

# Pan African Animal Health Yearbook 2003



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## Preface

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Livestock are the mainstay of the vast majority of African people. They contribute a large proportion of the continent's gross domestic product (GDP) and constitute a major source of foreign currency earning for a number of countries. Pastoral communities across Africa rely almost solely on livestock. This is the main reason why any programme targeting meaningful reduction of poverty in Africa should take cognisance of livestock and livestock products and the potential they have for wealth creation and ensuring food security.

The Inter-African Bureau for Animal Resources (IBAR), the scientific and technical organ of the African Union (AU) in matters related to livestock has been in existence for over 50 years. The Bureau was established initially to control major animal diseases, an activity which it still pursues; animal production was later added to its portfolio. The eradication of rinderpest from almost all parts of Africa, except for suspicion of mild forms of the disease in the Somali eco-system, is one of the major achievements of IBAR. With time, the tasks of IBAR evolved to incorporate more broadly the demands of livestock development in Africa. The scope of IBAR's activities have been widened from traditional animal health and production to encompass facilitation of livestock marketing, improvement of pastoral livelihood by better service delivery and conflict resolution; and better management of resources and the environment, particularly so far as the wildlife/livestock interface is concerned. Most of these activities are implemented by IBAR through projects and programmes in close collaboration with a variety of development partners and livestock ministries/departments in AU-member countries.

One of the major Programmes currently implemented by IBAR is the Pan- African Programme for the Control of Epizootics (PACE), which focuses mainly on the eradication of rinderpest and strengthening of surveillance activities in 30 AU-member states. Capacity created or enhanced in these countries as well as within IBAR has enabled the collection and collation of a large amount of data resulting from disease surveillance and related activities. The present issue of the Pan-African Animal Health Yearbook is a result of information generated from data collected from AU-member countries over the last year. This is in line with one of IBAR's major objectives, *viz.* collection, collation and dissemination of information on important animal issues across Africa. With continued and expanded assistance from AU-member countries, IBAR will continue providing up-to-date information and services for the benefit of all.

With regards,

Dr. Jotham T. Musiime  
Ag. Director, AU-IBAR

### 1. INTRODUCTION

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Africa has vast animal resources and large communities in many countries almost entirely depend on livestock. In order to develop and benefit from these resources and use them for poverty alleviation both at household and national level, national veterinary services are challenged with the control of major diseases and have to comply with stringent requirements for international livestock trade, where transparency is a key element. Similarly, early warning for swift action is the corner stone for a sound disease control programme. Hence, accurate and timely information is needed more than ever.

The role information plays in every aspect of day-to-day life is well known and documented. Because information is key in planning, making decisions and monitoring on-going activities, those who recognise this valuable resource as a tool and make use of it have a comparative advantage over those without it. This fact is valid for every sphere of life and those engaged in the livestock sector need to be updated with current trends if meaningful service delivery or competitiveness is their objective.

The Interafrican Bureau for Animal Resources (IBAR) is a technical organ of the African Union (AU) in charge of coordinating all animal resources issues throughout the continent. It is mandated to collect, collate and disseminate information on animal production, health and marketing. To achieve this objective, IBAR relies on data gathered from ministries responsible for animal resources (Ministry of Agriculture or Livestock) in AU member states. These data are collected as monthly disease occurrence/absence reports and questionnaires and are analysed and presented in the Yearbook. It is believed that the Yearbook serves to share information among African countries, institutions, development partners and the general public on the status of animal resources and health across the continent. This year, attempts were made to widen the scope of the Yearbook by including baseline data on the role that animal resources play in the economy of the AU member states, and livestock estimates supported by density maps at the lowest possible administrative level. Similarly, list and contact addresses are provided for veterinary learning institution and ministries and departments in charge of livestock and veterinary services to facilitate bilateral or multi-lateral information exchanges among countries.

## 2. DATA SOURCES

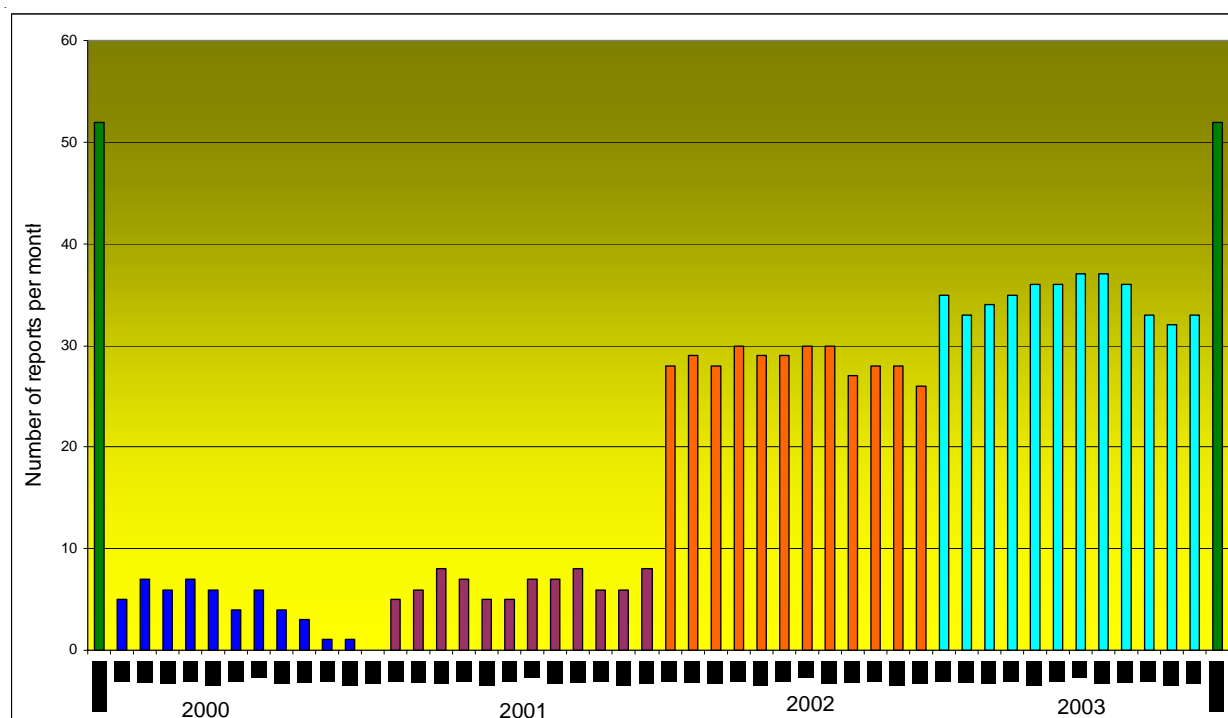
Information contained in the Yearbook are extracted from monthly disease reports received from AU member countries, and from questionnaires circulated to these countries to gather baseline data during 2003. Details of these sources and the number of countries involved are presented below.

### 2.1 Monthly disease reports

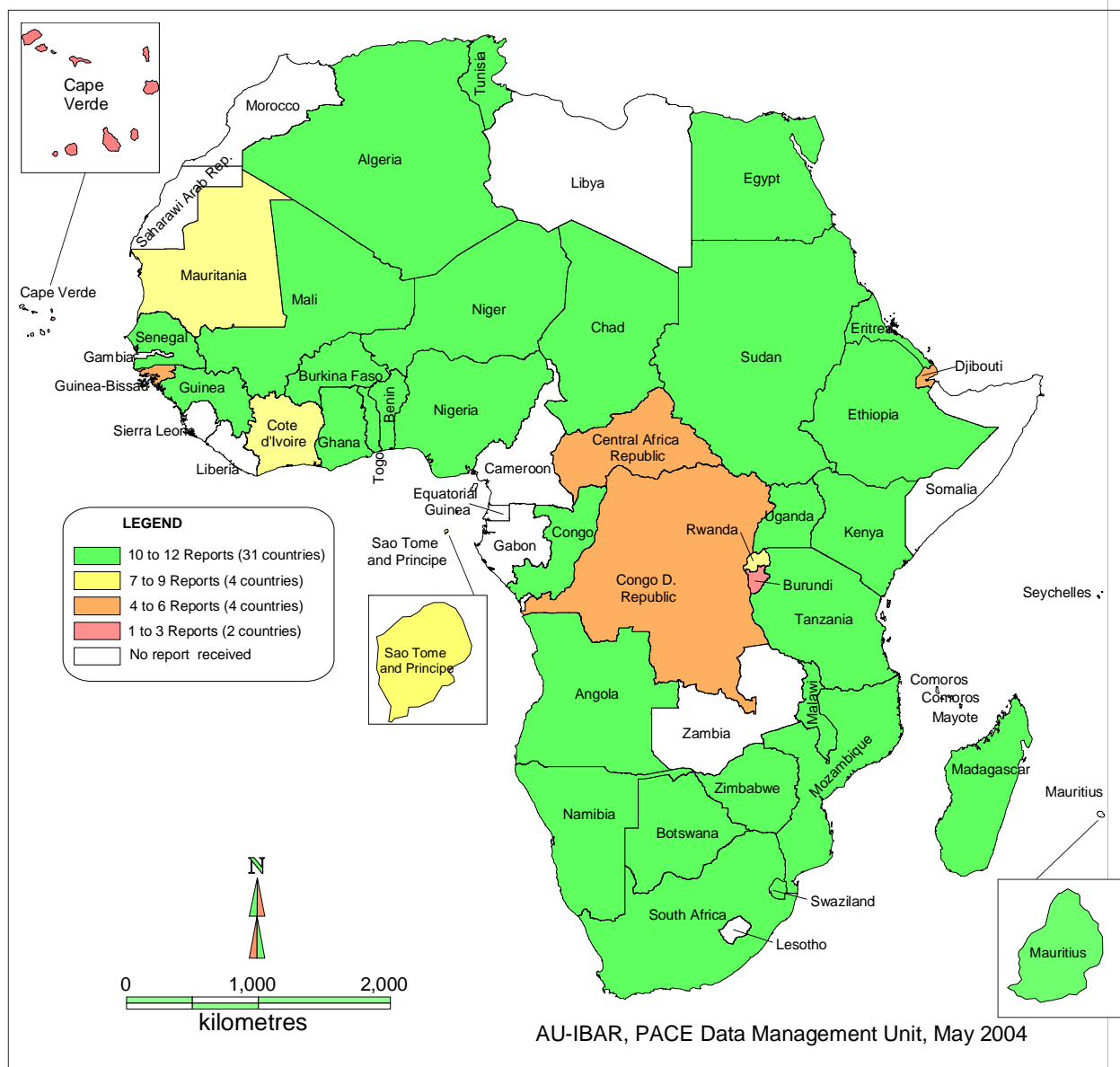
Information on the temporal and spatial distribution of diseases and the number of outbreaks and related parameters were compiled from monthly disease reports received from a total of 40 AU member states (Map 1) during 2003. Most of these reports are based on the Status Report (SR) 3 of the *Office international des épizooties* (OIE). Some countries, either used their own form (e.g. bulletins from Algeria) or a regional form such as the one used in the Southern African Development Community (SADC) livestock sector. Reports from two countries could not be used for analysis as both the spatial and temporal aspects were missing, and a single report for the entire year was filed instead of the usual monthly reports.

During 2003, IBAR received a total of 417 monthly reports. This accounts for 66% of the expected return rate from all member states of AU, 11% improvement compared to the previous year. Similarly, the number of countries reporting to IBAR has increased from 37 in 2002 to 40 in 2003. Chart 1 shows the steady growth of the monthly disease reports from AU member states to IBAR. Note that the ideal scenario where all AU member states report on monthly basis is depicted in green.

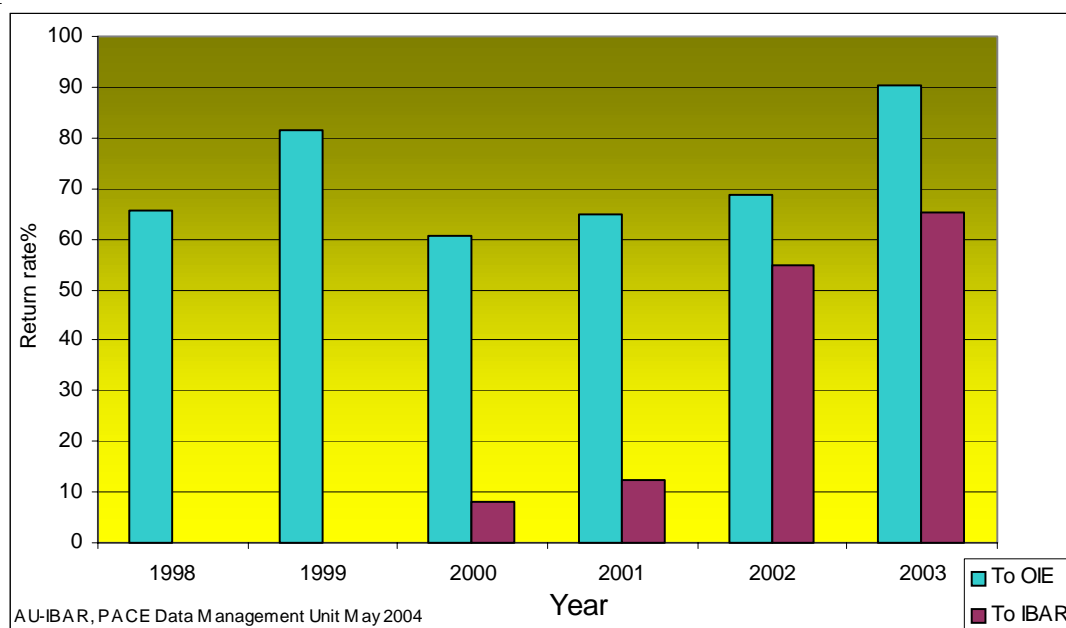
Chart 1. Progress of monthly disease reporting from African countries to IBAR (2000 -2003)



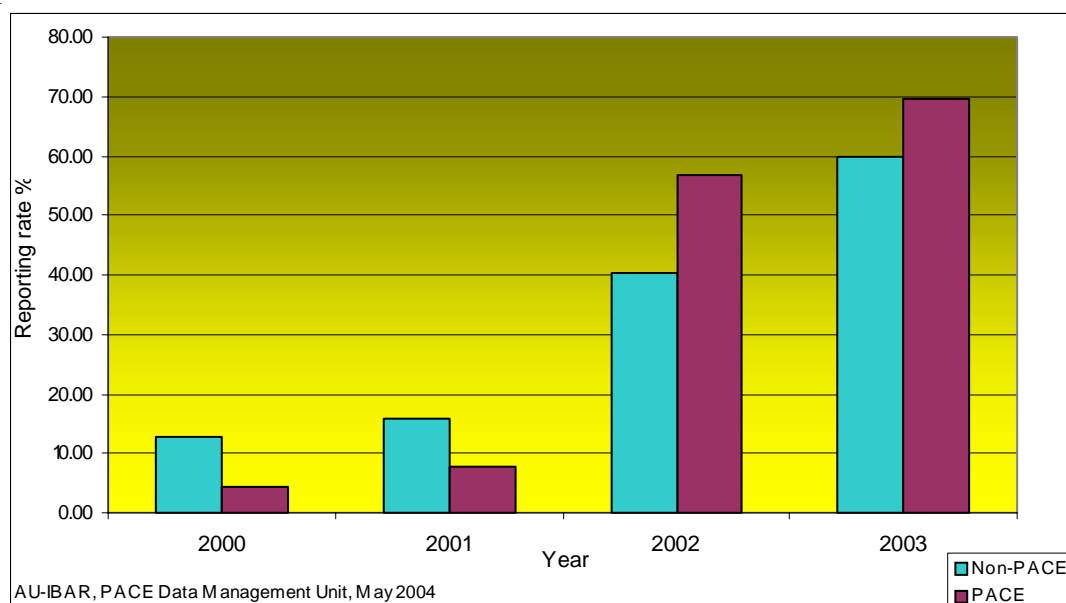
Map 1. Geographical distribution of monthly disease reports received at IBAR (2003)



The number of disease reports submitted to the OIE from African countries has also increased, reaching 91% in 2003 compared with 69% return rate in the previous year. 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 for international disease reporting and transparency.

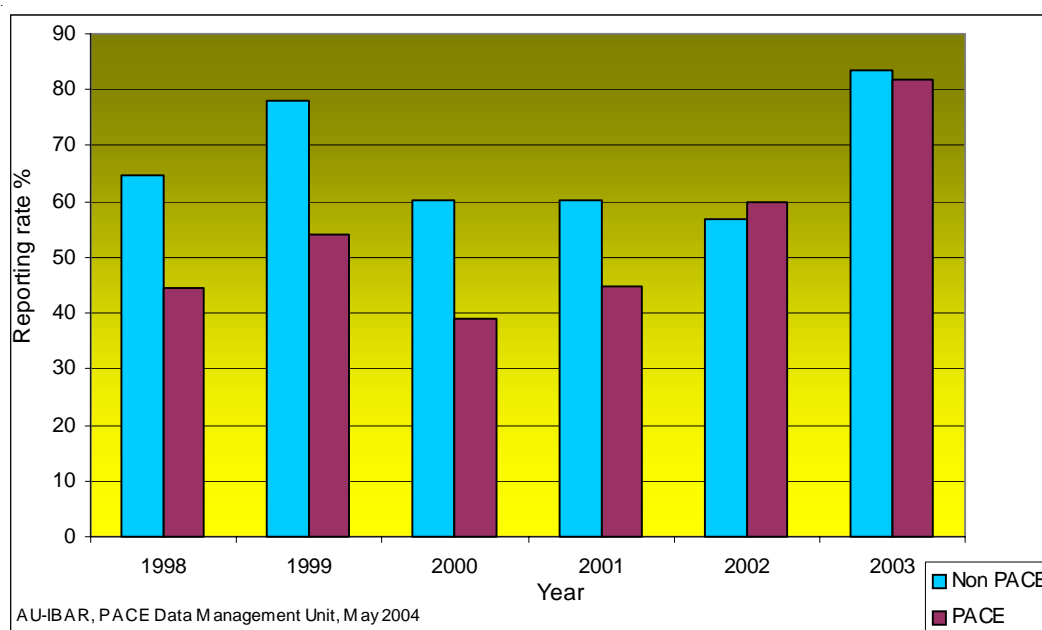
*Chart 2. Progress of international disease reporting from African countries to IBAR and OIE*

Unlike previous years (particularly 2000 and 2001) the disease reporting return rate from PACE member countries to IBAR improved. Chart 3 compares the trend of disease reporting from PACE member and non-member countries to IBAR for the last four years. Due to intensive activities geared towards strengthening surveillance, disease-reporting procedures were established in some countries and revitalised in others, contributing in this manner to improved reporting rates. Note that one of the major objectives of PACE was to strengthen surveillance in participating countries. By the end of 2003, the proportion of PACE member countries reporting to IBAR reached 69% while the proportion of non-PACE countries was 59%.

*Chart 3. Progress of international disease reporting from African countries members of PACE and others to IBAR (2000 – 2003).*

Similarly, the proportion of PACE member countries reporting to the OIE 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. Member countries of PACE now have similar reporting rates to those countries of North and Southern Africa, where international disease reporting is well established (Chart 4). The proportion of non-PACE countries reporting to the OIE reached 83% while PACE member countries are following very closely with 82%.

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



As previously mentioned, 40 countries submitted their monthly disease reports to IBAR during 2003. Burundi and Cape Verde sent a report each at the end of the year without following a standard monthly reporting form, making it difficult to aggregate data contained in their report to the other data. Hence, the analysis presented in the Yearbook used reports from 38 countries. Thirty countries submitted all the expected 12 monthly reports during 2003 and the remaining eight sent 4 to 9 reports (Map 1 and Annex I). Hence, readers are cautioned from making generalisations on disease occurrence or absence, or the number of outbreaks and cases since reports for some countries was not complete and 12 countries submitted no report.

During the year 2003, Congo, Cote d'Ivoire, Djibouti, Egypt, Sao Tome and Principe and Mauritius did not report outbreaks of any disease.

## 2.2 Questionnaire on animal resources baseline data

Another source of information used to compile this Yearbook was responses received from questionnaires administered to African countries to capture baseline data on the animal resources sub-sector. The questionnaire focused mainly on the following information:

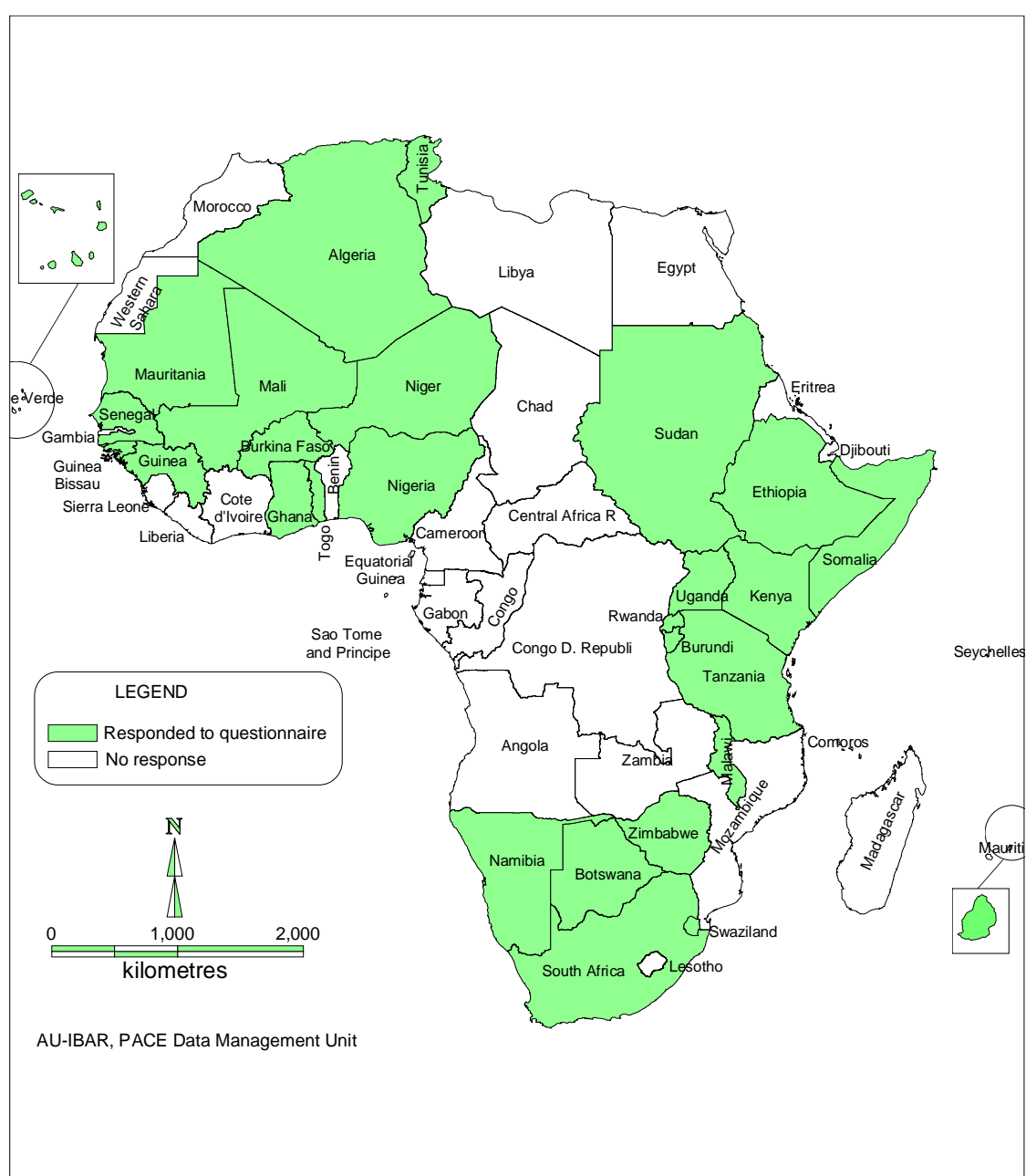
- > The role of livestock in national economy
- > Name and address of ministries in charge of livestock
- > Name and address of veterinary authorities
- > Veterinary human resources
- > Livestock estimates per species



- > Veterinary education centres
- > Number of Foot and mouth disease (FMD) outbreaks
- > and FMD virus serotypes identified in each country during 2003.

The response rate to the questionnaire administered in November 2003 was just above 53%, making it difficult to get a complete picture at continental level. Consequently, compatible data from reports on PACE implementation and sources such as World Bank, Food Agriculture Organization (FAO) of the United Nations (UN) and OIE were also used in the Yearbook. It is hoped that willingness to share information among African countries will gradually improve and data for continent-wide analysis made more available to IBAR in the near future.

*Map 2. Countries that responded to the questionnaire administered in 2003*



### 3. DISEASE SITUATION

Data recorded in the 417 reports received during 2003 were analysed and the summaries are presented in figures and charts. The number of disease outbreaks recorded, the number of cases and deaths resulted from these and the number of countries affected were used to rank diseases. The spatial distribution of the outbreaks is also presented. Base maps of each country at the lowest administrative unit level and the continental map, both from the Digital Chart of the World were used for disease mapping. Location data of the outbreaks received in Degree Decimal (DD) and Degree, Minute and Second (DMS) was standardised to DD and for those countries without georeference of the foci the central point (Centroid) of the administrative unit reporting the outbreak taken as reference. Since temporal distribution of animal diseases is heavily influenced with weather patterns, particularly rainfall, aggregating monthly disease outbreak parameters for the entire continent and presenting it on a single chart is less informative, if not confusing. The ideal scenario is to present temporal distribution of each disease per country, but that is difficult to present on hard copy publication like this Yearbook. For those interested, data on temporal distribution per disease and per country is available on request. The first part of this section presents the general situation of disease outbreaks during 2003, followed by details of each disease using the OIE classification (soon to be changed) of list A and B diseases.

During 2003, a total of 8,954 outbreaks involving 88 different animal diseases were recorded in the 417 monthly disease reports received from 38 African countries. These outbreaks affected a total of 755,404 animals out of which 241,592 died. Rabies was the disease with high number of outbreaks, contributing 15% of all recorded outbreaks in Africa during 2003 (chart 5). On a country basis, Newcastle disease was most frequently reported with 66% of countries reporting this disease (chart 6). It was also the disease with the highest number of cases (200,949) and deaths (143,770). African swine fever (ASF), *Peste des petits ruminants* (PPR) and FMD were among the top ten diseases with high numbers of cases and deaths during 2003, the other six being poultry diseases.

