Programme Pan-Africain de Contrôle des Epizooties
PACE

Union Africaine – Bureau Interafricain des Ressources Animales
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Bamako, le 12 septembre 2005

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Coordonnateur du Programme PACE
UA-IBAR
Nairobi, KENYA.

McKa
P/S circulate to staff for observation
23/9/06

Objet : Rapport final PACE 1999 - 2004 - Bamako.

Monsieur le Coordonnateur,

Je vous fais parvenir la version finale du rapport de la Coordination régionale du PACE pour la période 1999 - 2004 en français et en anglais.

Vous voudriez bien faire tenir une copie du rapport en anglais à l'attention de la DCE au Kenya.

En vous en souhaitant une bonne réception,

Je vous prie d'agréer, Monsieur le Coordonnateur, l'assurance de ma considération distinguée.

Pièces jointes :
- Rapport final PACE Bamako 1999 - 2004, 2 copies
- PACE Final Report 1999 - 2004, 2 copies

PROGRAMME PAN AFRICAIN DE CONTROLE DES EPIZOOTIES
PAN AFRICAN PROGRAMME FOR THE CONTROL OF EPIZOOTICS
PACE
BUREAU DE BAMAKO

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December 2004

PAN-AFRICAN PROGRAMME FOR THE CONTROL OF EPIZOOTICS

Regional Coordination for West and Central Africa **Final Report**

1991 - 2004



The PACE programme is funded by the European Union

PAN-AFRICAN PROGRAMME FOR THE CONTROL OF EPIZOOTICS

Regional Coordination
for West and Central Africa

Final Report 1999 - 2004

December 2004



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The maps presented in this report provide no more than a broad indication of the country's geographical location. They are not designed to represent detail, and they should not be considered an authority on the delimitation of boundaries.

Les cartes présentées dans ce rapport ne fournissent qu'une indication approximative des localisations géographiques des pays. Elles ne sont pas conçues pour représenter des détails et ne peuvent pas être considérées comme une reconnaissance officielle de la délimitation des frontières.

A French version of this report is available by request.
Une version Française de ce rapport est disponible sur demande.

Cover picture : transhumant cattle getting ready to cross the Bani river at Sofara (Djenne) in Mali.
Photo by Nicolas Denormandie.

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Chapter 1

Introduction

The Pan-African programme for the Control of Epizootics

1.1. At regional level

1.1.1. Introduction

October 31, 2004 marked the end of the Financing Agreement of the *Pan-African Programme for the Control of Epizootics* (PACE) signed in August between the European Union and the Organisation of African Unity (which is now the African Union since September 1999) but an extension of the programme until February 2007 was approved on October 5, 2004.

The month of October 2004 can be considered as the end of a first phase of the PACE programme which began in November 1999 with the Financing Agreement becoming effective. This period lasted five years and was marked by the launch of PACE at regional and national levels, the progressive implementation of planned activities to reach a certain number of results. This period is full of teachings and it is interesting to make an initial assessment.

This is the aim of this report which assesses the implementation of the PACE programme from the standpoint of those actors who participated in programme coordination at the regional level for West and Central African countries.

The report provides background information on the PACE programme (objectives, organization) and analysis of the main results achieved at the regional and national levels.

1.1.2. History

As early as the 1960's, African countries, many of whom had just gained international sovereignty, committed themselves to fighting together in order to achieve elimination of the main epizootic diseases. As a result, the joint project 15 (JP-15) began in 1962 and continued until 1976 to fight against rinderpest under the coordination of the Organization of African Unity (OAU).

The resurgence of rinderpest in infectious pockets after nearly 13 years (for West Africa) and 6 years (for East Africa) after the end of the JP-15 brought African States to embark anew on the PARC programme (*Pan-African Rinderpest Campaign*) under the coordination of the Inter-African Bureau for Animal Resources (OAU-IBAR) and thanks to the funding of the European Community Commission, the main donor agency.

The PARC programme which was implemented between 1986 through 1999 contributed to the improvement of health safety notably by making possible notable

progress in the eradication of rinderpest in Africa. No more outbreaks have been reported in Africa except in the Somali ecosystem, an area covering Somalia, North-eastern Kenya, South-eastern Ethiopia and Southern Djibouti. An independent assessment of the PARC project conducted in 1996/1997 had noted the positive results, which *"constituted satisfactory ground to envisage eradication of rinderpest from Africa and controlling other major diseases."*

After the PARC programme, the Organization of African Unity (OAU) and the European Community Commission (ECC) agreed to develop the *Pan-African Programme for the Control of Epizootics,* building on the achievements in the fight against rinderpest. The Financing Agreement for PACE was signed on July 5, 1999 by the ECC and on August 30, 1999, by the OAU.

The PACE programme started on November 1, 1999 for a period of 5 years. The PACE programme initially covered 32 sub-saharan African States (except Southern Africa and Madagascar). The *Inter-African Bureau for Animal Resources* (IBAR) of the OAU was designated coordinating body in the implementation of the PACE programme.

The budget allocated to the PACE programme by the *European Development Fund* amounted to 72 million ECU, the major portion of this budget (67%) going to country level activities.

By establishing an appropriate framework for improving and maintaining animal health safety, the PACE programme intends to lift one of the major constraints to the development of the livestock sector. Thus, the PACE programme is expected to contribute to the improvement of the living conditions of farmers and populations in general. In the medium and long term, consumers will be able to profit from PACE's outputs; at country level, an impact is expected on the economies of member states.



