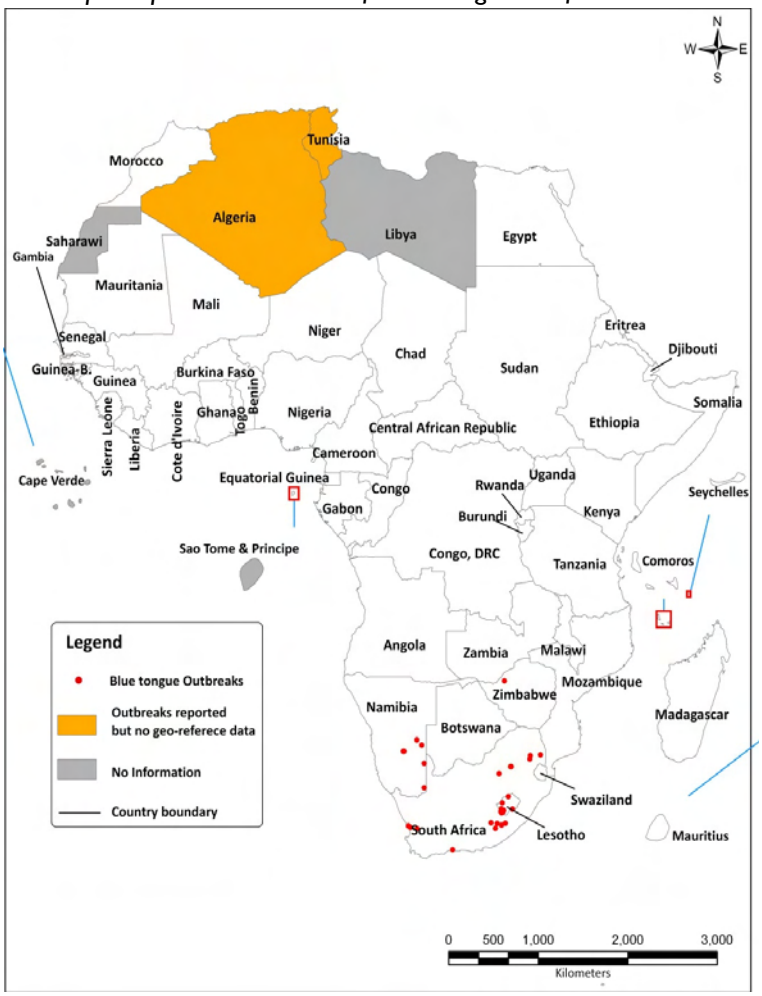
Country	Outbreaks	Cases	Deaths	Slaughtered	Destroyed
Algeria	48	137	24	1	0
Lesotho	9	382	2	0	0
Namibia	6	57	24	0	0
South Africa	15	118	30	NS	1
Tunisia	8	35	0	0	0
Zimbabwe	1	15	0	0	0
Total (6)	**87**	**744**	**80**	**1**	**1**

NS: Not specified

Algeria and Tunisia reported the disease in 2009 and even though the geo-reference data for the foci of disease outbreaks were not provided, it appears that being neighboring countries, the factors determining the occurrence of the disease in both countries

point to cross-border trade in sheep or some other common favorable environmental situation in the area (Map 4).

Map 4: Spatial distribution of Blue Tongue in Africa in 2010



4.5 Contagious bovine pleuropneumonia

In 2010, except for the northern region of Africa, countries within the remaining regions of the continent continued reporting CBPP. The disease was reported in 24 sub-Saharan countries, extending from Mali in the west to Ethiopia in the east and from Chad in the centre to Namibia in the south. Not all countries reported the number of outbreaks, but the highest numbers of outbreaks were recorded in Ghana (58), followed by Ethiopia (47), Côte d'Ivoire and Burkina Faso (21 outbreaks each), Somalia (17), Nigeria (14) and Central African Republic (CAR) (13). The 24 affected countries recorded a total of 218 outbreaks involving 7,043 cases and 1,715 deaths (Table 5).

Table 5: Countries reporting CBPP in Africa in 2010

Country	Outbreaks	Cases	Deaths	Slaughtered	Destroyed
Angola	NS	647	52	NS	17
Benin	3	109	34	6	NS
Burkina Faso	21	379	124	NS	NS
Cameroon	NS	54	3	NS	NS
Central African Republic	13	718	346	NS	NS
Chad	NS	934	457	50	37
Congo	NS	150	50	NS	20
Congo, DRC	1	418	50	NS	NS
Cote d'Ivoire	21	NS	NS	NS	NS
Ethiopia	47	1,285	202	6	NS
Gabon	1	17	6	NS	6
Ghana	58	396	116	142	NS
Mali	3	38	24	4	NS
Namibia	3	14	1	NS	NS
Niger	NS	13	13	NS	NS
Nigeria	14	274	17	48	NS
Rwanda	3	365	35	230	112
Sierra Leone	1	17	17	17	NS
Somalia	17	153	20	NS	NS
Sudan	3	36	15	197	NS
Tanzania	NS	19	15	NS	NS
Togo	NS	728	56	5	NS
Uganda	8	210	31	67	3
Zambia	1	69	31		
Total (24)	**218**	**7,043**	**1,715**	**772**	**195**

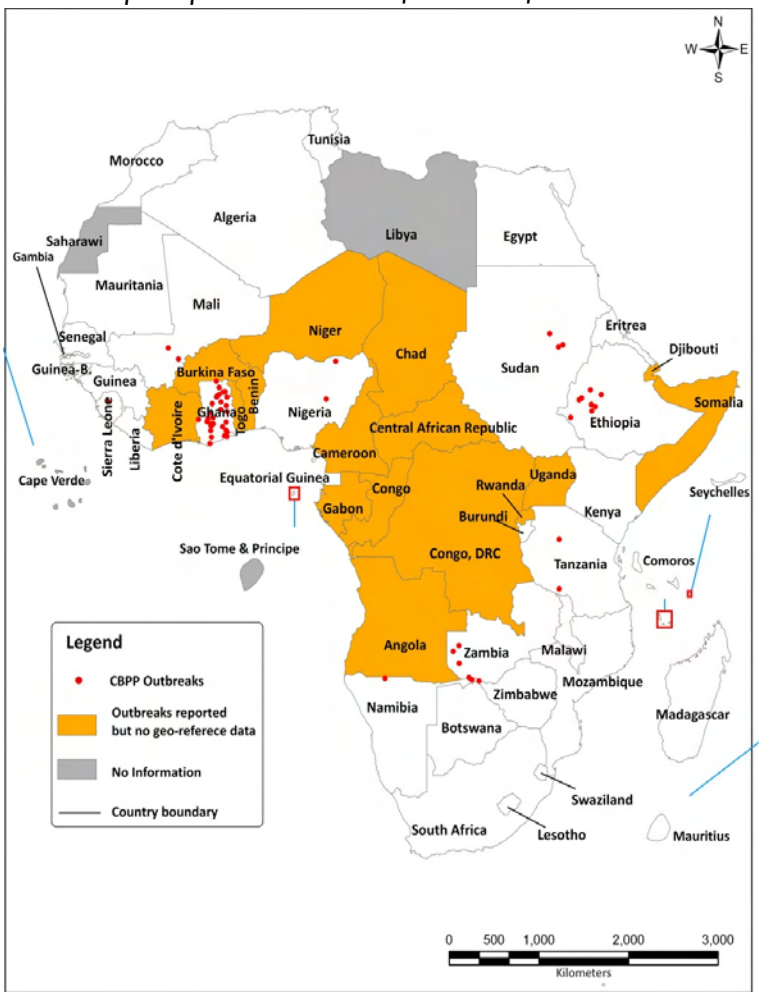
NS: Not specified

Out of the countries listed in Table 5, 67% had been reporting the disease over the past three years while the Democratic Republic of Congo (DRC), Congo, Gabon, Rwanda and Sierra Leon reported the disease for the first time. The number of countries reporting CBPP has steadily increased from 17 in 2008 to 20 in 2009 and 24 in 2010. There is no evidence to prove that this steady increase is a reflection of the progression to new areas or whether it is purely due to an increase in reporting. Whatever the true status is, CBPP control remains a big challenge for many affected countries. The control measures being used include vaccination and movement control, but there are is undocumented evidence to suggest that a number of cattle owners have resorted to the indiscriminate use of antibiotics to treat clinical cases. Spread of the disease is largely attributed to uncontrolled movement of cattle.

The spatial distribution of CBPP (Map 5) appears to be consistent with some production systems that are practiced in the affected countries. The predominant production system in the affected area that extends from Mali in the west to Ethiopia in the east and from Chad in the centre to Namibia in the south is pastoralism. Transhumance could explain the persistence

of the disease in northern Namibia and parts of Angola and Zambia. The absence of the disease from the rest of southern Africa could be attributed to the predominantly sedentary nature of the cattle production systems. Against this background, it is important to evaluate the effectiveness and efficiency of the current methods being employed to control CBPP in Africa and to seek better strategies (approaches) towards controlling the disease.

Map 5: Spatial distribution of CBPP in Africa in 2010



4.6 Contagious Caprine Pleuropneumonia

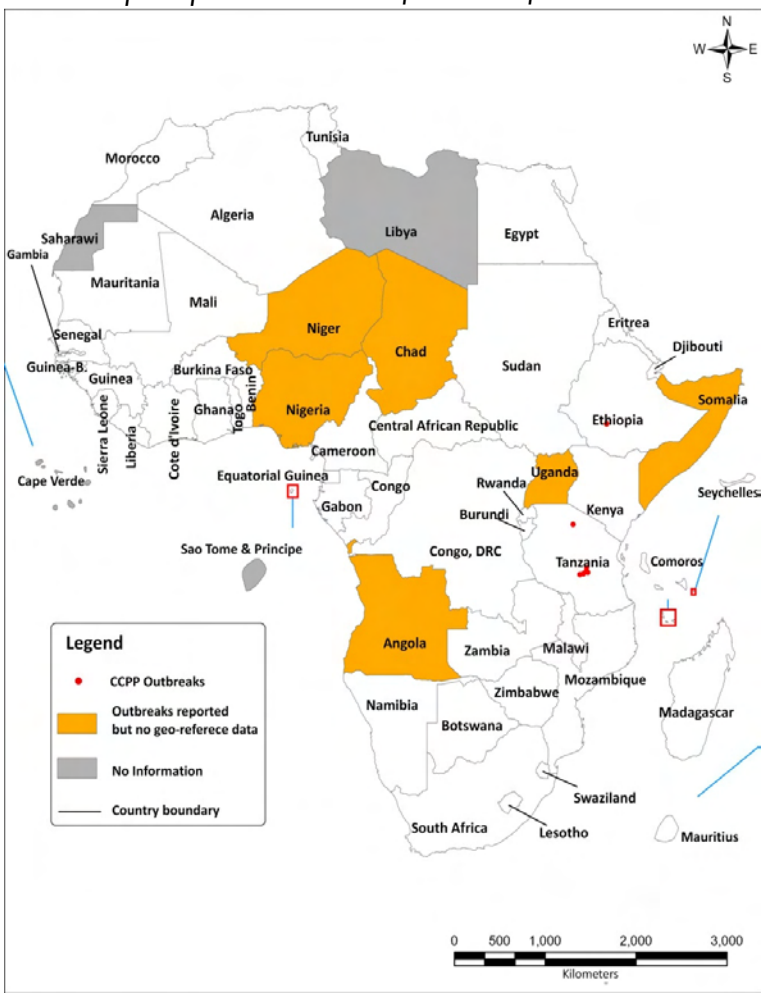
Eight (8) countries reported the occurrence of CCPP in 2010, with only Ethiopia and Tanzania having consistently reported the disease in 2008 and 2009. For the other countries, reporting has been rather erratic between 2008 and 2010. The erratic reporting could be attributed to the difficulties of laboratory confirmation faced by many countries and also the non reconnaissance of the disease by the field veterinarians that make confusion with other disease such as pasteurellosis and PPR. Map 6 shows the spatial distribution of the disease in 2010.

Table 6: Countries reporting CCPP in Africa in 2010

Country	Outbreaks	Cases	Deaths	Slaughtered	Destroyed
Angola		18	9	NS	NS
Chad	NS	242	103	18	40
Ethiopia (2008, 2009)	18	1,061	346	NS	NS
Niger (2008)	NS	19	8	NS	NS
Nigeria (2008)	1	3	2	NS	NS
Somalia (2009)	233	4,678	757	25	34
Tanzania (2008, 2009)	NS	365	145	NS	NS
Uganda (2008)	4	6,503	10	409	20
Total (8)	**256**	**12,889**	**1,380**	**452**	**94**

NS=Not specified

Map 6: Spatial distribution of CCPP in Africa in 2010



4.7 Foot and mouth disease

A total of 24 countries reported outbreaks of FMD in 2010 (Table 7). This is a disease which is widely spread and affected almost all parts of the continent. Not all the affected countries reported the exact number of outbreaks that occurred during the year. However, from those countries that did report, the highest number of outbreaks were

Burkina Faso (111), followed by Ethiopia (95), Ghana (39), Benin (28), Nigeria (13) and Cote d'Ivoire (8).

All countries listed, except Mali and Mozambique have been reporting FMD outbreaks for the last two years. Burundi reported the highest number of cases in three years.

Table 7: Countries reporting FMD in Africa in 2010

Country	Outbreaks	Cases	Deaths	Slaughtered	Destroyed
Benin	28	6,603	1,670	82	15
Botswana	NS	21	NS	NS	NS
Burkina Faso	111	37,793	117	NS	NS
Burundi	NS	195,402	567	NS	NS
Cameroon	NS	558	56	NS	NS
Chad	NS	691	49	7	18
Cote d'Ivoire	8	NS	NS	NS	NS
Ethiopia	95	20,008	103	3	NS
Ghana	39	1,025	15	41	NS
Kenya	NS	1,218	158	2	NS
Mali	4	112	3	NS	NS
Mozambique	1	710	NS	NS	NS
Namibia	1	144	NS	NS	NS
Niger	NS	393	24	NS	NS
Nigeria	13	259	9	8	3
Rwanda	1	8	3	5	3
Senegal	6	38	NS	NS	NS
Somalia	105	1,340	44	2	NS
South Africa	6	13	3	NS	9
Sudan	13	173	6	NS	NS
Tanzania	NS	4,052	62	NS	NS
Togo	NS	1,547	433	22	NS
Zambia	NS	3,352	13	NS	NS
Zimbabwe	23	1,168	NS	NS	NS
Total (24)	**454**	**276,628**	**3,335**	**172**	**48**

NS=Not specified

The detailed spatial distribution of FMD in 2010 is shown on map 7

Map 7: Spatial distribution of FMD in Africa in 2010

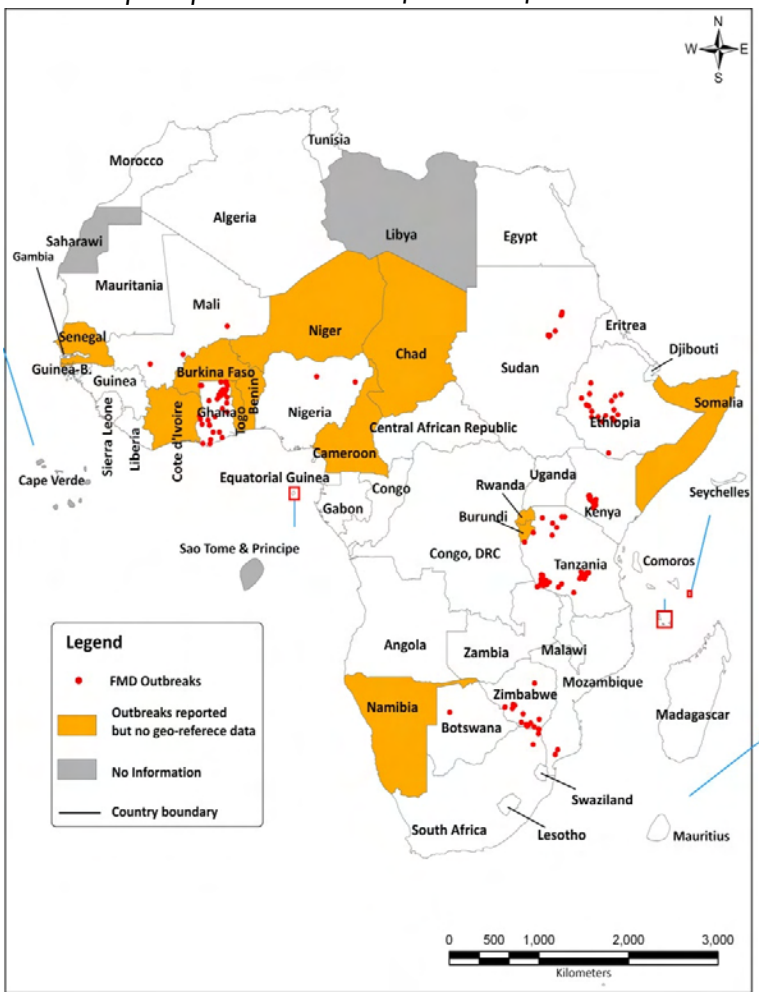


Table 8 shows the confirmed serotypes that were involved in some of the outbreaks that occurred between 2006 and 2010. In 2010, only 7 out of 24 (7/24) countries that reported FMD outbreaks provided information about the serotypes, compared to 4/23 and 2/20 in 2008 and 2009 respectively. It is evident that the serotypes of majority of outbreaks are not known, an indication of the weakness of the laboratory network within the continent. For countries that use vaccination as a control measure, effectiveness of the vaccination campaign largely depends on knowing the serotype involved as there is no cross protection between different serotypes. Other control measures reportedly used include movement control, slaughter and quarantine.

Table 8: Countries reporting FMD serotypes in Africa from 2006 to 2010

	FMD serotypes			
Country	**2006 & 2007**	**2008**	**2009**	**2010**
Benin	NS	O, SAT 1 & 2	O, SAT 1 & 2	A, O, SAT 1, SAT 2
Botswana	SAT 1 & 2	SAT 2	NS	NS
DRC	O	NS	NS	NS
Egypt	A, O	NS	A, O	NS
Ethiopia	O	NS	NS	NS
Mauritania	A	NS	NS	NS
Mozambique	NS	NS	NS	SAT 2
Namibia	NS	NS	NS	SAT1
Rwanda	NS	A, O, SAT 2	A, O, SAT 2	A, O, SAT2
South Africa	SAT 1 & 3	NS	NS	SAT 2
Togo	NS	O, SAT 1	O, SAT 1	O, SAT 1
Zimbabwe	NS	NS	NS	SAT 1,SAT 2

NS=Not specified

During the year under review, the OIE freedom status (without vaccination) was maintained by Mauritius and Madagascar, while Namibia, South Africa, Swaziland and Botswana were able to maintain selected OIE recognized free zones without vaccination. It is easy to understand that Madagascar and Mauritius maintained their OIE freedom status as these are islands. Cattle production systems across Africa largely fall either in the pastoral or sedentary categories. The predominantly sedentary systems of Southern Africa have enabled Namibia, South Africa, Swaziland and Botswana to maintain certain OIE recognized free zones without vaccination. These zones have largely been supported by the erection of fences which are not practical in the predominantly pastoral systems of production where movement control is very difficult to implement. It is therefore evident that for the rest of Africa where extensive pastoral system is being practiced, a more pragmatic solution to controlling FMD needs to be found.

4.8 Lumpy skin disease

During 2010, 31 countries reported the occurrence of LSD in their territories (Table 9). After Rabies, LSD had the second highest number of outbreaks in Africa during 2010 with a total of 1,141 outbreaks recorded involving 66,559 cases and 19,198 deaths. The highest number of outbreaks was reported from Zimbabwe (350), followed by Ethiopia (341 outbreaks), Burkina Faso (195), Swaziland (63), Zambia (39), South Africa (36), Somalia (26), Botswana (17) and Rwanda (14). Out of the countries that reported LSD in 2010, 74% also reported the disease either in 2008, or 2009, or in both years suggesting that the disease may be endemic in at least 74% of the countries reporting its occurrence. The high fatality rate in Burundi (70%) calls for further investigations as it is not consistent with LSD. Further, given the mode of transmission of LSD, the low figures for outbreaks and cases as reported by DRC, Djibouti, Ghana, Malawi, Mali and Senegal may reflect under reporting. Map 8 presents the spatial distribution of LSD.