*Chart 5. Ten most commonly reported diseases, by number of outbreak, in Africa (2003)*

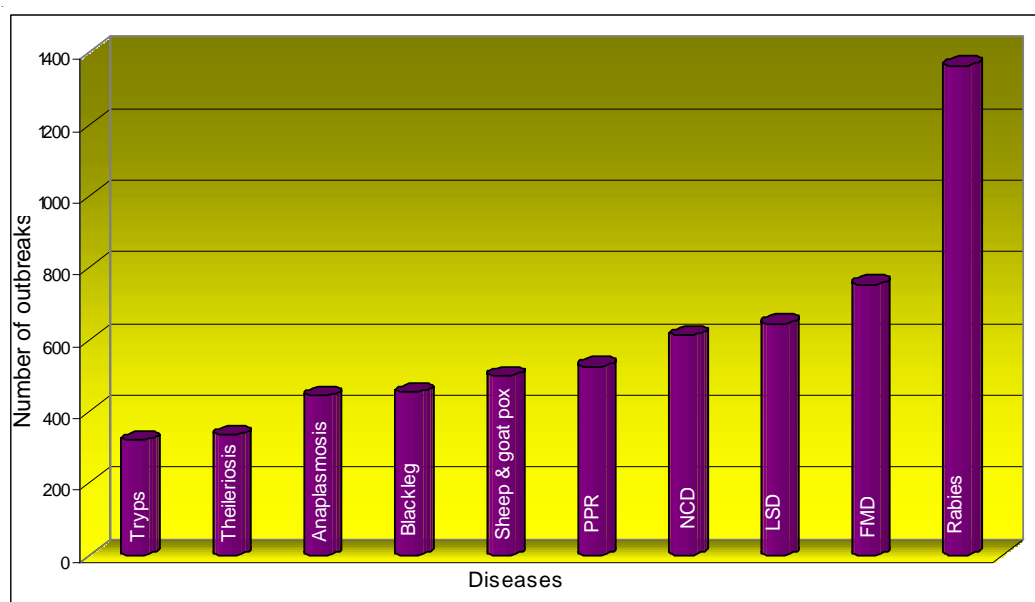
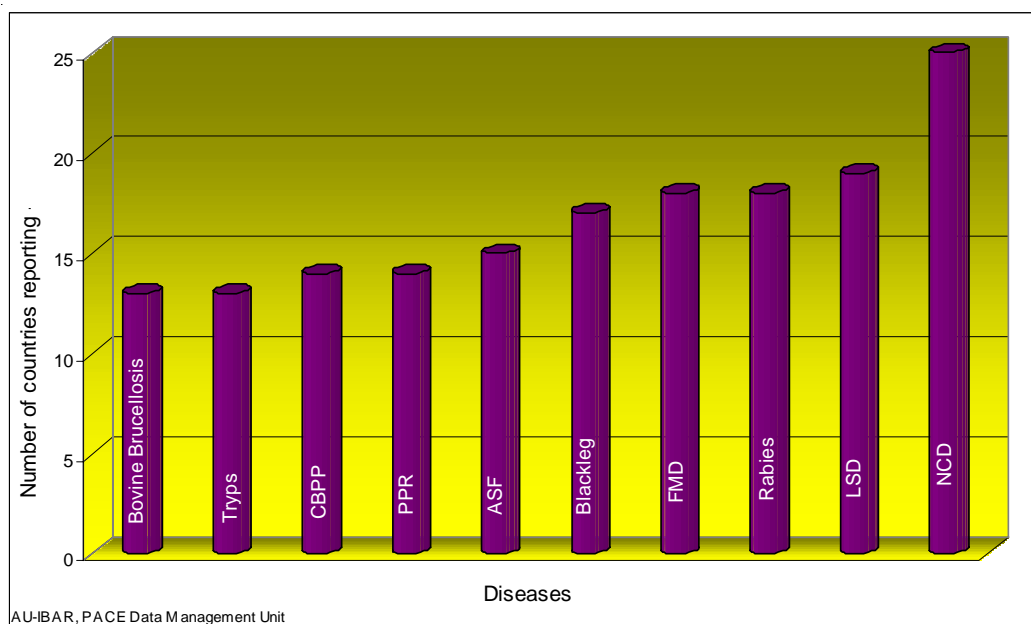


Chart 6. Ten most commonly reported diseases, by number of countries reporting, in Africa (2003)



The outbreaks recorded in 2003 in Africa have affected 10 domestic animals (farm and companion) species, 22 wildlife species and humans. In general terms, the species most affected was poultry with 398,496 cases (53% of all cases) and 193,455 deaths (80% of all deaths), followed by bovine with 158,744 (21%) case and 11,118 (5%) deaths (Charts 7 and 8). However, cattle were involved in more outbreaks (45% of all outbreaks) than domestic fowl (12%) (Chart 8). Although the tradition of reporting the number of wildlife cases and deaths through the routine monthly disease report is not well established, three countries (South Africa, Botswana and Uganda) recorded and reported a total of 58,479 cases and 398 deaths of wildlife during 2003. Interestingly, the number of wildlife cases reported during the period under consideration is higher than the number of cases of some domestic species (i.e. pigs, goats, equines and camels).

Chart 7. Proportion of animal species and humans affected by animal diseases in Africa (2003)

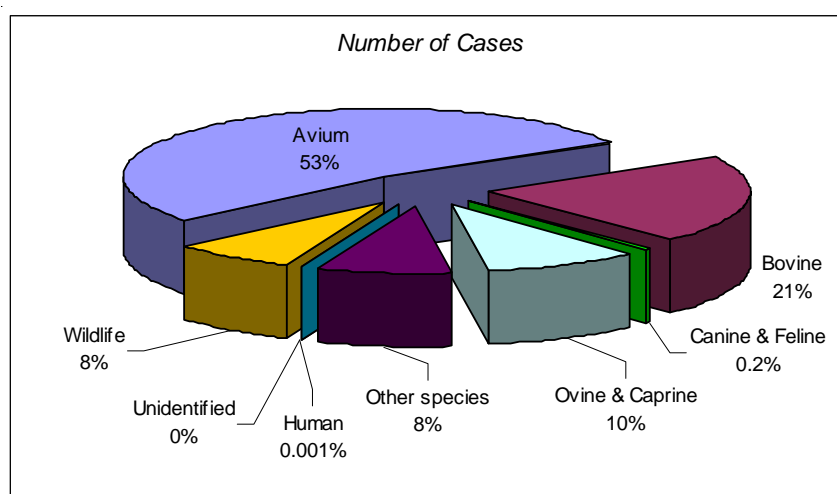
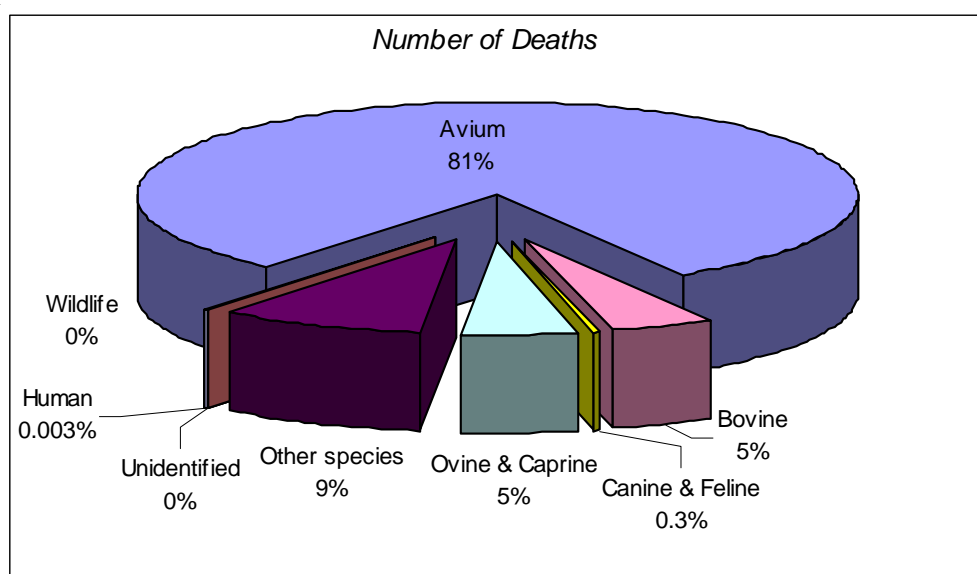


Chart 8, Proportion of animal species and humans killed by animal diseases in Africa (2003)



### 3.1 Situation of OIE List A diseases

Of the 16 OIE list A diseases\*, 13 were reported from African countries during 2003. This figure includes suspicion of rinderpest in Kenya in September 2003. A total of 3,858 outbreaks of diseases in OIE List A, accounting for 43% of all outbreaks, were reported during the year. List A diseases combined had more cases, 54% of all cases recorded and 76% of the total deaths. As stated above, Newcastle disease recorded the highest number of outbreaks, cases and deaths and it was a disease reported more frequently (25 of the 38 countries reporting it). Considering the number of outbreaks and the number of countries reporting, FMD and LSD were ranked second and third respectively followed by PPR and ASF (Charts 5 and 6).

\* The OIE List A diseases means the List of transmissible diseases which have the potential for very serious and rapid spread, irrespective of national borders, which are of serious socio-economic or public health consequence and which are of major importance in the international trade of animals and animal products.

Chart 9. Number of African countries reporting OIE List A disease in 2003, by type of disease

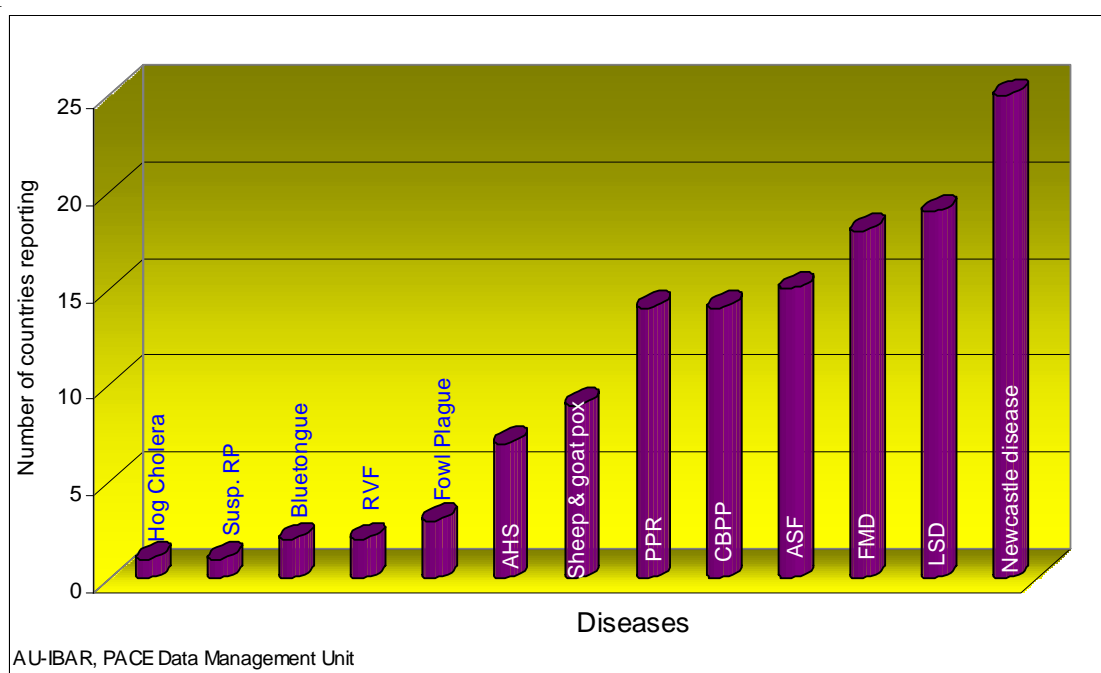
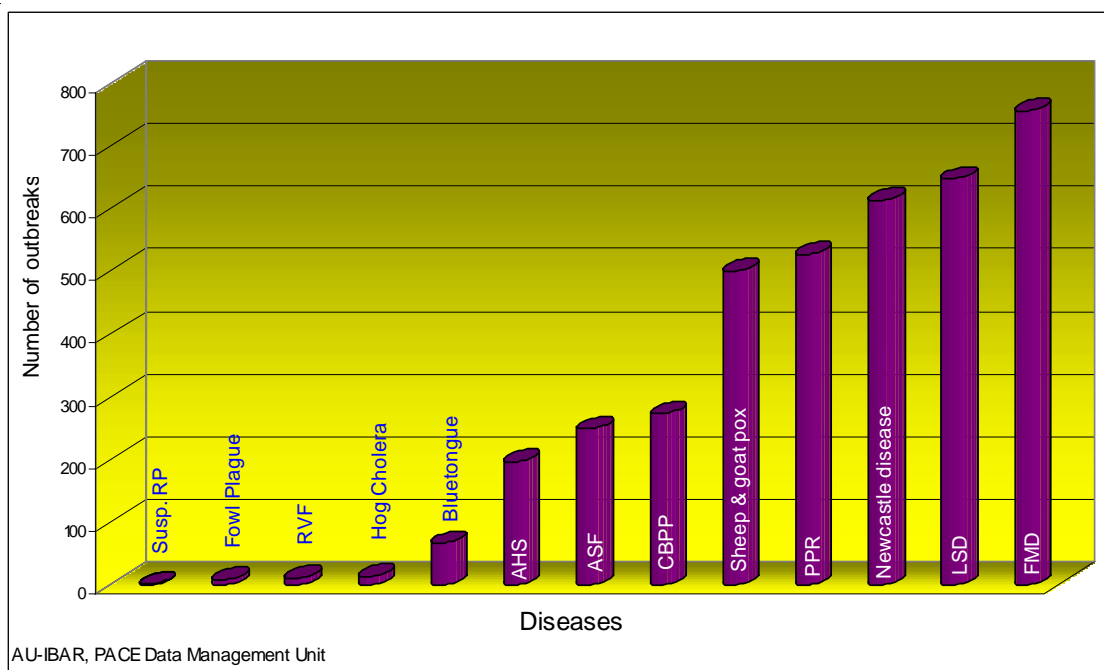


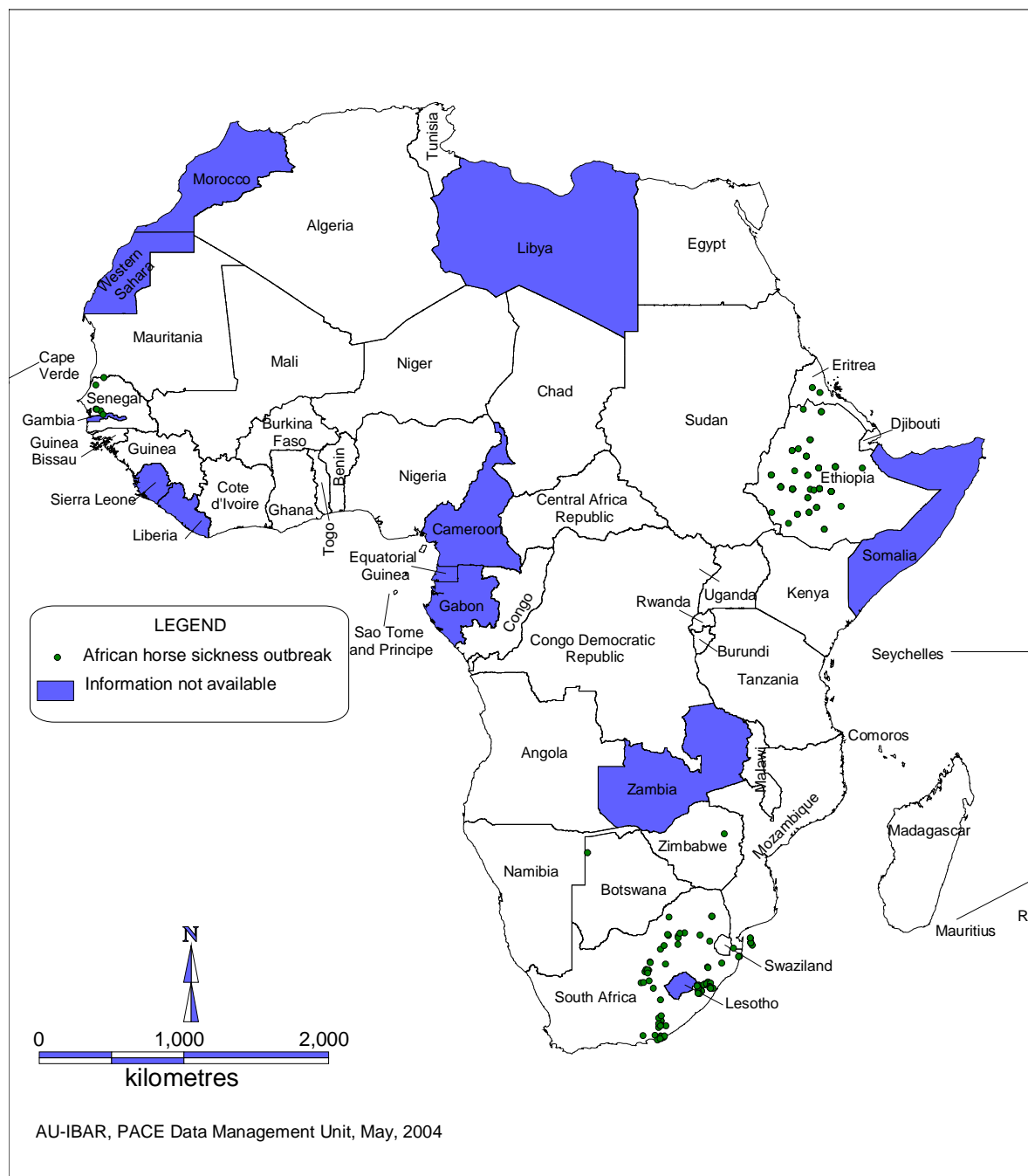
Chart 10. Number of OIE List A disease outbreaks registered in African countries (2003)



### African horse sickness (AHS)

A total of 196 outbreaks of AHS involving 2,101 cases and 1,431 deaths were recorded during 2003 in seven African countries (Map 3). The disease was reported by the same countries, which reported AHS in 2002. Ethiopia and South Africa, similar to the previous year, continued to report the highest number of outbreaks of AHS. During 2003, the two countries have recorded 90 and 89 outbreaks respectively.

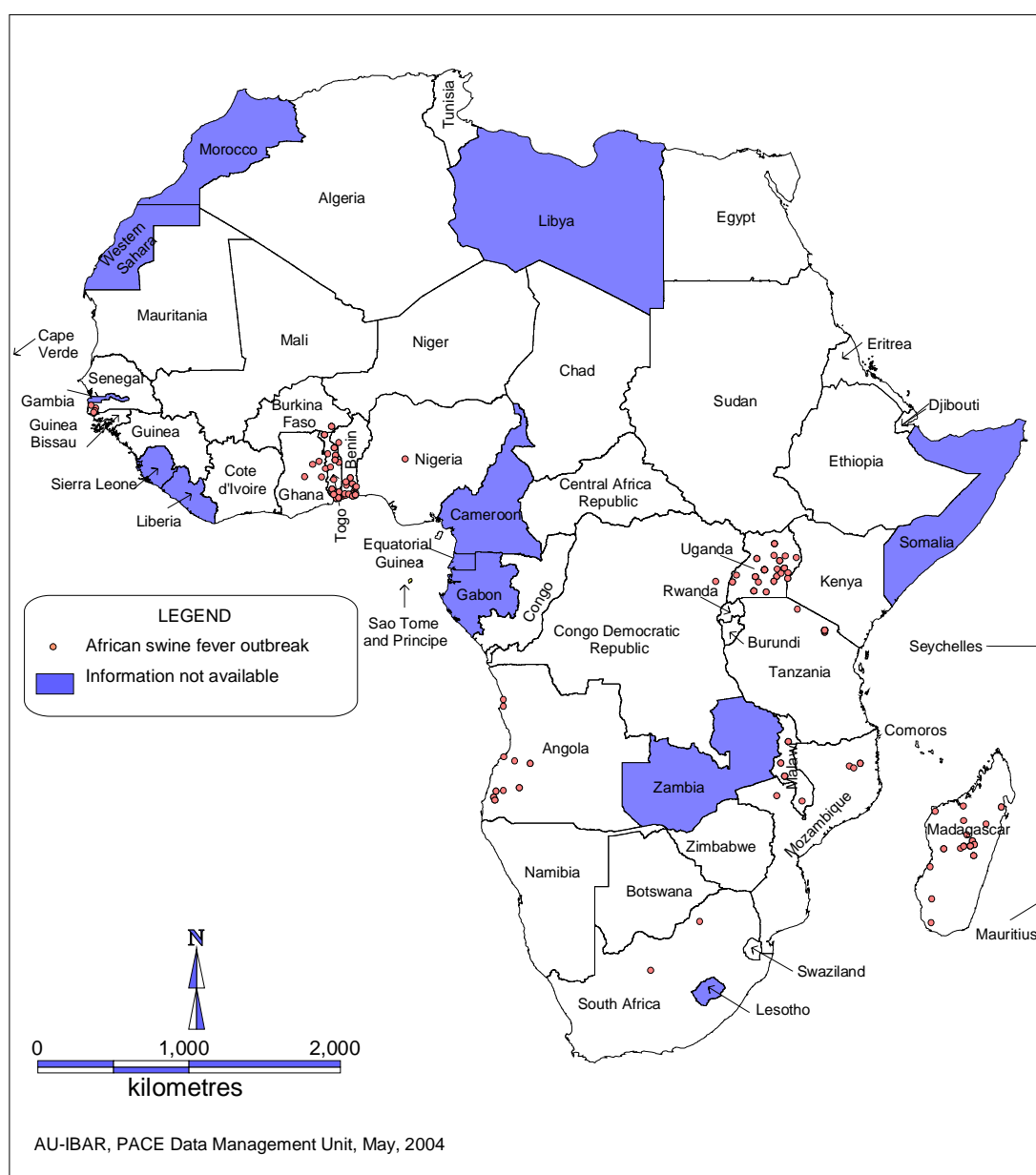
*Map 3. Spatial distribution of African horse sickness in Africa in 2003*



### African swine fever (ASF)

African swine fever affected several African countries during 2003. A total of 15 countries reported 250 outbreaks affecting 28,553 animals, out of which 19,639 died. Togo and Uganda recorded the highest number of outbreaks, 61 and 45 respectively. Six West African\* countries, particularly those coastal ones, were more affected recording about 40% of all outbreaks. Five countries from the Southern African region registered 36% of all outbreaks of ASF during 2003. The disease affected also Eastern and Central African countries (Map 4). The spatial distribution pattern was similar to that of the previous year 2002.

*Map 4. Spatial distribution of African swine fever in Africa in 2003*

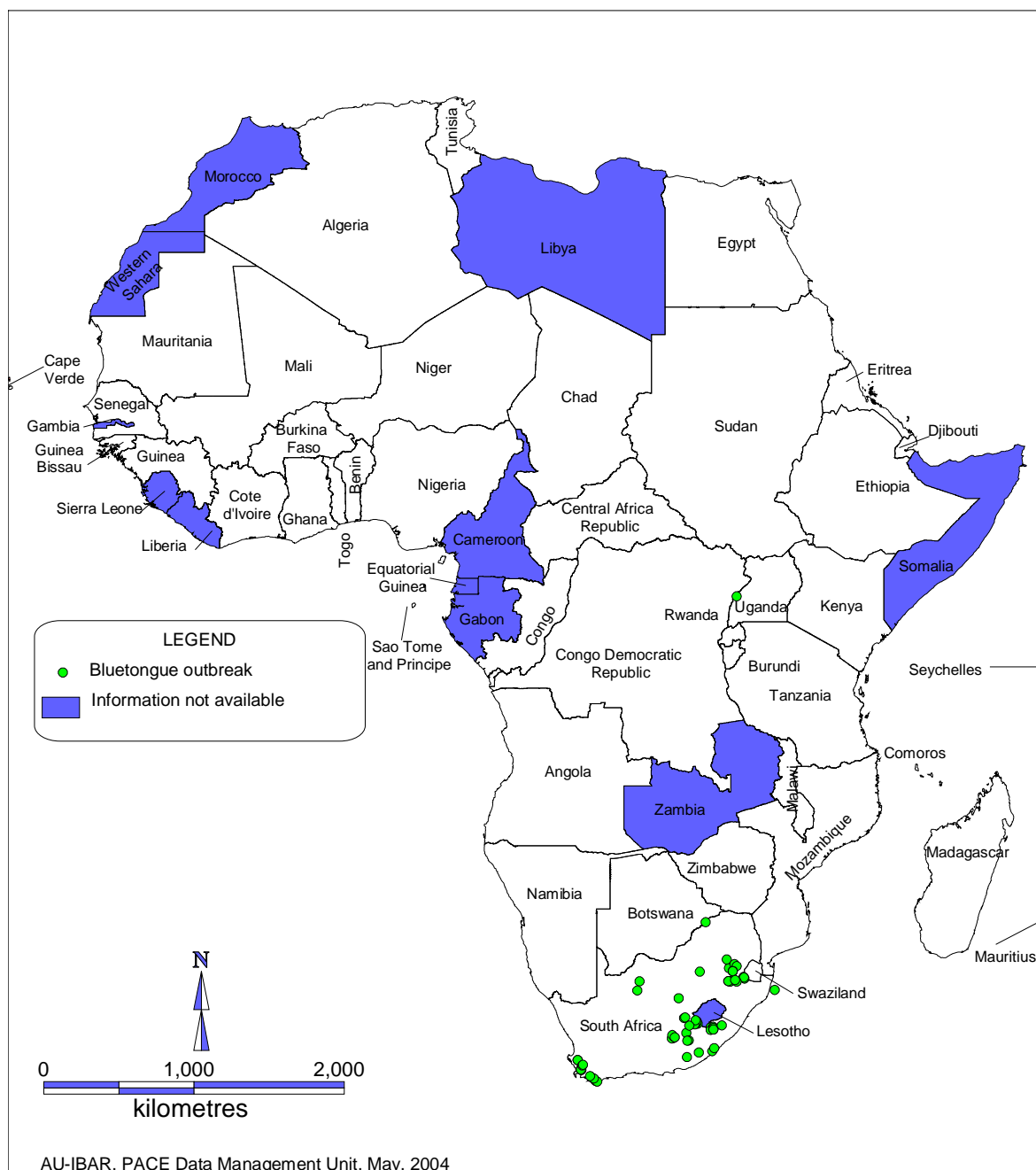


\* Classification of African countries into different regions (West, Southern, Eastern, etc.) is done here simply based on geographical location.

## Bluetongue

Only two countries, South Africa and Uganda reported bluetongue during 2003 recording a total of 66 outbreaks between them (Map 5). The majority of the 391 cases and 103 deaths caused by bluetongue were reported from South Africa, where 65 of the total 66 outbreaks in Africa were registered.

