Pan African Animal Health Yearbook 2004

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Preface

The vast majority of the population in Africa live in rural areas and make a living from agriculture and livestock. Apart from providing food and contributing to the household economy, livestock are a source of draft power for agriculture. Pastoral communities almost solely rely on livestock for their livelihood. Many African countries earn a large proportion of their foreign exchange from trade in livestock and livestock products. Hence, the role that livestock play in rural economy and its contribution to the Gross Domestic Product (GDP) of several countries in Africa cannot be over emphasised.

The Inter-African Bureau for Animal Resources (IBAR) is the technical organ of the African Union (AU) mandated to assist African countries to develop their animal resources. IBAR's mission is to become a Centre of Excellence in the development of the animal resources of Africa. Its objectives include: Improve animal health through the control and/or eradication of transboundary animal diseases, increase animal production through the improvement of live-stock feeds and genetic resources, improved marketing and trade of animals and animal products. AU-IBAR implements some of its activities through projects and programmes in close collaboration with development partners and livestock ministries/departments in AU-member countries.

Accurate and timely information is essential for efficient livestock development in Africa. IBAR is working towards consolidating its information generation and knowledge management in the area of animal resources of Africa. Collecting and collating animal resources data and generating and sharing information has been an important means of achieving its objectives over the last half century and today, this remains one of its core functions. IBAR believes that this task cannot be performed without the active participation of ministries and departments of livestock in AU member states as well as the involvement of other partners. As sources of data, livestock ministries and departments contribute by sending regular reports to AU-IBAR. Disease situation and other information contained in this Yearbook is an example of such cooperation between member countries submitting regularly, monthly disease occurrence reports and IBAR generating and sharing information. Filing quality reports on a timely basis enables IBAR to generate quality information for planning and decision-making for the benefit of all. Hence, those involved in reporting are urged to do their utmost in improving the quality of reporting following the remarks made in this Yearbook.

I hope and believe countries sharing their disease status with us and with the rest of international organisations through regular and timely reporting are fulfilling their duties. By declaring their disease status openly, they should not be penalised. To the contrary they should be applauded and encouraged for being transparent with everybody.

With regards,

Dr. Modibo Tiémoko Traoré

Director, AU-IBAR

1. INTRODUCTION

Many veterinary services across the world are appreciating the benefits of information management and have started investing in setting up systems or strengthening existing ones. With fast growing information and communication technology (ICT), collection of data on animal diseases and transmission of these to central authorities for action is becoming a valuable tool in veterinary service delivery. The capacity to perform these duties is becoming an indicator of the strength of veterinary services.

There is a general trend in assuming an information system as being only the latest hardware, databases and Internet connection. The key role that adequate computing facilities and databases of good quality play in information system is well understood. However, there are equally important components of information system neglected most of the times. These are the trained, motivated and dedicated staff collecting data from the field and computing these and the system in place to interact with data sources. Hence, having the latest computers and database alone is not sufficient. Similarly, trained and motivated staff members without adequate means are of no benefit to veterinary services in collecting and analysing data, generating information and sharing with all partners. Powerful computers and analytical systems are only as good as the data that is entered and poor data will still lead to convincing results and likely errors in management. It is important, therefore, to approach information systems in an integrated manner and pay attention to developing each component for better results.

Disease reporting is one of the well-established and main sources of information on spatial and temporal distribution patterns of disease occurrence. Veterinary services rely on immediate notification, follow-up and monthly reporting for decision-making, planning interventions and taking actions. The development and capacity of the system to capture data from sources and transfer these to central authorities or intermediate levels where analysis takes place, vary from country to country. Those veterinary services with efficient disease reporting systems benefit more in securing quality and timely information for action and fulfil their international reporting commitments, while their counterparts with no or less capable systems face difficulties. Stringent international rules and regulations in addition to stiff competition, are not favouring veterinary services in the latter group, and these have to work hard to become active in the fast moving international community, which is adopting greater integration through what is termed “globalisation”.

The Interafrican Bureau for Animal Resources (IBAR) of the African Union (AU) is mandated to gather and analyse data related to animal resources and disseminate information to member countries. More recently, IBAR is also involved in assisting member countries in developing their information management systems.

As part of monitoring the disease situation across the continent, IBAR gathers monthly disease

reports and immediate notification of the occurrence of emergency disease from AU member countries. Based on these reports, the disease situation in the continent is analysed and summary reports are presented in the annual publication of the Pan African Animal Health Yearbook. By the end of 2002, after a lull of five years, the publication of this Yearbook was revitalised by the Data Management Unit (DMU) of the Pan African Programme for the Control of Epizootics (PACE) of AU-IBAR. So far, two issues have been published and the current Yearbook is the third. The few monthly disease occurrence reports received during 2001 were also summarised and information on the disease situation was distributed to member countries and other partners.

4.

2. PROGRESS OF DISEASE REPORTING

During the late 1990s, disease reporting to IBAR declined sharply and by the end of 2000, the IBAR received only 51 monthly disease reports from 10 countries out of the total 53 member states of the AU. The reporting rate of 8.01% of 2000 was not promising in all aspects and the DMU embarked on improving the situation. Awareness was created through presentations at different meetings, conferences and using others means, on the importance of reporting in transparency, accountability and fulfilling international obligations. Acknowledgment of receiving monthly reports and quarterly disease reporting monitoring letters on the status of reporting were also introduced to encourage regular reporting. More importantly, the cooperation of member states and the publication and distribution of the Pan African Animal Health Yearbook had a positive impact on increasing reporting rate and its geographical coverage. The 8.01% reporting rate where only 10 of the 53 AU member states reported in 2000 has increased to 67.9% reporting rate and 40 countries reporting by the end of 2004. Similarly, there was a major shift from paper based monthly reporting to electronic format submission. In 2000 all the monthly disease reports received were on paper. By 2004 the proportion of electronic report reached 89%. The following table and chart summarises the progress made in disease reporting from African countries to IBAR on monthly and yearly basis from 2000 to 2004.

Chart 1, Progress of disease reporting from January 2000 to December 2004

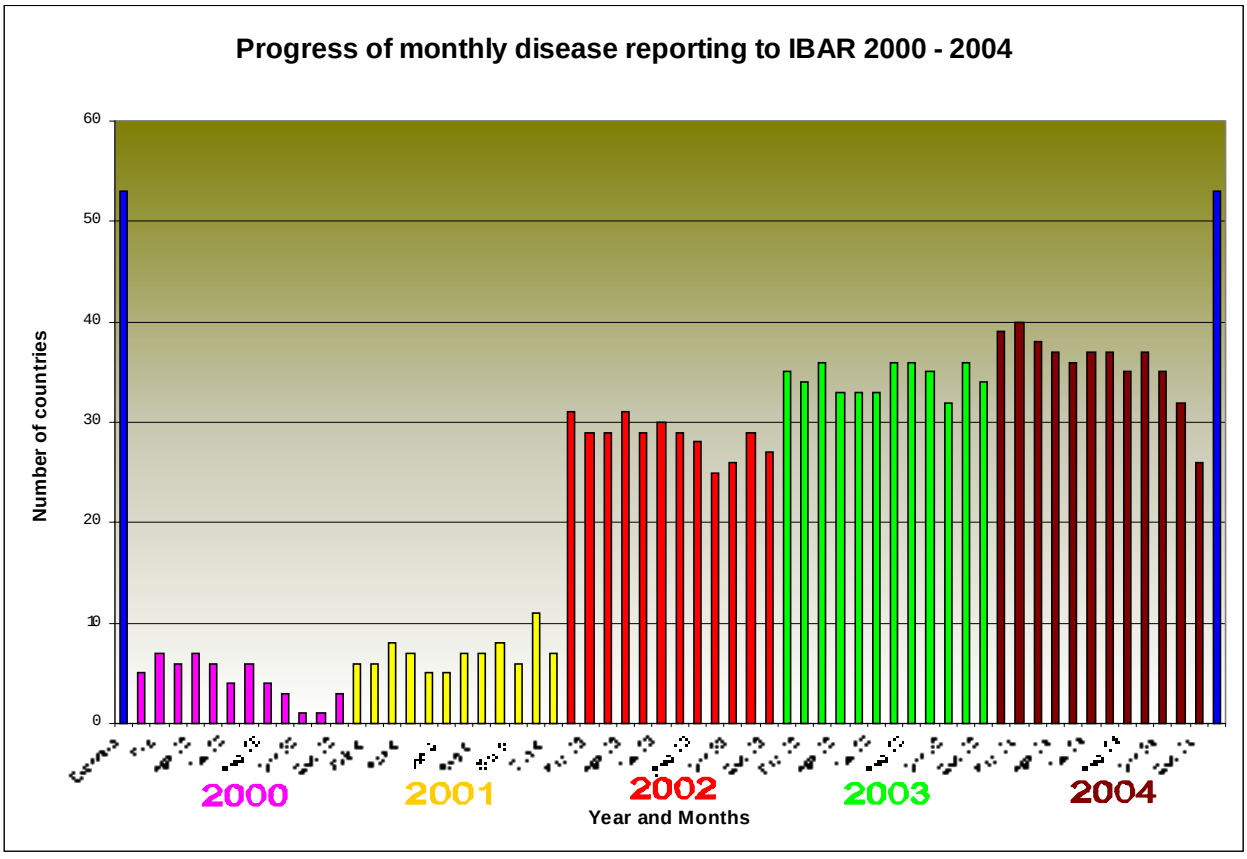
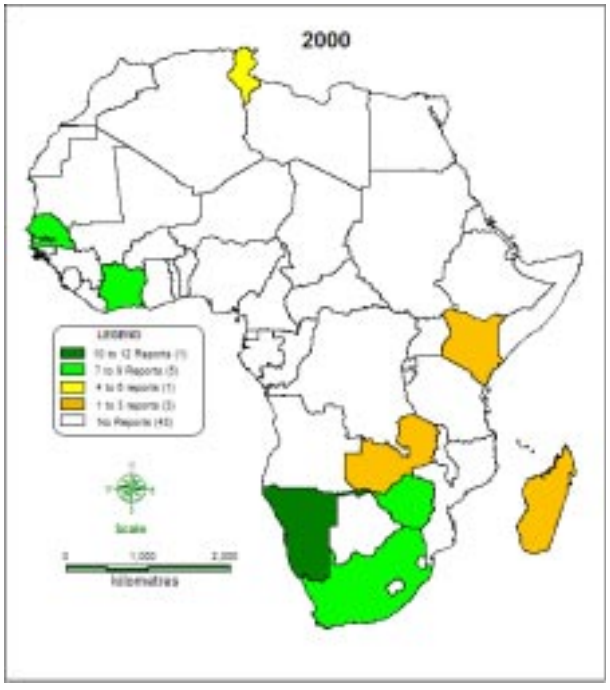
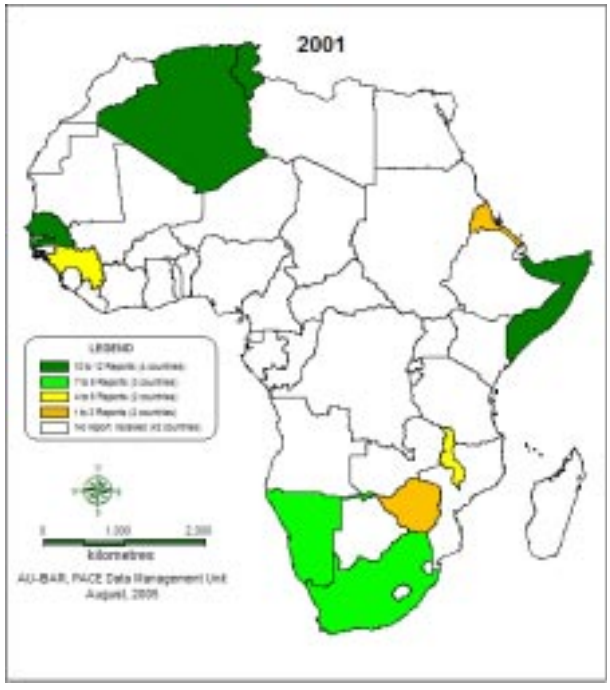


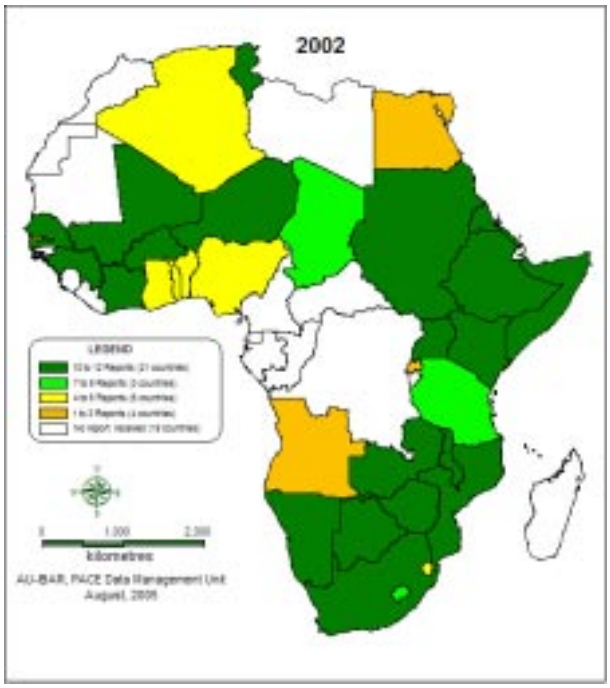
Table 1, Summary of reporting rate per year and number of countries reporting

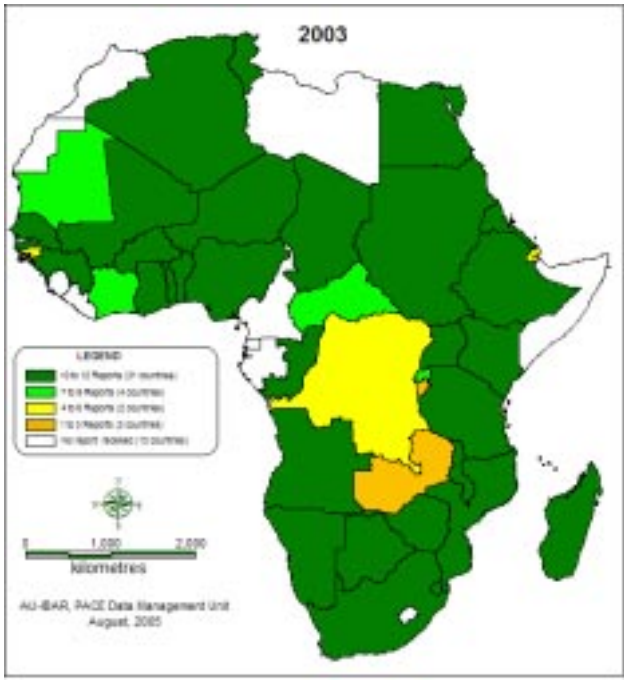
Year	Reporting rate (%)	No. of countries reporting	Proportion of Electronic reports (%)
2000	8.01	10	0.00
2001	12.40	11	8.60
2002	54.81	37	51.93
2003	65.57	40	82.99
2004	67.50	40	88.73

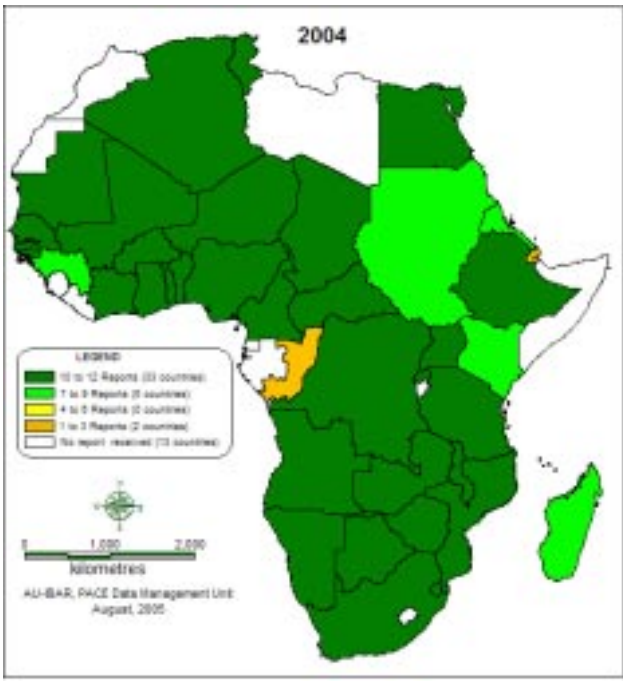
As can be seen from table 1 above, the number of countries reporting to IBAR has improved gradually, reaching 40 at the end of 2004. Although that is a very good achievement, taking into consideration that only 10 countries reported in 2000 and 11 in 2001, unless all the 53 member countries of the AU report on regular basis to IBAR, it is difficult to get an accurate general picture of the disease situation in the continent. It is of concern that four PACE member countries are not still reporting to IBAR. The following maps show the geographical coverage of disease reporting from AU member countries to IBAR between 2000 and 2004.











The number of disease reports submitted to the World Organisation for Animal Health (the OIE) from African countries has also increased, reaching 91% in 2003 compared with 69% in the previous year. However, there seems to be a small decline at the end of 2004 (77.1%). Chart 2 compares the increasing disease reporting rate from African countries to IBAR and OIE. This improvement is attributed to continuous sensitisation of veterinary authorities in Africa on the importance of international disease reporting and regular feedback. Growing disease-reporting rates also shows the commitment of veterinary services of African countries to international disease reporting and transparency.

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

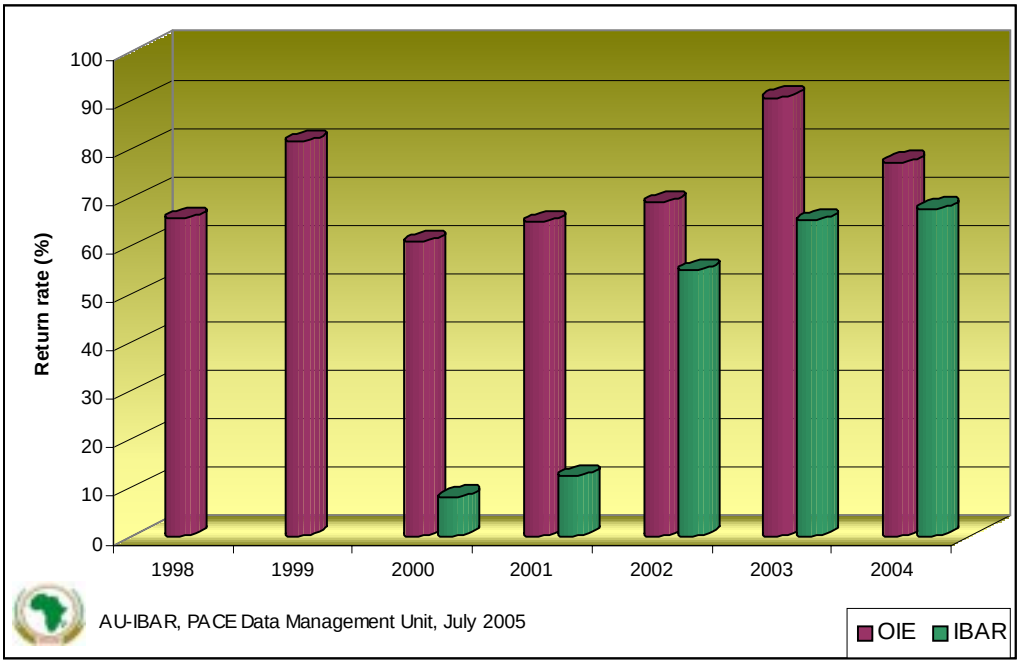
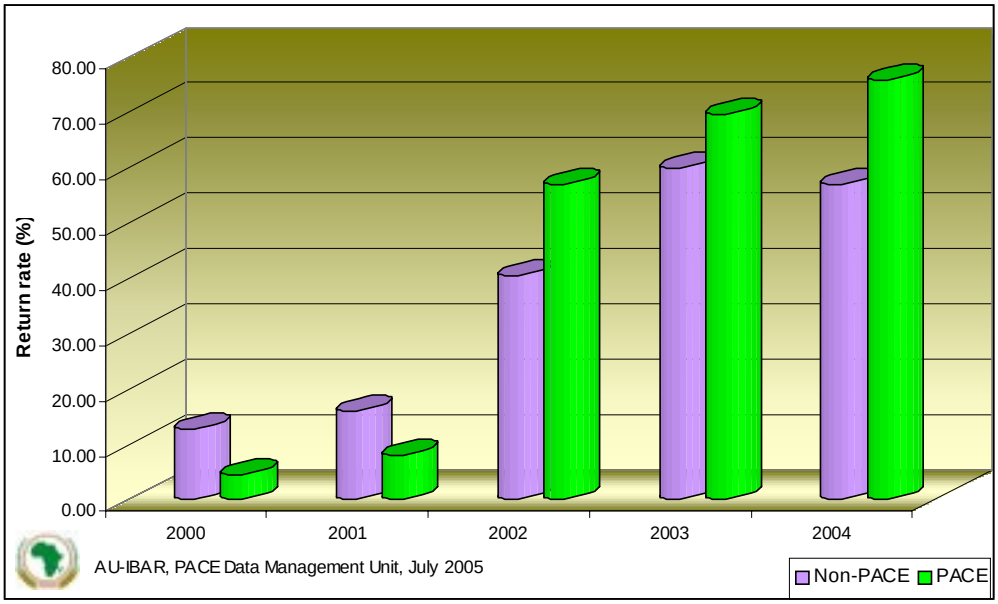
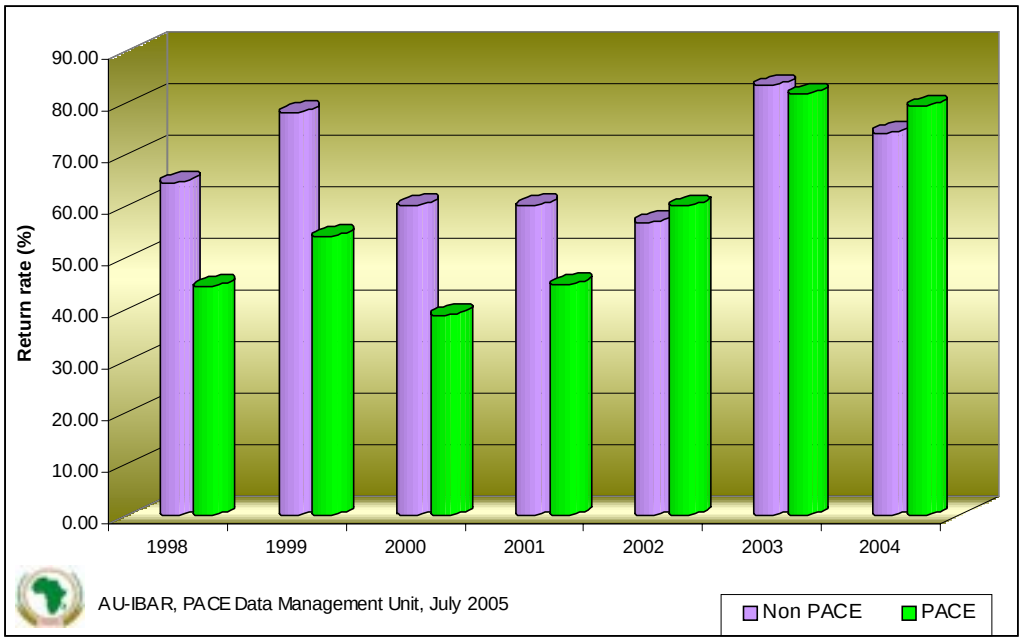


Chart 3. Progress of disease reporting from African countries members of PACE and others to IBAR (2000 – 2004



Similarly, the proportion of PACE member countries reporting to the OIE has increased. The PACE programme encouraged and assisted several countries to become members of the OIE, as a result of which reporting (among other membership interactions) increased. As can be seen from chart 4, reporting rate from PACE member countries has now slightly surpassed (79.3%) the reporting rates of those countries of North and Southern Africa (74.2%), where international disease reporting to IBAR and the OIE is well established.

Chart 4. Proportion of PACE and Non-PACE countries of Africa reporting to OIE



3. DISEASE SITUATION

It is difficult to give a complete picture of the disease situation in Africa when all countries are not reporting. Even those countries filing reports occasionally fail to send all the reports for a given year, making it difficult to give complete information on the disease situation across continent. With this cautionary remark, the following can be said about the disease situation in Africa during 2004.

