

PASTORALISM: OPPORTUNITIES FOR LIVESTOCK AND CHALLENGES FOR VETERINARY SERVICES

O. Idriss & C. Nersy¹

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Summary: *Founded on ancient traditions and based on the mobility of humans and animals, pastoralism remains a fundamental socio-economic activity in Africa particularly in terms of the generation and distribution of income in a rural environment. Indeed, in the 30 countries concerned that replied to the questionnaire, pastoralism is reported to involve over 62 million people and over 424 million head of livestock (i.e. 123 million cattle, 138 million sheep, 140 million goats and 23 million camelids).*

Despite making a significant contribution to gross domestic product (GDP) in nearly half of the countries, this activity and its actors, as indeed the whole of the livestock sector in Africa, are still in the large majority of cases politically neglected, as shown by a comparison of their contribution to national GDP (8.5% on average in the major pastoral livestock farming countries) with the funding they receive from the national budget (on average, less than 1% in the same countries).

Despite the implementation in most of the major livestock producing countries of support measures that are, in appearance at least, not inconsiderable (legislative and regulatory framework, cross-border agreements, research activities), livestock mobility is an ever-growing source of conflicts of an increasingly serious nature between communities (between farmers and pastoralists and sometimes even between pastoralists themselves).

Yet, even if this context gives little cause for optimism, in many countries mobile pastoralism generally still has major strengths and potentialities that give governments very real prospects for ensuring sustainable development and elaborating their land use planning policies, especially in the Sahel belt where vast areas are still devoid of any agricultural activity. Yet, the challenges they face are no less significant and need to be very rapidly addressed to avoid this way of life and all its potentialities disappearing in the very near future.

High on the list of constraints is the persistence of nearly all the major animal diseases, and especially contagious bovine pleuropneumonia (CBPP), foot and mouth disease (FMD), peste des petits ruminants (PPR) and most of the vector-borne diseases. This worrying animal disease situation is exacerbated by the chronic under-investment that the Veterinary Services have been suffering from since the introduction of structural adjustment policies some thirty years ago. Therefore, a very great effort is urgently needed to revitalise, strengthen, and even in some cases revive the Veterinary Services, especially with regard to pastoral livestock systems, which are essentially difficult to access given the mobility of the animals.

¹ Dr Oumar Alfaroukh Idriss, Regional Technical Assistant, OIE Regional Representation for Africa
Dr Cyrus Nersy, International Technical Assistant, OIE Regional Representation for Africa

Nevertheless, in the last few years a glimmer of hope has emerged with a change in the way pastoralism is perceived by decision-makers (principally multilateral donors) and the implementation (probably through the impetus of the Regional Sahel Pastoralism Support Project [PRAPS]) of a number of projects, in support of pastoralism and more generally the livestock sector, worth a total of about EUR 980 million. Even so, it should be pointed out that only a part of these projects is devoted to improving animal health (20% in the case of PRAPS).

Views on the future of pastoralism are deeply divided between countries where livestock production is predominantly pastoral, which consider that this activity should be maintained at all costs, and countries that are less involved and are often host countries for pastoral herds, which consider that, in the best of cases, it can only be partially perpetuated.

In this context, several recommendations can be made:

- conduct advocacy aimed at redressing the imbalance between the budget allocated to the livestock sector and the sector's economic importance;*
- urgently strengthen the capacities and accessibility of the Veterinary Services, based on analyses of OIE PVS Pathway missions already carried out or to be updated (readjustment of funding allocated to animal health and identification of new sources of funding);*
- establish animal health standards specific to pastoralism;*
- improve understanding and ownership of the 'One Health' approach, notably in terms of operationalisation;*
- significantly strengthen the effectiveness of border inspections posts (BIPs) (including, among others, regulatory provisions, training and resources);*
- develop continent-wide control programmes for the main animal diseases (e.g. PPR).*

Keywords: animal health – constraints – future prospects – protective measures – socio-economic data – strengths – transhumance and nomadic pastoralism.

INTRODUCTION

Within the context of the survey on the topic ‘Pastoralism: opportunities for livestock and challenges for Veterinary Services’, chosen as the Technical Item for the 22nd Conference of the OIE Regional Representation for Africa, a questionnaire comprising 29 main questions was sent to the 54 Countries of the OIE Africa Region. The list of countries that responded and their classification by group are given in [Appendix I](#).