*Map 5. Spatial distribution of bluetongue in Africa in 2003*

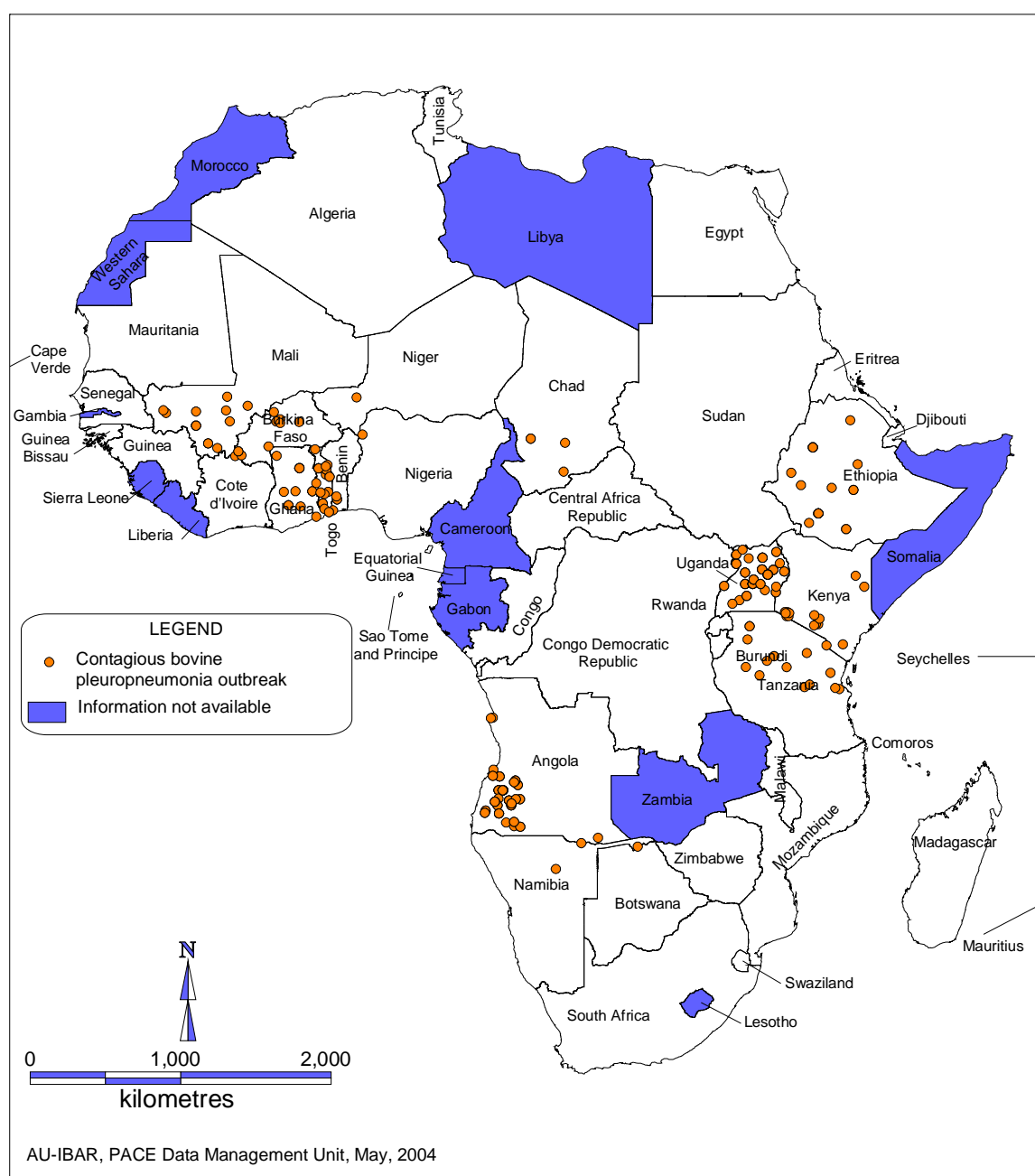




### Contagious bovine pleuropneumonia (CBPP)

During 2003, 14 countries reported a total of 272 outbreaks of CBPP with 7,510 cases and 1,289 deaths. The disease affected all regions of the continent except Northern African countries. Although more countries in Western African (six) reported the disease, higher numbers of outbreaks, cases and deaths were recorded in Eastern Africa (four countries). The two countries from Southern Africa (Angola and Namibia) reporting CBPP in 2003 have contributed 21% to all outbreaks of the disease. (Map 6) The spatial distribution pattern of CBPP was similar to that of the previous year 2002 and Uganda and Angola continued to register the highest number of outbreak once more this year with 66 and 53 outbreaks respectively.

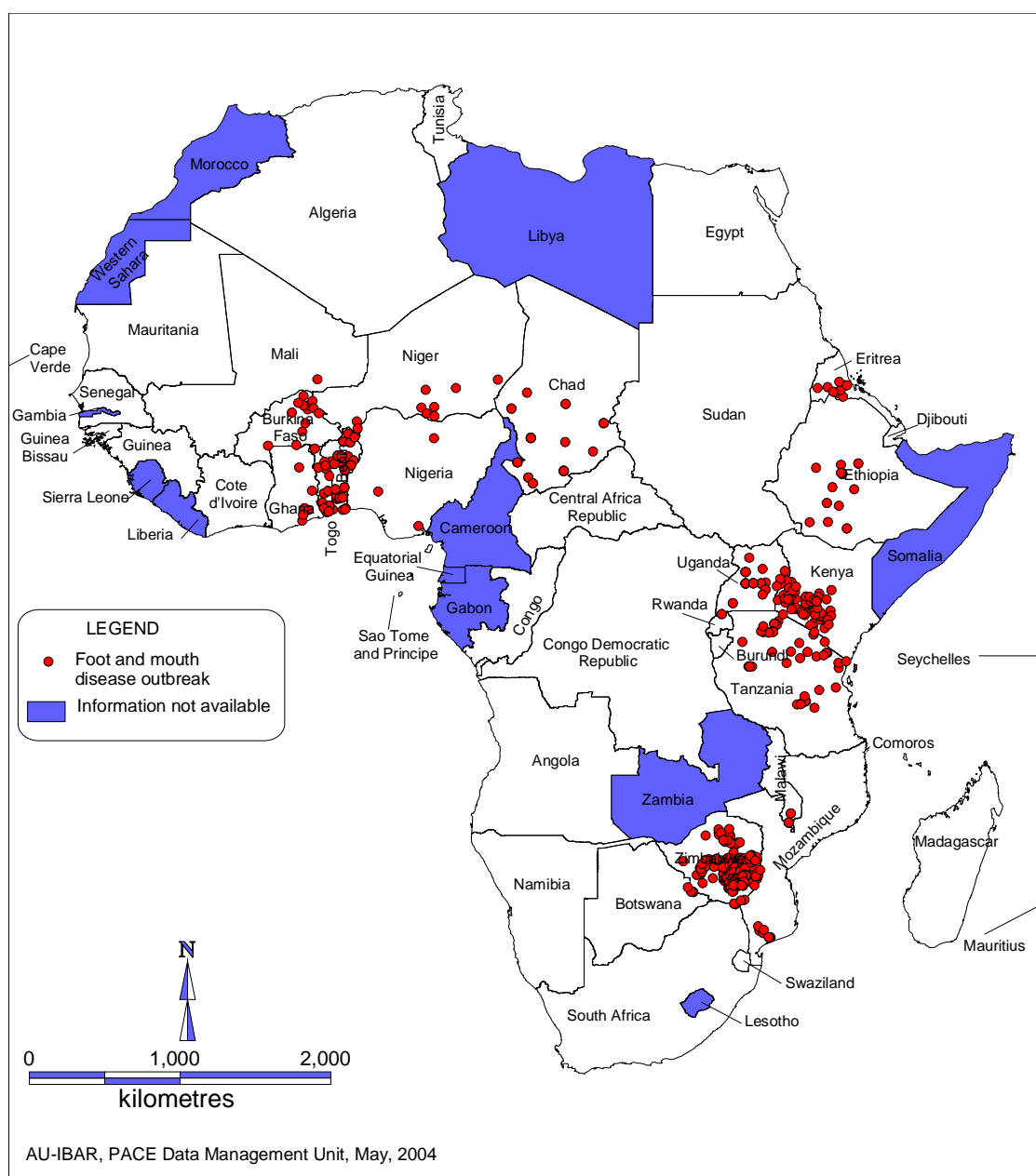
*Map 6. Spatial distribution of Contagious bovine pleuropneumonia in Africa in 2003*



### Foot and mouth disease (FMD)

Among the OIE List A diseases, FMD had the largest number of outbreaks recorded in 2003 covering eighteen African countries. The number of African countries reporting FMD remained the same as the previous year. During 2003, a total of 754 outbreaks of FMD, involving 102,292 cases and 2,974 deaths were recorded. Outbreaks of the disease affected all regions of Africa, except for the Northern regions. Seven countries from Western, five from each of the Southern and Eastern and one from Central African Region reported the disease during 2003. Refer to Map 7 for the spatial distribution of FMD outbreaks during 2003 in Africa. Almost a quarter (27%) of these outbreaks were recorded in Zimbabwe. Benin and Chad have also registered 95 outbreaks each during the same period.

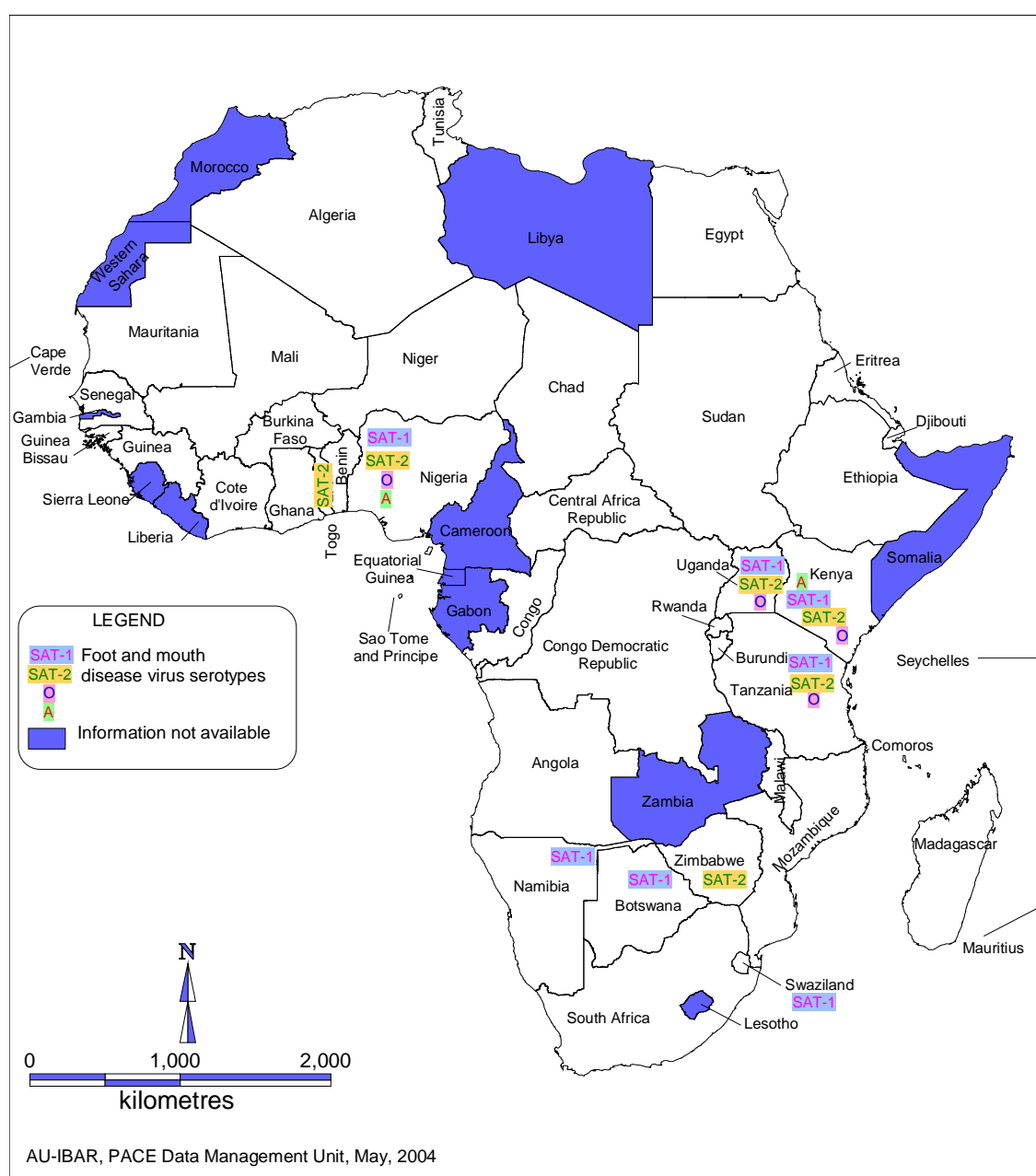
*Map 7. Spatial distribution of Foot and mouth outbreaks in Africa in 2003*



The reports indicated that cattle was almost the only species affected by FMD in 2003 (99.9% of all cases). A single case in kudu (*Tragelephus strepsiceros*) was reported from Botswana. Other species affected by FMD included a goat and 38 sheep.

Nine out of 18 countries reporting FMD outbreaks reported Foot and mouth disease virus serotypes. Four of the seven serotypes of FMD virus, SAT 1, SAT 2, O and A were identified. The SAT 1 serotype of FMD virus was registered in seven of the nine countries, followed by SAT 2 in six, O in four and A in two countries. See Map 8 for details.

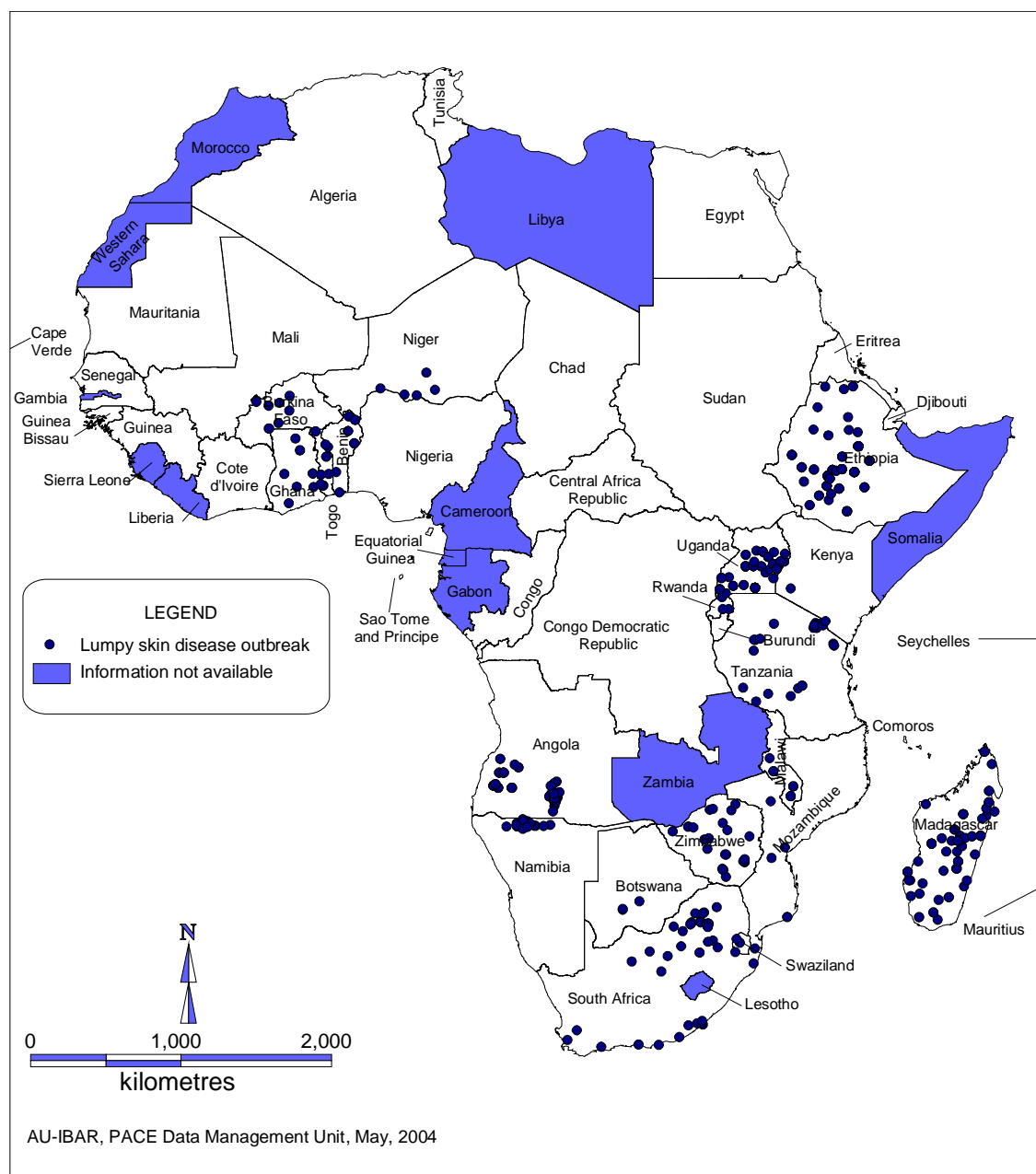
Map 8. Serotype of Foot and mouth disease virus identified in Africa in 2003



### Lumpy skin disease (LSD)

After Newcastle disease, LSD ranked as the second list A disease affecting more countries across the African continent during 2003, with a total of 646 outbreaks. A total of 19 countries, nine from Southern, five from each of the Eastern and Western African region has recorded outbreaks (Map 9). These outbreaks involved 20,726 cases and caused 1,089 deaths. The reported figures for population at risk, cases and deaths during 2003 suggest that LSD outbreaks had low morbidity and mortality rates. Ethiopia, Madagascar and Uganda reported the highest number of 181, 93 and 80 LSD outbreaks respectively.

*Map 9. Spatial distribution of Lumpy skin disease outbreaks in Africa in 2003*



## Newcastle disease

Newcastle disease (NCD) was the OIE list A disease with the highest number of cases and deaths recorded during 2003 in Africa. More than a quarter (27%) of cases and more than half (60%) of deaths caused by all disease outbreaks during 2003 in Africa were attributed to Newcastle disease. The disease affected Western, Southern and Eastern African regions (Map 10). The nine Western Africa countries affected with NCD reported 389 outbreaks (64%) while a similar number of Southern African countries recorded the highest proportion of cases (51%) and deaths (69%). Refer to Charts 11 for details. Ghana and Togo have been the worst hit countries with NCD during 2003, with 139 (23% of all NCD outbreaks) and 130 (21%) outbreaks respectively.

*Map 10. Spatial distribution of Newcastle disease outbreaks in Africa in 2003*

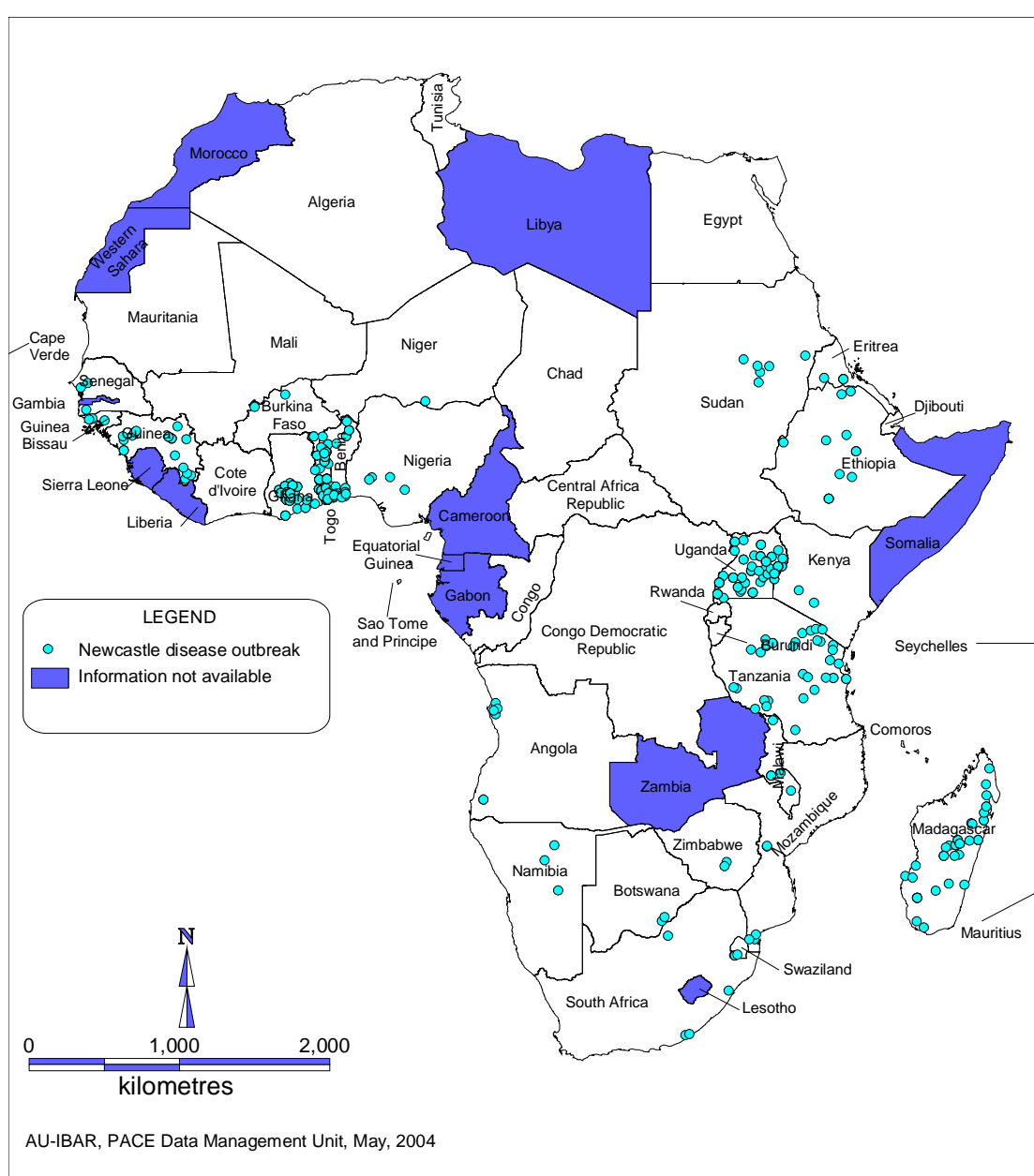
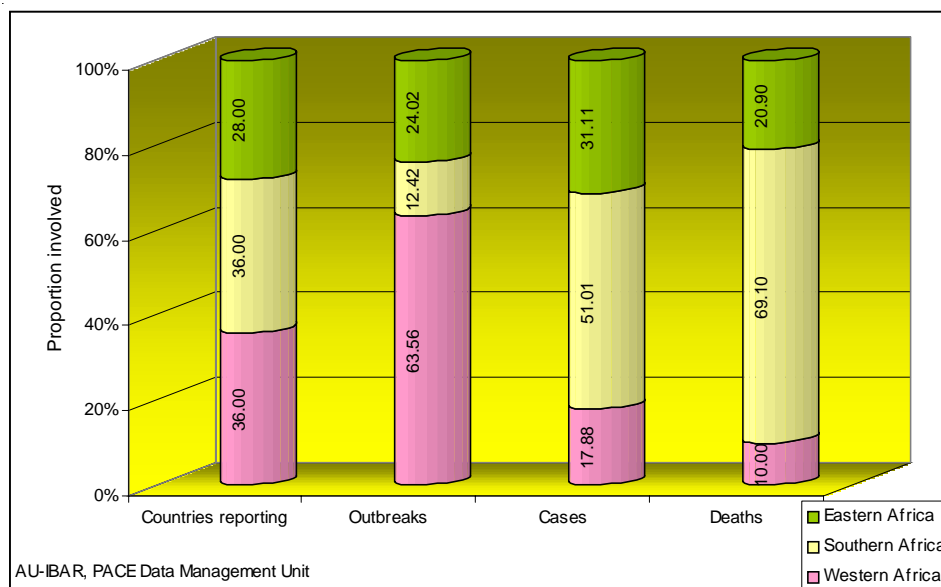


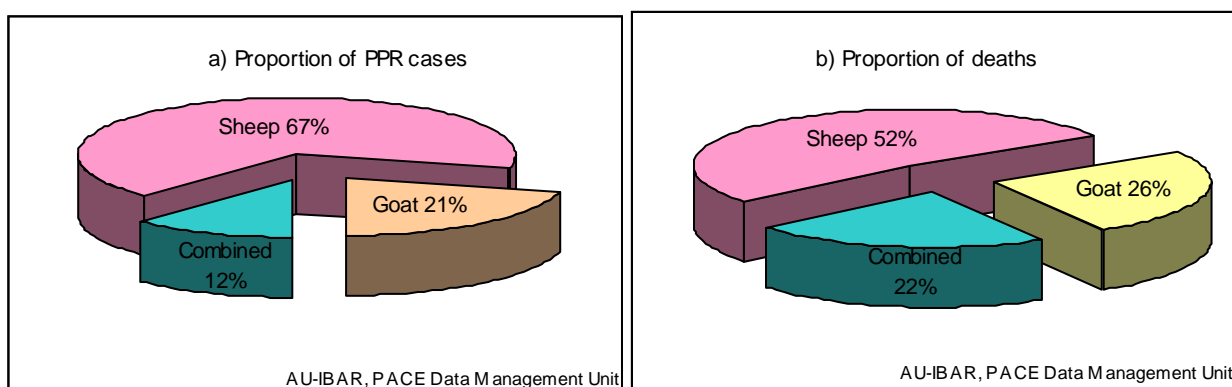
Chart 11. Proportion of countries reporting Newcastle disease during 2003 and related parameters by regions of Africa



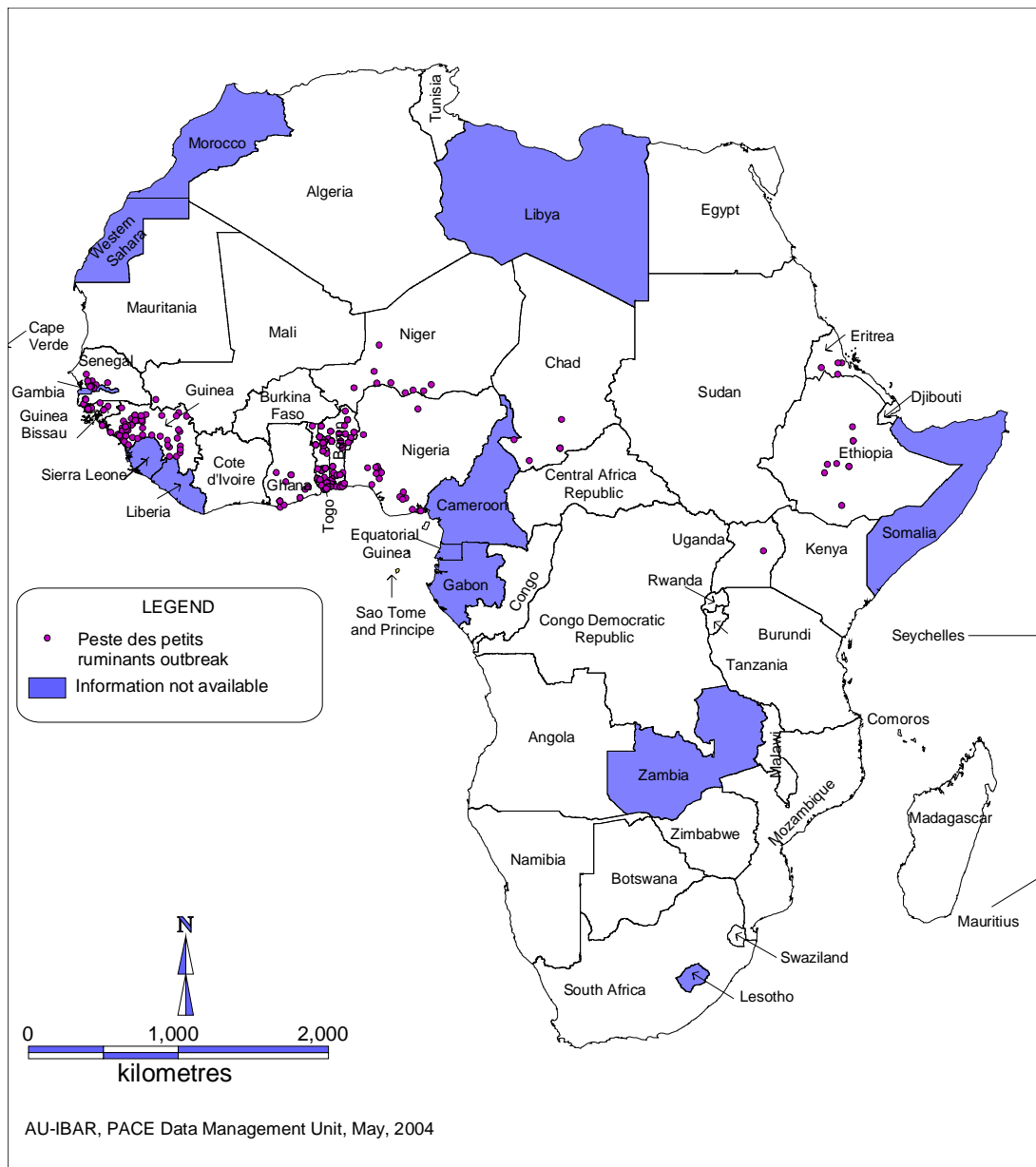
### Peste des petits ruminants (PPR)

Fourteen countries from West, Central and Eastern Africa have recorded 526 outbreaks of PPR during 2003 (Map 10). The outbreaks affected 31,820 sheep and goats, and caused 9,248 deaths. Countries in West Africa were more affected (nine out of 14 reporting countries have recorded 93% of all outbreaks, 97% of all cases and 96% of all deaths due to PPR). Togo, Guinea and Benin had 155, 123 and 117 PPR outbreaks respectively. Sheep were most affected both by the number of cases and deaths (Chart 12). Small proportion of reports did not specify the number of case and deaths per species and this is presented below as *combined*. The highest number of PPR outbreak was recorded in the month of October 2003 (Chart 20).

