

Pan African Animal Health Yearbook 2005



Interafrican Bureau for Animal Resources (IBAR)
African Union (AU)
P.O.Box 30786 code 00100
Nairobi, Kenya

reports@au-ibar.org
www.au-ibar.org

ISSN 1811-007X



AFRICAN UNION – INTER AFRICAN BUREAU FOR ANIMAL RESOURCES OFFICE H.E.

MESSAGE FROM THE COMMISSIONER OF RURAL ECONOMY AND AGRICULTURE: AFRICAN UNION.

As the African Union Commissioner for Rural Economy and Agriculture, I would like to express my delight that the 2005 Animal Health yearbook is now out for presentation to our stakeholders, partners and the general public.

I recognise that it has not been an easy task to produce such a detailed and comprehensive document. The process involved a lot of energy and effort not only on the part of AU- IBAR, but also on the part of the reporting officers from member states, who have had to work under strenuous and difficult conditions in order to generate credible information and data from the source, without whom the publication of this volume would not have been possible.



Mrs Rosebud Kurwijila

Managed information is knowledge and knowledge in turn is power if properly harnessed. The source of all the information in this year book is from the respective Veterinary / Livestock departments and services in member states. It is also true that these member states are the target or beneficiaries of the combined information in this yearbook. Thus information is a very important tool in the decision making process, especially for policy makers and the Livestock industry. This becomes critical in the development of strategies for livestock production, disease control and marketing, which is now more frequently crossing international country borders. Failure to manage livestock/animal information properly will imply a failure to attain food security and poverty alleviation on the continent.

This yearbook has been a very important resource material and we are very proud of the quality and consistency of its production since its revitalisation in 2002, when AU- IBAR took over the management of its production. Since then, it has improved not only the quality, but dissemination to all member states and stakeholders.

I would like to thank all member countries for their significant contributions in making this yearbook a reality. For those not reporting regularly, you are encouraged to do so as we all need to share this vital information. The decisions made or not made, by one country will affect others in the region and on the African continent in general. It is my sincere hope that this yearbook is not kept as a document on the office shelf, but utilised to its full potential and shared with others.

Finally, let me commend very sincerely, the director of AU- IBAR and his team for their tireless effort and commitment in making this 2005 volume of the yearbook a success.

Thank you.

Mrs Rosebud Kurwijila
Commissioner for Rural Economy and Agriculture
African Union Headquarters
Addis Ababa, Ethiopia.

TABLE OF CONTENTS

Preface	5
1.0 Introduction	7
2.0 Progress of disease reporting.....	9
3.0 Disease situation	11
<i>3.1 Detailed Disease situation (Ten Most Reported Diseases).....</i>	<i>16</i>
<i>3.2 Detailed Disease Situation (Other Important Diseases)</i>	<i>33</i>
4.0 Constraints of disease reporting and solutions proposed	51
<i>4.1 Formats to use for disease reporting</i>	<i>51</i>
<i>4.2 Need for improving reporting within African countries.....</i>	<i>52</i>
<i>4.3 Discipline to regularly report</i>	<i>52</i>
<i>4.4 Quality of reports</i>	<i>52</i>
<i>4.5 Proposed solutions</i>	<i>55</i>
5.0 Conclusion	58
6.0. Acknowledgments	59
7.0. Annexes	60

PREFACE

At the turn of the millennium, all world leaders, and governments in particular, made pledges and committed themselves to the values of the Millennium Development Goals (MDG). One of the most important elements of these goals is to significantly reduce poverty and hunger by way of improving food security and poverty alleviation on the African continent. Nowhere else is this more important than Africa, a great continent blessed with vast and abundant natural resources, yet the majority of African people still remain among the worlds poorest and malnourished.

A livelihood of the greater part of the African population is intimately linked with livestock and this occurs as a natural and historical phenomenon. Livestock in the African livelihood context, play an integral part in not only the food security but also a role in the cultural and economic fabric of most communities and societies.

Over the years, efforts have been made by the then Organisation of African Unity, to address poverty and food security in Africa. These efforts have now become more crystallised and focussed through the evolution of the African Union, (AU) which mandated its specialised technical organ, the Inter -African Bureau for Animal Resources (IBAR) to carry out the task of overseeing animal resource management on the continent. This colossal task includes:

- Control of major trans boundary livestock diseases
- Improvement of Genetic and feed resources
- Development of livestock information, communication and technology
- Enhance trade and marketing of livestock products of animal origin and
- Harmonisation of livestock related policies and the legal framework

The key to IBAR becoming a “Centre of Excellence” for Animal Resources management on the continent and for it to carry out its mandate, lies strongly in its ability to collect, analyse and disseminate livestock information. In our modern world of globalisation, information is invaluable and has become one of the most powerful tools to positive changes in society.

It is our desire at IBAR, to become an information “powerhouse” on animal resources in Africa, and sharing of the current volume of the year book plays a vital role in enabling all member countries and stakeholders to partake in this. It will allow us to make informed, collective and responsible decisions towards meeting the goal of food security and poverty alleviation on the continent.

Information generates data and this can only be as good as the source, in this case all member countries. It is vital that this information flow is made on a continuous and regular basis, so that IBAR can generate quality reports which can be used not only to monitor progress, but also to serve as a tool for decision making for the benefit of all. We urge member countries to prioritise their livestock information systems and also timely and regular submission of reports to IBAR.

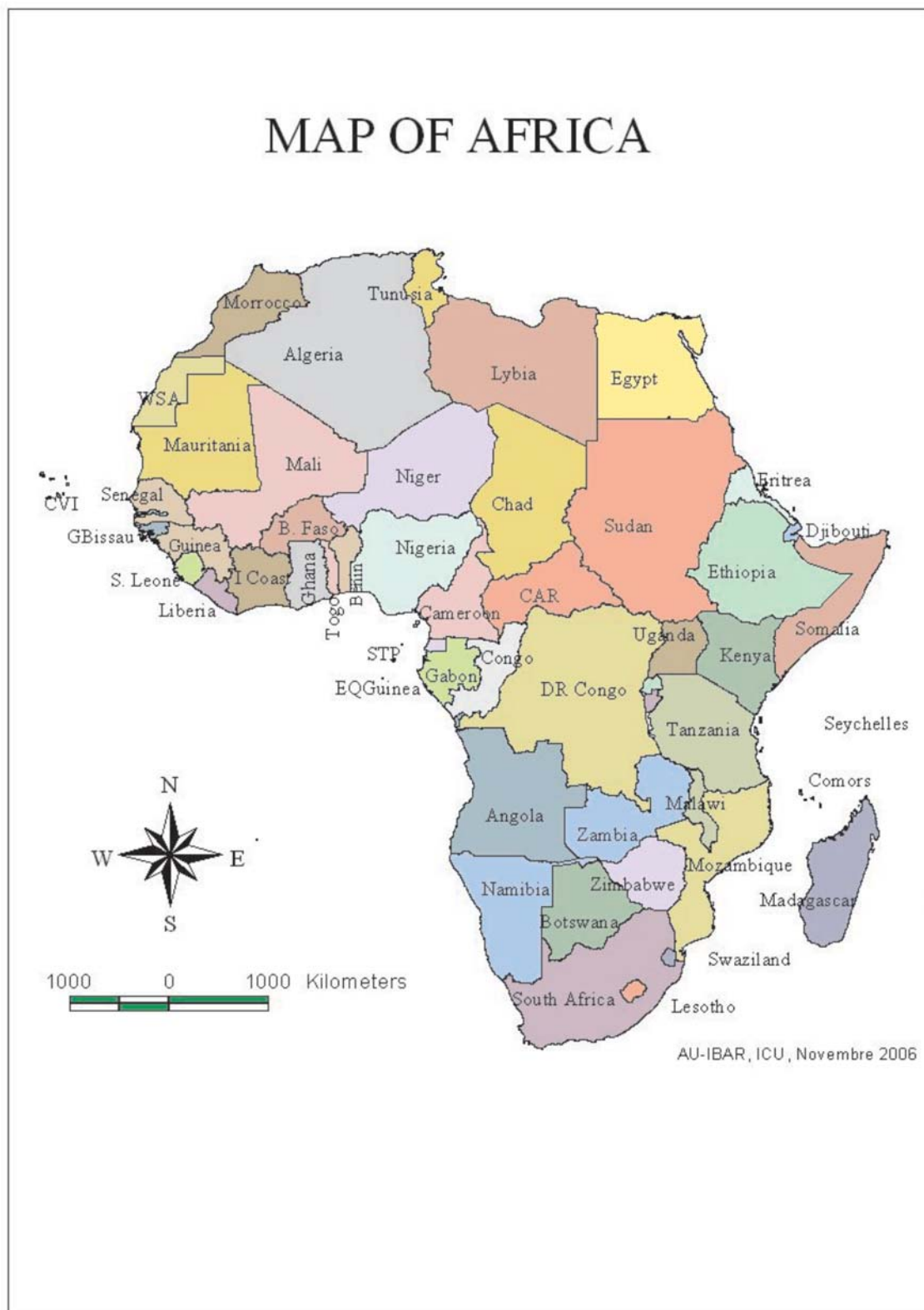
With the emergence of Emerging Zoonotic Diseases (EZD) such as Highly Pathogenic Avian Influenza (HPAI), it becomes extremely important, that information flow within and between African countries becomes imperative.

Although 2005 has seen a slight decline in information flow to IBAR when compared to 2004, it is my firm belief that those responsible from member countries will strive to fulfil their obligations and duties by timely and regularly reporting in the future. For those who have taken up the challenge and carry out this activity religiously, I commend you all.

Dr. Modibo T. Traoré
Director AU-IBAR



Dr. Modibo T. Traoré
Director AU-IBAR



53 Member Countries.

1. INTRODUCTION

Since the turn of the century and the ushering in of the new Millennium, Africa has been firmly placed on the map as a continent with vast Agricultural resources which need to be harnessed and put to better use by its inhabitants. It is a fact that Africa has the most abundant and diversified resources and communities in comparison to other continents. It is also known that the intricate relationship which exists between man and livestock is most evident here with many communities relying completely on their animals as a sole source of livelihood. At the same time, the continent is one that not made the best use of its animal resources, either due to recurring natural disasters like drought, famine and floods, or due to socio- political factors such as wars and political instability. The abundance and severity of animal diseases have also contributed to this scenario, many of which are of significant economic importance.

African Union (AU) member states made it a point to address these serious shortcomings and came up in line with the millennium goals, This was an undertaking made by all African leaders who pledged to improve food security and poverty alleviation on the continent, starting with their own individual countries.

In this light, the AU through its organ — the Inter African Bureau for Animal Resources (IBAR) was tasked with the colossal mandate of overseeing livestock activities. This is best exemplified through the vision and mission statements:

Vision of AU — IBAR:

“Animal resources contribute significantly to an Africa free of hunger and Poverty beyond 2015”

Mission of AU-IBAR:

“A centre of Excellence of the African Union, with a mandate to enhance AU member states and their regional economic communities to sustain ably improve the contribution of animal resources to the nutrition and incomes of their communities, especially the rural poor.”

In this day and age of significant strides in information technology and acquisition, it becomes imperative that data gathering, analysis and dissemination is pivotal in any decision making process, especially if sustainability is envisaged. The role that basic information plays, especially in regards to animal resources, cannot be downplayed. It is a valuable tool and when applied to the livestock sector, it is essential to see the trends and keep stakeholders informed of what is happening not only within their own countries but countries around them.

This is best exemplified with the thrust towards globalisation in trade and the occurrence emerging zoonotic diseases (EZD) such as Avian influenza, Ebola virus, Marburg virus, CJD and Nipah virus to mention but a few.

Transboundary animal diseases (TAD) such as Foot and Mouth Disease, Rinderpest, Rift Valley fever and Contagious Bovine Pleuro pneumonia have always been a problem in Africa and efforts towards their control, are now being focused as a regional approach due to the human and animal migratory tendencies which influence their spread across borders.

All of the above is not possible if the disease reporting structures are NOT adequate.

Monitoring the livestock disease situation across the continent is a core function of AU-IBAR. This comes by way of monthly reports and immediate notification of any disease outbreak from member countries. It therefore denotes that this is a two way process. On the one hand, the individual countries need to meticulously ensure proper and timely reporting on their part, while on the other hand, AU —IBAR gathers, analyses, summarises and disseminates this vital information not only to member countries, but to the entire world.

This year book was introduced and revitalised in 2002 with the sole purpose of carrying out this task. It is however only able to capture and pass on data which is made available. If countries do not report regularly, the report cannot be accurate and can only serve as a guide to the Livestock disease situation in the continent.

The 2005 yearbook is only as good as the data captured from the member states that reported during the year. It is highly encouraged that member countries who have formed the important habit of regular reporting, continue with this trend, while those which have not embraced this ideology be encouraged to follow suit.

2. PROGRESS OF DISEASE REPORTING

Disease reporting by member countries is an important and crucial activity which cannot be over emphasised. It is only by way of these reports that AU-IBAR is able to analyse and make quality information of disease presence and spread in the continent.

On the whole, reporting has been fairly poor and inconsistent. In 2000 only 10 countries out of a total of 53 member countries made an effort to report livestock diseases. This represented a poor 8% reporting rate. This figure improved insignificantly to 11 countries in 2001 which was at a 12% reporting rate.

At this point it was realised that a massive push towards educating and creating an awareness in member countries was evident. This was done by way of workshops, conferences and meetings which were held in respective countries and also in regions. This approach did yield promising results.

2002 saw a boost in the reporting rate (55%) with 37 countries submitting their reports. 52% of these reports were electronic. The new trend continued in 2003 with 40 countries reporting (66% reporting rate). 2004 remained at the same with only 40 out of the 53 member countries reporting. The three year period 2002, 2003 and 2004, generally saw a substantial improvement in reporting as well as in the use of electronically produced reports.

The reporting rate in 2005 sadly declined slightly to 56 %. Only 37 countries reported on a regular basis of which 65% of reports were electronic. There were 2714 individual reports made and sent to IBAR over the 12 month period.

The importance of electronically(digital)generated reports, marked a great improvement in the speed of reporting and the analysis as computerised data can be easily transferred and fed into databases and computing software which is able to generate tables, maps, graphs etc. Although many African countries are still struggling with acquisition of computers and ancillary infrastructure such as communication networks, it is encouraging to see that the trend is catching on and most countries are able to generate at least, basic reports even though infrequently. The tempo should be that member countries should prioritise animal disease reporting to IBAR and improvement in their communication capabilities.

Chart 1. Progress of Monthly disease reporting to IBAR in 2005

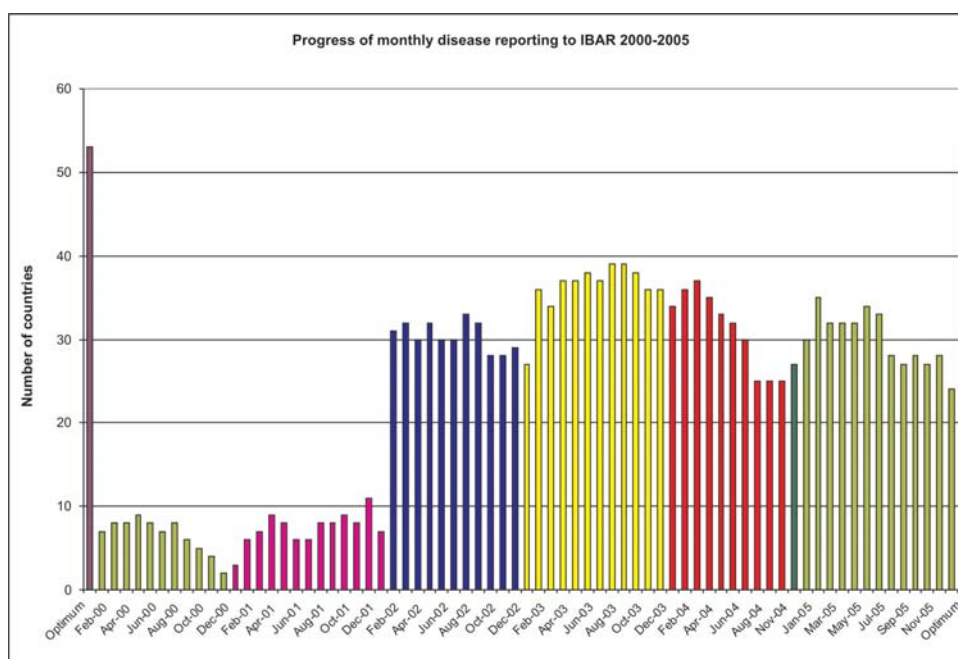


Chart 2. Progress of disease reporting from African countries to IBAR

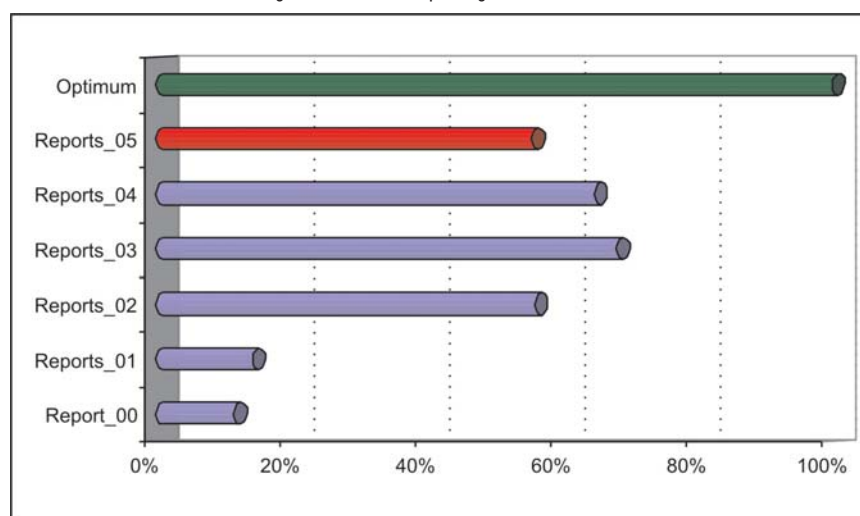


Table 1. Comparison African countries' reporting to AU-IBAR 2000 – 2005

Year	Reporting rate (%)	No. of countries reports	Proportion of Electronic reports (%)
2000	8	10	0
2001	12	11	9
2002	55	37	52
2003	66	40	83
2004	67	40	89
2005	56	37	65

3. DISEASE SITUATION

Out of the 52 member states, only 37 submitted disease reports to AU-IBAR in 2005. A total of 7311 outbreaks were recorded involving 78 different animal diseases. All species of domestic livestock were affected and 32 cases involving wildlife species were reported. Individual cases (case reports) were 326,399 and of these 112,073 animals died as a result of disease. There was a single Human mortality caused by rabies in Malawi.

Table 2: Breakdown of Disease Situation in 2005 in Africa

Species	No. Outbreaks	Cases	Deaths
Avian	462	180106	81821
Bovine	3565	92395	6008
Canine & Feline	368	786	371
Camel	17	106	17
Equine	187	975	438
Porcine	227	20325	13780
Small Ruminants (Ovine & Caprine)	2457	31656	9613
Wildlife	21	32	22
Others	7	18	3
Grand Total	7311	326399	112073

Of the 7311 outbreaks reported in 2005, the bovine species had the highest number with 48.76%. This was followed by small ruminants (ovine and caprine) with 33.61 % so in total, the domestic ruminants accounted for 82.37% of all outbreaks in 2005.

Avian species involved mainly the domestic chicken and some ostriches. They accounted for 6.32 % of outbreaks and numbers of individual animals involved were highest. Dogs and cats were mainly affected by rabies and several countries showed very high incidence such as Tunisia. These accounted for 5.03 % of outbreaks.

African swine fever was the main disease reported in pigs and 3.10% of total outbreaks were in the porcine species.

In terms of individual case reports made, which indicate the number of animals of a particular species that were affected in an outbreak, domestic birds (avian) recorded the highest with 55.18% followed bovine cases with 28.31% and small ruminants at 9.70%.

The number of deaths reported as a result of disease outbreaks recorded in 2005 indicated that the avian species had the majority of the mortalities which stood out at 73.01%. The porcine species (domestic pig) followed with 12.30 % and small ruminants (ovine and caprine) showed 8.58% .The bovine species showed 5.36% while other species did not show any significant mortalities.