Out of the 54 countries, 38 questionnaires were received, representing a response rate of 70%. However, one of these questionnaires was received too late to be included in the analysis.

Of the 37 questionnaires processed, 30 were from countries directly concerned by pastoralism issues and 7 were from countries not directly concerned.

Classification of countries

For data processing purposes, different Groups of countries were identified, on the one hand based on the scale of their pastoralism activities and on the other hand on their predominant language.

Table 1: Classification of countries

	Group 1	Group 2	Group 3	Total
English-speaking zone	6	5	5	16
French-speaking zone	9	9	0	18
Portuguese-speaking zone	0	1	2	3
Total	15	15	7	37

- Group 1 countries are those in which pastoralism is important (pastoral bovine population superior or equal to 40% of the national herd);
- Group 2 countries are those where pastoralism is considered to be limited;
- Group 3 countries are those that report having no pastoralism activities, within the meaning of ‘pastoralism’ as defined in the questionnaire.

To tackle the subject, the 29 questions were grouped into four categories:

- socio-economic data characterising pastoralism;
- strengths and constraints of pastoral livestock systems;
- animal health issues in pastoral areas;
- future prospects.

It is important to note that the analysis of questionnaires revealed a relatively high number of non-responses, non-interpretable responses and inconsistent responses (either between responses to questions or with generally accepted data). All such responses were excluded from the analysis.

SOCIO-ECONOMIC DATA

Types of mobility

In a very great majority of cases the two types of mobility, nomadism and transhumance, both exist, though with a higher proportion in Group 1 countries, where pastoralism is important.

Table 2: Types of mobility present

Type of mobility	Group 1	Group 2
Transhumance only	3	7
Nomadism only	2	0
Transhumance and nomadism	10	8
Total	15	15

Destination

The vast majority of Group 1 countries are both host and departure countries whereas Group 2 countries are mostly host countries.

Table 3: Classification by destination

Classification by destination	Group 1	Group 2	Total
Host country	1	10	11
Country of departure	2	1	3
Both	11	2	13
Not indicated	0	2	2
Not applicable	1	0	1
Total	15	15	30

Population

The socio-economic importance of pastoralism in Africa is undeniable since more than 62 million people are involved, obviously with a clear advantage for Group 1 countries, which account for 82% of the population concerned (51 million) compared to 18% for Group 2 countries (11 million).

Table 4: Population involved

Group	Population involved
Group 1	50,872,400
Group 2	11,175,372
Overall total	62,047,772

Livestock populations

The livestock population involved is also quite substantial, with more than 424 million animals out of a total of 720 million (comprising 123 million cattle, 138 million sheep, 140 million goats, 23 million camelids), which represents over 60% of the total livestock population of the countries that responded to the questionnaire. From a macro perspective, no significant difference was observed in the distribution rate between the different species in Group 1 countries. By contrast, in Group 2 countries the pastoral sheep and goat population represents around 20% of national livestock compared to 10% in the case of cattle. In these countries, pastoralism is therefore more concerned with small ruminants.

Table 5: Livestock populations involved

	National population	Pastoral population	Percentage
Group 1	556,209,897	395,311,444	71%
Cattle	151,850,347	117,930,939	78%
Sheep	172,353,014	122,794,858	71%
Goats	205,989,420	131,392,654	64%
Camelids	26,017,116	23,192,993	89%
Group 2	163,259,222	29,042,522	18%
Cattle	52,574,614	5,429,750	10%
Sheep	59,945,241	14,731,645	25%
Goats	50,254,832	8,700,310	17%
Camelids	484,535	180,815	37%
Total	719,469,119	424,353,966	59%

Economic and budgetary aspects

In economic terms, Group 1 countries clearly stand out from Group 2 countries. In the former, livestock-related GDP represents an average of 13.5% of national GDP, compared to 6.8% in Group 2 countries. Furthermore, pastoral activities represent nearly 62% of livestock-related GDP in Group 1 countries, compared to only 8% in Group 2 countries.

It is remarkable to note that, in both Groups, the share of the national budget that is allocated to the livestock sector is completely out of step with its economic importance, and in roughly the same proportions (2.4% / 13.53% for Group 1 countries and 1.44% / 6.81% for Group 2 countries).

The rate of budget implementation was markedly better in the major pastoralist countries than in the others (approx. 80% and 46%, respectively). Incidentally, this rate corresponds in most cases to the payment of civil servants' salaries and therefore demonstrates the recurrent chronic under-investment suffered by the livestock sector (especially the Veterinary Services) for almost the past 30 years.