Sheep at a livestock market in Nouakchott (Mauritania). Photo : D. Grégoire.





OAU and AU

The advent of the *African Union* (AU) may be considered as a major event in the institutional development of the continent. On September 9, 1999, the Heads of States and Governments of the *Organization of African Unity* (OAU) adopted a declaration, the Syrte Declaration, stipulating creation of the African Union in order, among others, to speed up the process of integration on the continent in order to enable Africa to play its real role in the world economy, while at the same time deploying efforts in order to resolve the multiple social, economic, and political problems she is confronted with, problems stressed by some negative effects of globalisation.

The Lome Summit, held in 2000, adopted the Charter of the Union. The Lusaka Summit, held in 2001, established the programme for the establishment of the African Union. The Durban Summit, held in 2002, launched the African Union and was followed by the inaugural session of the Conference of Heads of States and Governments of the Union.

The AU is the fundamental institution and the main organization of the continent in the area of the promotion of the accelerated socio-economic integration of the continent for stronger unity and solidarity among African countries and peoples. The AU is based on the shared vision of a strong and united Africa, and on the necessity to build a partnership among the governments and all strata of civil society, particularly women, youth and private sector, for stronger solidarity and cohesion among African peoples. A continent level organization, the AU basically works on promoting peace, security, and stability on the continent as preconditions to the implementation of its development and integration agenda.

1.1.3. Objectives and expected outputs

The overall objective of PACE (as defined in the Financing Agreement) is :

'The contribution to poverty reduction and to the development of the livestock sector in Africa through the establishment of an appropriate framework of zoo-sanitary security'

The two specific objectives are :

1. Strengthening the capability (National and Regional) to assess the technical and economic aspects of animal diseases and generate appropriate programmes for their control.

2. Safeguarding animal health in Africa against major animal diseases (OIE List A diseases).

The expected outputs of PACE's intervention are four-fold:

1. Reinforcing veterinary epidemiology services (information, diagnostics and follow-up) and control of major animal diseases in the participating countries.

2. Greater privatisation of veterinary services, and public/private sector linkage in the field.

3. Eradication of Rinderpest (RP) from Africa; greater control of other epizootic diseases, especially CBPP.





4. At pan-African level, sustainable co-ordination of national animal health systems and arrangements for tackling epizootic diseases set up.

1.1.4. Organisation and management of the programme

In the organisation of the programme one distinguishes a regional and a national level.

Regional level

The *Inter-African Bureau for Animal Resources* (IBAR) is a special agency of the African Union with headquarters in Nairobi (Kenya) ensures the regional coordination of the programme. The director of AU-IBAR is the Regional Authorizing Officer (RAO).

The AU-IBAR uses two regional coordinations based respectively in Nairobi for the East African countries and Bamako for the West and Central African countries. Overall programme management is entrusted to a AU-IBAR official, designated as PACE Coordinator.

The regional coordinations include the *Regional Coordination Units* and the PACE *Common Services* including an epidemiology unit, a communication unit, an economic unit, a support unit to the organization of veterinary services and a finance unit.

The regional coordination units (RCU) PACE

The regional coordination units based in Nairobi and Bamako are headed each by a Regional Coordinator. In practice, and for reasons of economies of scale, the Programme Coordination Unit (PCU) and the Regional Coordination Unit (RCU) for East Africa have been combined. The (main) PACE Programme Coordinator also exerts the function of regional coordinator for East Africa.

A Main Technical Assistant and a Financial Controller help the PACE Coordinator in programme management. Each of the regional coordination units has locally hired administrative staff.

The common services

The PACE programme offers member states support services, known as "*common services*". These latter services have experts in fields such as epidemiology, wildlife, communication, economics, and the organization of veterinary services. The experts are based in Nairobi for the most part and a few of them are based in Bamako. In the first two years of the PACE programme, there also was a branch office of the epidemiology unit in N'Djamena (Chad) for the *Sanitary Cordon*.

There are also regional technical assistants entrusted with following up on a group of countries each. However, 6 countries (Ethiopia, Kenya, Uganda, Sudan, Tanzania, and Chad) have a national technical assistant each.

The working languages at PACE are English and French. In some cases, reports, books and publications are produced in Arabic, Portuguese, or Spanish languages.





The PACE steering bodies

According to the PACE Financing Agreement, two bodies supervise PACE : the Advisory Committee and the Policy Committee.

The advisory committee

The *Advisory Committee* is entrusted with the review of programme progress on a six-month basis in order to define recommendations. The meetings of the Advisory Committee are held alternatively in Nairobi and Bamako. The Committee is presided by the Director-General of the OIE and includes the following representatives :

- The European Commission,
- FAO,
- IAEA,
- The OIE International Reference Laboratories : IAH-WRLR Pirbright (UK) and CIRAD-Emvt (France) and
- The Director of AU-IBAR.

PACE technical staff participate in these meetings, without however being entitled to vote or take decisions.

The political committee

The *Political Committee* ordinarily meets every two years and offers a framework for discussions and definition of policies and strategies in the area of animal health in Africa. It is composed of representatives of livestock institutions in Africa as well as donors (European Union, World Bank, African Development Bank, French, Italian, British, and German Cooperation Agencies, etc.).

This Committee has already met once in March 2002 in Addis Ababa on the occasion of the 6th Conference of AU Ministers in charge of Animal Resources.