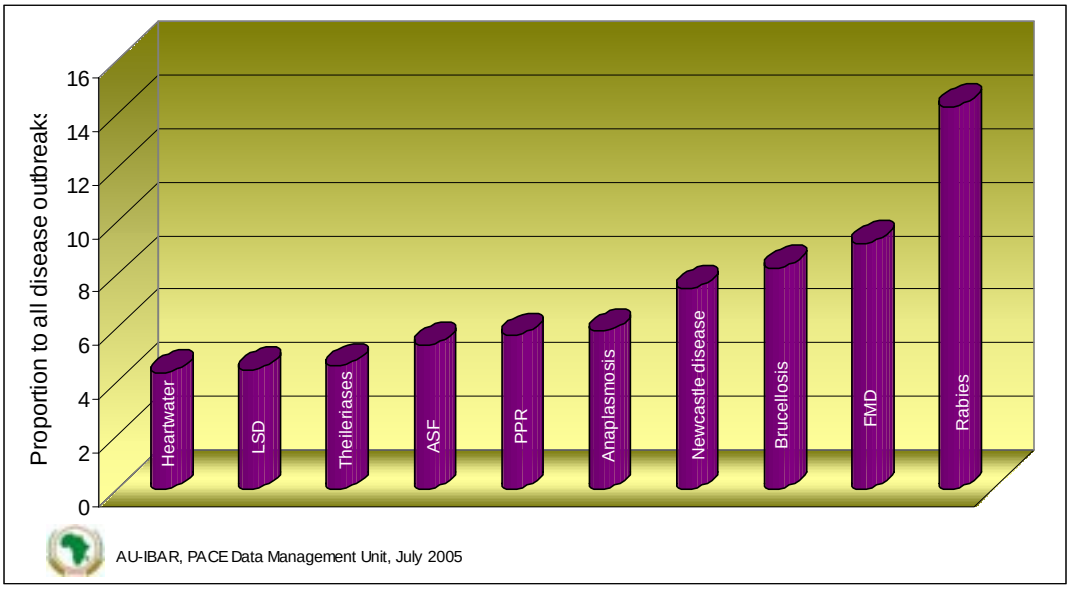
During 2004, out of the expected 636 monthly disease reports from all member states of AU, a total of 432 (67.9%) were received. Three of the 40 countries reporting to IBAR, i.e. Congo, Djibouti and Mauritius did not report the occurrence of any disease outbreak in their territories in 2004. Negligible amount of reports (0.03%) were totally rejected because of poor quality and discarded from data analysis. The rest of the report resulted in over 14,600 records, which were analysed and the summaries are presented below in figures and charts. The number of disease outbreaks recorded, the number of cases and deaths resulting from these and the number of countries affected are described below. Similarly, diseases reported in 2004 are ranked in order of importance based on different parameters in the following sections.

Where possible, the disease situation of 2004 is compared with that of the previous years. For quantitative comparison of the number of outbreaks, cases and deaths, reports from Fourteen countries which submitted all the 12 monthly disease reports in 2003 and 2004 were used. A specific section is dedicated to the description of individual disease outbreaks. The spatial distribution of the outbreaks is also presented on maps. Base maps of each country at the lowest administrative unit level, in most cases at district level, and the continental map, both from the Digital Chart of the World, are used for disease mapping. Location data of the outbreaks received in Degree Decimal (DD) and Degree, Minute and Second (DMS) are standardised to DD and for those countries without the specific location of the disease focus (geo-reference), the central point (Centroid) of the administrative unit reporting the outbreak is taken as reference.

Temporal distribution of animal diseases is influenced with geographical location of a specific country in respect to Equator or Poles and its altitude, which in turn influence weather patterns. Hence, aggregating monthly disease outbreak parameters for the entire continent and presenting it on a single chart is avoided. The Information Management Unit of IBAR is studying possibilities of creating a digital interactive facility whereby users can generate temporal distribution of diseases for country of their choice. Such facility will be available soon on the IBAR Website (www.au-ibar.org). Some examples of temporal distribution of disease outbreaks at country level are given below while discussing some specific diseases.

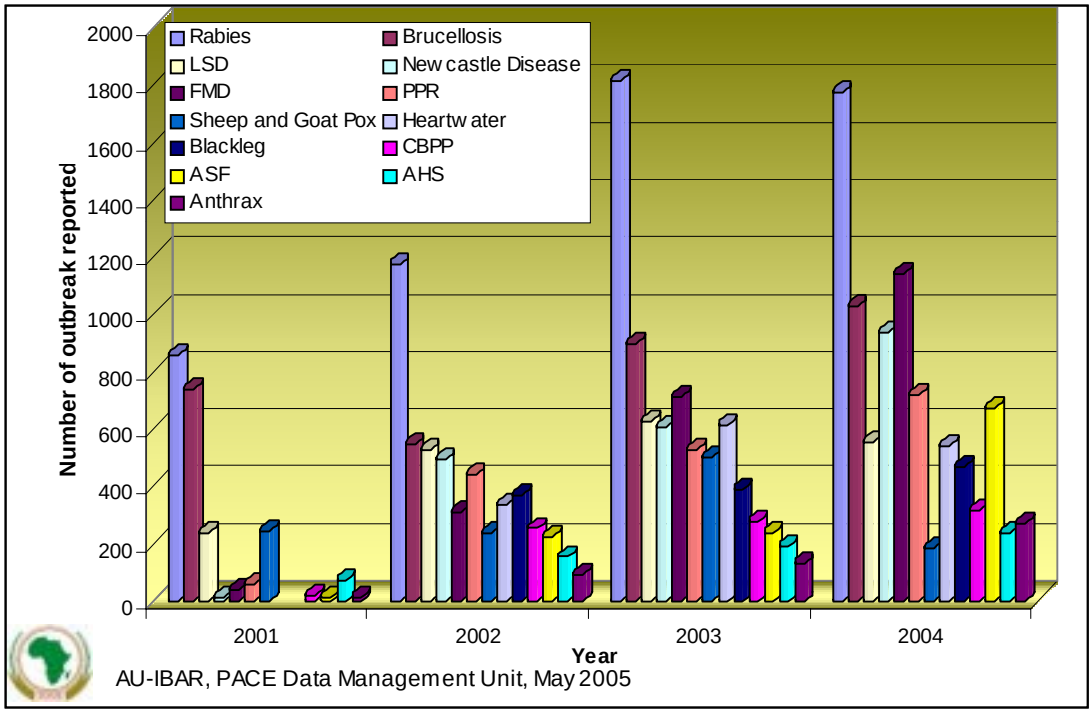
3.1 Disease situation by number of outbreaks – The 40 AU member states, which filed their monthly disease reports to IBAR recorded a total of 12,402 outbreaks involving 58 animal diseases. These outbreaks affected about 1.2 million animals, out of which close to half a million died. Similar to the previous year, the highest number of disease outbreaks recorded during 2004 involved rabies, accounting for 14.2% of all outbreaks. Foot and mouth disease (FMD) and brucellosis were the second and third most common disease outbreaks reported from African countries respectively during 2004, contributing 9.2% and 8.3% to all disease outbreaks recorded during the period. Chart 5 shows 10 most commonly reported animal diseases based on the number of outbreaks recorded in African countries during 2004.

Chart 5. Ten most commonly reported diseases, by number of outbreak, in Africa (2004)



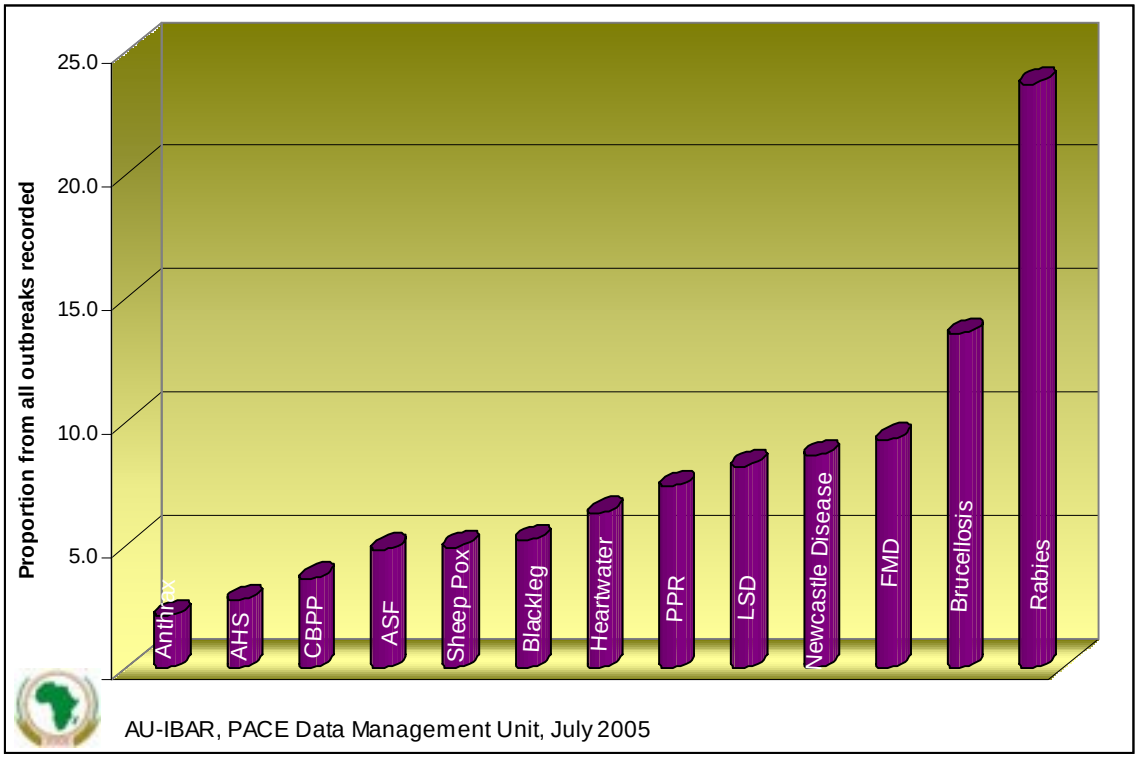
Rabies, brucellosis, Lumpy Skin Disease (LSD), Newcastle disease, Foot and mouth disease (FMD), *Peste des Petit Ruminants* (PPR), Sheep pox and goat pox, heartwater, blackleg and Contagious bovine pleuropneumonia (CBPP) were 10 diseases with a high number of outbreaks reported between 2001 and 2004. The following Chart compares the number of outbreaks of these diseases reported each year and the proportion of these compared to total number of outbreaks reported during that particular year in Africa.

Chart 6, Comparison between the number of outbreaks recorded for 10 most reported diseases in Africa between 2001 and 2004



The proportion of outbreaks of each disease to the total number of outbreaks was analysed and this shows that outbreaks of Rabies, on average, constitute 23.7% of all outbreaks registered during 2001 to 2004. The following was the proportion of the remaining nine diseases in order of importance: brucellosis (13.5%), Foot and mouth disease (FMD) (9.3%), Newcastle disease (8.6%), Lumpy skin disease (LSD) (8.2%), *Peste des Petit Ruminants* (PPR) (7.3%), heartwater (6.3%), blackleg (5.2%), Sheep pox and goat pox (4.9%) and Contagious bovine Pleuropneumonia (CBPP) (3.6%). Chart 7 shows this proportion.

Chart 7, Proportion of ten most frequently recorded disease outbreaks as compared to all outbreaks registered between 2001 and 2004



3.2 Disease situation by number of countries reporting - Based on the monthly reports received from AU member countries, diseases, which affected many countries, were computed and a large number of African countries were affected by Newcastle disease during the year 2004. Among African countries reporting to IBAR, 66% recorded Newcastle disease (chart 8). Other diseases with wider distribution during 2004 included LSD (53% of countries reporting), Rabies (49%), FMD (45%), CBPP (39%), ASF (38%) and PPR (34%).

Chart 8. Ten most commonly reported diseases, by number of countries reporting, in Africa (2004)

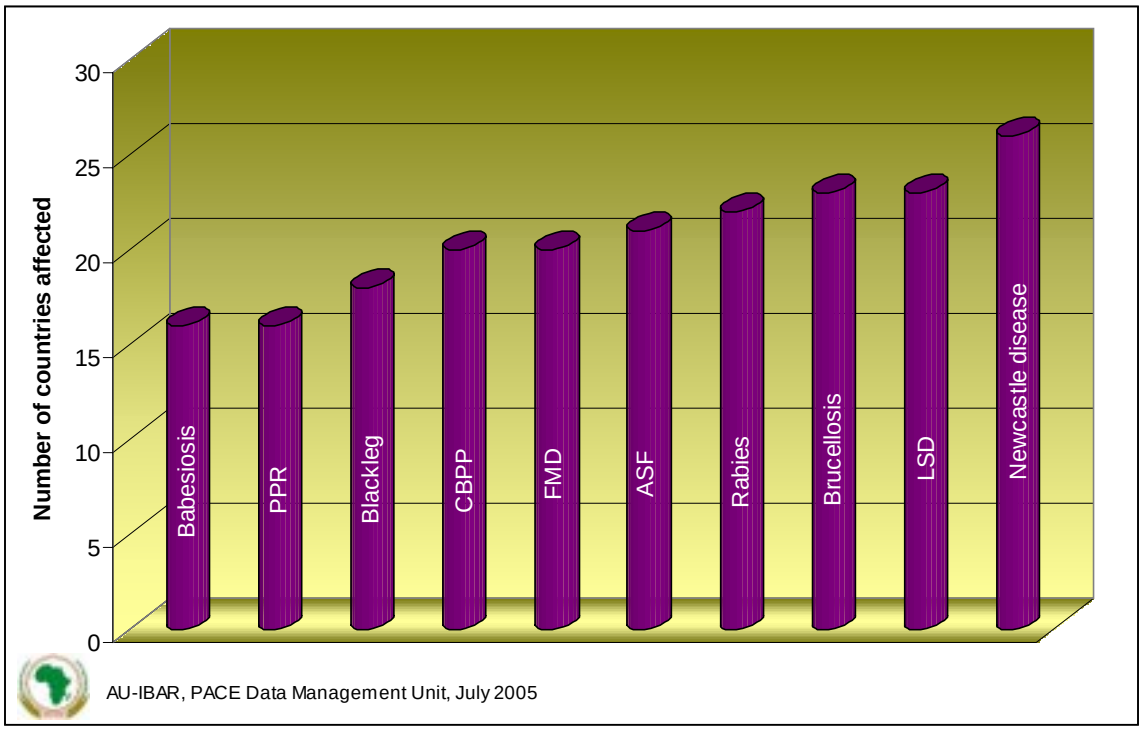
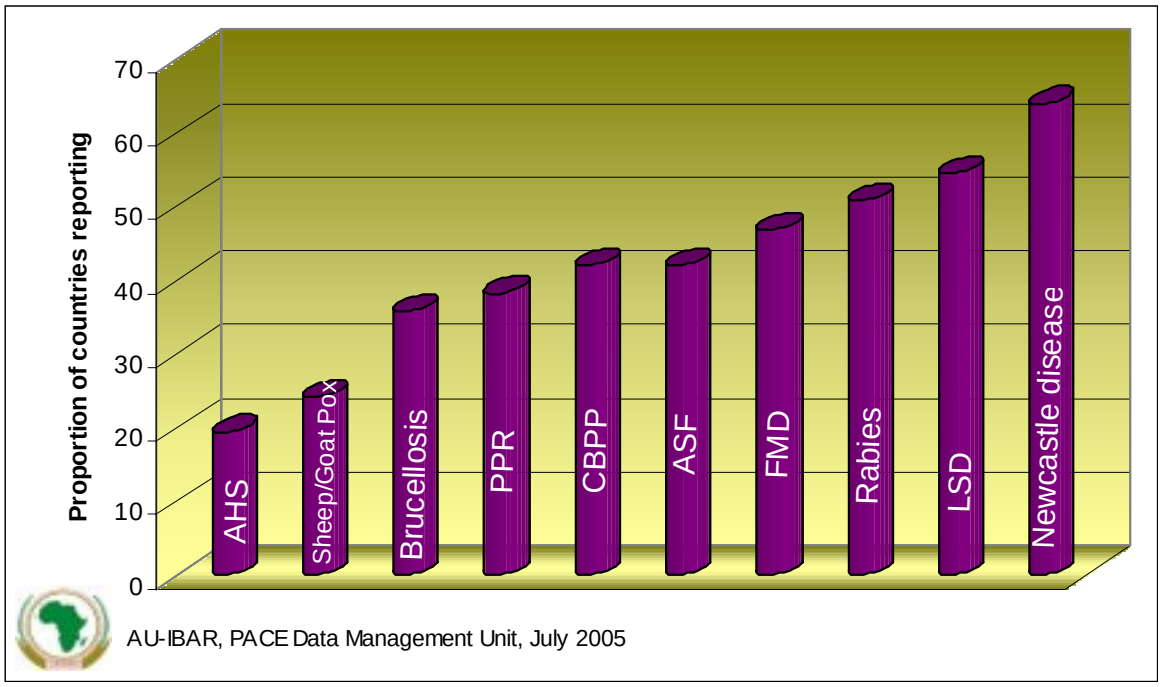


Chart 9, ten animal diseases most frequently reported from African countries and proportion of countries affected by these diseases in comparison with all those filing monthly disease reports between 2001 and 2004.



Among the AU member states submitting their monthly disease reports to IBAR between 2001 and 2004, 64% were affected by Newcastle disease, making it the disease most widely distributed in Africa during this period. Other diseases with wider distribution included LSD (55%), rabies (51%), FMD (47%), CBPP (42%), PPR (38%), brucellosis (36%), Sheep pox and goat pox (24%) and African horse sickness (20%). Details are presented on chart 9.

3.3 Disease situation by number of cases and deaths – Similar to the previous year, Newcastle disease has the highest number of new cases amounting to 471,489 followed by FMD with 146,253 new cases. Other diseases with a significant number of cases during 2004 in order of importance included ASF (118,281), Trypanosomosis (76,810), Infectious Bursal Disease (IBD) or Gumboro (58,032) and CBPP (52,145). Chart 10 shows ten animal diseases with a high number of cases reported in African countries during 2004.

Avian diseases ranked high among animal diseases with a large number of mortalities during 2004. Close to a quarter million birds died due to Newcastle disease outbreaks while salmonellosis and IBD caused 35,3517 and 25,435 mortalities respectively. The second most deadly disease outbreak was ASF, in which 74,667 pigs succumbed during the 670 outbreaks recorded across 21 African countries in 2004. Other disease outbreaks with a high number of animal deaths include PPR (17,480), CBPP (1,985) and Anthrax (1,847). Details are provided on chart 11.

Chart 10, ten diseases with high number of new cases during 2004

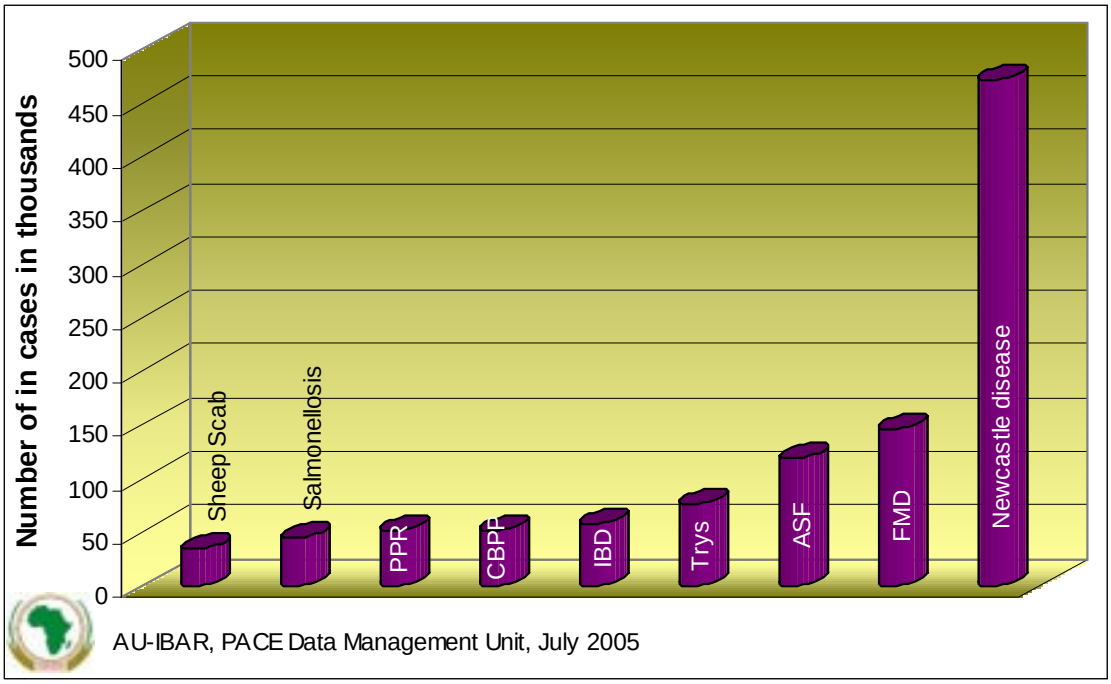
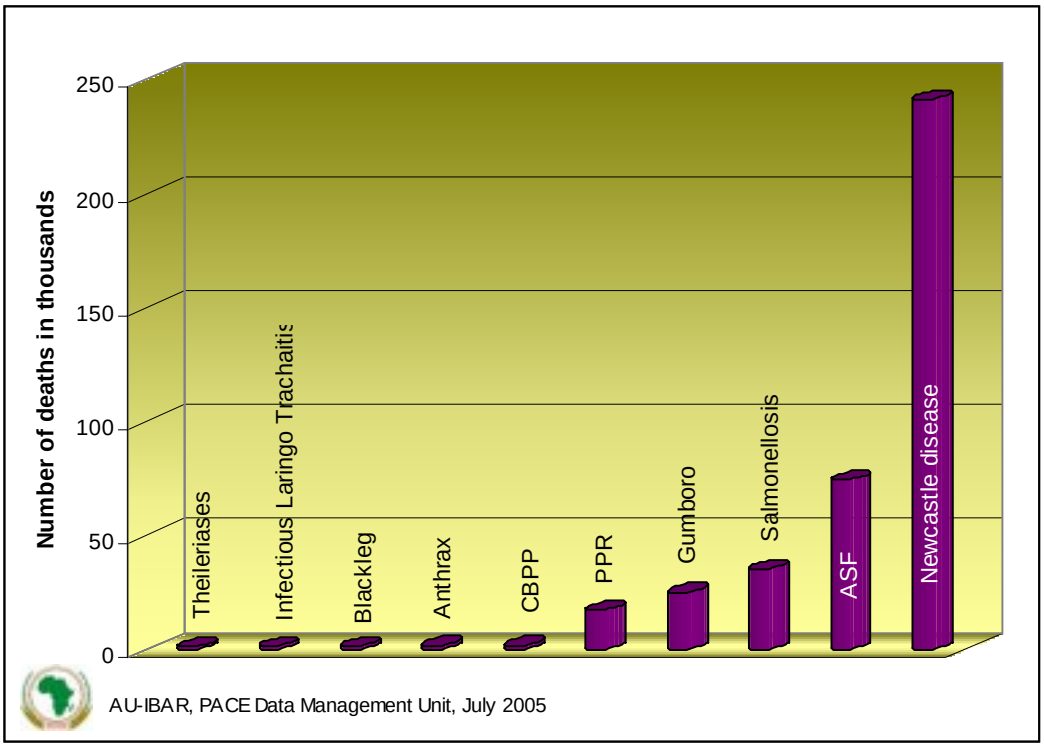


Chart 11, ten diseases with high number of deaths during 2004



Note that outbreaks of these diseases also caused higher mortalities during the previous three years.

3.4 Disease situation by type of species affected – Disease outbreaks reported from African countries during 2004 affected eight species of farm animals, two species of companion animals, wildlife and humans. Birds constitute about half (51.6%) of all new cases and three quarters (73.5%) of all deaths. Cattle form a quarter (25.3%) of all new cases but account for only 3% of all deaths. Other species with high proportion of cases and deaths included pigs (10.1% of all cases and 17.9% of all deaths) and sheep and goats (9.4% of all cases and 5% of all deaths). Details are presented on charts 12 and 13 for new cases and deaths respectively for animal species involved in disease outbreaks in Africa during 2004.

More than half (52.9%) of the outbreaks involved cattle, while about 15.3% of all outbreaks affected sheep and goats. About 11% of all disease outbreaks involved dogs and cats while birds were affected in about 10% of the outbreaks (chart 14). The proportion of species involvement as new cases or deaths during disease outbreaks reported in 2004 in Africa was similar to those of the previous years. Details are presented on chart 15 and 16.

Chart 12, Proportion of new cases per species of animal affected during disease outbreaks recorded in 2004 in Africa.