Table 6: Economic and budgetary data

	Group 1	Group 2
Livestock GDP / National GDP %	13.53%	6.82%
Pastoralism GDP / Livestock GDP %	61.63%	8.06%
Livestock budget / State budget	2.41%	1.44%
Pastoralism budget / Livestock budget	40.61%	5.0%
Livestock budget implementation rate %	77.33%	46.25%

Legislative and regulatory provisions

Pastoral activities are not systematically backed up by legislative and regulatory provisions: slightly less than 50% of cases in Group 1 and slightly more than 50% in Group 2 countries. A considerable amount of work therefore remains to be done in this field, given the scale of the land and property issues generated by this production system (see below: Occurrence of conflicts).

Table 7: Legislative and regulatory support

	Yes	No	Total
Group 1	7	8	15
Group 2	8	7	15
Total	15	15	30

Law	10
Decree (administrative decision issued by President or PM)	5
Decision (administrative decision issued by an authority other than President or PM)	5

Cross-border agreements

Group 1 countries generally have cross-border agreements with neighbouring countries (10/15), in contrast to Group 2 countries (5/15). There are slightly more regional agreements than bilateral agreements (10 and 9, respectively) and only 5 countries have both types of agreement. For the most part, these agreements make provision for frameworks of consultation at different levels but they are generally little used or not activated.

Table 8: Cross-border agreements

	Yes	No	Total
Group 1	10	5	15
Group 2	5	10	15
Total	15	15	30

Regional agreement	10
Bilateral agreement	9
Bilateral agreement and regional agreement	5
Not indicated	1

Research on pastoralism

Numerous countries (21/30) conduct research on pastoralism, but not surprisingly it is more frequent in Group 1 countries (12/15) than in Group 2 countries (9/15).

In terms of the four options proposed in the questionnaire, the research topics are fairly evenly spread and do not present any significant preference for one of the four topics. The most one can say is that research on the topics 'animal health' and 'socio-economics' is very slightly more frequent than on 'management of pastoralism crises' and 'environment'.

Table 9: Research being conducted and area of research

	Yes	No	Not indicated	Total
Group 1	12	2	1	15
Group 2	9	6	0	15
Overall total	21	8	1	30

Animal health	17
Socio-economics	16
Management of pastoralism crises	14
Environment	12

Occurrence of conflicts

Pastoralism seems to be increasingly a source inter-community conflicts (between agriculturalist communities and pastoralists and even between pastoralists themselves) as revealed by the responses to question 11 of the questionnaire. Indeed, in Group 1 countries the occurrence of very serious events is mentioned 11 times out of 15, and 6 times out of 15 for Group 2 countries. Furthermore, the occurrence of minor or serious events appears to be virtually the norm in all countries. Unfortunately, there is clearly an upward trend and this seems unlikely to change given the current demographic context in Africa.

Table 10: Occurrence of conflicts

	Number of responses
Group 1	15
Regular/Very serious	7
Regular/Minor	3
Frequent/Very serious	2
Very frequent/Very serious	2
Not indicated	1
Group 2	15
Regular/Serious	4
Regular/Minor	3
Very frequent/Very serious	2
Frequent/Very serious	2
Regular/Very serious	2
Frequent/Minor	1
Not indicated	1
Total	30

STRENGTHS AND CONSTRAINTS OF PASTORAL LIVESTOCK PRODUCTION SYSTEMS

Strengths of pastoral systems

According to the survey respondents, the main strengths of pastoral systems lie in their capacity to exploit the available land. Special emphasis is therefore placed on the possibility to exploit grazing resources that are temporarily available according to the season. Ancestral know-how and sustainable management of natural resources are reported as the next most important strengths. Management of sanitary risks and complementarity between systems (production of manure) are ranked last in order of importance and are cited significantly less frequently.

Table 11: Strengths of mobile pastoral livestock systems

Group 1	
Strong points of pastoral systems	Score
Available tracts of pastoral land	71
Ancestral know-how	56
Sustainable management of natural resources	52
Outlets for production	50
Management of health risks	42
Production of manure	31

Group 2	
Strong points of pastoral systems	Score
Available tracts of pastoral land	60
Sustainable management of natural resources	47
Ancestral know-how	42
Management of health risks	38
Production of manure	33
Outlets for production	21

Constraints of pastoral systems

The principal constraints identified reflect the main strengths referred to above, and are, in terms of priority, access to water and grazing, followed by climate variability and competition between agriculture and livestock. Accessibility of Veterinary Services and security of assets and people are significantly less frequently cited and therefore seem to be perceived by respondents as less important constraints. There does not appear to be any fundamental difference between Group 1 countries and Group 2 countries.