The national programmes

The PACE programme was scheduled to be implemented in 32 countries but Liberia and Sierra Leone remained out of the programme because these countries are not eligible for EDF funding.

Each country implements a national component based on a protocol signed between the Director of AU-IBAR, PACE Regional Authorizing Officer (RAO), the National EDF Authorizing Officer (NAO) and the Head of the EC Delegation of the country involved.

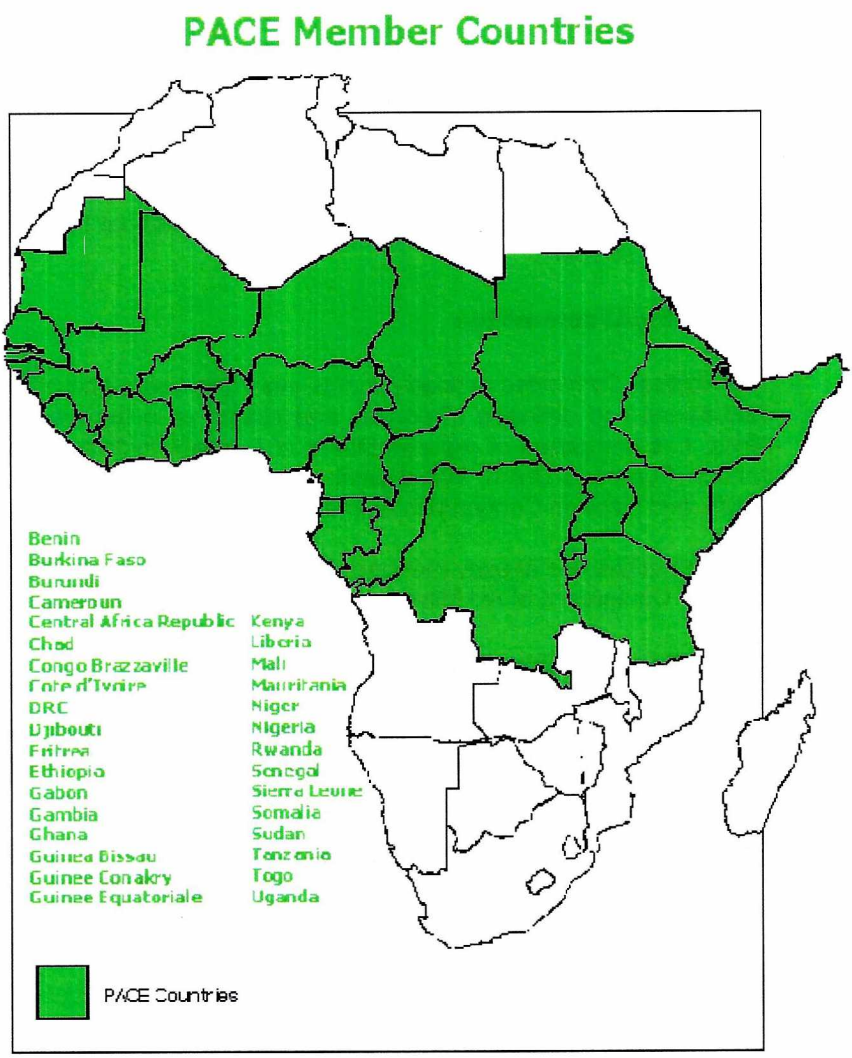
PACE member countries are :

a) in eastern Africa

Burundi	**Djibouti**	**Eritrea**	**Ethiopia**	**Kenya**
Uganda	**Rwanda**	**Somalia**	**Sudan**	**Tanzania**

b) in western and central Africa :

Benin	Cote d'Ivoire	Guinea	Mauritania	DRC
Burkina Faso	Gabon	Guinea Bissau	Niger	Senegal
Cameroon	Gambia	Equat. Guinea	Nigeria	Chad
Congo	Ghana	Mali	CAR	Togo



- Map 01. PACE member countries at continental level (source : web site AU-IBAR/PACE). Comment : the programme was never implemented in Sierra Leone and Liberia.





1.1.5. Other PACE components

Other PACE components at continental level are :

The Pan-African Veterinary Vaccine Center (PANVAC)

The Pan-African Veterinary Vaccine Centre (PANVAC) is meant to certify the quality of veterinary vaccines produced and/or used in Africa but also to develop quality norms in vaccine production. Pest destiné à la certification de qualité des vaccins vétérinaires produits et/ou utilisés en Afrique mais également au développement de normes de qualité de production de vaccins. PANVAC's activities started in 1986 with an FAO funding for two centres opened at Debre-Zeit (Ethiopia) and Dakar (Senegal). Between 1989 and 1992, PANVAC received UNDP funding. Following the end of that funding at the end of 1992, the Dakar center was closed and activities were concentrated on Debre-Zeit.

The other donors for PANVAC are the European Union (through the PARC, then the PACE programmes) and Japan (Japanese International Cooperation Agency). In February 1998, the Ministers of Foreign Affairs of OAU member states meeting in Addis-Ababa decided to turn PANVAC into an OAU institution.

The PACE emergency fund and rinderpest vaccine bank

With the end of vaccinations against rinderpest in most PACE member states, the cattle population has become gradually more vulnerable to a possible resurgence or reintroduction of the rinderpest virus. As a matter of fact, from year to year, there are fewer and fewer animals protected by their vaccinal origin immunity against infection.