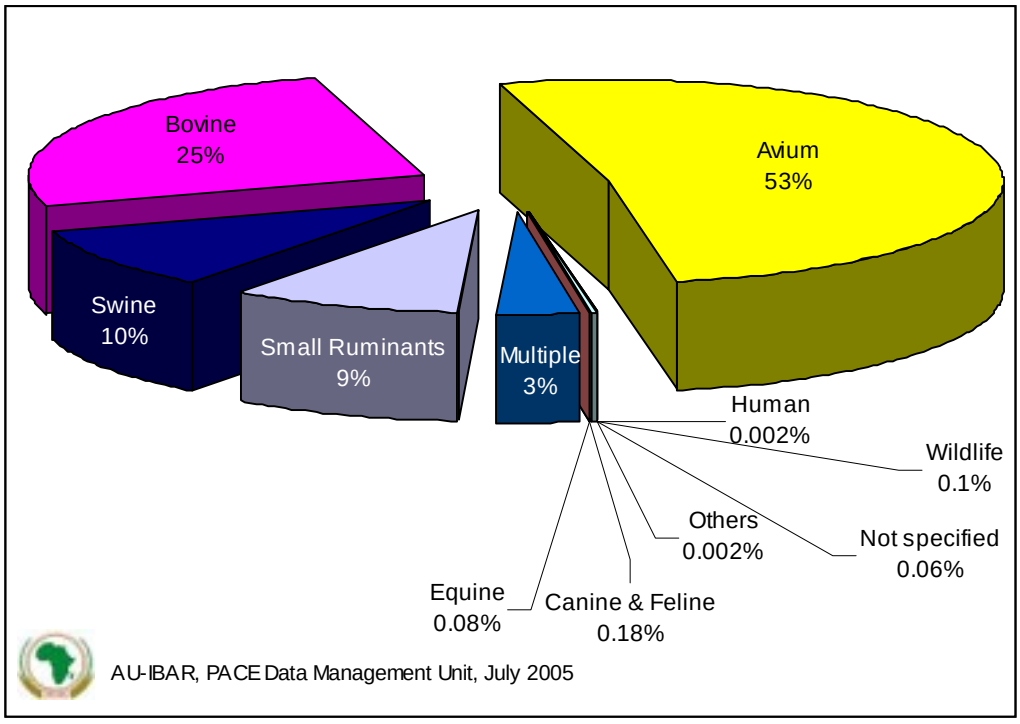


Chart 13, Proportion of deaths per species of animal affected during disease outbreaks recorded in 2004 in Africa.

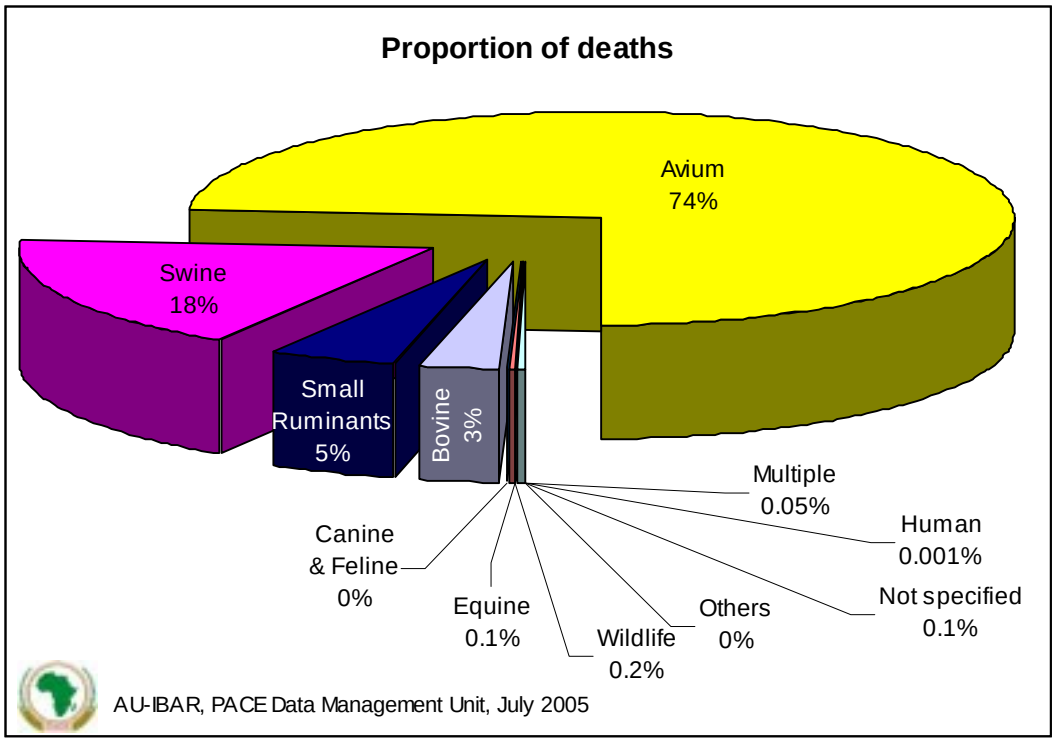


Chart 14, Proportion of disease outbreaks in which different species of animal were involved in 2004 in Africa

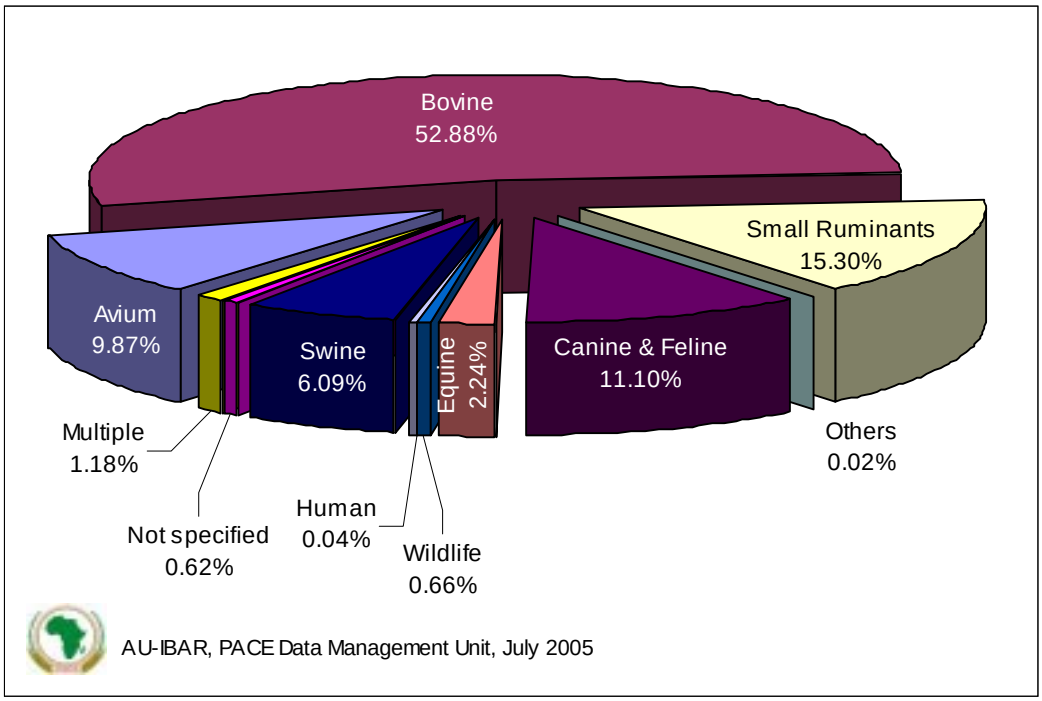


Chart 15, Comparison of the proportion of new cases per species affected by different disease outbreaks during 2003 and 2004

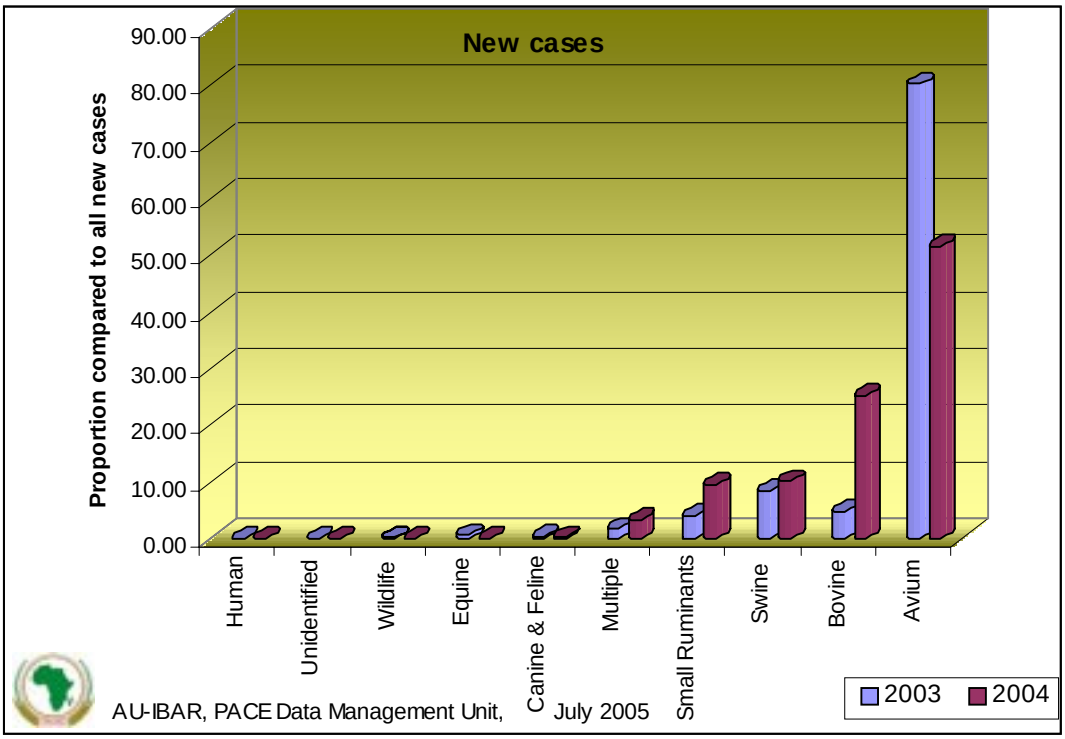
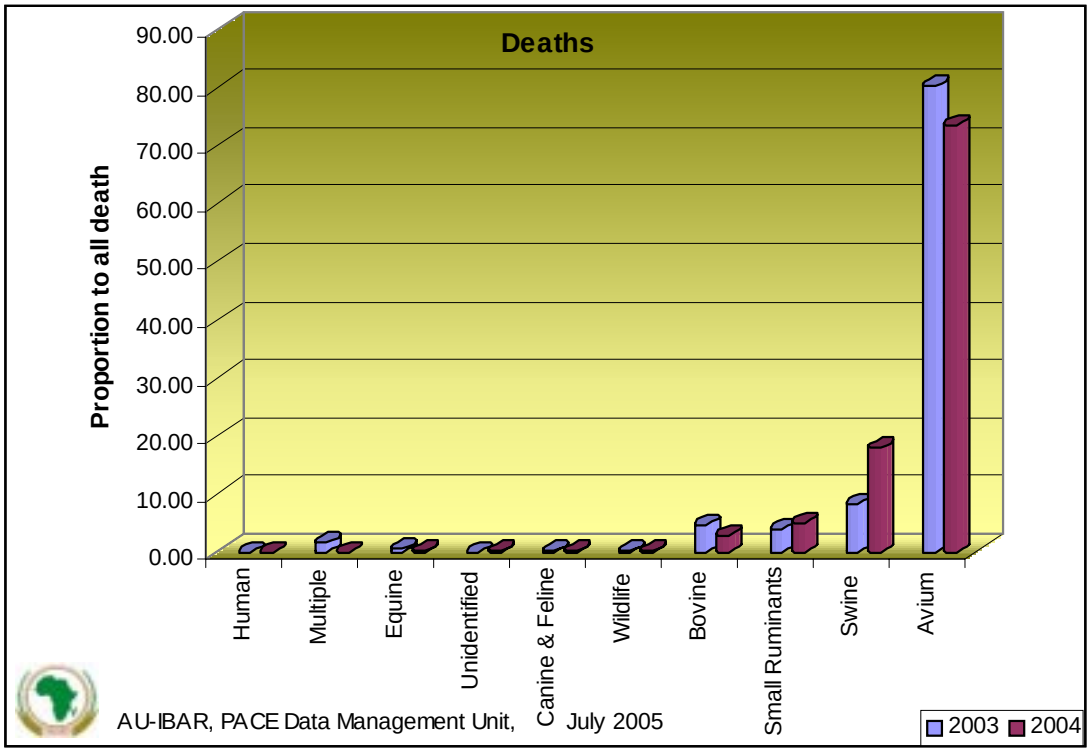


Chart 16, Comparison of the proportion of deaths per species affected by different disease outbreaks during 2003 and 2004

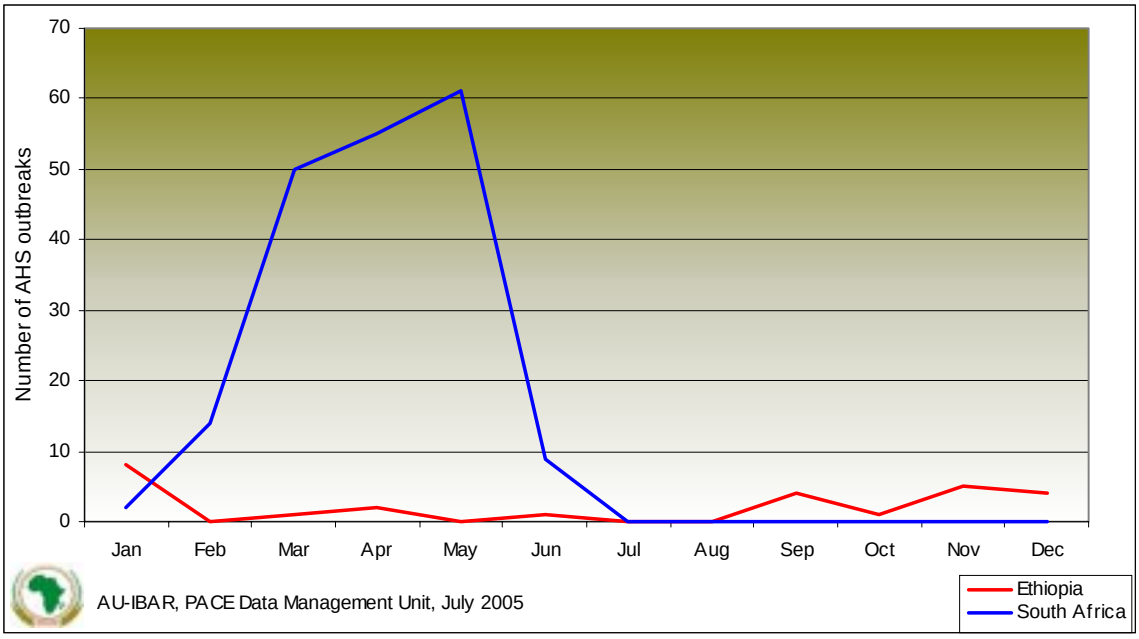


3.5 Detailed disease situation (by disease type)

African horse sickness (AHS)

During 2004, a total of 237 outbreaks of AHS were recorded in seven countries. The geographical distribution of the disease shows that it is confined to those countries that reported it during the previous years (Map 2). The highest number of AHS outbreaks was recorded from South Africa with 191 foci followed by Ethiopia reporting 26 outbreaks. The disease was continuously reported during the first half of the year in South Africa while in Ethiopia it occurred almost throughout the year. The temporal distribution of AHS outbreaks is presented on chart 17. Outbreaks of AHS affected a total of 827 horses and half of these new cases (435) died.

Chart 17, Temporal distribution of AHS outbreaks in selected African countries in 2004

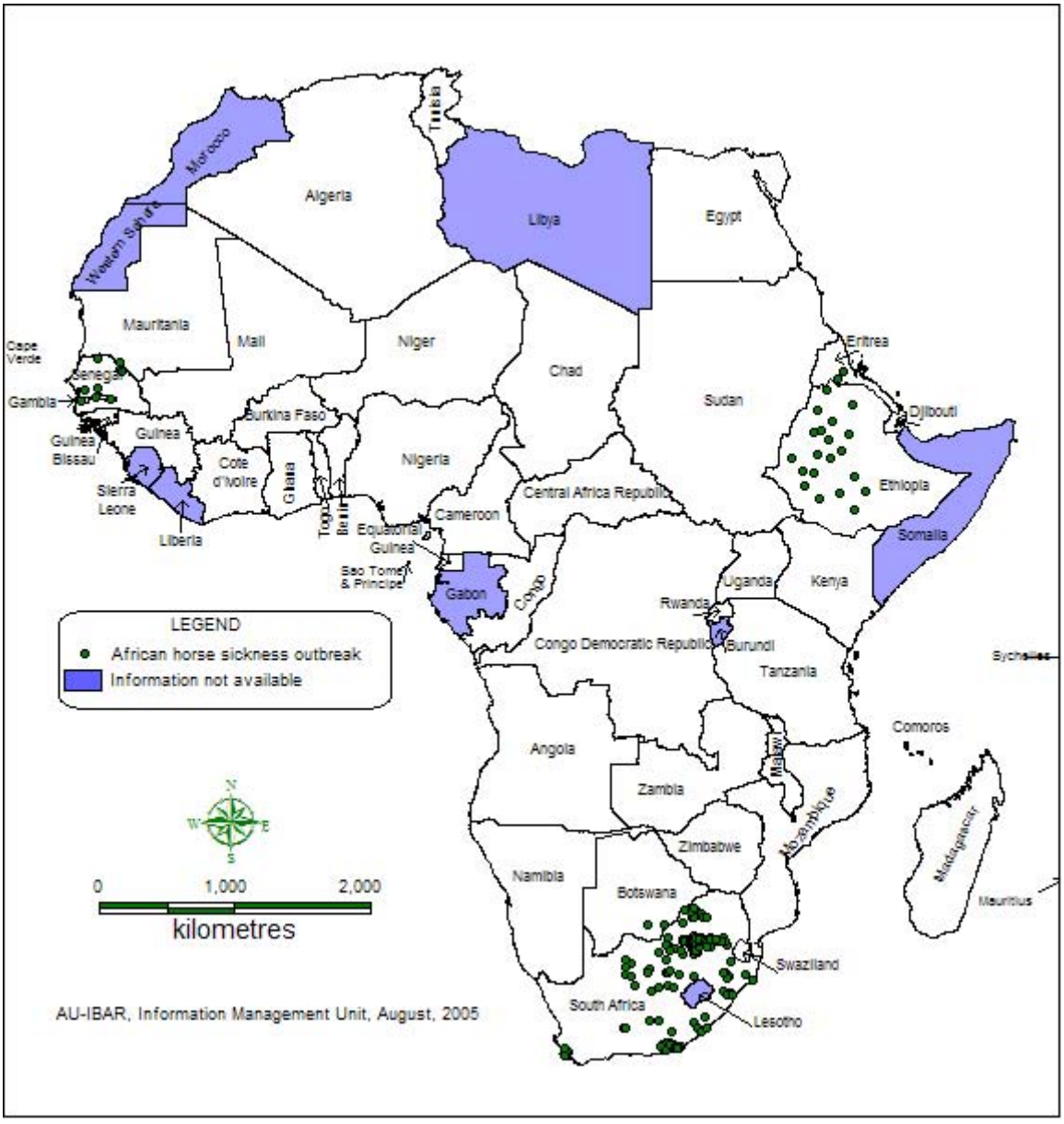


The number of AHS outbreaks, cases and deaths recorded in 2003 and 2004 were compared to see the trend in four countries, which submitted all the monthly disease reports during the two years and the result, is presented below in table 2. There is an increase in the number of AHS outbreaks in 2004 in these countries compared to 2003 but lesser cases and deaths.

Table 2, Comparison of AHS outbreaks and related data in selected African countries

	2003	2004	2003	2004	2003	2004
Country	Outbreaks	Outbreaks	Cases	Cases	Deaths	Deaths
Botswana	1	2	1	2	0	2
Senegal	6	6	21	9	13	7
South Africa	41	191	113	332	88	162
Ethiopia	83	26	866	430	510	237
Total	***131***	***225***	***1001***	***773***	***611***	***408***

Map 2. Spatial distribution of African horse sickness in Africa in 2004



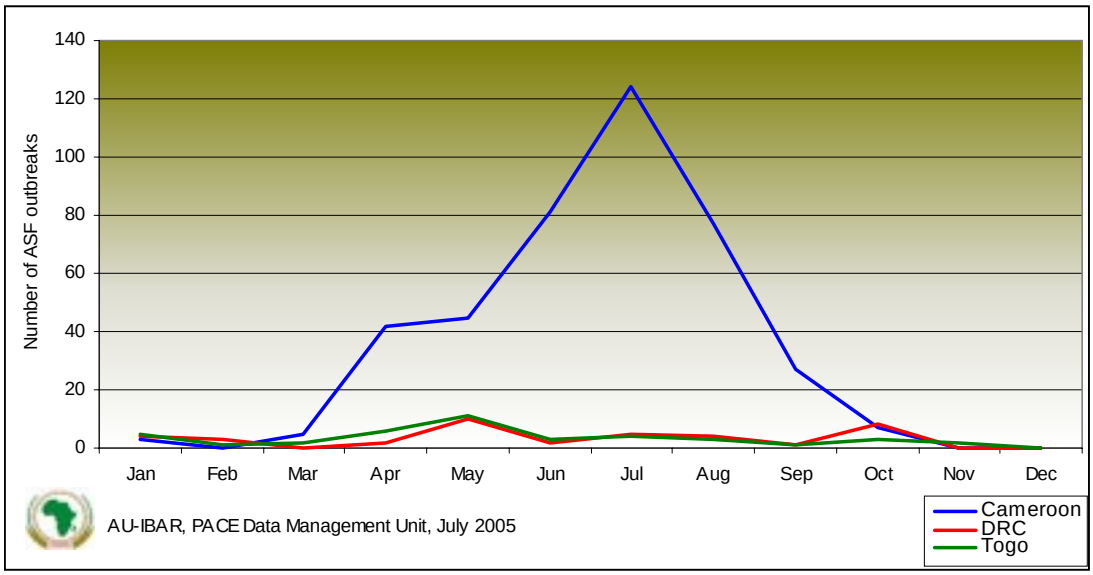
African swine fever (ASF)

During 2004, African swine fever affected a total of 21 countries. These countries recorded 670 outbreaks affecting 118,281 pigs out of which 74,667 died. Cameroon registered the highest number of outbreaks; about 60% of all the outbreaks, while Togo and Democratic Republic of Congo (DRC) reported 41 and 39 outbreaks. Reports from 16 countries, which contain complete quantitative data were used to calculate some epidemiological rates of ASF outbreaks recorded in 2004. The result show that morbidity rate for ASF was 25.3%, with ranges between 2.5% in Burkina Faso to 81.0% in Ghana. Mortality rate for all outbreaks of ASF recorded in the 16 countries was 15.8%, with a minimum of 0.4% in Rwanda and maximum of 49.7% in Cameroon. Case fatality rate reached 62.5% with a range between 11.0% in Rwanda to 100% in Zimbabwe and Namibia. Compared to ASF situation in 2003, the number of outbreaks and deaths occurred due to these were lower in 2004. However, the number of cases almost doubled (Table 3). Of all the countries that report regularly to IBAR, only Eritrea recorded the disease for the first time this year. New cases of ASF were recorded throughout the year in most countries. Chart 18 depicts the temporal distribution of ASF outbreaks in Cameroon, DRC and Togo. The spatial distribution of the disease during 2004 is shown on map 3.