Chart 3. Disease outbreaks by species affected in 2005

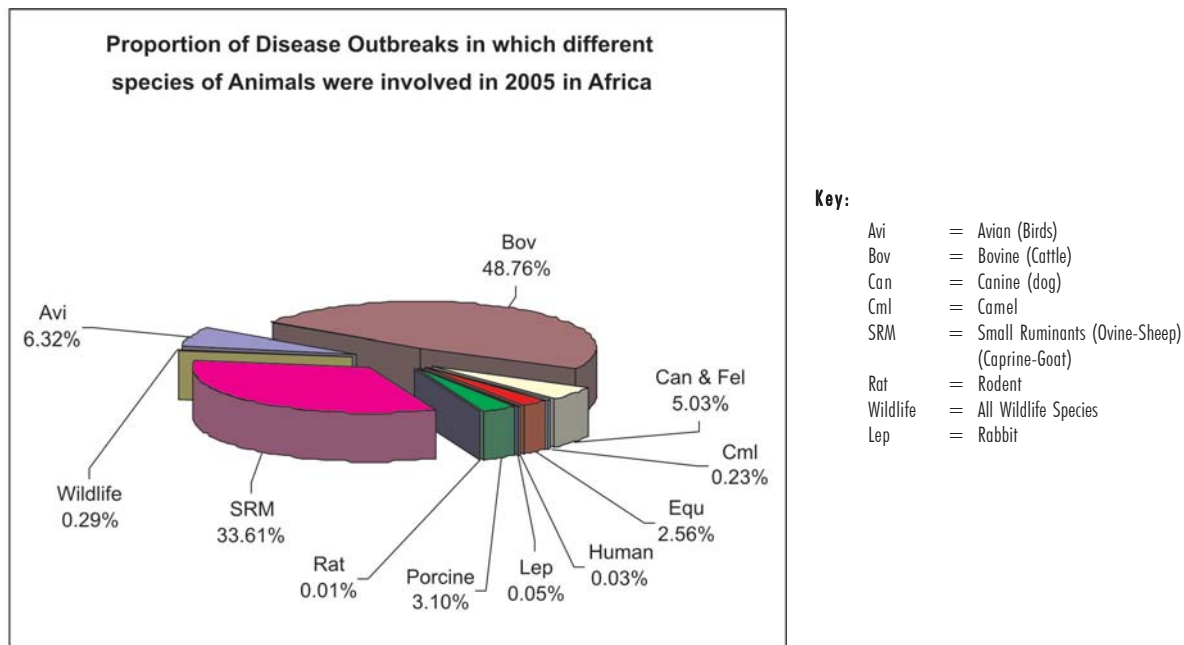


Chart 4. Percentage of individual cases in reported outbreaks in 2005

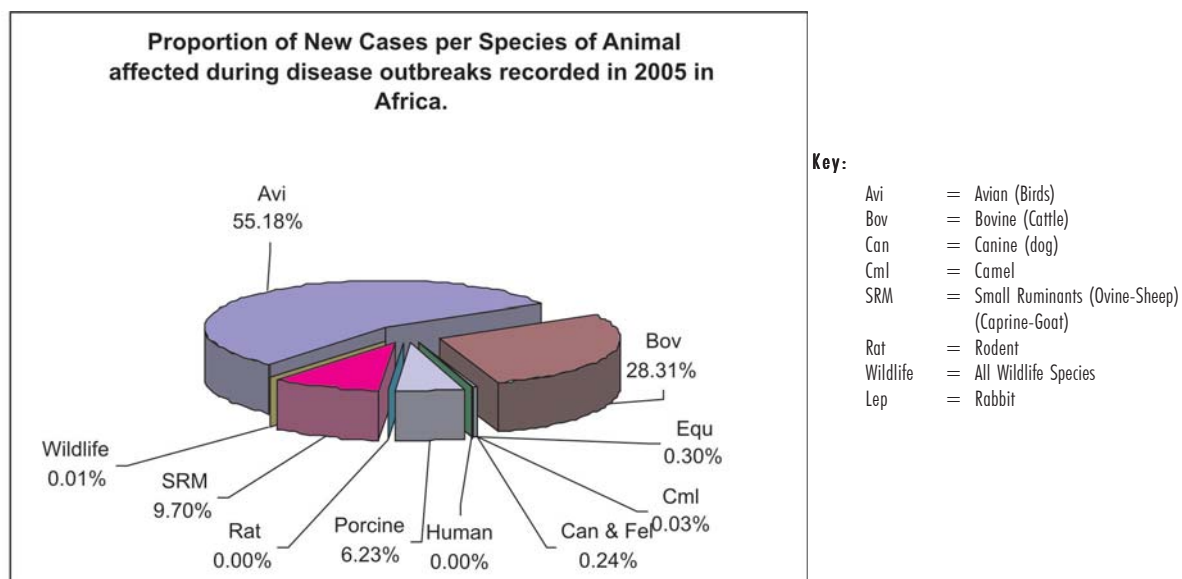
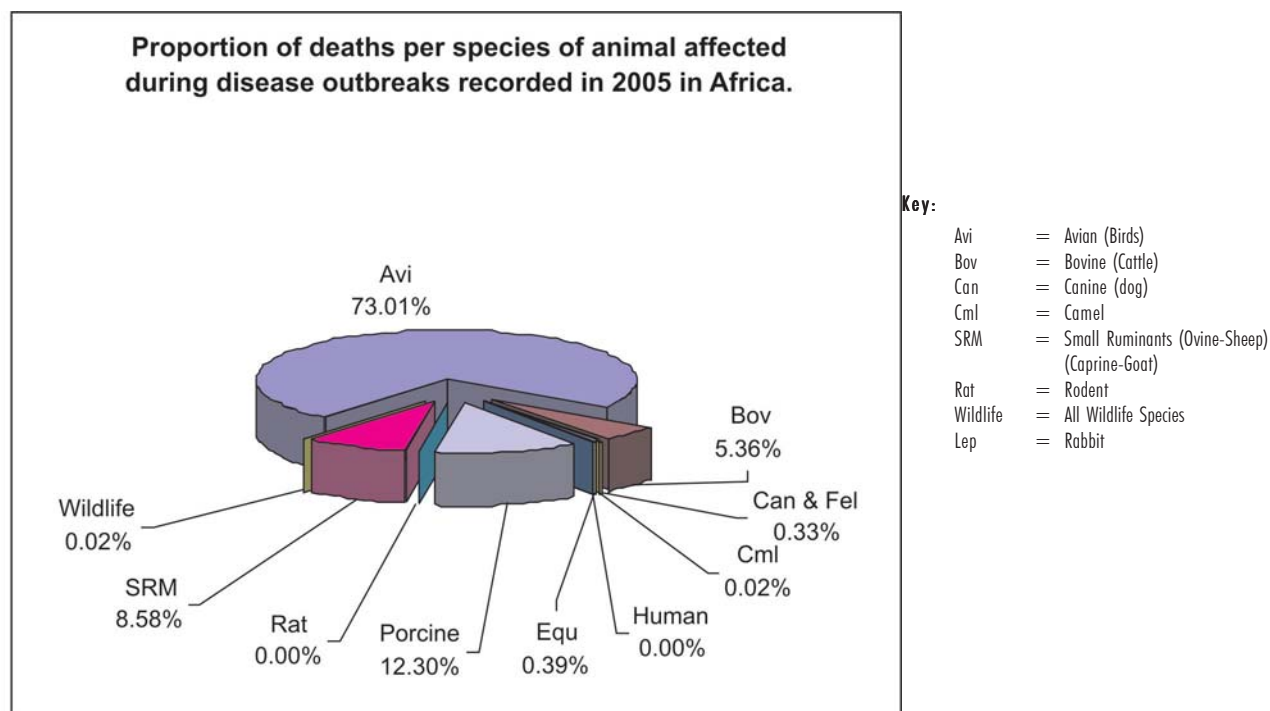


Chart 5. Mortalities per species in reported outbreaks in 2005



As indicated in the progress of disease reporting, 2005 saw a decline in the reports submitted to IBAR. It is difficult to give with certainty, the reasons for this decline.

Reporting is usually carried out in a fixed format, and on monthly basis, by the competent authorities in respective member countries — usually the Director of Veterinary Services. In most cases one report is generated containing all the relevant data and forwarded to the International World Animal Health body (OIE) and also forwarded to IBAR office.

Instances have been observed where reports are sent to OIE but not forwarded to IBAR therefore the information is NOT captured on the centralized African database. This may be a reason for the decline and it hampers significantly the quality and timeliness of this yearbook. Another may be due to the change in reporting frequency to the OIE which occurred towards the end of 2005. Instead of monthly reports, the OIE changed to a bi-annual report (every six months) therefore the forwarding to IBAR (which should be on a monthly basis) became less frequent hence information not captured.

It should however be noted that several countries are still not making any reports at all, year after year. This is despite reminders being sent from the IBAR office.

From analysis of the existing data from 2005 reports, it is observed that the ten most frequently reported disease outbreaks are indicated in the table and chart below.

Pasteurellosis outbreaks were the most frequent with 1230 outbreaks while Heart water disease was the lowest with only 269 outbreaks.

Table 3 : Ten most reported diseases by number of outbreaks and reporting countries (2005).

Disease	Number of Outbreaks	Number of Countries
Pasteurellosis	1230	6
FMD	691	18
Rabies	680	18
PPR	546	16
Black Quarter	537	19
Newcastle	490	23
Sheep & Goat Pox	394	9
Brucellosis	383	10
LSD	345	23
Heartwater	269	9
Total	5565	151

Chart 6 . Ten most commonly reported diseases, by number of outbreak, in Africa (2005.)

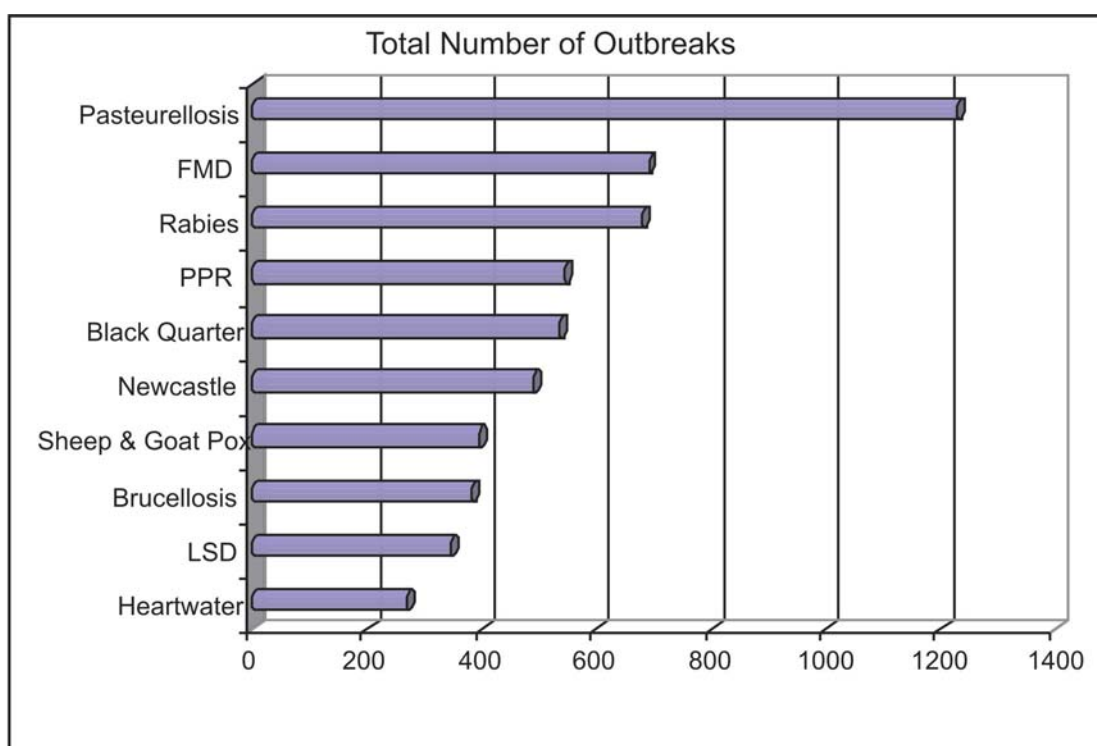
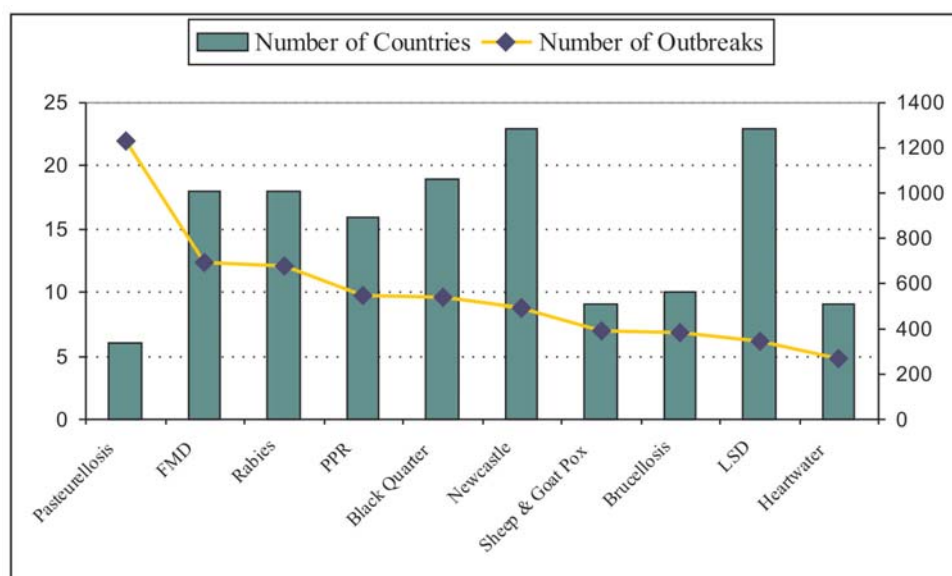


Table 4 . Comparison between the number of outbreaks recorded for 10 most reported diseases in Africa between 2001 and 2005

Disease	Number of countries				
	2001	2002	2003	2004	2005
Newcastle disease	6	25	25	26	23
LSD	5	23	19	23	23
Rabies	4	20	19	22	18
FMD	3	18	19	20	18
CBPP	3	16	15	20	18
ASF	4	14	15	21	17
PPR	3	13	14	16	16
Brucellosis	3	12	11	23	10
Sheep & Goat Pox	5	8	9	9	9
AHS	3	8	7	7	5

Chart 7. Ten most commonly reported diseases, by number of outbreaks and number of countries reporting, in Africa (2005)



In 2005, Pasteurellosis was the disease AU countries reported most to IBAR, followed FMD, Rabies, PPR, Black quarter, Newcastle disease, Sheep & goat pox, Brucellosis, Lumpy skin disease and lastly Heartwater which ranked 10th.

However, when the number of countries where the disease was reported is correlated with the number of reported outbreaks, Pasteurellosis comes last. This narrows considerably its geographical extent and relatively decreases its overall impact in the continent. New Castle disease and Lumpy Skin Disease were reported by 23 member States out of the 37 that have sent report to IBAR in 2005.

3.1 Detailed disease situation in 2005 (Ten most reported diseases)

Foot and Mouth Disease (FMD)

During 2005, 18 countries reported a total of 691 separate outbreaks of FMD. The distribution was continental wide with the exception of North Africa as seen on the map. This indicated the widespread occurrence of this disease.

18033 cases were reported which resulted in 805 mortalities recorded in all age groups of cattle. The West African member state of Niger had the highest number of outbreaks but with only one death. Cameroon had 129 outbreaks involving 3782 animals and the highest death rate of 244 mortalities.

Although Togo had only 68 outbreaks, the highest number of animals affected were reported here at 4,032 individual cases. It would appear that the majority of cases of FMD were seen in West Africa.

Due to the proximity of the reported cases between individual countries, it still appears that FMD remains a trans boundary disease in Africa. This is also supported by the fact that FMD remains the second most reported disease which was the case in 2004.

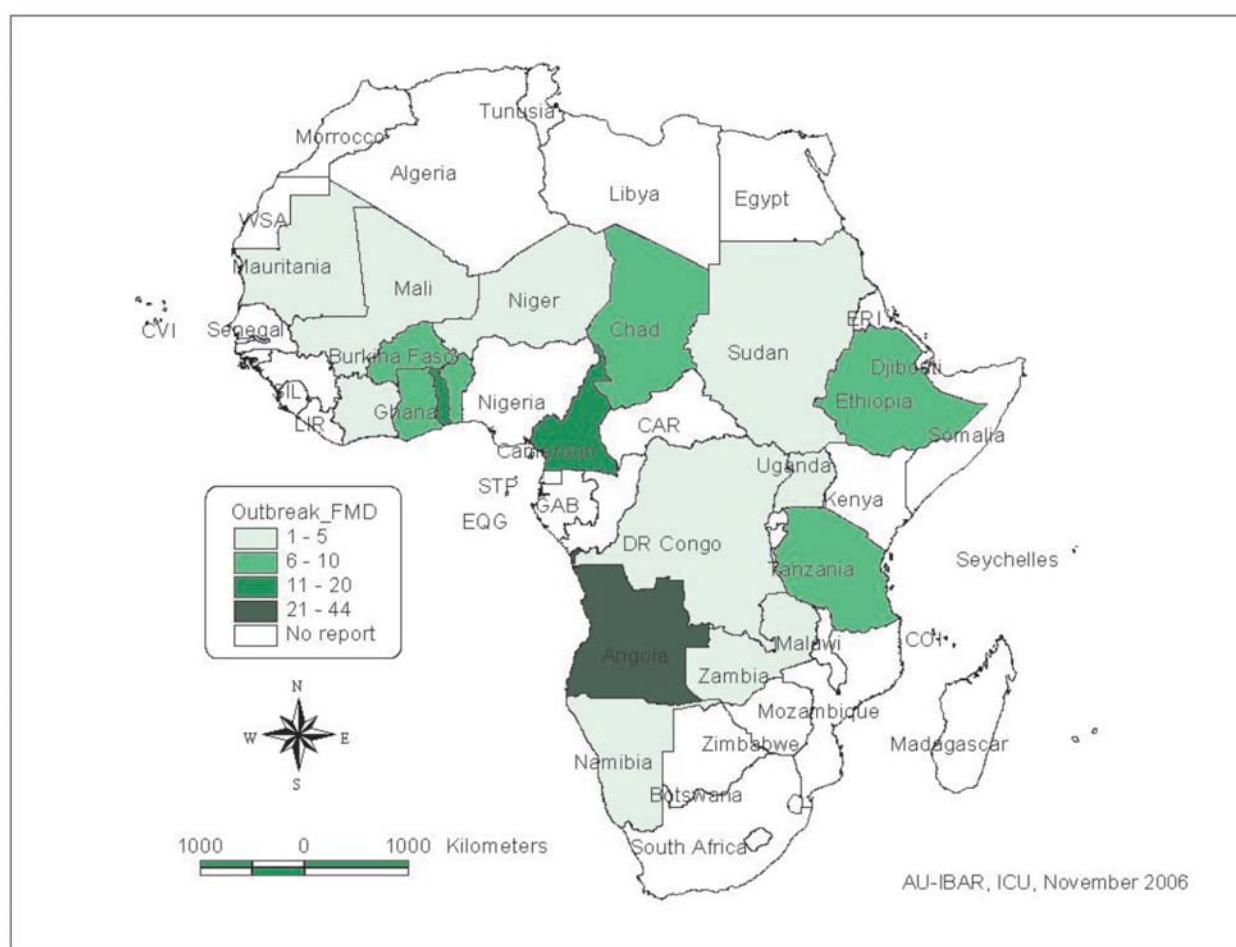
Table 5: Breakdown of FMD outbreaks by number of countries

Country	Outbreaks	Cases	Deaths
Benin	27	1752	56
Botswana	1	23	0
Burkina Faso	66	3668	126
Cameroon	129	3782	244
CAR	21	596	49
Chad	136	1164	54
Cote d'Ivoire	3	69	37
Ethiopia	12	631	0
Gambia	1	46	0
Ghana	13	869	17
Mali	2	130	0
Niger	179	173	1
Nigeria	1	5	0
Sudan	5	150	10
Tanzania	22	466	6
Togo	68	4032	175
Uganda	5	465	30
Zimbabwe		12	0
Total	691	18033	805

Table 6: Comparison of overall FMD situation 2003 – 2005

Year	Number of Countries Reporting	Number of Outbreaks	Number of Cases	Number of Deaths
2003	17	754	102,292	2,974
2004	20	1,140	146,253	1,396
2005	18	691	18033	805

Map 1: Spatial distribution of FMD in Africa in 2005



Lumpy Skin Disease (LSD)

During 2005, Lumpy skin disease was the 9th most reported disease and records show 23 countries reporting this disease. With the exception of the extreme northern and north eastern part of the continent, it was reported in all other regions of Africa.

345 outbreaks were reported in which 27, 623 cases were seen. Of these 782 deaths were reported. This is slightly lower to the 2004 figure of 553 outbreaks, but similarly reported in 23 countries.

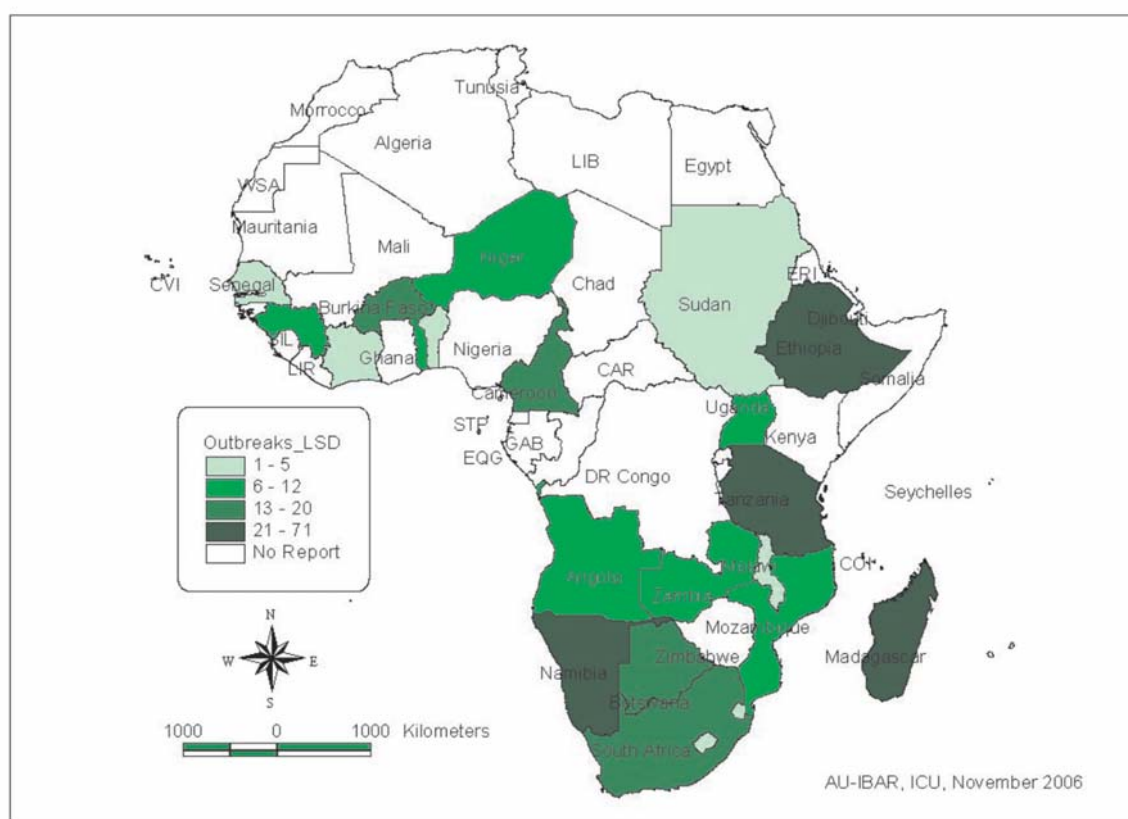
The highest number of outbreaks came from the Island of Madagascar with 71 outbreaks followed by Ethiopia with 58 and Tanzania with 43.