This is the reason why an emergency fund of 500,000 EUR was established under the PACE and entrusted to the OIE through a convention signed in July 2001 between the AU-IBAR and the OIE. This fund will help rapidly mobilize financial resources should the virus be reintroduced in a population which has become fully receptive to rinderpest. The mobilization of funds by countries requires that they set up an emergency (intervention) plan against rinderpest, defining clearly the measures to be enforced and the modes of use of funds and logistical means.

On the other hand, the PACE has established a rinderpest vaccine bank (the vaccine having become less available on the market) with a stock of 500,000 doses currently placed at the Botswana Vaccine Institute which takes care of its storage and quality assurance.

Research

The PACE Financing Agreement contains provisions for funding research on Rinderpest, CBPP, and PPR. This is the framework in which agreements have been signed with the two world reference centres for rinderpest and CBPP, which are respectively the IAH Pirbright Laboratory in the United Kingdom and the CIRAD-EMVT in France, in order to coordinate research activities in these fields.

Reviews, monitoring & evaluation

The PACE Financing Agreement contains provisions for funding technical review missions, ordered by the European Commission and the PACE Regional Authorizing

Officer. The mid-term programme review was conducted between October and November 2002 by a consultant team (supplied by the DRN: *Development Researchers' Network*). A second and final evaluation will take place, six months prior to the end of the programme (which is planned for 2007)



Meeting between PACE Mali staff and members of the mid-term review mission. Photo : D. Grégoire, 2000.

Environmental impact

Interactions between cattle and environment constitute an important environmental parameter in every programme aimed at livestock development. The PACE Financing Agreement therefore provides for means to fund environmental impact studies in four arid and semi-arid areas which are particularly sensitive to overstocking. Also refer to Chapter 10.2.

Support to veterinary schools and faculties

Such assistance had initially been designed as contributing to the development – by the PACE programme – of a curriculum which could be used by the various higher education institutions; this task had been entrusted to the communication unit which, as early as 2002, actually developed a 'Communication' training module for the 4th year class, i.e., 28 students at the EISMV in Dakar. This module was a 'pilot' module destined to start a process of integration of 'Communication' in the EISMV training curriculum and make such training sustainable. However, the Advisory Committee recommended that activities should not be pursued in this sense, but that actions should focus on sensitisation of high officials of veterinary education institutions in Africa.

Thus, from March 8 through 11, 2004, in the conference room of the ILRI at Addis Ababa, the PACE programme organized a meeting gathering various Directors and





Deans of Veterinary Schools and Faculties of PACE participant countries as well as officials of research and training institutions in order to present all the experiences acquired by AU-IBAR in the implementation of PARC, and later, PACE, and likely to profit to and used in the training of future veterinary surgeons in Africa; this first and so far, only meeting between PACE and the Deans and Directors of African veterinary schools and faculties has facilitated very constructive exchanges of views and can herald the establishment of more formal collaborative links among African veterinary schools and faculties themselves and between these and AU-IBAR.

Support to the OIE regional office for Africa

The PACE programme provides financial support to the Africa Representation of the OIE (*World Animal Health Organization*). An agreement has been established in that sense since programme start-up in November 2000. The budget of the OIE Regional Representation which was included in that of the PACE Regional Coordination programme in the first two years has now become autonomous. The Regional OIE Representation shares the same premises as the PACE Regional Coordination in Bamako.

Support to the veterinary diagnostic laboratories

A collaboration established between the AU-IBAR and the IAEA (*International Atomic Energy Agency*) since the PARC programme continues under PACE. Through such collaboration, the IAEA provides assistance to African national laboratories in the areas of training and equipment with diagnostic means in order to control major animal diseases, particularly rinderpest. An expert hired by the IAEA is made available to PACE in order to help the laboratories. In principle, the IAEA intervention will end in March 2005.

1.2. At sub-regional level : West and Central Africa

The regional Coordination for West and Central Africa includes the branches of the various entities defined at the central level : PCU (RCU), CSU and technical assistance.

The regional coordination is located in Sotuba, in the eastern outskirts of Bamako, the capital of Mali. It has seven individual offices, a meeting room, a secretariat, and additional rooms. The whole compound is linked to an electric emergency generator with automatic start-up which supplies power to all offices in case of power failure.

The coordination also has a PBX type internal telephone network, which is also used by the OIE Africa Representation ; also, it has a fax-machine and the usual office equipment (computers, printers, scanners, and photocopiers). Refer to **annex 4** for details.



The PACE Regional Coordination offices in Sotuba (Bamako) in Mali. Photo : P. Bastiaensen.

The Regional Coordination Unit (RCU) comprises a Regional Coordinator, hired under a contract signed with the AU-IBAR and locally hired support staff (1 accountant, 2 secretaries, 1 administrative officer, 1 driver, 1 clerk, 3 guards).

The PACE programme started its activities in West and Central Africa with Dr Samba Amadou SIDIBE as Regional Coordinator. He was replaced in May 2001 by Dr Bouna Alboury DIOP. From December through April 2001, Dr. DIOP had been Assistant Regional Coordinator. Dr. SIDIBE is currently OIE Representative for Africa.