This point probably merits a comment, insofar as security of assets and people and animal health, and more generally access to social services, very often feature among the top priorities in field surveys carried out in pastoral communities.

Table 12: Main constraints of mobile pastoral livestock systems

Group 1	
Constraints of pastoral systems	Score
Accessibility of water	97
Accessibility of grazing	80
Climate variability	72
Agriculture/livestock competition	59
Accessibility of Veterinary Services	53
Hindrances to mobility	52
Security of assets and people	45
Accessibility of social services	42

Group 2	
Constraints of pastoral systems	Score
Accessibility of water	82
Climate variability	79
Accessibility of grazing	77
Accessibility of social services	57
Security of assets and people	55
Agriculture/livestock competition	56
Hindrances to mobility	49
Accessibility of Veterinary Services	39

Constraints to herd mobility

The main constraints to herd mobility are chiefly attributed to demographic growth and its corollary, growing land use for agricultural activities, which seems very logical. However, legislative weaknesses, ranked in second place, probably reflect the subjective views of the survey respondents, insofar as this constraint is only very occasionally mentioned by the pastoral communities themselves during field surveys. Insecurity and the development of large livestock production operations (land grabbing and water points) are once again ranked in last position. There is no significant difference between the Groups.

Table 13: Main constraints to herd mobility

Main constraints	Score
Demographic growth	103
Legislative weaknesses	90
Maintenance or development of obstacles	85
Insecurity	60
Large livestock production operations	60

Aspirations of pastoral communities

The aspirations of pastoral communities are mainly perceived by respondents to be, as a priority:

- access to water
- access to animal health (to the Veterinary Services)
- security of assets and people
- access to social services.

This corresponds closely to the wishes and aspirations expressed by communities during field surveys. These responses need to be compared with the responses that respondents made to previous questionnaires, which would tend to suggest that there is a certain divergence of views between their assessment and that of communities with regard to the importance of animal health and, to a lesser degree, the security of assets and people.

Table 14: Main aspirations of pastoralist communities

Main aspirations	Number of citations				
	Rank 1	Rank 2	Rank 3	Rank 4	Total
Access to water	9	7	1	1	18
Animal health	1	4	7	4	16
Access to grazing	3	9	1	1	14
Safeguarding of herd mobility	5	2	2	1	10
Security of assets and people	1	1	5	2	9
Social services (education/health)	0	1	3	4	8
Access to markets	0	0	2	3	5

Existence of dedicated projects

Contrary to some received opinion, pastoralism seems to be enjoying a recent, but nevertheless real, upsurge of interest, as shown by the amount of funding devoted to it, namely a total of 42 projects worth nearly EUR 980 million. The Group 1 countries naturally account for the lion's share, with 31 projects and EUR 786 million. Among these projects is, of course, the World Bank Regional Sahel Pastoralism Support Programme (PRAPS) which alone totals USD 248 million. It should, however, be noted that these projects, even if most of them have an animal health component, are essentially focused on the management of natural resources (access to water, safeguarding of grazing) and market access. In this context, animal health (20% of the total funding for PRAPS) remains relatively marginalised and strong advocacy is therefore needed to redress the balance.

Table 15: Existence of dedicated projects

	Yes	No	Total
Group 1	13	2	15
Group 2	7	8	15
Total	20	10	30

	Value of dedicated projects (EUR)	Number of dedicated projects
Group 1	785,541,599	31
Group 2	191,737,753	11
Total	977,279,352	42

ANIMAL HEALTH ISSUES IN PASTORAL AREAS

Animal health situation

The animal health situation in pastoral areas and indeed in Africa in general continues to be characterised by the persistence of virtually all the major diseases. In cattle, CBPP, FMD and anthrax are the leading diseases cited. In sheep, the classic diseases are PPR, gastro-intestinal parasitosis and sheep pox. In goats, PPR, gastro-intestinal parasitosis and contagious caprine pleuropneumonia (CCPP) are considered to be the main diseases. Lastly, the large number of non-responses regarding camelid diseases reflects a lack of available knowledge or even a lack of interest in this species. Camel trypanosomosis and camel pox are the diseases most frequently cited.