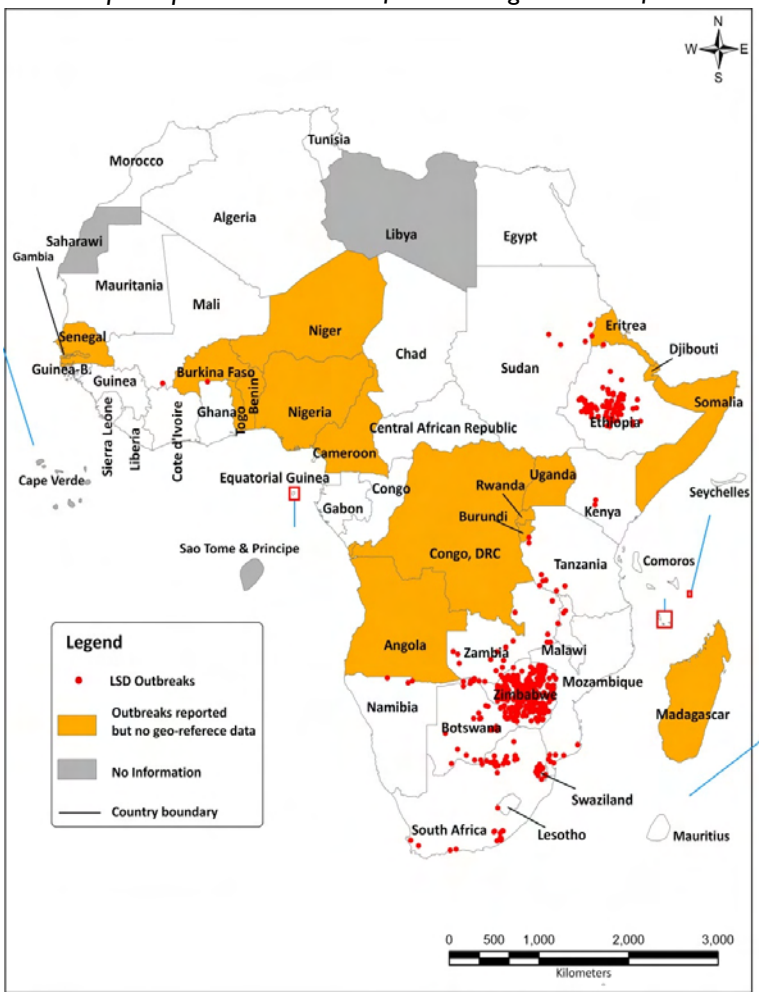
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Table 9: Countries reporting LSD in Africa in 2010

Country	Outbreaks	Cases	Deaths	Slaughtered	Destroyed
Angola	NS	264	17	NS	9
Benin	7	2,053	52	127	NS
Botswana	17	113	10	NS	NS
Burkina Faso	195	8,213	540	NS	NS
Burundi	NS	24,834	17,300	NS	NS
Cameroon	NS	13	NS	NS	NS
Congo, DRC	1	3	NS	NS	NS
Djibouti	1	6	NS	NS	NS
Eritrea	3	583	62	NS	NS
Ethiopia	341	12,172	898	5	NS
Ghana	1	2	NS	NS	NS
Kenya	NS	53	13	NS	NS
Madagascar	NS	227	8	NS	NS
Malawi	2	13	NS	NS	NS
Mali	2	23	3	1	NS
Mozambique	8	475	59	NS	NS
Namibia	8	37	NS	NS	NS
Niger	NS	1,249	54	NS	NS
Nigeria	6	1,021	NS	6	NS
Rwanda	14	44	7	6	6
Senegal	1	30	NS	NS	NS
Somalia	26	339	21	NS	NS
South Africa	36	137	10	NS	3
Sudan	9	111	2	NS	NS
Swaziland	63	186	3	3	NS
Tanzania	NS	56	5	NS	NS
The Gambia	NS	17	1	NS	NS
Togo	NS	222	36	NS	NS
Uganda	11	11,259	NS	95	4
Zambia	39	804	17	NS	NS
Zimbabwe	350	2,000	80	NS	NS
Total (31)	**1,141**	**66,559**	**19,198**	**243**	**22**

NS=Not specified

Map 8: Spatial distribution of LSD during 2010 in Africa



4.9 Newcastle disease

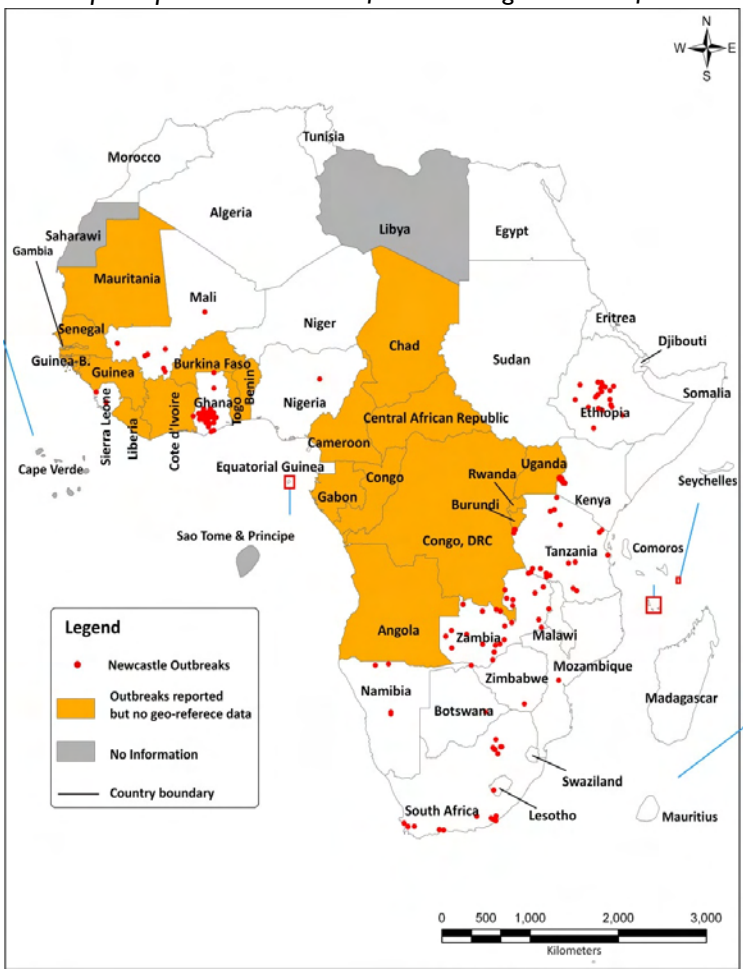
During the year under review, 35 countries recorded a total of 735 outbreaks of NCD (Table 10). Ghana (302), Burkina Faso (126), Ethiopia (80), Zambia (69), Benin (39), Uganda (25), Cote d'Ivoire (24) and South Africa (22) reported the highest number of outbreaks. Gabon, Sierra Leon and Liberia reported NCD for the first time in three years. Capacity building for disease reporting in general has improved in Sierra Leon and Liberia due mainly to the Support Programme to Integrated National Action Plans for Avian and Human Influenza (SPINAP) implementation, during which time the two countries were given preferential treatment as countries with special needs. The apparent absence of NCD prior to 2010 is likely a reflection of lack of reporting as opposed to absence of the disease. Overall, all other countries consistently reported NCD during the past three years including 2010, consistent with the known endemicity of the disease on the continent. The importance of NCD on the African continent is further reflected by its consideration in AU-IBAR's Vaccines for Control of Neglected Animal Diseases in Africa (VACNADA) initiative as one of the key neglected diseases. Map 9 shows the spatial distribution of NCD during 2010.

Table 10: Countries reporting NCD in Africa in 2010

Country	Outbreaks	Cases	Deaths	Slaughtered	Destroyed
Angola	NS	259	259	25	259
Benin	39	8,911	2,785	706	20
Botswana	1	1	1	NS	NS
Burkina Faso	126	22,955	9,928	NS	NS
Burundi	NS	3,176,000	285,847	NS	NS
Cameroon	NS	2,498	2,222	NS	NS
CAR	2	512	508	NS	NS
Chad	NS	3,219	2,132	209	870
Congo	NS	570	265	NS	NS
Congo, DRC	NS	30	NS	NS	NS
Cote d'Ivoire	24	NS	NS	NS	NS
Ethiopia	80	3,592	1,613	55	NS
Gabon	5	471	471	NS	471
Ghana	302	45,339	5,366	11	NS
Guinea	4	582	490	12	NS
Guinea-Bissau	3	50	38	11	NS
Kenya	NS	3,928	2,902	99	NS
Lesotho	1	13	13	NS	NS
Liberia	1	350	280	125	NS
Madagascar	NS	504	230	NS	NS
Mali	8	22,729	17,636	3	NS
Mauritania	NS	5	5	NS	Ns
Mozambique	1	38	37	NS	NS
Namibia	4	97	76	NS	NS
Nigeria	9	1,048	430	292	2
Rwanda	NS	10	10	1	9
Senegal	2	400	330	NS	NS
Sierra Leone	1	6,263	518	NS	NS
South Africa	22	3,153	1,731	NS	86
Tanzania	NS	6,052	3,469	NS	NS
The Gambia	NS	130	125	NS	NS
Togo	NS	3,030	1,416	265	58
Uganda	25	8,522	75	2,175	230
Zambia	69	9,037	5,218	NS	NS
Zimbabwe	6	193	122	NS	NS
Total (35)	**735**	**3,330,491**	**346,548**	**3,989**	**2,005**

NS=Not specified

Map 9: Spatial distribution of NCD during 2010 in Africa.



4.10 Peste des petits ruminants

The number of countries reporting PPR outbreaks increased from 19 in 2008, to 20 in 2009 and 25 during the year under review. Out of the 25 countries that reported the disease in 2010 (Table 11), 64% also reported the disease during the past two years. In total, 583 outbreaks were recorded in 25 countries covering central, eastern and western Africa. Ghana (152), Ethiopia (144), Benin (83), Nigeria (61), Guinea (56), Central African Republic (22), Sudan (19), Cote d'Ivoire (17) and Guinea-Bissau (12) reported the highest number of outbreaks in 2010. Gabon and Liberia reported the disease for the first time in three years.

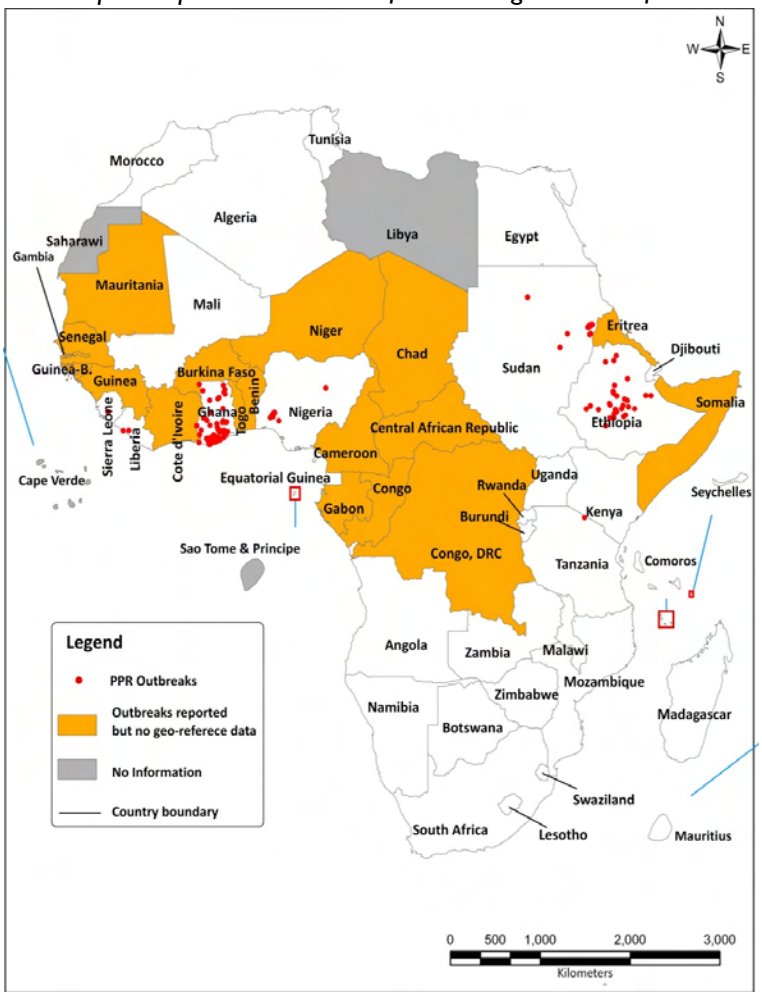
The PPR situation in Tanzania deserves special mention for several reasons. First, PPR cases were suspected before 2010 but the occurrence of the disease was confirmed and reported in 2010. Second, PPR has traditionally been known to be confined to the south of the Sahara desert and north of the equator in central, eastern and western regions of Africa. Third, Tanzania is the only country close to the southern African region where some form of pastoralism is practiced, meaning that movement of goats and sheep closer to the "free" countries may trigger PPR outbreaks there. The confirmation of the disease in Tanzania and its serological evidence in northern Zambia (as reported by VACNADA) therefore poses a big threat to the southern African countries. At immediate risk are Malawi, Zambia and Mozambique. This risk of spread to the southern African region is further compounded by the confirmation of the disease in DRC. Map 10 shows the spatial distribution of PPR during 2010.

Table 11: Countries reporting PPR in Africa in 2010

Country	Outbreaks	Cases	Deaths	Slaughtered	Destroyed
Benin	83	7,100	1,717	270	29
Burkina Faso	5	223	124	NS	NS
Cameroon	NS	119	76	NS	NS
CAR	22	1,067	788	12	8
Chad	NS	1,284	481	43	122
Congo	NS	899	509	NS	NS
DRC	1	66	Ns	NS	NS
Cote d'Ivoire	17	NS	NS	NS	NS
Eritrea	3	115	74	NS	NS
Ethiopia	144	13,475	1,508	54	NS
Gabon	1	92	85	NS	85
Ghana	152	2,636	649	321	NS
Guinea	56	2,365	1,488	63	12
Guinea-Bissau	12	156	89	15	13
Liberia	3	317	122	80	NS
Mauritania	NS	10	NS	NS	NS
Niger	NS	102	69	NS	NS
Nigeria	61	2,394	1,043	108	12
Senegal	2	59	52	NS	NS
Sierra Leone	NS	11,940	1,254	NS	10,000
Somalia	2	80	20	NS	NS
Sudan	19	1,448	212	NS	NS
Tanzania	NS	26	NS	NS	NS
Gambia	NS	1,699	2,045	NS	NS
Togo	NS	4,347	1,219	386	21
Total (25)	**583**	**52,019**	**13,624**	**1,352**	**10,302**

NS=Not specified

Map 10: Spatial distribution of PPR during 2010 in Africa.



4.11 Sheep and goat pox

The number of countries reporting SGP has markedly increased over the past three years from 7 in 2008, to 11 in 2009 to 26 in 2010. This represents 58% of the countries reporting the disease for the first time in three years. There is no plausible explanation for this increase in the occurrence of the disease, suggesting the need for detailed investigation. Not all countries reported the number of outbreaks, but out of those that did, Ethiopia (283) followed by Somalia (223), Tunisia (100), Sudan (53), Algeria (37), Zambia (21) and Botswana (13) reported the highest number of outbreaks. Overall, 964 outbreaks were reported, resulting in 40,939 cases and 6,329 deaths (Table 12). Map 11 shows the spatial distribution of SGP in 2010.

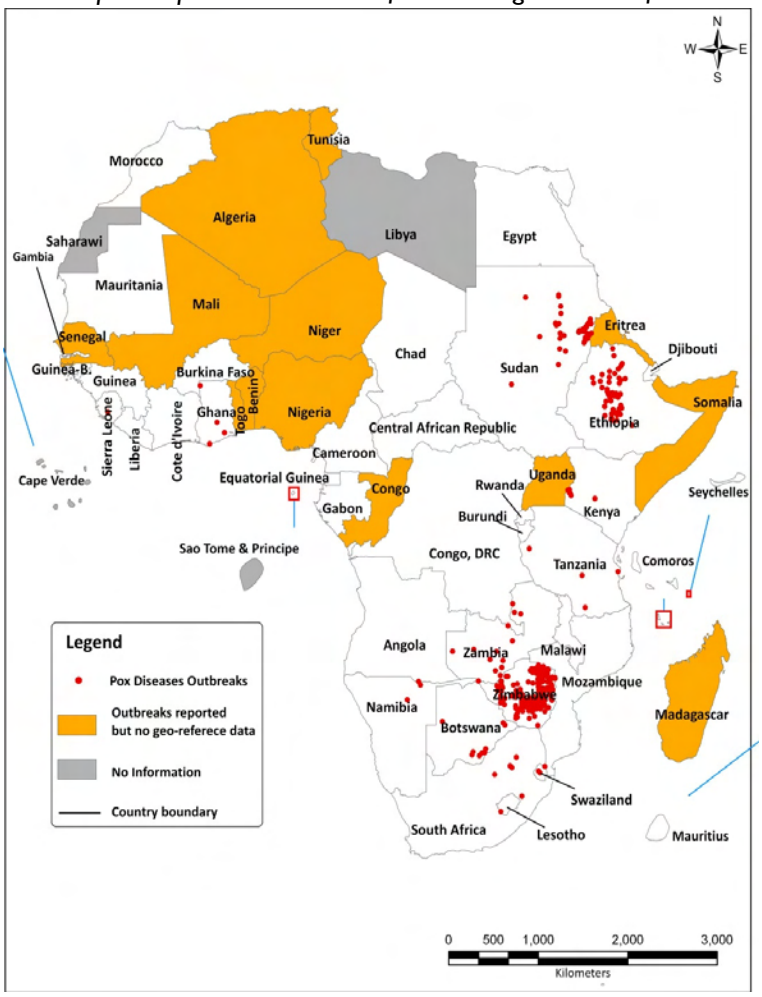
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Table 12: Countries reporting sheep and goat pox diseases in Africa in 2010

Country	Outbreaks	Cases	Deaths	Slaughtered	Destroyed
Algeria	37	307	8	4	NS
Benin	5	1,168	280	NS	NS
Botswana	13	96	105	NS	NS
Congo	NS	2,003	98	NS	NS
Eritrea	2	17	2	NS	NS
Ethiopia	283	6,708	948	69	NS
Ghana	9	4,917	16	NS	NS
Kenya	NS	855	595	39	NS
Lesotho	1	4	1	NS	NS
Madagascar	NS	24	NS	NS	NS
Mali	1	276	30	NS	NS
Namibia	3	16	6	NS	NS
Niger	NS	4,234	868	NS	NS
Nigeria	6	100	9	4	NS
Senegal	7	134	19	NS	NS
Sierra Leone	1	109	24	NS	NS
Somalia	223	3,195	307	19	2
South Africa	6	1,051	1,009	NS	NS
Sudan	53	1,256	194	NS	6
Swaziland	3	68	63	NS	1
Tanzania	NS	420	112	NS	NS
Togo	NS	7	2	NS	NS
Tunisia	100	563	89	1	76
Uganda	5	7,605	209	NS	226
Zambia	21	1,015	253	NS	NS
Zimbabwe	185	4,791	1,082	NS	NS
Total (26)	**964**	**40,939**	**6,329**	**136**	**311**

NS=Not specified

Map 11: Spatial distribution of SGP during 2010 in Africa.



4. 12 Rift Valley fever (RVF)

Considering the RVF situation on the African continent, South Africa is the only country that has consistently reported the disease outbreak during the past three years. It is not clear whether the outbreaks reported in neighboring Botswana and Namibia were linked to those in South Africa. Four countries reported RVF in 2010 and the highest number of outbreaks were in South Africa (330), followed by Namibia (14) (Table 13). Similarly the highest number of cases were reported by South Africa (11,350), followed by Mauritania (144), Namibia (82) and Botswana (21). In 2009, in addition to South Africa with 41 cases, 2 cases were reported from Zimbabwe and 16 from Comoros.