The PACE *Common Services Units* represented in Bamako include the epidemiology unit and the communication unit. The epidemiology unit currently has two epidemiologists, one of whom is hired under a contract signed between AU-IBAR and CIRAD-EMVT and a second one made available to PACE by the French Ministry of Foreign Affairs (Dr. Antoine MAILLARD occupied this position at the beginning of the PACE programme until the end of his contract in September 2002.

The position remained vacant for several months before the arrival of Dr. Cecile SQUARZONI in February 2004 for a 2 year contract).

The epidemiologist supplied by CIRAD-EMVT, Dr Fatah BENDALI, worked at the sub-regional branch office of N'Djamena at the beginning of PACE before moving to Bamako in January 2003. His contract ended on October 31, 2004.

The Regional Coordination in Bamako also benefited from a wildlife epidemiologist, Dr. Bertrand CHARDONNET, between 2000 and 2003 (CIRAD-EMVT).

The communication unit was represented by only one expert whose contract came to an end in February 2004. The first communication expert was Mr Didier BERNARD, replaced in October 2001 by Mr Daniel GREGOIRE.

The Regional Technical Assistants (RTA), who are three in number, including two (Dr Patrick BASTIAENSEN and Dr Nicolas DENORMANDIE) based in Bamako and one (Dr Hanns-Achim KREBS) in Yaounde, have been intervening since 2003 under a contract signed between the AU-IBAR and the *GTZ International Services/ SATEC-Development* consortium. They are each entrusted with assistance to a cluster of countries.



Technical assistance on duty on 31.10.2004.
From left to right : P. BASTIAENSEN, N. DENORMANDIE, A. MASSARELLI (N'Djaména), F. BENDALI, H. KREBS (Yaounde), C.SQUARZONI and B.A. DIOP, Regional Co-ordinator.

The budget of the PACE regional coordination in Bamako covers personnel and operating expenses of the RCU as well as the operational costs of the epidemiologist made available to PACE by the French Ministry of Foreign Affairs (a mission letter was signed to that effect with AU-IBAR).

The Regional Coordination has a LAN network with an high-end server and also has a specific domain for e-mail addresses : **pacereg.org**

Important data are stored on a central computer, which is accessible to all users of the network and which is equipped with an automatic backup system.

In order to strengthen the communication capacities of the PACE programme, the Regional Coordination at Bamako has been equipped since 2003 with a broadband



internet connection (wireless/radio). This connection is shared with the OIE Representation for Africa and with the national coordination of PACE-Mali.



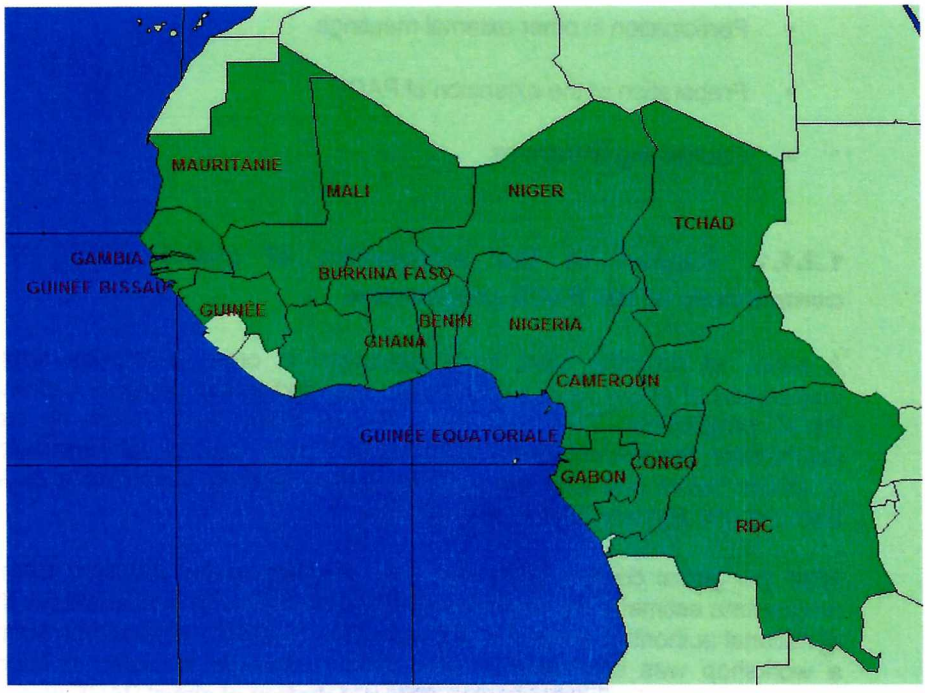
The Regional Co-ordinator for West and Central Africa during the 4th PACE Annual Reg. Coordination Meeting in Yaounde (Cameroon), June 2004. Photo : C. Squarzoni.

The missions of the Regional Coordination are carried out either by car, or more often by plane from the Bamako-Senou international airport, which is used by most regional and international airlines, the main ones being Air Burkina Faso, Air Ivoire, Air Senegal International, Air France, and Ethiopian Airlines.