Table 16.1: Main diseases of cattle in pastoral areas

Main diseases	Number of citations					Total
	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	
CBPP	14	4	3	1	0	22
FMD	7	7	2	2	1	19
Anthrax	1	4	3	3	2	13
Lumpy skin disease	1	2	2	3	4	12
Trypanosomoses	0	1	1	5	4	11
Tick-borne diseases	3	3	3	0	2	11
Brucellosis	1	3	3	0	2	9
Tuberculosis	0	1	4	0	3	8
Pasteurellosis	0	2	3	3	0	8
Blackleg	0	2	2	2	0	6

Table 16.2: Main diseases of sheep in pastoral areas

Main diseases	Number of citations
PPR	24
Gastro-intestinal parasitosis	11
Sheep pox	10
Pasteurellosis	10
Brucellosis	8
Anthrax	7
Rift Valley fever	6
Goat pox	6
CCPP	5
Enterotoxaemia	5

Table 16.3: Main diseases of goats in pastoral areas

Main diseases	Number of citations
PPR	23
Gastro-intestinal parasitosis	11
CCPP	10
Pasteurellosis	9
Goat pox	8
Anthrax	7
Brucellosis	6
Rift Valley fever	6
Sheep pox	4
FMD	4

Table 16.4: Main diseases of camelids

Main diseases	Number of citations
Trypanosomoses	7
Camel pox	6
Ectoparasites (mange/ticks)	5
Brucellosis	4
Pasteurellosis	4
Tick-borne diseases	3
Anthrax	2
Rift Valley fever	2
No response	35

Vaccination

A majority of countries (19/30) report that animals are vaccinated before leaving on transhumance – mainly against CBPP, PPR, anthrax, blackleg and pasteurellosis. Once again, camelids do not seem to be included. While vaccinations against soil-borne diseases appear to be performed very frequently, it would seem less certain that vaccinations against CBPP and PPR are performed as frequently as indicated.

Table 17: Vaccination of animals before transhumance

	Yes	No	No response	Total
Group 1	13	2	0	15
Group 2	6	8	1	15
Total	19	10	1	30

	Cattle	Sheep	Goats	Camelids
Rank 1	CBPP	PPR	PPR	Pasteurellosis
Rank 2	Anthrax/blackleg	Anthrax/blackleg	Anthrax/blackleg	–
Rank 3	Pasteurellosis	Pasteurellosis	Pasteurellosis	–

Constraints to improvement of animal health in pastoral areas

The main constraints to improving animal health in pastoral areas are primarily considered to be related in one way or another to the accessibility, and more especially the capacity, of the Veterinary Services, accounting for 62 citations² of the 93 citations taken into account. Poor level of knowledge among livestock producers, low availability of medicines and vaccines and poor level of awareness about pastoralism are placed on an equal footing, each with around 5 citations out of 93.

Security of assets and people was not considered to be a major obstacle to improving animal health, even though at present and especially in the Sahel (countries involved in PRAPS) entire regions are inaccessible, which might appear paradoxical.

Table 18: Constraints to improvement of animal health in pastoral areas

Main constraints	Number of citations					Total
	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	
Veterinary Services' capacity and accessibility	12	5	5	3	3	28
Lack of budgetary resources	4	4	4	1	0	13
Lack of infrastructure	0	4	3	3	1	11
Lack of human resources	2	1	3	2	1	9
Poor level of training of livestock producers	0	3	1	0	2	6
Lack of control of livestock movement	0	0	1	3	1	5
Persistence of transboundary and other diseases	2	0	3	0	0	5
Mobility	2	1	1	1	0	5
Availability of vaccines and medicines	1	1	1	2	0	5
Poor level of awareness about pastoralism	2	1	2	0	0	5

Disease reporting

Animal disease information from pastoral areas is mainly considered to be provided regularly (18/30), especially in Group 1 countries (12/15) as opposed to 6/15 countries in Group 2. These results do not really corroborate observations in the field, where it is often found that implementation of epidemiological surveillance systems largely depends on the existence of projects to finance this activity. Thus, in many countries the epidemiological surveillance systems are dormant even though in most cases they have the backing of regulatory or even legislative provisions.