Temporal distribution remains throughout the year with no particular month showing any significant change in the disease pattern of occurrence.

Table 7: Breakdown of LSD outbreaks by country

Country	Outbreaks	Cases	Deaths
Angola	7	50	3
Benin	2	20	0
Botswana	15	96	4
Burkina Faso	13	423	37
Cameroon	17	360	33
Cote d'Ivoire	1	1	0
Ethiopia	58	4485	371
Gambia	0	1	0
Guinea Conakry	6	247	6
Lesotho	3	17	0
Madagascar	71	386	9
Malawi	5	114	0
Mozambique	8	276	1
Namibia	36	210	18
Niger	11	27	4
Senegal	2	33	0
South Africa	16	19	0
Sudan	5	73	9
Swaziland	4	24	0
Tanzania	43	2629	194
Togo	7	185	1
Uganda	7	17845	80
Zambia	8	102	12
Total	345	27623	782

Map 2: Spatial distribution of LSD in Africa in 2005



Newcastle Disease (NCD)

New castle disease (NCD) reports were made by 23 countries all of which are located in all the regions with the exception of the far North. 490 outbreaks were reported involving 143,649 cases and 63,094 mortalities.

This is a significant drop in comparison to 2003 and 2004 which reported 612 and 931 outbreaks respectively.

In almost all cases, confirmatory laboratory diagnosis was not made so the reports are based on clinical field findings. This is worrisome as with the advent of Pathogenic Avian Influenza on the continent, there is a dire need to be able to distinguish between both diseases which show very similar clinical signs and epidemiological characteristics.

It is even more disturbing that countries in the north of Africa are not reporting any cases for the last few years. These are countries which are in close proximity to Europe and the middle east where there are confirmed reports of both NCD and HPAI.

South Africa reported the highest number of outbreaks at 126 with 27972 cases which resulted in 28,048 deaths. Temporal distribution was not significant as the disease was reported throughout the year. It was normal to see two peaks or waves of outbreaks in individual countries during the year. This may be linked to localised weather patterns in those countries.

NCD was the 6th most reported disease in 2005.

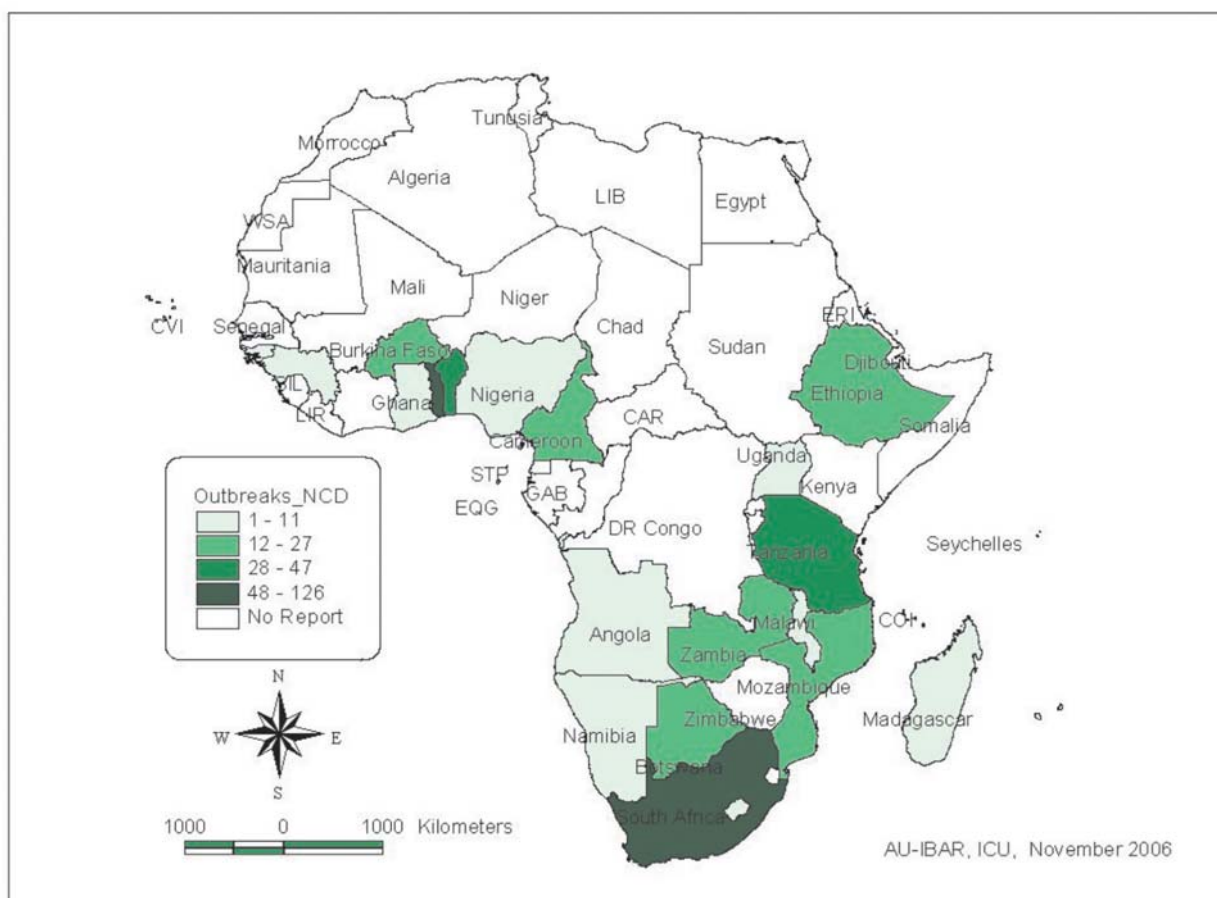
Table 8 : Breakdown of NCD outbreaks by country

Country	Outbreak	Cases	Deaths
Angola	9	93	93
Benin	47	11347	4649
Botswana	21	671	2939
Burkina Faso	21	2245	1322
Cameroon	27	726	383
Ethiopia	26	1435	738
Gambia	8	73	53
Ghana	7	678	582
Guinea Bissau	1	24	14
Guinea Conakry	4	279	194
Lesotho	4	416	416
Madagascar	11	813	304
Malawi	2	13	53
Mozambique	13	1624	1201
Namibia	1	135	125
Niger		18	2
Nigeria	3	3430	912
South Africa	126	27972	28048
Tanzania	37	12782	6166
Togo	99	9684	4322
Uganda	6	62538	4902
Zambia	17	2507	1966
Zimbabwe		4146	3710
Total	490	143649	63094

Table 9: Comparison of and overall NCD situation 2003 - 2005

Year	Number of Countries Reporting	Number of Outbreaks	Number of Cases	Number of Deaths
2003	25	612	200,949	143,770
2004	26	931	471,489	241,334
2005	23	490	143,649	63,094

Map 3. Spatial distribution of NCD in Africa in 2005



Peste Petits Ruminants (PPR)

The total number of outbreaks reported in 2005 was 546 compared to 714 from the previous year 2004. These involved 14791 cases (52,038 — in 2004) and 7476 mortalities (17 480 in 2004). This record suggests that the disease is on the decline when compared to the reports of the previous two years (2003 and 2004).

It is still a major problem in Africa and was reported by 16 countries and affecting all regions with the exception of southern Africa and also the extreme north and north eastern part of the continent.

West African countries in particular showed the highest number of outbreaks.

Togo and Benin had the majority of outbreaks, cases and mortalities.

PPR was reported as the 5th most common disease in 2005.

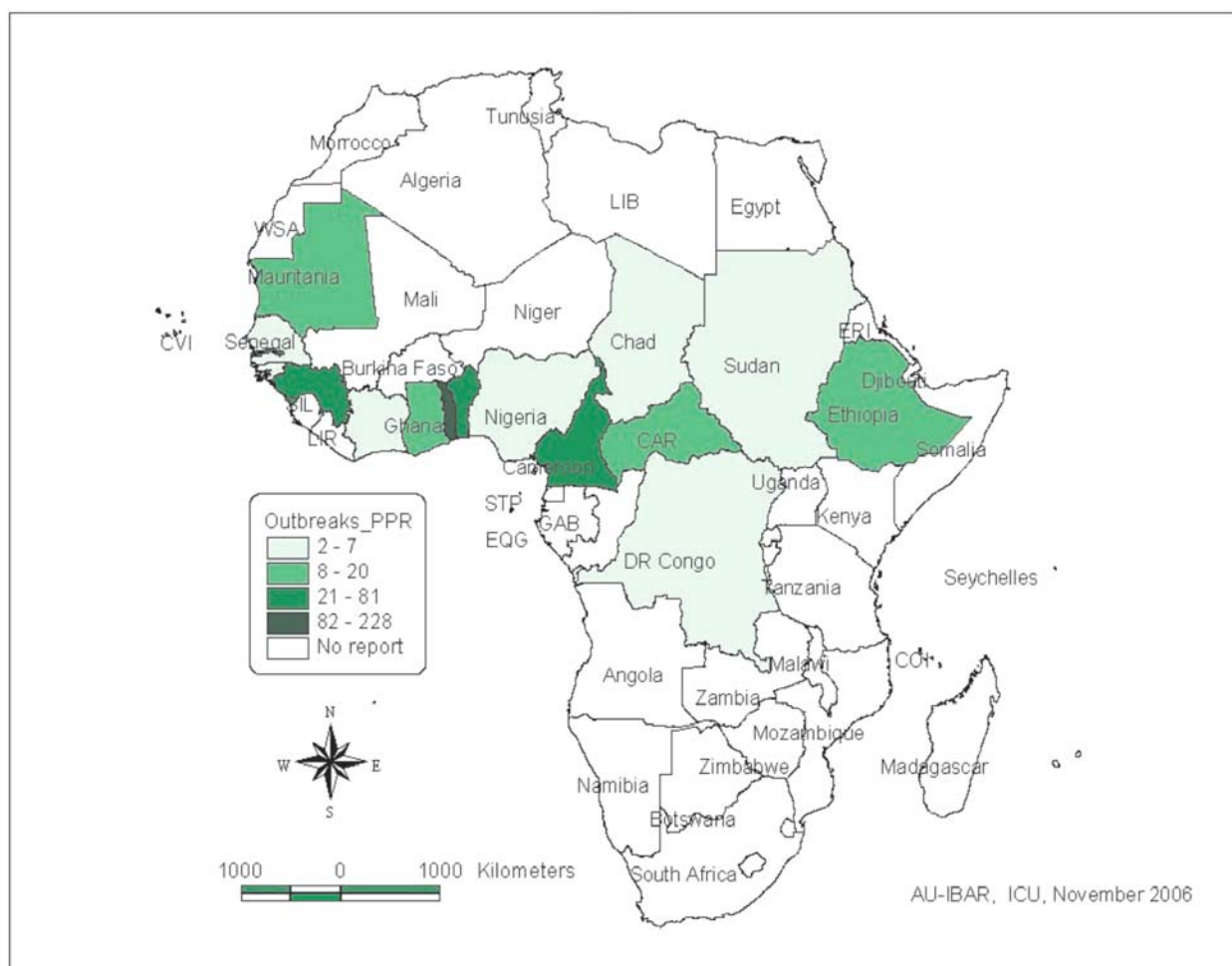
Table 10: Breakdown of PPR outbreaks by country

Country	Outbreaks	Cases	Death
Benin	81	5120	3278
Cameroon	51	498	445
CAR	12	75	62
Chad	3	10	9
Cote d'Ivoire	2	78	56
DR Congo	3	77	36
Ethiopia	20	543	213
Gambia	43	165	82
Ghana	19	543	237
Guinea Bissau	7	190	58
Guinea Conakry	56	1218	506
Mauritania	11	5	0
Nigeria	4	90	10
Senegal	4	116	102
Sudan	2	169	49
Togo	228	5894	2333
Total	546	14791	7476

Table 11: Comparison of and overall PPR situation 2003 - 2005

Year	Number of Countries Reporting	Number of Outbreaks	Number of Cases	Number of Deaths
2003	14	526	31,820	9,248
2004	16	714	52,038	17,480
2005	16	546	14,971	7,476

Map 4: Spatial distribution of PPR in Africa in 2005



Rabies

The extent of Rabies distribution and spread in 2005 covered the entire continent. 683 outbreaks were reported which involved 993 cases and resulted in 445 deaths.

Over 90% of the cases were reported in the canine with the domestic dog being involved. There were cases also reported in the feline, bovine, caprine, ovine and equine species. One Human case was reported from Malawi while one case involving a domestic rat was reported from Tunisia.

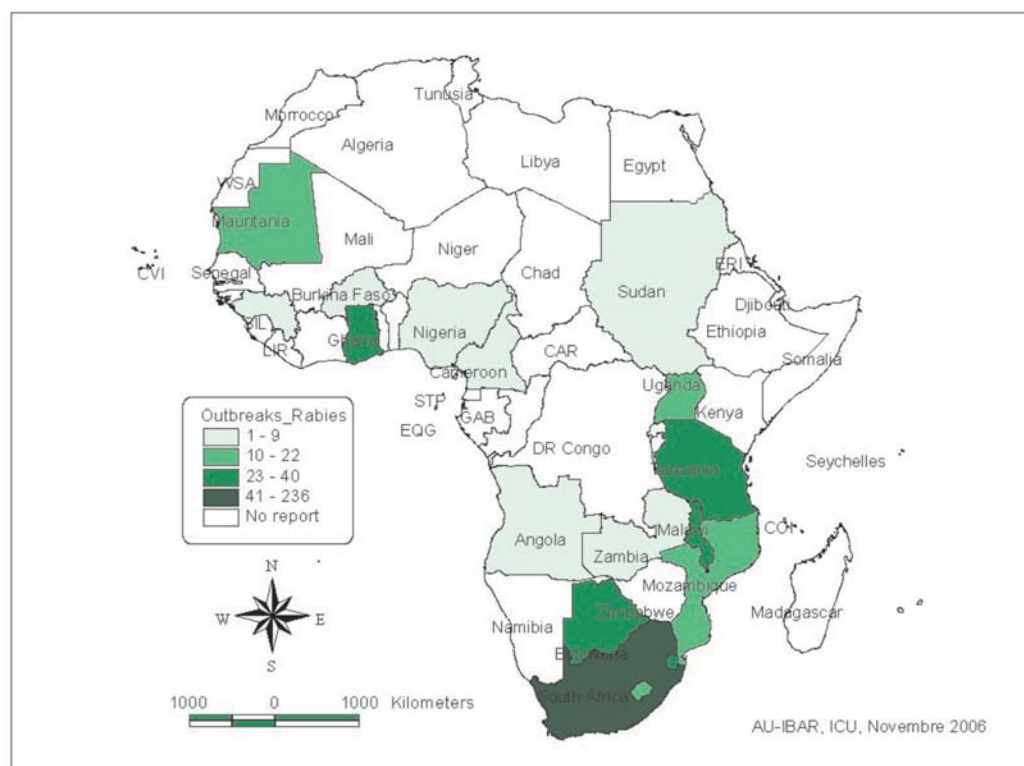
By far the greatest number of outbreaks was reported in South Africa with 236 outbreaks. The highest mortalities were recorded in Malawi with 69 deaths followed by Ghana with 54.

Rabies remained the 3rd most reported disease in 2005. It has also similarly been consistently present as one of the top ten diseases since 2000.

Table 12: Breakdown of Rabies outbreaks by country

Country	Outbreaks	Cases	Deaths
Angola	6	13	12
Botswana	40	46	41
Burkina Faso	9	21	15
Cameroon	5	5	0
Ghana	38	75	54
Guinea Conakry	2	3	0
Lesotho	22	34	18
Malawi	34	86	69
Mauritania	13	13	13
Mozambique	15	39	22
Nigeria	2	4	2
South Africa	236	69	45
Sudan	1	1	1
Swaziland	33	35	22
Tanzania	26	221	63
Tunisia	181	133	30
Uganda	12	170	16
Zambia	8	25	22
Total	683	993	445

Map 5: Spatial distribution of Rabies in Africa in 2005



Sheep and Goat Pox

A total of 9 countries reported 394 outbreaks in 2005. This involved 3470 individual cases and 502 deaths. In comparison to the previous year, there is a marked increase in the outbreaks (180 in 2004).

Niger had the highest number of outbreaks with 189. This was closely followed by Ethiopia with 133 compared to 59 reported in 2004. Ethiopia also had the highest mortalities with 393 deaths from 2752 cases reported.

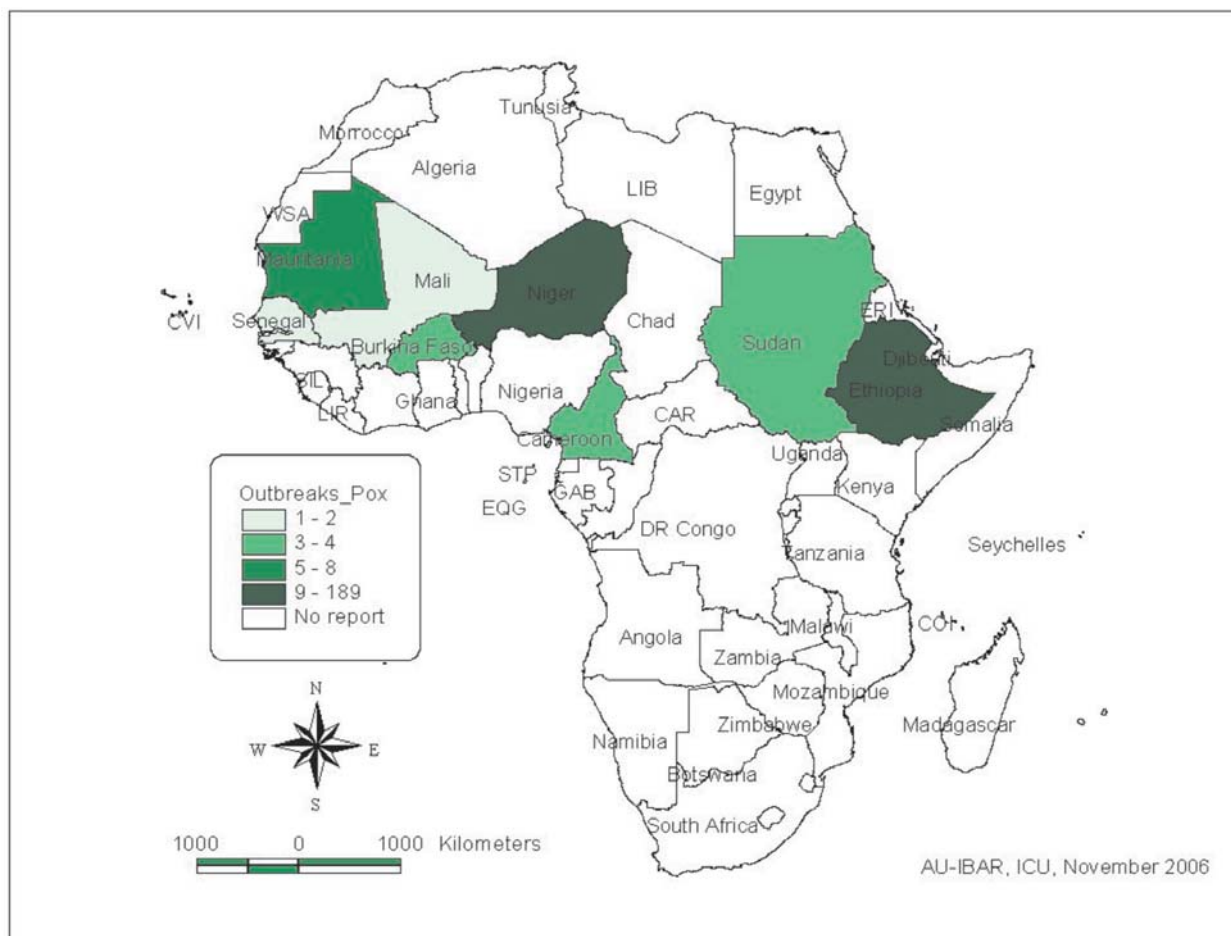
Since most of the countries which reported sheep and goat pox are from drier and hotter climates, it may be that the virus is more adaptable in such environments.

Sheep and Goat pox was the 7th most reported disease in 2005.

Table 13: Breakdown of Sheep & Goat Pox outbreaks by country

Country	Outbreaks	Cases	Deaths
Burkina Faso	4	18	5
Cameroon	3	23	14
Ethiopia	133	2752	393
Mali	1	8	3
Mauritania	8	113	2
Niger	189	305	10
Senegal	2	34	30
Sudan	4	40	11
Tunisia	50	177	34
Total	394	3470	502

Map 6: Spatial distribution of Sheep & Goat Pox in Africa in 2005



Black Quarter (BQ)

This disease was reported in most parts of the continent with the exception of the north. A total of 537 outbreaks were reported in 19 different countries with Niger showing the highest number of outbreaks standing at 330, involving 650 clinical cases and only 6 deaths.