Table 13: Countries reporting RVF in Africa in 2010

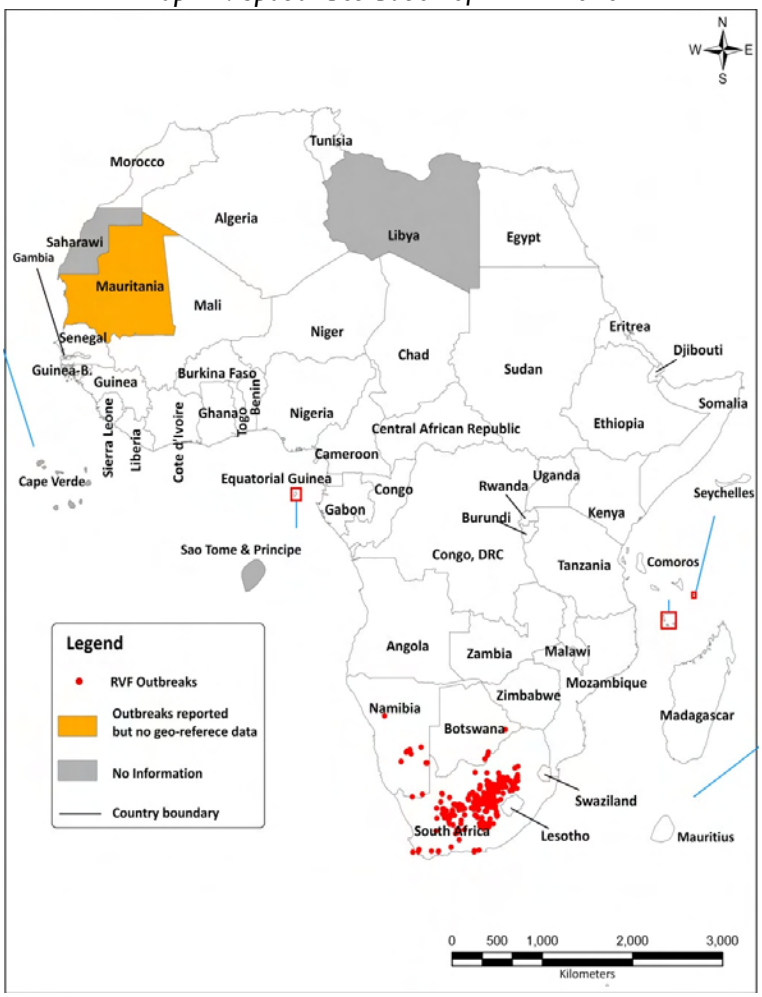
Country	Outbreaks	Cases	Deaths	Slaughtered	Destroyed
Botswana	4	21	3	0	0
Mauritania	2	144	1	0	NS
Namibia	14	82	40	0	0
South Africa	330	11350	6347	NS	502
Total (4)	**350**	**11597**	**6391**	**0**	**502**

NS=Not specified

The zoonotic of nature of RVF and the magnitude of its spread in South Africa during the past few years deserves special attention. The number of outbreaks has steadily increased from 34 in 2008 to 41 in 2009 followed by an eight fold jump to 330 in 2010. The corresponding number of cases progressed from 502 in 2008 dropping to 299 in 2009 and increasing to 11,597 in 2010. It is assumed that factors which led to the current status of RVF in South Africa have been clearly documented and that other African countries will draw lessons learned from that part of the continent. Map 12 shows the spatial distribution of RVF in 2010.

It is also instructive to note that there has been serological evidence of the disease in some countries that have not been confirmed or reported yet.

Map 12: Spatial distribution of RVF in 2010



5. SITUATION OF OTHER IMPORTANT DISEASES REPORTED IN AFRICA DURING 2010

5.1 Anaplasmosis

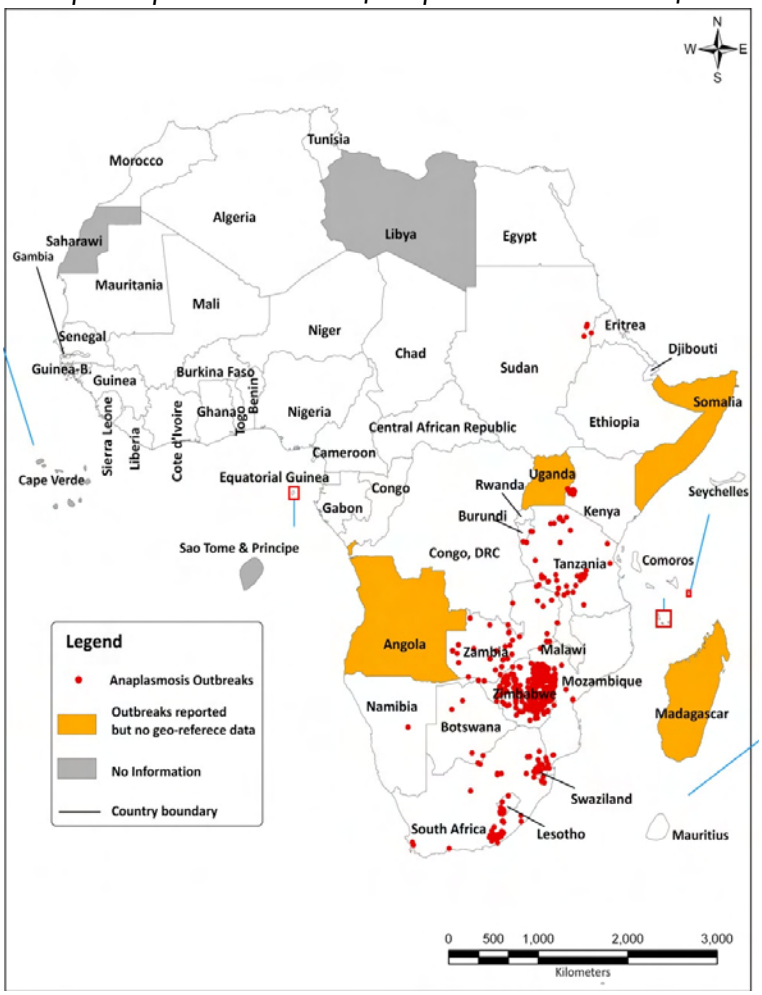
During the year under review, Anaplasmosis was reported by 15 countries (Table 14. While not all countries indicated the number of outbreaks registered, the highest number of outbreaks was reported by South Africa (81), followed by Swaziland (57), Somalia (50), Uganda (35) and Mozambique (12). Due to paucity of data, it was not possible to estimate case fatality rates. Crude estimates of the same show a very wide range (0-100%) which is not consistent with a disease which assumes enzootic stability in indigenous cattle populations. Map 13 shows the spatial distribution of Anaplasmosis in 2010.

Table 14: Countries reporting Anaplasmosis in Africa in 2010

Country	Outbreaks	Cases	Deaths	Slaughtered	Destroyed
Angola	Ns	27	8	NS	8
Botswana	6	34	30	NS	NS
Kenya	NS	137	48	1	NS
Lesotho	NS	45	2	NS	NS
Madagascar	NS	8	NS	NS	NS
Mozambique	12	74	12	NS	NS
Namibia	1	1	1	NS	NS
Somalia	50	583	24	NS	5
South Africa	81	566	250	NS	1
Sudan	6	223	71	NS	NS
Swaziland	57	108	48	NS	NS
Tanzania		530	82	NS	NS
Uganda	35	8,733	122	20	5
Zambia	2	2,463	546	NS	NS
Zimbabwe	396	1,058	NS	NS	NS
Total (15)	**646**	**14,590**	**1,668**	**21**	**19**

NS=Not specified

Map 13: Spatial distribution of Anaplasmosis in 2010 in Africa



5.2 Anthrax

In 2010, Anthrax was reported by 21 countries (Table 15). Of these countries,71.4% reported the disease in 2008 and 2009. Uganda reported Anthrax for the first time since 2008. Like other diseases, not all countries indicated the number of outbreaks that occurred during the year. However, a total of 902 outbreaks were registered within the year compared to the 155 outbreaks recorded for 2009. The highest number of outbreaks were reported by Ethiopia (489), followed by South Africa (192), Somalia (102), Zimbabwe (21), Burkina Faso (19), Rwanda (18), Guinea (14) and Namibia (12). The corresponding number of cases was highest in Ethiopia (5280), followed by Togo (1712), Niger (686), Somalia (502), Chad (270), Eritrea (213) and South Africa (212). Apart from Ethiopia and Somalia, the other countries that reported very high number of cases did not report the actual number of outbreaks. Map 14 shows the spatial distribution of Anthrax in 2010.

Vaccination remains the most important control measure employed by many countries to control the disease, although the coverage and effectiveness of the measure needs to be evaluated.

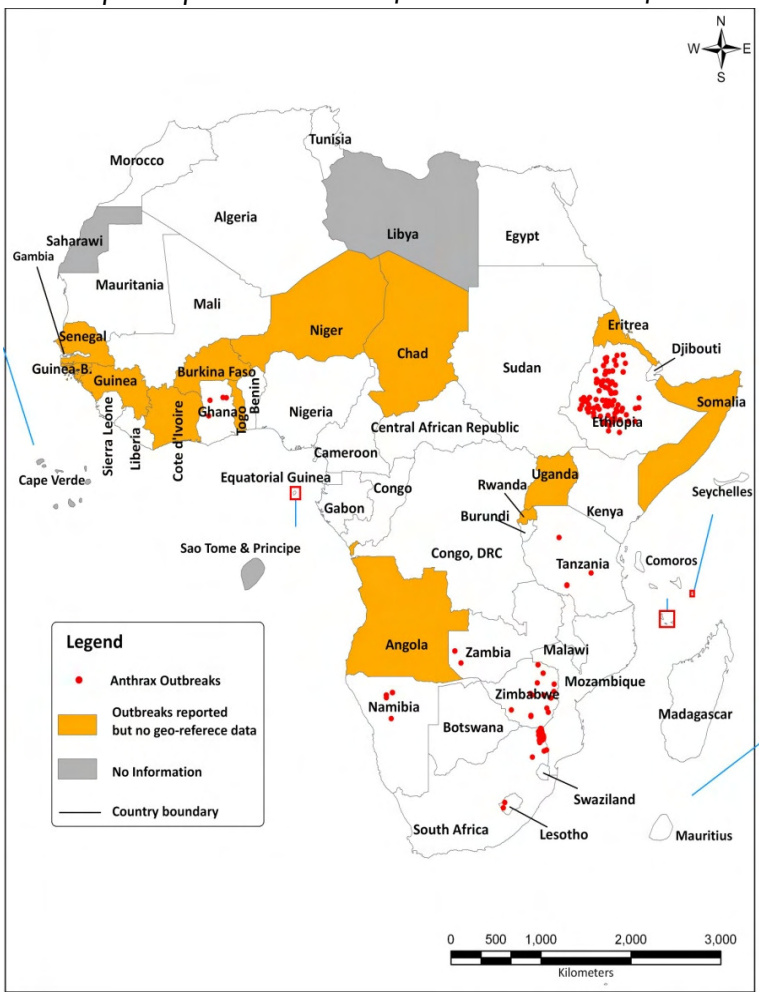
The proportion of species affected by Anthrax in 2010 is shown in table 15.

Table 15: Countries reporting anthrax in Africa in 2010

Country	Outbreaks	Cases	Deaths	Slaughtered	Destroyed
Angola		5	5	NS	5
Burkina Faso	19	57	41	NS	NS
Chad		270	123	12	143
Cote d'Ivoire	6	NS	NS	NS	NS
Eritrea	6	213	134	NS	67
Ethiopia	489	5,280	1,605	57	NS
Ghana	4	10	10	NS	NS
Guinea	14	166	133	NS	7
Guinea-Bissau	5	39	19	6	NS
Lesotho	3	6	6	NS	NS
Namibia	12	196	195	NS	NS
Niger	NS	686	324	NS	NS
Rwanda	18	45	45	NS	45
Senegal	2	6	5	NS	NS
Somalia	102	502	101	NS	5
South Africa	195	212	200	NS	NS
Tanzania	NS	15	5	NS	NS
Togo	NS	1,712	77	7	NS
Uganda	2	92	NS	NS	NS
Zambia	4	12	10	NS	NS
Zimbabwe	21	105	83	NS	NS
Total (21)	**902**	**9,629**	**3,121**	**82**	**272**

NS=Not specified

Map 14: Spatial distribution of Anthrax in 2010 in Africa



5.3 Babesiosis

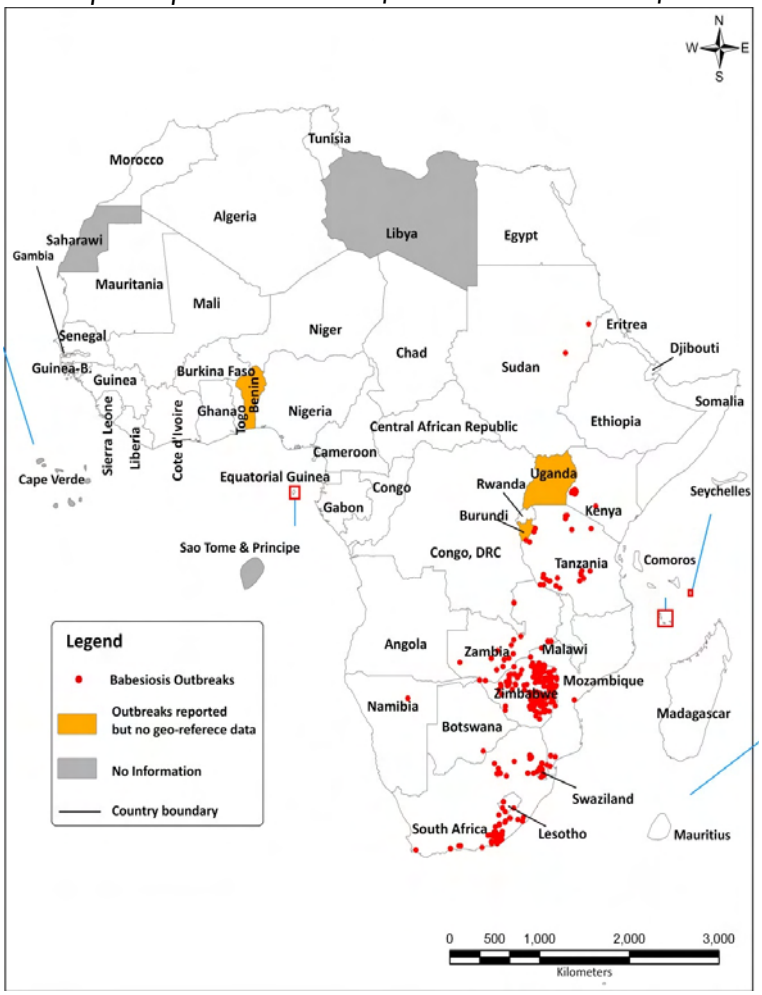
During the year under review, Babesiosis was reported by 15 countries, some of which indicated the number of outbreaks experienced (Table 16). The highest number of outbreaks was recorded by Zimbabwe (178), followed by South Africa (119), Swaziland (48) and Somalia (25). The corresponding number of cases was highest in Burundi (829), followed by South Africa (759), Zambia (571), Benin (545), Zimbabwe (371), Somalia (303), Tanzania (117) and Sudan (108). Apart from South Africa, Sudan and Somalia, the other countries did not report the number of outbreaks. Map 15 shows the spatial distribution of Babesiosis in 20110.

Table 16: Countries reporting Babesiosis in Africa in 2010

Country	Outbreaks	Cases	Deaths	Slaughtered	Destroyed
Benin	NS	545	13	2	NS
Botswana	1	2	1	NS	NS
Burundi	NS	829	NS	NS	NS
Kenya	NS	64	20	2	NS
Lesotho	2	59	2	NS	NS
Mozambique	7	30	19	NS	NS
Namibia	1	1	NS	NS	NS
Somalia	25	303	32	NS	2
South Africa	119	759	163	NS	2
Sudan	4	108	35	NS	NS
Swaziland	48	69	33	NS	NS
Tanzania	NS	117	15	NS	NS
Uganda	4	26	5	3	NS
Zambia	NS	571	120	NS	NS
Zimbabwe	178	379	81	NS	NS
Total (15)	**389**	**3,862**	**539**	**7**	**4**

NS=Not specified

Map 15: Spatial distribution of Babesiosis in 2010 in Africa



5.4 Blackleg

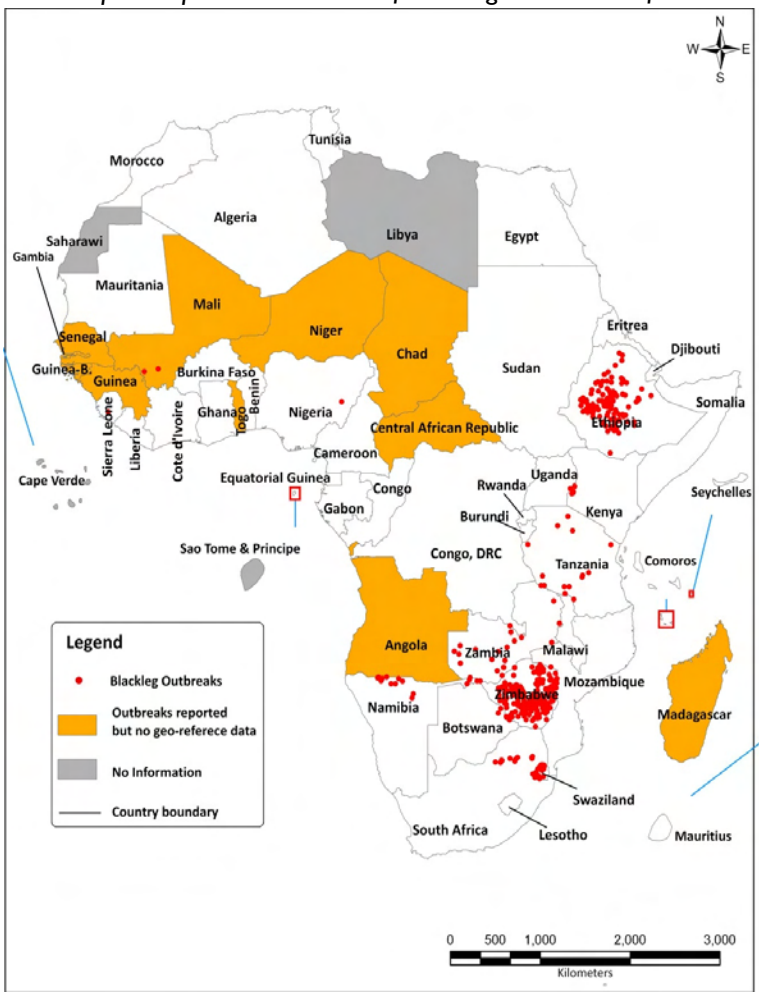
In 2010, Blackleg was reported by a total of 22 countries (Table 17). Of these countries, 45.5% of these countries also reported the disease in 2008 and 2009. Central African Republic, Guinea, Madagascar, Mali and Togo reported the disease for the first time since 2008. Like the other diseases, not all countries indicated the number of outbreaks that they experienced during the year. However, the highest number of outbreaks was reported by Ethiopia (679), followed by Zimbabwe (262), Swaziland (88), Zambia (45), South Africa (15), Guinea (14) and Namibia (14). The corresponding number of cases was highest in Ethiopia (8,008), followed by Zimbabwe (1540), Namibia (792), Zambia (638), Chad (566), Swaziland (282) and Tanzania (263). Apart from Chad, the other countries also reported a corresponding high number of cases. Map 16 shows the spatial distribution of Blackleg in 2010. Vaccination remains the most important control measure employed by many countries.

Table 17: Countries reporting blackleg in Africa in 2010

Country	Outbreaks	Cases	Deaths	Slaughtered	Destroyed
Angola	NS	77	35	NS	15
Botswana	1	1	1	NS	NS
CAR	1	22	4	NS	NS
Chad	NS	566	308	45	162
Ethiopia	679	8,008	1,292	61	NS
Guinea	14	58	50	NS	NS
Guinea-Bissau	7	118	17	NS	NS
Kenya	NS	29	7	NS	NS
Madagascar	NS	65	8	NS	NS
Mali	2	12	12	NS	NS
Namibia	14	792	59	NS	NS
Niger	NS	50	11	NS	NS
Nigeria	4	24	9	NS	5
Senegal	4	73	10	NS	NS
Sierra Leone	NS	7	1	NS	NS
South Africa	15	61	22	NS	NS
Swaziland	88	282	72	NS	NS
Tanzania	NS	263	88	NS	NS
Gambia		19	19	NS	NS
Togo	NS	3	3	NS	3
Zambia	45	638	314	NS	NS
Zimbabwe (2008, 2009)	262	1,540	696	NS	NS
Total (22)	**1,136**	**12,708**	**3,038**	**106**	**185**

NS=Not specified

Map 16: Spatial distribution of Blackleg in 2010 in Africa



5.5 Brucellosis

During the year under review, 18 countries reported 1090 outbreaks, 9864 cases and 131 deaths related to Brucellosis (Table 18). Not all countries provided figures on the actual number of outbreaks, but the highest number was reported by Algeria (501), followed by South Africa (394) and Swaziland (125). The corresponding number of cases in descending order was: South Africa (5092), Algeria (2077) and Swaziland (1597). Other countries that reported relatively high numbers of cases included Uganda (295), Mozambique (229) and Zambia (112). Map 17 presents the spatial distribution of Brucellosis in 2010.