Chart 12. Number of cases and deaths as a result of PPR outbreaks in 2003 by species



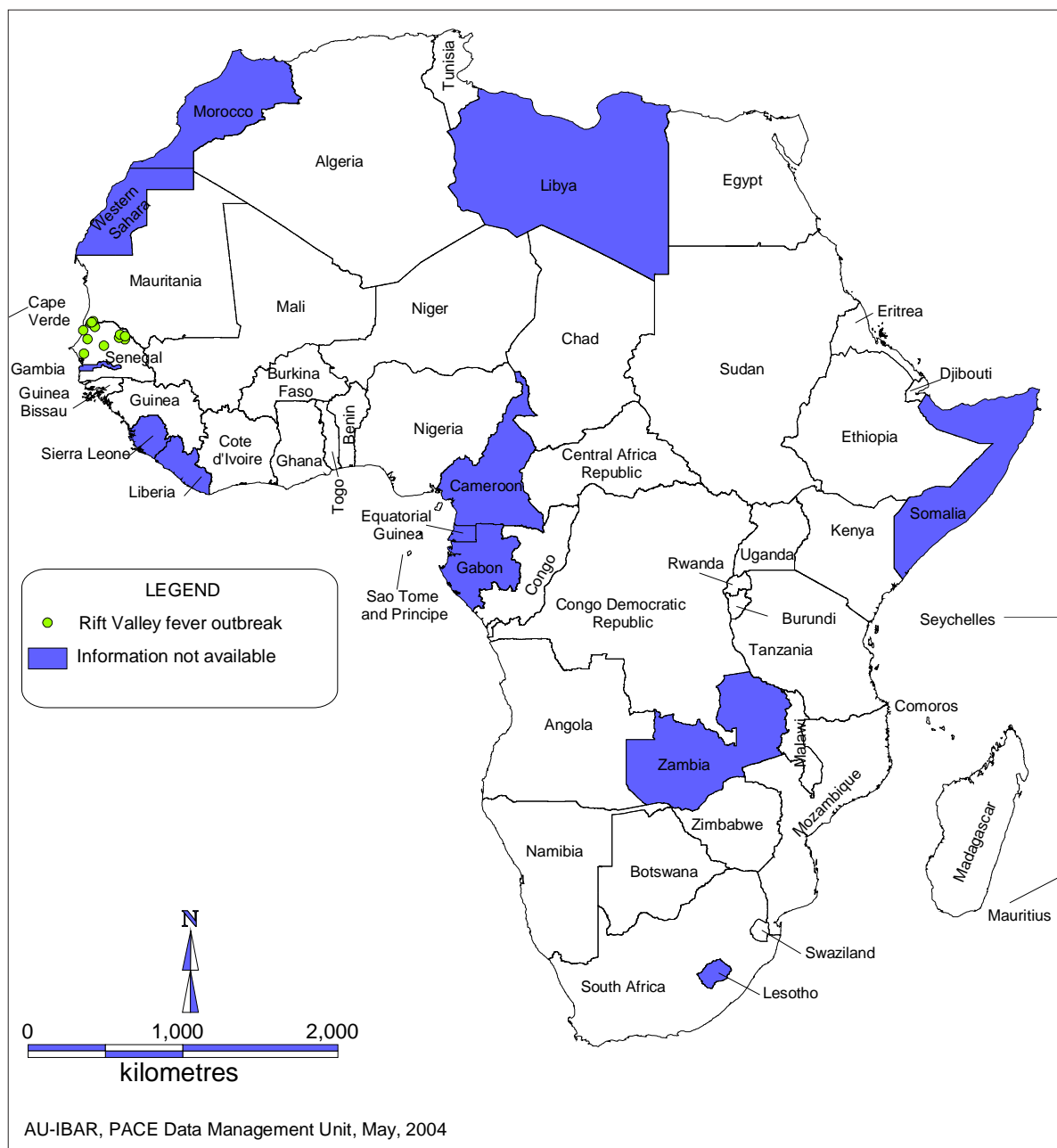
Map 11. Spatial distribution of Peste des petits ruminants outbreaks in Africa in 2003



### Rift Valley fever (RVF)

Only two countries in Africa, Senegal and Mauritania, reported RVF in 2003. A total of 10 outbreaks (during the months of October and November) and 44 cases were recorded; there were no deaths reported. Specification locations of RVF outbreaks during 2003 are depicted on Map 12.

*Map 12. Spatial distribution of Rift Valley fever outbreaks in Africa in 2003*





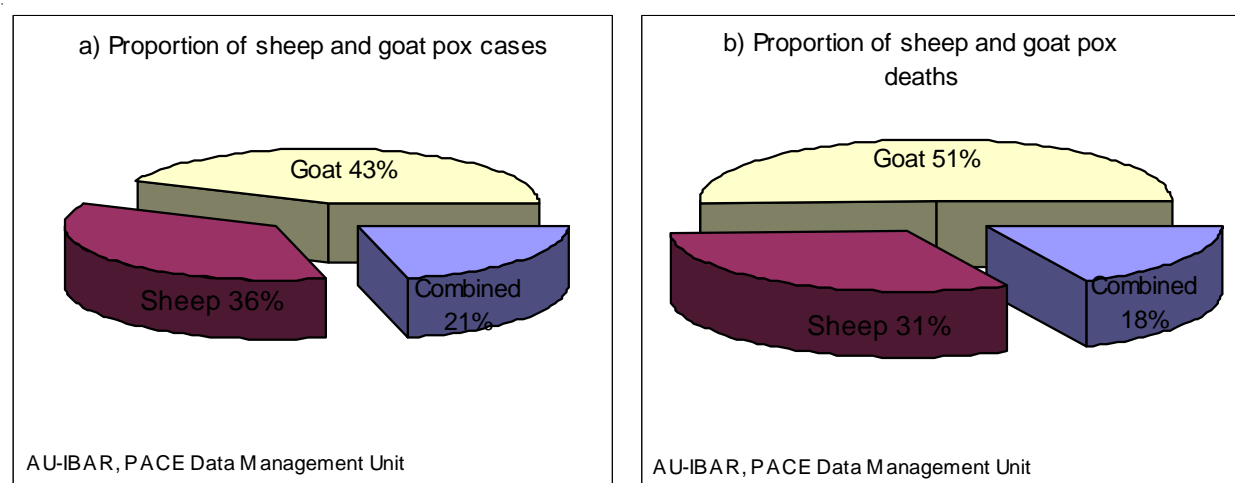
## Rinderpest

A single suspected outbreak of mild rinderpest was reported from Garissa district of Kenya in September 2003. The mentioned location lies within the Somali Eco-system, suspected to harbour the last rinderpest infection on the African continent. The suspected disease affected 200 cases with different signs resembling mild rinderpest; deaths were not reported. Laboratory result from international and regional laboratories were contradictory making the final diagnosis difficult. There was another field event where rinderpest was suspected on serological evidence in two warthogs from Mauritania, but further investigation ruled out the circulation of rinderpest virus in the area.

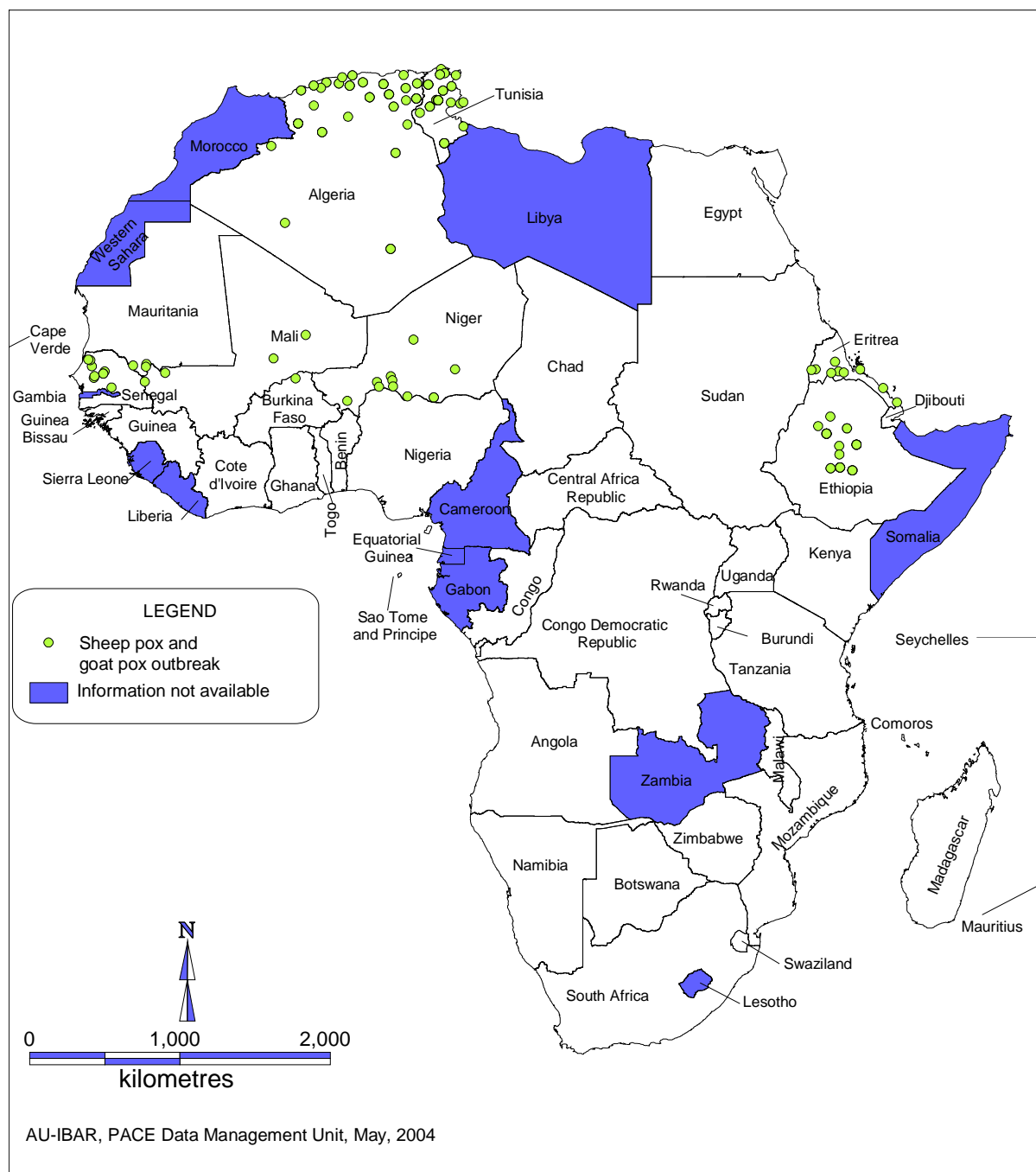
## Sheep pox and goat pox

A total of 500 outbreaks of sheep pox and goat pox were reported in 2003 from nine countries north of the equator in Africa (Map 12). The country worst hit was Algeria, where almost half of all the outbreaks in Africa during 2003 were recorded, followed by Niger and Tunisia with 75 and 65 outbreaks respectively. The sheep pox and goat pox outbreaks involved a total of 4,184 cases and 915 deaths. Figures from reports received during 2003 suggest that goats are most affected, both in terms of cases and deaths, during these outbreaks. Refer to chart 13 a and b for details.

*Chart 13. Species involvement in sheep and goat pox outbreaks in Africa in 2003*



Map 13. Spatial distribution of sheep pox and goat pox outbreaks in Africa in 2003



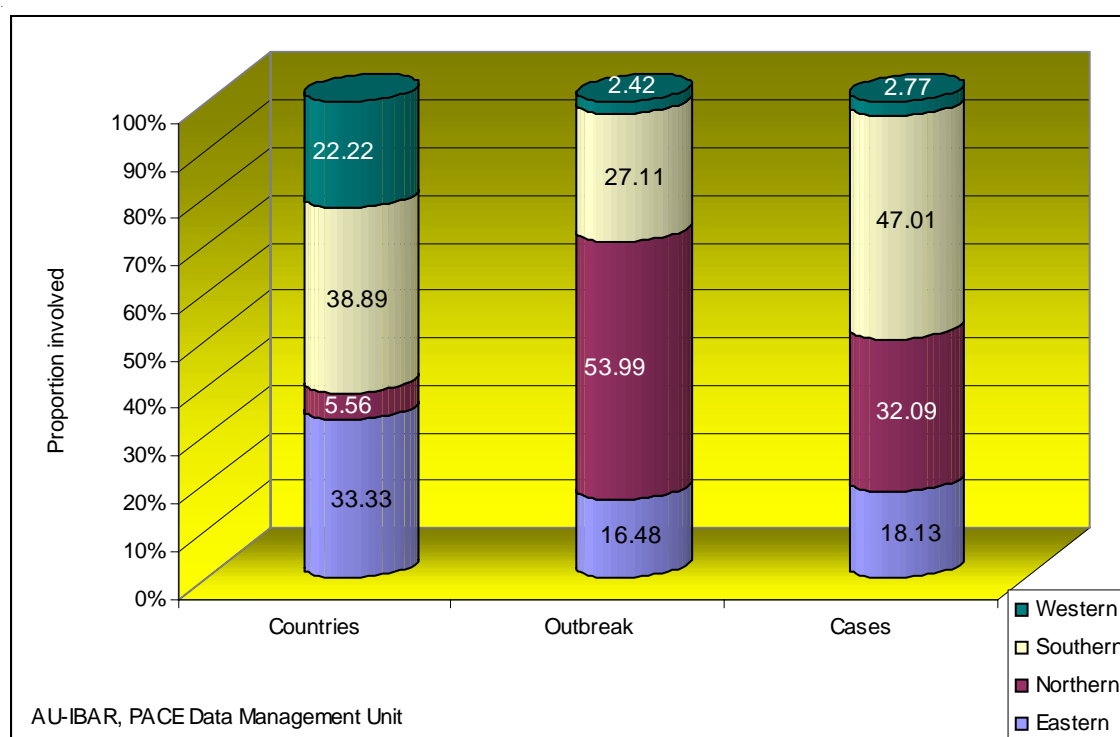
### 3.2 Situation of OIE List B diseases

This section deals with some of the major OIE List B\* diseases with large number of outbreaks and/or affecting several countries in Africa during 2003. The complete summary of all disease outbreaks including those in list C is available on request for those interested. Over 4,196 outbreaks of OIE List B diseases affecting 209,472 animals and causing 31,664 deaths were reported from different African countries during 2003. Rabies was the disease with the highest number of outbreaks and affecting large number of countries during the mentioned period. Anaplasmosis, trypanosomiasis and theileriosis were other OIE List B diseases with high number of outbreaks recorded during 2003. The later two diseases were recorded in a high number of countries. Hence, details are provided below on these two diseases and rabies.

#### Rabies

A total of 18 countries in Africa have reported 1,365 outbreaks of rabies during 2003. No other disease was reported as frequently, and rabies alone accounted for 16% of all disease outbreaks reported in Africa in 2003. Except for Central Africa, all regions and particularly Northern and Southern African countries were affected and recorded higher number of outbreaks and cases of rabies. Please refer to Chart 14 and Map 14. Algeria and Zimbabwe reported 737 and 223 outbreaks respectively.

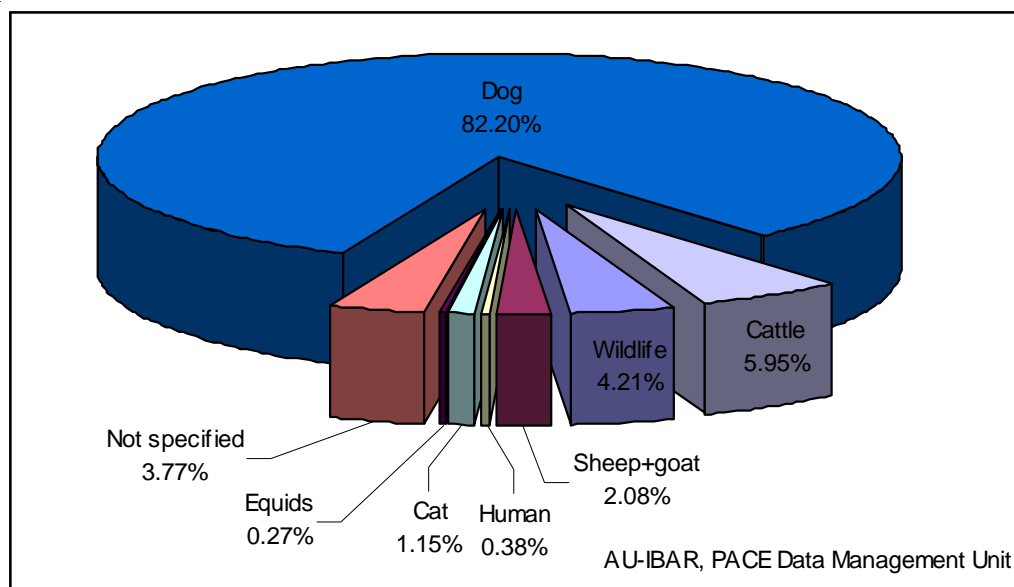
*Chart 14. Proportion of countries affected with rabies and related parameters during 2003 by regions of Africa*



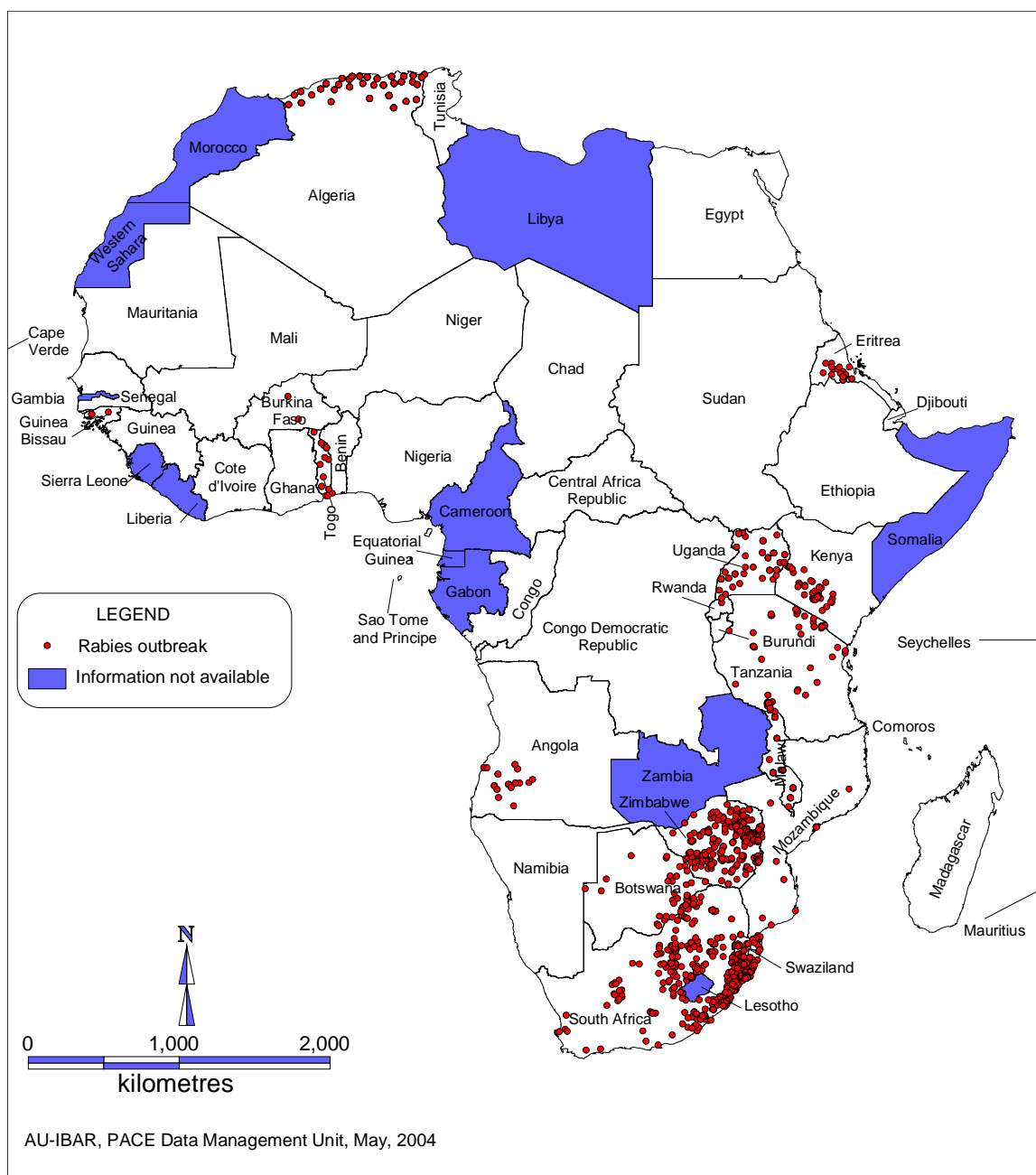
\* The OIE List B diseases means the List of transmissible diseases which are considered to be of socio-economic and/or public health importance within countries and which are significant in the international trade of animals and animal products.

The dog was the most commonly affected species, constituting 82% of all cases followed by cattle and wildlife species. Among wildlife, the species most affected was Yellow Mongoose (*Cynictis penicillata*) with 46 cases, followed by Bat-eared fox (*Otocyon megalotis*) and Black-backed jackal (*Canis mesomelas*). A few human cases were also reported, particularly from Eritrea. Details are presented on Chart 15.