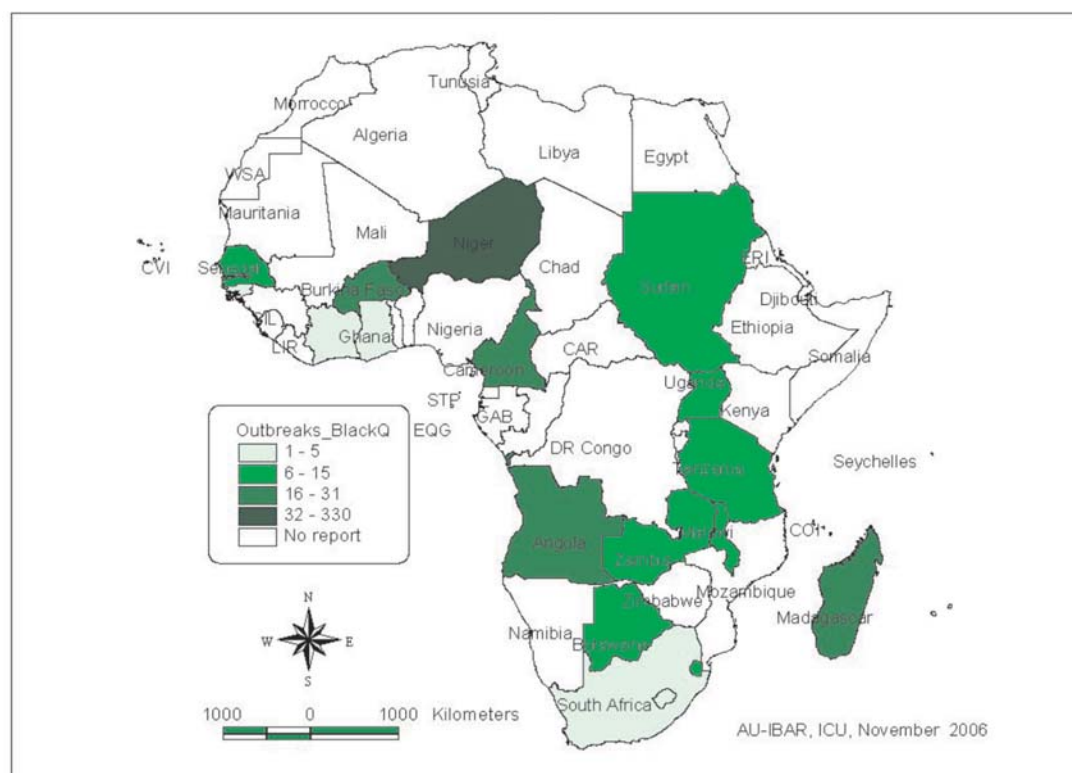
Mortalities on the whole were low as reports indicated 128 in total from 2709 clinical cases. Most of the outbreaks reported occurred in the last quarter of the year from September – December.

Blackquarter ranked 5th on the most common diseases reported.

Table 14: Breakdown of Black Quarter outbreaks by country

Country	Outbreak	Cases	Death
Angola	24	112	7
Botswana	11	50	7
Burkina Faso	30	351	10
Cameroon	18	95	18
Cote d'Ivoire	1	45	1
Gambia	13	17	17
Ghana	1	6	1
Guinea Bissau	5	47	4
Lesotho	2	10	2
Madagascar	31	163	5
Malawi	14	242	11
Niger	330	650	6
Senegal	7	30	5
South Africa	4	7	3
Sudan	6	88	6
Swaziland	11	47	11
Tanzania	15	462	4
Uganda	6	138	4
Zambia	8	149	6
Total	537	2709	128

Map 7: Spatial distribution of Black Quarter in Africa in 2005



Brucellosis

Brucellosis was seen as widespread in the continent with reports coming from all regions. A total of 10 countries reported 3600 cases from 392 outbreaks. Most of the outbreaks were observed in the southern region of Africa with South Africa in particular recording the highest number of outbreaks at 346 and number of individual cases at 3124 with one natural death and 161 animals destroyed. One of the outbreaks involved 3 buffalo. The highest mortalities were reported in Cote d'Ivoire in which 12 animals died after 47 cases were reported in a single outbreak.

Although most of the cases seen affected the bovine species, small ruminant were affected to a lesser extent.

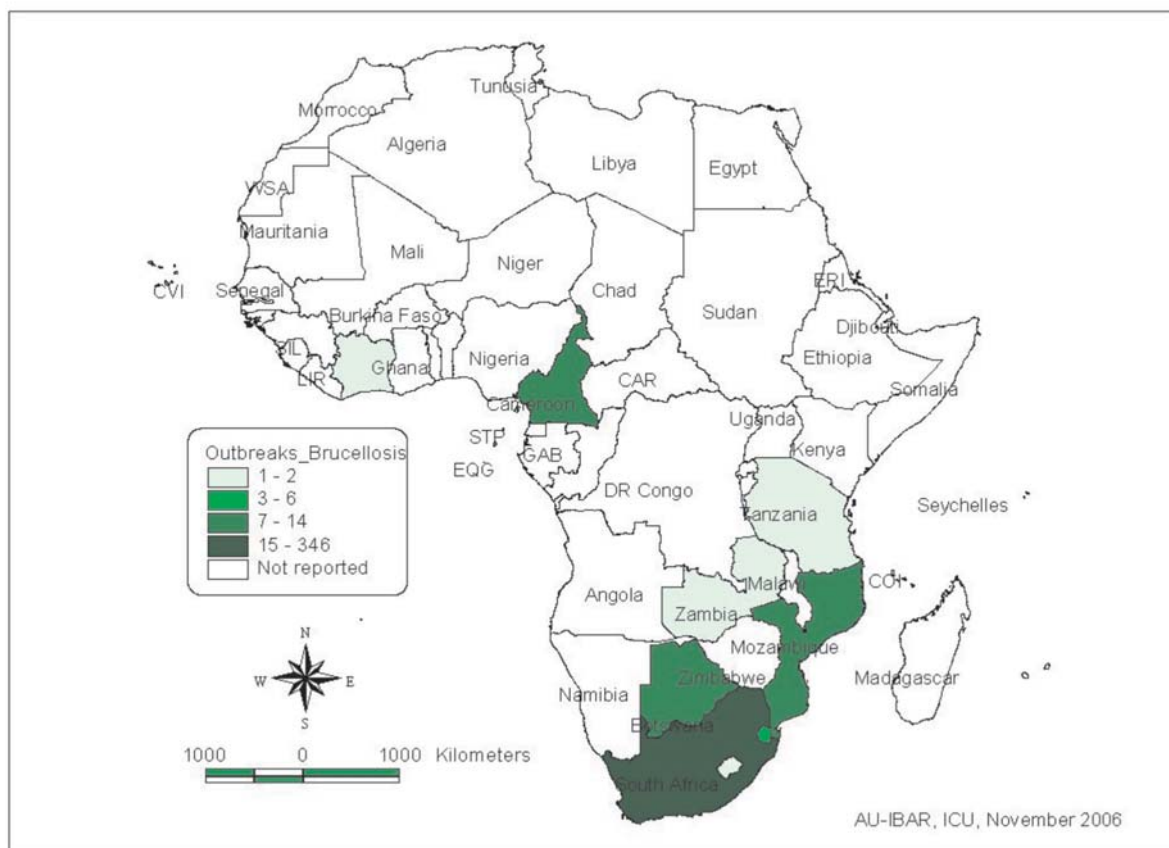
Temporal distribution saw cases occurring throughout the year in all seasons with no preference for a particular month or time period.

Brucellosis was recorded as the 8th most common disease.

Table 14: Breakdown of Brucellosis outbreaks by country

Country	Outbreaks	Cases	Deaths
Botswana	9	29	0
Cameroon	7	34	1
Cote d'Ivoire	1	47	12
Lesotho	1	0	0
Mozambique	8	44	9
South Africa	346	3124	1
Swaziland	4	55	0
Tanzania	1	6	4
Tunisia	14	252	0
Zambia	1	9	0
Total	392	3600	27

Map 8: Spatial distribution of Brucellosis in Africa in 2005



Pasteurellosis

This was the disease that had the highest number of reported outbreaks in 2005. A total of 1230 outbreaks were reported in 6 countries. This involved 2041 animals and were restricted to bovine, caprine and ovine species only. Recorded deaths as a result of Pasteurellosis were numbered at 658.

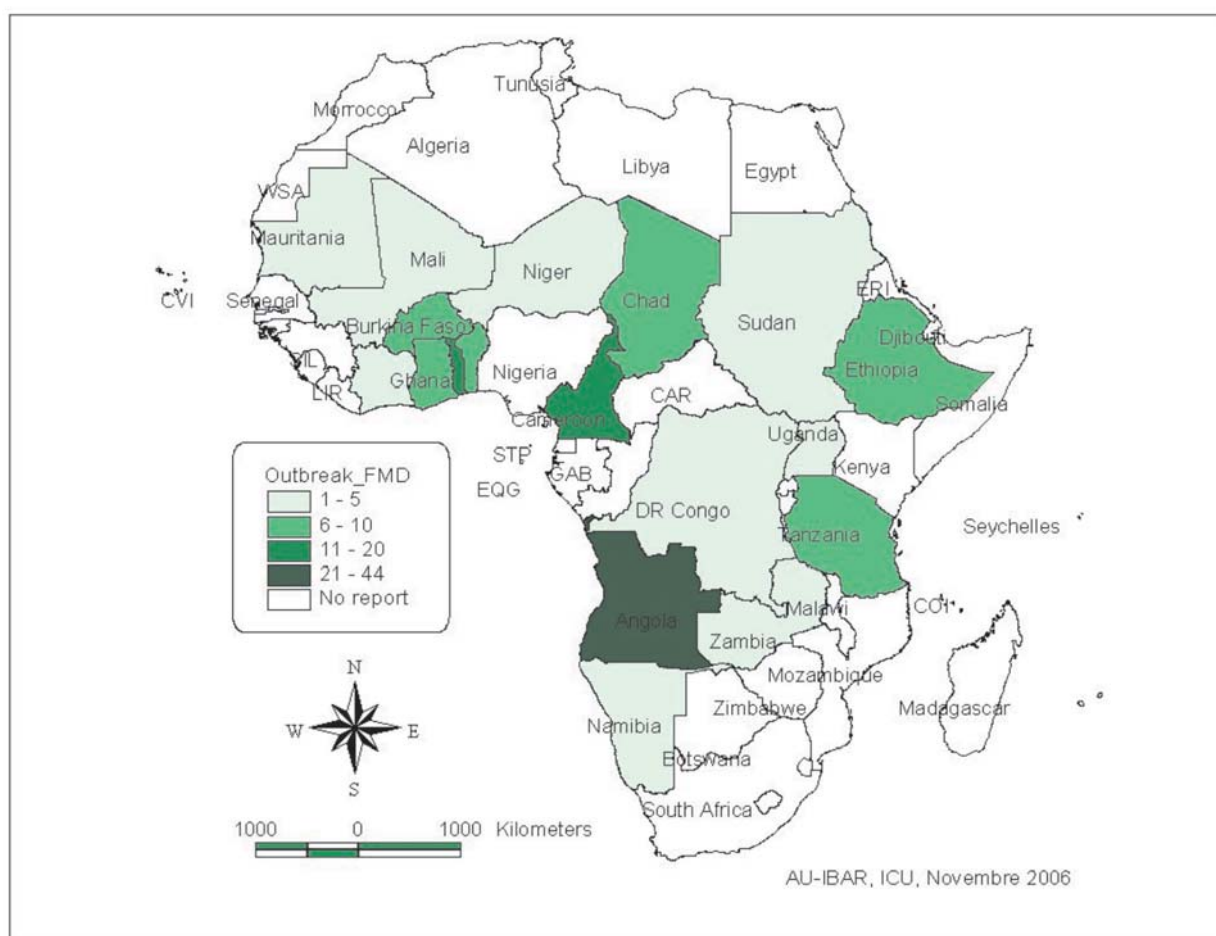
Almost all of the documented outbreaks were reported from Niger in West Africa with a figure of 1,203 outbreaks involving 1646 cases. All of the reported cases originated from West African countries with the exception of Lesotho in Southern Africa. This would suggest or indicate a lack of reporting of this disease from other member country reports.

No cases of Pasteurellosis were reported in 2003 or in 2004.

Table 15: Breakdown of Pasteurellosis outbreaks by country

Country	Outbreaks	Cases	Deaths
Burkina Faso	16	276	32
Cameroon	5	24	12
Lesotho	2	10	3
Mali	3	75	21
Niger	1203	1646	585
Senegal	1	10	5
Total	1230	2041	658

Map 9: Spatial distribution of Pasteurellosis in Africa in 2005



Heart water

During 2005, 269 outbreaks of Heart water were reported from 9 member countries. This involved 1239 cases of which 483 deaths were noted.

Botswana had the highest number of outbreaks (148), cases (489) and deaths (327). Both large (bovine) and small ruminants (ovine & caprine) were equally affected and areas where the cases occurred in Botswana were in the Eastern part of the country. The Western, drier sandveld areas only showed few cases.

No cases were reported in the northern part of the continent, which tends to have a much hotter, drier sandy environment considered not conducive to the tick vector which carries the disease.

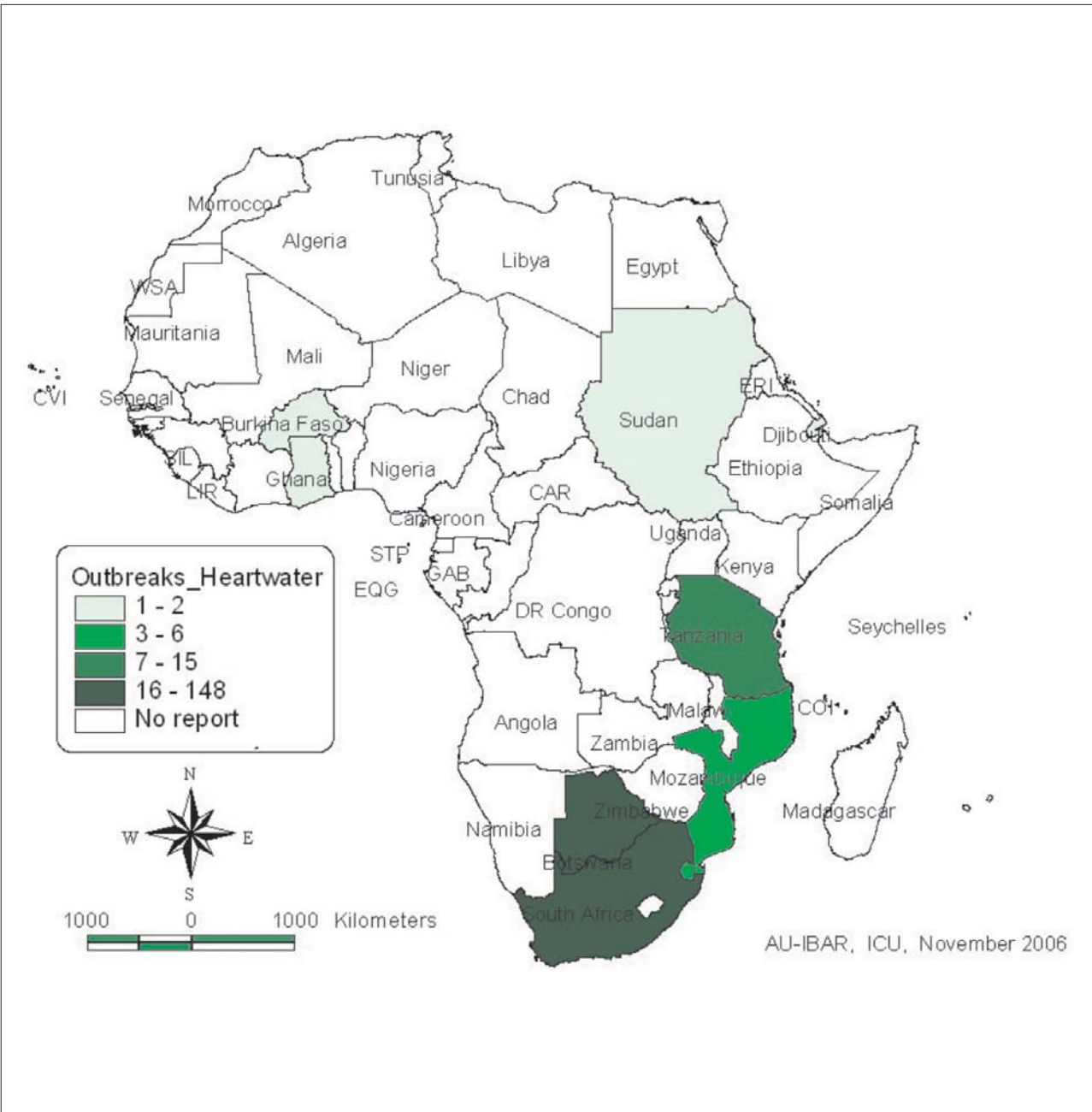
South Africa also reported 90 outbreaks involving 425 cases and 87 deaths. Between both countries (Botswana and South Africa) that region reported over 95 % of the cases. Monthly distribution reports indicate that cases occurred throughout the year with most seen in between October – January.

Heart water ranked as the 10th most common disease outbreak during 2005.

Table 16: Breakdown of Heart Water outbreaks by country

Country	Outbreaks	Cases	Deaths
Botswana	148	489	327
Burkina Faso	2	13	6
Djibouti	1	20	14
Ghana	1	30	6
Mozambique	6	16	11
South Africa	90	452	87
Sudan	1	20	2
Swaziland	5	16	4
Tanzania	15	183	26
Total	269	1239	483

Map 10: Spatial distribution of Heart Water in Africa in 2005



3.2 Detailed disease situation in 2005 (Other important reported diseases)

Contagious Bovine Pleuro Pneumonia (CBPP)

In 2005, 18 countries reported outbreaks of CBPP. This was a similar number to 2004 while in 2003 14 countries reported outbreaks. The disease was reported in Sub-saharan Africa with no reports from the northern regions. This pattern of distribution has been consistent from 2001 reports to date.

In the 18 countries that reported, 156 outbreaks involving 1,937 cases and 570 mortalities. All these figures are significantly less when compared to 2003 -2004 records.

The highest number of outbreaks was 44 reported from Angola on the extreme south west of the continent. Similarly, Angola had the highest number of individual cases affected at 520 and deaths at 139.

When looking at the Map of CBPP, it is observed that all the countries bordering Angola also reported the disease. This shows a regional clustering of the disease and this scenario is similarly observed in the Western and Eastern African regions. There are different prevalence levels for each country with some being more affected than others. This wide continental spread of CBPP indicates its importance as a transboundary animal disease (TAD) which suggests it requires a regional approach to control / eradication.