From Bamako, the regional coordination coordinates the activities of the PACE programme in 20 countries of West and Central Africa :

Country	Indicative budget in EURO	Year of start-up
Guinea	996 990	08.2000
Mali	1 329 310	08.2000
Senegal	1 329 310	08.2000
Chad	3 323 280	08.2000
Benin	997 000	01.2001
Cote d'Ivoire	996 985	01.2001
Gabon	664 660	01.2001
Ghana	996 890	01.2001
Mauritania	996 985	01.2001
Niger	996 985	01.2001
CAR	1 943 970	01.2001
Togo	664 655	01.2001
Burkina Faso	1 329 310	03.2001
Gambia	664 660	03.2001
Guinea Bissau	664 655	03.2001
Nigeria	2 658 620	03.2001
Congo	196 170	11.2001
Equatorial Guinea	166 165	05.2002
DRC	1 329 310	05.2002
Cameroon	1 658 620	12.2003

- Table 01 : Indicative budget and starting date of the programme in PACE member countries in WCA (ranked according to starting date).



- Map 02. Countries covered by the Regional Coordination Office in Bamako.

1.2.1. Regional Coordination Unit

Activities implemented at the Regional Coordination cover the following topics :

- Support to the preparation of global plans and annual work plans (PE) of PACE national programmes.
- Analysis of work plans from national programmes in order to be consolidated at regional level.
- Follow-up (monitoring) of national programmes.
- Support to and evaluation of national epidemio-surveillance systems.
- Support to the implementation of the OIE pathway in view of the eradication of rinderpest.
- Support to the development of control strategies for major animal diseases such as CBPP and RVF.
- Support to the improvement of zoo-sanitary data-management through the installation of PID at country level and the training of national staff in its use.
- Development of a training programme.
- Organisation of the PACE Annual Reg. Coordination meetings





- Organisation of the Advisory Committee meetings in Bamako.
- Participation in other external meetings
- Preparation of the extension of PACE
- Counselling of trainees

1.2.1.1. Support in the preparation of global plans of national components of the PACE programme.

A series of missions have been conducted in order to provide support in the preparation of global work plans to be presented to the Advisory Committee of the PACE programme. This work has required many visits made by the Regional Coordinator, the epidemiologist assigned by France and the epidemiologist in charge of wildlife before and after the meetings of the Advisory Committees of July 2000 in Bamako and January 2001 in Addis-Ababa.

After the global country work plan was adopted by the Advisory Committee, the programme estimates for the first year were established and submitted to the approval of national authorities (NAO & ECD) before consolidation. It should be pointed out that a workshop was organized in May 2000 in Abidjan in order to inform national programme coordinators on the modalities of drafting of global PACE work plans.

1.2.1.2. Analysis of national component programme estimates for their consolidation.

The annual programme estimates or work plans of national programmes, as prepared by the national programme coordinations and submitted locally to the approval of the national EDF authorizing officer and Head of EC delegation, were consolidated at the regional level. The consolidation of programme estimates was aimed at :

- harmonizing the implementation of the PACE programme in the different countries,
- making it possible to carry out a financial control of national components with decentralized management.

Since the beginning of PACE, 9 consolidations have been concluded and have involved the groups of countries indicated in the table below.

An attempt was made to revise this consolidation procedure for national programme estimates. Indeed, two difficulties are encountered with the current procedure:

- non compliance with submission deadlines for national PE (WP), leading to a delay of the consolidation period for the country and leading to an extension by 6 months of the implementation period of the PE initially set at 12 months without additional financial resources..
- intervals of several months between the effective mobilization of funds and the starting date of activities planned in the programme estimates ;

In addition to this, there is the fact that during the consolidation in October 2003, the approval process was made more complex because of countries not having closed their previous WP and therefore the non-availability of sufficient un-committed funds.



In addition, with the new provisions of the 9th EDF, the de-concentrated ECD's would agree to sign WP's only if the amount would have been committed in the accounting system by the Lead EC-Delegation (Kenya).

Consolidation	Start-up	Number of countries	Countries
Group n° 1	01.08.2000	4	Ethiopia, Rwanda, Sénégal, Guinea
n° 2	01.01.2001	10	Bénin, RCI, Eritrea, Gabon, Ghana, Mauritania, Niger, CAR, Chad, Togo
n° 3	01.04.2001	8	Burkina Faso, Djibouti, Gambia, Guinea Bissau, Kenya, Nigeria, Somalia, Uganda
n° 4	01.11.2001	7	Congo, Ethiopia, Guinea, Rwanda, Sénégal, South-Sudan, Tanzania
n° 5	01.05.2002	20	Bénin, Burkina Faso, Cameroon, CAR, Djibouti, Eritrea, Gabon, Ghana, Guinea Bissau, Equatorial Guinea, Mali, Mauritania, Niger, Nigeria, Uganda, DRC, Somalia, Chad, Togo, North-Sudan
n° 6	01.11.2002	10	Burundi, Congo, RCI, Ethiopia, Guinea, Kenya, Sénégal, South-Sudan, Tanzania, Gambia
n° 7	01.05.2003	14	Bénin, Burkina Faso, Djibouti, Eritrea, Gabon, Ghana, Guinea Bissau, Mauritania, Niger, Somalia, CAR, North-Sudan, Togo, Uganda
n° 8	01.11.2003 (01.02.2004)	14	Ethiopia, Burundi, DRC, Kenya, Tanzania, Rwanda, Mali, Nigeria, Congo, Guinea, Equatorial Guinea, Sénégal, South-Sudan
n° 9	01.05.2004	13	Bénin, Burkina Faso, Djibouti, Eritrea, Ghana, Guinea Bissau, Mauritania, Niger, Uganda, Somalia, North-Sudan, Chad.

- Table 02. Consecutive consolidations of work plans of national programmes.