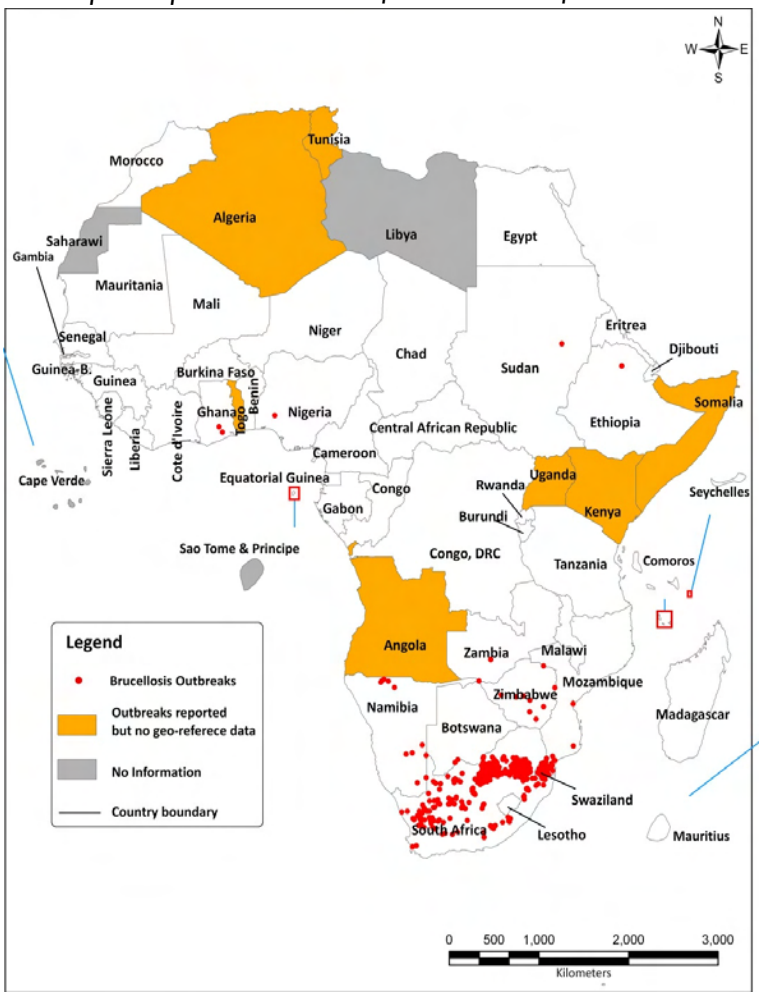
Table 18: Countries reporting Brucellosis in Africa in 2010

Country	Outbreaks	Cases	Deaths	Slaughtered	Destroyed
Algeria	501	2,077	NS	2,077	NS
Angola	NS	8	NS	NS	NS
Botswana	3	6	1	NS	NS
Ethiopia	2	4	NS	NS	NS
Ghana	2	13	NS	1	NS
Kenya	NS	4	1	NS	NS
Mozambique	17	229	36	44	49
Namibia	11	36	2	NS	NS
Nigeria	1	20	2	NS	NS
Somalia	5	86	42	NS	NS
South Africa	394	5,092	2	NS	928
Sudan	1	15	2	10	NS
Swaziland	125	1,597	3	NS	NS
Togo	NS	171	8	NS	NS
Tunisa	12	83	19	5	5
Uganda	6	295	8	NS	NS
Zambia	4	112	4	NS	NS
Zimbabwe	6	16	1	NS	NS
Total (18)	**1,090**	**9,864**	**131**	**2,137**	**982**

NS=Not specified

Screening and slaughter/culling of reactors were the most commonly employed control measures.

Map 17: Spatial distribution of Brucellosis in Africa in 2010



5.6 Dermatophilosis

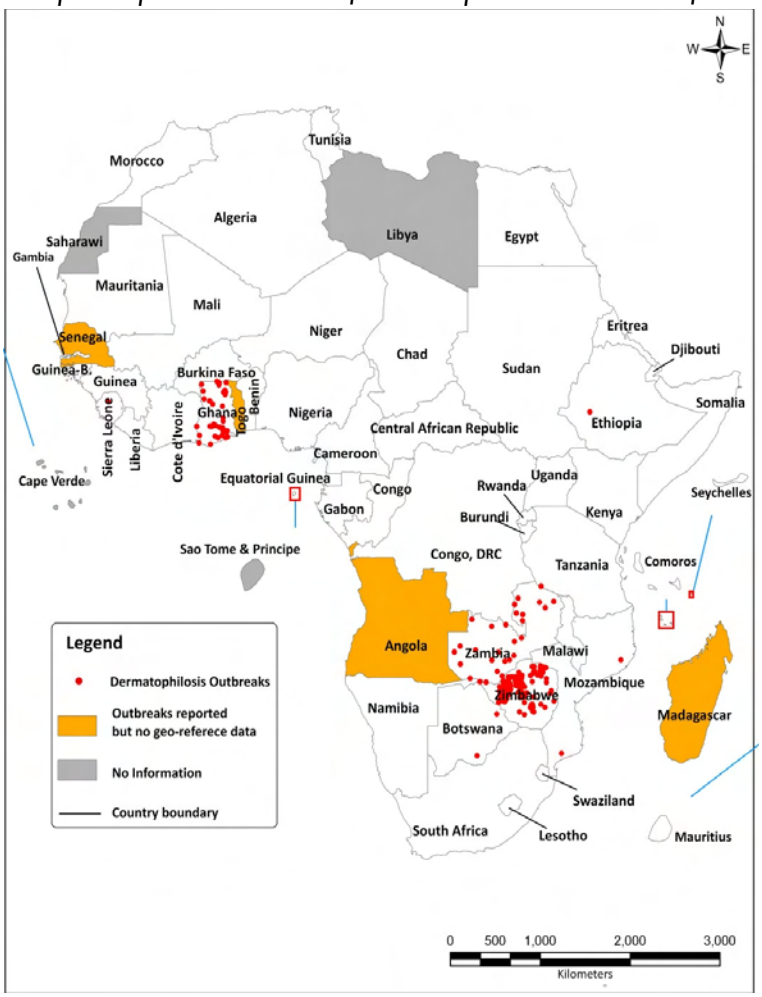
Dermatophilosis was reported by 11 countries during the year under review (Table 19). A total of 358 outbreaks, 6062 cases and 249 deaths were recorded. The highest number of outbreaks were reported by Zimbabwe (212), followed by Ghana (74) and Zambia (59). The corresponding number of cases were highest in Zimbabwe (2374), followed by Zambia (1574), Mozambique (1005), Angola (519) and Ghana (259). Map 18 shows the spatial distribution of Dermatophilosis in 2010.

Table 19: Countries reporting Dermatophilosis in Africa in 2010

Country	Outbreaks	Cases	Deaths	Slaughtered	Destroyed
Angola	NS	519	58	NS	20
Botswana	3	33	NS	NS	NS
Ethiopia	2	4	2	NS	NS
Ghana	74	259	NS	100	NS
Madagascar	NS	241	5	NS	NS
Mozambique	2	1,005	1	NS	NS
Senegal	5	35	4	NS	NS
Sierra Leone	1	8	2	NS	NS
Togo	NS	10	NS	NS	NS
Zambia	59	1,574	62	NS	NS
Zimbabwe	212	2,374	115	NS	NS
Total (11)	**358**	**6,062**	**249**	**100**	**20**

NS=Not specified

Map 18: Spatial distribution of Dermatophilosis in 2010 in Africa



5.7 Gumboro disease (Infectious Bursal disease)

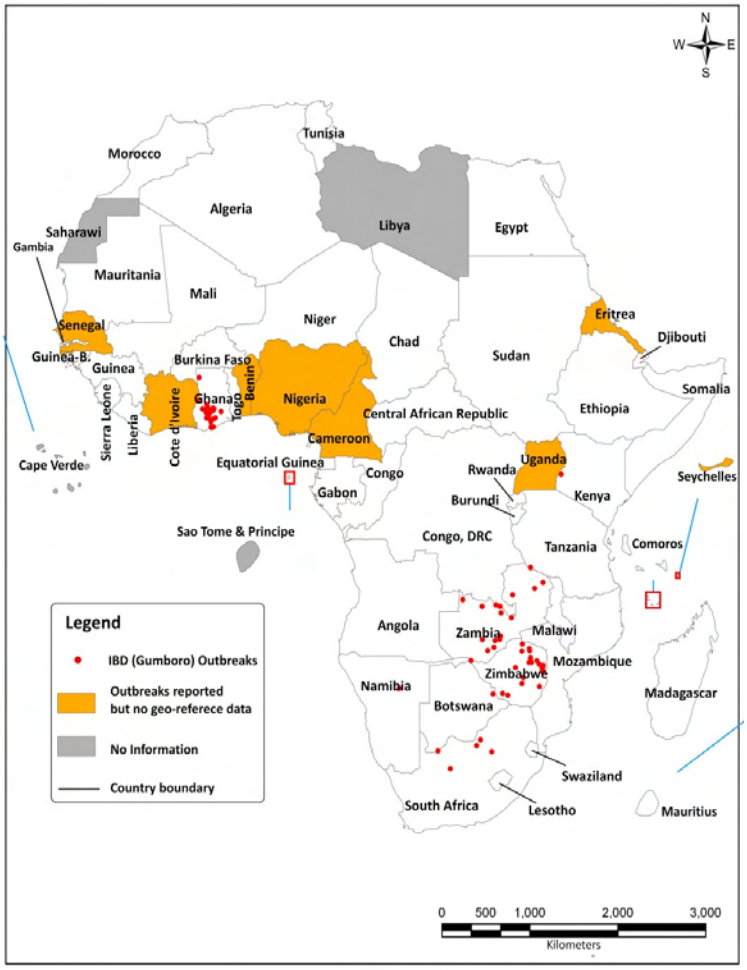
Gumboro disease was reported by 15 countries during the year under review. A total of 191 outbreaks, 4912 cases and 19095 deaths were recorded (Table 20). The highest number of outbreaks were reported by Ghana (104), followed by Zambia (30) and Zimbabwe (24). The corresponding number of cases were highest in Ghana (31923), followed by Benin (10200), Zambia (2504), Nigeria (1255) and Zimbabwe (678). The highest number of deaths followed the same trend: Ghana (9607), Benin (5450) and Zambia (1104). Map 19 shows the spatial distribution of Gumboro disease in 2010.

Table 20: Countries reporting Gumboro disease in Africa in 2010

Country	Outbreaks	Cases	Deaths	Slaughtered	Destroyed
Benin	4	10200	5450	0	0
Botswana	1	3	5	0	0
Cameroon	NS	312	312	0	0
Cote d'Ivoire	10	NS	NS	NS	NS
Eritrea	1	950	620	NS	NS
Ghana	104	31923	9607	0	0
Kenya	NS	500	500	0	0
Namibia	1	13	1	0	0
Nigeria	8	1255	651	22	0
Senegal	1	500	400	0	0
Seychelles	1	1		0	0
South Africa	5	31	3	NS	0
Uganda	1	250	190	NS	60
Zambia	30	2504	1104	NS	NS
Zimbabwe	24	678	252	0	0
Total (15)	**191**	**49120**	**19095**	**22**	**60**

NS=Not specified

Map 19: Spatial distribution of Gumboro disease in 2010 in Africa



5.8 Heartwater (Cowdriosis)

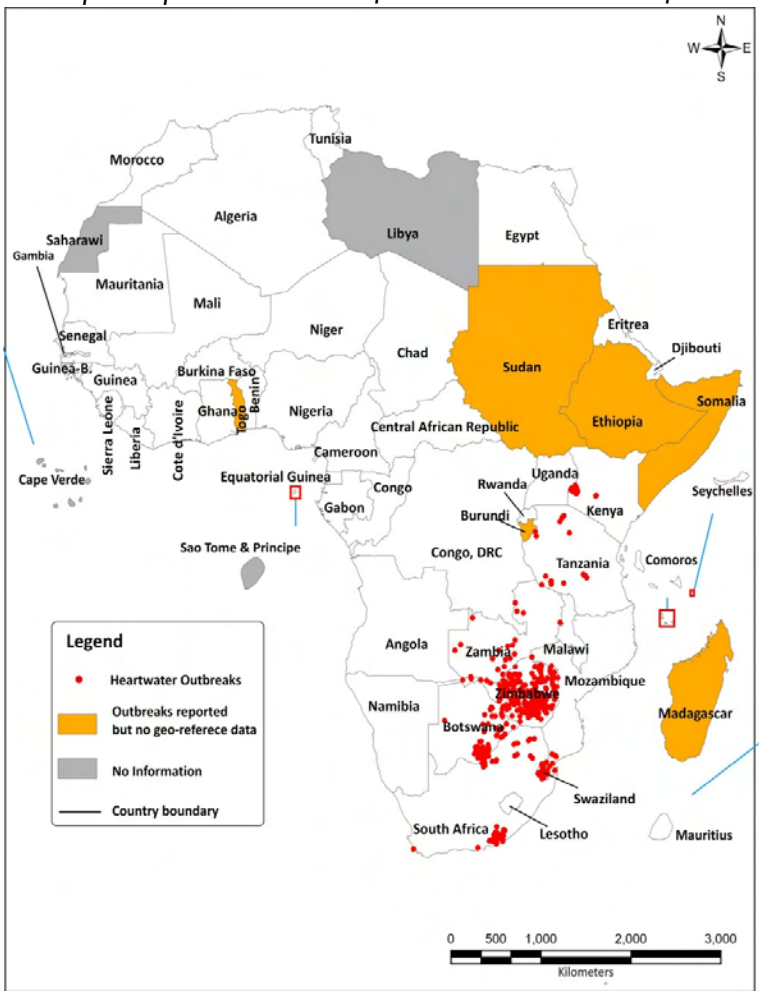
Heartwater was reported by 15 countries during the year under review. A total of 602 outbreaks 980,063 cases and 1,210 deaths were recorded (Table 21). The highest number of outbreaks were reported by Zimbabwe (254), followed by South Africa (129), Botswana (109) and Zambia (40). The corresponding number of cases were highest in Burundi (977,024), followed by Zimbabwe (819), Zambia (805), South Africa (436), Tanzania (217), Botswana (196) and Swaziland (150). Map 20 shows the spatial distribution of Heartwater in 2010.

Table 21: Countries reporting Heartwater in Africa in 2010

Country	Outbreaks	Cases	Deaths	Slaughtered	Destroyed
Botswana	109	196	266	NS	NS
Burundi	NS	977,024	NS	NS	NS
Ethiopia	1	91	54	NS	NS
Kenya	NS	70	16	2	NS
Madagascar	NS	175	12	NS	NS
Mozambique	7	12	8	NS	NS
Namibia	2	14	11	NS	NS
Somalia	8	45	11	7	2
South Africa	129	436	186	NS	NS
Sudan	1	8	2	2	NS
Swaziland	51	150	71	NS	NS
Tanzania	NS	217	46	NS	NS
Togo	NS	1	NS	NS	NS
Zambia	40	805	245	NS	NS
Zimbabwe	254	819	282	NS	NS
Total (15)	**602**	**980,063**	**1,210**	**11**	**2**

NS=Not specified

Map 20: Spatial distribution of Heartwater in 2010 in Africa



5.9 Mange

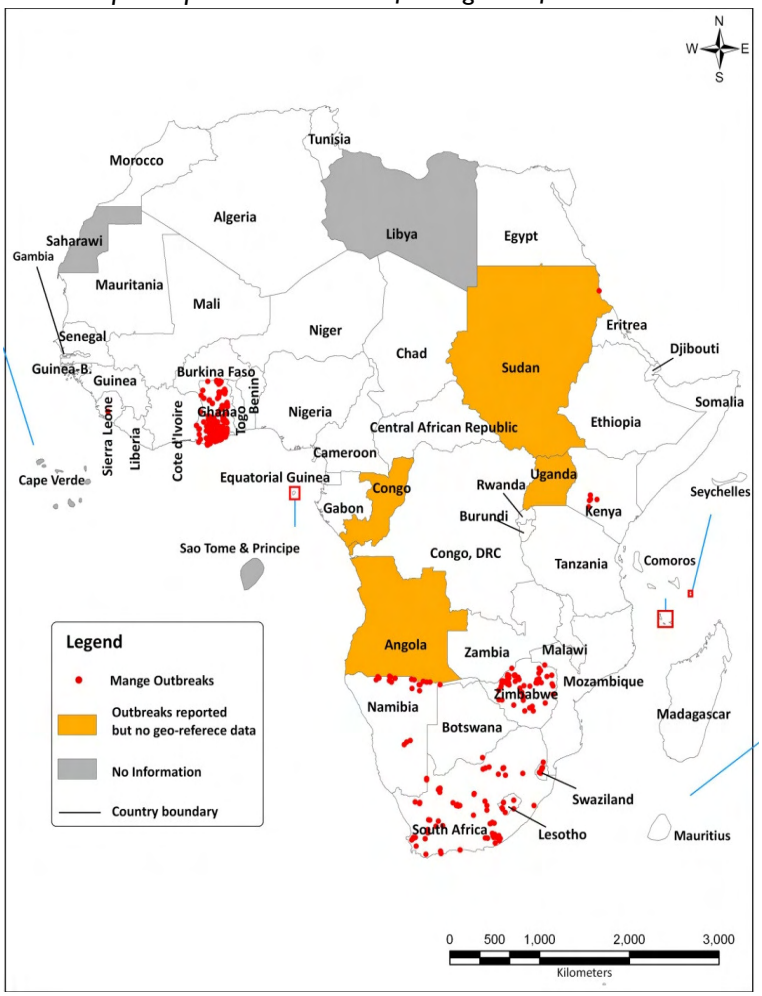
Mange, a contagious disease of animals caused by parasitic mites is characterized by a variety of clinical signs depending on the species of mites. Mange mite infestations are widespread among small ruminants across the sub-Saharan region. Mange is not associated with heavy mortalities but is a trade sensitive disease due to economic loss in terms of loss of productivity of affected animals and spoiling of hides. Therefore, more attention should be paid to ectoparasites diseases. During 2010, Mange re-emerged for the first time since 2003, to be the fifth most important disease after Rabies, Blackleg, Brucellosis, Tuberculosis and Anthrax; the ninth disease in terms of number of outbreaks reported, and the twelfth disease in terms of number of cases. It was reported in 13 countries with 836 outbreaks and 25,604 cases (Table 22). Map 21 shows the spatial distribution of Mange in Africa in 2010.

Table 22: Countries reporting Mange in Africa in 2010

Country	Outbreaks	Cases	Deaths	Slaughtered	Destroyed
Angola	NS	1,400	98	NS	30
Botswana	1	35	7	NS	NS
Congo	NS	616	36	1	NS
Ghana	658	7,579	82	194	NS
Kenya	NS	32	23	NS	NS
Lesotho	4	366	10	NS	NS
Namibia	28	5,378	46	NS	NS
Sierra Leone	3	89	10	NS	NS
South Africa	73	9,392	51	NS	NS
Sudan		45	NS	NS	NS
Swaziland	10	220	NS	NS	NS
Uganda	3	34	NS	NS	2
Zimbabwe	56	418	68	NS	NS
Total (13)	**836**	**25,604**	**431**	**195**	**32**

NS=Not specified

Map21: Spatial distribution of Mange in Africa in 2010



5.10 Pasteurellosis

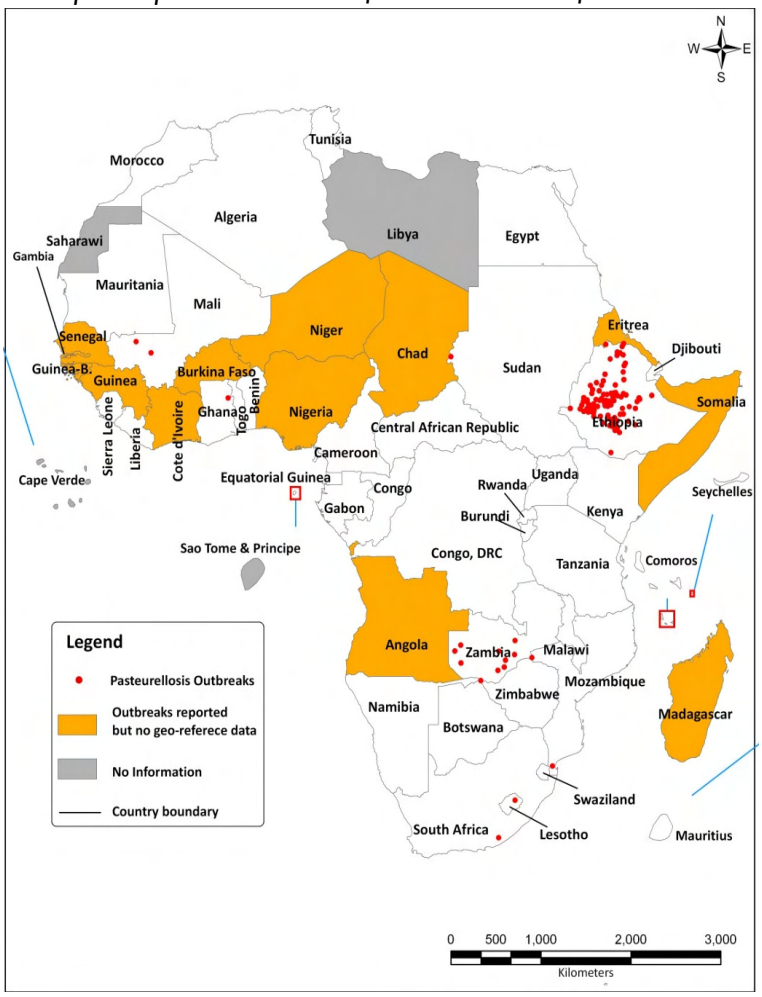
Pasteurellosis is the eighth most widely distributed disease in Africa after NCD, Rabies, LSD, SGP, PPR, CBPP and FMD in 2010. A total of 994 outbreaks with 17,563 cases and 4,960 mortalities were recorded in 23 countries (Table 23). Ethiopia recorded 77.36% of the total of outbreaks followed by Burkina Faso 6.34%, Somalia 4.52% and Senegal 3.02%. Map 22 shows the spatial distribution of the disease in 2010.