Table 19: Frequency of reporting of animal disease information

	Regularly	Rarely	Very rarely	Total
Group 1	12	3	0	15
English-speaking	5	1	0	6
French-speaking	7	2	0	9
Group 2	6	6	3	15
English-speaking	2	1	2	5
French-speaking	3	5	1	9
Portuguese-speaking	1	0	0	1
Total	18	9	3	30

2 Citations per se or equivalent: lack of budgetary resources, lack of infrastructure, lack of human resources

Veterinary Services

A majority of countries (18/30) indicated that the Veterinary Services are not organised in a specific way to address the needs of pastoral communities. No difference was found between Group 1 countries and Group 2 countries. This lack of specific organisation must be considered the norm, as even in those countries that indicated they were organised in a specific way this does not really seem to be the case, taking into account the responses given. Indeed, only one country indicated that mobile teams have been set up and three countries rely solely on private veterinarians to provide animal health cover in pastoral areas. As for the remainder of the responses, they either merely describe the national system or could not be taken into account.

Table 20: Veterinary Services specifically organised to address the needs of pastoralists

	Yes	No	Total
Group 1	6	9	15
Group 2	6	9	15
Total	12	18	30

Private veterinarians	3
Mobile clinic or team	1
Description of national system	3
Response not taken into account	3
No response provided	2
Total	12

Private veterinarians and veterinary para-professionals

As a rule, private veterinarians and veterinary para-professionals are present in the pastoral areas of Group 1 countries (11/15 and 13/15, respectively). However, there are far more in English-speaking areas than in French-speaking areas (ratio of 5 to 1). Therefore, much greater use is made of private veterinarians and veterinary para-professionals in English-speaking areas (and especially in East Africa) to address the needs of pastoralist communities.

Table 21: Presence of private veterinarians and veterinary para-professionals in pastoral areas

	Group 1		Group 2	
	Percentage of countries	Number	Percentage of countries	Number
Private veterinarians in pastoral areas	73%	2,393	50%	291
English-speaking	66%	2,112	0%	0
French-speaking	77%	281	77%	291
Para-professionals in pastoral areas	86%	19,262	71%	731
English-speaking	83%	15,592	80%	731
French-speaking	89%	3,670	66%	ns

Border inspections posts

By contrast, the provision of border inspections posts (BIPs) seems to be a characteristic of French-speaking areas (15/18 countries compared to 5/11 in English-speaking areas). Their efficacy is assessed to be particularly low in English-speaking areas given that on average only 13% of animals pass through a BIP and only 1/3 of animals are actually controlled. In French-speaking areas, they appear at first sight to be assessed more favourably with an average of 40% of animals passing through a BIP, with 70% of these animals being controlled. In actual fact these figures mask a very wide disparity and these apparently better results are due to the indications of several countries which stated that 100% pass through BIPs and that 100% are controlled. As a rule, and according to information collected in the field, it would appear that fewer than 10% pass through a BIP, with fewer than 20% of them actually being controlled, regardless of whether one considers transhumance flows or trade flows.

In 17 of the 21 countries concerned, the various border services (customs, police, Veterinary Services) work in collaboration, though there was no provision to indicate the degree of collaboration. Only four countries maintain specifically veterinary BIPs.

In this context, and given the importance of cross-border movements in spreading diseases, a complete overhaul is needed to improve the efficacy of cross-border sanitary checks and enable them to make a significant contribution to controlling the main animal diseases in Africa.

Table 22: Border inspection posts (BIPs)

	Yes	No	No response	Total
English-speaking	5	5	1	11
French-speaking	15	3	0	18
Portuguese-speaking	1	0	0	1
Total	21	8	1	30

	Average		
	Group 1	Group 2	Overall average
% animals passing through BIPs	26,50%	41,43%	32.65%
English-speaking countries	16,67%	7,50%	13.00%
French-speaking countries	30,71%	55,00%	40.83%
% animals controlled by BIPs	48,50%	69,44%	58.42%
English-speaking countries	38,33%	30,00%	34.17%
French-speaking countries	52,86%	89,17%	69.62%

	Yes	Not applicable	No	No response	Total
Inter-service collaboration	17	8	4	1	30

Measures to improve the delivery of animal health care and the performance of disease prevention campaigns

The priority measures identified by respondents to improve the delivery of animal health care and the performance of disease prevention campaigns focus mainly on strengthening the Veterinary Services. In terms of delivery of care, Group 1 countries also count heavily on veterinarians setting up in private practice and training for pastoralists. In the same Group, in terms of disease prevention, access to vaccines and medicines are among the priorities highlighted. In the case of Group 2, the large number of non-responses makes it difficult to interpret the results. The most one can say is that, in addition to

strengthening of the Veterinary Services, the main priority is awareness-raising and training for pastoralists.