Chart 15. Proportion of species affected with rabies during 2003 in Africa



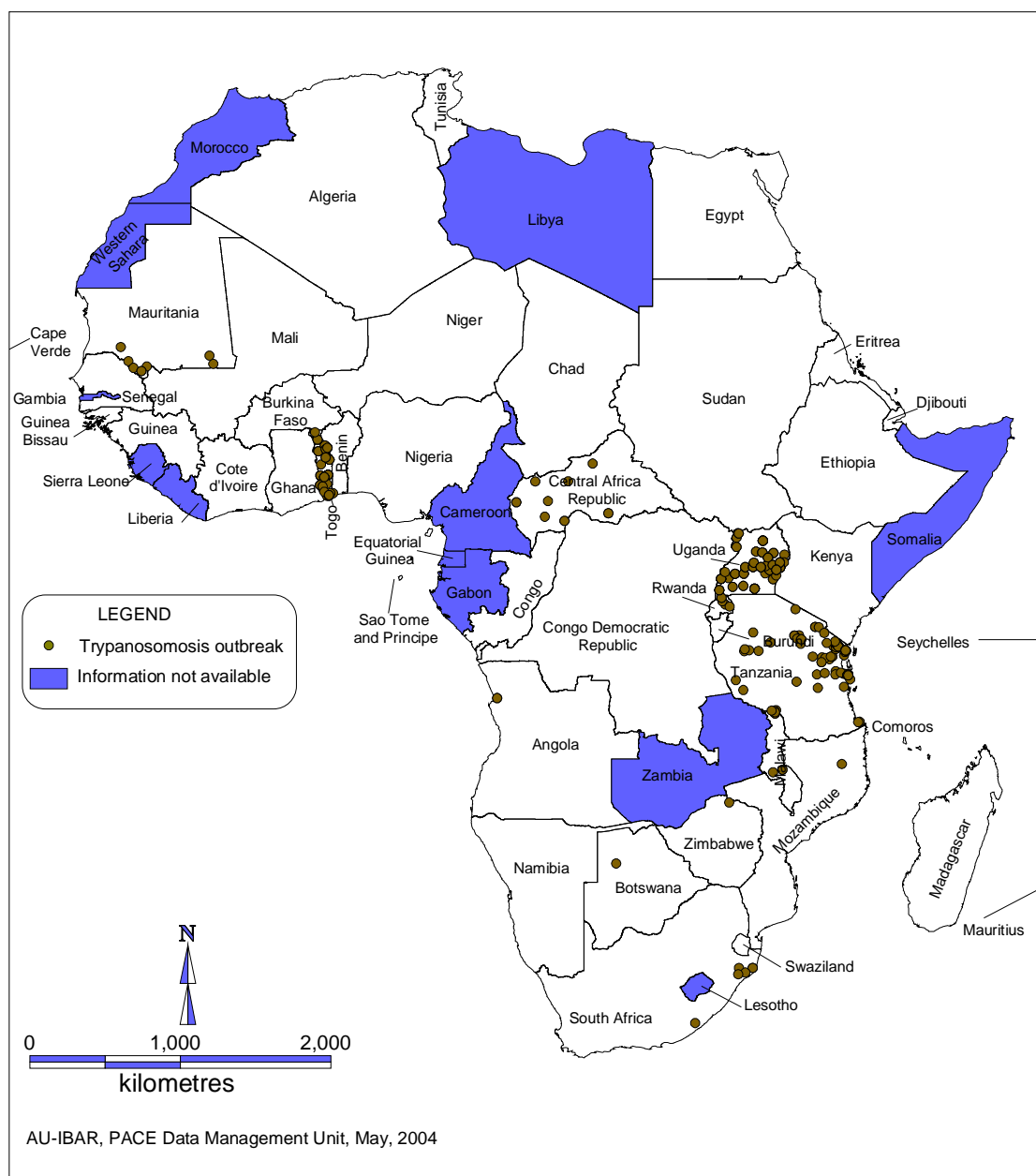
Map 14. Spatial distribution of rabies outbreaks in Africa in 2003



## Trypanosomiasis

Thirteen countries in Africa reported 320 outbreaks of trypanosomiasis during 2003 (Map 15). The number of countries reporting the disease seems to be far less than the known distribution. During the outbreaks, a total of 32,607 cases and 564 deaths were registered. Uganda reported the highest number of trypanosomiasis outbreaks (108) during 2003 followed by Tanzania (85) and Mauritania (34). Since most of the incoming reports did not specify details on the species involved in each outbreak, it is difficult to get a clear picture of species involvement. Reports where details have been given indicate that cattle is the species most affected followed by camels and pigs.

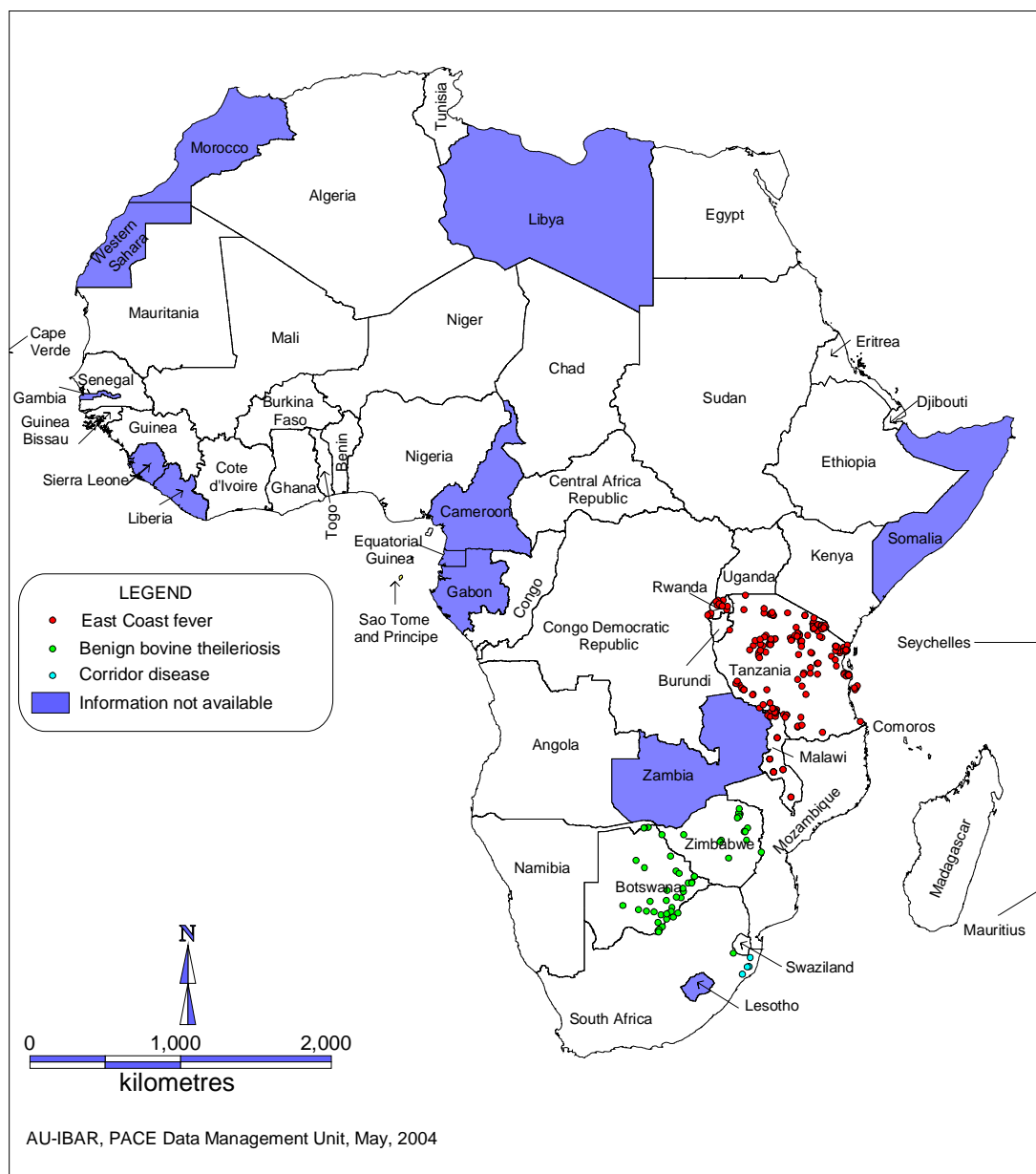
*Map 15. Spatial distribution of Trypanosomiasis outbreaks in Africa in 2003*



## Theileriosis

A total of 335 outbreaks of theileriosis were reported from 10 African countries during 2003, accounting for 1,940 cases and 740 deaths. The distribution of the three diseases, East coast fever, Corridor disease and benign bovine theileriosis, presented under this general header is shown on Map 16.

*Map 16. Spatial distribution of Theileriosis outbreaks in Africa in 2003*



## 4. ISSUES AFFECTING DISEASE REPORTING

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Since there is a rapidly growing need for informed decision-making and swift action, the accuracy, completeness and timeliness of data collected from field is mandatory. Capacity to collect data on health/disease at the lowest administrative level at any time, the speed of transmission of these data to central units for analysis and taking action is an indicator for the strength of the veterinary services. Despite the fact that international disease reporting, both to IBAR and OIE, is growing for the last four years or so, there are still challenges to be addressed as a matter of urgency. These include the standardisation of data for international reporting and improvement of the quality of reports (mainly accuracy, completeness and timely submission). This section discusses problems faced and proposes some solutions.

### 4.1 Standardisation of reports

As has been mentioned in section 2.1 of this Yearbook, monthly disease reports collected from African countries mainly rely on the OIE SR-3 form, used for more than 14 years now. Other countries make use of their own format or bulletin. Extracting and aggregating data from different forms is not easy and frequently leads to errors. Hence, there is a need to standardise forms used for international disease reporting. Countries can have their own forms and procedures to gather and transmit data internally. For international reporting, however, they need to follow the collectively agreed forms for sake of standardisation in order to benefit from electronic information management and sharing.

To solve this problem, IBAR has developed a multi-user and multi-lingual database called PACE Integrated Database (PID), which can be installed at any level in countries with capacity of aggregating data from lower levels and send to higher level for automated integration. Format compatible with this database and completing guidelines were produced (annex II) and distributed to all African countries for use but few countries are completing and sending this new form back. It is also important to avoid duplication of efforts and reduce the burden of reporting to different international organisations, for which IBAR is initiating efforts on standardising data collection and reporting procedure particularly with OIE and SADC.

### 4.2 Reporting rate within countries (completeness)

Reports received by countries from their districts constitute the basis for international disease reporting. Unless these units report, and report quality data in time, the report filed to international organisations would be incomplete as it comes from few reporting districts. Several factors such as chain of command (decentralisation), staff training on disease reporting, motivation, monitoring and feedback influence the smooth flow of reports from lower level to the national veterinary authorities and thereafter to international organisations. It would be interesting to know the proportion of districts regularly filing reports (reporting rate within country) and the progress made in improving this over a period of time. One way of doing this is to include a column on this aspect in international disease reporting form and regularly monitor the proportion of districts in that country contributing to that particular international disease report.

### 4.3 Frequency of reporting (timeliness)

Unless new changes are introduced in the near future, the established reporting procedure to international organisations stipulates that emergency reports (SR-1) are sent as soon Emergency diseases break out, followed by weekly follow-up report (SR-2). The third and most common type of report is the monthly disease reports (SR-3), filed monthly as the name suggests. The later is to be submitted within practical time following the reporting month. In



practical terms, however, some countries use to bundle six or more reports together and send much later than expected. Some even produce a single report for the entire year making it difficult for data entry and analysis. A month or two after the reporting month should be enough for international disease report submission. This will enable data entry personnel work at a regular pace and detect any error in time instead of pressure of entering large backlogged data in few weeks towards the end of the year.

#### 4.4 Accuracy of reports

It has been mentioned that the current reporting form used is old and does not cater for current information needs. The quality of reports is, therefore, compromised because of lacking certain key parameters or because some reporting officers do not follow completing guidelines while filling forms. Some of these factors are discussed below:

Lack of certain key data elements leads reporters to make their own interpretation and decision, affecting in this way the quality of reports. For example, the lack of *basis for diagnosis and reporting* (whether the outbreak was confirmed by laboratory, reported on only clinical grounds or rumour) leads some reporters to ignore all outbreaks not confirmed by laboratory resulting in underreporting while others report all rumours and livestock owner's claim as outbreak leading to over reporting.

Ignoring the instruction of completing forms – This is affecting the quality of reports very much particularly quantitative analysis. In several reports, either the number of new outbreaks is missing or confused with total outbreaks during the reporting month (including continuing from 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, which 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. Common errors include also combining figures of different species (number of susceptible animals, cases, deaths, destroyed, etc.) for multi-species diseases. Obviously this creates problem at a later stage when users wish to analyse species-specific parameters.

Missing or confusing location data – Disease mapping is an old tool veterinarians use to visualise the spatial patterns of infection. Geographical Information System (GIS) has modernised and simplified this tool, offering much more than static two-dimensional maps. The benefits of using GIS for disease mapping and other sophisticated analysis are based on the quality of spatial data. The way location data is collected and submitted in disease reports currently needs a lot of improvement and standardisation. Due to frequent changes operated in administrative set-ups, particularly those at lower level, using names of these units assist little. Moreover, few countries stick to uniform way of reporting regions and districts where disease outbreaks occur. Most provide the name of villages and district this month and next the name of districts and regions. Although growing number of countries are submitting location data in Latitude and Longitude, some provide this data as Degree Decimal while other send in Degree, Minute and Second, forcing data entry and analysis staff to make the necessary conversion and standardisation before mapping.

### 4.5 Proposed solution

AU-IBAR strongly believes that the form circulated to member states at the end of 2003 addresses most of the above-mentioned problems and would like to thank those countries, which have started implementing it for their cooperation. It is hoped that more and more countries will join in using this form in the near future. Although it is not AU-IBAR's wish, that those which opt not to adopt it can continue reporting whatever reporting form suits them best but to observe the above mentioned data quality issues of completeness timeliness and accuracy.

## 5. PROGRESS MADE IN RINDERPEST ERADICATION

The Pan African Programme for the control of Epizootics (PACE) implemented by IBAR has the objective of eradicating rinderpest from the remaining suspected foci in an objectively verifiable manner, among others. Strengthening surveillance for early detection and confirmation of all suspected cases resembling rinderpest and assisting countries to progress along the OIE pathway for the eradication of rinderpest are some of the activities implemented together with PACE National Programmes in 30 AU member States.

### 5.1 Improved surveillance

Capacity to detect as early as possible any field event resembling rinderpest both in cattle and wildlife has increasingly enhanced in PACE member countries. The conventional surveillance methods of clinical and serological surveillance for detecting footprints of the virus have continued vigorously. The participatory disease search (PDS) methods implemented in Somali Eco-system, suspected to harbour mild rinderpest virus, is also bearing fruits. As a result of enhanced surveillance activities, two suspected rinderpest events were detected in Mauritania and Kenya. In January 2003, two sera from hunted warthog in Keur Marcein region of Mauritania, north of the Senegal River delta become positive for rinderpest antibody. As a result of this, Mauritania was temporarily lost the rinderpest disease free status. Further investigation and follow-up of this incident, however, didn't suggest any circulation of rinderpest virus.

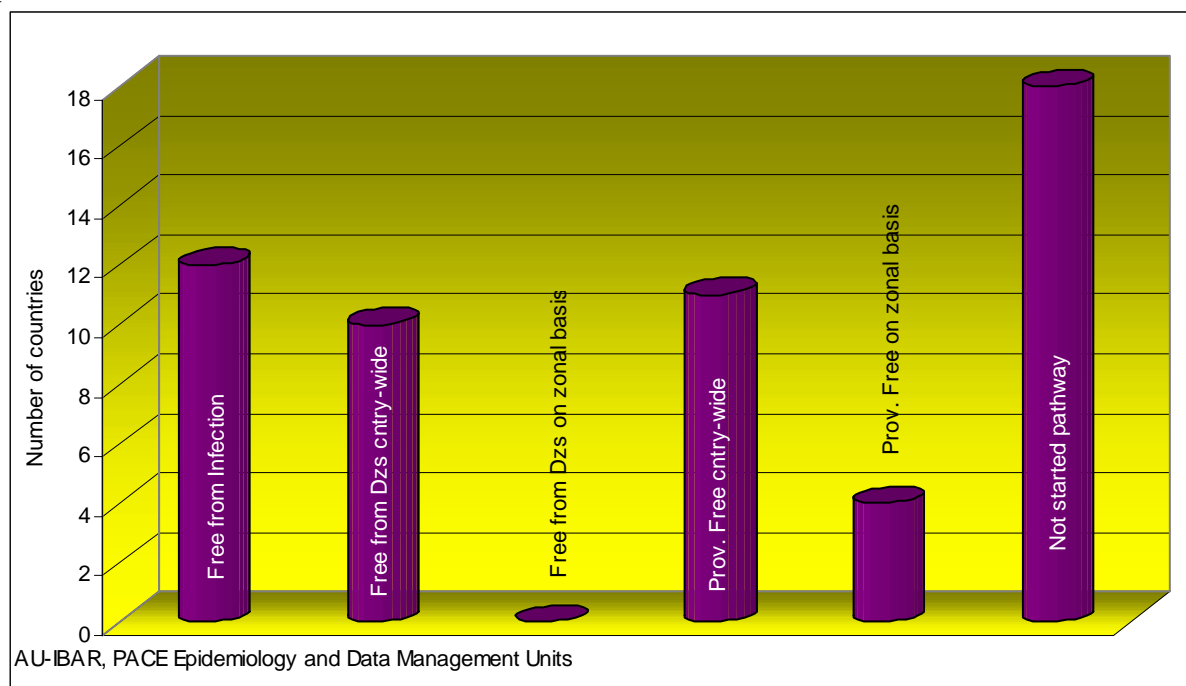
Similarly, the suspected mild rinderpest outbreak in Kenya involving 200 cases in Garissa district of North-eastern province was confirmed by the Regional Reference Laboratory of KARI-Muguga. However, result from the world rinderpest reference laboratory of Pirbright didn't corroborate the findings of Muguga. It is to be recalled that Kenya lost the Provisional Freedom on zonal basis after another outbreak of mild rinderpest among buffaloes in Meru National Park in 2002. Although the detection of rinderpest at this stage of eradication is undesirable, the extremely difficult hunt for mild rinderpest is becoming reality due to improved surveillance activity introduced by PACE.

### 5.2 Progress of African countries along the OIE Pathway

More than two-third of the countries in Africa has started or reached the final stage of the OIE pathway for the eradication of rinderpest. Twelve of these have gained the status of Freedom from rinderpest infection, ten obtained Freedom from disease (rinderpest) status at country-wide level, eleven declared Provisional Freedom at country-wide level while four others are at the stage of Provisional Freedom on zonal basis. Please refer to Chart 16 and Map 17 for details.

Seventeen countries in Africa didn't yet start the OIE Pathway for the eradication of rinderpest and six of these are members of PACE. From the later group, Somalia couldn't declare Provisional Freedom from rinderpest because of lacking central veterinary authorities (no central government since 1991) and Kenya lost the initial status of OIE Pathway because of the reason explained in section 5.1 Guinea Bissau, a country which can apply for the final stage of Freedom from infection on historical basis and serological evidence or at least apply for Disease Free status is making all the necessary efforts to become member of OIE, a prerequisite for application and recognition. The rest two countries, Congo and Equatorial Guinea have started there PACE national programmes very late while Gabon kept most PACE activities at low profile, making it difficult to prepare the necessary dossier for declaration of Provisional Freedom or applying for other status.

Chart 16. Number of African countries at different stages of OIE Pathway





## 6. BASELINE DATA OF ANIMAL RESOURCES

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This section attempts to present baseline data on animal resources focusing mainly on the role of livestock in the national economies, recent livestock estimates per species and number of veterinary human resources of African countries. Contact addresses of the ministries responsible for animal resources and veterinary authorities and list of veterinary teaching institution in Africa are presented in annex III to V. As has been mentioned in section 2.2 of this Yearbook, only 28 member states of the AU responded to the questionnaire. Data from other sources such as PACE implementation reports, the OIE, FAO and the World Bank were used wherever applicable and compatible to provide complete picture. The Interafrican Bureau for Animal Resources believes that member countries would commit themselves in the future in providing complete and timely data contributing in this way to information sharing.

### 6.1 The role of livestock in national economy of African countries

Available data suggests that agriculture contributes between 3% and 80% to national Gross Domestic Product (GDP) of African countries. Among those with little agricultural contribution to GDP figures Seychelles and Botswana (3% each), Djibouti (3.7%), Gabon (5%) and Congo (5.3%). Sectors of economy contributing mainly to the GDP value in these countries are services (port and tourism) or industry (oil). The typical example is Gabon where 49% of the GDP value comes from oil. Please refer to Chart 17 for the share of agriculture in national GDP on some African countries.

Among countries where agriculture contributes largely to the national GDP Burundi, Central African Republic, Ethiopia and Tanzania rank high. The contribution of agriculture to GDP values in these countries is 80%, 55%, 52% and 50% respectively. Similarly, the proportion of population deriving a living from the agricultural sector in these countries range between 80% and 90%.

The contribution of livestock to agricultural GDP is high in countries like Botswana (80%), Namibia (74%), Somalia (70%), Mauritania (68%) and Mali (50%). The first two are countries with well developed and market oriented livestock industry while the remaining are countries with extensive pastoral community relying basically on livestock. The contribution of livestock to agricultural GDP is minimal in Mauritius (0.7%), Swaziland (1.1%), Cote d'Ivoire (2.0%), Congo (3.0%) and Congo Democratic Republic (3%). Most of these countries import livestock and livestock product to satisfy growing needs of food of animal origin.

The proportion of population engaged in the livestock sub-sector was also analysed and the result show that 80% of the population in Sudan, Somalia, Mali and Botswana and 70% in Ethiopia, Namibia and Zimbabwe earn there living from this sub-sector. Details are presented on Chart 18.

Chart 17. Contribution of agriculture to the national GDP values in African countries

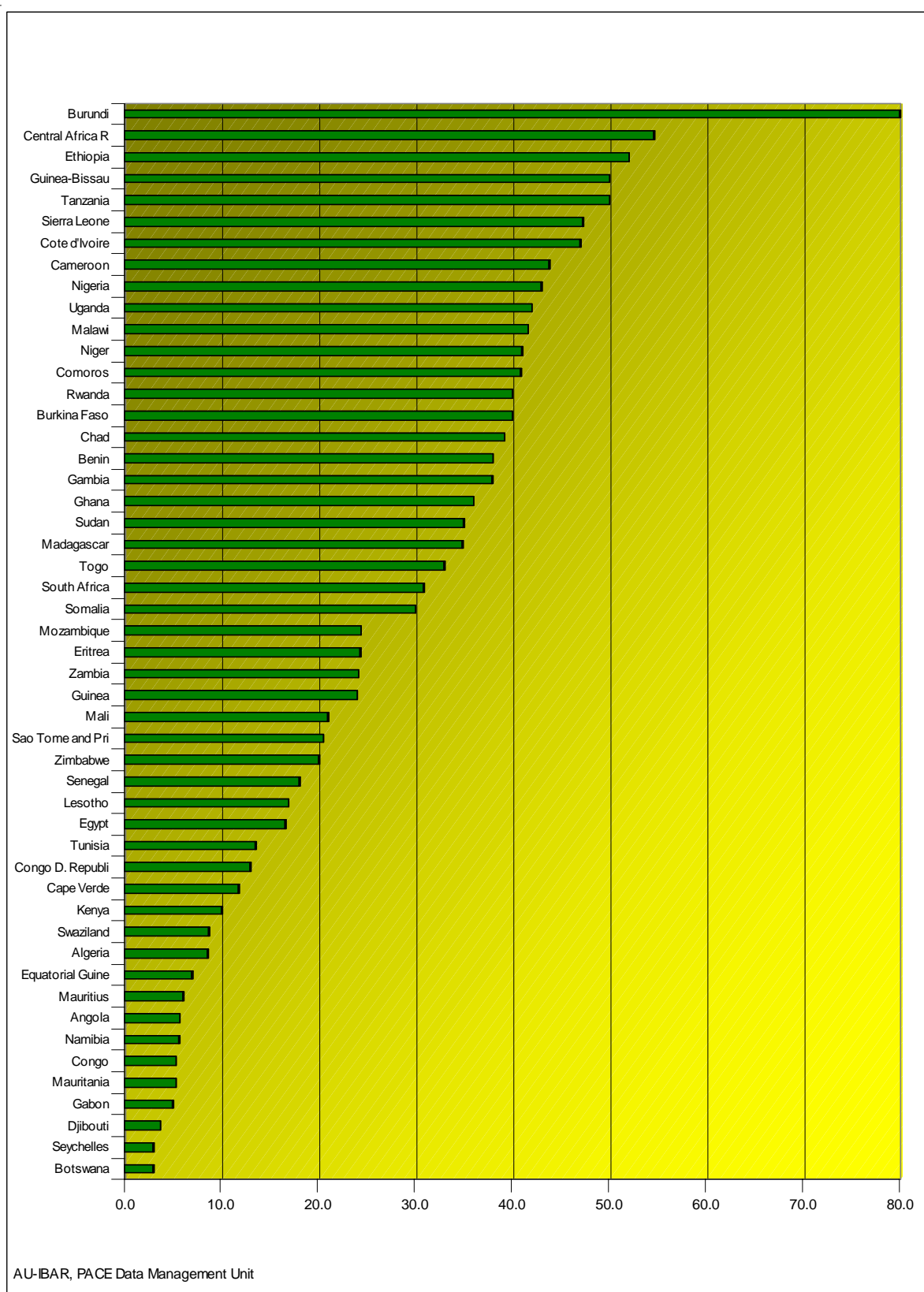
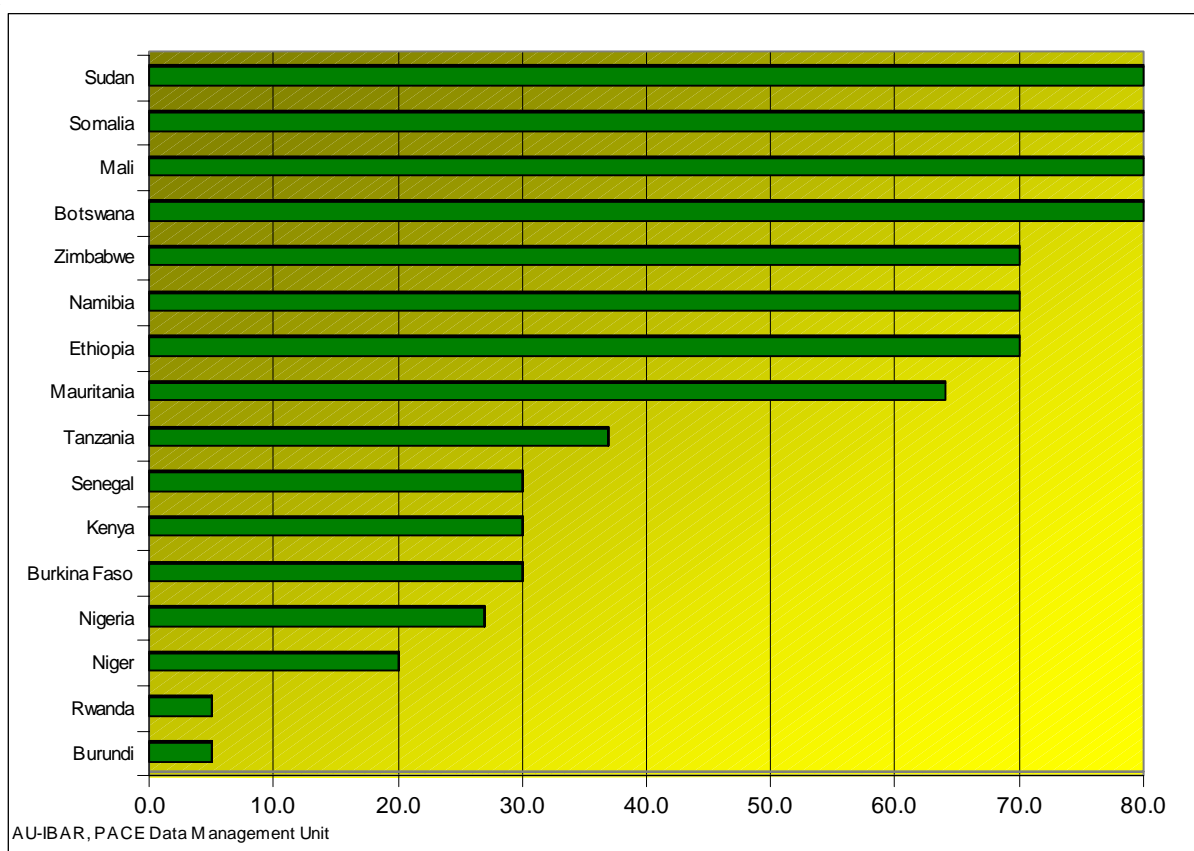


Chart 18. Proportion of population engaged in the livestock sub-sector in some African countries



## 6.2 Ministries in charge of livestock sub-sector in African countries

Eight of the fifty countries for which data was available on the ministry in charge of livestock, have specific ministries dealing only (or mainly) with livestock matters. Note that the share of livestock in agricultural GDP values in the eight countries with specific ministries for livestock range between 6.5% and 35.0% and the proportion of population in the livestock sub-sector range between 20% and 30% (only Sudan has the highest figure 80%). In the remaining 42 countries livestock issues are handled by ministries of agriculture, which are also responsible for one or more of the following: rural development, forestry, environment, marketing, cooperatives, food, water, etc. Interestingly, livestock contribute largely (at least higher than those countries with specific ministries) to agricultural GDP and sizable proportion of the population derives living in these countries from the livestock sub-sector. Please refer to the details on chart 19 and 20. Contact address of the different ministries responsible for livestock sub-sector is provided in annex III.