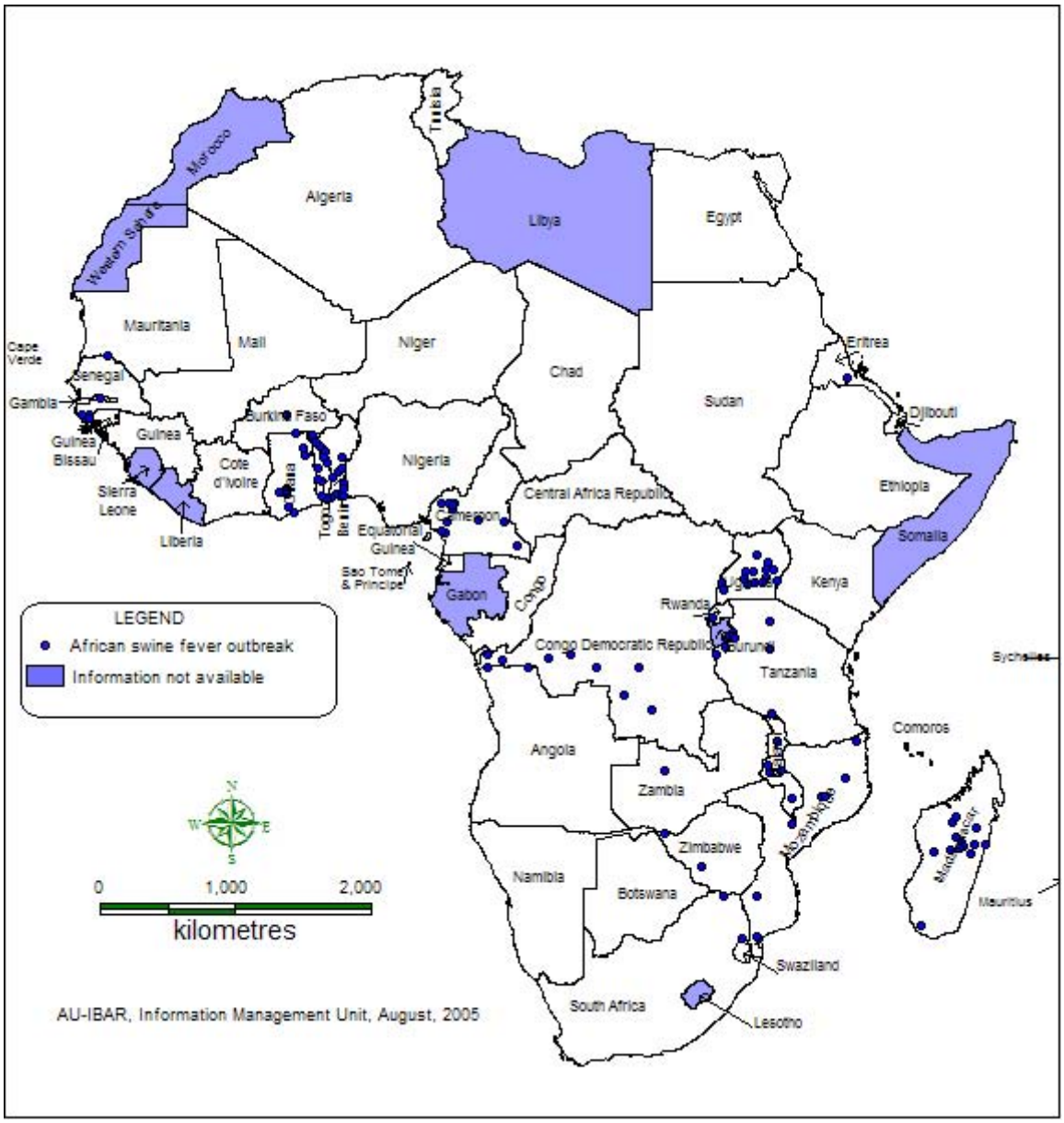
Table 3, Comparison of ASF outbreaks and related data in selected African countries

	2003	**2004**	**2003**	**2004**	**2003**	**2004**
Country	Outbreaks	Outbreaks	Cases	Cases	Deaths	Deaths
Senegal	3	1	52	8	45	8
Namibia	0	1	0	25	0	25
Burkina Faso	2	1	133	3800	133	1125
South Africa	2	2	42	127	38	69
Mozambique	5	8	2762	402	2762	392
Benin	24	16	10805	6334	6469	2756
Malawi	9	23	57	2274	11	2111
Uganda	45	24	1120	13280	536	2010
Total	***90***	***76***	***14971***	***26250***	***9994***	***8496***

Chart 18, temporal distribution of ASF outbreaks in selected African countries in 2004



Map 3. Spatial distribution of African swine fever in Africa in 2004



Bluetongue

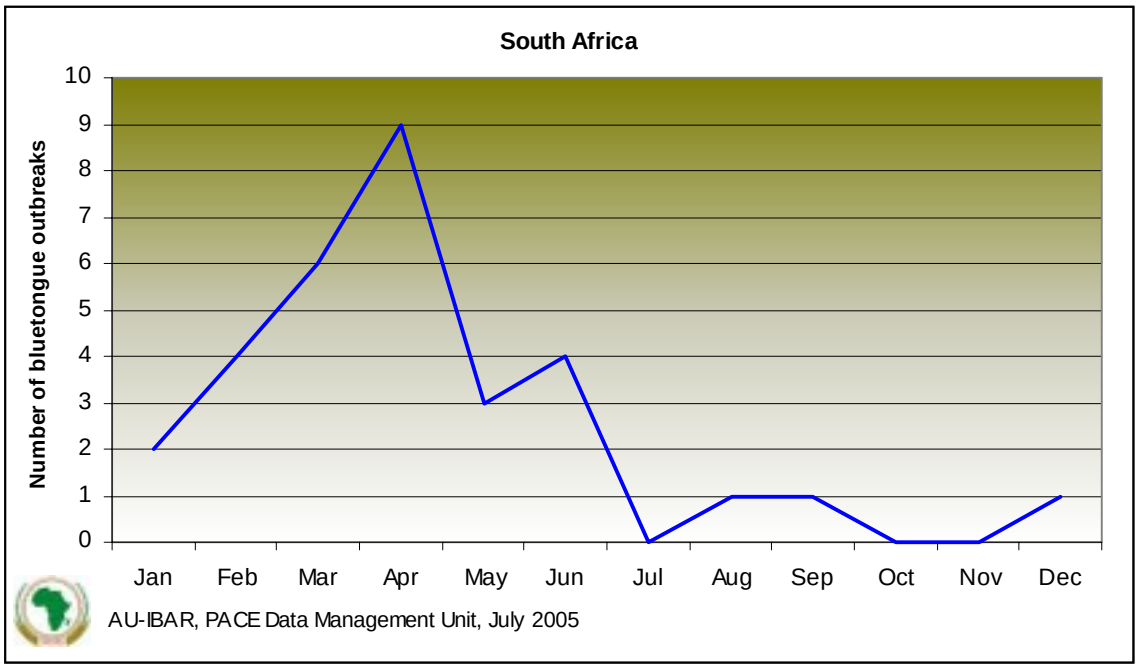
South Africa and Namibia are the only two countries reporting bluetongue during 2004. The number of countries reporting remained the same as the previous year but instead of Uganda, it is Namibia reporting it this year. As can be seen from table 5, the number of bluetongue outbreaks is declining since 2002. During the 32 outbreaks recorded in 2004 there were total of 153 new cases and 60 deaths. The number of new cases and deaths were also lower than those reported during the previous years.

Table 4. Number of bluetongue outbreaks recorded by African countries, 2000 - 2004

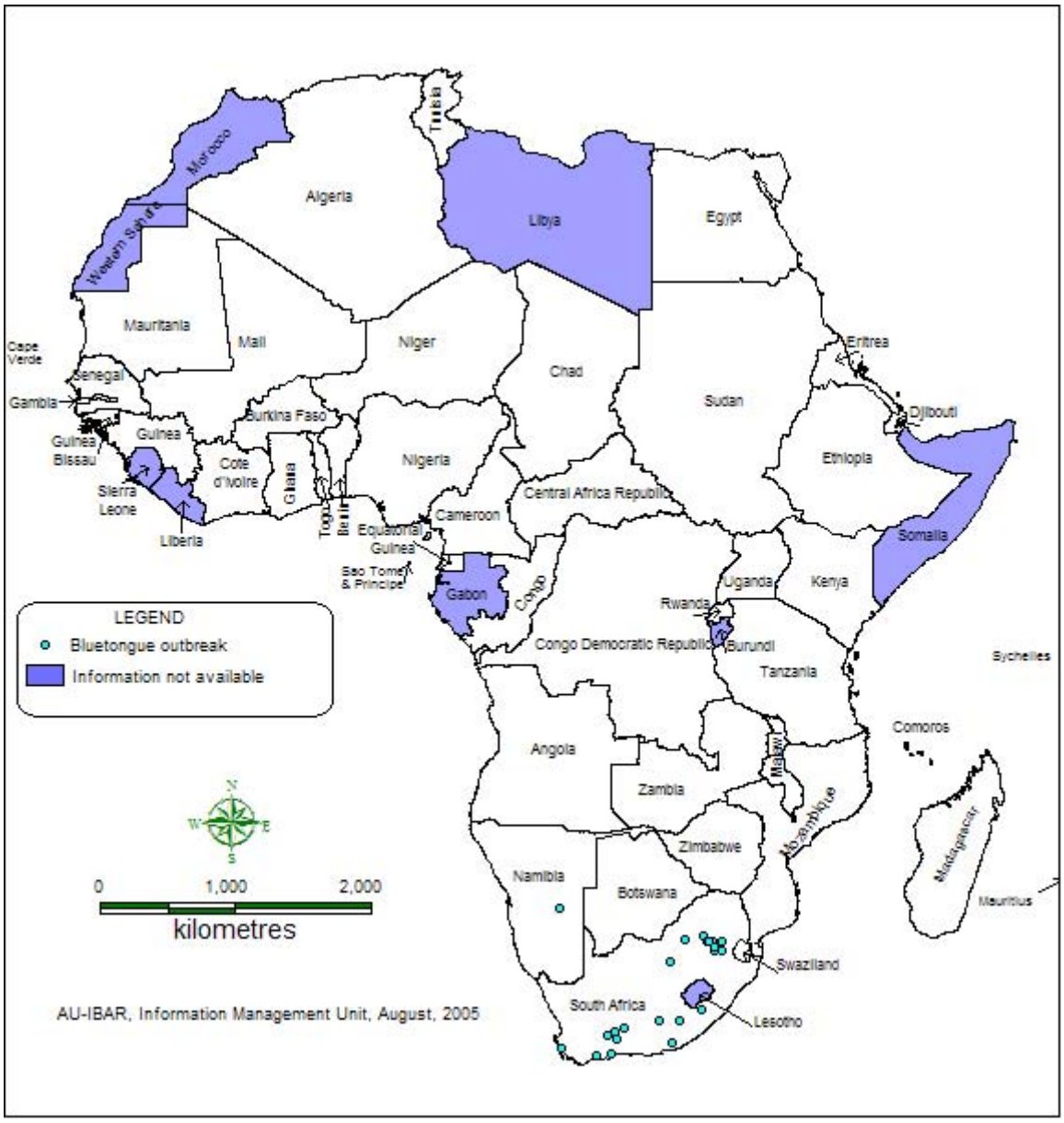
No.	Country	2000	2001	2002	2003	2004
1	South Africa	98	23	75	64	31
2	Namibia	4	2	1	0	1
3	Uganda	?	?	2	1	0
	Total	**102?**	**25?**	**78**	**65**	**31**

In South Africa, where higher number of bluetongue outbreaks was recorded in 2004, the majority of these occurred during the first six months. Refer to chart 19 for the temporal pattern of the disease in South Africa. The spatial distribution of bluetongue outbreaks is presented on map 4.

Chart 19, temporal distribution of bluetongue outbreaks in South Africa in 2004



Map 4. Spatial distribution of bluetongue in Africa in 2004



Brucellosis

During 2004, 16 African countries reported a total of 1,027 brucellosis outbreaks affecting cattle, goats and sheep. The majority of these outbreaks (73.7%), affected cattle while goats and sheep were involved in 20.8% and 5.5% of the incidents (Chart 20). Similarly, the highest number of new cases of brucellosis was among cattle (85.2%), followed by goats (10.5%) and sheep (4.3%). Details are presented on chart 21. Despite the fact that porcine brucellosis is a notifiable disease, none of the countries reported its prevalence. It is important to find out whether this is due to the absence of brucella infection in pigs or lack of capacity to identify the disease and report. Among the 16 affected countries, Algeria recorded the highest number of Bovine brucellosis and Caprine brucellosis, while South Africa registered the highest number of Ovine brucellosis and the second highest number of Bovine brucellosis. In most of the affected countries, this zoonotic disease was detected throughout the year, without specific temporal clustering. The spatial distribution of brucellosis outbreaks during 2004 in Africa is presented on map 5.

Chart 20, Proportion of brucellosis outbreaks and involvement of different species

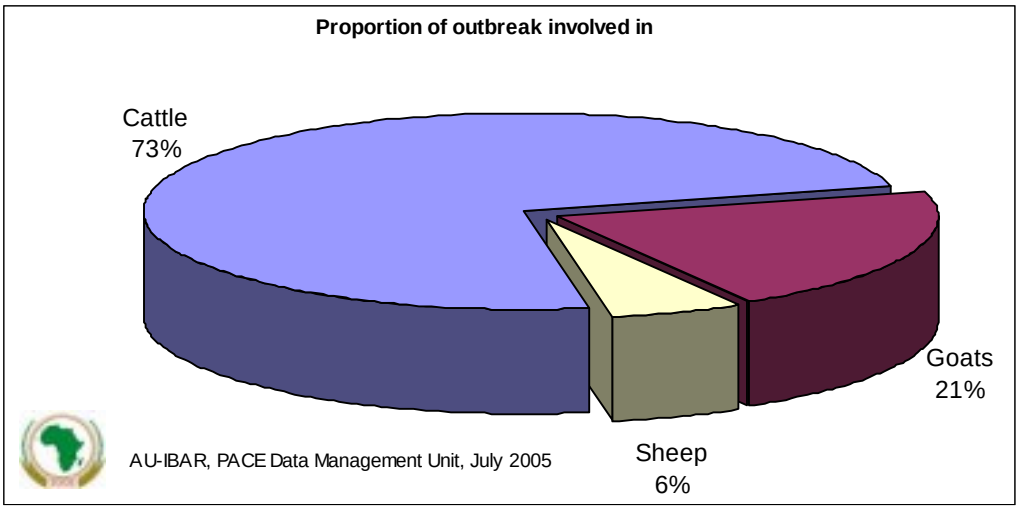
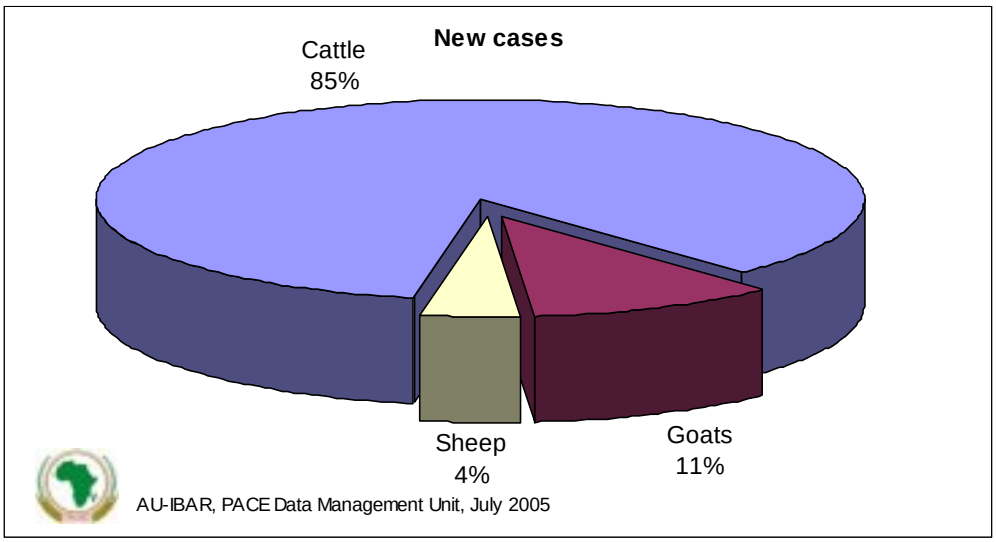
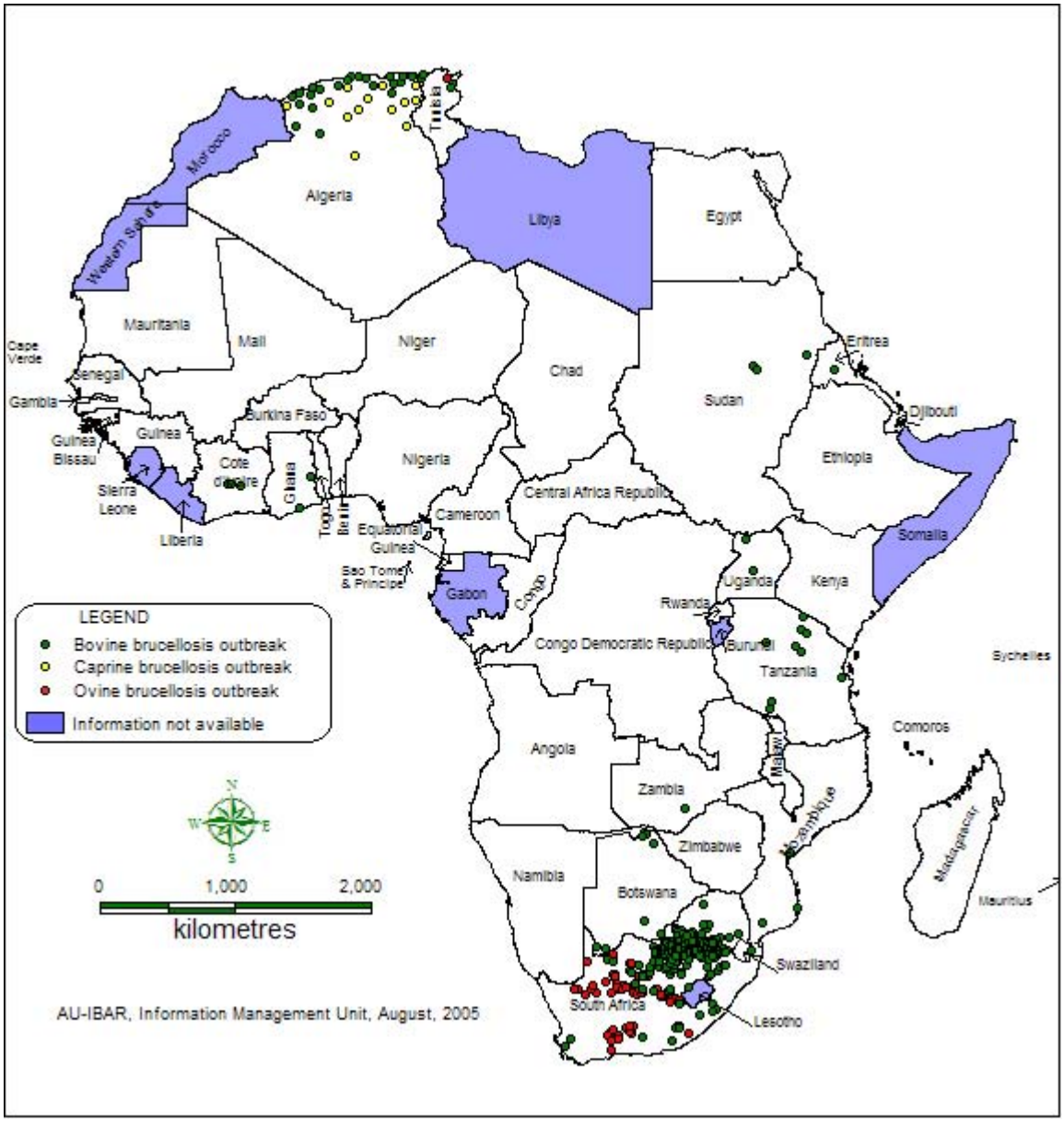


Chart 21, Proportion of new cases per species during brucellosis outbreaks in 2004



Map 5, Spatial distribution of brucellosis in Africa in 2004



Contagious bovine pleuropneumonia (CBPP)

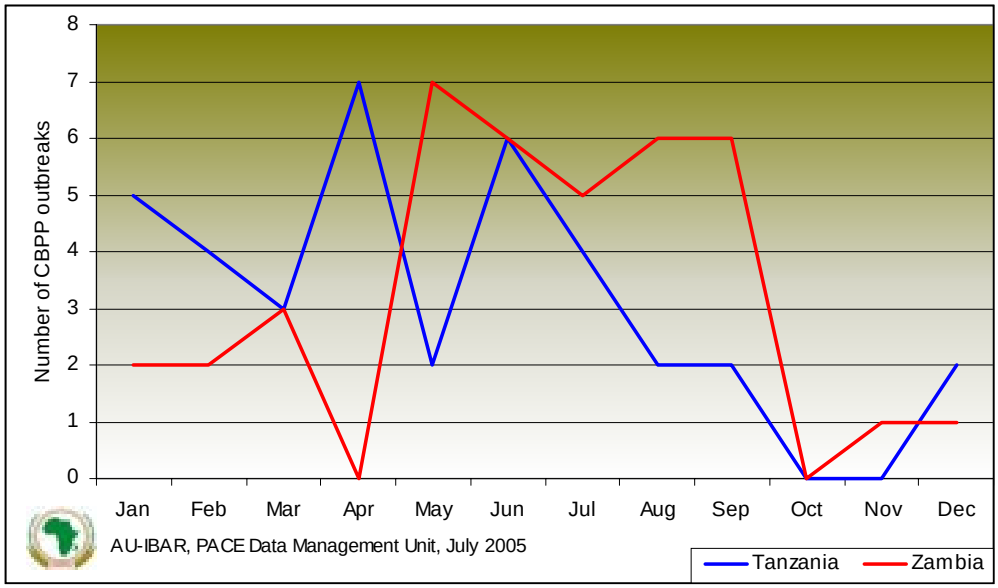
In 2004, except for the northern region of Africa, the remaining regions of the continent continued reporting CBPP. The disease was observed in 18 sub-Saharan countries, extending from Mali in the west to Ethiopia in the east and from Chad in the centre to Namibia in the south (Map 6). The 18 affected countries recorded a total of 314 outbreaks involving 52,145 new cases and 1,985 deaths. The highest numbers of outbreaks were recorded in Angola (55), followed by Zambia (39) and Tanzania (37). Comparing CBPP situation in 2004 with that of the previous year, there is an increase in the number of CBPP outbreaks, the number of countries reporting the disease, the number of new cases and deaths. See table 6. However, it is difficult to attribute these to increased incidence of the disease or improved reporting from countries. Zambia and Cameroon are among countries, which started reporting to IBAR in 2004 where CBPP outbreaks were recorded. Among frequent reports, Nigeria and Cote d'Ivoire reported CBPP in 2004 but not in 2003.

Table 5. Comparison of CBPP situation in 2004 with that of 2003

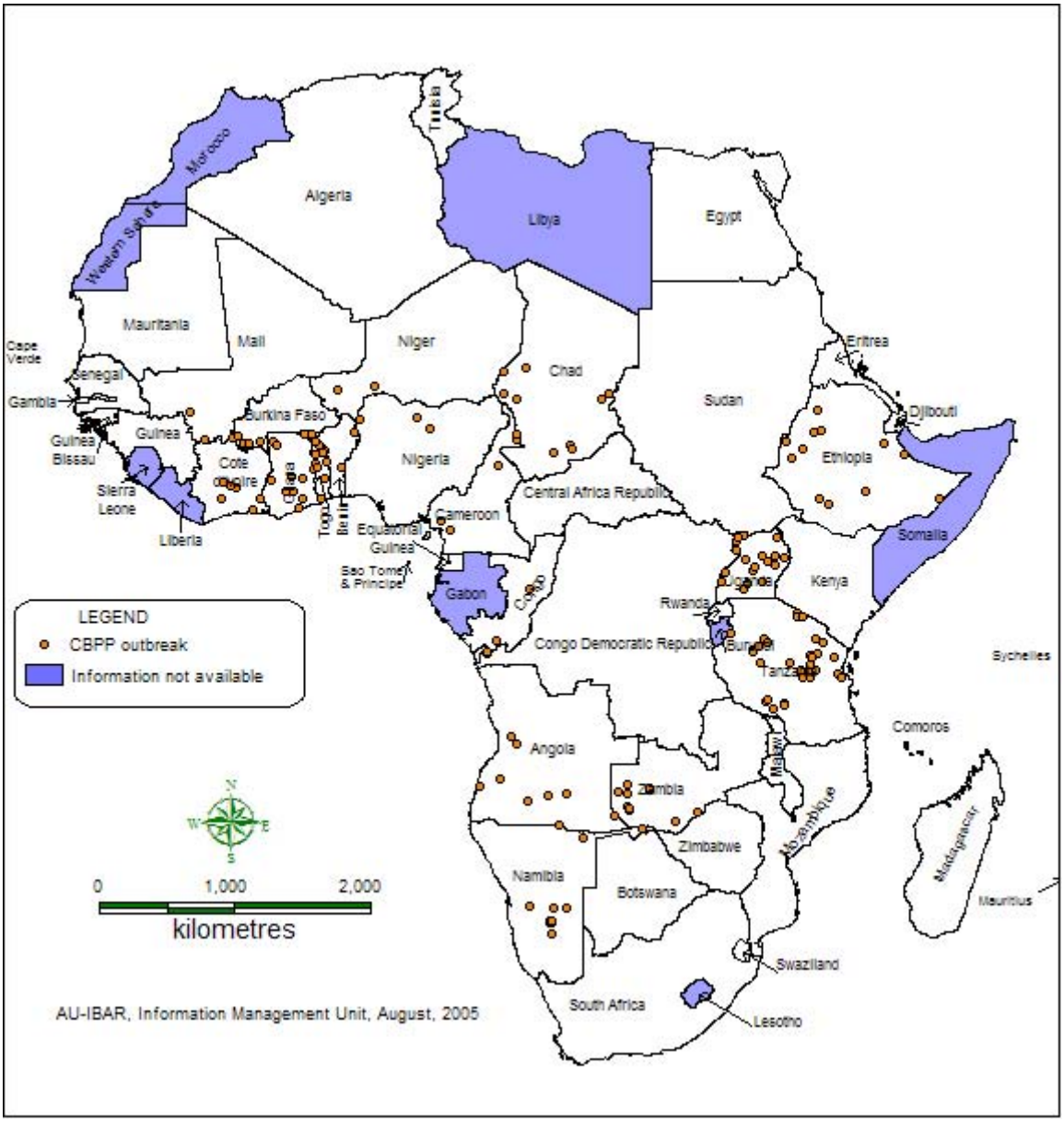
Year	Number of countries reporting	Number of outbreaks	Number of cases	Number of deaths
2003	14	272	7,510	1,289
2004	18	314	52,145	1,985

Some epidemiological rates for CBPP outbreaks in 2004 were calculated using reports from 17 countries, which submitted complete quantitative data set throughout the year. The result shows that morbidity rate for CBPP was 1.4%, ranging between close to zero percent in Namibia to 48.1% in Cote d'Ivoire. Mortality rate was almost zero, ranging from close to zero in Uganda and Namibia to 8.2% in Niger. The case fatality rate was 2.8%, with lowest range of 0.4% in Uganda and highest range of 74.6% in Namibia. The outbreaks of CBPP were recorded in most countries throughout the year without a specific temporal pattern. Example of temporal distribution of CBPP in some countries in 2004 is given in the following chart.