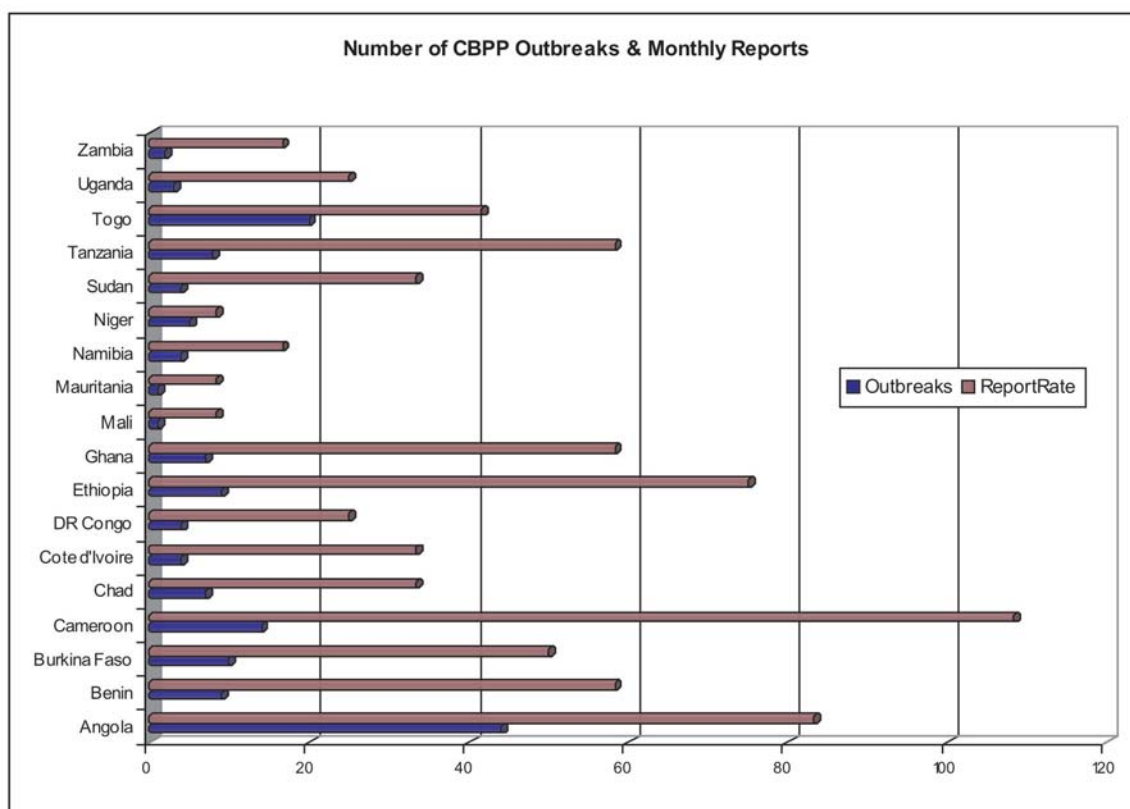
Table 17: Breakdown of CBPP outbreaks by country

Country	Outbreaks	Cases	Death
Angola	44	520	139
Benin	9	138	11
Burkina Faso	10	181	39
Cameroon	14	173	60
Chad	7	27	26
Cote d'Ivoire	4	72	52
DR Congo	4	6	1
Ethiopia	9	131	86
Ghana	7	50	15
Mali	1	3	0
Mauritania	1	2	
Namibia	4	31	7
Niger	5	58	3
Sudan	4	29	12
Tanzania	8	167	66
Togo	20	290	25
Uganda	3	33	11
Zambia	2	26	17
Total	156	1937	570

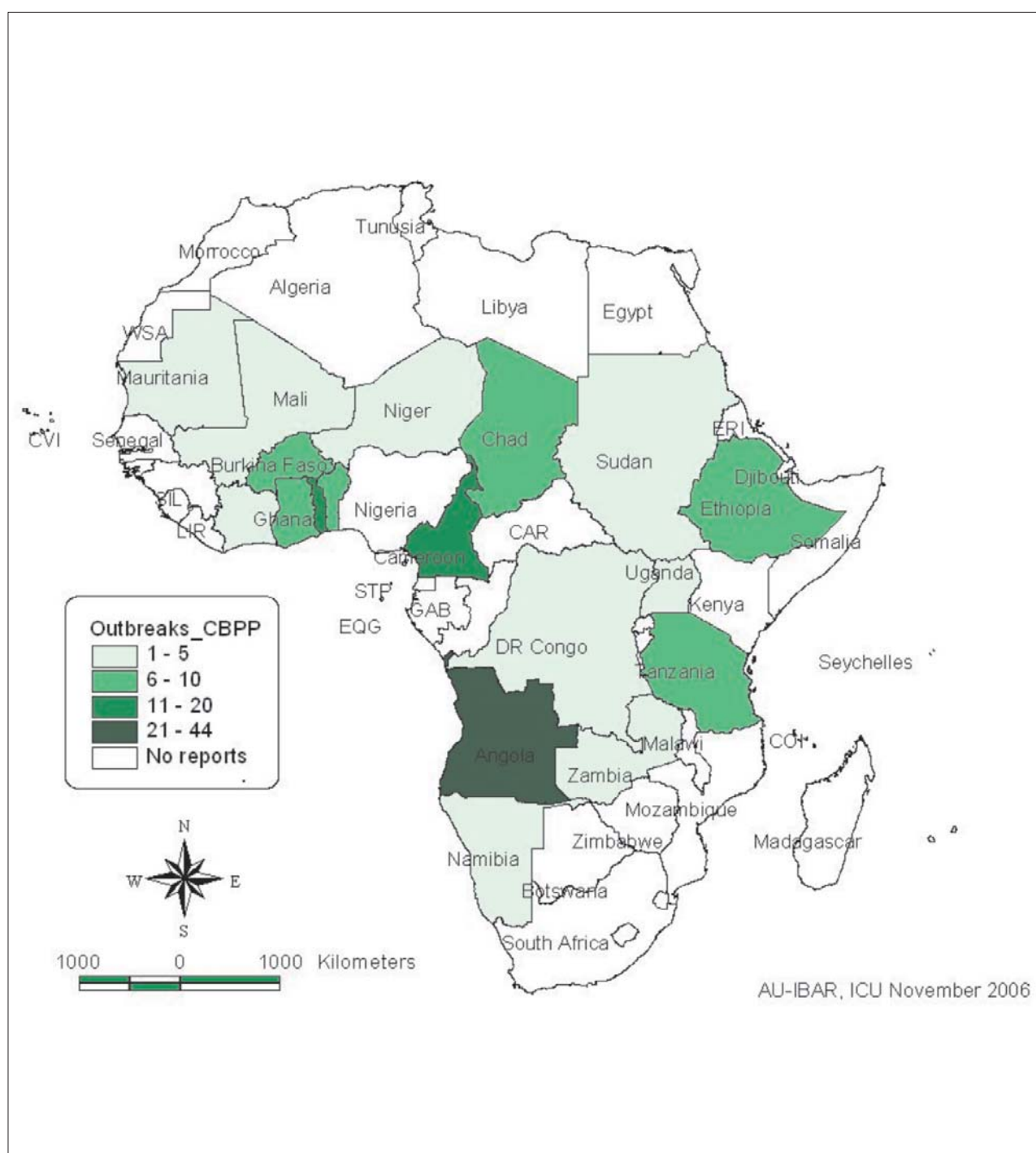
Table 18: Comparison of and overall CBPP situation 2003 - 2005

Year	Number of Countries Reporting	Number of Outbreaks	Number of Cases	Number of Deaths
2003	14	272	7,510	1,289
2004	18	314	52,145	1,985
2005	18	156	1,937	570

Chart 8: Number of CBPP outbreaks by country monthly reports in 2005.



Map 11: Spatial distribution of CBPP in Africa in 2005



Rift Valley Fever (RVF)

Only one country Angola, reported a single outbreak of Rift Valley Fever (RVF) in 2005. This involved 11 individual bovine cases out of a susceptible population of 16,774. It was recorded in the month of July and no mortalities were observed.

In 2004, two outbreaks were reported in Senegal and Gambia only. OIE reports indicated another outbreak in the same year from Mauritania which was not reported to the AU-IBAR office. In 2003 again only two countries, Senegal and Mauritania again, reported a total of 10 outbreaks in which 44 cases were recorded. All cases involved small ruminants and occurred during the months of October and November.

Recent history therefore shows the occurrence of this disease in the extreme West African part of the continent, which seems not to be the case for 2005 which according to records has now seen a geographical shift to Angola in South West Africa.

Table 19: Breakdown of RVF outbreaks by country

Country	Outbreaks	Cases	Death
Angola	1	11	0
Total	1	11	0

Bluetongue

Only 2 countries reported 26 Bluetongue outbreaks in 2005. South Africa reported 23 outbreaks involving 149 cases resulting in 31 deaths. Lesotho reported 3 outbreaks in which 41 animals were affected out of which 13 died.

It would appear that from 2000 - 2005 records, the disease is confined predominantly within the Southern and East African regions and to particular countries as seen in the table below:

Table 20: Breakdown of Bluetongue outbreaks by country

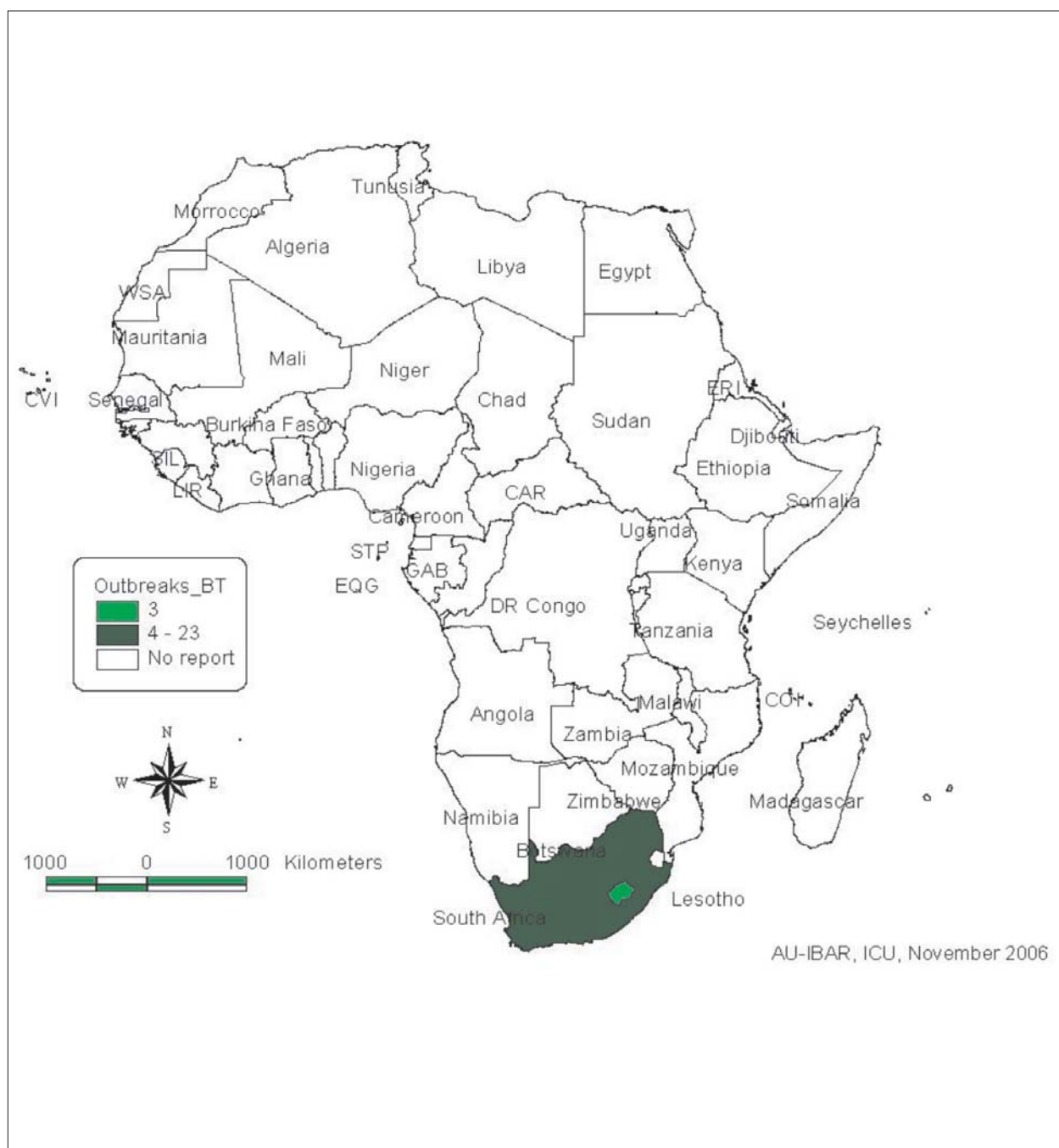
Country	Outbreaks	Cases	Death
Lesotho	3	41	13
South Africa	23	108	18
Total	26	149	31

Table 21: Recorded Outbreaks of Bluetongue in African countries 2000-2005.

Country	2000	2001	2002	2003	2004	2005
South Africa	98	23	75	64	31	23
Namibia	4	2	1	0	1	0
Uganda	*	*	2	1	0	0
Lesotho	0	0	0	0	0	3
Total	102	25	78	65	32	26

* = Data Not Available.

Map 12: Spatial distribution of Bluetongue in Africa in 2005



African Horse Sickness (AHS)

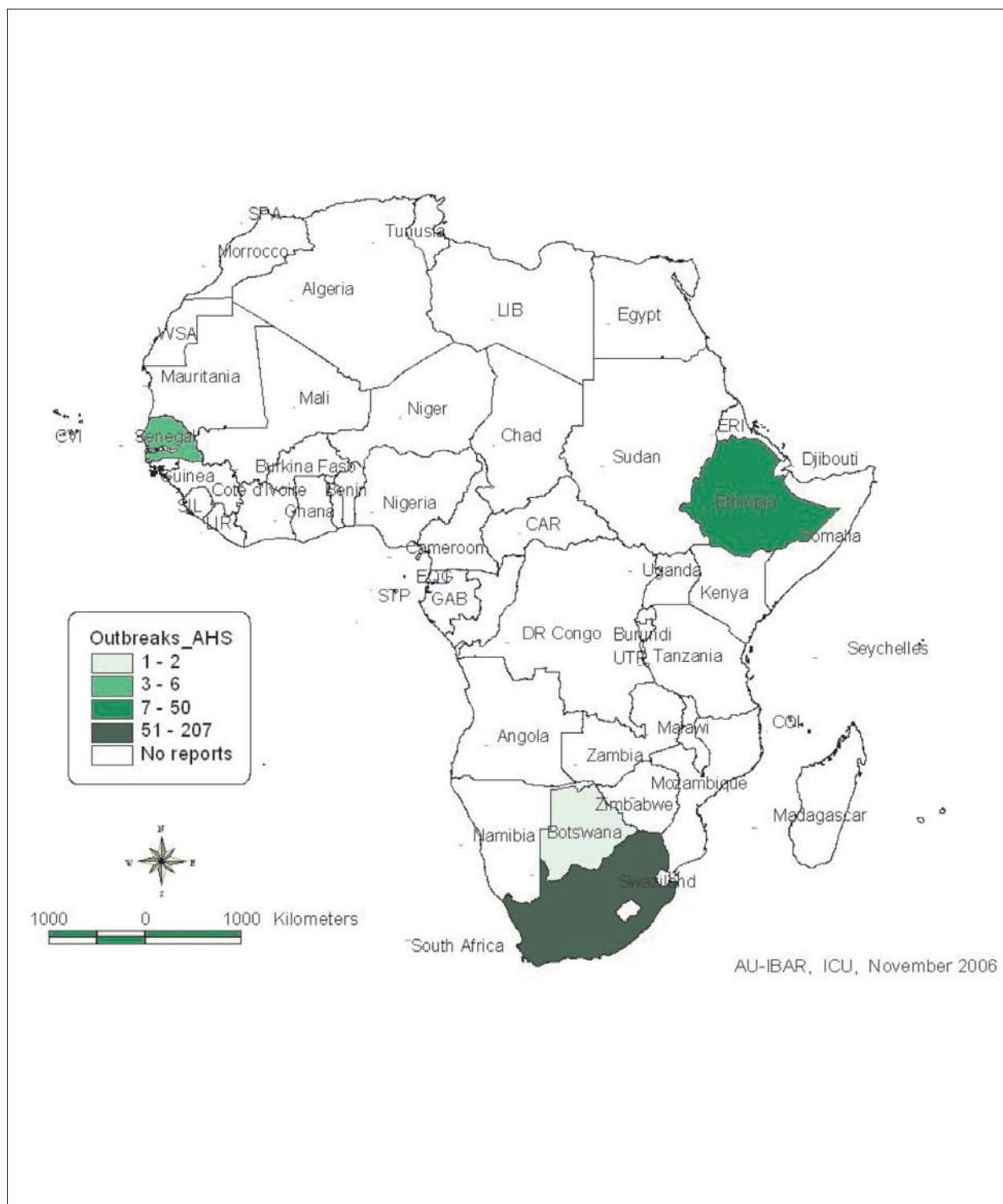
African horse sickness was reported in 5 countries in 2005. A total of 264 outbreaks were noted compared to 237 in 2004 and 196 in 2003. The same countries that reported in 2004 also made reports in 2005 which is very indicative that either other countries are not reporting or the disease is absent. Figures seen below are laboratory confirmed according to records.

When comparing the number of cases to deaths, it can be seen that mortality rates for AHS is high with over half of reported cases dying from the disease.

Table 22: Breakdown of AHS outbreaks by country

Country	Outbreak	Cases	Death
Botswana	1	11	8
Ethiopia	50	512	326
Senegal	6	17	12
South Africa	207	188	59
Total	264	728	405

Map 13: Spatial distribution of AHS in Africa in 2005



African Swine Fever (ASF)

During 2005, African Swine Fever affected a total of 17 countries. These countries recorded a total of 228 outbreaks affecting 19,511 animals out of which 13,717 died.

Togo in West Africa recorded the highest number of outbreaks (41) followed closely by South Africa (37) and Malawi (29)

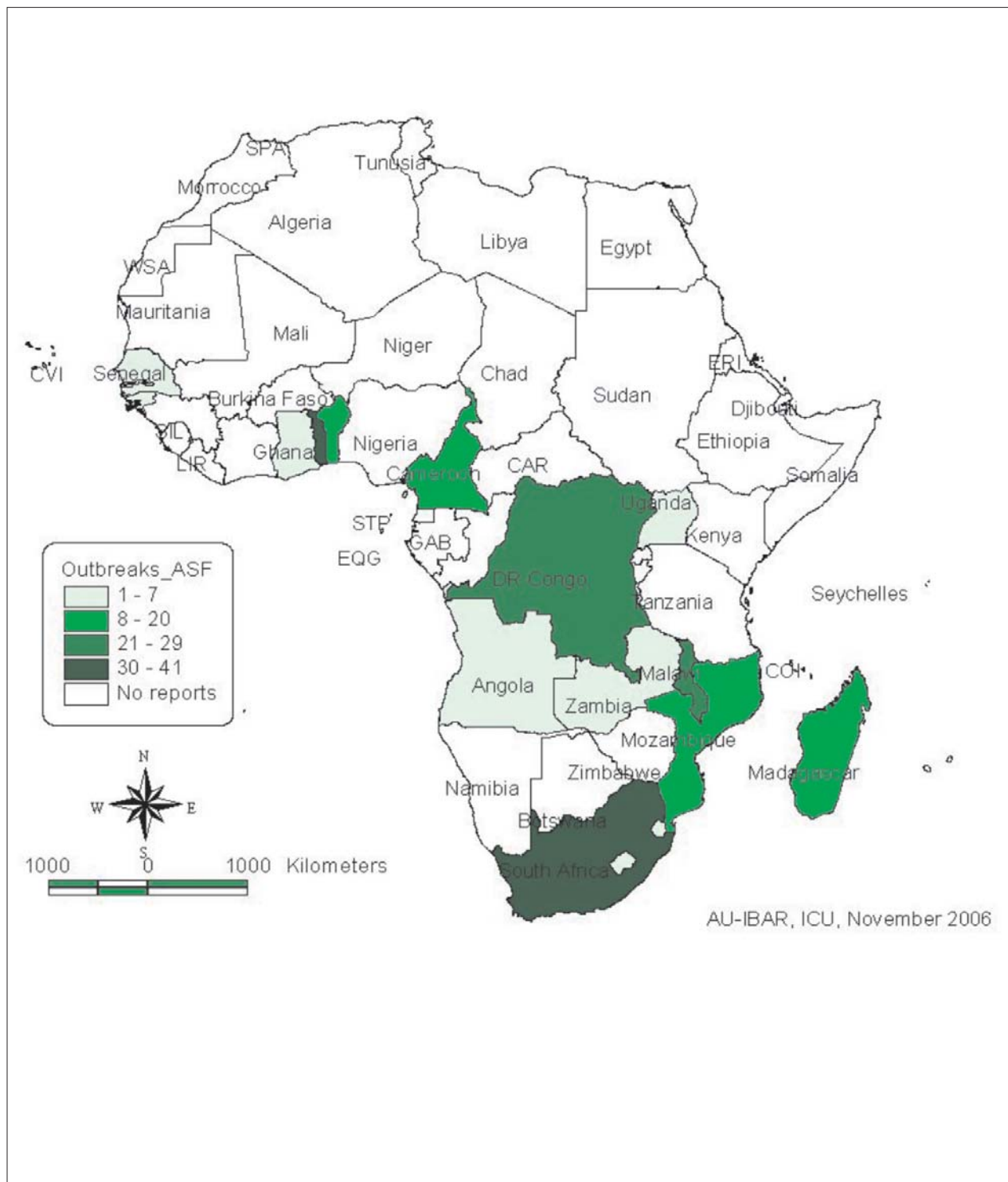
Majority of the reported cases came from the Southern African region while the rest from the West African sub-region. No cases were reported in Northern Africa, presumably because very few pigs are reared in the predominantly Muslim countries.

Mortality rates for this disease remains very high.

Table 23: Breakdown of ASF outbreaks by country

Country	Outbreaks	Cases	Death
Angola	6	198	198
Benin	20	5534	3213
Cameroon	20	126	217
DR Congo	24	722	397
Ghana	7	426	409
Guinea Bissau	1	26	4
Lesotho	1	0	0
Madagascar	18	312	267
Malawi	29	4107	3450
Mozambique	16	1721	1257
Senegal	1	462	462
South Africa	37	45	19
Swaziland	1	1	1
Tanzania		0	
Togo	41	5429	3641
Uganda	5	401	181
Zambia	1	1	1
Total	228	19511	13717

Map 14: Spatial distribution of ASF in Africa in 2005



Trypanosomiasis.

During 2005, a total of 14 countries reported 120 outbreaks of trypanosomiasis. This involved 13, 357 cases of which 370 animal died.

Most of the records indicate the bovine species affected, but few small ruminants and camels were also reported to have succumbed to the disease.

Tanzania recorded the highest number of outbreaks at 61. The same country also had the highest number of outbreaks in 2004 (298) and 2003 (85).

Unfortunately records did not indicate which species of *Trypanosoma* were involved.