Chart 19. Comparison between the contribution of livestock to agricultural GDP and the type of ministry responsible for the sub-sector in some African countries

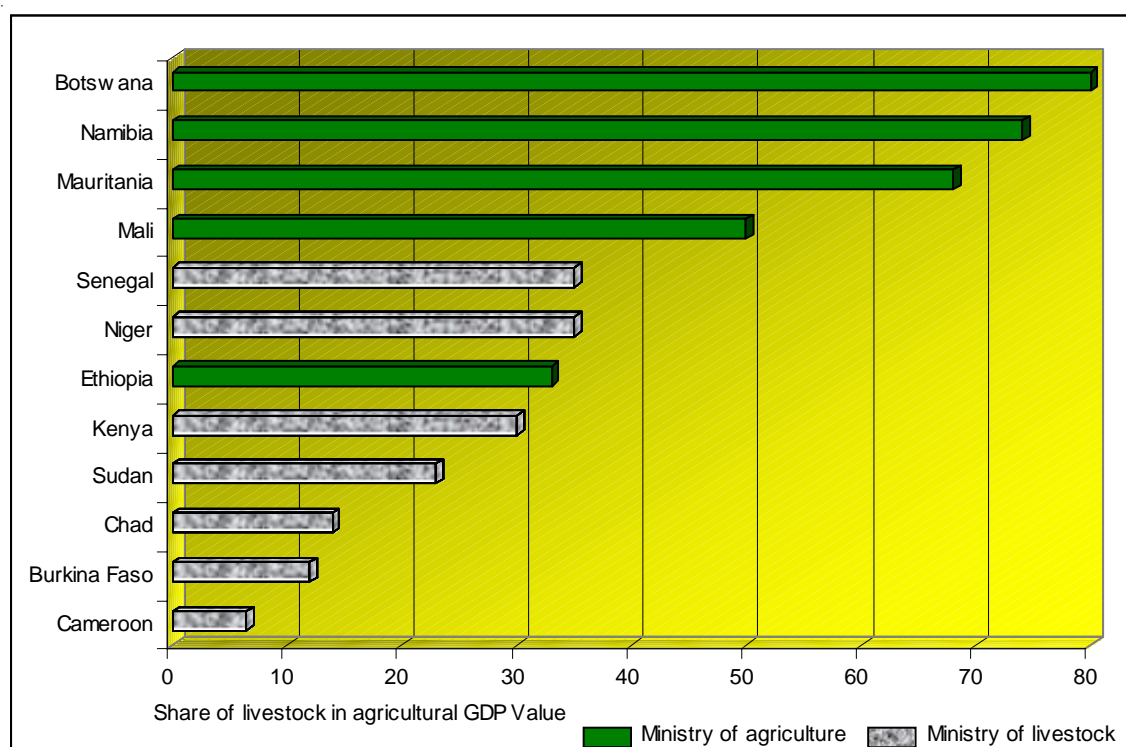
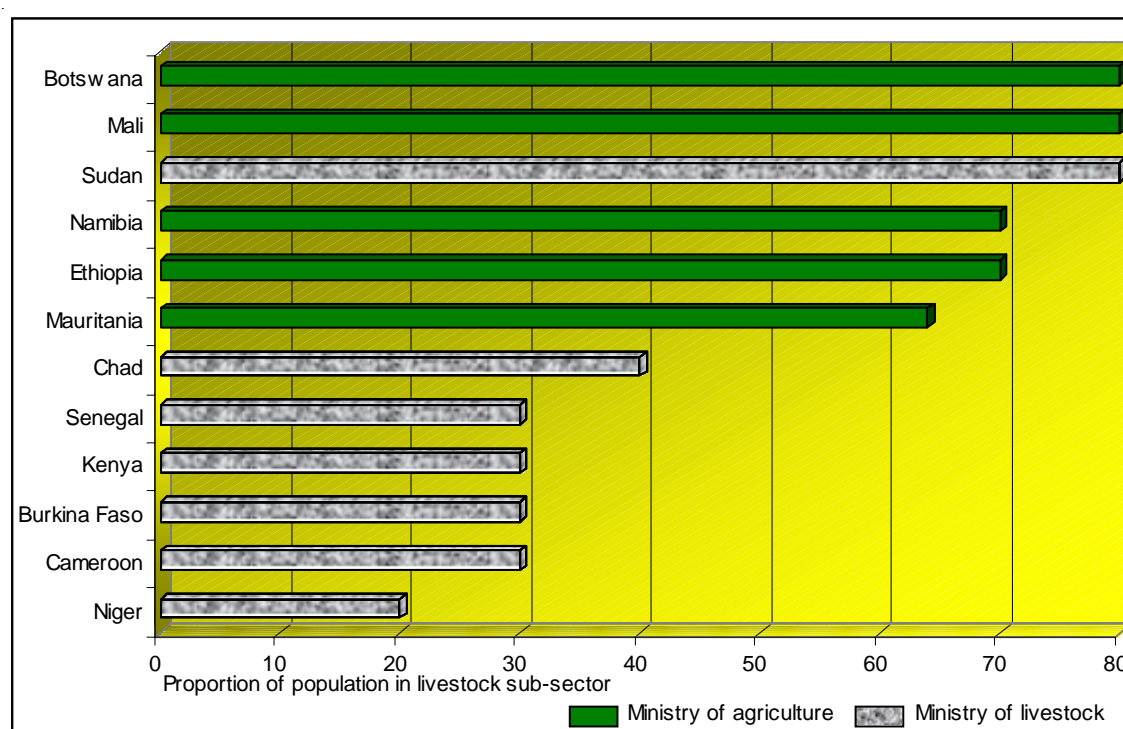


Chart 20. Comparison between proportion of population engaged in livestock sub-sector and the type of ministry responsible for the sub-sector in some African countries



### 6.3 Veterinary human resource

Figures on veterinary human resource were received only from 28 African countries during the year 2003. Some of the entries on the questionnaire form were not completed as required. Attempts to complete the overall picture at continental level by incorporating data from other sources were not successful either. Only eight countries submitted report on number of veterinarians and other staff members to OIE in 2003. The 28 countries presented on Map 2 of section 2 of this Yearbook had among themselves a total of 20,080 veterinarian and 22,095 other staff members in 2003 (Chart 21). These countries also reported a total of 9,023 Community Animal Health Workers (CAHW) or equivalent category operating in their territories. Available data from 12 countries suggest that 22% of veterinarian in these countries have postgraduate trainings. Similarly, the proportion of veterinarian working in the private sector in 24 African countries during 2003 was analysed and the results show that just over half (52%) are engaged in private practices. The highest proportion of private practitioners is located in Algeria, where over 73% of veterinarians operate in this sector. Table 1 and 2 show the details.

Chart 21. Number of veterinarians in some African countries during the year 2003

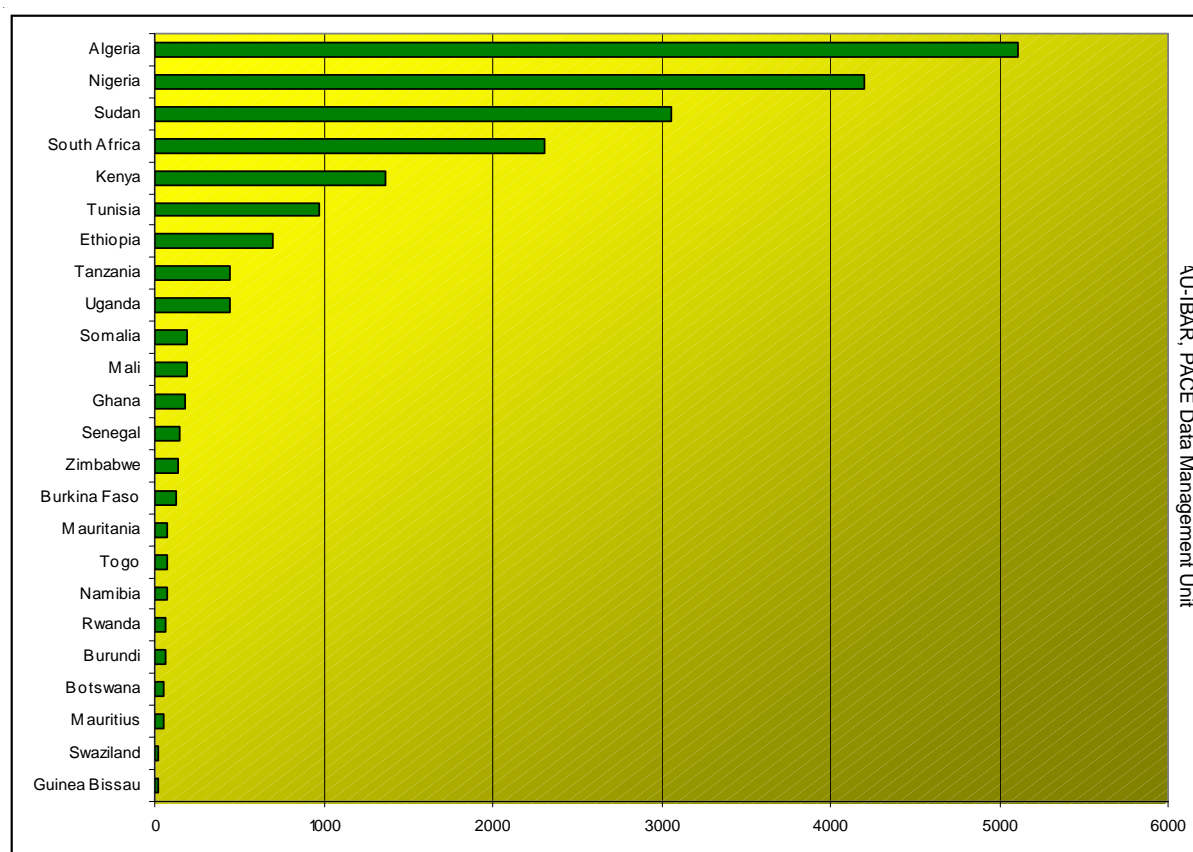


Table 1, number of graduate and post-graduate veterinarian in some African countries in 2003

Country	Postgraduate vets	Graduate vets	Total	% Postgraduate
Guinea Bissau	1	22	23	4.35
Mauritius	2	49	51	3.92
Namibia	5	64	69	7.25
Swaziland	8	18	26	30.77
Malawi	11	10	21	52.38
Zimbabwe	21	114	135	15.56
Botswana	33	25	58	56.90
Ghana	56	128	184	30.43
Ethiopia	78	618	696	11.21
Tanzania	121	328	449	26.95
Sudan	818	2237	3055	26.78
Nigeria	825	3380	4205	19.62
Total	1979	6993	8972	22.06

Table 2, number of veterinarian in public sector and those engaged in private practices in some African countries during 2003

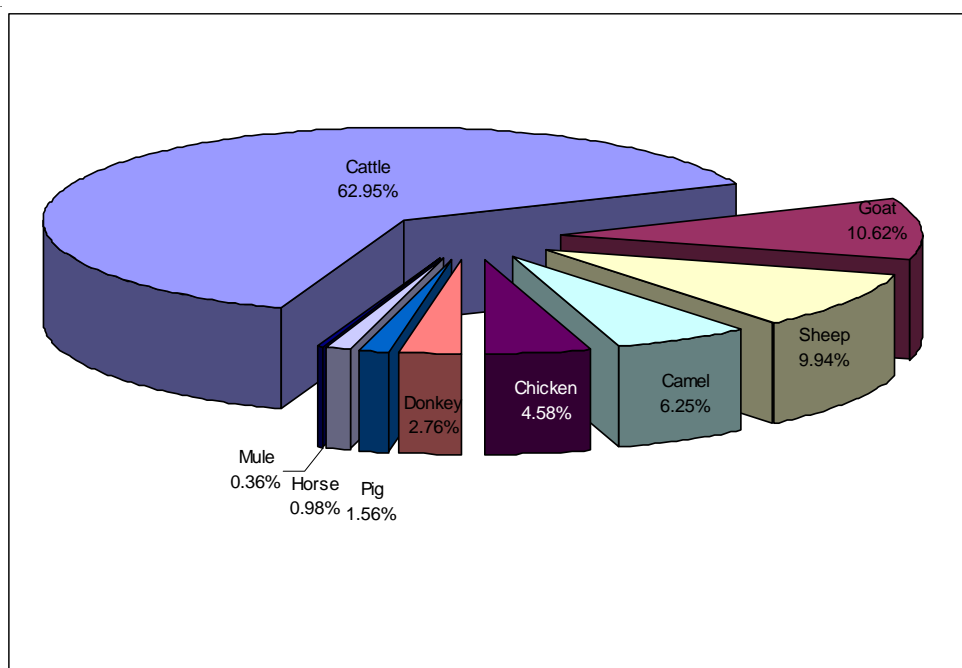
Country	Veterinarian in public services	Veterinarian in private practice	Total	% Private
Malawi	17	4	21	19.05
Swaziland	18	8	26	30.77
Mauritius	20	31	51	60.78
Guinea Bissau	23	0	23	0.00
Togo	26	46	72	63.89
Namibia	32	37	69	53.62
Mauritania	35	18	53	33.96
Rwanda	44	20	64	31.25
Botswana	46	12	58	20.69
Senegal	56	93	149	62.42
Burundi	59	4	63	6.35
Burkina Faso	70	54	124	43.55
Zimbabwe	83	52	135	38.52
Mali	117	69	186	37.10
Ghana	153	31	184	16.85
Niger	162	17	179	9.50
Tanzania	411	38	449	8.46
Uganda	442	0	442	0.00
Kenya	537	833	1370	60.80
Tunisia	585	390	975	40.00
Ethiopia	640	56	696	8.05
Sudan	905	2150	3055	70.38
Algeria	1340	3770	5110	73.78
Nigeria	2738	1467	4205	34.89
Total	8559	9200	17759	51.80

## 6.4 Livestock population

Statistics on livestock is one of the vital information required for planning different interventions and resource allocation. However, conducting census or at least sample survey at a regular interval is not an easy task for several African countries. Hence, most planning exercise are done on outdated livestock figures. Figures presented in this Yearbook were compiled mainly from responses to the questionnaires administered to African countries in 2003. To complete an overall picture\* of livestock figures in Africa, data from FAOSTAT for the year 2003 was used. For comparison and presentation purpose, livestock numbers were converted to a common ratio of Tropical Livestock Unit (TLU). Efforts were made to map livestock density per species based on figures obtained from the questionnaires. Finally, in absence of livestock census figures for all African countries for the year 2003, it is hoped that figures extracted from reports received from countries and those obtained from additional sources may serve as the best available estimate. Figures discussed below include the common farm animal species.

Data compiled from the aforementioned sources indicate that the livestock numbers in Africa in 2003 are estimated at 261 million\* TLU. Cattle contribute to 63% of this figure followed by goat and sheep with 11% and 10% share respectively (Chart 22). Mule and horse contributed less than 2% of the total TLU.

Chart 22. Proportion of different species of livestock expressed as TLU in Africa (2003)

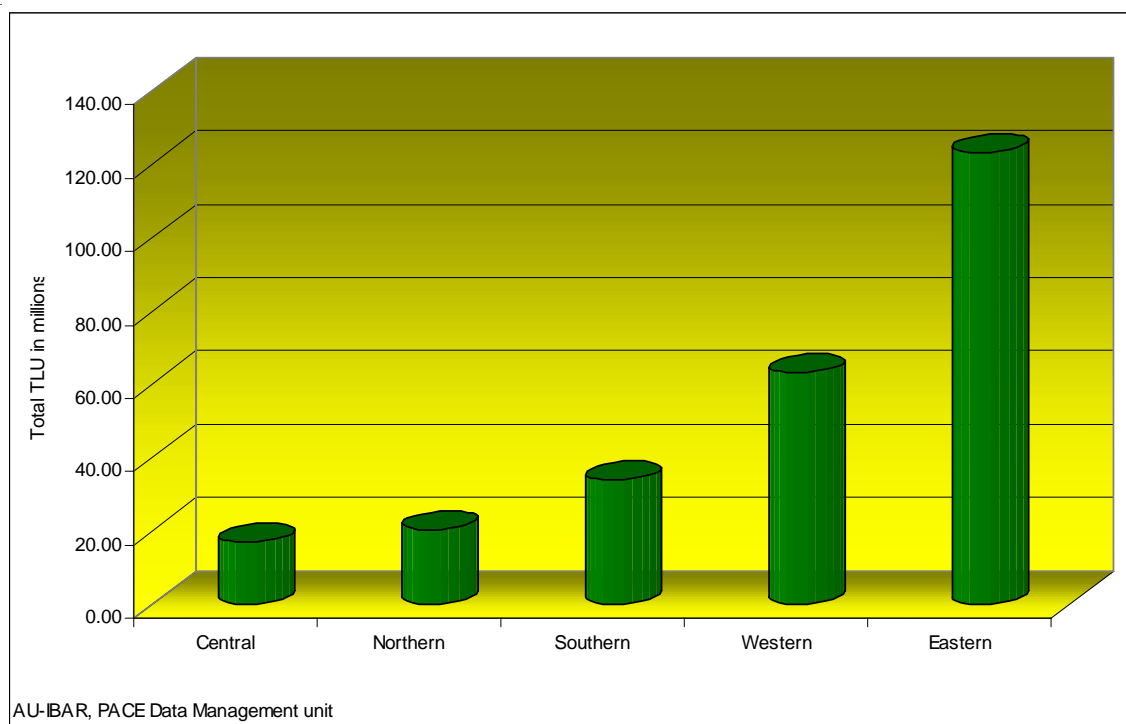


\* Livestock estimate from Morocco also included

\* For better understanding, figures throughout this section are rounded

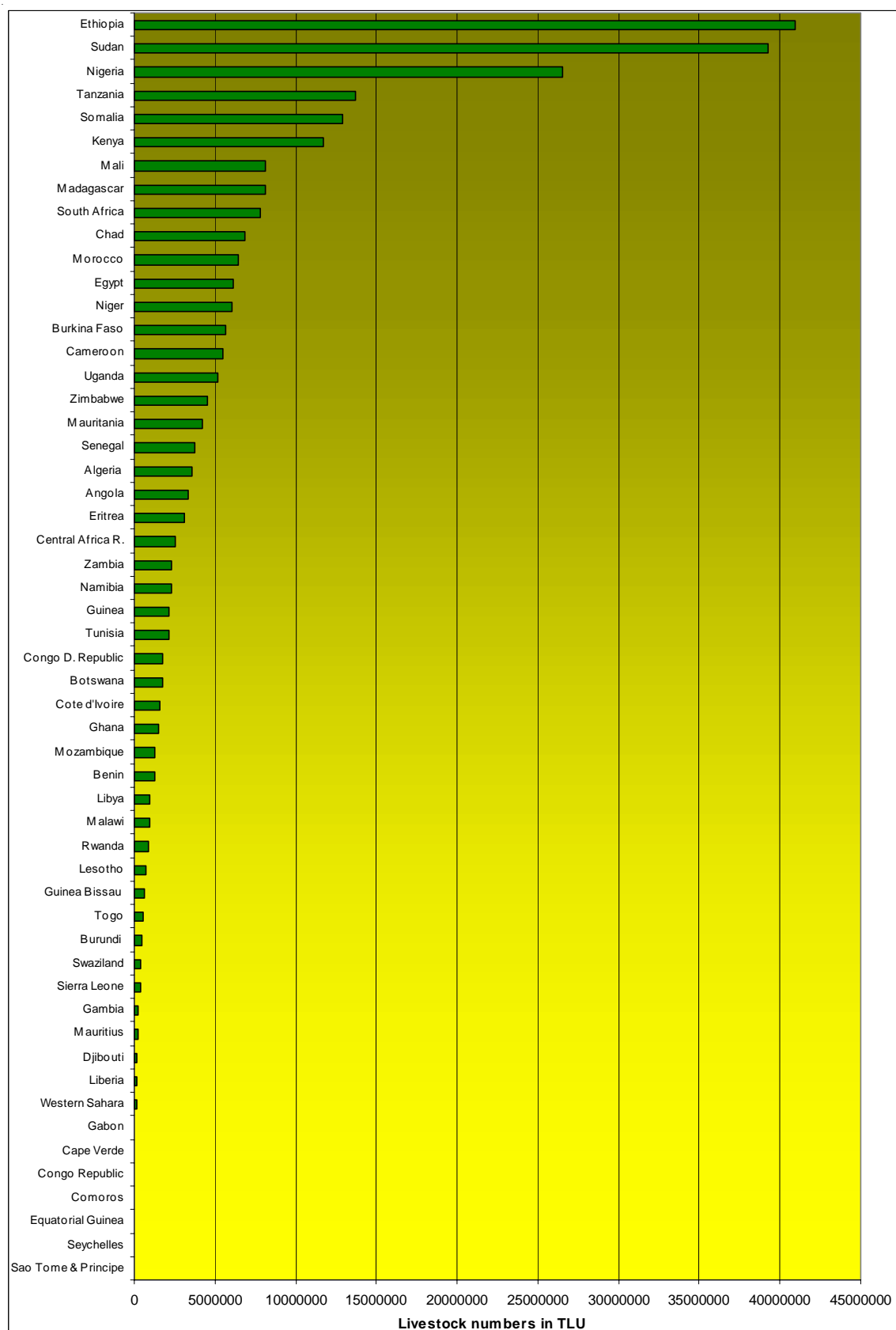
The highest number of livestock is estimated in the Eastern African region in 2003. Eleven countries here reported 129 million TLU; almost half (49%) of the total population in Africa (Chart 23). Livestock estimates in 2003 in the Western, Southern, Northern and Central African region was 63 million TLU (24% of total), 34 million TLU (13%), 19 million TLU (7%) and 17 million TLU (6%) respectively.

*Chart 23. Livestock estimate in TLU in 2003 by different regions of Africa*



Ethiopia, Sudan and Nigeria estimated higher figures of livestock population in Africa in 2003 with 41 million TLU; 39 million TLU; and 27 million TLU respectively. In fact, the first two countries had more livestock than the entire Western African region or all the rest regions combined. The least livestock estimate comes from island nations of Sao Tome and Principe (8,000), Seychelles (10,000), and Equatorial Guinea (14,000). Please refer to Chart 24 for details.

Chart 24. Livestock estimate in TLU in African countries in 2003



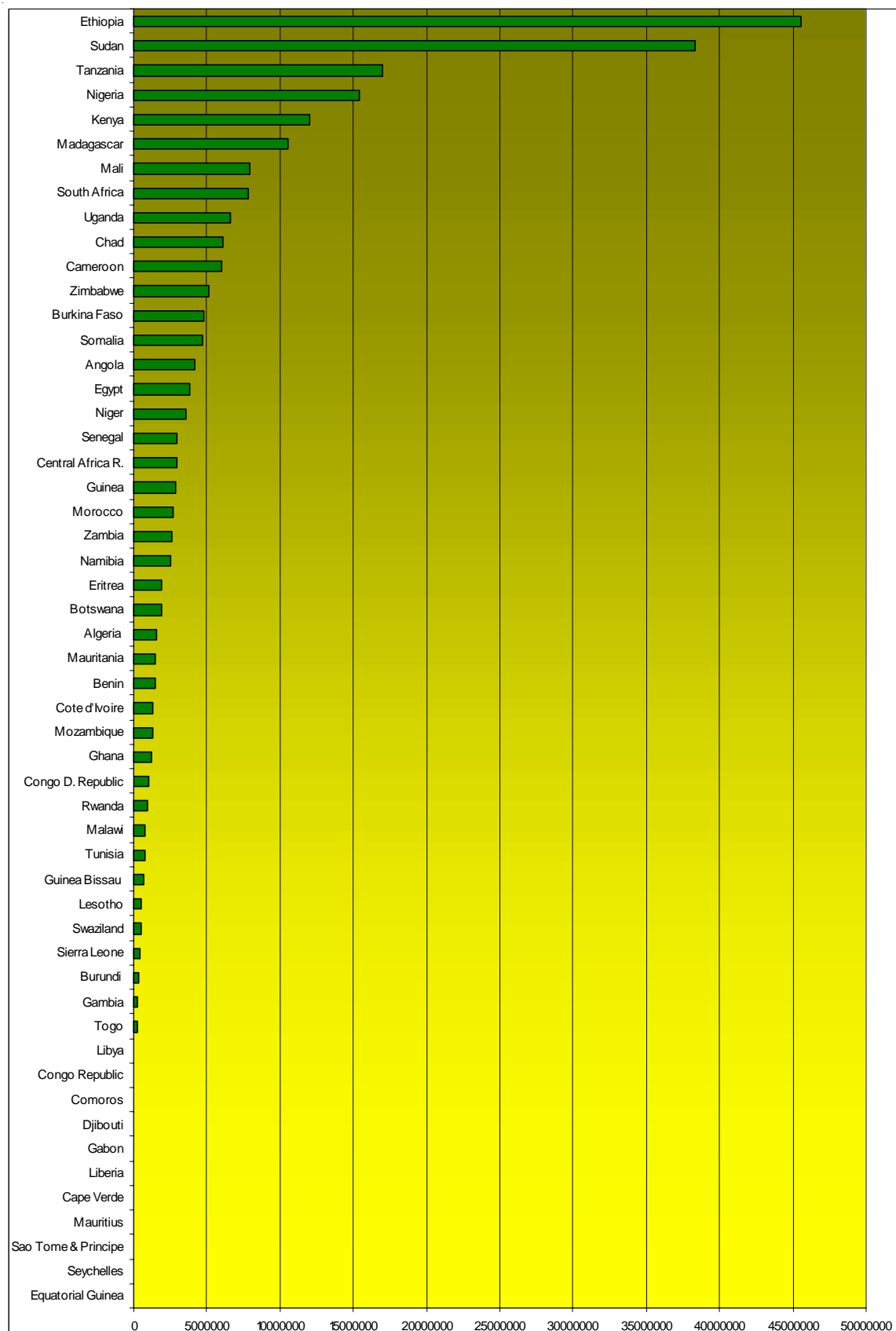
## Cattle

A total of 235 million head of cattle were estimated in Africa in 2003. This is 17% of the world cattle population estimated by FAOSTAT in 2003. The distribution pattern of cattle in Africa was similar to that of TLU, with largest number estimated in the Eastern African region. The number of cattle estimated in Eastern Africa in 2003 is larger than the combined figure of the remaining four regions (54% of total). The proportion of cattle in Western, Southern, Central and Northern Africa was 19%, 16%, 7% and 4% respectively.