Chart 22, temporal distribution of CBPP in Tanzania and Zambia in 2004



Map 6, Spatial distribution of Contagious bovine pleuropneumonia in Africa in 2004



Foot and mouth disease (FMD)

During 2004, a total of 20 African countries reported outbreaks of FMD. This is a disease, which also affected almost all parts of the continent, except for the northern region (map 7). The 1,140 FMD outbreaks registered during the year is the second highest number of outbreaks for the year after rabies, constituting almost 10% of all outbreaks recorded during 2004. The highest number of outbreaks was reported from Tanzania (372), followed by Chad (132) and Cameroon (134). Note that the single outbreak of FMD reported from South Africa occurred in an FMD Controlled area (buffer zone). Compared to FMD situation in 2003, there is an overall increase in the number of countries reporting the disease, the number of outbreaks and number of cases in 2004. However, the number of deaths recorded in 2004 is by far less than the one in 2003. (See table 7) It is difficult to attribute the increase in number of outbreaks and new cases of FMD to its wider distribution as this could be due to the increase in the number of reporting.

Table 6, comparison of and overall FMD situation in 2003 and 2004

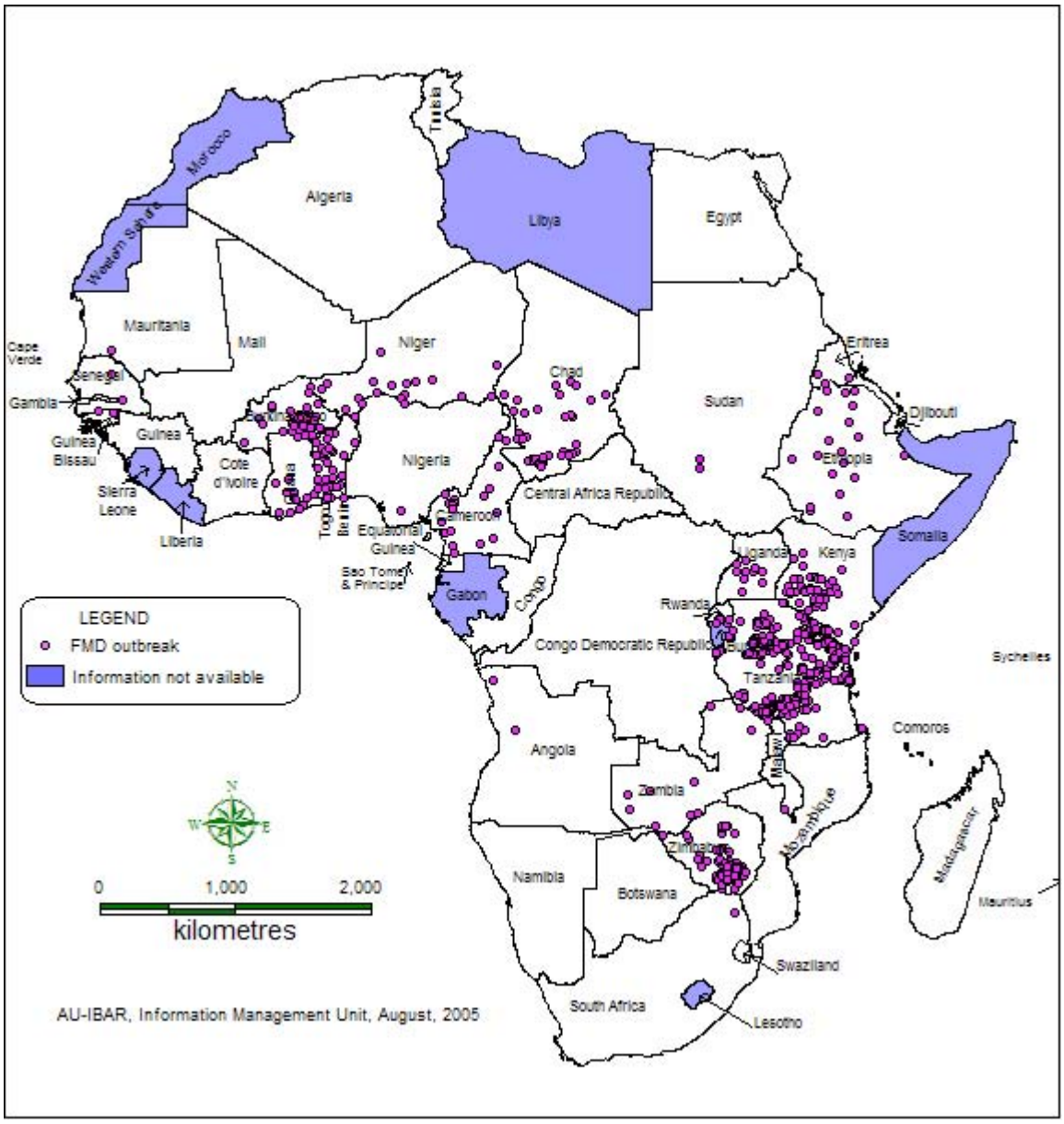
Year	Number of countries reporting	Number of outbreaks	Number of cases	Number of deaths
2003	17	754	102,292	2,974
2004	20	1,140	146,253	1,396

At individual country level, there are few where the number of FMD outbreaks reduced compared to 2003 or did not report the disease at all. However, there are countries, which recorded higher number of outbreaks and new case. The following table compares FMD situation in some African countries during 2003 and 2004.

Table 7, comparison of FMD situation in some African countries during 2003 and 2004

	2003	2004	2003	2004	2003	2004
Country	Outbreaks	Outbreaks	Cases	Cases	Deaths	Deaths
South Africa	2	1	80	4757	0	0
Malawi	3	4	4371	3	1	0
Botswana	4	0	27	0	0	0
Ethiopia	22	43	1927	28131	74	42
Burkina Faso	15	53	638	10265	0	23
Mozambique	17	0	233	0	0	0
Uganda	32	25	23069	19488	350	61
Niger	64	66	80	234	4	4
Chad	95	138	812	1004	121	128
Benin	95	16	12151	5597	157	32
Total	***349***	***346***	***43388***	***69479***	***707***	***290***

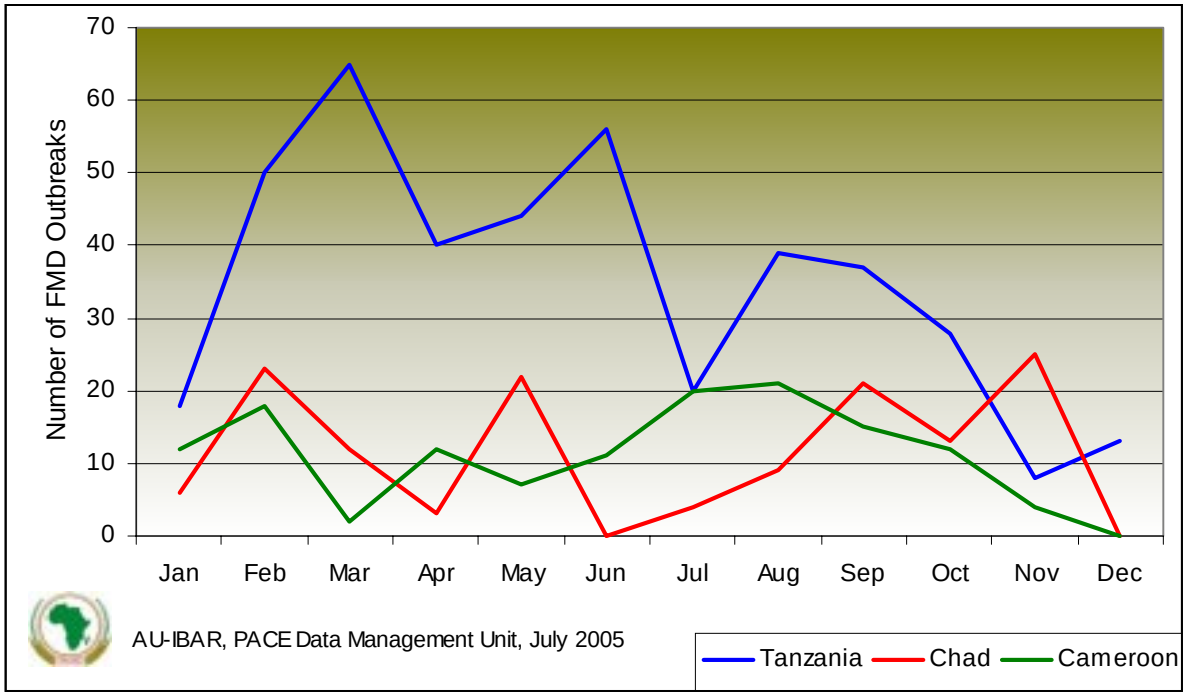
Map 7, Spatial distribution of Foot and mouth disease outbreaks in Africa in 2004



In 2004, sixteen countries filed all the monthly reports to IBAR with complete quantitative data set for FMD. Data from these reports were used to calculate some epidemiological rates for the disease. The result shows that morbidity rate for FMD was 7.1%, with ranges between 0.2% in Malawi and 20% in Nigeria. Mortality rate was 0.1% with ranges between close to zero in Tanzania, Zimbabwe, Burkina Faso, Ethiopia, Uganda, Ghana and Benin and 1.8% in Chad. Finally, the case fatality rate for FMD was 1.0% with ranges between close to zero in Zimbabwe, Ghana, Malawi, Eritrea and Mali and 12.7% in Chad. Except for a few outbreaks in Cameroon, Chad and Senegal, which involved small ruminants, almost all outbreaks of FMD in 2004 affected cattle.

As can be seen from chart 22, the temporal distribution of FMD varies from country to country. In most of the countries reporting FMD during 2004, outbreaks occurred throughout the year without remarkable temporal variation.

Chart 23, temporal distribution of FMD in selected African countries in 2004



Not all countries identify and report the serotype of FMD virus involved in the outbreaks. Reports from eight of the 20 countries received in 2004, which managed to identify the serotypes of FMD virus, suggest that types A, O, SAT 1 and SAT 2 were causes of the outbreaks in their countries (map 8). Because of poor identification and reporting of FMD virus serotypes implicated in disease outbreaks, data extracted from monthly disease reports is not sufficient to suggest the expansion or otherwise of the different serotypes. However, available data suggests that SAT 2 serotype of FMD virus circulate in nine out 14 countries in Africa, which provided information on serotypes. SAT 2 is also the serotype widely distributed affecting countries from Western, Central, Eastern and southern regions of Africa. Eight of the 14 countries recorded the circulation of

SAT 1 serotype of FMD virus in their territories, and these are mainly from Western, Eastern and Southern regions of Africa. From reports received in 2003 and 2004, there is no record about FMD virus type C and SAT 3. Table 7 shows the FMD virus serotypes identified and reported by some African countries during 2003 and 2004.

Map 8, Foot and mouth disease virus sero-types identified in some African countries in 2004

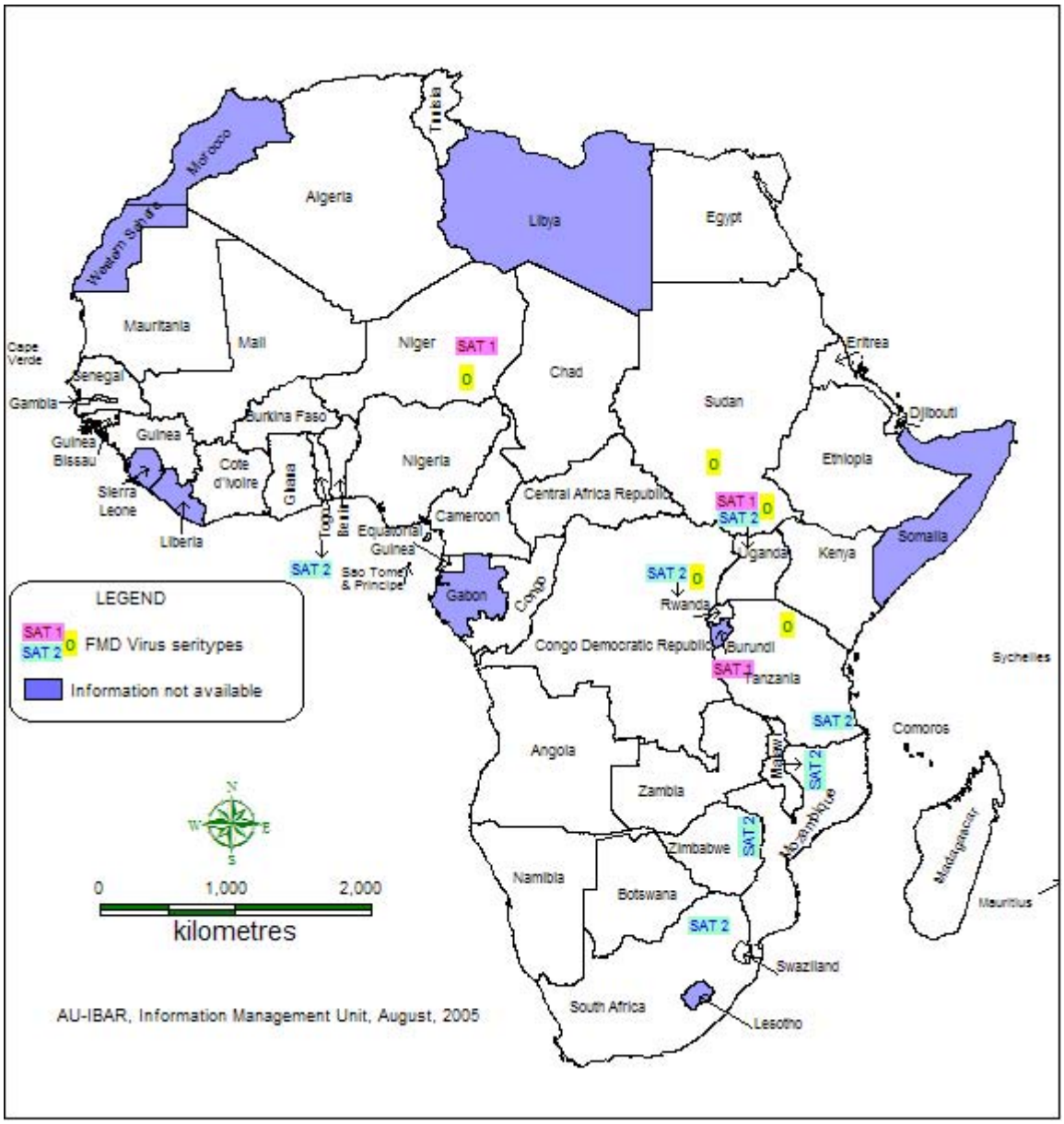


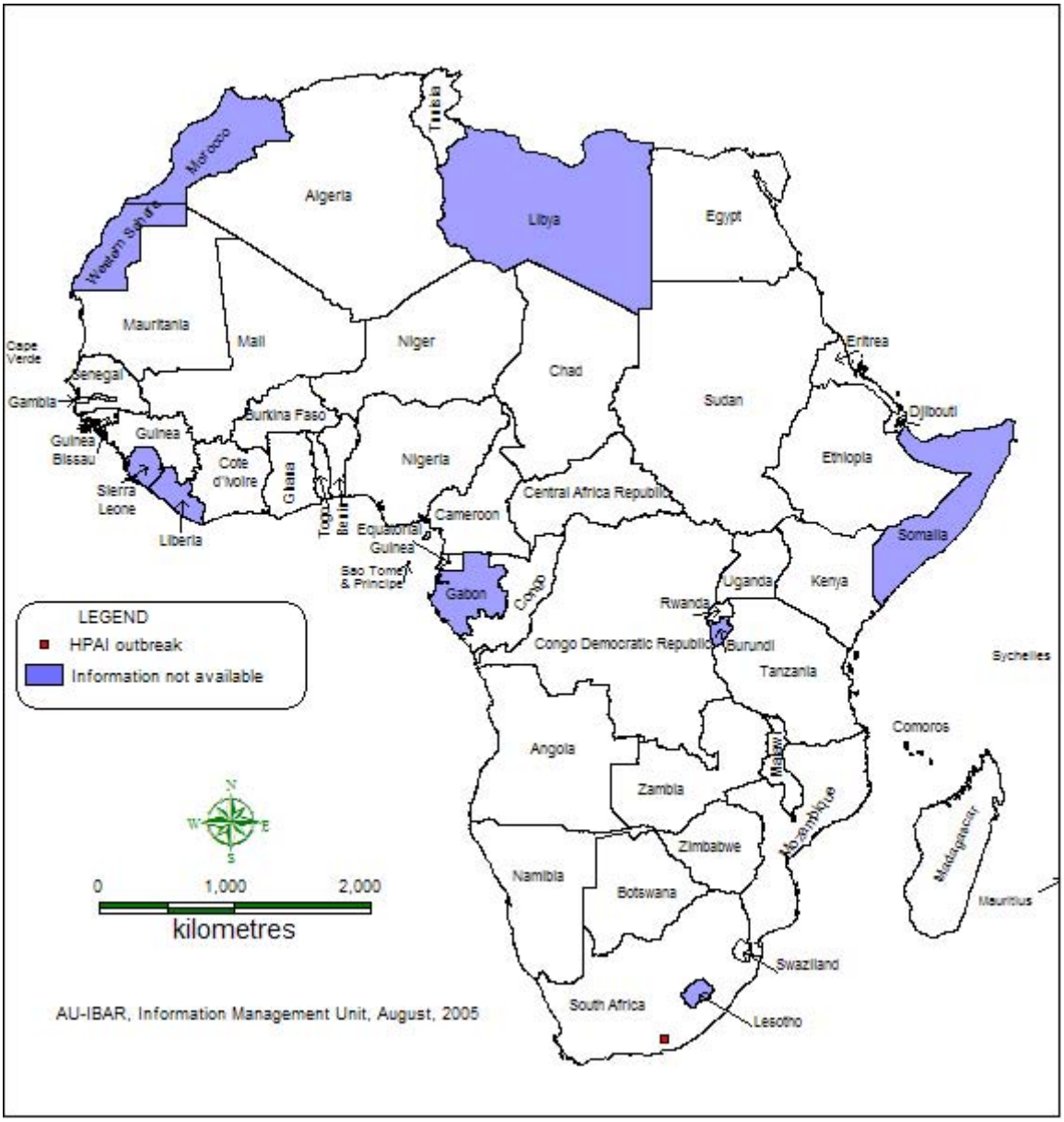
Table 8, list of FMD virus serotype identified in some African countries in 2003 and 2004

lo.	Country	A		C		O		SAT 1		SAT 2		SAT 3	
		2003	2004	2003	2004	2003	2004	2003	2004	2003	2004	2003	2004
	Togo									✓	✓		
	Nigeria	✓				✓		✓		✓			
	Uganda					✓	✓	✓	✓	✓	✓		
	Kenya	✓				✓		✓		✓			
	Tanzania					✓	✓	✓	✓	✓	✓		
	Namibia							✓					
	Botswana							✓					
	Zimbabwe									✓	✓		
	Swaziland							✓					
0	Niger						✓		✓				
1	Sudan						✓						
2	Rwanda						✓			✓			
3	Malawi										✓		
4	South Africa										✓		

Highly Pathogenic Avian Influenza (HPAI)

During 2004, only South Africa recorded the outbreak of HPAI in Africa. Here the outbreak of the disease was suspected in July 2004 and later confirmed in August 2004 in Eastern Cape Province. Records of HPAI in Africa are sketchy but there was no outbreak recorded in recent years. The outbreak of HPAI in the Blue Crane Route Municipality of Eastern Cape Province was the first for South Africa, which was considered as free from the disease until 2004. The outbreak affected several farms in the Area and ostrich is the main species affected. Both the Onderstepoort Veterinary Institute (OVI) in South Africa and the Institute of Animal Health (Pirbright) in the United Kingdom confirmed that the virus causing the outbreak is the H5N2 strain of the Avian Influenza virus. Figures provided on the number of outbreaks of APAI in South Africa during 2004 vary, from reports to report. The monthly report submitted to IBAR indicate that there was a single outbreak while the OIE Website (www.oie.int) indicate that there were a total of eight outbreaks during the year. A total of 202 new cases, mainly involving ostrich, were reported. The South African Veterinary Services destroyed 24,263 ostriches, chickens, ducks, geese and turkeys and conducted rigorous surveillance to stamp out the disease. Map 9 show the location of HPAI outbreak in South Africa.

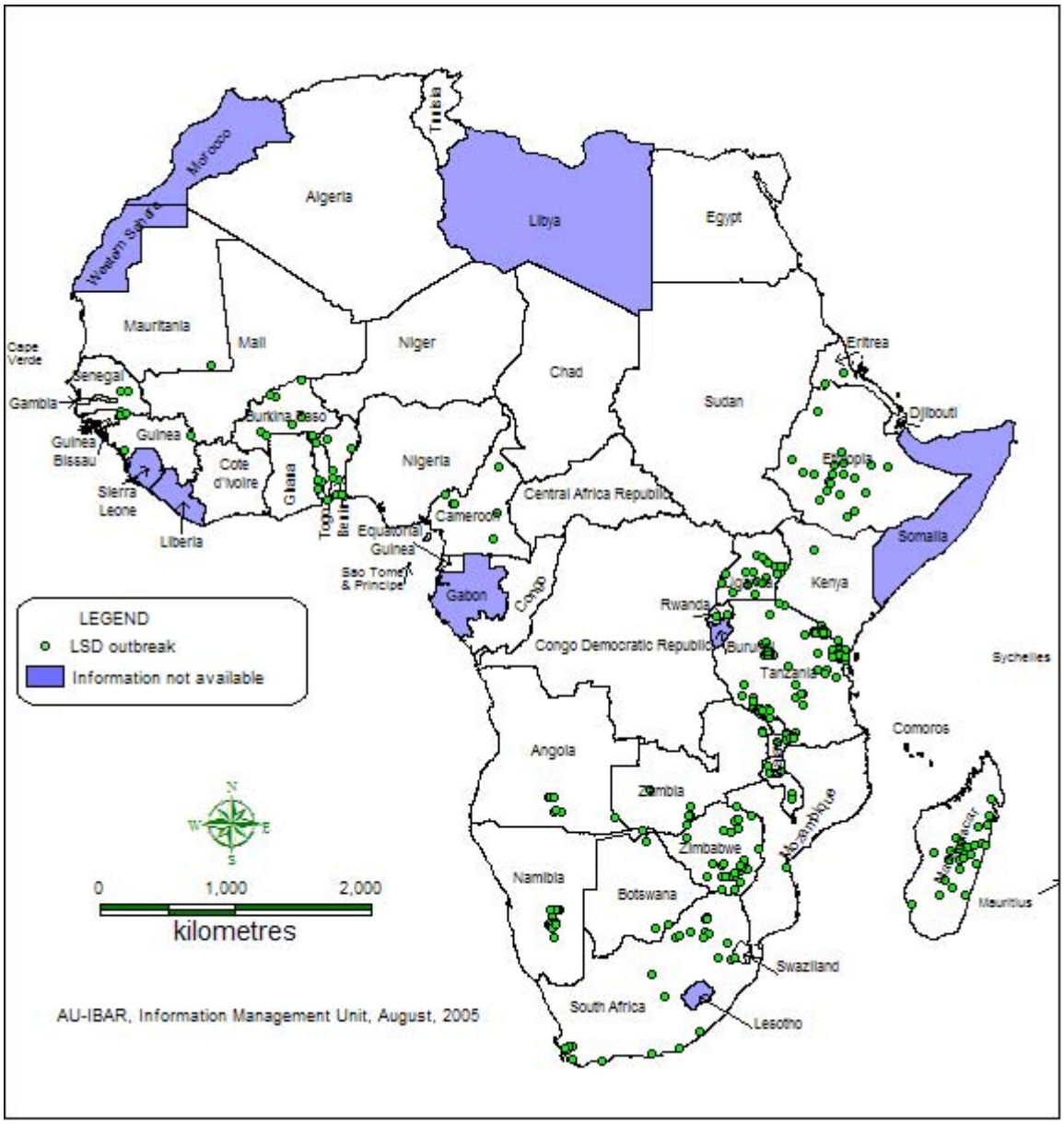
Map 9. Spatial distribution of Highly Pathogenic Avian Influenza outbreaks in Africa in 2004



Lumpy skin disease (LSD)

During 2004, 23 African countries recorded the occurrence of LSD in their territories. This makes LSD the second widely distributed disease in Africa during 2004, after Newcastle disease. A total of 553 outbreaks of the disease recorded in these countries caused 21,446 new cases and 1,426 deaths. Southern and Eastern African regions are the most affected with the highest number of outbreak reported from Tanzania (138 outbreaks) followed by Madagascar (88) and Namibia (44). Map 10 shows the spatial distribution of LSD during 2004 in Africa. Compared to the disease situation of the previous year, there is an increase in the number of countries reporting LSD, as well as the number of new cases and deaths. However, the number of outbreaks showed a slight decline. There was no temporal pattern in the occurrence of LSD as most of the countries reporting experienced outbreaks throughout the year.