Faced with this situation, it was proposed that the approval process of national PE (WP) be revised based on the following elements:

- The need to adapt PACE procedures to the de-concentration policy implemented by the European Commission and which grants greater responsibility to local ECD's.
- The need to set up a simplified approval process for national programme estimates, nevertheless resting on a thorough analysis of the situation of individual countries by the PACE Coordination Unit and Common Services.

- The desire to see the national components mobilize their funds more rapidly for better programme efficiency.

The revised proposal was submitted to the ECD Kenya after approval by the PACE Advisory Committee.

It should be pointed out that the Rider extending the Financing Agreement of the PACE programme signed on October 5, 2004, defined a new procedure of consolidation of WPs which adapts PACE procedures to the policy of de-concentration of the European Commission which grants more power to local ECD ; this new procedures makes it possible to simplify the approval process of national programme estimates and ultimately to facilitate a more rapid mobilization of funds by countries.

In this new procedure, the PACE Programme Coordination Unit (PCU) prepares an orientation paper supplying a technical and budgetary framework for the development of the annual programme estimates of national components. This framework document presents the main objectives and expected results in the extension period of the PACE programme as well as the logframes and indicative budgets (ceilings) for each country. The Director of AU-IBAR, Regional Authorizing Officer of PACE and the Head of the Lead - Delegation of the European Commission (Kenya) have approved this document prepared by the PCU, based on an analysis of the situation of each country.

1.2.1.3. Monitoring of the national components

The monitoring of the national components of the PACE programme was carried out through missions conducted by the PACE Programme Coordination Unit, the Common Services and the Regional Technical Assistants.

The number of visits carried out in the countries (for the monitoring of activities or in the course of meetings) since the beginning of the PACE programme until the end of October 2004 is presented in table 3 on the following page.

Refer to § 1.2.3. for results achieved.

1.2.1.4. Support to and evaluation of national epidemio-surveillance systems.

Refer to chapter 2.1.

1.2.1.5. Support to the implementation of the OIE pathway in view of the eradication of rinderpest.

Refer to chapter 3.

Unit	RCU			PEU		Communication				RTA		
Name	Sidibe	Diop	Bendali	Squarzoni	Chardonnet	Maillard	Bernard	Grégoire	Denormandie	Bastiaensen	Krebs[1]	Woodford[1]
Period	11/99 - 5/01	12/00 – 10/04	6/00 – 10/04	2/04 – 10/04	6/00 – 3/03	11/99 – 9/03	10/00 – 3/01	10/01 – 2/04	5/03 – 10/04	6/03 – 10/04	10/03 – 10/04	04/03 – 08/03
Benin		2	2		2	4	1	1	3			
Burkina	2	3	2		1	2		1	1	3		
Côte d'Ivoire	3	2	1			2		1	3			
Gambia	1				1	1				1		
Ghana		2	1	1	1	2		1	2			
Guinea	1	2	1	1	1	1	1	2	2	1	1	
Guinea B.		1		1	1	4		1		4		
Mali											2	
Mauritania		1	2		1	2		1		3		
Niger		1	1	1	1	2				3		
Nigeria		1		1	2	2		2		1		
Senegal	5	5	5	1	1	4	1	4	1	5	1	
Togo	2	1	1			4	1	1	3			
Cameroon	1	2	3	2	2	2		1	1	1		
CAR		1	2		2	1			3			
Chad		3			3	1		1				
Congo		1		1	1	1		1	2	1		
DRC		1		1	2	1		2		1	2	
Equat. Guin.		1			1	1		1				1
Gabon			1		1	2		1	2			
Ethiopia	3	4	1			1						
Kenya	2	4	6	1	4	3		5	2	1		
Tanzania	1	2	1					1	1	1		1
Sudan		1	1		2	1						
Djibouti			1									
Uganda	1	1	1									
Totaux	**22**	**42**	**32**	**11**	**29**	**44**	**4**	**28**	**26**	**26**	**6**	**2**

• Table 03 : Breakdown of country-missions conducted between 1999 – 2004 (PACE member countries only).

[1] Dr John Woodford and thereafter Dr Hanns-Achim Krebs are RTA based in Yaoundé (Cameroon).

1.2.1.6. Support to the development of control strategies for priority diseases such as CBPP and Rift Valley Fever

Disease	Venue	Date
ASF	Lome	October 2001
CBPP	Accra	February 2003
CBPP	Conakry	February 2004
RVF	Dakar	January 2004

- Table 04 : Regional workshops and meetings (co-)organized by PACE within the framework of control strategy development against major diseases (other than rinderpest).

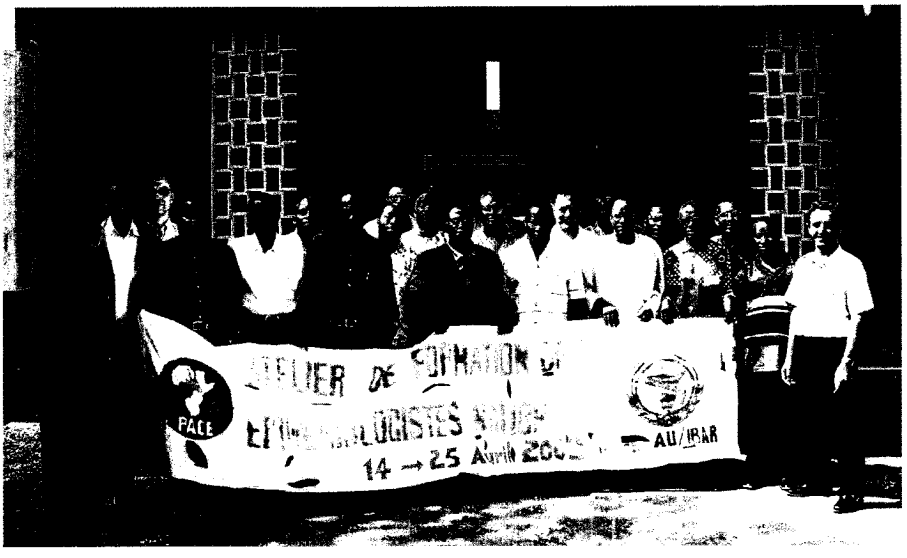
Refer to chapter 4 and 7.2. for more details.