Table 23: Countries reporting Pasteurellosis in Africa in 2010

Country	Outbreaks	Cases	Deaths	Slaughtered	Destroyed
Benin	26	1,893	339	18	NS
Botswana	1	2	2	NS	NS
Burkina Faso	63	586	127	NS	NS
Chad	NS	705	355	17	249
Cote d'Ivoire	7	NS	NS	NS	NS
Eritrea	1	2	2	NS	NS
Ethiopia	769	9,736	2,534	201	NS
Ghana	1	6	4	NS	NS
Guinea	5	113	39	NS	NS
Guinea-Bissau	3	42	25	11	NS
Lesotho	1	1	NS	NS	NS
Madagascar	NS	71	67	NS	NS
Mali	2	141	19	1	NS
Mozambique	2	25	3	NS	NS
Namibia	8	53	38	NS	NS
Niger	NS	1,068	419	NS	NS
Nigeria	3	44	4	6	NS
Senegal	30	1,488	162	NS	NS
Somalia	45	256	22	NS	NS
South Africa	4	44	42	NS	NS
Sudan	2	519	416	103	NS
The Gambia	NS	607	300	NS	NS
Zambia	21	161	41	NS	Ns
Total (23)	**994**	**17,563**	**4,960**	**357**	**249**

NS=Not specified

Map 22: Spatial distribution of Pasteurellosis in Africa in 2010



5.11 Rabies

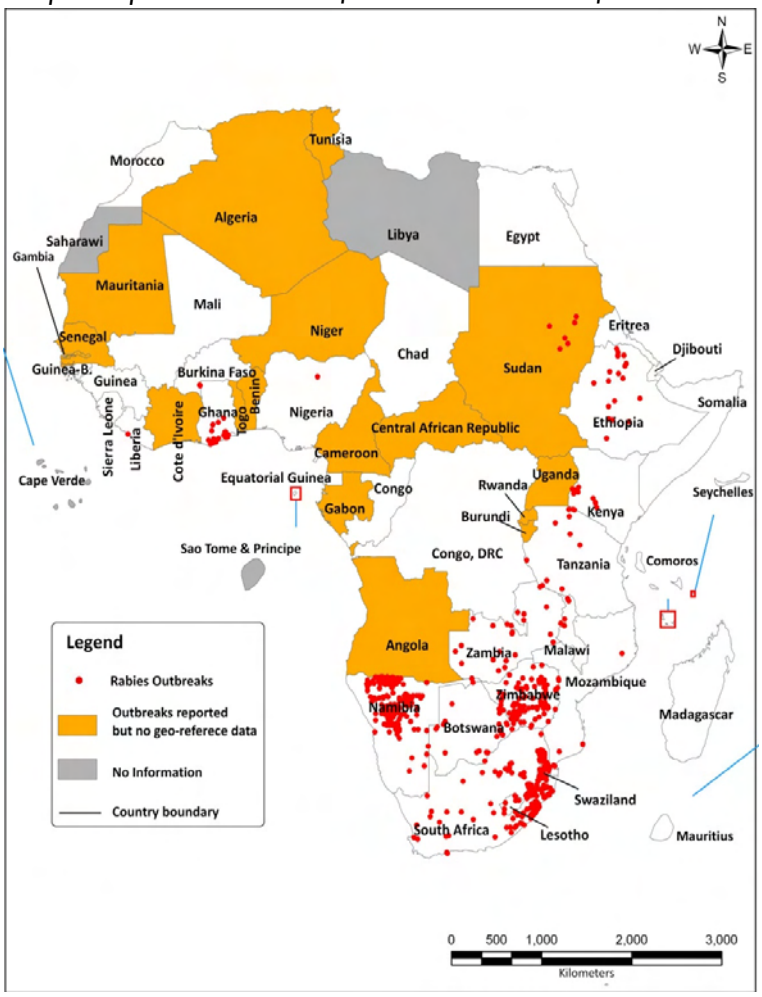
In 2010, a total of 1072 outbreaks of Rabies were recorded in Africa. The figure is not complete because 8 countries out of the 32 that reported did not specify the number of outbreaks. Nevertheless, Rabies had the highest number of outbreaks and accounted for 9.61% of all the disease outbreaks reported in 2010. It is also the second most widely distributed zoonotic disease affecting 32 countries in all the regions of the continent. Algeria, South Africa and Namibia recorded the highest number of outbreaks with 440, 332 and 288 respectively (Table 24). Burundi accounted for 34.56% cases of the total of cases during the reporting period followed by Namibia and Algeria for 2.98% and 2.75% respectively. Map 23 shows the spatial distribution of Rabies outbreaks in Africa in 2010. Although Rabies is one of the major zoonotic diseases, reports on its situation from many countries was often incomplete. All the reports received in 2010 did not capture the number of outbreaks, cases, mortalities, species involvement, sources of infection and human cases. These parameters are essential to substantiate the impact of Rabies in public health. Nevertheless, available data calls for an urgent, concerted and coordinated effort in controlling the disease in Africa considering its impact in human health.

Table 24: Countries reporting Rabies in 2010

Country	Outbreaks	Cases	Deaths	Slaughtered	Destroyed
Algeria	440	487	176	12	303
Angola	NS	16	16	NS	16
Benin	2	3	NS	1	NS
Botswana	26	29	27	NS	NS
Burundi	NS	1,783	794	794	NS
Cameroon	NS	18	18	NS	NS
Central African Republic	2	54	28	NS	28
Cote d'Ivoire	13	NS	NS	NS	NS
Ethiopia	71	447	309	5	NS
Gabon	1	1	1	NS	1
Ghana	55	63	55	NS	9
Kenya	NS	21	9	5	NS
Lesotho	11	36	35	NS	1
Liberia	1	1	NS	1	NS
Malawi	6	6	3	NS	NS
Mauritania	1	9	1	9	NS
Mozambique	8	12	9	NS	6
Namibia	288	529	483	NS	NS
Niger	NS	1	1	NS	NS
Nigeria	6	6	2	1	2
Rwanda	40	91	61	NS	773
Senegal	1	1	1	NS	NS
South Africa	332	364	170	NS	211
Sudan	8	11	9	NS	2
Swaziland	74	86	85	NS	1
Tanzania	NS	102	90	NS	NS
The Gambia	NS	2	2	NS	NS
Togo	NS	196	33	21	2
Tunisia	116	117	117	NS	NS
Uganda	10	21	6	1	12
Zambia	54	323	104	NS	NS
Zimbabwe	136	323	206	1	32
Total (32)	**1,702**	**5,159**	**2,851**	**851**	**1,399**

NS=Not specified

Map 23: Spatial distribution of Rabies outbreaks in Africa in 2010.



5.12 Theileriosis

Theileriosis is one of the diseases which had different names depending on countries. For the analysis and presentation of this report, Theileriosis, East Cost fever and Corridor Disease were all taken as Theileriosis.

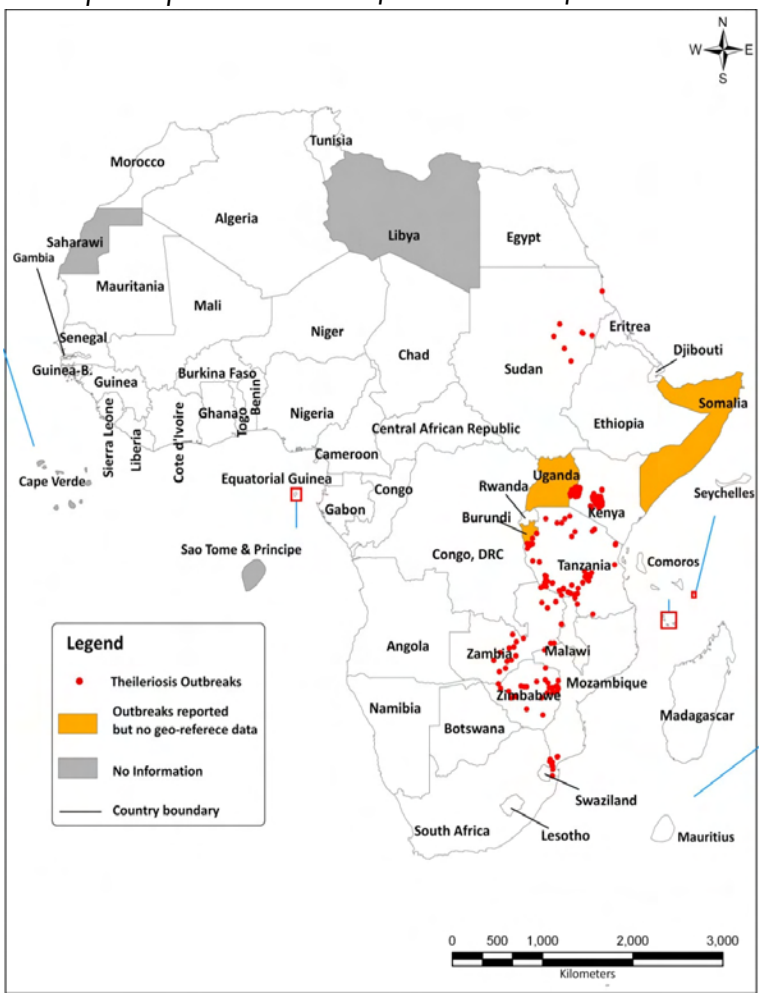
The number of countries that reported Theileriosis outbreaks significantly decreased from 16 countries in 2009 to nine in 2010, but the number of outbreaks recorded was highest in 2010 compared to previous years. Uganda, Burundi, and Zambia recorded the highest number of cases f40.67%, 28.03%, and 19.14% respectively. The Table 25 shows details of the reporting countries with the related quantitative data while Map 24 shows the spatial distribution of Theileriosis in Africa in 2010.

Table 25: Countries reporting Theileriosis in 2010

Country	Outbreaks	Cases	Deaths	Slaughtered	Destroyed
Burundi	NS	12499	9998	NS	NS
Kenya	NS	3540	924	51	2
Mozambique	10	50	5	0	0
Somalia	1	9	1	0	0
Sudan	14	567	117	5	1
Tanzania	NS	1068	210		
Uganda	45	18134	54	318	5
Zambia	9	8536	2390	NS	NS
Zimbabwe	33	180	73	0	0
Total (9)	**112**	**44583**	**13772**	**374**	**8**

NS=Not specified

Map 24: Spatial distribution of Theileriosis in Africa in 2010



5.13 Trypanosomosis

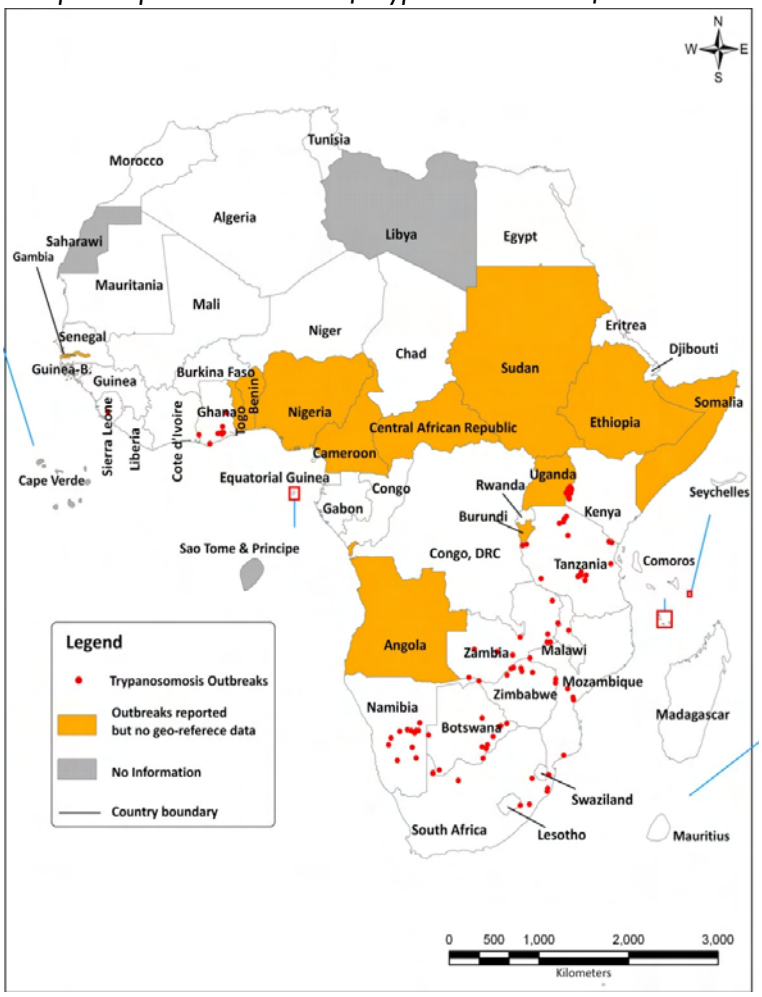
During 2010, 23 countries reported outbreaks of Trypanosomosis, compared to 19 countries in 2009. However, this seems far less than the known distribution of the pattern of the disease in Africa. The 23 countries recorded 679 outbreaks involving 94,760 cases and 2,201 mortalities (Table 26). Countries with the highest number of cases included Benin (53,793), Uganda (27,571) and Somalia (3,237). Map 25 shows the spatial distribution of trypanosomosis in 2010.

Table 26: Countries reporting Trypanosomosis in 2010

Country	Outbreaks	Cases	Deaths	Slaughtered	Destroyed
Angola	NS	3	NS	NS	NS
Benin	83	53,793	381	616	2
Botswana	16	38	1	NS	NS
Burundi	NS	1,034	746	NS	NS
Cameroon	NS	138	86	NS	NS
Central African Republic	NS	21	13	NS	NS
Ethiopia	1	115	15	NS	NS
Ghana	16	66	15	2	NS
Kenya	NS	419	116	18	NS
Malawi	1	1	1	NS	NS
Mozambique	6	100	40	NS	NS
Namibia	12	28	NS	NS	NS
Nigeria	4	74	15	6	NS
Sierra Leone	NS	576	74	NS	NS
Somalia	476	3,237	90	1	19
South Africa	7	60	NS	NS	1
Sudan	1	97	46	NS	NS
Tanzania	NS	392	37	NS	NS
The Gambia	NS	165	5	NS	NS
Togo	NS	4,761	398	13	NS
Uganda	30	27,571	21	24	3
Zambia	16	1,993	88	NS	NS
Zimbabwe	10	78	13	NS	NS
Total (23)	**679**	**94,760**	**2,201**	**680**	**25**

NS=Not specified

Map 25: Spatial distribution of Trypanosomosis in Africa in 2010



5.14 Tuberculosis

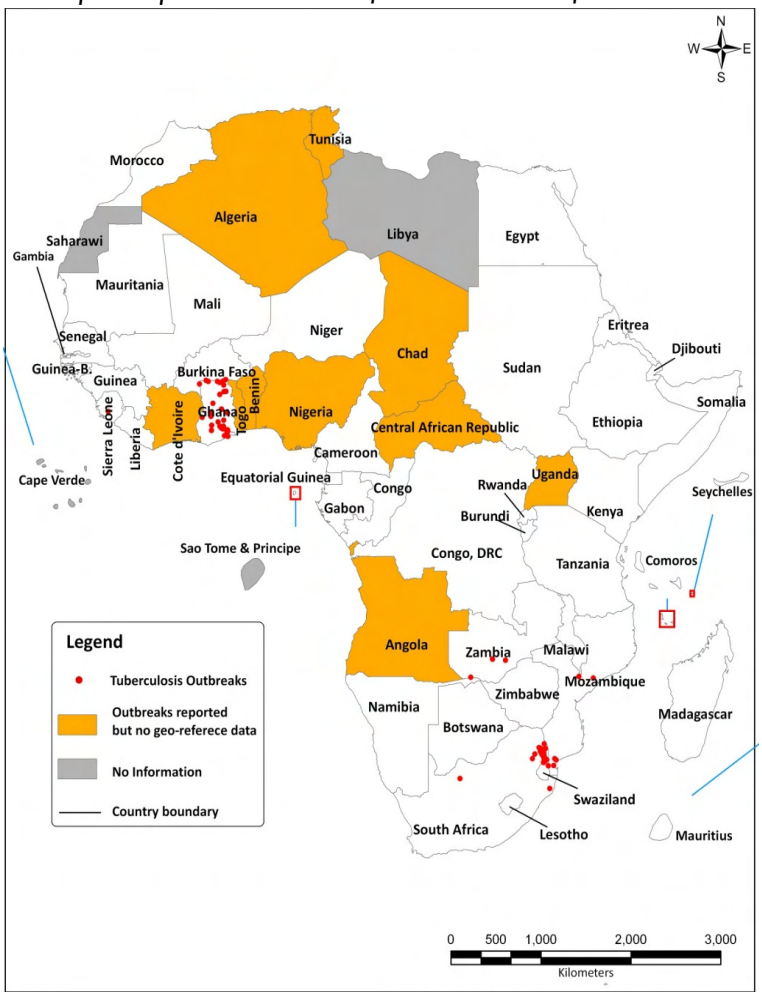
During 2010, 15 countries reported Tuberculosis with 3,173 cases (Table 27). Togo recorded the highest number of cases (40.9%), followed by Tunisia (21.84%), Benin (12.76%) and Ghana (7.69%). Tuberculosis was the fourth most important zoonotic disease in Africa after Rabies, Anthrax and Brucellosis., However the data provided may not have captured all the cases occurring in countries. This could be attributed to the surveillance and reporting system being used in many countries where data and information from meat inspection reports is not adequately integrated into the regular monthly reports. Map 26 shows the spatial distribution of Tuberculosis in 2010.

Table 27: Countries reporting Tuberculosis in 2010

Country	Outbreaks	Cases	Deaths	Slaughtered	Destroyed
Algeria	67	132	NS	132	NS
Angola	NS	102	1	NS	NS
Benin	10	405	NS	319	NS
Central African Republic	2	75	30	NS	NS
Chad	NS	94	38	13	23
Cote d'Ivoire	10	NS	NS	NS	NS
Ghana	83	244	NS	243	NS
Mozambique	2	12	4	NS	3
Nigeria	1	12	NS	2	10
Sierra Leone	1	4	NS	4	NS
South Africa	37	45	7	NS	25
Togo	NS	1,298	89	2	9
Tunisia	693	693	NS	NS	693
Uganda	4	33	5	4	4
Zambia	5	24	12	NS	NS
Total (15)	**915**	**3,173**	**186**	**719**	**767**

NS=Not specified

Map 26: Spatial distribution of Tuberculosis in Africa in 2010



6. AU-IBAR INTERVENTIONS IN DISEASES CONTROL DURING 2010

6.1 Rinderpest eradication

The Somali Ecosystem Rinderpest Eradication Coordination Unit (SERECU) project whose objective was to verify the eradication of Rinderpest in the Somali Ecosystem (SES) and support other non-SES countries that had lagged behind in progressing along the OIE pathway successfully came to end on 31st December 2010. In addition to Ethiopia and Kenya which had been certified Rinderpest free in 2008 and 2009 respectively, Somalia, Cameroon, Central African Republic, Chad, Djibouti, Nigeria and Niger were accredited free of Rinderpest in May 2010. The remaining four countries (Liberia, Sierra Leone, Gambia and Sao Tome and Principe) were expected to be accredited free of the disease in May 2011. During the year under review, AU-IBAR shared the exit post Rinderpest strategy for Africa with FAO and OIE. Within the framework of the strategy, a project proposal titled "Surveillance in Support of Trade Sensitive Diseases in the Horn of Africa" was prepared and submitted to a potential donor.