Map 10. Spatial distribution of Lumpy skin disease outbreaks in Africa in 2004



Newcastle disease

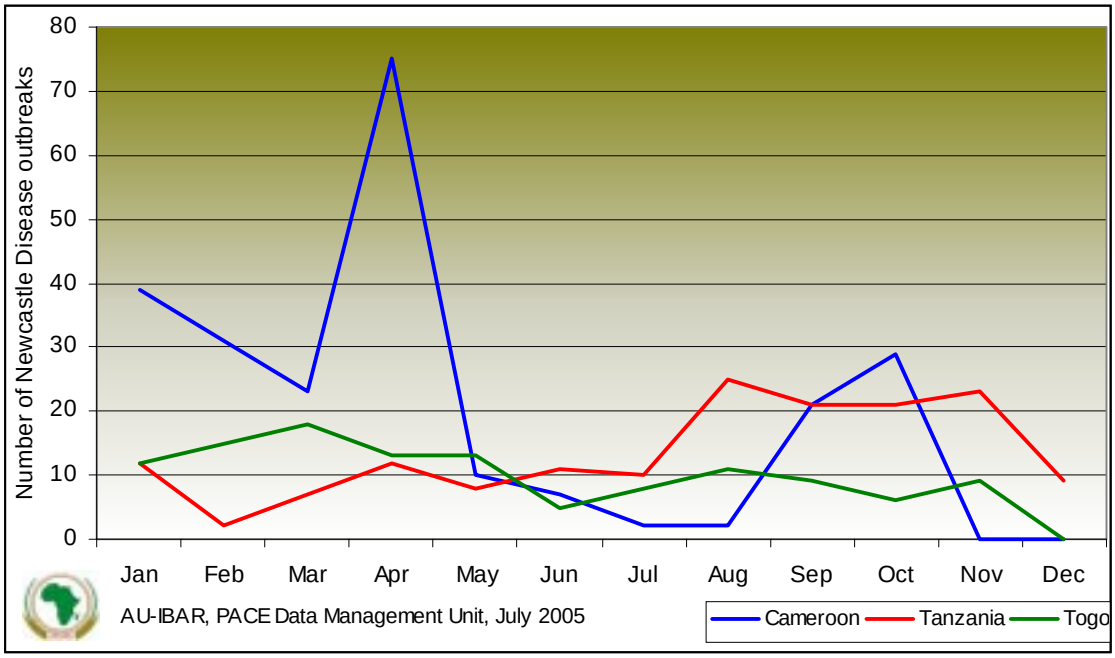
Newcastle disease (NCD) outbreaks have been the most widely distributed throughout the continent during 2004, affecting all the five regions. Twenty-six African countries from these regions recorded a total of 931 outbreaks of NCD. Countries reporting a high number of NCD outbreaks included Cameroon (269), Tanzania (130) and Togo (119). Compared to the situation of Newcastle disease of the previous year, in 2004 there were more countries reporting the disease and more number of outbreaks. Similarly, the number of cases and deaths almost doubled (see table 9). Readers are cautioned, however, from concluding that the increased number might or might not be due to increased incidence of the disease and its wider circulation in 2004. The reporting pattern of member countries does not warrant such interpretation as yet.

Table 9, comparison of and overall Newcastle disease situation in 2003 and 2004

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

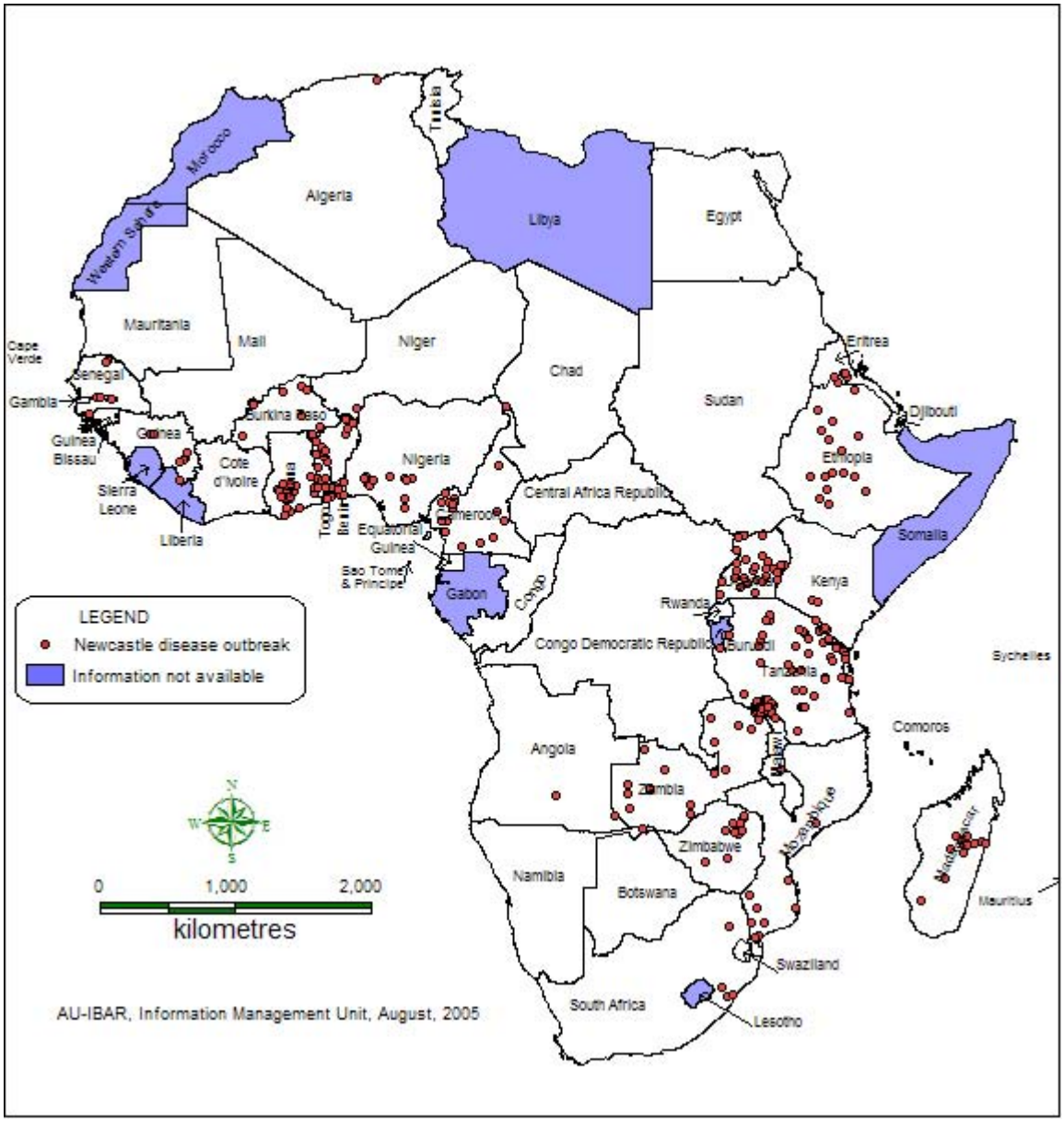
Monthly disease reports submitted by 19 of the 26 countries affected by Newcastle disease in 2004 had complete quantitative data. Analysis of these show that morbidity rate for Newcastle disease was 5.6%, with ranges between close to zero in Namibia to 64.0% in Nigeria. Mortality rate for the disease was 2.9%, ranging from close to zero in Namibia to 30.4% in Cameroon. Finally, case fatality rate for Newcastle disease in 2004 was 52.0%, with ranges between 23.6% in Ghana and 100% in Angola. The temporal distribution of Newcastle disease depends on the situation in a particular country. For example, the pick was reached in the month of April in the case of Tanzania, with a second up serge in October. Temporal distribution of the disease is given for some countries in the following chart.

Chart 24, temporal distribution of Newcastle disease in selected African countries in 2004



Almost all reports received from countries lack information on the laboratory confirmation and identification of the strain of the virus involved in these outbreaks. Taking into account the high number of outbreaks recorded every year and lack of laboratory confirmation, there is a need how many of these outbreaks are genuinely caused by Newcastle disease and not other avian diseases with similar clinical signs. In face of Highly Pathogenic Avian Influenza (HPAI), there is a need to support each Newcastle disease outbreak report by laboratory findings and differential diagnosis.

Map 11. Spatial distribution of Newcastle disease outbreaks in Africa in 2004



Peste des petit ruminants (PPR)

A slightly higher number of PPR outbreaks than the previous year were recorded in Africa in 2004. The 714 outbreaks were recorded in 16 countries from central, eastern and western regions of Africa (see map 12). Although some buffaloes were found sero-positive for PPR in Uganda, no clinical disease in small ruminants was reported from there this year. Countries with a high number of outbreaks of PPR in 2004 include Cameroon (196), Togo (152) and Guinea (120). The number of outbreaks is also higher than the one recorded in 2003. That makes PPR the sixth most frequently reported outbreak in the continent during 2004. During the outbreaks of PPR in 2004, a total of 52,038 new cases of sheep and goats with 17,480 deaths were registered. See table 10 for comparison of PPR situation in 2003 and 2004.

Table 10, comparison of and overall PPR situation in 2003 and 2004

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

Some epidemiological rates for PPR were calculated from complete data set provided in monthly disease reports submitted throughout the year from nine countries affected by the disease. The result shows that morbidity rate for PPR was 21.9%, with ranges between 9.6% in Cameroon to 50.0% in Mali. The mortality rate for PPR was 8.0%, ranging between 3.4% in Ghana and 50.0% in Mali. Case fatality rate for the disease was 36.7%, with a range between 20.9% in Guinea Bissau to 100.0% in Mali. Both the morbidity and mortality rates for PPR calculated here seems low compared to values normally reported elsewhere. It should be clear that the number of cases used in calculating epidemiological rates is as reported by countries, which in turn get it mostly based on clinical grounds during outbreak investigations. Accuracy of the results of such calculation is as good as the inputs and there is a pressing need to improve the quality of outbreak investigation and reporting. This remark is valid for all epidemiological rate calculations made in this Yearbook.

Available records suggest that sheep were involved in 65% of all PPR outbreaks during 2004 and accounted for 55% of all new cases. However, mortalities were more common among goats, which accounted for 54% of all deaths caused by these outbreaks. Details on the involvement of the two species in the outbreaks and proportion of each species in new cases and deaths are presented on charts 25, 26 and 27.

Map 12. Spatial distribution of Peste des petit ruminants outbreaks in Africa in 2004

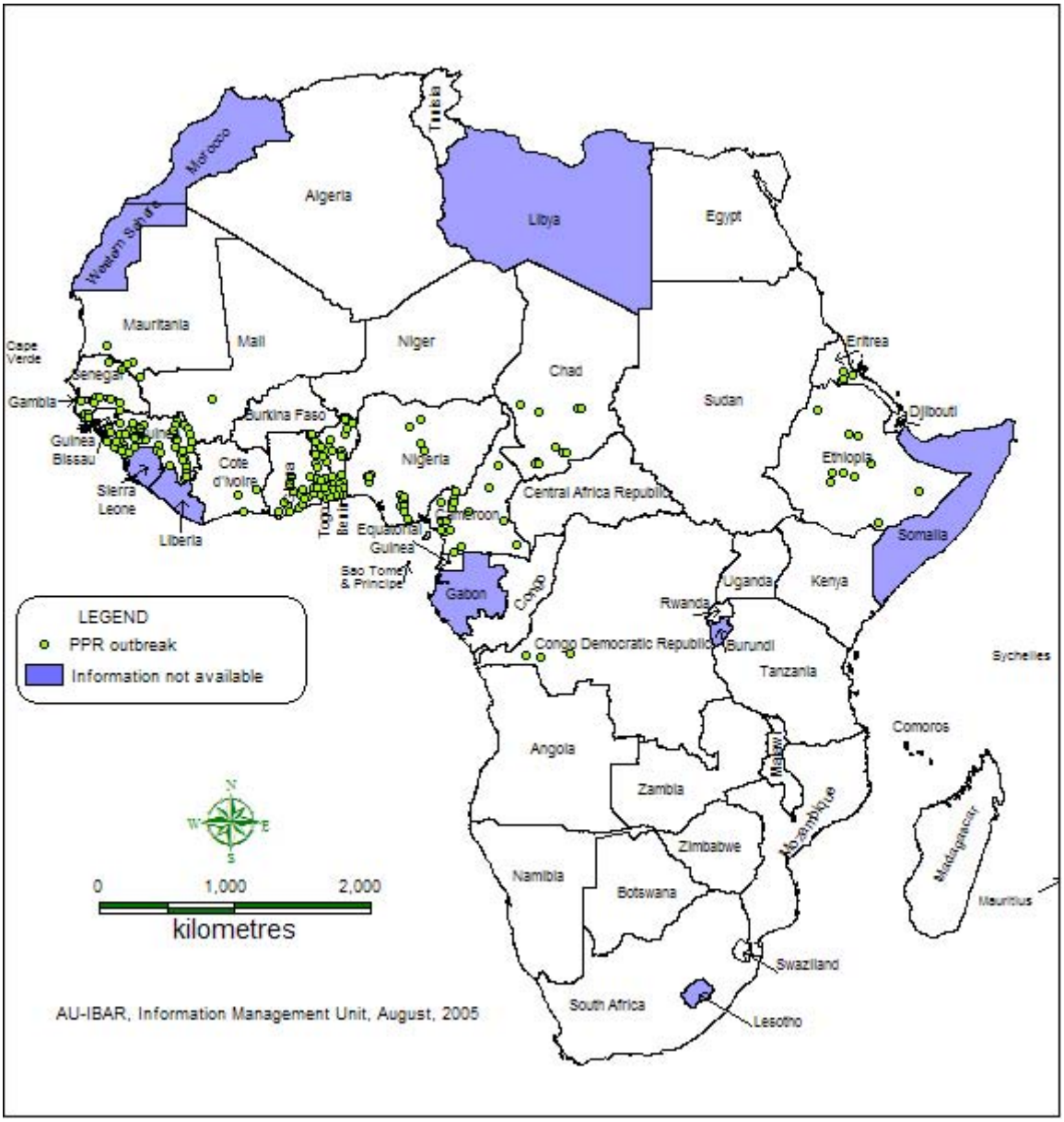


Chart 25, Proportion of involvement of different species in PPR outbreaks in 2004

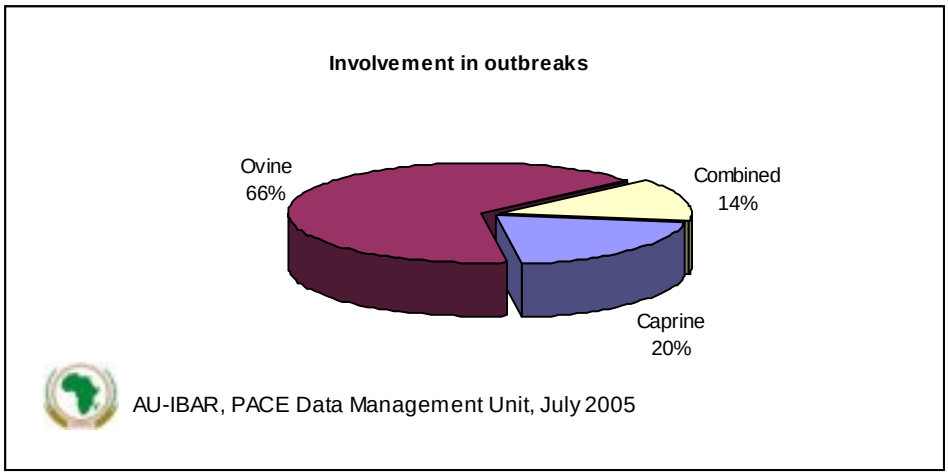


Chart 26, Proportion of new cases of different species in PPR outbreaks in 2004

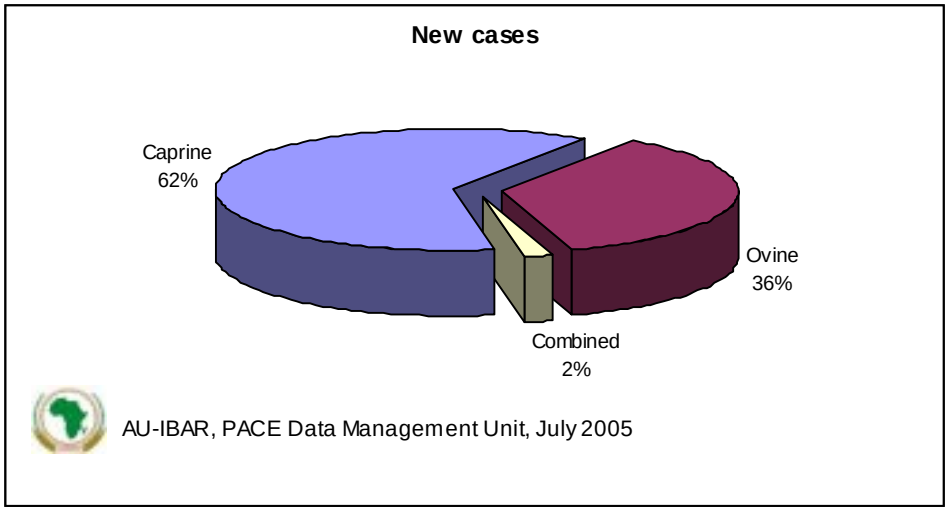
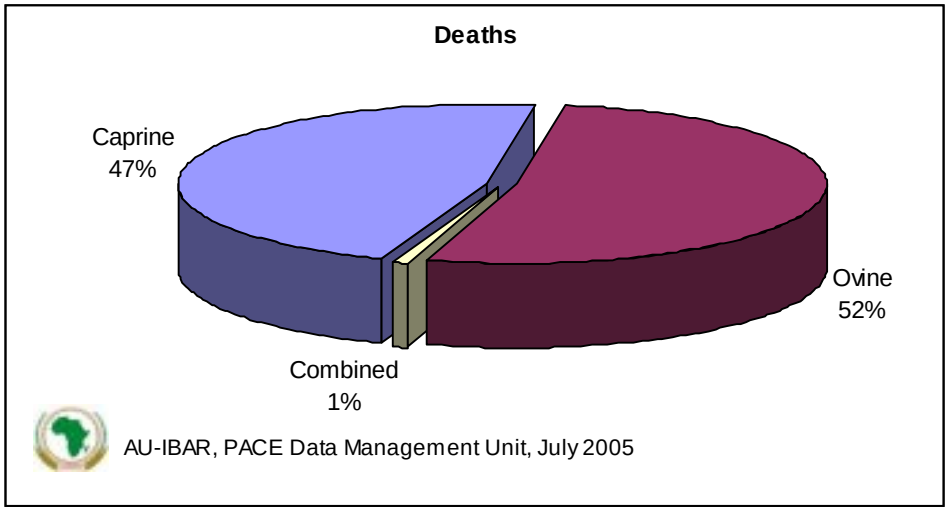
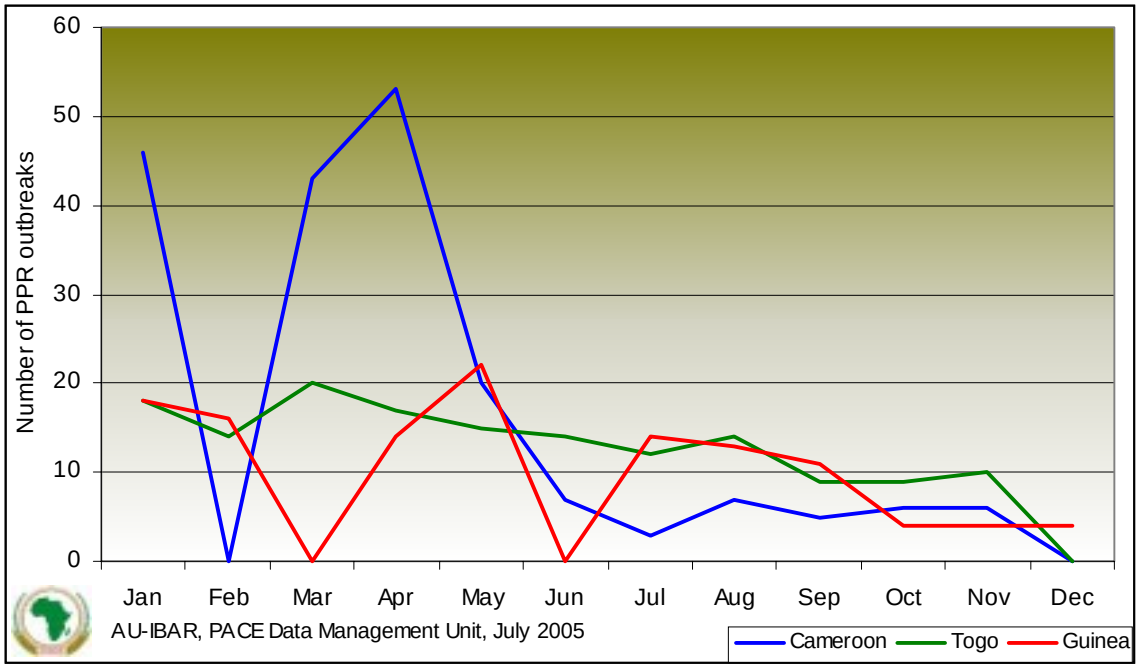


Chart 27, Proportion of death of different species in PPR outbreaks in 2004



The temporal distribution of PPR in 2004 varied from country to country. In the three most affected countries, however, major outbreaks occurred between the month of March and May (see chart 28 below).

Chart 28, temporal distribution of PPR in selected African countries in 2004



Rabies

During 2004, a total of 1,774 outbreaks of rabies were recorded in Africa. The figure is the highest number of outbreaks among all the diseases reported during the period accounting for 14.3% of all disease outbreaks. It is also the fourth widely distributed disease affecting 22 African countries of almost all regions of the continent. Algeria, South Africa and Zimbabwe recorded the highest number of outbreaks with 751, 304 and 230 outbreaks respectively. The spatial distribution of the disease remained almost the same as the previous year (map 13).

The total number of new cases is 3,082 and over half of these (52%) are dogs. The other species affected by rabies outbreaks during 2004 include, in order of importance, cattle (10.6%), wildlife (2.3%), cats (2.2%), goats (2.2%), equids (1.9%), sheep (1.7%), camel (0.5%), human (0.13%) and pigs (0.06%) (Chart 29). Human cases of rabies were reported from Malawi and Zimbabwe. Despite the fact that rabies is one of the major zoonotic diseases, reports on situation is not always complete. The sources of infection and the species involvements, particularly the number of humans affected is under reported.