Ethiopia, Sudan and Tanzania estimated the highest figures of cattle in Africa in 2003 with 46 million; 38 million and 17 million while the smallest figure was recorded in Equatorial Guinea (900 head) followed by Seychelles (1,400) and Sao Tome and Principe (4,300). Chart 25 shows the estimated number of cattle in African countries during 2003 while Map 18 displays the density of cattle at lower administrative level (district or province) in some African countries during 2003.

*Map18. Dot desity map of the 2003 cattle population estimate for African countries*

Chart 25. Cattle population estimate in African countries in 2003





## Goats

As shown on Chart 22, goats rank second in TLU numbers after cattle. The total estimated figure for this species during 2003 in Africa is about 279 million. The figure represents more than one-third (36%) of the global goat population as estimated by FAOSTAT in 2003. The Western African region has estimated almost half (47%) of the entire goat population in the continent during 2003, while the Eastern, Central, Southern and Northern African regions estimated 36%, 6%, 6% and 5% respectively.

Countries where larger goat populations were estimated in 2003 include Nigeria (85 million), Sudan (38 million) and Ethiopia (20 million). Island nations of Sao Tome and Principe, Seychelles and Mauritius estimated the lowest figures with 4,850, 5,150 and 21,000 respectively. Chart 26 shows the estimated number of goats in African countries during 2003 while Map 19 displays the density of goat at lower administrative level (district or province) in some African countries during the same period.

*Map 19. Dot density map of 2003 goat population estimate for African countries*

*Chart 26. Goat population estimate in African countries*

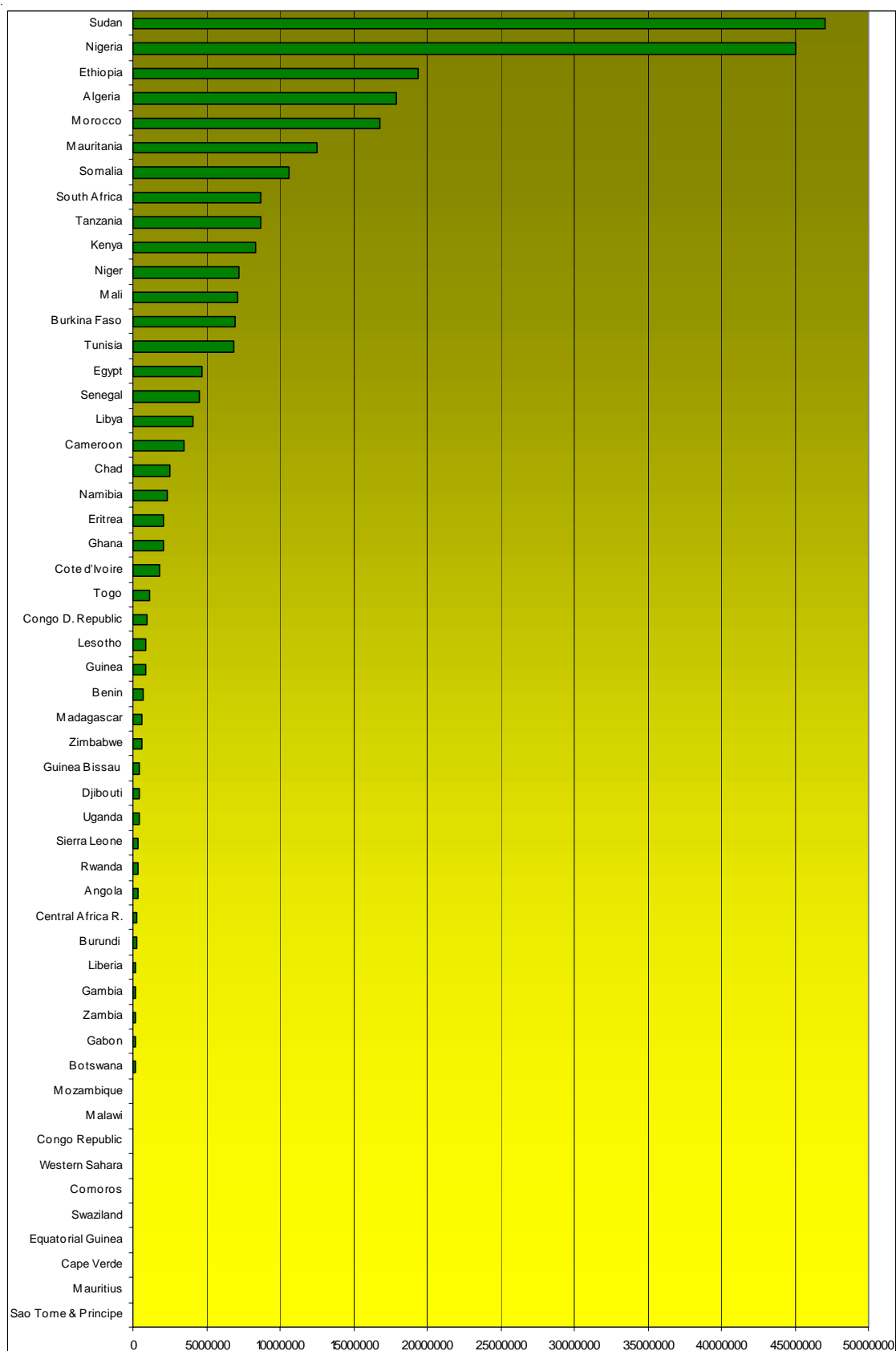
## Sheep

The estimated figures for sheep population in Africa in the year 2003 stands at 261 million. This is a quarter (25%) of the world sheep population (FAOSTAT, 2003). In terms of TLU numbers, sheep ranked third after cattle and goat in Africa during 2003. The spatial distribution pattern of sheep during 2003 is almost balanced between the Eastern and Western Africa regions, with 38% and 35% respectively of the total sheep population in the continent. The least sheep population was estimated in Central African countries, contributing only 3% of the total figure in the continent. The share of Northern and Southern African regions was 19.55% and 5.52% respectively. Sudan, Nigeria and Ethiopia are the three countries with higher estimates of sheep population in Africa during 2003 with 47 million; 45 million and 19 million heads respectively. Please refer Chart 27 and Map 20 for details.

*Map 20. Dot density map of the 2003 sheep population estimate for African countries*



Chart 27. Sheep population estimate in African countries in 2003

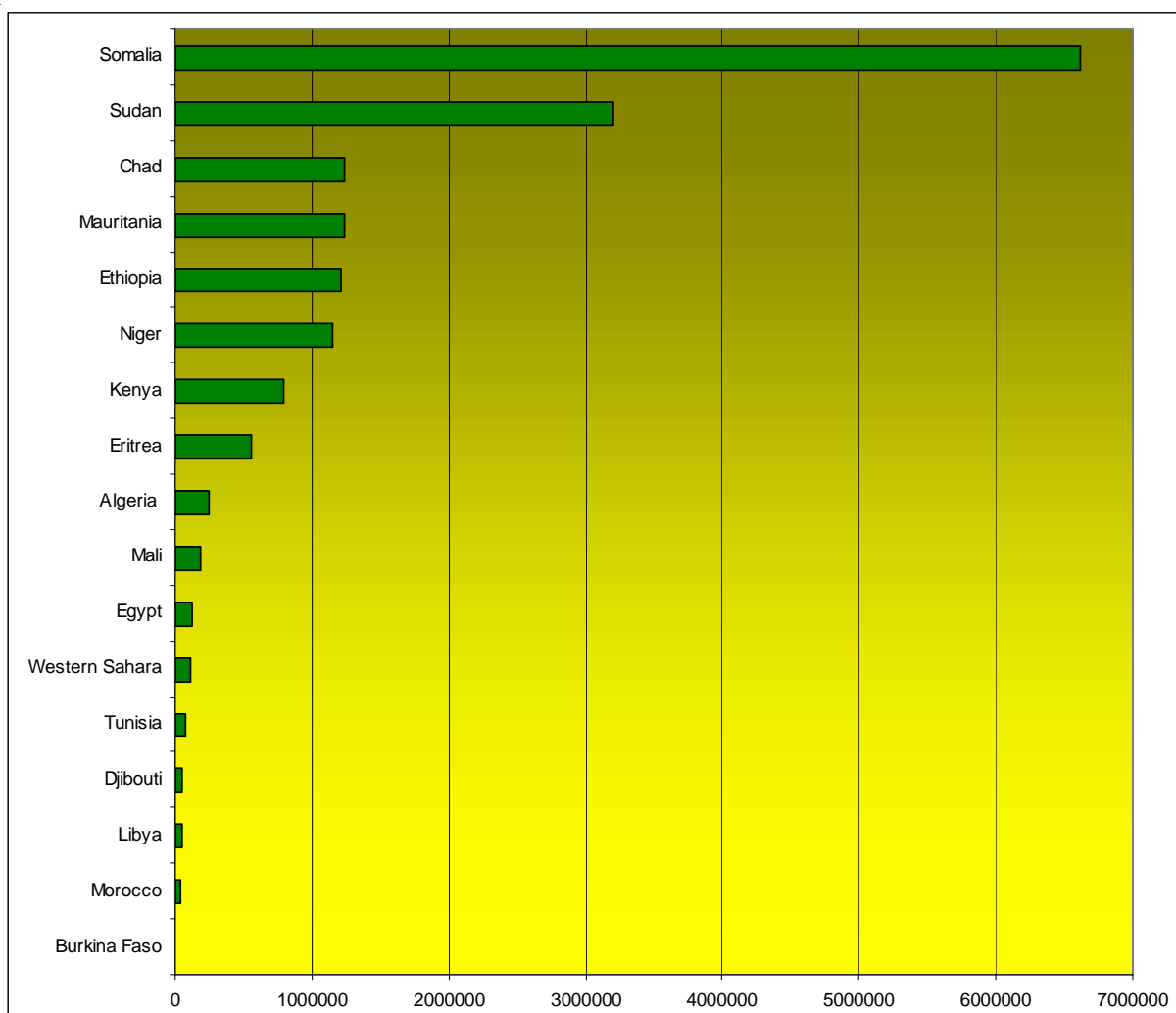


## Camels

A total of 17 countries in Africa have reported an estimated figure of 17 million camels in their territories during 2003. This is about 88% of the camel population of the world (FAOSTAT, 2003). Except for Southern African countries, camel is distributed in most areas with arid and semi-arid ecological zones across African. Somalia, Sudan and Ethiopia estimated more than 65% of the total camel population in Africa in 2003. Details are presented on Chart 28 and Map 21.

*Map 21. Dot density map of the 2003 camel population estimate for African countries*

Chart 28. Camel population estimate in African countries in 2003



### Chicken

The total number of chicken estimated in Africa in 2003 was 1.2 billion, about 7% of the world chicken population (FAOSTAT 2003). The estimated figure of chicken contributed 5% to the estimated total TLU values in Africa during 2003. The five northern African countries have about 36% of the total chicken population in Africa followed by the West African region with 27%. The share of the southern, eastern and central regions of Africa was estimated at 19%, 13% and 5% respectively. Three countries, Nigeria, Morocco and Algeria, own among themselves more than a third of chicken population estimate in Africa in 2003. Please refer Chart 29 for details.

### Donkeys

Based on the estimates for 2003, donkeys are found to be the most numerous among equine species in Africa. The estimated figures for donkeys in Africa in 2003 were about 15 million, 35% of the total world donkey population. Out of 54 countries in Africa 36 of these from different regions recorded estimated figures between the lowest of 36 in Equatorial Guinea to the highest of close to 4 million in Ethiopia. Chart 30 shows details of estimated number of donkeys in Africa in 2003.

### Pigs

Pigs contributed only 2% to the total TLU values estimated in Africa in the year 2003. The actual figure stands at about 20 million pigs, with little significance in the world pig population (2%). The number of African countries with pig population is about 43 and these species is absent from the majority of Muslim nations in the continent for obvious reasons. About a third (31%) of the estimated pig population in Africa in 2003 was found in Nigeria. Details are presented on Chart 31.

### Horses and mules

These two equine species were less frequent and contributed little more than 1% to the total TLU values of livestock estimate in Africa in 2003. During this period, a total of 3.2 million horses were estimated in 30 African countries. Ethiopia estimated 47% of the total population of horses in Africa in 2003 followed by Senegal accounting for another 15%. Mules are less common, only 14 African countries reporting a total of estimated number of 1.5 million. Morocco and Ethiopia estimated the largest number of 510,000 and 350,000 respectively. Details are presented on Charts 32 and 33.