6.2 Avian Influenza

DDuring 2010, AU-IBAR undertook various capacity building activities designed to strengthen national preparedness capacities to prevent and control HPAI. These activities were implemented through projects, notably, SPINAP jointly funded by EU and the AUC, and the Emergency Relief Support to Combat Avian Influenza (ERSCA) jointly funded by AfDB and the AUC. The activities mainly involved training, planning and risk mapping and procurement of laboratory, surveillance and communication equipment.

More specifically, training was designed to build capacity of national veterinary personnel and to upgrade the skills of national experts, veterinary technical staff and Community Based Animal Health Workers (CAHW) in bio-security and HPAI recognition and reporting. In addition, training focused on establishing the national capabilities for rapid response to disease outbreaks. At the central AU-IBAR level, training activities were organized in the areas of disease surveillance where 90 epidemiologists from 43 countries were trained in risk based disease surveillance; and 51 professionals from veterinary services and 48 from wildlife departments were trained in wildlife capture and sampling for surveillance purposes. In the establishment and training of joint rapid response teams**,** seven Training of Trainers (ToT) workshops were conducted bringing together 267 participants from 44 countries (animal health 110; human health 50; public health communication 33; animal health communication 38; and wildlife professionals (36)) Training (ToT) in risk communication involved 116 human and animal health communication focal points, sociologists and other participants from 42 countries.

Specialized laboratory Training included two public health laboratory technicians from Seychelles who were trained for two weeks at the National Institute for Communicable Diseases in South Africa, one veterinarian for three weeks training in specialized French Laboratories, four laboratory technical staff from Sierra Leone for three weeks on various diagnostic techniques in Kenya, five public health and 10 animal health laboratory technicians were trained on molecular biology in Burundi and Sao Tome et Principe.

Simulation exercises were used in a selected number of countries to test all aspects of the plan including stakeholder participation, logistics, and coordination, understanding of the various roles and responsibility and resource allocation.

Many countries which were poorly equipped at the beginning of the programs were supported to invest in the acquisition of various equipment in support of disease surveillance, diagnosis, information and communication and field transportation among others. Information and communication, cold chain, diagnostic, surveillance, sampling, disposal equipment etc. and sophisticated equipment such as PCR machines, real time PCR machines, Elisa readers, rapid detection kits, reagents, packaging items, cool boxes, incinerators, fridges and deep freezers (-80c), autoclaves and computer hardware were procured.

6.3 PPR, NCD, CBPP, CCPP and Sheep and Goat pox

TThe 2010 data analysis in the present pan African yearbook clearly indicated that livestock diseases such as NCD, SGP, PPR, CCPP and CBPP have a major impact on African food security. Indeed NCD was the most widely distributed disease in the continent with 35 affected countries while PPR, SGP, CBPP and CCPP affected 26, 25, 24 and 8 countries respectively. AU-IBAR through VACNADA and LEISOM projects which are funded by EU significantly contributed to the reduction of the impact of the above mentioned diseases. Massive vaccination campaigns, seromonitoring and serosurveillance were the main control measures used in 27 beneficiary countries (26 for VACNADA and Somalia for LEISOM). Map 27 shows the geographical coverage of AU-IBAR's intervention in disease control in Africa in 2010 under these 2 projects (Map 27).

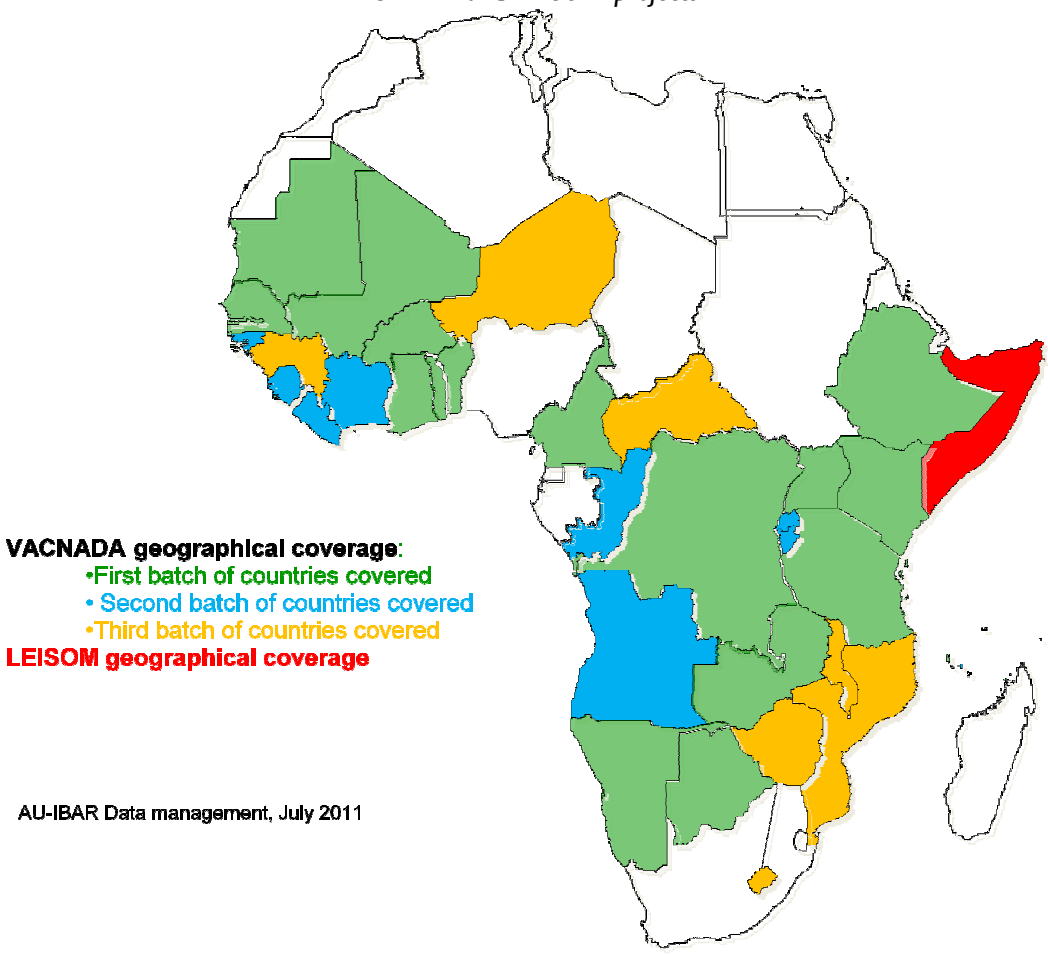
A total of 38,391,850 doses of vaccine (PPR (15,221,700), NCD (14, 1916, 950); CCPP (3,800,000); Sheep and Goat Pox (1,100,000) and CBPP (3,353,200)) were procured through VACNADA (33,391,850 doses) while LEISOM provided 5,000,000 doses to the beneficiary countries. In addition, cost recovery for treatment of animals was successfully implemented in Somalia (Galgadud and Middle Juba Regions) in collaboration with private veterinary practitioners who contributed 20% of the drug purchase prices and charged livestock owners for the treatment provided. A total sum of Euro 2,393,564 was transferred to 19 countries under the VACNADA project in 2010, to undertake vaccination campaigns in 15 countries and support laboratory capacity in the remaining 4 countries.

In the area of human resource capacity building, 114 veterinary personnel consisting of members of 26 veterinary teams and supervisory staff from the ministries responsible for livestock underwent three days of refresher training to enable them to undertake the vaccination campaign, serum sampling and treatment activities using a harmonized approach.

In order to further support disease control efforts on the continent and contribute to sustainability, AU-IBAR and GALVmed carried out a needs assessment, and purchased and supplied essential equipment to upgrade eight selected vaccine producing laboratories (BVI-Botswana, LANVET-Cameroon, LCV-Kinshasa in the DRC, KEVEVAPI – Kenya, LCV-Bamako in Mali and ISRA-LNERV-Dakar in Senegal) in addition to providing training in Vaccine Operation Management and supporting mechanisms to Quality Assurance (QA) implementation in the laboratories. AU-IBAR and GALVmed also conducted a study on strengthening vaccine distribution systems and a market survey on vaccine needs was carried out in Ethiopia (CBPP, CCPP, NCD & PPR); Ghana (NCD); Kenya (CBPP, CCPP, ND & PPR) and Southern Africa (CBPP & PPR). In addition, working in collaboration with CIRAD the VACNADA project completed the development of experimental batches of new formulations of CBPP (T/144) vaccine for trials and developed a standardized cELISA

for CCPP antibody detection and optimized CCPP vaccine production at NVI, Ethiopia. Working with AU-PANVAC, AU-IBAR procured reagents to support the upgrading of AU-PANVAC laboratory and also supported the maintenance and calibration of equipment; as well as contributed to the procurement of BioSafety Level 3 (BSL3) laboratory equipment for AU-PANVAC. Further the project provided technical assistance to improve quality assurance and vaccine quality control to several vaccine producing laboratories in Africa.

Map 27: Geographical coverage of AU-IBAR intervention in disease control in Africa in 2010 under the VACNADA and LEISOM projects



6.4 Trade facilitation and harmonization

In 2010, AU-IBAR supported trade facilitation and harmonization of procedures in Somalia through the SOLICEP and LEISOM projects funded by EC. SOLICEP aimed at improving the export performance of the livestock sub-sector in Somalia and the SES countries (Ethiopia, Kenya and Djibouti), continued to support the veterinary authorities of Puntland, Somaliland and Central South Somalia to undertake animal health certification activities in order to enhance access livestock export markets. The project also supported the establishment and operations of the Somali Livestock Stakeholders Coordination body whose goal is to enhance coordination of livestock development activities and in particular animal health certification, trade and marketing between the three regions of Somalia.

During 2010, two major activities were undertaken under SOLICEP. These included a workshop to promote information sharing between livestock exporting countries in the Greater Horn of Africa Region (Somalia, Ethiopia, Sudan, Djibouti and Kenya) and importing countries in the Gulf and Middle

East region on 2nd to 3rd August 2010 in Dubai, United Arab Emirates (UAE). In addition, SOLICEP convened a Public-Private-Partnership (PPP) meeting for the livestock development in Somalia on August 4, 2010 in Dubai UAE. The participants included public and private livestock sector players in Somalia, representatives from USAID, FAO and the Turkish Government. Representatives of the public and private sectors from the main importing countries in the Middle East, the Gulf Region and potential new markets participated as observers.

The LEISOM project provided additional support to improve the performance of the Somali livestock marketing system through the rehabilitation of livestock marketing infrastructure and improvement of systems for their management in order to enhance access to markets. A total of eleven mobile crushes, four loading ramps and two watering troughs were constructed at Gurieel and Dhusamareb in Galgadud Region during September and October 2010. A total of 11 mobile vaccination crushes were constructed during 2010 for use by vaccination teams in Galgadud, and Middle Juba Regions.

6.5. Tsetse and trypanosomosis

The International Scientific Council for Trypanosomiasis Research and Control (ISCTRC) secretariat, which is hosted by AU-IBAR contributed towards the fight against tsetse and trypanosomiasis by facilitating information sharing and exchange through supporting the publication of Tsetse and Trypanosomiasis Information Bulletin (TTI) that disseminates current information on all aspects of tsetse and trypanosomiasis research and control. The Bulletin is published within the framework of the Program Against African Trypanosomiasis (PAAT).

To enhance coordination and harmonization of Tsetse and Trypanosomiasisactivities, the ISCTRC Executive Committee held its 35th Meeting on 31st November and 1st December 2010 in Bamako, Mali where reports on T&T research and control activities from various institutions were received and discussed. The meeting also held discussions on the forthcoming 31st ISCTRC general conference which will be held from the 12th to 16th September 2011 in Bamako, Mali. The conference will bring together various stakeholders on T&T research and control to exchange scientific information, propose viable intervention options and report on progress made towards the control of tsetse and trypanosomiasis during the period 2009 to 2011.

6.6. Contribution to the terrestrial and aquatic animal health standards code commissions in 2010: Voice of Africa at the General Session of the World Assembly of OIE Delegates

In 2009, AU-IBAR launched a project to enhance the participation of OIE Delegates from Africa in the OIE standard-setting process through Participation of African Nations in Sanitary and Phytosanitary Settings (PANSPSO) project funded by the EC. The main reasons for initiating this project were:

- The low participation of Africa in OIE standard setting activities, as reflected in the low number of written and verbal comments submitted to the OIE on draft or amended standards;
- The lack of coordinated or common position among African nations to propose draft standards, to submit written comments on proposed drafts, or to makes suggestions for standards revision;

- The lack of opportunity, during meetings of the OIE Regional Commission for Africa, to debate standards or establish a common approach and understanding;
- The strong need expressed by African OIE delegates to convene and discuss in detail, prior to the OIE General Sessions of the World Assembly of Delegates, new or amended standards, and to harmonize their opinions to enable them present a common view during the General Session.

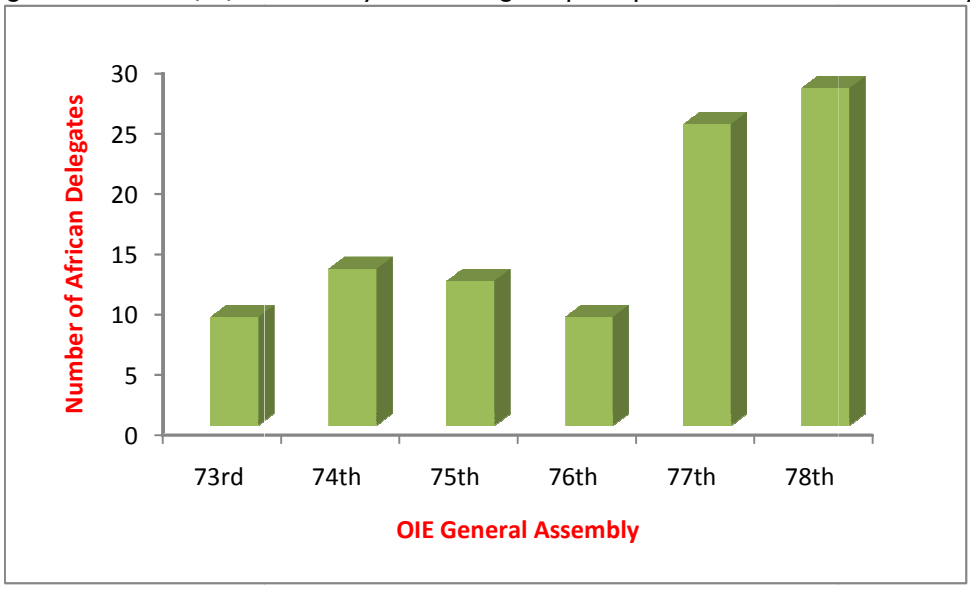
During the workshop, in which all delegates were encouraged to actively participate, all new or amended standards being proposed by the OIE Terrestrial Animal Health Standards Commission (the Code Commission) were explained and discussed in detail. Where applicable, and especially when the proposed standards could affect trade in animals and animal products and animal health in Africa, Delegates proposed comments to be presented as verbal interventions during the 77th OIE General Session in 2009.

Therefore, following the success of the first attempt in 2009 to enhance participation by OIE Delegates from Africa, the exercise was repeated in May 2010 in Entebbe, Uganda for the 78th General Session.

The meeting with OIE Delegates in Entebbe, Uganda, was preceded by a technical meeting between an OIE expert, AU-IBAR SPS experts and the members of the OIE Regional Commission for Africa, held at the AU-IBAR headquarters in Nairobi to discuss new and/or proposed OIE standards in detail and to formulate tentative interventions by Delegates. Subsequently the issues raised were again explained and discussed in detail with the 52 Delegates during a ministerial meeting, held in Entebbe, Uganda, from 6 to 8 May 2010, before the 78th OIE General Session.

The success of these intensive discussions with the Delegates, enhanced their ability to interact and debate with informed confidence, Figure 15 shows the trend of OIE Delegates from Africa over the past six years, (73rd to the 78th OIE General Sessions). These figures concern only interventions in proposed changes to the OIE *Terrestrial Animal Health Code* but a similar increase in interventions was noticed during the presentation of the other Specialist Commissions and discussions on technical items.

Figure 15: Trend of African country's OIE Delegates participation to the General Assembly



Several of interventions made during the 77th and 78th General Sessions, resulted in a proposed standard being changed or amended to reflect and accommodate the needs of Africa, as expressed by the Delegates from Africa.

The success of their participation in the 77th and 78th General Session of the World Assembly of OIE Delegates was unanimously acknowledged, and this was very encouraging and rewarding for Africa. The AUC is fully conscious of the important technical, but also political impact on such actions, and has therefore decided to institutionalize this process by providing a regular dedicated budget for that purpose.

These achievements have been made possible by the excellent partnership and synergies that AU-IBAR and the OIE have developed in their long history of partnership.

The comments made during the 78th GS/OIE by the African OIE Delegates are in annex 3.

7. DISEASE CONTROL INTERVENTIONS FOR 2011

7.1. Improving veterinary governance in Africa

Veterinary Services in Africa play a key role in controlling animal diseases by means of surveillance of animal diseases (including zoonoses), early detection and rapid response. To improve animal health in Africa, and in particular to control emerging and re-emerging diseases, it is necessary to build the capacity of Veterinary Services and improve their governance, in accordance with the quality standards in the Terrestrial Animal Health Code, which were adopted by all MS and territories of the OIE. AU-IBAR with the support of the European Commission (EC) has developed a programme to address the veterinary governance in Africa. The programme aims at reinforcing veterinary governance in Africa and will improve institutional environment at national (country) and regional levels (RECs) to provide better animal health services. The programme will build on the success of the long-term partnership of the EC with AU-IBAR, which led to eradication of one of the major transboundary animal diseases affecting Africa: Rinderpest. This disease was the second "plague" to be eradicated from the world, after Smallpox. Further improvements in animal health in Africa are however still needed to boost livestock development, and in turn increase food security and new trade opportunities, lifting livestock keepers in Africa out of poverty.

The strategic goal of the programme is to bring about institution strengthening of veterinary services towards (i) the establishment of adequate veterinary services at the national level (ii) strengthen regional institutions to play their roles of: coordination, harmonization, integration and support to countries with the aim to stimulate a more conducive environment for public and private investments in the livestock sector. The programme will focus on three main areas:

- Creating a conducive and participatory change environment through evidence-based advocacy and knowledge creation.
- Build institutional and individual capacity in policy analysis, formulation and implementation to undertake institutional strengthening of veterinary services
- Encouraging change through supporting initiatives with high leverage effects.

The evidence based advocacy and knowledge creation focus aims at improving the general understanding in countries and regions of the potential of the livestock sector in terms of poverty alleviation and as economic driver towards improved livelihoods and food security. This understanding should enhance the acceptance and the political will for reviewing and changing/updating the present, often substandard institutional arrangements, policies and strategies that are currently in place (see outcomes of PVS evaluations) to exploit the Livestock potential. This will be done by making the required socio-economic and general policy information available and using this information to advocate the need for change with the relevant state and non-state actors. Non-state actor participation will ensure acceptance and ownership by the wider stakeholder community.

Secondly the approaches envisaged for the capacity building interventions and change towards better sector governance will be based on internationally recognized good practices as outlined i.e. in the reference documents published by Europe Aid[1]. The capacity building focus will be both on state and

[1] European Commission Tools and Methods Series – Reference Document No 4 - Analysing and Addressing Governance in Sector Operations. Luxemburg: Office for Official Publications of the European Communities November 2008 - ISBN 978-92-79-11376-5

non-state actors at national and regional levels. In terms of scope, policy related activities could address the whole Livestock sector, as it would be unrealistic to address animal health policies without dealing with other Livestock related policies. However, for strategy and legislation related activities, the programme will concentrate on animal health issues.