Map 13. Spatial distribution of rabies outbreaks in Africa in 2004

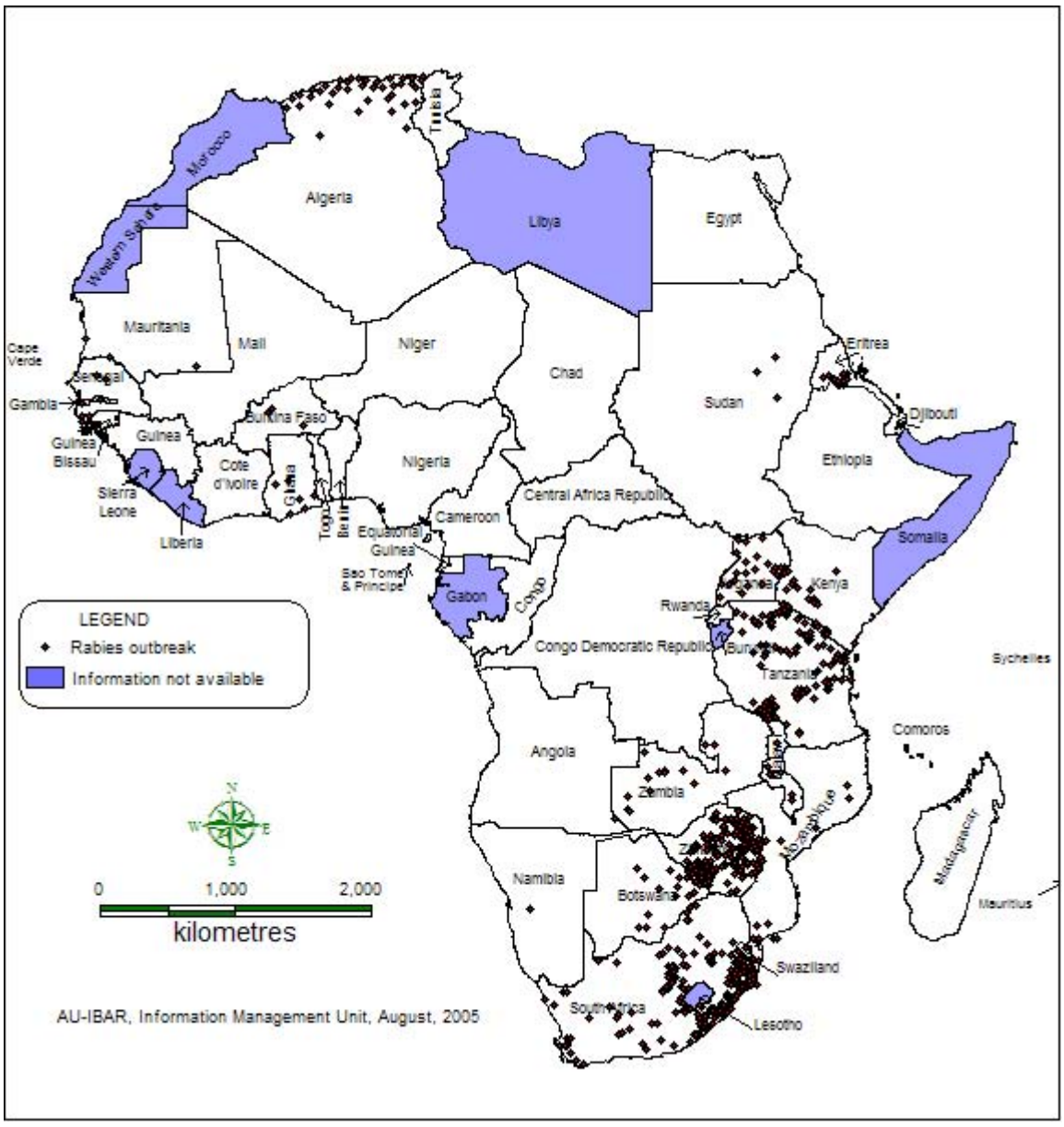
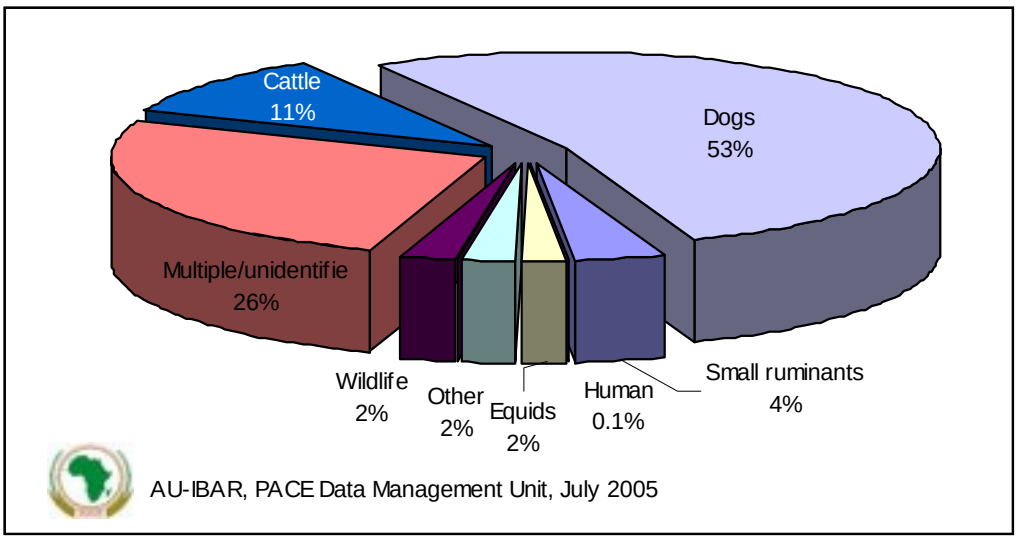


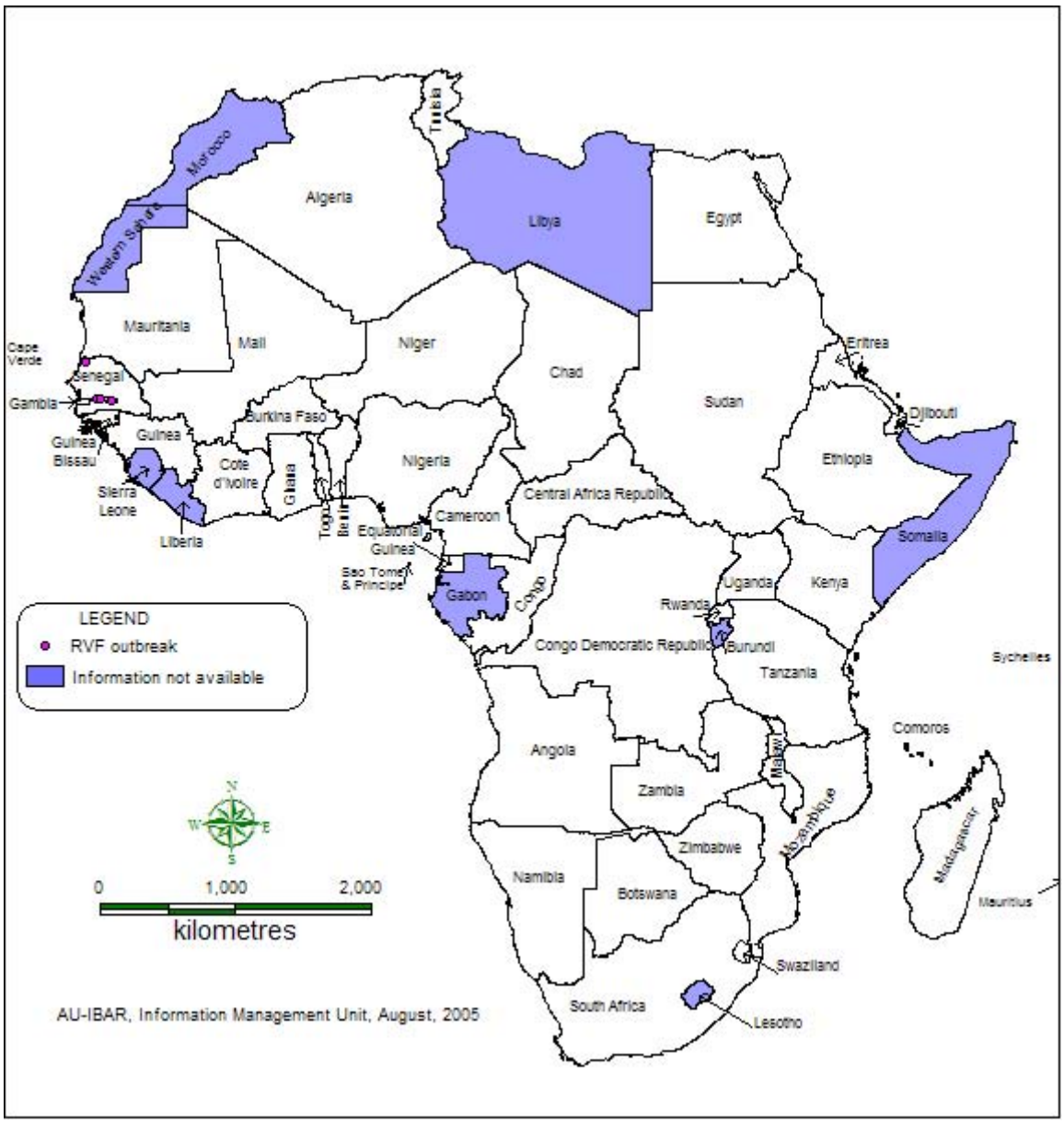
Chart 29, proportion of species affected by rabies outbreaks in 2004



Rift Valley fever (RVF)

Rift Valley fever outbreaks in 2004 were confined to the western African region, in particular to Senegal and Gambia. It was evident from the OIE Website that Mauritania was also affected by RVF during 2004, brining to three the number of countries affected by the disease in Africa in 2004. However, as Mauritania did not submit disease reports for the first four months to IBAR, details on the outbreak(s) is not available in the database. Hence, it is only the outbreaks in the Gambia and Senegal discussed here. The seven outbreaks observed in the two countries during 2004 affected 102 small ruminants, out of which 31 died. Map 15 shows the spatial distribution of RVF in Africa in 2004. Only two countries, Senegal and Mauritania, reported 10 outbreaks (during the months of October and November) of RVF in 2003. During these outbreaks, a total of 44 new cases were recorded but no deaths reported. The spatial distribution of RVF is presented on map 14.

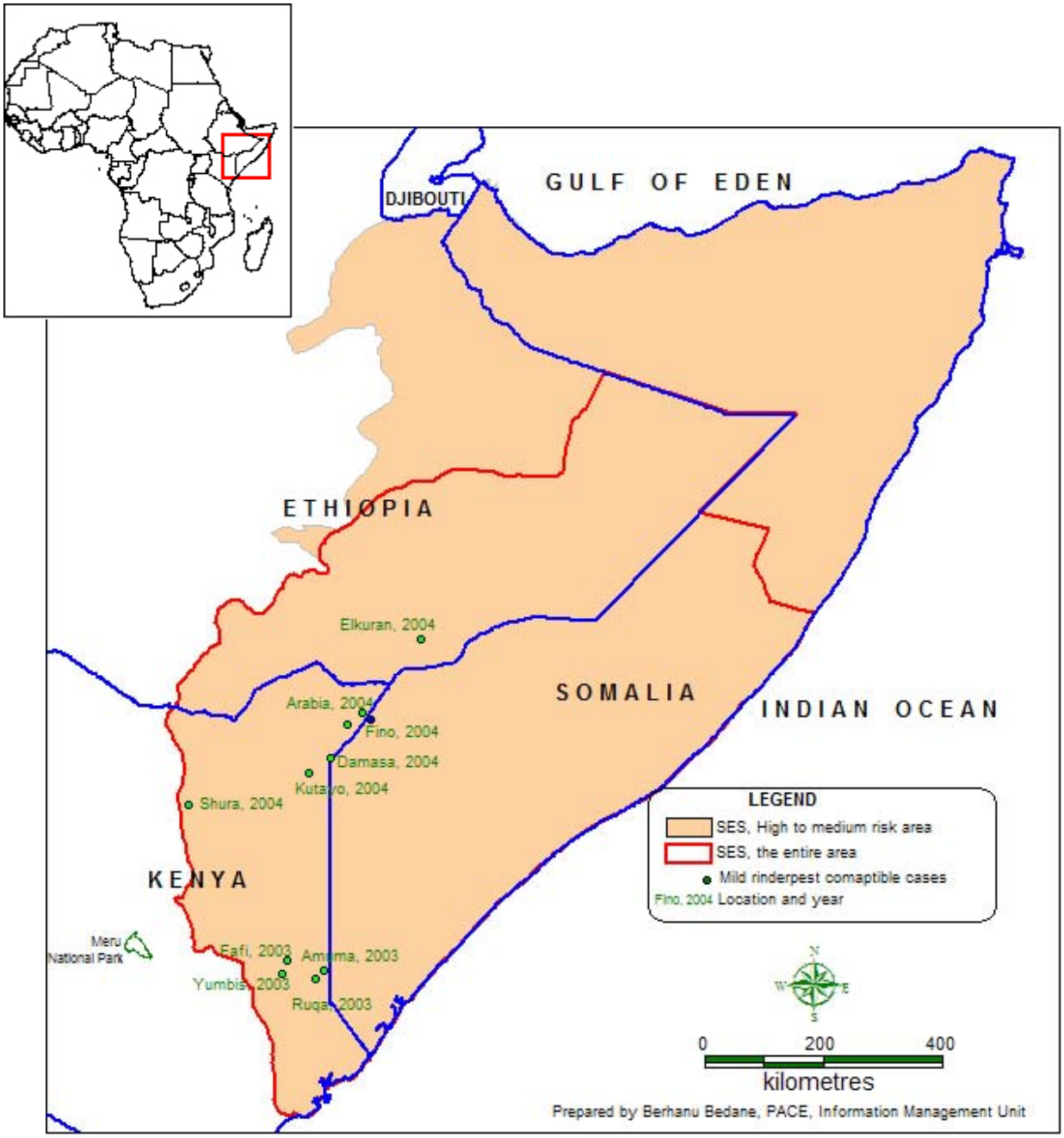
Map 14. Spatial distribution of Rift Valley fever outbreaks in Africa in 2004



Rinderpest

There was no confirmed rinderpest outbreak recorded in Africa in 2004. However, the rinderpest eradication programme in Africa is progressing very well (details are presented further ahead in this yearbook) and as a result of this, there is an intensified surveillance activity undertaken, particularly in the presumed last foci of Somali eco-system. Countries forming part of the eco-system, particularly Kenya and Ethiopia, embarked on active surveillance and detected six locations with mild rinderpest compatible cases. These are Shura in Marsabit district and Kutayo, Damasa, Fino and Arabia in Mandera district of Kenya in February 2004 and at El Kuran in Dolo Bay district of Ethiopia in May 2004. Samples collected from suspected cases in Kenya were tested at the Kabete virology laboratory by cELISA and ICE and all were found negative. Samples from Ethiopia were thought to be positive at the national laboratory (NAHRC) but the World Reference Laboratory (IAH - Pirbright) failed to confirm the initial findings. Map 15 shows areas where rinderpest was suspected in 2004 in Africa.

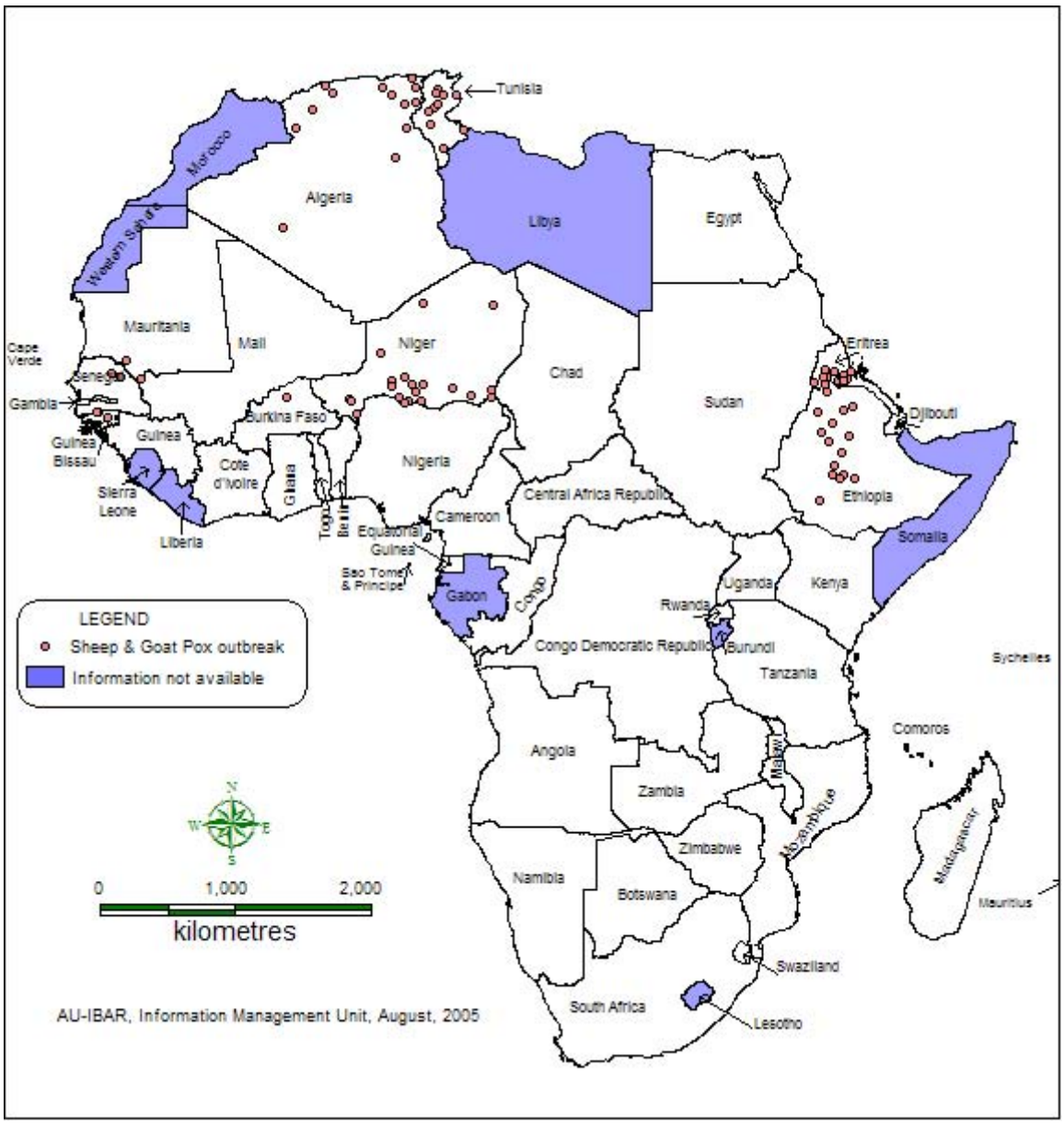
Map 15, Locations where mild rinderpest compatible clinical cases were found in Africa in 2004



Sheep pox and goat pox

During 2004, nine African countries reported a total of 180 outbreaks of sheep pox and goat pox. The spatial distribution of the disease remains similar to that of the previous year, except for Mali, where the disease is absent this year (see map 16). The highest number of outbreak was recorded in Ethiopia (59 outbreaks) followed by Algeria (31) and Niger (28). Although the number of countries reporting sheep pox and goat pox remained equal as in 2003, the number of outbreaks recorded declined significantly (from 500 in 2003 to 180). However, the number of new cases due to the outbreaks during 2004 doubled that of 2003. Out of the 8,474 new cases of sheep and goats affected, 1,146 died. Sheep seem to be the species involved in most outbreaks (66%) but goats are most affected (62% of all new cases). The proportion of death was close, with sheep accounting for 52% of all deaths and goats 47%. There was no spatial clustering in the occurrence of sheep pox and goat pox as countries reporting continued experiencing the occurrence of outbreaks during most parts of the year.

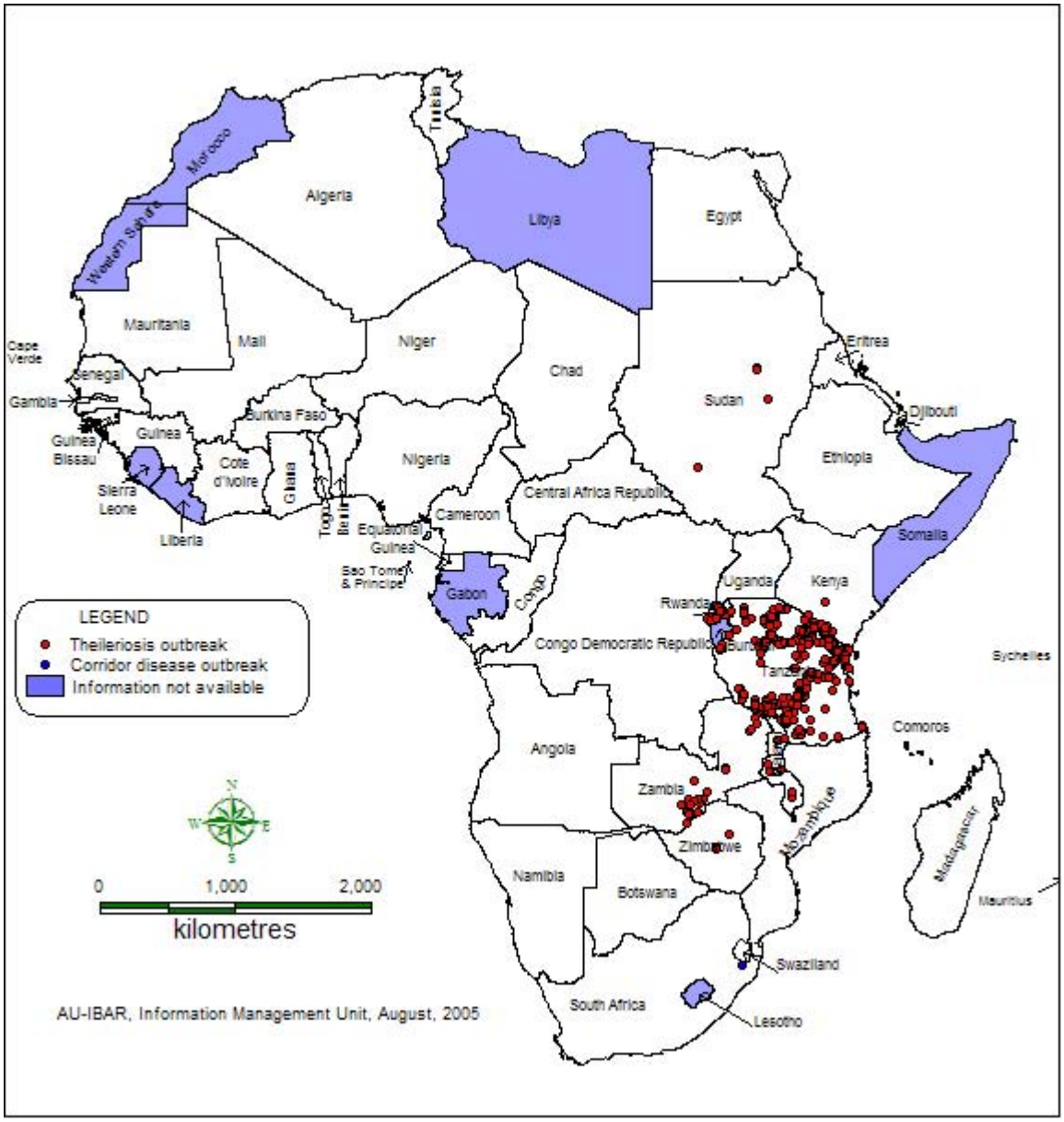
Map 16. Spatial distribution of sheep pox and goat pox outbreaks in Africa in 2004



Theileriosis

Under this heading, theileriosis or East Coast fever and Corridor disease are presented. Outbreaks of these diseases were reported from seven African countries. With the exception of a single outbreak of corridor disease reported from South Africa, the remaining six countries registered 570 outbreaks of theileriosis in 2004. Tanzania is the worst affected country with 434 (76% of all outbreaks) followed by Rwanda (74 outbreaks) and Zambia (41). During the outbreaks, a total of 5,026 new cases of theileriosis and 1,481 deaths were recorded. The spatial distribution of the outbreaks is presented on map 17.