Table 23: Priority measures that should be implemented to improve delivery of animal health care in pastoral areas

Priority measures	Number of citations				
	Rank 1	Rank 2	Rank 3	Rank 4	Total
Group 1					
Strengthening of Veterinary Services	10	3	3	1	17
Setting up of veterinarians in private practice	2	2	3	1	8
Awareness-raising/training for pastoralists	0	2	3	2	7
Installation of livestock infrastructure	0	1	2	3	6
Access to veterinary products	0	2	2	1	5
Establishment of veterinary para-professionals	0	0	2	2	4
Group 2					
No response	3	3	3	6	15
Awareness-raising/training for pastoralists	1	1	3	4	9
Strengthening of Veterinary Services	4	0	2	2	8
Establishment of veterinary para-professionals	1	1	3	0	5
Animal census/identification	2	0	1	1	4
Setting up of veterinarians in private practice	0	3	1	0	4
Legislation/regulations	1	2	0	0	3

Table 24: Priority measures that should be implemented to improve the performance of disease prevention campaigns

Priority measures	Number of citations				
	Rank 1	Rank 2	Rank 3	Rank 4	Total
Group 1					
Strengthening of Veterinary Services	10	5	3	5	23
Access to medicines and vaccines	1	4	3	0	8
Strengthening of epidemio-surveillance networks	2	0	3	0	5
Installation of livestock infrastructure	0	1	2	2	5
Awareness-raising/training for pastoralists	1	0	1	3	5
Legislation/regulations	1	0	1	1	3
Group 2					
No response	2	3	4	6	15
Strengthening of Veterinary Services	7	2	1	2	12
Awareness-raising/training for pastoralists	3	1	2	2	8
Access to medicines and vaccines	0	3	1	1	5
Movement control	0	1	2	1	4
Other	1	2	0	1	4
Animal census/identification	1	1	0	0	2

‘One Health’ approach

The question on ways in which the ‘One Health’ approach could help to improve human and animal health in pastoralist communities seems to have caused some problems of interpretation or comprehension, as shown by the disparity and imprecision of the majority of responses. In fact, nearly half of the responses could not be interpreted and classified within a group of responses. In all, it was possible to characterise two groups of interpretable responses. The first concerns the mutualisation of actions or pooling of resources between the animal health and human health services (e.g. organisation of a joint disease prevention campaign, which was cited specifically only once) and the second concerns the development of synergies between the animal health and human health services (e.g. sharing of information and collaboration on epidemiological surveillance systems and contingency plans).

It must be said that, even if the principle of ‘One Health’ seems to be clearly understood and acknowledged, it would probably be appropriate to strengthen relevant stakeholders’ knowledge and understanding regarding the scope of its operational application.

Table 25: ‘One Health’ approach

Approach	Number of citations
Development of synergies between animal health and human health systems	7
Mutualisation of actions or pooling of resources	7
Inter-ministerial collaboration	1
Specific training	1
Imprecise response	12
Non-existent	1
No response	1
Total	30

FUTURE PROSPECTS

Future of pastoralism

The responses on the perceived future of pastoralism differ widely between the Groups but very little within a given language zone. Out of the 15 Group 1 countries, 11 countries consider that this type of production system should be maintained at all costs, four of the 15 countries consider that it can be partially maintained and no countries considered this activity to be ultimately doomed. In contrast, Group 2 countries (which are essentially host countries) consider in a majority of cases (10/15) that this type of production system is either set to evolve (7/15) or is even doomed in the near future (3/15). There is therefore a fundamentally different appraisal between the Groups of countries, which corroborates the findings available in the literature.

Table 26.1: Future of pastoralism

Respondents' views	Maintained	Adapted	Doomed	No response	Total
Group 1	11	4	0	0	15
English-speaking	6	0	0	0	6
French-speaking	5	4	0	0	9
Group 2	4	7	3	1	15
English-speaking	1	1	2	1	5
French-speaking	3	5	1	0	9
Portuguese-speaking	0	1	0	0	1
Total	15	11	3	1	30

Decision-makers' views

In the majority of cases, the respondents stated that their view was shared by most of their country's decision-makers. A difference in views was indicated in five cases though no details were provided.