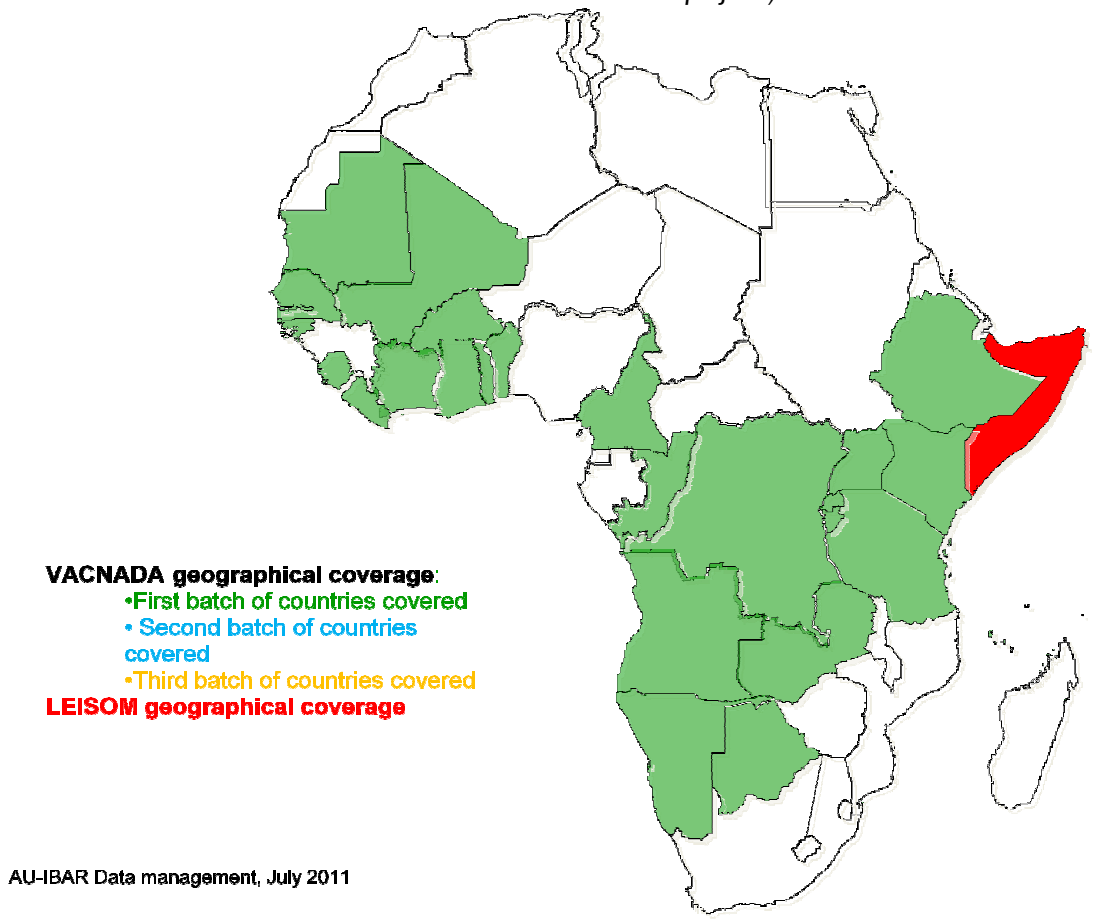
The third focal area is encouragement for change, which will be provided through the support of change initiatives and the implementation aspects of the newly defined policy and strategic approaches. Strong focus will be on issues with a high potential for quick success and high impact such as (i) data/information collection and sharing with special attention for the role of IBAR, OIE and FAO as knowledge providers, (ii) disease prevention and control, and (iii) participation of African countries in standard setting organizations.

Follow-up PVS missions will be undertaken from the second year of the programme to provide information on emerging trends and progress achieved.

7.2. PPR, NCD, CBPP, CCPP and Sheep and Goat pox

The vaccination of sheep and goats against PPR, NCD, CBPP, CCPP and Sheep and Goat Pox will be continued in all the beneficiary countries in order to utilize all the vaccine doses provided by AU-IBAR. The treatments of selected animals against other endemic livestock diseases will also be continued alongside the vaccinations. A further 7 countries were recruited in year 2011 to join the beneficiary countries for vaccinations thus bring a total number of 33 AUC Member states receiving disease control support from AU-IBAR. Map 28 shows AU-IBAR future intervention geographical coverage in 2011.

Map 28: Geographical coverage of AU-IBAR intervention in disease control in Africa in 2011 (under VACNADA and LEISOM projects)



7.3. Trade Facilitation and harmonization

Through the SOLICEP and LEISOM Projects, AU-IBAR will continue with livestock trade facilitation and harmonization activities during 2011. The LEISOM project will support the completion of rehabilitation works on livestock marketing infrastructure facilities along the main livestock export marketing chains in Somalia. Modalities for the sustainable management of these structures will also be consolidated to ensure that the local municipal authorities and the livestock traders will continue to use and manage the facilities following the closure of the LEISOM Project later in the year. A workshop involving key livestock import and export stakeholders from the Middle East and the Horn of Africa respectively is planned to take place in June 2011. The goal of the workshop is to contribute towards safe and stable inter-regional livestock trade between the Horn of Africa exporting nations and Middle East importing countries. AU-IBAR will continue to support the Somali veterinary authorities to undertake animal health certification activities for livestock export and the activities of the Somali Livestock Stakeholders coordination body through SOLICEP and LEISOM projects.

7.4. Tsetse and Trypanosomiasis Research and control

On 12th to 16th September 2011, ISCTRC will hold the 31st ISTRC general conference in Bamako, Mali. The International Scientific Council for Trypanosomiasis Research and Control (ISCTRC) biennial conference is one of the African Union's (AU) Statutory Conferences. The objective of the Conference will be to promote information sharing on tsetse, human and animal trypanosomiasis problem, review control strategies and recommend appropriate approaches in tsetse and

trypanosomiasis research and control. It is held every two years in African Union Member States affected by Tsetse and Trypanosomiasis.

During the conference over 100 scientific and technical presentations will be made and over 300 participants from African Union Member states, Non Governmental Organizations, the pharmaceutical industry players and International Organizations will attend the meeting.

The theme of the conference is ***'Refocusing Research and Control of tsetse and trypanosomiasis: a development agenda'.*** The programme will include plenary sessions and poster presentations covering the following sub-themes, PATTEC Initiative, Country Reports, Animal African Trypanosomiasis, Human African Trypanosomiasis, *Glossina* Biology, Control and Eradication and Land Use, Environment and Socio-economics.

During 2011, ISCTRC will also participate in T&T coordination and harmonization meetings with other partners especially PATTEC and PAAT and will also support the publication of the Tsetse and Trypanosomiasis Information Bulletin (TTI).

7.5. Animal Resource Information System and knowledge management

TThe timely collection, collation, storage, analysis and sharing of sanitary information is essential for the effective prevention and control of animal diseases. However, most African countries have inadequate capacities to fulfill these tasks with most of the systems in use are not sustainable. Within the scope of its mandate and in view of the requirement for transparency in disease reporting and the need for timely availability of information, AU-IBAR developed a first version of the Animal Resources Information System (ARIS) in 2000 to facilitate animal resource information sharing. A second version of the system, ARIS-2, which will be sustainable and based on an open source system, is now being developed for use by MS and the RECs.

The overall objective of the ARIS 2 is to enhance the information and knowledge management capacity of AU-IBAR and MS to swiftly respond to disease emergencies and to properly plan interventions in animal production, marketing and trade. This objective emanated from the knowledge management strategy of AU-IBAR for the period 2010 to 2014, and the needs assessment of MS carried out by IBAR in 2010.

In terms of major features, ARIS will allow MS to submit, validate, report and analyze data on animal resources using an online web-based system while enhancing the collaboration between MS and the RECs. In this context, ARIS will serve as an early warning system and a notification tool for immediate notification and regular reporting of outbreaks of animal diseases. It will as well facilitate reporting of relevant epidemiological information on diseases and the prevention and control measures applied by African countries. The system also envisages improving the capability of countries to collaborate and fully participate in activities of international standard setting bodies (OIE, CAC, IPPC and World Trade Organisation).

ARIS-2 system will be flexible and customizable to country and user needs and requirements.

The core modules for administrative and security control, the modules for reporting so far developed include: Emergency disease reporting, Regular or monthly disease reporting, Active Disease surveillance, Disease control measures (vaccination), Meat inspection, Animal population and composition, SPS standards, and Plant pest reporting.

As there are several information management systems currently being used by countries (WAHIS, TAD-Info, LIMS, and other national databases), ARIS will be made interoperable with these systems in order to avoid duplication of efforts and facilitate safe on-line exchanges of data and information.

ARIS-2 will be availed to all RECs and MS and a roll out plan in stages has been worked out. It is expected that ARIS will become operational by September 2011.

For the operationalization and the familiarization with the new system by MS, AU-IBAR will organize training on data collection and analysis, and provide technical backstopping for information collation, analyses and dissemination. AU-IBAR will also commence the dissemination of disease outbreak alerts on weekly basis and publication of a quarterly animal health bulletin in addition to the regular Pan African Animal Health Year Book.

7.6. Integrated Regional Coordination Mechanism for TADs and Zoonoses (IRCM)

Africa is beset by a myriad of endemic animal diseases and zoonoses, that exert a huge socio-economic burden on the populace through production losses, subdued productivity of Africa's animal resources, negative impacts on market access and quality of commodities produced and direct infection with morbidity, mortality and related costs in both animal and human populations. The impacts are most manifest from TADs and zoonoses. Due to their ability to spread rapidly across borders, cause high mortality and morbidity in populations, block access to market due sanitary requirements and demand huge investments to prevent and control, TADs have played an important role in impoverishing communities that depend on animal resources for their livelihoods. On the other hand, zoonotic diseases infect both animals and humans, and are often have negative impacts on production and productivity, public health and market access. Unfortunately, most countries lack the means to combat these diseases beyond their national borders due to administrative and policy limitations, scarcity of resources, complexity of the processes involved among other reasons.

Experience gained from the prevention and control of the highly pathogenic avian influenza in the recent past, has demonstrated that TADs and zoonoses can best be dealt with through multi-disciplinary cross border strategies. This approach assures cooperation among nations, pooling and sharing of essential resources such as expertise, information, technology, infrastructure and even financial investments to name a few. The operationalization of this approach implicitly translates into operationalization of the one health strategic framework. Additionally, experience has shown that for sustainability, interventions for disease prevention and control can only be assured if they are entrenched on existing institutions and are continually supported through internal resourcing.

In view of this, the IRCM is designed to facilitate the institutionalization of TADs and zoonoses prevention and control strategies within the regional economic communities. It complies with **the DECISION ON THE REPORT OF THE EIGHTH CONFERENCE OF MINISTERS OF ANIMAL RESOURCES Doc. EX.CL/590 (XVII).** The RECs, in their efforts to spearhead regional integration and establish structures for the free movement of people, goods and services, can play a significant role in the coordination and harmonization of TADs and zoonoses prevention and control. This will not only contribute to their desire to achieve free movement of goods and services, but also the economic aspiration of reducing poverty and food insecurity among their people. Entrenching TADs and zoonoses prevention and control into the REC institutional structures and business processes will guarantee sustainability and access to essential resources to continuously address this endemic bottleneck to the development of animal resources in Africa.

AU-IBAR, in the execution of its mandate places high priority to the prevention and control of TADs and zoonoses in the current strategic plan 2010-2014. The IRCM provides an avenue to push this agenda forward by establishing operational modalities of working with and through the RECs in delivering support to member states.

The Overall objective of IRCM is to provide an objective and progressive approach to coordination and capacity development for the effective management of TADs and zoonoses (including emerging/re-emerging) in Africa. This mechanism will strengthen the capacity of RECs and their member states to coordinate harmonize and execute interventions in the prevention and control of TADs and zoonoses; including of emerging and re-emerging diseases with all relevant stakeholders.

To make this approach a reality, AU-IBAR is working closely with the UN Food and Agriculture Organization (FAO), World Health Organization Africa Regional Office (WHO AFRO), the World Organization for Animal Health (OIE) and the * AU recognized RECs (CENSAD, COMESA, EAC, ECCAS, ECOWAS, IGAD, SADC and UMA) to finalize the IRCM strategic framework and develop implementation plans at the Regional Economic Community level. The IRCM will spearhead interventions to address REC specific priorities which will be tackled through 5 year and implementation plans developed by the RECs.

8. CONCLUSION

During 2010, 49 countries reported their disease status to AU-IBAR. This has slightly increased and the missing reports are from the following 4 countries: Cap Verde, Libya, Saharawi and Sao Tome and Principe. This represented the highest reporting rate 92.45% from 2000 to 2010 and even since the establishment of the Pan African Animal Health Yearbook. There is still a need to improve both the quantity and quality of reports to give a complete picture of the disease situation across the continent. It is hoped that data quality will improve as more and more African countries adopt the AU-IBAR monthly disease reporting format and ARIS 2 which will operational in 2011.

During 2010, most of the major animal diseases continued to affect African countries. A total of 17,708 outbreaks of 59 animal diseases were recorded causing 5,286,686 new cases, 500,195 mortalities, 138,208 slaughtered and 38,135 destroyed. Diseases with a high number of outbreaks in order of importance included; Rabies, Blackleg, Brucellosis, Tuberculosis, Anthrax, Mange and Trypanosomosis.

Major TADs by order of importance were LSD, Sheep and Goat Pox disease, NCD, PPR, FMD, RVF, AHS, CBPP and ASF. NCD was the disease with the widest distribution affecting 35 of the 49 countries followed by Rabies (32), LSD (31) sheep and pox disease (26), PPR (25), CBPP (24), FMD (24), Pasteurellosis (23), Trypanosomosis (23) blackleg (21) anthrax (21).

AU-IBAR will continue to work with African Union MS to tap the great potential of its animal resources. In 2010, AU-IBAR made significant progress in disease control interventions and animal certification in Africa through several programmes/projects. A number of ongoing programmes made the much needed contribution to improving the contribution of livestock and other animal resources to the livelihoods of Africa's populations. These include VACNADA, LEISOM, PANSPSO, SOLICEP and SPINAP. In addition, there are new and upcoming programmes intended to further strengthen the ability of veterinary services to meet the governance challenges of the 21st century, and the IRCM, which aims to strengthen the coordination among relevant stakeholders and build capacities at the national and REC levels for the control and systematic eradication of priority TADs and zoonoses in Africa in line with the global one health strategic framework.

Finally, there is no turning back in our efforts to transform our animal resources sector into a viable, sustainable, well paying enterprise by controlling major animal diseases in the continent..

ANNEX

ANNEX 1: STATUS OF MONTHLY DISEASE REPORTING BY COUNTRIES IN 2010

	Country	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.	Algeria												
2.	Angola												
3.	Benin												
4.	Botswana												
5.	Burkina Faso												
6.	Burundi												
7.	Cameroon												
8.	Cape Verde												
9.	CAR												
10.	Chad												
11.	Comoros												
12.	Congo Brazzaville												
13.	Cote d'Ivoire												
14.	Djibouti												
15.	DR Congo												
16.	Egypt												
17.	Equatorial Guinea												
18.	Eritrea												
19.	Ethiopia												
20.	Gabon												
21.	Gambia												
22.	Ghana												
23.	Guinea Conakry												
24.	Guinea Bissau												
25.	Kenya												
26.	Lesotho												
27.	Liberia												
28.	Libya												
29.	Madagascar												
30.	Malawi												
31.	Mali												
32.	Mauritania												
33.	Mauritius												
34.	Mozambique												
35.	Namibia												
36.	Niger												
37.	Nigeria												
38.	Rwanda												
39.	Saharawi												
40.	Sao Tome & Principe												
41.	Senegal												
42.	Seychelles												
43.	Sierra Leone												
44.	Somalia												
45.	South Africa												
46.	Sudan												
47.	Swaziland												
48.	Tanzania												
49.	Togo												
50.	Tunisia												
51.	Uganda												
52.	Zambia												
53.	Zimbabwe												

KEY: Zero reports Reports received No reports received

ANNEX 2: LIST OF DISEASES REPORTED IN AU-IBAR MEMBER STATES IN 2010 AND RELATED QUANTITATIVE DATA ARRANGED IN ORDER OF NUMBER OF OUTBREAKS

No.	Disease	No. of countries affected	Outbreaks	Cases	Deaths	Slaughtered	Destroyed
1	Rabies	32	1702	5159	2851	851	1399
2	Lumpy skin disease	31	1141	66559	19198	243	22
3	Blackleg	22	1136	12708	3038	106	185
4	Brucellosis	18	1090	9864	131	2137	982
5	pasteurellosis	23	994	17563	4960	357	249
6	Pox disease	26	964	40939	6329	136	311
7	Tuberculosis	15	915	3173	186	719	767
8	Anthrax	21	902	9629	3121	82	272
9	Mange	13	836	25604	431	195	32
10	Newcastle Disease	35	735	3330491	346548	3989	2005
11	Trypanosomosis	23	679	94760	2201	680	25
12	Anaplasmosis	15	646	14590	1668	21	19
13	Heartwater (Cowdriosis)	15	602	980063	1210	11	2
14	PPR	25	583	52019	13624	1352	10302
15	Foot and mouth disease	24	454	276628	3335	172	48
16	Babesiosis	15	389	3862	539	7	4
17	Dermatophilosis	11	358	6062	249	100	20
18	Rift valley fever	4	350	11597	6391	0	502
19	African horse sickness	5	305	2394	1143	0	1
20	Contagious Ecthyma	5	297	1526	89	12	22
21	CCPP	8	256	12889	1380	452	94
22	CBPP	24	218	7043	1715	772	195
23	Mastitis	5	213	428	3	0	0
24	Infectious bursal disease (Gumboro)	15	191	49120	19095	22	60
25	Coccidiosis	13	186	13848	775	210	78
26	Contagious Ophthalmia	3	163	474	1	0	0
27	African swine fever	21	145	27529	19156	6228	1670
28	Cysticercosis	7	128	1320	57	13	242
29	Infectious coryza	4	119	2747	511	0	0
30	Foot rot	7	115	1404	58	1	15
31	Theileriosis	9	112	44583	13772	374	8
32	Gastro-intestinal tract parasite	6	105	1872	44	0	0
33	Canine distemper	8	90	891	167	3	22
34	Blue tongue	6	87	744	80	1	1
35	Old world screwworm	2	67	495	6	0	0
36	Contagious pustular dermatitis	3	55	1154	30	0	0
37	Varroae	1	40	1956	0	0	1956
38	Distomatosis (Liver Fluke)	7	37	546	19	39	0
39	Botulisim	7	33	635	546	0	0
40	Salmonellosis	7	29	138957	20447	110921	16521
41	Trichomonosis	2	29	58	0	0	10

No.	Disease	No. of countries affected	Outbreaks	Cases	Deaths	Slaughtered	Destroyed
42	Echinococcosis/Hydatidosis	3	27	497	122	0	0
43	Enterotoxaemia	7	26	244	96	0	0
44	Malignant catarrhal fever	3	20	193	27	0	1
45	Piroplasmosis	3	17	2142	835		0
46	Bovine genital campylobacteriosis	2	17	45	2	0	0
47	Marek's disease	7	15	1105	406	0	10
48	Fowl cholera	4	11	475	203	0	3
49	Bovine ephemeral fever	1	10	52	0	0	0
50	Nairobi sheep disease	1	6	136	9	0	0
51	Avian infectious bronchitis	4	5	3397	115	1	0
52	Avian chlamydiosis	1	5	12	2		0
53	Avian mycoplasmosis	1	5	11	9	0	0
54	Leishmaniosis	1	5	6	0	1	6
55	Avian Influenza	2	4	2899	2899		0
56	Actinomycosis	2	4	11	1	0	1
57	Contagious agalactia	1	4	4	0	0	0
58	Equine rhinopneumonitis	2	3	303	210		0
59	Swine erysipelas	4	3	187	100	0	3
60	European foulbrood of honey bees	1	3	50	0	0	50
61	Paratuberculosis	1	3	24	6		18
62	Avian leukosis	2	3	17	10	0	0
63	Mucosal disease	2	3	5	0	0	0
64	Parafilariosis	1	2	40	0	0	0
65	Tetanus	1	2	2	0	0	0
66	Wesselsbron Disease	1	1	25	25		0
67	Johne's disease	1	1	15	0	0	2
68	Caseous lymphangytis	2	1	14	2	0	0
69	Canine parvovirus	1	1	2			
70	Myiasis	1	1	2			
71	Schistosomosis	1	1	2	1	0	0
72	Enzootic bovine leukosis	1	1	1	0		0
73	Infectious bovine rhinotracheitis	1	1	1	0	0	0
74	Ovine pulmonary adenomatosis	1	1	1	1		0
75	Fowl typhoid	1		870			
76	Swine atrophic rhinitis	1		10	9	0	0
77	Encephalomyelitis	1		1	0		
78	Epizootic Lymphangitis	1		1	0	0	0
79	Leptospirosis	1		1	1	0	0
	Grand Total		**17708**	**5286686**	**500195**	**130208**	**38135**

ANNEX 3: COMMON POSITION OF AFRICA DELEGATES TO BE PRESENTED AT THE 78th GENERAL SESSION OF THE OIE: PARIS, FRANCE: 22 to 28 MAY 2010