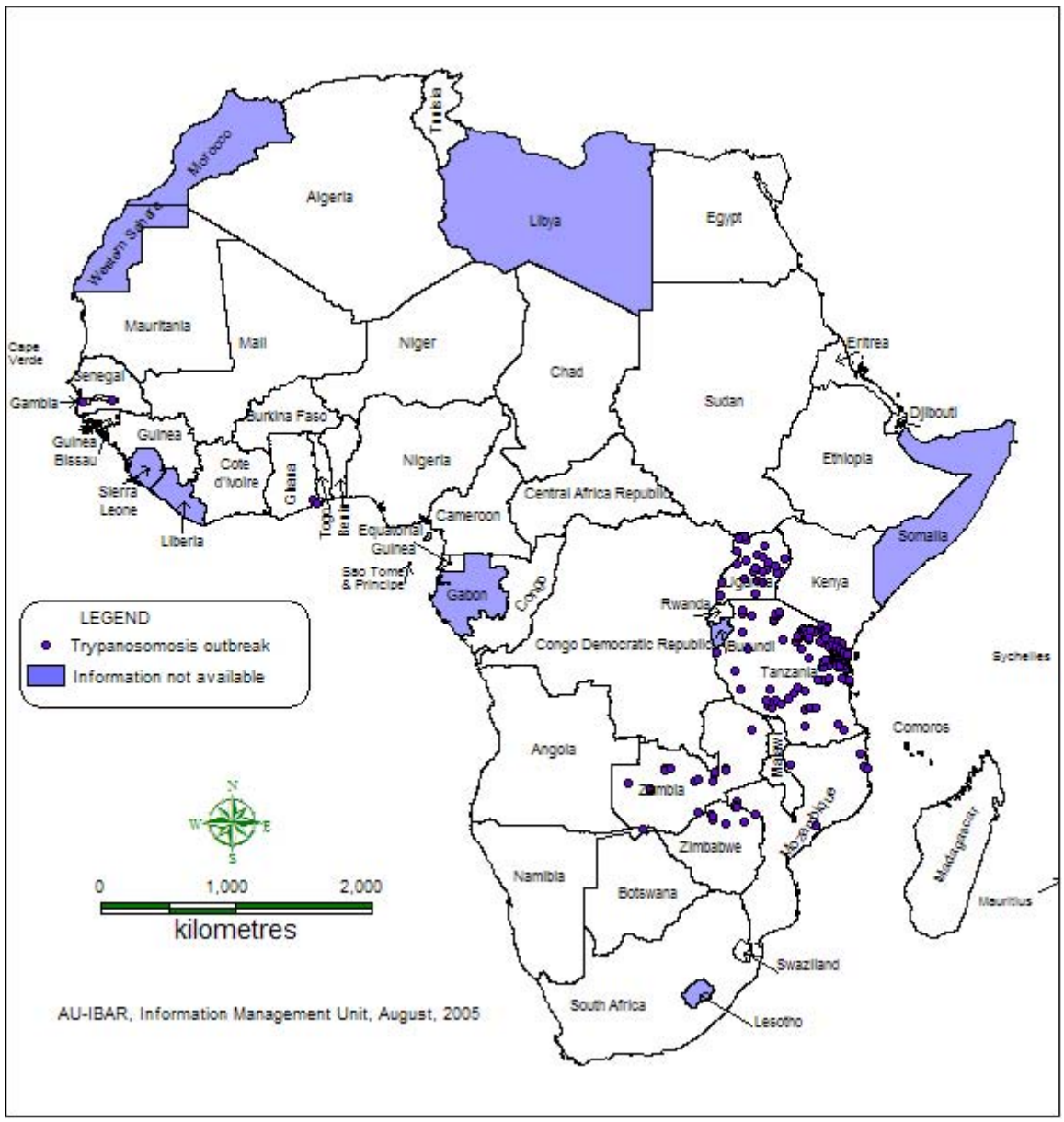
Map 17. Spatial distribution of Theileriosis outbreaks in Africa in 2004



Trypanosomiasis

Eight African countries reported outbreaks of trypanosomosis in 2004; fewer than the number of countries reporting the disease during 2003 and this seems far less than the known distribution of the disease in Africa. The eight countries recorded a total of 424 outbreaks of trypanosomiasis. Countries with a highest number of outbreaks include Tanzania (298), Uganda (65) and Zambia (30). The spatial distribution of outbreaks is presented on map 18. During 2004, a total of 76,810 new cases and 765 deaths were registered. Information made available in the reports indicates that bovine is the species most affected during these outbreaks.

Map 18. Spatial distribution of Trypanosomiasis outbreaks in Africa in 2004



Development in Information and Communication Technology (ICT) boost the manner in which countries collect and analyse animal health/disease data and share information for decision-making and planning intervention. Information management is central to this and if this tool is to be used properly for animal disease management, one has to follow basic requirements for data collection, collation and analysis. Powerful databases do exist for the storage and analysis of data and sharing of information. However, these are of little use unless data coming from the field are complete, timely and organised in an agreed format.

[It is very important for reporting officers to follow agreed reporting protocols while preparing and submitting reports. It is only when this discipline is followed that data capture and aggregation is made correctly. Any mistake made during these, preliminary steps can jeopardise data analysis and generate false information. It is often confusing and misleading collating data from different spatial and temporal resolution or levels of detail. The need to follow certain formats to collect data from the field and mode and time of transferring these to databases cannot be over emphasised. This is valid at country level or at continental organisation such as AU-IBAR. Most constraints IBAR is facing regarding the quality of reports received from some member states were presented in the previous issues of the Yearbook and some of these have been improved. However, as there are still problems in some areas it is worthwhile bringing the issues to everyone's attention again.

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 2 A and 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 the 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 21 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 disease 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 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 worth 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.

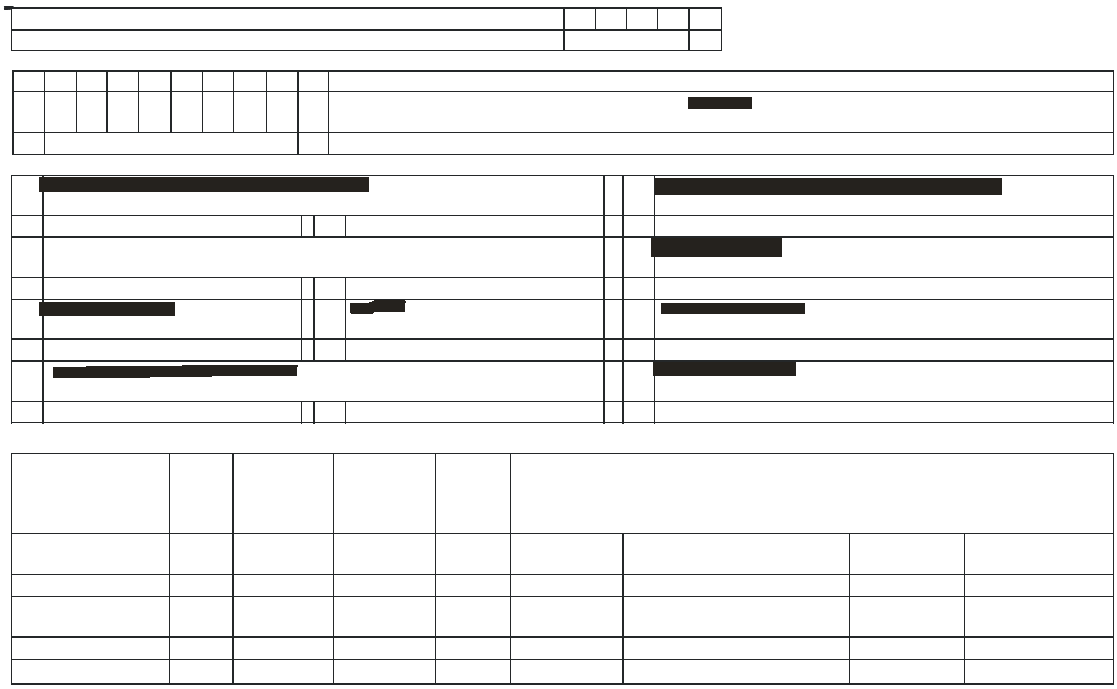
4.4 Quality of reports

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 Annex 2 B 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 cases, the number of susceptible species is ignored making it difficult to calculate any epidemiological rate. There are countries that do not provide any figure for the number of susceptible animals, cases, deaths, destroyed, etc. despite the fact they file the number of outbreaks per disease (see for example the January 2004 report from one of the member states presentedin Table 11) below). Common errors include combining figures of different species (number of susceptible animals, cases, deaths, destroyed, etc.) for multi-species diseases. Obviously this creates problems at a later stage when users want to analyse species-specific parameters.

Table 11, example of poor quality reports where key quantitative data is missing



Outbreak location data missing – With growing application of Geographical Information System (GIS) in disease mapping, veterinary authorities can easily get spatial patterns of disease occurrence for informed decisions. This is possible only if the exact location of each disease outbreak is recorded and provided in each report. Capacity created in the use of GIS and affordable prices of Global Positioning System (GPS) receivers is making the capture and recording of location data (geo-reference) easy. Several African countries are now including location data in latitude and longitude degrees in their monthly disease occurrence reports. The only comment for those countries providing geo-reference data is the need for standardisation. Although it is possible to convert location data from Degree, Minute and Second (DMS) to Degree Decimal (DD), AU-IBAR would prefer to capture geo-reference data as DD to three decimal point precision.

Countries still using the list of administrative units for reporting disease outbreak location are encouraged to introduce geo-reference in their reporting, as the latter is much more accurate and stable, compared to continuously changing administrative boundaries.

4.5 Proposed solutions – Most of the disease reporting quality issues raised in the previous sections can be solved by introducing the current AU-IBAR disease reporting format and following the guidelines in completing it. Training of staff involved in disease reporting and equipping them with current tools in order to capture spatial data is very important. Regular supervision of staff to verify whether or not reporting is done on a timely basis is another area to focus on. Embarking on these activities is not only to satisfy international disease reporting obligations but also to have complete and consistent data set for each and every country's need.

As part of global rinderpest eradication, Africa is making good progress in eliminating the disease in a verifiable manner. This activity is undertaken by the Pan African programme for the Control of Epizootics (PACE) under the auspices of AU-IBAR and financed mainly by the European Union. Main activities of rinderpest eradication coordinated by PACE regional programme and implemented by 30 national programmes consist of surveillance for verification of presence or absence and in the case of proven absence certification following the OIE Pathway for the eradication of rinderpest.

5.1 Recent surveillance activities

As has been mentioned in section three of this Yearbook, intensive rinderpest surveillance was conducted in 2004, particularly in the presumed last foci in the Somali Eco-system. Rinderpest surveillance teams operating in the area used Participatory Disease Search (PDS) methods, sero-surveillance and wildlife surveillance to hunt the elusive mild rinderpest virus (rinderpest virus African Lineage II) or its footprints. PDS methods were particularly instrumental in detecting mild rinderpest compatible cases in different herds in Kenya and Ethiopia. Despite the suggestive clinical symptoms observed in five locations in Kenya and one in Ethiopia, none was confirmed by laboratory. Results from sera collected in 2004 from several herds covering large areas of Somali Eco-system did not show evidence of rinderpest virus circulating.

Similarly, clinical and serological surveillance in wildlife, important sentinel species in rinderpest surveillance, did not show the presence of rinderpest virus. In 2004, 123 sera collected from desert warthogs (*Phacochoerus aethiopicus)*, giraffes and buffaloes from Garissa, Ijara, Lamu and Tana River districts of Kenya, (the Southern tip of SES) were all negative for rinderpest antibodies. From the foregoing it is clear that the last evidence of rinderpest in or around Somali Eco-system is the Meru outbreak, which affected buffaloes in Meru National Park of Kenya in 2001. Since then, there is no confirmed rinderpest outbreak in Africa. The value of this baseline and updating the status of sentinel populations of both wildlife and livestock is critical during the coming year or two. The current status might represent an inter-epidemic period or extinction of the virus. If surveillance activities are relaxed, there could be a serious setback should the virus spread cryptically. Therefore, countries in the Somali ecosystem have a key role in strengthening surveillance activities.

5.2 Coordinating rinderpest eradication in Somali Eco-system

Given that final eradication of rinderpest from the Somali-ecosystem is synonymous with final rinderpest eradication in the world, more emphasis is being given on how to best approach it.

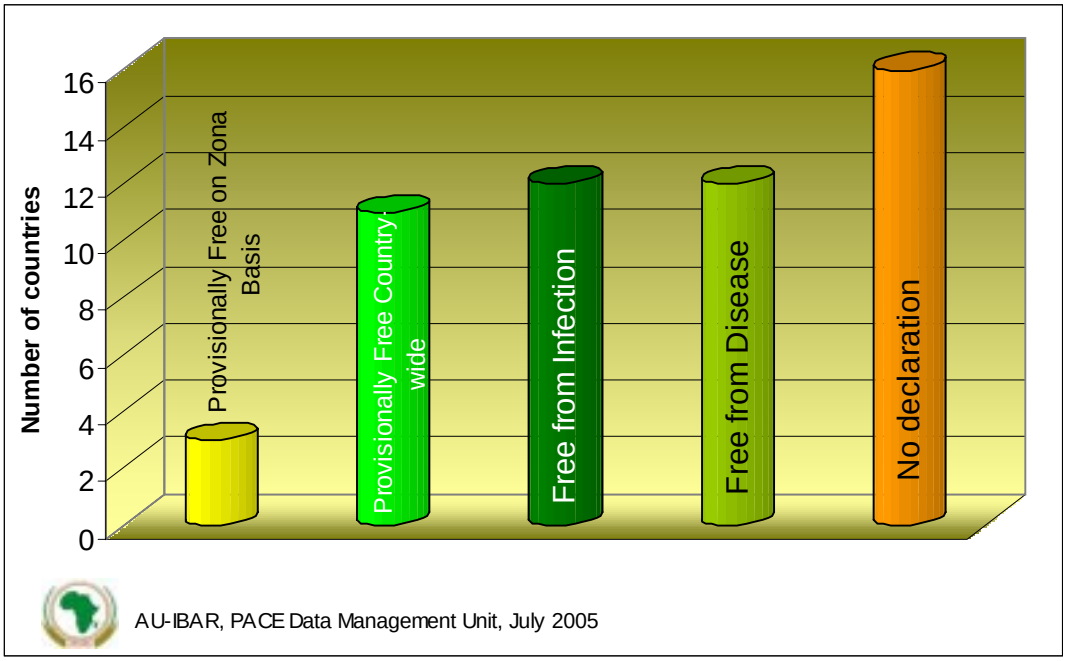
Addressing rinderpest eradication in an isolated manner by each one of the countries forming part of the eco-system is less productive than a coordinated approach. Livestock production systems and socio-economic characteristics of the region demands such approaches and recognising this fact PACE has taken a step in establishing a special unit, which deals only with Somali Eco-system and coordinates rinderpest activities there. This Unit called the Somali Eco-system Rinderpest Eradication Coordination Unit (SERECU) will be launched very soon.

5.3 Progress of African countries along the OIE Pathway in 2004

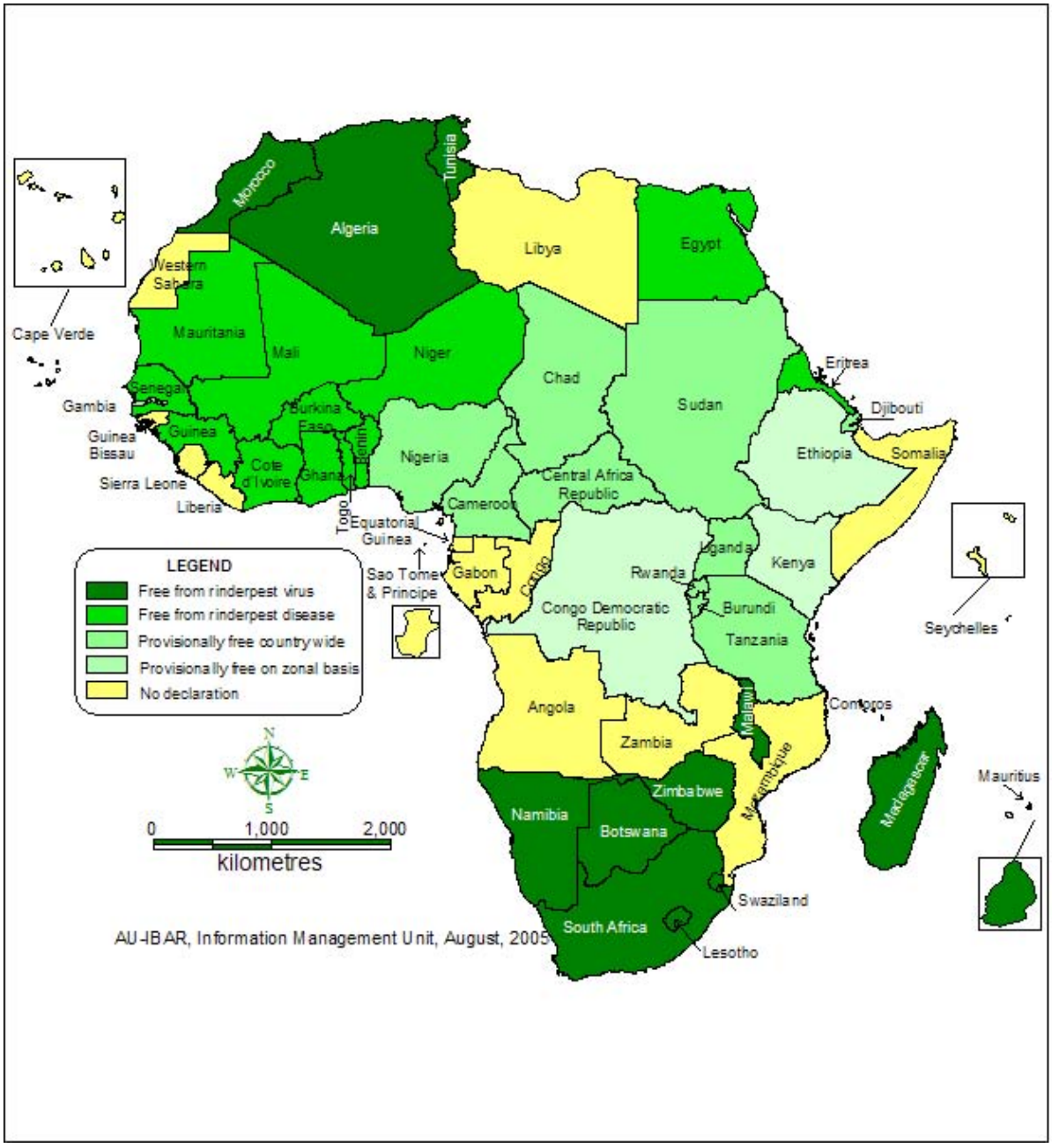
About half of the African countries are now recognised by the World Organization for Animal Health (the OIE) as either free from rinderpest disease or rinderpest infection. Twelve of these countries were certified as free from rinderpest infection while another twelve obtained the status of country free from rinderpest disease. One quarter of the African countries have made self-declaration of Provisional Freedom from rinderpest either country wide (11 countries) or on Zonal basis (3 countries). The remaining countries did not apply to join the OIE Pathway for the eradication of rinderpest. (See Chart 30 and map 19 for details)

It is important to recognise the effort being made by the PACE Epidemiology Unit in assisting PACE member countries starting from designing random sample survey to write-up technical dossiers accompanying the application, requirements for verification of the absence of rinderpest and obtaining the certification. Staff members of the Unit have interacted with member countries and designed timetable for the submission of the dossiers and applications, accelerating in this way the certification process. The Unit offers assistance to all African countries, including non-PACE members that wish to pursue certification of their rinderpest status.

Chart 30. Number of African countries at different stages of OIE Pathway for the eradication of rinderpest



Map 19. The status of African countries along the OIE Pathway in 2004



6. CONCLUSION

Although the number of African countries reporting to AU-IBAR remained the same as the previous year, the number of reports received has increased by 2% during 2004. There is still a need to improve both the quantity and quality of reports to give a complete picture of 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.

During 2004, most of the major animal diseases continued to affect African countries. A total of 12,500 outbreaks of 58 animal diseases were recorded causing 1.2 million new cases and 0.5 million deaths. Diseases with a high number of outbreaks in order of importance included; rabies, Foot and mouth disease, brucellosis, Newcastle disease, anaplasmosis, *Peste des petit ruminants*, African swine fever, theileriosis, lumpy skin disease, and heartwater. Newcastle disease was also the disease with a wider distribution affecting 26 of the 40 countries filing monthly reports.

In Africa, in 2004, significant progress was also made in rinderpest eradication. Surveillance activities have intensified in the Somali Eco-system, area presumed as the last foci of rinderpest and as a result of this mild rinderpest compatible cases were identified. However, none of these were confirmed by laboratory. It is almost four years now since the last confirmed rinderpest in Africa. Eradication and verification process is well underway and additional countries have progressed along the OIE pathway for the eradication of rinderpest. In 2004, PACE has also established a special Unit to deal with and coordinate activities in the Somali Eco-system, called the Somali Eco-system Rinderpest Eradication Coordination Unit (SERECU).

7. ACKNOWLEDGEMENT

The Interafrican 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 40 AU member countries who provided reports during 2004 on which this Yearbook is based.

Annex I – monthly breakdown of disease reports received from African countries during 2004 (blank boxes = report not received)Annex II a – Disease reporting format

Country	Jan-04	Feb-04	Mar-04	Apr-04	May-04	Jun-04	Jul-04	Aug-04	Sep-04	Oct-04	Nov-04	Dec-04
Algeria												
Angola												
Benin												
Botswana												
Burkina Faso												
Burundi												
Cameroon												
Cape Verde												
CAR												
Chad												
Comoros												
Congo												
Cote d'Ivoire												
Djibouti												
DR Congo												
Egypt												
Equatorial Guinea												
Eritrea												
Ethiopia												
Gabon												
Gambia												
Ghana												
Guinea												
Guinea-Bissau												
Kenya												
Lesotho												
Liberia												
Libya												
Madagascar												
Malawi												
Mali												
Mauritania												
Mauritius												
Morocco												
Mozambique												
Namibia												
Niger												
Nigeria												
Rwanda												
Sao Tome & Principe												
Senegal												
Seychelles												
Sierra Leone												
Somalia												
South Africa												
Sudan												
Swaziland												
Tanzania												
Togo												
Tunisia												
Uganda												
Saharawi Arab Republic												
Zambia												
Zimbabwe												

African Union, Interafrican Bureau for Animal Resources (AU-IBAR)
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Monthly disease reporting form

Reporting Unit: Country _____ Region _____ Province _____ District _____

Reporting Period: Month _____ Year _____
(name of the month) *(yyyy)*

Reporting officer: Name _____ Position _____ Signature _____

Date report: Prepared _____ Received at Vet. Dept. _____ Received at IBAR _____
(dd/mm/yyyy) *(dd/mm/yyyy)* *(dd/m*

Is there outbreak to report? YES ☐ NO ☐ *(mark with X an appropriate box)* ***If reporting only vaccination start at the column labe***

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

Disease (& serotype)	New or Followup	Date				Name of affec. Parish	Latitude *(in DD)*	Longitude *(in DD)*	Species Affected	Age group	Sex	Production system	
		occurred	repor. to vet.	investigated	final diagn.								
a	b	c	d	e	f	g	h	I	j	k	L	m	

Please continue to page 2

Monthly disease reporting form, Page 2

Basis for diagnosis	Number of susceptib	cases	deaths	slaug.	recovered	destroyed	Outbreak stopped?
o	p	q	r	s	t	u	v

Disease	# Control vaccination	# Prophyla. vaccination	Source of Vaccine	Batch number	Date Produc.	Expiry date
w	x	y	z	aa	ab	ac

Please use the following options for the corresponding headers

J - Species affected

Bov Cattle
Avi Birds
Cml Camelidae
Fel Cats
Can Dogs
Equ Equidae
Cap Goats
Lep Rabbits/hares
Ovi Sheep
Sui Pigs
Fau Wildlife

K - Age group

Bovine, Equine, Camel, buffalo and other large animals
0 – 12 months
13 – 24 months
25 – 36 months
Over 36 months
All

Ovine, Caprine, Swine and other small animals
0 - 6 months
7 - 12 months
13 - 18 months
Over 18 months
All

Chickens and other birds
Young
Adult

L - Sex

Male
Female
Neutral (Castrated)
All

M - Production system

Intensive
Mixed
Extensive (Pastoral & Transhumant)

N - Control measure

Treatment
Vaccination
Quarantine
Stamping out
Control of Wildlife Re
Vector control
Movement control

O - Basis for diagno

Laboratory
Post-mortem
Clinical
Owners claim
Rumour

MONTHLY DISEASE REPORTING FORM: COMPLETEING 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 (2nd administrative layer in the country) from where the report is coming
Province	Province or any 3rd administrative layer in the country from wherethe report is coming
District	District or local administration or any 4th 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, post mortem 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 burnet) as a result of the disease out break 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 (Panafrican Vaccine Quality Control Centre) or not. The expected answer is “YES” or “NO”

DISCLAMER

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.