Table 26.2: Decision-makers' views

Decision-makers' views	The same	Different	No respons	Total
Group 1	13	2	0	15
Group 2	11	3	1	15
Total	24	5	1	30

Measures to be implemented by the OIE

Regarding measures that the OIE should implement, there is a fairly significant consensus in favour of the development of specific standards (33 citations) followed in equal second position (25 citations each) by the establishment of a specific OIE Collaborating Centre and the organisation of a multiregional conference on pastoralism. It should however be noted that it was the inclusion of the responses of six countries not involved in pastoralism that tipped the scales in favour of the development of specific standards. Had they not been included the ranking would have been far closer. Nevertheless, it is worth noting that recognition by UNESCO of pastoralism as a world heritage was cited significantly less frequently than the other three choices (ratio of 1 to 2).

Table 27: Priority measures to be implemented by the OIE to improve the recognition of pastoralism at international level

	Group 1	Group 2	Group 3	Total
Specific standards	13	13	7	33
OIE Collaborating Centre	13	10	3	26
Organisation of a multiregional conference	14	9	2	25
Recognition by UNESCO	9	5	1	15

Lastly, it should be pointed out that only four other proposals were put forward:

- Carry out a study on the current state of pastoralism in the world;
- Improve collaboration with UNICEF and the International Organization for Migration (IOM);
- Give countries legal and financial support for the development of pastoralism;
- Issue an international declaration on the role of pastoralism and the importance of its being maintained.

CONCLUSION

Pastoralism remains a socio-economically fundamental activity in Africa. It alone can exploit the vast tracts of rangeland still available (but for how long?) and consequently plays a fundamental role in the creation of employment and the distribution of income in rural areas. Not only does this system of production continue to play a crucial role in poverty reduction, it is also an important tool for improving the food security and sovereignty of those countries where it is still practised. It generally presents major strengths and potentialities that give governments very real prospects for ensuring sustainable development and elaborating their land use planning policies. However, the challenges it faces are no less significant and need to be very rapidly addressed to avoid this way of life and all its potentialities disappearing in the very near future. These constraints include demographic growth, and its corollary land occupation by agricultural pioneer fronts, and difficulties in accessing natural resources coupled with recurring climatic variability. The ever-increasing frequency and seriousness of inter-community tensions is evidence of the fragility of the situation and of the future of pastoralism in Africa. Nonetheless, the last few years have seen a change in perception among decision-makers and especially donors regarding this system of livestock production, which has led to a significant surge of interest and the funding of a relatively large number of projects for quite substantial amounts.

While not being ranked at the top of the list of constraints and obstacles to the maintenance or development of pastoralism, the animal health situation is characterised by the persistence of nearly all of the major animal diseases in pastoral areas and, more generally, in Africa. This situation, which reflects some thirty years of chronic under-investment in activities to improve animal health and especially in the Veterinary Services, has had a major impact on livestock productivity in the continent. In the context of a doubling of African populations by the year 2050, and therefore at very least a doubling of the demand for animal protein, a very great effort is urgently needed to revitalise, strengthen, and even in some cases revive the Veterinary Services, especially with regard to pastoral livestock systems, which are essentially difficult to access given the mobility of the animals.

To this end, several recommendations can be made:

- Conduct advocacy aimed at redressing the imbalance between the budget allocated to the livestock sector and the sector's economic importance;
- Urgently strengthen the capacities and accessibility of the Veterinary Services based on analyses of OIE PVS Pathway missions already carried out or to be updated (readjustment of funding allocated to animal health and identification of new sources of funding);
- Establish animal health standards specific to pastoralism;
- Improve understanding and ownership of the 'One Health' approach, notably in terms of operationalisation;
- Significantly strengthen the effectiveness of border inspections posts (BIPs) (including, among others, regulatory provisions, training and resources); and
- Develop continent-wide control programmes for the main animal diseases (e.g. PPR).

.../Appendix

List and classification of countries that replied to the questionnaire

Group 1	Group 2	Group 3
French-speaking countries		
Burkina Faso Cameroon Chad Djibouti Madagascar Mali Mauritania Niger Senegal	Algeria Angola Benin Burundi Congo (Dem. Rep. of) Côte d'Ivoire Guinea Morocco Tunisia	
English-speaking countries		
Eritrea Kenya Somalia South Sudan Sudan Uganda	Egypt Gambia Ghana Namibia Tanzania	Botswana Lesotho Seychelles Swaziland Zimbabwe
Portuguese-speaking countries		
	Guinea-Bissau	Cabo Verde Mozambique