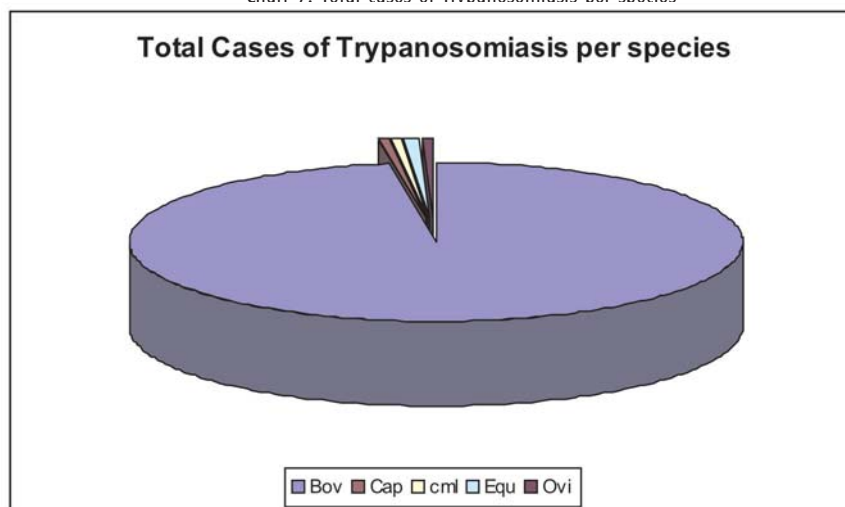
Table 24: Breakdown of Trypanosomiasis outbreaks by country

Country	Outbreaks	Cases	Death
Angola	10	123	107
Benin	12	1947	16
Cameroon	5	126	8
CAR			
Cote d'Ivoire	4	42	21
Gambia	0	5	0
Ghana	1	21	1
Mozambique	4	72	54
Senegal	2	48	27
Tanzania	61	3471	97
Tunisia	10	48	11
Uganda	7	7296	14
Zambia	4	153	14
Zimbabwe		5	0
Total	120	13357	370

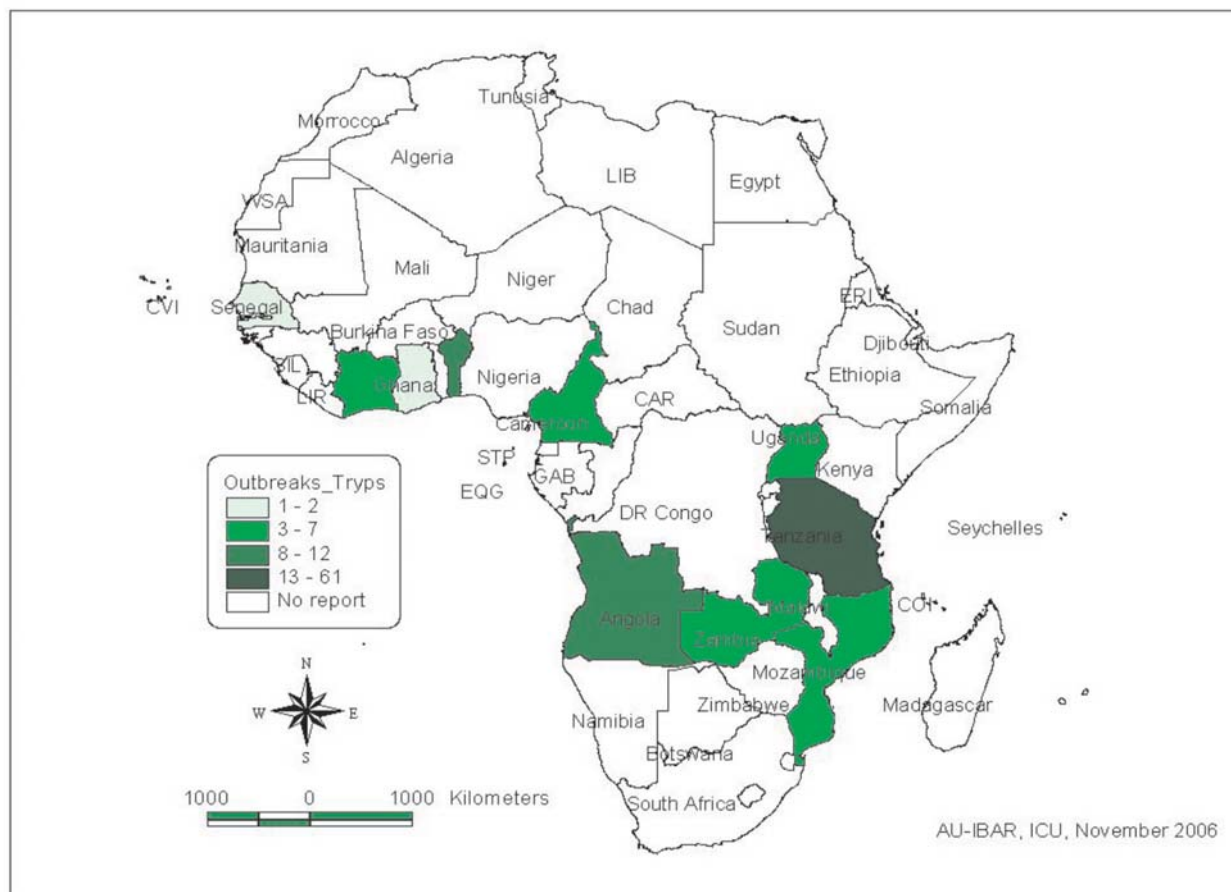
Table 25: Comparison of and overall Trypanosomiasis situation 2003 – 2005

Year	Number of Countries Reporting	Number of Outbreaks	Number of Cases	Number of Deaths
2003	13	320	32,607	564
2004	8	424	76,810	765
2005	14	120	13,357	370

Chart 9. Total cases of Trypanosomiasis per species



Map 15: Spatial distribution of Trypanosomiasis in Africa in 2005



Theileriosis

A total of eight countries reported outbreaks of Theileriosis in 2005. Geographical distribution was continent wide with reports from as far north to as Tunisia to as far south as Mozambique. 491 outbreaks were recorded involving 3267 cases of which a mortality figure of 644 animals was observed.

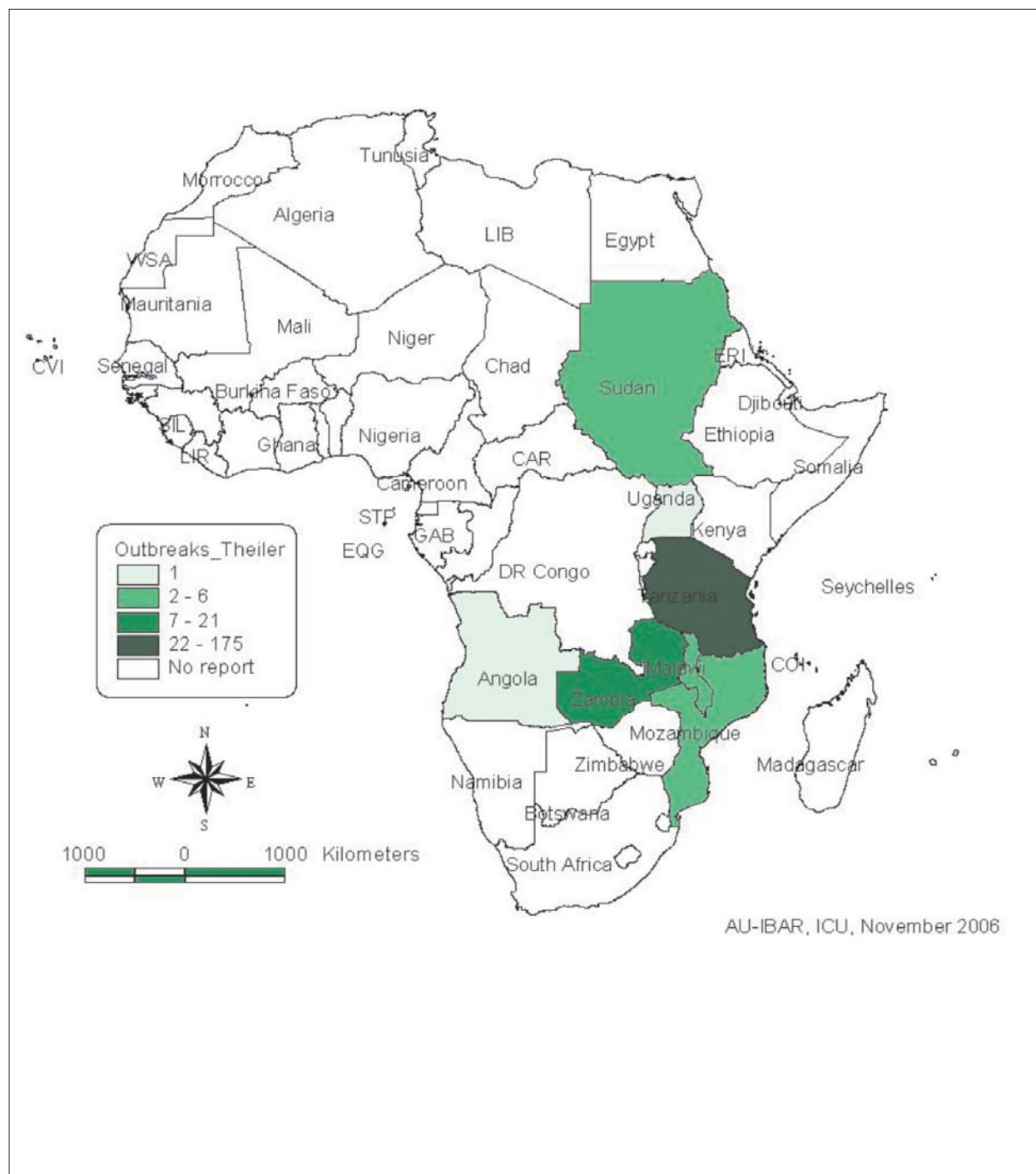
This is one of the diseases which had different names depending on country preference. For the analysis and presentation of this report, Theileriosis, East Coast Fever and Corridor disease were all taken as Theileriosis.

In 2004 Tanzania was the worst affected country with 434 outbreaks. This number has significantly reduced in 2005 to 175 outbreaks, the deaths are however the highest for 2005. Tunisia in North Africa has the highest number of outbreaks in 2005 standing at 280 while the deaths number 5 showing a much lower mortality rate than in Tanzania and Mozambique.

Table 26: Breakdown of Theileriosis outbreaks by country

Country	outbreaks	cases	death
Angola	1	20	20
Malawi	6	15	10
Mozambique	4	308	227
Sudan	3	38	13
Tanzania	175	2010	275
Tunisia	280	297	5
Uganda	1	64	2
Zambia	21	515	92
Total	491	3267	644

Map 16: Spatial distribution of Theileriosis in Africa in 2005



Rinderpest.

As in 2004, there was no confirmed outbreak of Rinderpest recorded in Africa in 2005. This has been largely due to the concerted efforts made by the Pan Africa Programme for the control of Epizootics (PACE) in partnership with other stakeholders that set a target for the complete eradication of Rinderpest by the year 2010.

Rinderpest outbreaks have not been reported in West and Central Africa in the last 19 years. Over half of the countries in these regions have been recognized as being Free from infection while the rest are at different stages of verifying absence of disease and or infection. Benin, Senegal and Togo got their freedom from infection in 2005.

Unlike in West and Central Africa, East Africa is still presumed to contain infection and considerable progress was made by most of those countries in 2005. The only last focal point of suspected infection is within the Somali Ecosystem (SES).

Both Eritrea and Tanzania got OIE recognition of freedom from infection in 2005 while Kenya and Ethiopia are recognized as free from infection only on zonal basis as some parts of those countries are within or border the SES.

Currently, it is presumed that the last remaining foci of the Rinderpest virus in Africa are in the Somali Ecosystem area only (Ethiopia, Kenya and Somalia). Concerted efforts are being made by the Somali Ecosystem Rinderpest Eradication Coordination Unit (SERECU), which was established within the AU – IBAR- PACE in order to manage and coordinate the final eradication of Rinderpest from the SES and therefore from Africa.

Table 27: Rinderpest status with regard to the OIE Pathway in PACE countries of East Africa

Country	Provisionally free	Freedom from disease	Freedom from infection
Burundi	2003		
Eritrea	1999	2004	2005
Djibouti*	2003		
Rwanda	2003		
Tanzania	1998	2005	
Sudan	2004	2006	
Uganda	2002	2006	
Ethiopia	1999(Zonal)	2005(Zonal)	SES
Kenya	2004(Zonal)	2006(Zonal)	SES
Somalia			SES

* Advised to Apply on Historical Basis
SES = Somali Ecosystem

Table 28: Rinderpest status with regard to the OIE Pathway in PACE countries of West and Central Africa.

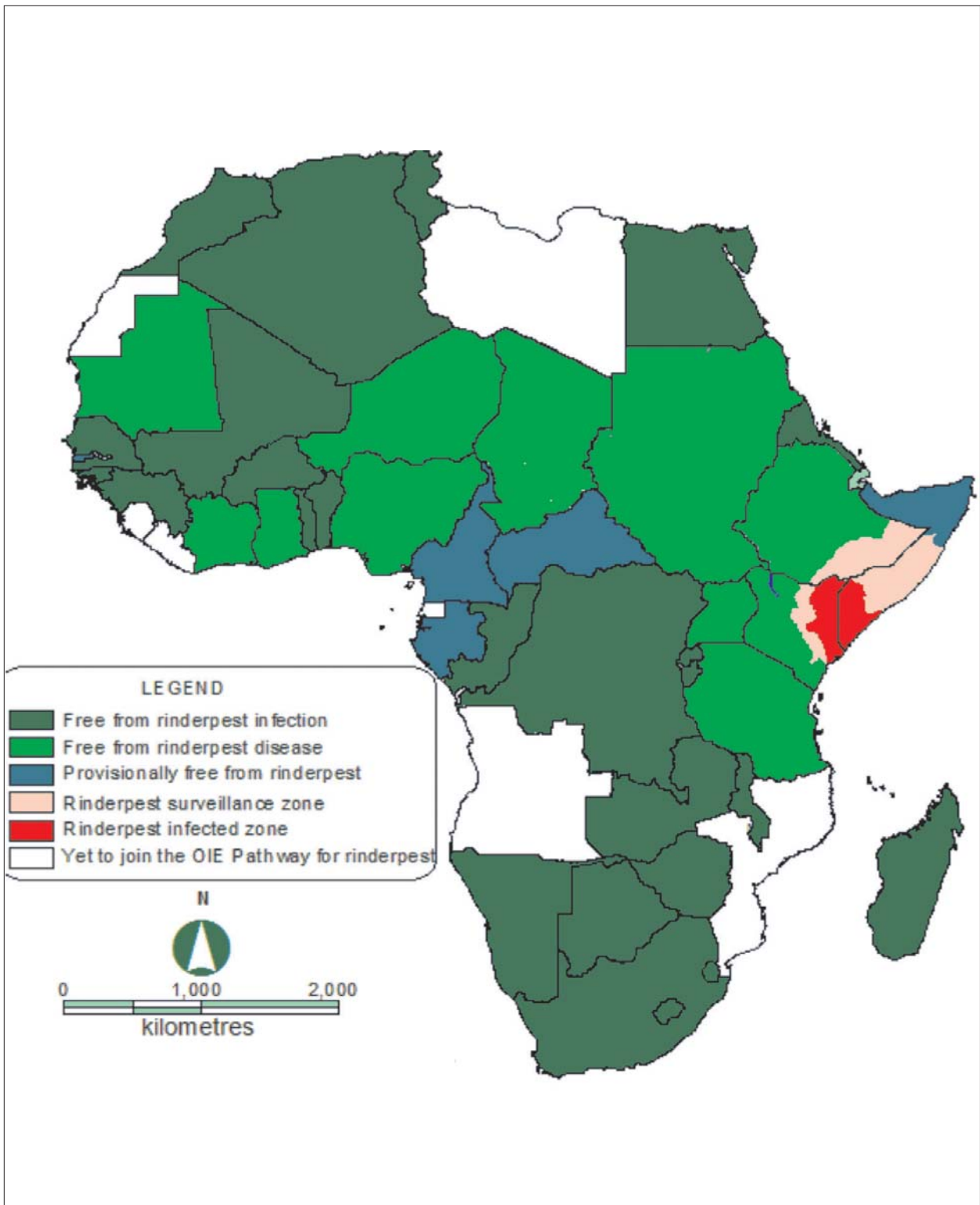
Country	Provisionally free	Freedom from disease	Freedom from infection
Benin	1999	2003	2005
Burkina Faso	1998	2003	
Cameroon	1999		
CAR*	2004		
Congo**			
Chad	2002		
DR Congo**	2003 (Zonal)		
Côte d'Ivoire	1997	2004	
Equatorial Guinea***			
Gambia	1990		
Gabon	2005		
Ghana	1997	2003	
Guinea Conakry	1996	2003	
Guinea Bissau**	2003		
Mali	1997	2003	
Mauritania	1999	2003	
Niger	1999	2003	
Nigeria	1998	2004	
Senegal	1997	2003	2005
Togo	1996	2003	2005

* CAR is not on the OIE up-dated list.

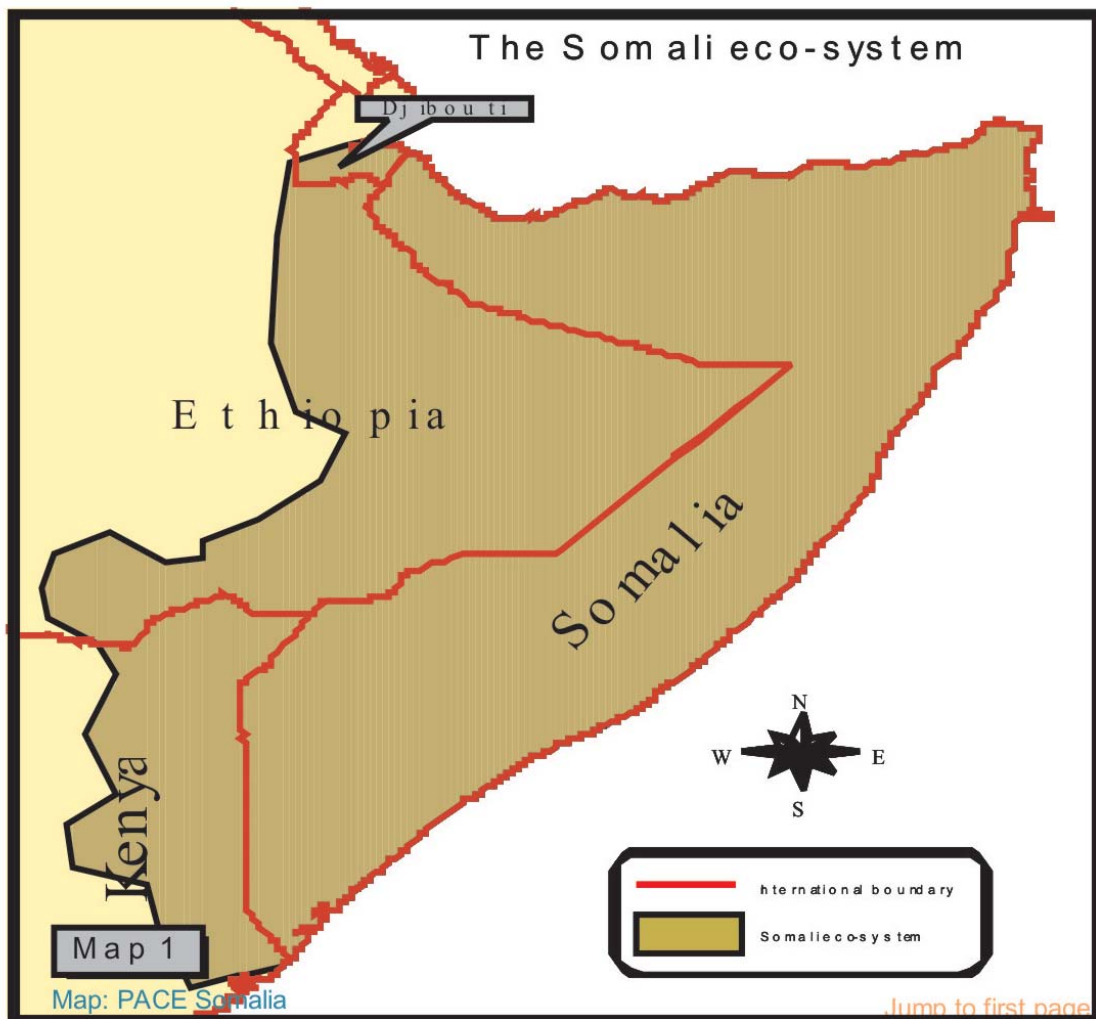
** Freedom from infection on historical basis

*** Advised to Apply on Historical Basis

Map 17: Situation of countries with regards to OIE Rinderpest pathway



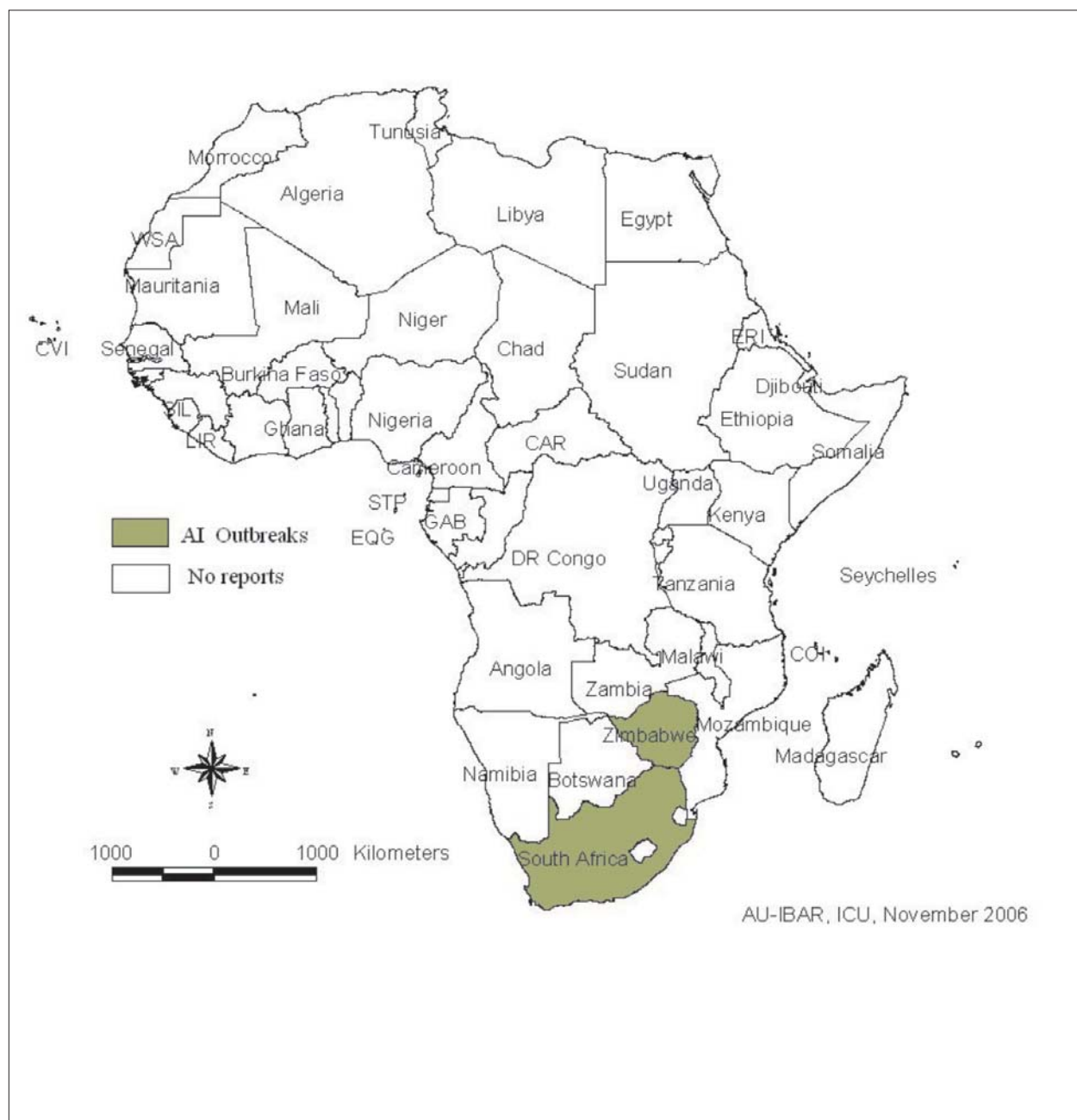
Map 18: Geographical map of Somali Ecosystem



Highly Pathogenic Avian Influenza. (HPAI)

In Africa in 2005 Avian Influenza was reported only in South Africa and Zimbabwe. The outbreaks occurred in ostrich farms and were caused by the H5N2 virus strain. Figures on number of affected and dead animals are not available. The outbreaks were controlled by stamping out all ostrich population in infected areas.