Chart 29. Chicken population estimate in African countries in 2003

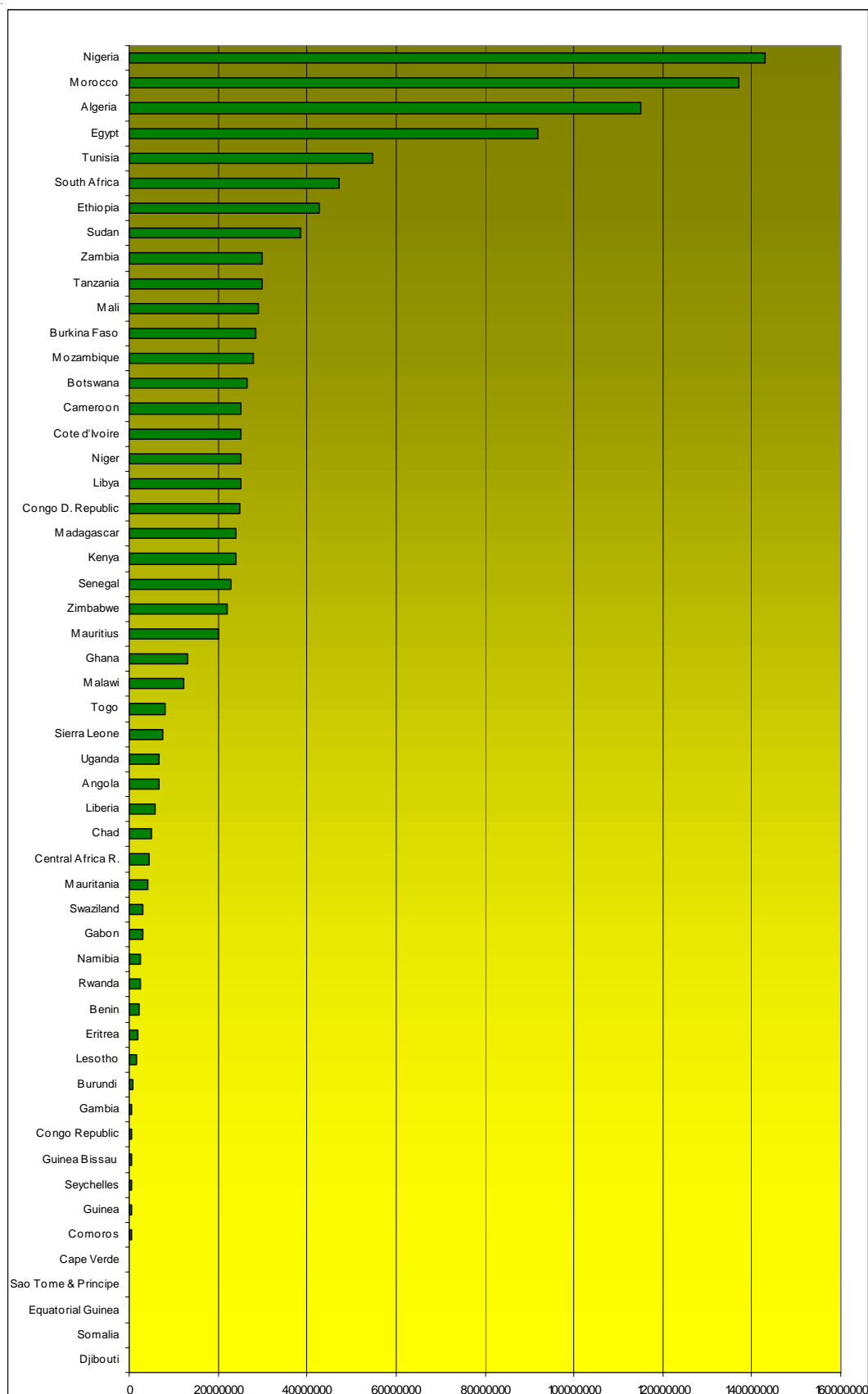




Chart 30. Donkey population estimate in African countries in 2003

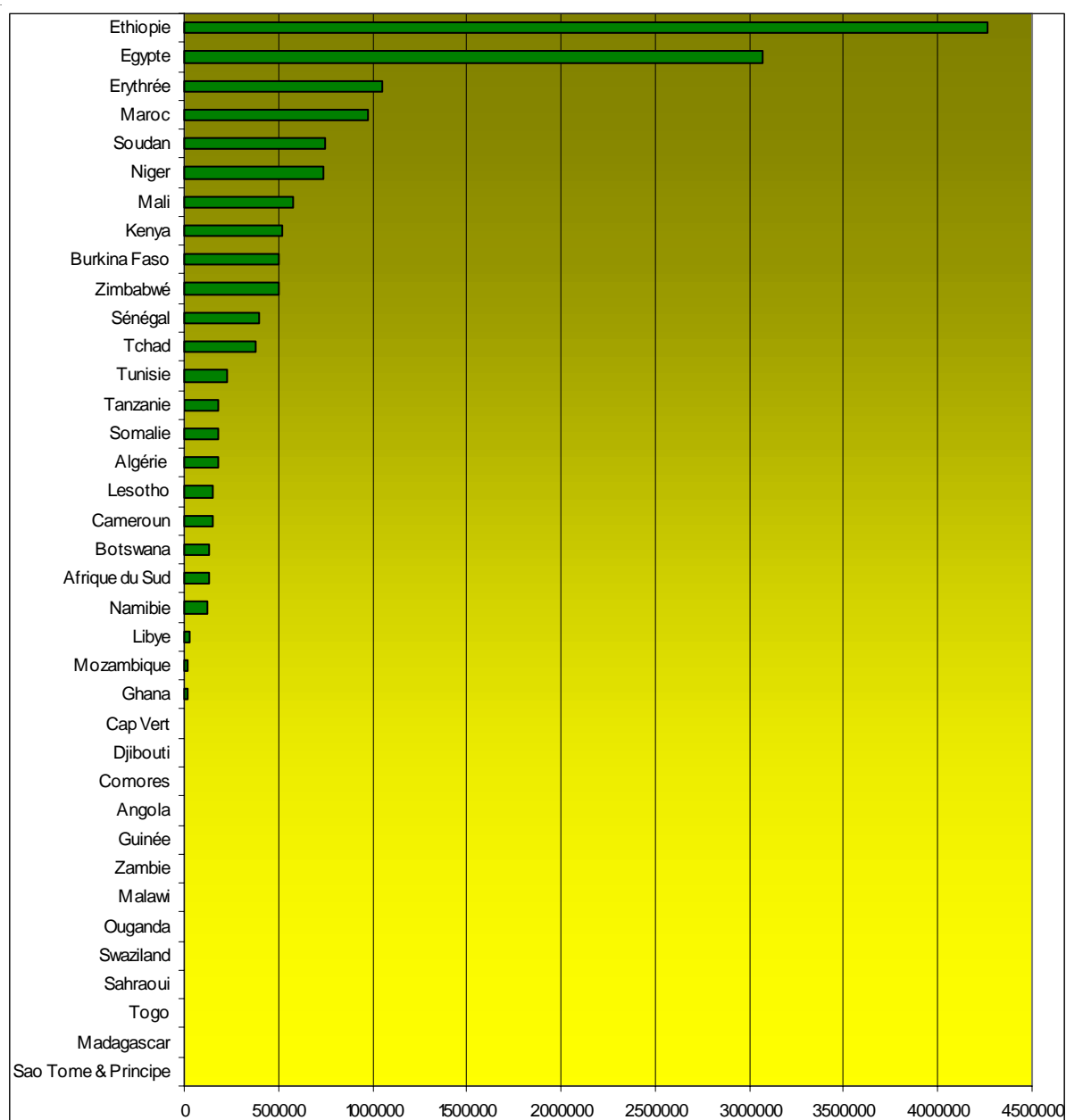


Chart 31. Pig population estimate in African countries in 2003

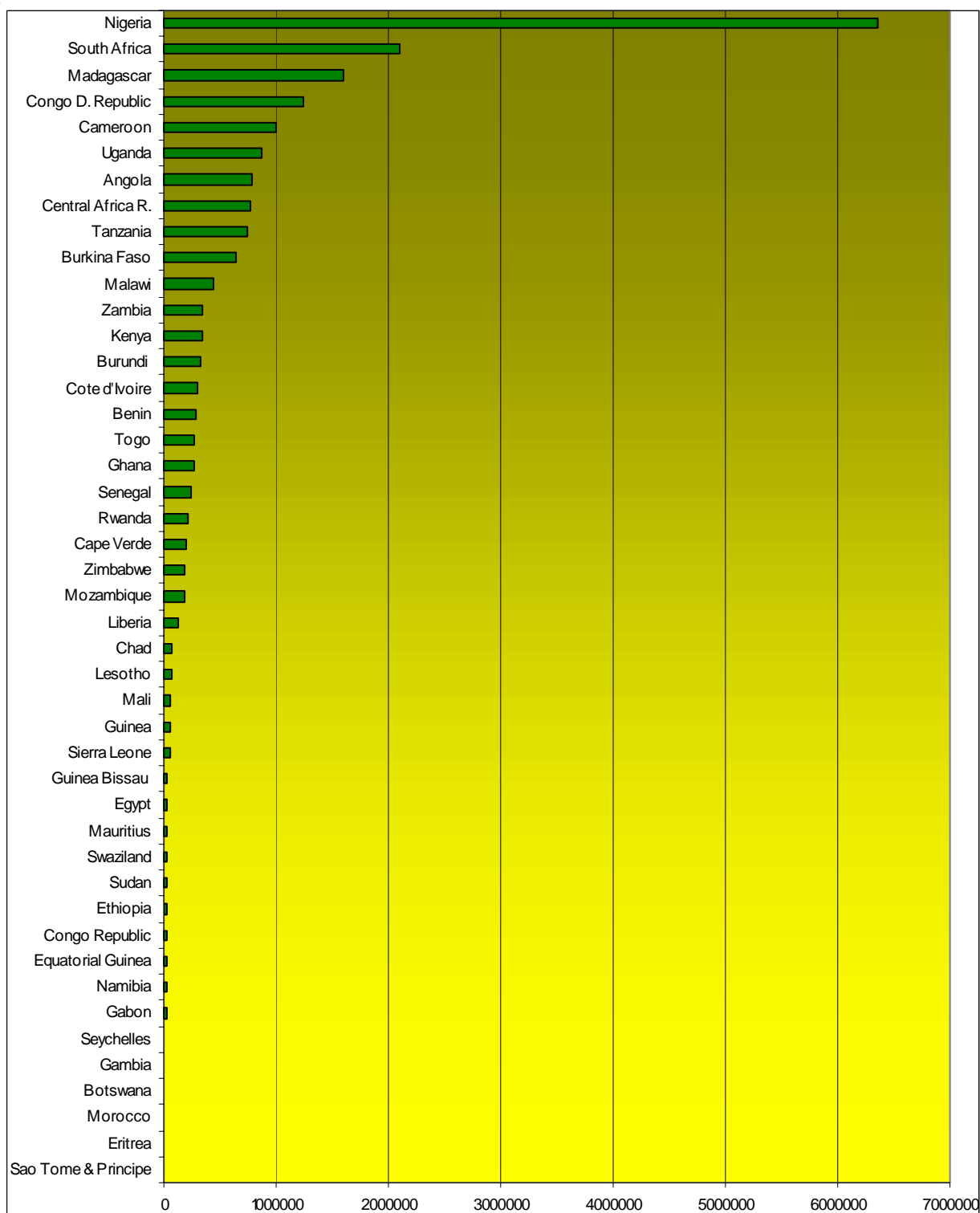


Chart 32. Horse population estimate in African countries in 2003

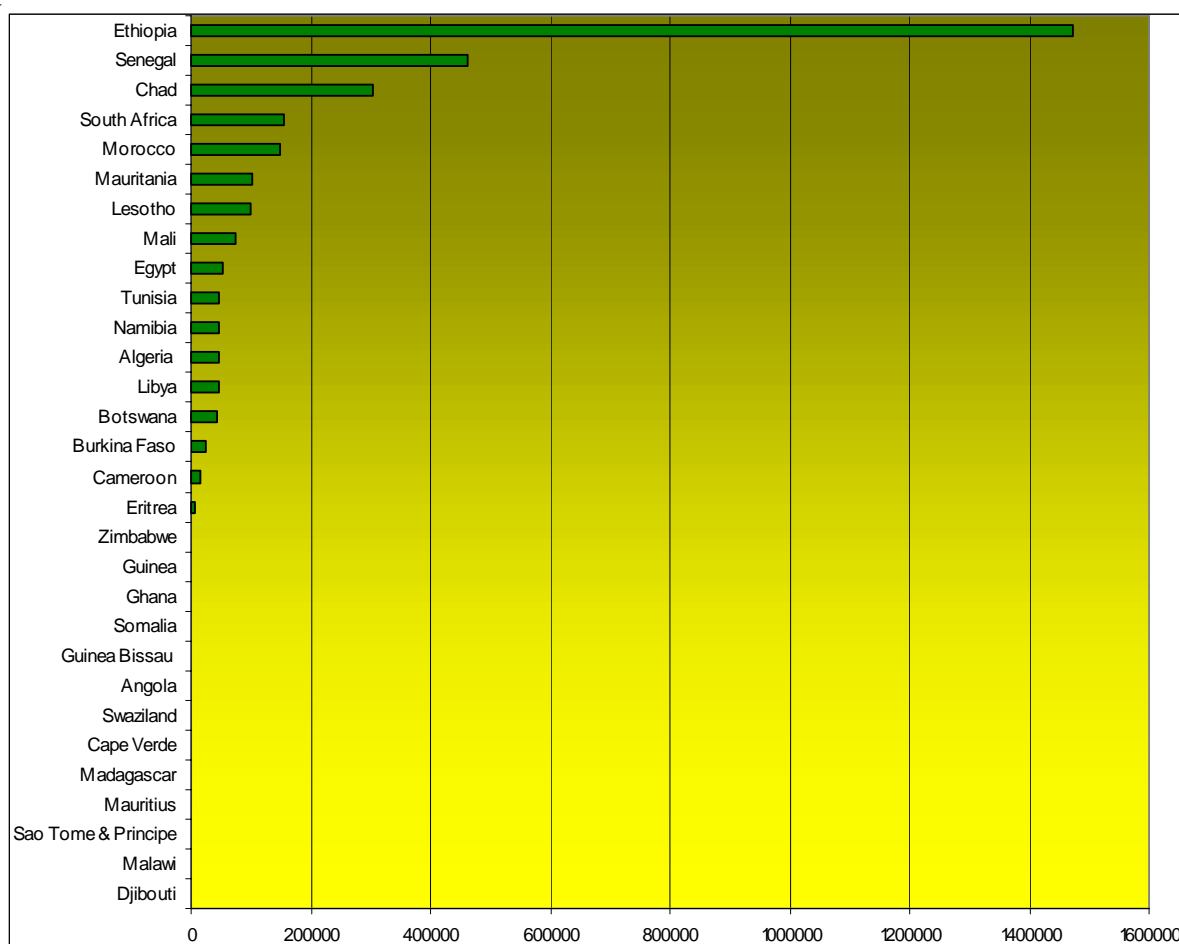
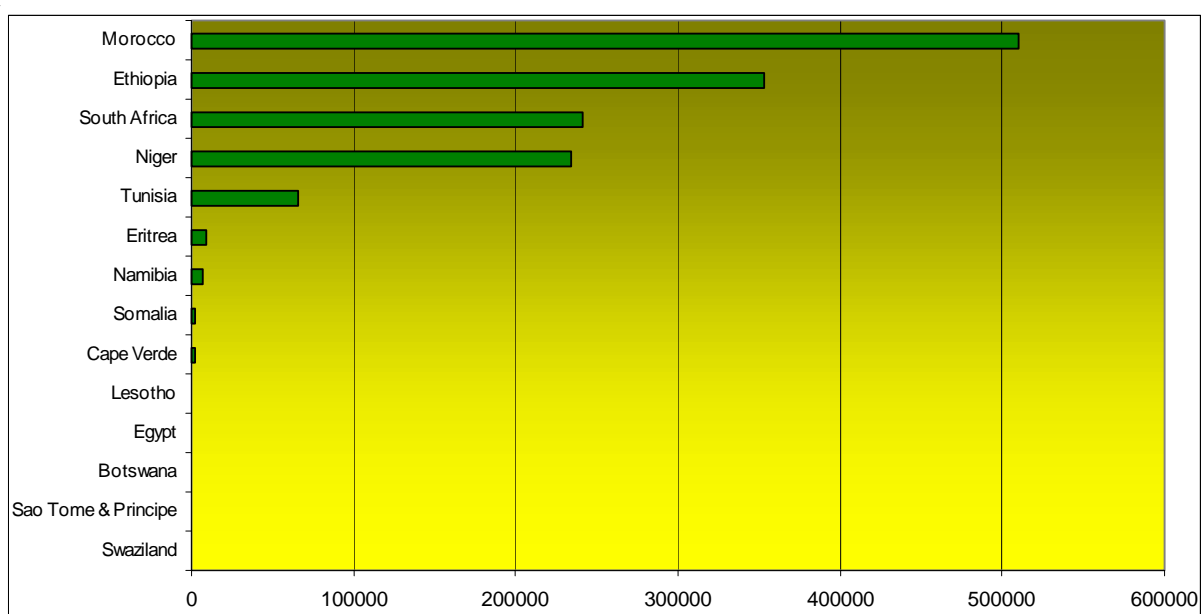


Chart 33. Mule population estimate in African countries in 2003



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### 7. CONCLUSION

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Disease reporting to IBAR from African countries increased during 2003, both in the number of reports received and the number of countries reporting. Responses to the questionnaires administered to AU member countries were not sufficient to draw complete picture at continental level but it is a good start. This is an encouraging trend towards sharing complete information on annual basis at continent level for spatial and temporal distribution of disease and baseline data on animal resources. The provision of data by growing number of countries is an indication of willingness to share information with one another and become transparent on their disease status. This positive trend should continue developing further with improvement in the number of countries reporting and better quantity of reports and quality data.

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## 8. ACKNOWLEDGEMENT

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The Interafrican Bureau for Animal Resources of the African Union 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 2003 on which this Yearbook is mainly based. The Bureau recognise with appreciation the OIE and FAO for providing some data and there continue support.

*Annex I – monthly breakdown of disease reports received from African countries during 2003*

	2 0 0 3											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Algeria												
Angola												
Benin												
Botswana												
Burkina Faso												
Burundi												
Cameroon												
Cape Verde												
Central Africa Republic												
Chad												
Comoros												
Congo												
Cote d'Ivoire												
Djibouti												
Democratic Rep. Congo												
Egypt												
Equatorial Guinea												
Eritrea												
Ethiopia												
Gabon												
Gambia												
Ghana												
Guinea												
Guinea-Bissau												
Kenya												
Lesotho												
Liberia												
Libya												
Madagascar												
Malawi												
Mali												
Mauritania												
Mauritius												
Morocco	Not member of African Union											
Mozambique												
Namibia												
Niger												
Nigeria												
Rwanda												
Sao Tome & Principe												
Senegal												
Seychelles												
Sierra Leone												
Somalia												
South Africa												
Sudan												
Swaziland												
Tanzania												
Togo												
Tunisia												
Uganda												
Western Sahara												
Zambia												
Zimbabwe												



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

<b>Reporting Unit:</b>	Country	Region	Province	District
<b>Reporting Period:</b>	Month	Year		
<b>Reporting officer:</b>	Name	Position	Signature	
<b>Date report:</b>	Prepared	Received at Vet. Dept.	Received at IBAR	

Is there outbreak to report?	YES <input type="checkbox"/>	NO <input type="checkbox"/>	(mark with X an appropriate box)	If reporting only vaccination start at the column labeled "w"

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

[illegible]

### *Annex II b – Disease reporting form completing guidelines*

#### 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 (2 <sup>nd</sup> administrative layer in the country) from where the report is coming
Province	Province or any 3 <sup>rd</sup> administrative layer in the country from where the report is coming
District	District or local administration or any 4 <sup>th</sup> administrative layer in the country from where the report is coming

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

##### Reporting Period

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

##### Reporting Officer

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

##### Date Report

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



### Is there outbreak to report?

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

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

### Details

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

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

- |                             |  |
|-----------------------------|--|
| a) Disease & Serotype       | The name of the disease (in full or easily recognisable abbreviated form) suspected or confirmed during the outbreak and if known the serotype of the agent involved (e.g. A, O, C, SAT 1 etc. for FMD)  |
| b) New or Followup          | Is the outbreak being reported new occurrence or a follow-up of the previous month? Enter New or Follow-up   |
| c) Date occurred            | The date in dd/mm/yyyy form when the first case of the outbreak was observed   |
| d) Date reported to vet.    | The date in dd/mm/yyyy form on which the outbreak was first communicated to local veterinary staff   |
| e) Date investigated        | The date in dd/mm/yyyy form on which the outbreak was first investigated by local veterinary staff   |
| f) Date of final diagnosis  | The date in dd/mm/yyyy form on which the outbreak was confirmed by laboratory or final diagnosis was made by clinical, postmortem or another means or combination of these.  |
| g) Name of village affected | The name of the village or locality where the outbreak was observed. In case the outbreak involve several villages sharing grazing or watering or any other factor favouring disease transmission, enter the first village reporting the outbreak and mention the rest in the remark.                                |
| h) Latitude (in DD)         | The latitude in degree decimal (to 3 decimal place precisions) of the village affected by the outbreak   |
| i) Longitude (in DD)        | The longitude in degree decimal (to 3 decimal place precisions) of the village affected by the outbreak  |
| j) Species affected         | The name of the species of animal affected (i.e. Bovine, Ovine, Caprine, Avium, etc.). Note that details of each species should be entered separately in different rows for diseases affecting multiple species.   |
| k) Age group                | The age group of the animals affected during the outbreak. Four categories are available (0 – 12 months, 13 – 24 months, 25 – 36 months and > 36 months for large animals – Cattle, Horse, Buffalo, etc. and 0 - 6 months, 7 - 12 months, 13 - 18 months and > 18 months for small animals – Sheep, Goat, Pig, etc.) |

l) Sex	The sex of the animals affected during the outbreak (Male, Female, Neutral and all are the possible options)
m) Production system	The type of livestock production system (Intensive, mixed farming (small holder), pastoral, transhumant (semi-sedentary), etc.) affected by the outbreak
n) Control measures	The type of control measure(s) used to stop the progress of the disease outbreak being reported. These may include the following one or more combined measures: Vaccination, Quarantine, Stamping out, Treatment, Vector control, etc.
o) Basis for diagnosis	The method (laboratory, post-mortem, clinical, Owners claim, rumour, etc.) used to arrive to final diagnosis
p) Number of suscep.	The number of animals (per species for multi-species diseases) susceptible to the disease being reported (Population at risk)
q) Number of cases	The number of animals (per species for multi-species diseases) affected by the disease being reported (clinical cases)
r) Number of deaths	The number of animals (per species for multi-species diseases) died as a result of the disease outbreak being reported
s) Number of slaug.	The number of animals (per species for multi-species diseases) slaughtered because of the disease outbreak being reported
t) Number of recovered	The number of animals (per species for multi-species diseases) affected by the disease outbreak being reported but finally recovered
u) Number of destroyed	The number of animals (per species for multi-species diseases) destroyed (killed and buried or burnet) as a result of the disease outbreak being reported
v) Outbreak stopped?	The column expects answer to the question on whether there are still clinical cases of the disease outbreak at the end of the reporting month or not. Reporting officers are expected to fill the column with "YES" if the outbreak stopped or Ended. If there are still clinical cases by the time of reporting, then enter "NO" to show that the outbreak Continued.
w) Disease	In case of continuing giving details of an outbreak, particularly control vaccination, please enter the name of the same disease outbreak being reported. However, if there was only prophylactic vaccination for other disease(s), the name of this (these) should be entered here.
x) # Control vaccination	This is the number of animals per species vaccinated to stop the progress of the disease outbreak.
y) # Prophylactic vaccination	This is the number of animals per species vaccinated to prevent the infection of animals (in absence of disease)
z) Source of vaccine	The origin (the manufacturing institution) of the vaccine used for control or prophylactic purpose.
aa) Batch number	The batch number of the vaccine used in control or prophylaxis
ab) Date produced	This is the date the vaccine used was manufactured
ac) Expiry date	Date on which the vaccine used for control or prophylactic purpose expires (ends)
ad) Tested at PANVAC?	This column expects an answer on whether the vaccine used for control or prophylactic purpose was tested for quality at PANVAC (Panafrikan Vaccine Quality Control Centre) or not. The expected answer is "YES" or "NO"

## Annex III – Contact address of ministries responsible for livestock in some African countries in 2003.

Country	Ministry responsible for livestock	Minister	Street and city	P.O.Box
Algeria	Min. of Agriculture and Rural Development	Hon. Dr Saïd Barkat	12, Boulevard Colonel Amirouche, Alger	16000
Botswana	Ministry of Agriculture	Hon. Johny Swartz	Gaborone	P. Bag 3
Burkina Faso	Min. of Animal Resources	Hon. Alfonso D. Bonou	Ouagadougou	03 BP 7026
Burundi	Min. of Agriculture and Livestock	Hon. Dr. Ndikumagenge Pierre	Bujumbura	B.P. 1850
Ethiopia	Min. of Agriculture and Rural Development	Hon. Belay Ejigu	Addis Abeba	62347 or 3735
Ghana	Min. of Food and Agriculture	Hon. Major Courage Quarshigah Rtd	Accra	M37
Guinea Bissau	Min. of Agriculture, Forestry, Wildlife and Livestock	Hon. Dr. Mamadú Badji	Q.G - Bissau	71- Bissau
Kenya	Min. of Livestock and Fisheries Development	Hon. Joseph Munyao	Kilimo House, Nairobi	30028
Malawi	Min. of Agriculture, Irrigation & Food security	Hon. Dr. Thom Chakufwa	Lilongwe City	30134
Mali	Min. of Agriculture, Livestock and Fisheries	Hon. Seydou Traoré	Mohamed V, Bamako	61
Mauritania	Min. of Rural Development and Environment	Hon. Ahmedou Ould Ahmedou	Nouakchott	360
Mauritius	Min. of Agriculture, Food Tech. & Nat. Resources	Hon. N. Bodha	Jules Koenig/Maillars St. Reduit	
Namibia	Min. of Agriculture, Water & Rural Development	Hon. Helmut Angula	Gov. office Park, Luther Street, Windhoek	P.Bag 13184
Niger	Min. of Animal Resources	Hon. Koroney Maoudé	Niamey	12091
Nigeria	Min. of Agriculture and Rural Development	Hon. Mallam Adamu Bello	FCDA Secretariat, Area 11, Garki, Abuja	P.M.B. 135
Rwanda	Min. of Agriculture and Livestock	Hon. Patrick B. Habamenshi	Kigali	621
Senegal	Min. of Livestock	Hon. Dr. Yéro Ameth	Dakar	45677
South Africa	Department of Agriculture	Hon. Thoko Didiza	Agri. Place, Beatrix street, Pretoria	P.Bag X250, Pretoria, 0001
Sudan	Min. of Animal Resources and Fisheries	Hon. Glwak Deng	Khartoum	293
Swaziland	Min. of Agriculture and Co-operatives	Hon. Miti Fakudze	Mbabane	162
Tanzania	Min. of Livestock and Water Development	Hon. Edward Lowasa	Dar-es Salaam and Dodoma	9152 Dar & 456 Dodoma
Tunisia	Min. of Agriculture, Environment and Water Resources	Hon. Mohamed El Habib El Haddad	30 Rue Alain Savary	1002
Uganda	Min. of Agriculture, Animal Industry and Fisheries	Hon. Dr. Kisamba Mugerwa	Entebbe	24
Zimbabwe	Min. of Land, Agriculture and Resettlement	Hon. Dr. Joseph Made	1 Borrowdale Rd.	7701 Causeway

Country	Telephone	Fax	e-mail	Website
Algeria	213-21-711712	213-21-718732	dsva@wssal.dz	www.minagri.dz
Botswana	267-3950500	267-3903744	DAHP@gov.bw	http://www.gov.bw
Burkina Faso	226-326053	226-318475		
Burundi	257-222087 or 257-225141	257-222873	minagri@usan-bu	
Ethiopia	251-01-518040 or 517354	251-01-512984 or 511543		
Ghana	233-21-663036 or 21-671306	233-21-663250	Minister@Mofa.org.com	
Guinea Bissau	245-221200 or 223028	245-222483	gagricultura@hotmail.com	
Kenya	254-0202718870/9	254-020718318		
Malawi	265-01-789033	265-01-789219	cimatabwa@globemw.net	
Mali	223-2233006 or 2222979	223-2231023	fttraoré @mdr-mali.org	http://www.afribone.net.ml/mdre/
Mauritania	222-5251500	222-5257475		
Mauritius	230-2120643	230-2124427		
Namibia	264-61-2087643	264-61-229961		
Niger	227-733184	227-738186		
Nigeria	234-9-3140337 or 9-5234461	234-9-3140336 or 9-5240126	pacenigeria@microaccess.com	
Rwanda	250-85053	250-585057		
Senegal	222-8645091	222-8645091		
South Africa	271-23196000	271-23218558	Minister@nda.agric.za	www.nda.agric.za
Sudan	249-11-462420	249-11-475996	pacesud@yahoo.com	
Swaziland	268-404-2731	268-4040978	moac-Hq@realnet.co.sz	www.gov.sz
Tanzania	255-22-2866446	255-22-2862538	epid.tz@raha.com	
Tunisia	216-71-794586	216-71-786833		
Uganda	041-321463		pace@utlonline.co.ug	
Zimbabwe	263-04-251322			

## Annex IV – Contact address of Departments responsible for veterinary services in some African countries in 2003.

Country	Department responsible for Vet. Services	Head of Veterinary Services	Street and City	P.O.Box
Algeria	Veterinary Services Dept.	Dr Rachid Bouguedour	12, Boulevard Colonel Amirouche, Alger	16000
Botswana	Dept. of Animal Health & production	Dr. Musa Fanikiso	Gabarone	P.Bag 32
Burkina Faso	Veterinary Services Dept.	Dr. Zacharie Compaore	Ougadougou	03 BP 7026
Burundi	Livestock Dept.	Dr. Biyanke Patrice	Gitega	B.P. 161
Ethiopia	Dept. of Animal Health Services	Dr. Sileshi Zewdie	Addis Abeba	1084
Ghana	Veterinary Services Dept.	Dr. M. Agyen-Frempong	Ring road East, Accra	M 161
Guinea Bissau	Livestock Dept.	Ing. Antonio Roberto da Silva	Granja de Pessubé-Bissau	26 Bissau
Kenya	Veterinary Services Dept.	Dr. William Toroitch K. Chong	Kabete Veterinary Services	VetLabs 00625 Kangemi
Malawi	Dept. of Animal Health & Livestock Development	Dr. Wilfred Godwin Lipita		2096, Lilongwe
Mali	Risk Prevention and Plant and Animal Protection Division	Dr. Sourmana Diallo	Energie du Mali, Bamako	E/281
Mauritania	Dept. of Livestock and Agriculture	Dr. Fall Mokhtar	Nouakchott	180
Mauritius	Veterinary Services Division	Dr. L. L. Prayag	Reduit	
Namibia	Directorate of Veterinary Services	Dr. Archie Norval	Gov. office Park, Luther Street, Windhoek	P.Bag 12022, Windhoek
Niger	Animal Health Dept.	Dr. Aboubacar Seyni		
Nigeria	Dept. Livestock and Pest Control	Dr. Foluso E. Fasami	FCDA Secretariat, Area 11, Garki, Abuja	P.M.B. 135
Rwanda	Livestock Dept.	Dr. Isidore Gafarasi Mapendo	Kigali	621
Senegal	Livestock Dept.	Dr. Abdoulaye Niang	37, Avenue Pasteur - Dakar	67
South Africa	Directorate of Animal Health	Dr. JJH van Wyk	Delpen Building, c/o Union Road and Annie Botha Avenue, Riviera, Pretoria	P.Bag X138, Pretoria, 0001
Sudan	Undersecretary of Animal Resources & Fisheries	Dr. Ahmed Mustafa Hassan	Khartoum	293
Tanzania	Dept. of Veterinary and Livestock Services	Dr. Robert Thwala	Mbabane	162
Zambia	Directorate Of Veterinary Services	Dr. Barnos W.S. Kimaroyo	Temeke Area	9152 Dar-es-Salaam
Zimbabwe	Veterinary Services Dept.	Dr. Malek Zrelli	30 Rue Alain Savary	1002
Uganda	Directorate of Animal Resources	Dr. William Olaho Mukani	Entebbe	513
Zimbabwe	Division of Livestock and Veterinary Services	Dr. Stuart Harsreaues	18 Borrowdale Rd.	CY 66 CAUSEWAY

Country	Telephone	Fax	e-mail	Website
Algeria	21321743434	21321743434	dsva1@wissal.dz	<a href="http://www.minagri.dz">www.minagri.dz</a>
Botswana	267-3950635	267-3903744	mfanikiso@gov.bw	<a href="http://www.gov.bw">http://www.gov.bw</a>
Burkina Faso	226-324584	226-313529	dsv@fasonet.bf	
Burundi	257-402133 or 257-402092	257-402133	coopacebu@cbinf.com	
Ethiopia	251-01-536336	251-01-536342	nat.pace@telecom.net.et	
Ghana	233-21-776021	233-21-776021	vetsdept@africaonline.com.gh	
Guinea Bissau	245-221364	245-221719	pacegbissau@hotmail.com	
Kenya	254-020-631273,632231	254-020-631273	cvfovvetlabs@kenyaweb.com	
Malawi	265-01-754963 or 265-01-750455	265-01-751349	agric-dahi@sdhp.org.mw	
Mali	223-2228024	223-2228024	dprpav@cefib.com	
Mauritania	222-5290808	222-5293293	se.dsa@mauritel.mr	
Mauritius	230-4541016 or 4541017	230-4642210	vetser@intnet.mu	
Namibia	264-61-2087506	264-61-2087778	norvala@mawrd.gov.na	
Niger	227-733184	227738186		
Nigeria	234-9-3140337 or 9-5234461	234-9-3140336 or 234-9-5240126	folusofasanmi@yahoo.com, pacenigeria@microaccess.com	
Rwanda	250-54649	250-84644		
Senegal	222-8213228	221-8213228	Dire14@hotmail.co	
South Africa	271-23197679	271-23197470	SMAH@nda.agric.za	<a href="http://www.nda.agric.za">www.nda.agric.za</a>
Sudan	249-11-465920	249-11-475996	pacesud@yahoo.com	
Swaziland	268-404-2731	268-404-9802	sd-fangrd@realnet.co.sz	<a href="http://www.gov.sz">www.gov.sz</a>
Tanzania	255-22-2866447	255-22-2862538	epid.tz@raha.com	
Tunisia	216-71794586	216-7178906		
Uganda	041-320915		pace@africaonline.co.ug	
Zimbabwe	263-04-790879		vu@africaonline.m.zw/vet/	<a href="http://www.africaonline.m.zw/vet/">www.africaonline.m.zw/vet/</a>

## Annex V - Veterinary Education Centres in some African countries during 2003

Country	Name of the University/Institution	Name of Veterinary faculty	Location/Address	Average # of Graduates/year
Algeria		Ecole Nationale Vétérinaire	El Harrach. Alger.	154
Algeria	Université de Blida	Institut des sciences vétérinaires	BP 270 Route de Soumâa. Blida	151
Algeria	Département vétérinaire	Faculté des Sciences agronomiques et sciences de la terre	Route de Bouhadjar. El Tarf	
Algeria		Institut des sciences vétérinaires	Route de Fraïda. Tiaret	85
Algeria		Institut des sciences vétérinaires	wilaya de constantine	76
Algeria		Institut des services vétérinaires	wilaya de Batna	72
Botswana	No Veterinary Faculty			
Burkina Faso	No Veterinary Faculty	Member of EISMV, see Senegal		
Burundi	No Veterinary Faculty			
Ethiopia	Addis Ababa University	Faculty of Veterinary Medicine	Debre-zeit	35
Ethiopia	Alemaya University	Faculty of Veterinary Medicine	Alemaya (Harar)	No graduates yet
Ethiopia	Jimma University	Faculty of Veterinary Medicine	Jimma	No graduates yet
Ethiopia	Debub University	Faculty of Veterinary Medicine	Awassa	No graduates yet
Ethiopia	Mekelle University	Faculty of Veterinary Medicine	Mekelle	No graduates yet
Ghana	No Veterinary Faculty			
Guinea Bissau	No Veterinary Faculty			
Kenya	University of Nairobi	Faculty of Veterinary Medicine	Kabete Box 29053	60 - 90
Malawi	No Veterinary Faculty			
Mali	No Veterinary Faculty			
Mauritania	No Veterinary Faculty	Member of EISMV, see Senegal		
Mauritius	No Veterinary Faculty			
Namibia	No Veterinary Faculty			
Niger	No Veterinary Faculty	Member of EISMV, see Senegal		
Nigeria	Ahmadu Bello University (ABU)	Faculty of Veterinary Medicine	Zaria, Kaduna State.	51
Nigeria	University of Ibadan (UI)	Faculty of Veterinary Medicine	Ibadan, Oyo State.	61

Country	Name of the University/Institution	Name of Veterinary faculty	Location/Address	Average # of Graduates/year
Nigeria	University of Nigeria Nsukka (UNN)	Faculty of Veterinary Medicine	Nsukka, Anambra State.	37
Nigeria	University of Maiduguri (UM)	Faculty of Veterinary Medicine	Maiduguri, Borno State.	37
Nigeria	Usman DanFodio University (UDU)	Faculty of Veterinary Medicine	Sokoto, Sokoto State.	25
Nigeria	Universities of Agriculture Abeokuta	Faculty of Veterinary Medicine	Abeokuta	No graduates yet
Nigeria	Universities of Agriculture Makurdi	Faculty of Veterinary Medicine	Makurdi	No graduates yet
Rwanda	No Veterinary Faculty	Member of EISMV, see Senegal		
Senegal	l'Ecole Inter-Etats des Sciences et Médecine Vétérinaires (EISMV)		Route Université Prol., Dakar	
South Africa	University of Pretoria	Faculty of Veterinary Science	Onderstepoort (close to Pretoria)	80
Sudan	Khartoum University	Faculty of Veterinary Science	Khartoum	100
Sudan	Sudan University	Faculty of Veterinary Science	Khartoum	45
Sudan	Nyala University	Faculty of Veterinary Science	Nyala	70
Sudan	Bahr Al Ghazal University	Faculty of Veterinary Science	Khartoum	85
Swaziland	No Veterinary Faculty			
Tanzania	Sokoine University Of Agriculture	Faculty of Veterinary Medicine		15
Tunisia	Ecole de médecine vétérinaire de Sidi Thabet		Sidi Thabet	50
Uganda	Makerere University	Faculty of Veterinary Medicine	P.O Box 7062 Kampala	35
	Bukalasa Agricultural College	Veterinary department	Tororo District	20
	Arapai Agricultural College	Veterinary department	Soroti District	15
	Liri Research Centre	Veterinary department	Luwero District	25
Zimbabwe	University of Zimbabwe	Faculty of Veterinary Science	MP 167, Mt. Pleasant, Harare	



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DISCLAIMER

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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.