Code Commission	**26 May 2010**	**11h30 – 13h00** **14h30 – 16h00**			
STANDARD	**CODE REFERENCE**	**PROPOSED CHANGE**	**AFRICA POSITION**	**SPEAKER**	**SUPPORT**
Glossary		Change of Central Bureau to Headquarters	SUPPORTED: Africa supports all the changes and proposes to rather change the term "*Headquarters"* to the term "*OIE Headquarters"* to avoid confusion due to the general use of the word "headquarters". Africa also takes note and appreciates the addition of the term "livestock-owners/keepers" in the training program for *early detection*	Niger	Ghana Namibia
Border posts and quarantine stations in importing country	Chapter 5.6 Article 5.6.2	Presence of disease in quarantine station	SUPPORTED. Africa supports the addition of the last sentence under article 5.6.2. Although this concept is already applied by most countries, its insertion as legal text within the Code makes it more reassuring.	Algeria	Nigeria Malawi
Animal health surveillance	Chapter 1.4. Article 1.4.1	Disease in wildlife and domestic animals	SUPPORTED: Africa wishes to thank the Code Commission for inserting the term "*vice versa"* in Article 1.4.1 (2) as it is important in the African continent to realise that the presence of a disease in wildlife does not always imply it is also present in livestock and *vice versa.* SUPPORT: Africa also supports the replacement of the word "livestock" with "domestic animals" in Article 1.4.1 (2) and expects that this change will apply to all other similar relevant chapters.	Ethiopia	Kenya Botswana
	Article 1.4.6	Compartment deleted	SEEK CLARIFCATION: Africa realises the need for change but the policy of the OIE for future official recognition of compartments needs to be made clear.	Sudan	Swaziland Madagascar
Surveillance for arthropod vectors	Chapter 1.5 Article 1.5.1	5th paragraph in introduction- additional surveillance of vectors Other paragraphs	NOT SUPPORTED: Africa considers that this paragraph is unclear and repetitive. We suggest changing it to: "*The need has arisen to complement the general recommendations on surveillance with specific standards for surveillance for vectors".* SUPPORT: Africa supports the other changes	Kenya	Tanzania Uganda

Status of OIE listed diseases: Procedures for self declaration and official recognition	Chapter 1.6 Article 1.6.1 and disease questionnaires	General principles: replacing the word *recognise* with *publish*	SUPPORTED & SEEK CLARIFCATION: Africa supports the change but need clarity for legal purposes: Does publish also imply not being recognised by the OIE? However we suggest that the text on this part should be clearer to avoid confusion with trade partners. The French text refers to "procedure of self-declaration" and need to be harmonized with the English text which does not mention "procedures" The inclusion of the questionnaires in the Code for official disease status recognition is welcomed and SUPPORTED by Africa.	Lesotho	Sudan Niger

Veterinary services	Chapter 3.1 Article 3.1.2 (6)	Veterinary legislation	NOT SUPPORTED: With regard to the first paragraph, Africa considers that: veterinary legislation is a prerequisite for all the other things mentioned and not only quality. We propose that the formulation be changed as follows: "Veterinary legislation is a prerequisite to support good governance and to provide a legal framework and mandate for key activities of the *Veterinary Services*" With regard to the second paragraph: Africa finds it unclear and very selective on what veterinary legislation should define and document as things other than identification systems, animal movements, etc could be added to the list. The paragraph needs to be rewritten or deleted. We consider that legislation is what should be done while regulations are describing how it should be done. These concepts are mixed up in the paragraph. With regard to the third paragraph, Africa is of the view that it should be rewritten or deleted. It is not clear what kind of demonstration is been talked about.	Zambia	Benin Nigeria
Evaluation of Veterinary Services	Chapter 3.2 Article 3.2.2	Scope – 4th bullet	NOT SUPPORTED: Africa proposes to modify the French version which is not in line with the English version. The French version should be reformulated as follows: "capacités en matière de législation et réglementation vétérinaire". In the English version, the word "regulations" should be changed to "regulatory"	Mali	Ethiopia Algeria
Design and implementation of identification systems to achieve animal traceability	Chapter 4.2 Article 4.2.3 (5)(c)(iii)	The description of movements	NOT SUPPORTED: Africa finds the proposed changes are confusing. A clear distinction should be made between movements (in the general speaking language of the word) on one hand and additions and/or decrease in numbers in a herd on the other. In Africa, births, slaughters and deaths of animals are not classified or referred to as movements but are either additions or decrease in numbers. We suggest that paragraph 2 and the first bullet should be reviewed to accommodate this and to make a clear distinction between movements *per se* and additions or decreases in the herd. We suggest that paragraph iii) be reviewed and rewritten. We also propose the deletion of the phrase "when not classified as a movement" which is in the first bullet of the former 4.2.3(5)(c)(iv) need to be deleted, as it is not needed anymore.	Ghana	Botswana Gabon

Zoning and compartmenta-lisation	Chapter 4.3 Article 4.3.3 (2)	Descriptive text for a *protection zone*	NOT SUPPORTED: Africa appreciates the principle of the new proposed text but also notes from the report of the Scientific Commission that the text in this regard was prepared for Member comments. Africa therefore proposes that the proposed text should be first evaluated by the Scientific Commission before adoption.	Uganda	Zambia Cote d'Ivoire

Application of compartimenta-lisation	Chapter 4.4	Chapter in general	SUPPORTED: The concept of compartmentalisation presented in this paragraph is supported, on condition that the. General Assembly acknowledges the concept as also being a safe (and not a high risk!) trade facilitating measure that will benefit developing countries. It is also important to note from the sentiment of the text that compartmentalisation is NOT a new or unknown issue – only the term is new but the concepts portrayed in the text have been applied in Africa for many years such as for TB and Brucellosis free herds, biosecurity establishments for African swine fever, export of ostrich meat, etc.	Swaziland	Angola Malawi
General obligations related to certification	Chapter 5.1 Article 5.1.1	5th Paragraph - signing of certificate	SUPPORTED: The insertion of the first sentence of the fifth paragraph is welcomed by Africa and considered necessary as it is expected for example to prevent Members for requesting certification for freedom from FMD for the export of horses. NOT SUPPORTED: However, the wording of the second sentence is still confusing in the English version. Africa suggests that this sentence be reformulated in the English version as follows: " Each certificate should be signed by only one veterinarian". The French version is satisfactory. NOT SUPPORTED: Africa suggests that the two first sentences of the fifth paragraph under article 5.1.1 be moved to chapter 5.2 dealing with "certification procedures".	Nigeria	Lesotho Chad

Certification procedures	Chapter 5.2 Article 5.2.3 (30	Language of certificate	NOT SUPPORTED: Africa considers the proposed text as confusing – does it imply that the certifying veterinarian from the exporting country must also be able to speak/read the language of the importing country? Africa wishes to suggest that both the languages of importing and exporting countries should be used on the certificate, in case the two partners do not reach an agreement on a unique language. One of the OIE recognised international language may also be used if requested by one of the partners.	Gabon	Sudan Madagascar
Slaughter of animals	Chapter 7.5 Article 7.5.1	Object – paragraph 2	NOT SUPPORTED: Africa requests clarification as to whether this sentence is an addition or a deletion. In case this sentence has not been deleted, then Africa suggests the insertion be improved to read: "Not all of the recommendations apply to rabbits and poultry because of the specific manner of handling these animals",	Chad	Mauritania Mozambique
Use of animals in research and	Chapter 7.X Preamble	Preamble – paragraph 5	NOT SUPPORTED: Africa proposes that the insertion in paragraph 5: "Key events" should be replaced by "Key events and	Burkina Faso	Mali South

education	Article 7.X.1 Article 7.X.4(3)	Definition of euthanasia "Use programme"	interventions". NOT SUPPORTED: Africa suggest to change the formulation of the definition to: "means the act of inducing death using a method with the minimum pain or distress to the animal that results in rapid and permanent loss of consciousness" NOT SUPPORTED: In the English version, Africa finds the word "use programme" unclear and would prefer a more descriptive term. The French version is satisfactory and we propose the English version should be aligned to it.		Africa
Anthrax	Chapter 8.1 Articles 8.1.12, 14 & 15	Chapter as a whole Insertion of "notes" Articles 8.1.12, 14 and 15	SUPPORTED: The changes proposed are supported as they provide flexibility and are less restrictive and prescriptive than the previous version e.g. replacing the term "quarantine" with the word "restriction". SEEK CLARIFICATION: Africa would like to draw the attention of the World Assembly to the fact that this is the only chapter in the Code where such notes are inserted without having a specific Article reference. Do these notes have a legal status e.g. in setting up import requirements? We request clarification on the purpose of these notes? Are they aimed at ensuring safe trade or are they considered as procedures?	Sudan	Togo Zambia
Foot and mouth disease	Chapter 8.5 Article 8.5.5 bis Article 8.5.7(2) Article 8.5.39	FMD free compartment Establishment of a containment zone Inactivation of casings	SUPPORTED: The African Delegates sincerely wish to thank the Commission for inserting this text for adoption as it was requested several times in the past by Africa. I also refer you to the remarks made earlier by Africa under chapter 4.4 (Application of compartmentalisation). NOT SUPPORTED: Some clarity is however needed on the following: Article 8.5.5 bis 2(a): Does the certification refer only to the area where the compartment is intended to be established or the entire country or zone? Article 8.5.5 bis(4): This Article appears to be in contradiction with the first paragraph under Article 8.5.5 bis where it is stated that a FMD compartment can be established in an infected country or zone NOT SUPPORTED: In article 8.5.7 (2) it is stated that a stamping-out policy should be applied for a FMD containment zone but in Article 8.5.9 bis (new Article) provision is made for animals from a containment zone to be moved for direct slaughter to an abattoir which is not the same as stamping-out. The Delegates of Africa would prefer the option of article 8.5.9 bis, as within developing countries, controlled slaughter in the event of an outbreak, including slaughter of animals from a containment zone, would be preferable to stamping-out, in order to avoid waste of the much needed food.. Chapter 4.3 also provides for other means of disposal in a containment zone than stamping-out and there is no scientific reason why it should be different for FMD.	Botswana	Uganda Namibia

			SUPPORTED: Africa wishes to thank the Commission for taking into account the request made by the African Delegates on this aspect during the 77th General Session		
Avian influenza	Chapter 10.4 Articles 10.4.13& 14 10.4.20	Replacing container with packaging material Recognising NAI and/or HPAI	SUPPORTED: Africa wishes to thank the Commission for accepting and putting into effect the request made by the African Delegates during the 77th General Session,. The same applies for Newcastle disease chapter. NOT SUPPORTED: The inclusion of NAI, in addition to HPAI, in the provisions of this chapter is not supported as it could have serious trade implications e.g. for exports of ostrich fresh meat.	Tanzania	Burkina Faso Nigeria
Bovine tuberculosis	Article 11.7.3 Articles 11.7.3 and others	Compartment vs herd free from bovine tuberculosis Use of the gamma interferon test	NOT SUPPORTED: During the 77th General Session, Africa (supported by the Delegate of Canada) made an intervention on this and indicated that the application of compartments for bovine tuberculosis is not acceptable due to the reasons given last year. In the report of the 77th General Session (see page 99), the President of the Commission indicated that these concerns of Africa and other Members, were noted and that the International Trade Department would provide an alternative text. This has apparently not been done as compartments are again indicated for bovine TB. The African Delegates still abides by its opinion expressed during the 77th General Session and request that this be rectified as indicated in the report. NOT SUPPORTED: In the introductory overview of the President of the Commission (par. 27 (a)) it is indicated that the gamma interferon test was inserted in the chapter on the request of "one member". In the experience of countries in Africa, there are still many uncertainties related to the use and interpretation of the gamma interferon test and are therefore not generally used for official certification purposes. Was the view of this "one member" verified by convincing scientific evidence? The request from Africa is that this issue also be referred to the Scientific Commission for clarification before the use of the gamma interferon test is proposed for adoption. Africa wishes to remind this assembly that the Gamma interferon test is indicated as an alternative test but not as a prescribed test in the Terrestrial Manual.	Swaziland	Niger Comoros Uganda
Stray dog control	Chapter 7.7	deleting of "guidelines" in the heading of the text	It is acknowledged that this issue on replacing guidelines previously in the Code and incorporating it into Code chapters has been discussed. However there is still some concern that it will now be applied as strict standards by trade partners and giving less flexibility as with application of "guidelines". Africa wishes to request that the changes be differed until clarity on legal implication of this change is given.	Nigeria	South Africa Zimbabwe
			INTERVENTIONS ON PRESENTATIONS OF OTHER COMMISSIONS BY DELEGATES FROM AFRICA		
Scientific Commission for Animal Diseases	**25 May 2010**	**14h45 – 18h30**			

		Explanatory text for a protection zone	SUPPORTED: This initiative of the Commission is noted with appreciation by Africa as it will greatly assist Members to apply this concept in a uniform and harmonised manner.	Ghana	Malawi Uganda
		Strategy for the global eradication of FMD	SUPPORTED: Africa wishes to thank the Commission for this initiative and the possibility of providing text for the acknowledgement of national FMD control strategies which would assist and encourage countries in Africa to focus more specific on the control of FMD	Namibia	Lesotho Niger

		Draft policy on the wildlife-livestock interface	SUPPORTED: This work undertaken by the Commission is appreciated by the African delegates as it supports several requests from Africa that the relationship between wildlife and domestic animals should again be looked at as it relates to recognition of disease status and trade facilitation.	Kenya	Zambia Botswana
		Handbook on Terrestrial Animal Health Surveillance	SUPPORTED: The Commission is thanked for the progress on this project as there is within Africa an urgent need for veterinarians and para-professional staff for such a practical guide.	Nigeria	Sudan Burkina-Faso
Biological Standards Com.	26 May 2010	17h30 – 18h30			
		Guidelines for the sequestration of viral agents	SUPPORTED – Africa supports the drafting of these guidelines as it appears necessary to expedite the process for moving towards global freedom from rinderpest.	Ethiopia	Tanzania Mali
Presentation of Technical Theme I (24 May 2010 11h00 – 12h30)	Technical Item I: The Private Sector's point of view on the use of public and private standards		SUPPORTED: Africa wishes to reiterate its support for the Resolution adopted during the 76th General Session on Private Standards. We acknowledge that the use of private standards contributes to improving quality and food safety. However, for Africa the issue of private standards is an important trade issue as such standards are often used as non-tariff barriers to trade, if not harmonised with OIE and CODEX standards. Africa requests once again that Members should firstly respect their obligations to comply with OIE standards and not to use private standards as an alternative requirement for import, which could become very cost intensive for developing countries. If used as complementary to and in harmony with OIE standards, we would support the use of private standards but not if used as barriers to trade. We request that a nominee of Africa be considered for inclusion in the drafting team for the Resolution.	Nigeria	Gabon Namibia

ANNEX 4: AU-IBAR FUTURE INTERVENTION IN DISEASE CONTROL IN AFRICA IN 2011

COUNTRY	ACTIVITY	COUNTRY INSTITUTION	IMPLEMENTING PARTNER
Benin	Vaccination against NCD	Ministère de l'Agriculture et de l'Elevage et de la Pêche	AU-IBAR
Botswana	Freeze dried PPR vaccine production, enhancing CBPP vaccine production and support to laboratory equipment capacity	Botswana Veterinary Vaccines Institute (BVI)	GALVmed
Burkina Faso	Vaccination against PPR	Ministère de l'Agriculture, de l'Elevage et de la Pêche	AU-IBAR
Burundi	Vaccination against NCD	Ministère de l'Agriculture et de l'Elevage	AU-IBAR
Cameroon	Freeze dried PPR vaccine production, enhancing CBPP and NCD vaccine production, and support to laboratory equipment capacity	Ministère de l'Elevage, des Pêches et des Industries Animales	GALVmed
	Evaluation of CBPP vaccines	Laboratoire National Vétérinaire (LANAVET)	CIRAD
	Quality Management System	Laboratoire National Vétérinaire (LANAVET)	AU-PANVAC
Central African Republic	Vaccination against NCD	Ministère chargé de l'Elevage et de Santé Animale (Ministère du Développement Rural et de l'Agriculture)	AU-IBAR
Comoros	Vaccination against NCD	Ministère de l'Agriculture et de la Pêche	AU-IBAR
Congo Republic	Vaccination against NCD	Ministère de l'Agriculture et de l'Elevage	AU-IBAR
Congo DR	Vaccination against ND and survey for PPR along southern border	Ministère de l'Agriculture	AU-IBAR
	Enhancing NCD vaccine production capacity	Laboratoire Vétérinaire Kinshasa	GALVmed
	Quality Management System	Laboratoire Vétérinaire Kinshasa	AU-PANVAC
Cote d'Ivoire	Vaccination against PPR	Ministère de la Production Animale et des Ressources Halieutiques	AU-IBAR
Ethiopia	Vaccination against PPR and CCPP	Ministry of Agriculture and Forestry	AU-IBAR
	Freeze dried PPR vaccine production, enhancing CCPP, CBPP and NCD vaccine production, and support to laboratory equipment capacity	National Veterinary Institute (NVI)	GALVmed and CIRAD
	Evaluation of CBPP vaccines	National Veterinary Institute (NVI)	CIRAD
	Quality Management System	National Veterinary Institute (NVI)	AU-PANVAC
Gambia	Vaccination against PPR	Ministry of Agriculture	AU-IBAR
Ghana	Vaccination against NCD	Ministry of Food and Agriculture	AU-IBAR
	Enhancing NCD vaccine production and support to laboratory equipment capacity	Accra Veterinary Laboratory	GALVmed
	Quality Management System	Accra Veterinary Laboratory	AU-PANVAC
Guinea Bissau	Vaccination against PPR	Ministère de l'Agriculture et du Développement Rural	AU-IBAR

Guinea Republic	Vaccination against PPR	Ministère de l'Elevage	AU-IBAR
Kenya	Vaccination against PPR and CCPP	Ministry of Livestock Development	AU-IBAR
	Freeze dried PPR vaccine production, enhancing CCPP, CBPP and NCD vaccine production, and support to laboratory equipment capacity	Kenya Veterinary Vaccines Production Institute (KEVEVAPI)	GALVmed and CIRAD
	Quality Management System	Kenya Veterinary Vaccines Production Institute (KEVEVAPI)	AU-PANVAC
Lesotho	Vaccination against NCD	Ministry of Agriculture and Food Security	AU-IBAR
Liberia	Vaccination against PPR	Ministry of Livestock	AU-IBAR
Malawi	Survey for PPR along northern border	Ministry of Agriculture	AU-IBAR
Mali	Vaccination against PPR	Ministère de l'Elevage et de la Pêche	AU-IBAR
	Freeze dried PPR vaccine production, enhancing CBPP and NCD vaccine production, and support to laboratory equipment capacity	Laboratoire Central Vétérinaire (LCV)	GALVmed
	Evaluation of CBPP vaccines	Central Veterinary Laboratory (LCV)	CIRAD
	Quality Management System	Central Veterinary Laboratory (LCV)	AU-PANVAC
Mauritania	Vaccination against PPR	Ministère de l'Agriculture et du Développement Rural	AU-IBAR
Mozambique	Support to NCD laboratory capacity	Ministry of Agriculture	AU-IBAR
Namibia	Support to cold chain in aid of CBPP vaccination	Ministry of Agriculture, Water and Forestry	AU-IBAR
Niger	Vaccination against PPR	Ministère de l'Agriculture et de l'Elevage	AU-IBAR
Rwanda	Vaccination against NCD	Rwanda Animal Resources Development Authority (RARDA)	AU-IBAR
Senegal	Vaccination against PPR	Ministère de l'Elevage	AU-IBAR
	Enhancing PPR and NCD vaccine production and delivery capacities	Institut Sénégalais de Recherches Agricoles (ISRA)	GALVmed
	Quality Management System	Institut Sénégalais de Recherches Agricoles (ISRA)	AU-PANVAC
Sierra Leone	Vaccination against PPR	Ministry of Agriculture, forestry and Food Security	AU-IBAR
Somalia	Vaccination of sheep and goats against PPR, CCPP and sheep and goat pox; and treatment of selected animals for livestock diseases and infrastructure development to support marketing and animal welfare.	Somaliland, Puntland and Central/South Somalia	AU-IBAR
Tanzania	Vaccination against PPR and CBPP Survey along southern border	Ministry of Livestock development and Fisheries	AU-IBAR
Togo	Vaccination against NCD	Ministère de l'Agriculture de l'Elevage et de la Pêche	AU-IBAR
Uganda	Vaccination against PPR and CCPP	Ministry of Agriculture, Animal industry and Fisheries (MAAF)	AU-IBAR
Zambia	Vaccination against PPR Survey for PPR along northern border	Ministry of Livestock and Fisheries Development	AU-IBAR
	Evaluation of CBPP vaccines	Central Veterinary Laboratory	CIRAD
Zimbabwe	Vaccination against NCD and enhancement NCD vaccine producing laboratory	Ministry of Agriculture, Mechanization and irrigation Development	AU-IBAR

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