MAP 19: Spatial distribution of HPAI in Africa in 2005



4. CONSTRAINTS OF DISEASE REPORTING AND SOLUTIONS PROPOSED.

Recent development in Information and Communication Technology (ICT) and their application in animal health resulted in a significant change of mind and a better perception of the importance of data management use in order to understand and control major diseases. The collection and analysis of animal health related data as well as sharing information for decision-making and planning intervention are essential to this process.

Data management comprises of data collection, processing, analysis and presentation of information in a format easily visible and understood by stakeholders involved in disease control. One of AU-IBAR's key mandates is to gather and compile diseases reports from all its member States in order to determine the prevalence, spatial and temporal distribution of major trans boundary diseases and to better coordinate control programmes at regional or continental level. To this end, it is essential that member countries keep sending to IBAR disease reports on a regular basis. It is also critical that reporting procedures and formats be harmonised throughout the continent in order to facilitate data compilation and processing at a central level.

AU-IBAR, through its PACE programme has developed and implemented an information system (ARIS) to be used by member States to capture animal resources related data but mostly to harmonise diseases reporting and facilitate information sharing in the continent.

However, despite reminders sent to the respective directors of national veterinary services and to data management officers, monthly diseases reporting to IBAR is still sub-optimal and reports are coming in various formats causing lot of difficulties in capturing and processing data. It also leads to a considerable loss of information.

The need to follow a certain format to collect data from field, the mode and time of transferring these to databases cannot be over emphasised. Most constraints IBAR is faces regarding the quality of reports received from some member states and the difficulty to compile and process these reports have been highlighted in previous yearbooks. Solutions to improve the reporting system(s) have also been emphasised. Despite this, the frequency, harmony and quality of reports sent since to IBAR is still below required standards, it is therefore necessary to stress yet again the following recommendations.

4.1. Formats to use for disease reporting

In order to generate information, which supports decision-making process to prioritise disease control or eradication programme or embark on research, it is important to collect all the necessary data. It is only after securing complete data that information on temporal and spatial distribution, morbidity and mortality rates, ranking of diseases, etc can be generated.

Databases or other ICT facilities, regardless of how sophisticated they may be, cannot generate quality information from non-existing or incomplete data sets. Hence, the format used for field data collection has to contain the necessary elements. AU-IBAR introduced a monthly disease reporting format (see annex III a & b) for this purpose two years ago. Several countries have adopted the format and have submitted their monthly reports. Countries with compatible database i.e. the Animal Resources Information System (ARIS) have sent electronic data generated from the System. Some countries, however, have not yet adopted this format and are still sending their reports using the old format. This makes aggregation of data difficult.

Completing different formats for different organisations is a cumbersome task. However, with the introduction of ARIS this problem is well taken care of. ARIS allows countries to generate reports, first and foremost for themselves, and then in formats that international and regional organisations require.

A typical example is the generation of the OIE monthly disease report (SR-3), which is automatically sent by e-mail, if Internet connection exists. Note that the SR-3 is not valid anymore, as a new reporting system has been introduced by the OIE.

In line with changes introduced in disease reporting by OIE, AU-IBAR is planning to re-adjust the facility in ARIS enabling countries to file immediate notification as well as the period reports in the required format. It is important to mention here the recommendation passed at the first consultative meeting between the Directors of Veterinary Services and IBAR in Paris on 21st May 2005 to introduce the monthly disease reporting format developed by AU-IBAR that is compatible with ARIS.

4.2 Need for Improving reporting within African Countries.

Unless countries receive monthly disease reports (or immediate notification) from veterinary authorities and staff at the lower administrative levels, there will be no data to generate information for action or making decisions and international reporting. The quality of reports from a given country depends on the number of lower levels providing regular reports. International disease reporting based on few districts or local administration in a country provides an incomplete picture of the disease situation. Hence, countries need to sensitise, train and equip their lower level staff to regularly report disease events.

4.3 Discipline to regularly report

AU-IBAR expects immediate notification of disease occurrence and monthly reporting of disease status and control measures from member states. It is important not to confuse this with the requirements of other international and regional organisations. During the previous years, some countries provided reports of several years at the middle of the year or at the end of the year. Apart from not being timely, this makes data entry and analysis difficult. Monthly reports are to be submitted by the end of the month or during the course of the first or at least the second following months. It is also worthwhile mentioning the need for being consistent in sending monthly reports for ALL months during the year and not only some of them. That is true even when there is no disease outbreak, as absence of a disease outbreak by itself is a report.

To encourage countries to comply with these key requirements, a congratulations and a reminder letters are sent on a quarterly basis respectively to DVS reporting 12 months a year and to those sending less than 12 reports a year. A spread sheet displaying the reporting rate for each of the 53 member countries is also attached to the letter so as to give to Directors of Veterinary services a basis to compare their reporting performances and assiduity with others'. A templates of these letters is attached as annex iv.

4.4 Quality of reports

The quality of reports submitted to AU-IBAR has improved over the last few years. However, because of not using the right format or not following the guidelines, there are still some incoming reports of low quality. Some of the commonly observed problems are described below.

Certain key data elements are overlooked — reporting formats used by some countries do not cater for how the final diagnosis of the reported disease outbreak was made. Hence, whether the reported outbreak was suspected on clinical grounds or confirmed by a laboratory is not clear from such reports. It also creates inconsistency in reporting among countries as some report only those outbreaks confirmed by laboratory while others include all suspected and confirmed outbreaks. The current AU-IBAR disease reporting form has a provision for entering whether the disease outbreak being reported was confirmed by a laboratory or is suspected on clinical grounds. That is the reason why veterinary authorities in member countries are urged to introduce this format.

Instructions of completing forms are overlooked — Guidelines for the current AU-IBAR reporting format provided in the annex, as well as the formats used previously, clearly explain how each column of the form should be entered. However, as these are often overlooked by some officers the quality of reports is affected particularly those needed for quantitative analysis. In several reports, either the number of new outbreaks is missing or confused with total outbreaks during the reporting month (including the previous month). There are instances where the extent of an outbreak is considered as each household affected, even though livestock graze and water together (a single epidemiological unit), inflating the number of outbreaks reported. In most

5. CONCLUSION

The year saw a slight decrease in reporting rates as only 37 out of the 53 member states made reports to IBAR. 2714 reports were received of which 65% were in the electronic format. All member countries should try to make a concerted effort to improve on their Livestock disease reporting to IBAR.

In terms of outbreaks, 7311 were reported and involved 326,399 individual cases of which 112,073 deaths were recorded. 78 different diseases occurred and affected all domestic and few wildlife species. Bovines had the most reported outbreaks at 48.76%. This high number shows the significant importance of cattle on the African continent when compared to other species. As for numbers of individual cases reported, the avian species was ranked first with 55.18% of cases recorded being avian (mostly domestic chicken.)






















Foot and mouth Disease and Contagious Bovine Pleuro pneumonia are still present and rank as diseases of serious economic importance to the continent. Rinderpest has been almost totally eradicated with the exception of possible pockets in the Somali ecosystem. Even here no clinical cases were reported in 2005 and it is hoped that this last pocket of possible infection will be eradicated completely in the near future.

6. ACKNOWLEDGEMENT

The Inter African Bureau for Animal Resources of the African Union (AU-IBAR) would like to thank the Heads of Livestock Departments, Directors of Veterinary Services and Information Management staff in all the 37 AU member countries who provided reports during 2005 on which this Yearbook is based.

7. ANNEXES

Annex 1: Individual Country Data

(ANNEX): BASELINE INFORMATION OF AU MEMBER COUNTRIES												
ANIMAL POPULATION ('000)												
GENERAL INFORMATION						ANIMAL POPULATION ('000)						
ALGERIA	FLAGS	CAPITAL CITY	CURRENCY	HUMAN POPU. (Million)	AREA ['000 SQ KM]	CATTLE	SHEEP	GOATS	PIGS	CHICKENS	CAMELS	BUFFALO
		Algiers	Algerian Dinar	32.8	2382	1 300	16 800	3 400	6	132 000	136	X
ANGOLA		Luanda	Kwanza	15.9	1247	3 900	336	2 000	800	6 650	X	X
BENIN		Porto - Novo	CFA Franc	8.4	113	1 550	645	1 270	500	29 000	X	X
BOTSWANA		Gaborone	Pula	1.7	582	2 380	250	1 850	7	3 500	X	X
BURKINA FASO		Ouagadougou	CFA Franc	13.2	274	4 800	7 000	9 000	600	23000	X	X
BURUNDI		Bujumbura	Burundian Franc	7.5	28	400	330	920	80	4,400	X	X
CAMEROON		Yaounde	CFA Franc	16.3	475	5 900	3 880	4 400	1 430	31 000	X	X
CAPE VERDE		Praia	Escudo	0.5	4	22	9	112	640	480		
CENTRAL AFRICAN REP.		Bangui	CFA Franc	4	623	3 200	211	2 900	649	4 600	X	X
COMORES		Moroni	Comoro Franc	8	2	51	20	170	X	490	X	X
CONGO		Brazzaville	CFA Franc	3.9	342	800	900	4 100	1 000	22 000	X	X
COTE D'IVOIRE		Yamoussoukro	CFA Franc	18.1	323	1 400	1 400	1 100	300	31 100	X	X
D.R.C		Kinshasa	Congolaise franc	48	2345	900	930	4 400	1 100	21 000		
DJIBOUTI		Djibouti	Djiboutian Franc	0.7	23	269	470	513	X	X	66	X
EGYPT		Cairo	Egyptian Pound	78.8	1001	3 500	4 400	3 300	X	99 000	100	3 400
AFRICAN COUNTRIES SURVEY						ANIMAL POPULATION ('000)						
	FLAGS	CAPITAL CITY	CURRENCY	HUMAN POPU. (Million)	AREA ['000 SQ KM]	CATTLE	SHEEP	GOATS	PIGS	CHICKENS	CAMELS	BUFFALO/HORSES
EQUATORIAL GUINEE		Malabo	CFA Franc	0.5	28	2 368	687	864	54	8 900	X	X
ERITREA		Asmara	Nakfa	4.4	118	2 200	1 600	1 700		4 600	80	X
ETHIOPIA		Addis Ababa	Birr	75	1104	35 095	22 000	16 950	25	55 400	X	X
GABON		Libreville	CFA Franc	1.3	268	39	198	91	213	3 200	X	X
GAMBIA		Banjul	Dalasi	1.5	11	364	195	270	14	780	X	X
GHANA		Accra	Cedi	22.1	239	1 300	2 700	3 000	400	20 000	X	X

Annex II: Monthly Breakdown of Disease Reports received by Member countries in 2005
(Blank boxes = Report Not Received)

Country	Jan-05	Feb-05	Mar-05	Apr-05	May-05	Jun-05	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05
Algeria	1	1	1	1	1	1	1	1	1	1	1	1
Angola	1	1	1	1	1	1	1	1	1	1	1	1
Benin	1	1	1	1	1	1	1	1	1	1	1	1
Botswana	1	1	1	1	1	1	1	1	1	1	1	1
Burkina Faso	1	1	1	1	1	1	1	1	1	1	1	1
Burundi	0	0	0	0	0	0	0	0	0	0	0	0
Cameroon	1	1	1	1	1	1	1	1	1	1	1	0
Cape Verde	0	0	0	0	0	0	0	0	0	0	0	0
CAR	1	1	1	1	1	1	1	1	0	1	1	1
Chad	1	1	1	1	1	1	1	1	1	1	1	1
Comoros	0	0	0	0	0	0	0	0	0	0	0	0
Congo	0	0	0	0	0	0	0	0	0	0	0	0
Cote d'Ivoire	1	1	1	1	1	1	1	1	1	1	1	1
Djibouti	1	1	1	1	1	1	1	1	1	1	1	1
DR Congo	1	0	0	0	0	0	0	0	0	0	0	0
Egypt	1	1	1	1	1	1	1	1	1	1	1	1
Equatorial	0	0	0	0	0	0	0	0	0	0	0	0
Eritrea	0	0	0	0	0	0	0	0	0	0	0	0
Ethiopia	1	1	1	1	1	1	1	1	1	0	0	0
Gabon	0	0	0	0	0	0	0	0	0	0	0	0
Gambia	1	1	1	1	1	1	1	1	1	1	1	1
Ghana	1	1	1	1	1	1	1	1	1	1	1	1
Guinea Conakry	1	1	1	1	1	1	0	0	0	0	0	0
Guinea Bissau	1	1	1	1	1	1	1	1	1	1	1	0
Kenya	0	0	0	0	0	0	0	0	0	0	0	0
Lesotho	1	1	1	1	1	1	1	1	1	1	1	1
Liberia	0	0	0	0	0	0	0	0	0	0	0	0
Libya	0	0	0	0	0	0	0	0	0	0	0	0
Madagascar	0	0	0	0	0	0	0	0	0	0	0	0
Malawi	1	1	1	1	1	1	1	1	1	0	1	1
Mali	1	1	1	1	1	0	0	0	0	0	0	0
Mauritania	1	1	1	1	1	1	1	1	1	1	1	1
Morocco	0	0	0	0	0	0	0	0	0	0	0	
Mauritius	1	1	1	1	1	1	1	1	1	1	1	1
Mozambique	1	1	1	1	1	1	1	1	1	1	1	1
Namibia	1	1	1	1	1	1	1	1	1	1	1	1
Niger	1	1	1	1	1	1	1	1	1	1	1	1
Nigeria	1	1	1	1	1	1	0	0	0	0	0	0
Rwanda	0	0	0	0	0	0	0	0	0	0	0	0
Sao Tome &	0	0	0	0	0	0	0	0	0	0	0	0
Senegal	0	0	0	0	1	1	0	0	1	1	1	1
Seychelles	0	0	0	0	0	0	0	0	0	0	1	0
Sierra Leone	0	0	0	0	0	0	0	0	0	0	0	0
Somalia	0	0	0	0	0	0	0	0	0	0	0	0
South Africa	1	1	1	1	1	1	1	1	1	1	1	0
Sudan	1	1	1	1	1	1	1	1	1	1	1	1
Swaziland	1	1	1	1	1	1	1	1	1	1	1	1
Tanzania	1	1	1	1	1	1	1	1	1	1	1	1
Togo	1	1	1	1	1	1	0	0	0	0	0	0
Tunisia	1	1	1	0	1	1	1	1	0	1	1	1
Uganda	1	1	1	1	1	1	1	1	1	1	0	0
Zambia	1	0	0	1	1	1	0	0	0	0	0	0
Zimbabwe	1	0	0	0	0	0	0	0	0	0	0	0

P.O.Box 30786, Nairobi, Kenya - Fax +254 20 226565 e-mail reports@au-ibar.org www.au-ibar.org

Reporting Unit:	Country	Region	Province	District
Reporting Period:	Month	Year (yyyy)		
Reporting officer:	Name	Position	Signature	
Date report:	Prepared (dd/mm/yyyy)	Received at Vet. Dept. (dd/mm/yyyy)	Received at IBAR (dd/mm/yyyy)	

Is there outbreak to report? YES ☐ NO ☐ (mark with X an appropriate box)

If reporting only vaccination start at the column labeled "w"

For each outbreak, please enter the following parameters in columns labeled from a) to ad)
Please provide details for each species on different lines for multi-species diseases

[illegible]

Please continue to page 2

[illegible]

Please use the following options for the corresponding headers

J - Species affected	K - Age group	Chickens and other birds	N - Control measures
Bov Cattle	Bovine, Equine, Camel, buffalo and other large animals	Young	Treatment
Avi Birds		Adult	Vaccination
Cml Camelidae	0 – 12 months		Quarantine
Fel Cats	13 – 24 months	L - Sex	Stamping out
Can Dogs	25 – 36 months	Male	Control of Wildlife Reservoirs
Equ Equidae	Over 36 months	Female	Vector control
Cap Goats	All	Neutral (Castrated)	Movement control
Lep Rabbits/hares		All	
Ovi Sheep	Ovine, Caprine, Swine and other small animals		
Sui Pigs	0 - 6 months	M - Production system Intensive	O - Basis for diagnosis Laboratory
Fau Wildlife	7 - 12 months	Mixed	Post-mortem
	13 - 18 months	Extensive (Pastoral & Transhumant)	Clinical
	Over 18 months		Owners claim
	All		Rumour

Annex III b — Disease reporting form completing guidelines

MONTHLY DISEASE REPORTING FORM: COMPLETING GUIDELINES

INTRODUCTION

The role of in-country or international disease reporting is well understood. There is growing need for accurate and timely information for planning, decision-making or transparency. The new AU-IBAR monthly disease reporting form aims to standardise disease occurrence data collected from the lowest administrative levels in member states. Hence, this form is to be completed at district or equivalent levels and forwarded to the higher levels. While sending these reports to IBAR office, countries shouldn't summarise them and send as they are. Countries where compatible database to this report, the PACE Integrated Database (PID), is installed are expected to enter the report and send electronic report using the Data Communication Package. Other countries where PID is not yet installed can meanwhile transfer the paper report to a spreadsheet (without summarising them) and send as e-mail attachment. In case the two options mentioned above are not practical, then countries should send to IBAR copies of paper reports received from their districts every month.

Reporting Unit

Country	Country filing the monthly disease report
Region	Region or State (2 nd administrative layer in the country) from where the report is coming
Province	Province or any 3 rd administrative layer in the country from where the report is coming
District	District or local administration or any 4 th administrative layer in the country from where the report is coming

Note — In countries where one or both intermediate layers (i.e. Region, Province) do not exist, please leave the boxes blank and fill only the layer applicable.

Reporting Period

Month	The name of the month for which report is prepared
Year	The year for which report is prepared in full (e.g. 2003)

Reporting Officer

Name	The name of the person preparing the report at the district or equivalent administrative level
Position	Responsibility or duties of the reporting officer (e.g. District Veterinary Officer, team leader, etc.)
Signature	The signature of the person preparing the report

Date Report

- Prepared Date in dd/mm/yyyy form when the report is prepared. Ideally this is usually towards the end of the reporting month or the beginning of the following.
- Received at Vet. Dept. This is the date in dd/mm/yyyy form when the report is received at the headquarters of the veterinary services in the country.
- Received at IBAR This is the date in dd/mm/yyyy form when the report is received at IBAR office in Nairobi. The two dates are completed at the headquarters of the veterinary services in the country and at IBAR in Nairobi respectively. Therefore, reporting officer at districts shouldn't complete these.

Is there outbreak to report?

The complete question directed to the reporting officer is "Have you had any outbreak during the reporting month in your district? The expected answer is YES or NO and this is done by placing a cross "X" in one of the provided boxes. If the answer is NO, then there will be no need to complete the remaining column (unless the reporting officer wishes to report routine (prophylactic) vaccination) and the report should be sent as it is. However, if the answer is YES, the details of EACH outbreak should be provided on a separate ROW. For multiple species diseases, reporting officers are expected to provide separate details per species and outbreak.

When there is no outbreak to report during a particular month, but prophylactic vaccinations conducted, reporting officers should directly go and start entering data about the vaccination in columns "w" to "ad".

Details

This is the part of the report form where details of each outbreak are provided on separate rows for each of the columns labelled from "a" to "v". If the control measure of the reported outbreak is vaccination, number of animals vaccinated to contain the progress of the disease should be entered in column "x" and the rest details in columns "z" to "ad". Note that column "w" is redundant in this case.

Although the number of rows provided in the sample reporting form is only five users can extend rows to suit the number of outbreaks they are reporting in a given month. Similarly, the width of the columns given here may be smaller than the data to enter. Hence, reporting officers can widen each column to the size of their data and paper to use. Adjustment of the reporting form without affecting the type and sequence of data to gather is possible.

- a) Disease & Serotype The name of the disease (in full or easily recognisable abbreviated form) suspected or confirmed during the outbreak and if known the serotype of the agent involved (e.g. A, O, C, SAT 1 etc. for FMD)
- b) New or Followup Is the outbreak being reported new occurrence or a follow-up of the previous month? Enter New or Follow-up
- c) Date occurred The date in dd/mm/yyyy form when the first case of the outbreak was observed
- d) Date reported to vet. The date in dd/mm/yyyy form on which the outbreak was first

- communicated to local veterinary staff
- e) Date investigated The date in dd/mm/yyyy form on which the outbreak was first investigated by local veterinary staff
- f) Date of final diagnosis The date in dd/mm/yyyy form on which the outbreak was confirmed by laboratory or final diagnosis was made by clinical, postmortem or another means or combination of these.
- g) Name of village affected The name of the village or locality where the outbreak was observed. In case the outbreak involve several villages sharing grazing or watering or any other factor favouring disease transmission, enter the first village reporting the outbreak and mention the rest in the remark.
- h) Latitude (in DD) The latitude in degree decimal (to 3 decimal place precisions) of the village affected by the outbreak
- i) Longitude (in DD) The longitude in degree decimal (to 3 decimal place precisions) of the village affected by the outbreak
- j) Species affected The name of the species of animal affected (i.e. Bovine, Ovine, Caprine, Avium, etc.). Note that details of each species should be entered separately in different rows for diseases affecting multiple species.
- k) Age group The age group of the animals affected during the outbreak. Four categories are available (0 – 12 months, 13 – 24 months, 25 – 36 months and > 36 months for large animals – Cattle, Horse, Buffalo, etc. and 0 - 6 months, 7 - 12 months, 13 - 18 months and > 18 months for small animals – Sheep, Goat, Pig, etc.)
- l) Sex The sex of the animals affected during the outbreak (Male, Female, Neutral and all are the possible options)
- m) Production system The type of livestock production system (Intensive, mixed farming (small holder), pastoral, transhumant (semi-sedentary), etc.) affected by the outbreak
- n) Control measures The type of control measure(s) used to stop the progress of the disease outbreak being reported. These may include the following one or more combined measures: Vaccination, Quarantine, Stamping out, Treatment, Vector control, etc.
- o) Basis for diagnosis The method (laboratory, post-mortem, clinical, Owners claim, rumour, etc.) used to arrive to final diagnosis
- p) Number of suscep. The number of animals (per species for multi-species diseases) susceptible to the disease being reported (Population at risk)
- q) Number of cases The number of animals (per species for multi-species diseases) affected by the disease being reported (clinical cases)
- r) Number of deaths The number of animals (per species for multi-species diseases) died as a result of the disease outbreak being reported
- s) Number of slaug. The number of animals (per species for multi-species diseases) slaughtered because of the disease outbreak being reported
- t) Number of recovered The number of animals (per species for multi-species diseases)

affected by the disease outbreak being reported but finally recovered

u) Number of destroyed The number of animals (per species for multi-species diseases)

destroyed (killed and buried or burned) as a result of the disease outbreak being reported

v) Outbreak stopped? The column expects answer to the question on whether there are still clinical cases of the disease outbreak at the end of the reporting month or not. Reporting officers are expected to fill the column with "YES" if the outbreak stopped or Ended. If there are still clinical cases by the time of reporting, then enter "NO" to show that the outbreak Continued.

w) Disease In case of continuing giving details of an outbreak, particularly control vaccination, please enter the name of the same disease outbreak being reported. However, if there was only prophylactic vaccination for other disease(s), the name of this (these) should be entered here.

x) # Control vaccination This is the number of animals per species vaccinated to stop the progress of the disease outbreak.

y) # Prophylactic vaccination This is the number of animals per species vaccinated to prevent the infection of animals (in absence of disease)

z) Source of vaccine The origin (the manufacturing institution) of the vaccine used for control or prophylactic purpose.
















aa) Batch number The batch number of the vaccine used in control or prophylaxis

ab) Date produced This is the date the vaccine used was manufactured

















ac) Expiry date Date on which the vaccine used for control or prophylactic purpose expires (ends)























ad) Tested at PANVAC? This column expects an answer on whether the vaccine used for control or prophylactic purpose was tested for quality at PANVAC (Panafrikan Vaccine Quality Control Centre) or not. The expected answer is "YES" or "NO"

Annex I — Baseline information of AU member countries

ANIMAL POPULATION ('000)												
GENERAL INFORMATION						ANIMAL POPULATION ('000)						
FLAGS	CAPITAL CITY	CURRENCY	HUMAN POPU. (Million)	AREA ['000 sq km]	CATTLE	SHEEP	GOATS	PIGS	CHICKENS	CAMELS	BUFFALO	
	Algiers	Algerian Dinar	32.8	2382	1 300	16 800	3 400	6	132 000	136	X	
	Luanda	Kwanza	15.9	1247	3 900	336	2 000	800	6 650	X	X	
	Porto - Novo	CFA Franc	8.4	113	1 550	645	1 270	500	29 000	X	X	
	Gaborone	Pula	1.7	582	2 380	250	1 850	7	3 500	X	X	
	Ouagadougou	CFA Franc	13.2	274	4 800	7 000	9 000	600	23000	X	X	
	Bujumbura	Burundian Franc	7.5	28	400	330	920	80	4,400	X	X	
	Yaounde	CFA Franc	16.3	475	5 900	3 880	4 400	1 430	31 000	X	X	
	Praia	Escudo	0.5	4	22	9	112	640	480			
	Bangui	CFA Franc	4	623	3 200	211	2 900	649	4 600	X	X	
	Moroni	Comoro Franc	8	2	51	20	170	X	490	X	X	
	Brazzaville	CFA Franc	3.9	342	800	900	4 100	1 000	22 000	X	X	
	Yamoussoukro	CFA Franc	18.1	323	1 400	1 400	1 100	300	31 100	X	X	
	Kinshasa	Congolaise franc	48	2345	900	930	4 400	1 100	21 000			
	Djibouti	Djiboutien Franc	0.7	23	269	470	513	X	X	66	X	
	Cairo	Egyptian Pound	78.8	1001	3 500	4 400	3 300	X	99 000	100	3 400	

Cont.....

AFRICAN COUNTRIES SURVEY				ANIMAL POPULATION ('000)								
FLAGS	CAPITAL CITY	CURRENCY	HUMAN POPU. (Million)	AREA ['000 Sq KM]	CATTLE	SHEEP	GOATS	PIGS	CHICKENS	CAMELS	BUFFALO/ HORSES	
	Malabo	CFA Franc	0.5	28	2 368	687	864	54	8 900	X	X	
	Asmara	Nakfa	4.4	118	2 200	1 600	1 700		4 600	80	X	
	Addis Ababa	Birr	75	1104	35 095	22 000	16 950	25	55 400	X	X	
	Libreville	CFA Franc	1.3	268	39	198	91	213	3 200	X	X	
	Banjul	Dalasi	1.5	11	364	195	270	14	780	X	X	
	Accra	Cedi	22.1	239	1 300	2 700	3 000	400	20 000	X	X	
	Bissau	CFA Franc	1.5	36	520	285	325	345	850	X	X	
	Conakry	Guinean Franc	9.4	246	2 368	687	864	54	8 900	X		
	Nairobi	Kenyan Shilling	34	583	13 392	5 800	7 600	110	30 000	X	X	
	Maseru	Loti	1.7	30	510	720	560	63	1 700	X	X	
	Monrovia	Liberian Dollar	3.2	111	36	210	220	130	4 200	X	X	
	Tripoli	Dinar	5.8	1760	220	4 125	1 265	X	248	72	46	
	Antananarivo	Malgache franc	18.6	587	10 400	800	1 400	900	25 900	X	X	
	Lilongwe	Kwacha	12.8	119	750	110	1 450	240	15 000	X	X	
	Bamako	CFA Franc	13.5	1240	6 600	6 200	9 800	65	24 500	500	100	
	Nouakchott	Ouguiya	3.07	1031	1 500	7 500	5 000	20	4 100	1 200	X	
	Port Louis	Mauritius Rupee	1.2	2	27	7	94	20	4 427	X	X	

AFRICAN COUNTRIES SURVEY							ANIMAL POPULATION ('000)						
	FLAGS	CAPITAL CITY	CURRENCY	HUMAN POPUL. (Million)	AREA ['000 sq km]		CATTLE	SHEEP	GOATS	PIGS	CHICKENS	CAMELS	HORSES
MOROCCO							2 700	17 300	5 100	10	135 000	X	150
MOZAMBIQUE		Maputo	Metical	19.7	802		1 320	122	392	180	280	X	X
NAMIBIA		Windhoek	Namibian Dollar	2	824		2 294	2 174	1 732	19	2 250		
NIGER		Niamey	CFA Franc	13.9	1267		2 200	4 312	6 700	39	20 000	400	80
NIGERIA		Abuja	Naira	131.5	924		19 830	20 500	24 300	4 855	126 000	X	X
RWANDA		Kigali	Rwandan Franc	9	26		732	254	750	177	1 090	x	x
SAHRAWI		El Aaiun	Dirham/ Tala	341	266		X	X	X	X	X	X	X
SAO TOME & PRINCIPE		Sao Tome	Dobra	0.1	1		232	1 172	22 905	34 905	103 441	X	X
SENEGAL		Dakar	CFA Franc	11.6	196		3 100	4 500	3 900	330	4 500	X	500
SEYCHELLES		Victoria	Seychelles Rupie	0.1	0.4		1 400	X	5 000	18 300	1 000	X	X
SIERRA LEONE		Freetown	Leone	5.5	72		420	365	200	52	6 000	X	X
SOMALIA		Mogadishu	Somali Shilling	8.2	638		1 400	13 000	5 000	18 300	1 000	X	X
SOUTH AFRICA		Pretoria	Rand	47.4	1220		13 500	28 600	6 700	1 500	119 700	X	250
SUDAN		Khartoum	Dinar	27.9	2506		35 000	42 500	37 500	X	41 000	X	X
SWAZILAND		Mbabane	Lilangeni	1	17		660	26	438	31	1 000	X	X
TANZANIA		Dodoma	Tanzanian Shilling	38.3	945		14 350	4 150	9 900	345	28 000	X	X
TCHAD		NDjamena	CFA Franc	9.7	1284		1 330	1 370	1 070	275	29 000	X	X
TOGO		Lome	CFA Franc	6.1	57		223	740	1 110	850	7 500	X	X
TUNISIA		Tunis	Tunisian Dinar	10.1	164		800	6 600	1 400	X	43 000	200	X
UGANDA		Kampala	Ugandan Shilling	27.6	236		5 700	1 970	3 650	960	23 000	X	X
ZAMBIA		Lusaka	Kwacha	11.6	753		2 273	120	1 069	324	28 000	X	X
ZIMBABWE		Zimbabwe	Zimbabwe Dollar	13	391		5 500	525	2 770	278	15 000	X	26

X Data not available

Please CVO update their data

Annex V Competent Authority Contacts in Member Countries.

ADDRESS FOR THE DIRECTORS OF VETERINARY SERVICES

Countries	Address	Tel. Nos.	Mobile No.	Fax No.	E-mail
ALGERIA (French)	Dr Rachid Bouguedour Directeur des services vétérinaires Ministère de l'Agriculture 12, Boulevard Colonel Amirouche 16000 Alger, ALGERIE	(213-21) 743434/711712		(213-21) 743 434/74561	dsval@wissal.dz
ANGOLA	Dr Filipe Visseze Director Nacional de Pecuária Ministério da Agricultura e do Desenvolvimento rural C.P. 527 / 1257 Luanda, ANGOLA	(244-222) 324 067		(244-222) 324 067	dnap@ebonet.net
BENIN	Dr Guillaume Hounsou-Ve Directeur de l'élevage Ministère de l'agriculture, de l'élevage et de la pêche BP 2041 COTONOU, Benin	(229)21 330285/ 921815/ 909987		(229)21 335408/ 331665 331768	delevage@intnet.bj pacebeni@intnet.bj
BOTSWANA (English)	Dr Kgosietsile Phillemon-Motsu Director Department of Animal Health and Production Ministry of Agriculture Private Bag 0032 Gaborone, BOTSWANA	267 391 4492	267 7298 3870	267 390 3744	Kohillemon-motsu@gov.bw
BURKINA FASO (French)	Dr Zacharie Compaore Directeur Général des services vétérinaires Ministère des ressources animales 03 BP 7026 Ouagadougou 03 - BURKINA FASO	(226) 5032 4584		(226) 503 1 3529	dsv@fasonet.bf
BURUNDI (French)	Dr Patrice Biyanke Directeur Général de l'Élevage Direction Generale de l'Élevage BP 161 Gitega - BURUNDI	(257) 402 133 (257) 832 262		(257) 402 133	labopacebdi@cbinf.com

CAMEROON (French)	Dr Hamadou Saïdou Directeur des services vétérinaires Ministère de l'élevage, des pêches et des industries animales Yaoundé, CAMEROON	(237) 998 4527		(237) 231 6048	Louis_banipe@hotmail.com
CAP-VERT	Dr. Louis BANIPE Chef de Service de la Protection Sanitaire Direction des Services Vétérinaires Ministère de l'Elevage, des Pêches Et des Industries Animales YAOUNDE, Cameroun				dgasp@mail.cvtelecom.cv
CHAD	DR MAHAMAT A. ABDERAMAN Directeur des Services Vétérinaires B.P. 750 N'DJAMENA, TCHAD	(235) 529853/334432		(235) 520 797	Hamat.dsvtchad@ininet.td dsvtchad@yahoo.fr
COMOROS	Dr. Fatharoudine Abdourahim Chef Service Santé Publique Vétérinaire Ministère de la Production et de l'Environnement B.P. 289 Moroni, les îles Comores				
CONGO	Dr Valentin Okombo Ngassaki Directeur de l'Elevage B.P. 83 BRAZZAVILLE - CONGO	(242) 548 4944 (242) 661 1881			Valentin_okombo@yahoo.fr
RDC	Dr. N'Lemba Mabela Directeur chef de Service de la Production et de la Santé Animales (DPSA) Croisement Boulevard du 30 juin Avenue Batetela Gombe B.P. 8722, KINSHASA- RDC	(243) 815 126 564 (243) 999 902 967			Dr.nlemba@yahoo.fr

COTE D'IVOIRE	Dr Denis Kouakou Directeur des Services Vétérinaires et de la Qualité Ministère de la Production Animale et des Ressources Halieutiques Cité administrative, B.P. V 84 Tour C, 2e ABIDJAN - COTE D'IVOIRE	(225) 2021 8972		(225) 2022 4533	dsvq@aviso.ci phvenvd@yahoo.fr
DJIBOUTI	Dr. Moussa Ibrahim Cheik Directeur de l'Elevage et des Services Vétérinaires B.P. 297 DJIBOUTI	(253) 351 301 (253) 351 025		(253) 357 061	pace@ininet.dj
EGYPT	Prof. Dr. Ahmed Tawfik Mohamed Chairman of the General Organisation of Veterinary Services (GOVS) Ministry of Agriculture 1st Nadi El Seid Street – Dokki Giza 12618 – CAIRO, Egypt				tawfik@claes.sci.eg
EQUATORIAL GUINEA	Dr. Domingo Ololo Nve Director General de Ganaderia Alimentacion Ministerio de Agricutural Desarrollo Rural B.P. 230 Bata Litoral BATA LITORAL Guinea Equatorial				
ERITREA	Dr. Ghebreiwet Teame Mahru Director of veterinary Services Ministry of Agriculture P.O. Box 1048 ASMARA, Eritrea				
ETHIOPIA (English)	Dr Sileshi Zewdei Head of Veterinary Services Ministry of Agriculture, Animal and Fisheries Resources Development and Regulatory Department PO Box 62347, Addis Ababa, ETHIOPIA	(251-115) 536 339		(251-115) 51 2984 (251-115) 536 339	Nat.pace@telecom.net.et

GABON	Ing. Yolance MOUNGUENGUI Ingénieur Agro-zootéchniciens Directrice de l'Elevage et des Industries Animales B.P. 136 LIBREVILLE, Gabon				pacegabon@yahoo.fr
GAMBIA	Dr Jabel M. Sowe Director of Livestock Services Department of Livestock Services Ministry of Agriculture Abuko, THE GAMBIA	(220) 4390 820	(220) 9902441	(220) 4397575	imsowe@yahoo.com
GHANA	Dr Mensah Agyen-Frempong Acting Director - Veterinary Services Department Ministry of Food and Agriculture PO Box M 161 Accra, GHANA	(233-21) 775 777		(233-21) 776 021	vetsdept@africaonline.co m.gh
GUINEE (French)	Dr Sery Mane Directeur National de l'Elevage MAE/DNE BP 559 CONAKRY GUINEE	(224) 598 576 (224) 340115 (224) 401977		(224) 452 047	sf-dne@biasy.net
GUINEE EQUATORIALE	Dr. Domingo Obolo Nve Director General de Ganaderia Alimentacion Ministerio de Agriculural Desarrollo Rural B.P. 230 Bata Litoral BATA LITORAL Guinee Equatoriale				
KENYA (English)	Dr. Joseph Musaa Director of Veterinary Services P.O. Box 006625, Kangemi NAIROBI, Kenya	(254-20) 632231		(254-20) 631 273	vetsdept@todaysonline.co m

LESOTHO	Dr. Marosi Molomo Director of Livestock Services Department of Livestock Services Ministry of Agriculture and Food Security P O Box A 82 MASERU 100, Lesotho	(266) 223 172 84 (266) 223 248 43 (226) 223 123 18	(266) 620 00922	(266) 223 115 00	Morose_molomo@yahoo.com
LIBERIA	Dr. Kpadeh K. Koikoi Director of Veterinary Services Head of Delegation C/O FAO Representative P.O. Box 10-4094 MONROVIA, Liberia				
LIBYA	Dr. Giurma Hallul Director of Animal Health Department Department of International Cooperation Gen. Pop. Comm. Of Animal Resources PO Box 83252 TRIPOLI, Libya				
MADAGASCAR (French)	Dr. Raymond Directeur de la Santé Animale et du Phytosanitaire AMPANDRIANOMBY bp 291 ANTANANARIVO, Madagascar	(261-22) 665 36		(261-22) 665 34	ddsaps@yahoo.fr dsaps@freenet.mg
MALAWI (English)	Dr Danny Oswald Chinombo Deputy Director Department of Animal Health and Livestock Development Ministry of Agriculture P.O. Box 2096 Lilongwe, MALAWI	(265-1) 7563 89/469		(265-1) 755 912/751 349	agri-dahi@sdhcp.org.mw chinombo@sdhcp.org.mw

NIGERIA	Dr. Elder Amogu Ukagha Deputy Director Federal Department of Livestock and Pest Control Services Garki Area 11 PMB 135, ABUJA	(234-9) 273 1117 80331136821 8043373326			uamogu@hotmail.com nnaoscar@yahoo.com ouamogu@yahoo.com
RWANDA	Dr. Gafarasi I. Mapendo Directeur de l'Elevage B.P. 621 KIGALI, Rwanda	(250) 0850 6713		(250) 589 716	igafarasi@yahoo.fr
SAO TOME ET PRINCIPE	Dr. Natalina Lima de Carvalho Vera Cruz Directrice de l'Elevage Ministère de l'Agriculture du Développement Rural et de Pêche Avenida Marginal 12 de Julho Caixa Postal 718 SAO TOME et Principe				
SENEGAL	Dr. Malik Faye Directeur de l'Elevage Ministère de l'Elevage 37, Avenue Pasteur BP 67 DAKAR, Senegal	(221) 321 3228 (221) 639 3848		(221) 821 3228	mfaye@refer.sn
SEYCHELLES	Dr. Jimmy Gelaze Melanie Director Veterinary Services Ministry of Environment and Natural Resources P.O. Box 166, Victoria Mahe, SEYCHELLES	(248) 285 950 (248) 722 869		(248) 225 245	vetmamr@seychelles.net
SIERRA LEONE	Mr. Francis A-R Sankoh Director Livestock Services Division Ministry of Agriculture, Forestry and Food Security FREETOWN, Sierra Leone	(232) 242 167 (232) 076 734 580			farsankoh@yahoo.com
SOMALIA					

SOUTH AFRICA	Dr. B.M. Modisane Senior Manager of the Directorate of Animal Health Department of Agriculture Private Bag X250, PRETORIA 0001, South Africa					
SUDAN						
SWAZILAND	Dr. Robert S. Thwala Director Veterinary and Livestock Services Ministry of Agriculture and Cooperatives PO Box 162 MBABANE, Swaziland	(268) 404 2731-9 (268) 4040 6948	(268) 404 9802		thwalar@gov.sz	
TANZANIA	Dr. Johnson O. Mollel Acting Director of Veterinary Services Ministry of Water and Livestock P.O. Box 9152 DAR ES SALAAM, Tanzania		(255-22) 28 62 538		dvs@mifugo.go.tz	
TOGO	Dr. Adow Séibou Sonhaye Directeur de l'Elevage et de la Pêche Ministère de l'Agriculture, de l'Elevage et de la Pêche 9, Avenue des Nîmes BP 4041, LOME, Togo	(228) 221 2882/904 4101	(228) 221 71 20		adossou@yahoo.fr	
UGANDA	Dr. William Olaho-Mukani Director Animal Resources Ministry of Agriculture, Animal Industry and Fisheries'PO Box 513 ENTEBBE, Uganda	(256-41) 320 825	(256-41) 320 428		dar.maait@infocom.co.ug	
ZAMBIA	Dr. Moto Peter Crispin Mangani Deputy Director Animal Production and Health Suprogramme Ministry of Agriculture, Food and Fisheries Ridgeway 15101 P.O. box 50060 LUSAKA, Zambia					
ZIMBABWE	Director of Veterinary Services P.O. Box CY 66 Causeway HARARE, Zimbabwe					

DICLAIMER

The designations employed and the presentation of the material and maps in this Yearbook do not imply the expression of any opinion whatsoever on the part of the Interafrican Bureau for Animal Resources of the African Union concerning the legal status of any country territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.