1.2.1.7. Improvement of animal health information data management through installation of PID in countries and training of national staff on its use.

Refer to chapter 2.2.

1.2.1.8. Development of a training programme

A regional training programme for the national components was developed; the latter had expressed the need, at the time of development of their programme estimates, to build the capacities of PACE staff intervening in various areas, such as animal epidemiology, epidemio-surveillance of wildlife, communication, animal health economy, privatisation and management of animal health data.



Participants at the training workshop of regional epidemiologists, from April 14 to 25, 2003 in Dakar, Senegal.

To develop such training programme, the Regional Coordination of the PACE programme called on specialized institutions such as CIRAD-EMVT in Montpellier,, EISMV in Dakar and ITC in Banjul. The methodology applied consisted in:

- Identifying actors intervening in the national components of the PACE programme;





- Developing for each individual actor a competence referential,
- Identifying pedagogic objectives related to each competence,
- Developing contents, materials, and pedagogic methods for each module identified ,
- Designating a lead-institution to coordinate each of the training modules to be supplied.

This work led to the establishment of a portfolio of training-topics, adapted to the needs of PACE and grouped into six modules :

Module	Content	Compliance / progress
Training of PACE National Programme Coordinators	ESS quality evaluation , risk analysis, economic risks in case of epizootics, human resources management, financial management in accordance with EDF rules, communication of project results, etc.	Organization of training was cancelled considering the fact that training courses on the procedures of management of EDF projects were organized in several countries by the local ECD
Training of Main Epidemiologists	Basic indicators, sampling plans, epidemiological statistic tools, conception and management of the ESS; laboratory data and samples management ; staff training, communication, establishment of emergency preparedness plans, risks analysis etc.	Carried out in Dakar (Senegal), April 2003 in collaboration with EISMV and CIRAD-Emvt
Training of Wildlife epidemiologists		6 training courses organized
Training of Data management and GIS Officers	MS-Access databases; preparing a database, GIS, presentation of results, decision-aid tools, etc.	Carried out in Banjul (Gambia) in September-October 2002 in collaboration with ITC and DMU.
Training of Communication Officers	Dialogue with PACE technicians, field staff, and media professionals. Preparing a communication strategy ; preparing basic multimedia supports and materials ; discussions tools – basic education skills for field workers and livestock owners, etc.	Carried out in Bamako (Mali) and Entebbe (Uganda)
Privatisation process and improving services to farmers and livestock owners – Officers	Technical assistance and follow up of private vets ; modernising legislation, interface between public and private sector ; conducting studies on improving services and dialogue subjects, etc.	Not carried out.

- Table 05. The PACE training modules

1.2.1.9. Organisation of annual meetings of the PACE coordination

PACE organises a yearly regional coordination meeting of the PACE programme which gathers national programme coordinators, officials of veterinary services of member states, as well as technical assistants and representatives of partner organisations (OIE, ECOWAS, FAO) and donors (mainly EC).

Such meetings generally take place in June and alternately in each region of the PACE area (West, Center, and East). For each of these meetings, a detailed report in French and English has been produced and passed on to participant countries.

Annual Meeting	Venue	Host-country	Date
1	Ouagadougou	Burkina Faso	June 2001
2	Cotonou	Benin	June 2002
3	Arusha	Tanzania	June 2003
4	Yaounde	Cameroon	June 2004

- Table 06. PACE annual coordination meetings, organized so far since the start of PACE.

1.2.1.10. Organisation of meetings of the PACE Advisory Committee in Bamako.

The PACE Advisory Committee, chaired by the Director-General of the OIE, and comprising representatives of the European Commission (DCE Kenya and SCR Brussels), the FAO, the IAEA, world reference laboratories at Pirbright (United Kingdom) and CIRAD-Emvt (France) and the Director of AU-IBAR, is entrusted with reviewing programme activities as well as its technical and financial results twice a year in order to formulate recommendations.

Advisory Committee	Venue	Date
1	Naivasha (Kenya)	March 2000
2	Bamako (Mali)	July 2000
3	Addis Ababa (Ethiopia)	January 2001
4	Nairobi (Kenya)	September 2001
5	Bamako	April 2002
6	Nairobi	October 2002
7	Nairobi	May 2003
8	Bamako	November 2003
9	Nairobi	April 2004

- Table 07. Meetings of the advisory committee since the start of PACE.

1.2.1.11. Participation in other external meetings (non-PACE)

Refer to chapter 9.7.

1.2.1.12. The preparation of the extension of the PACE programme

The preparation of the extension of the PACE programme was an important activity of the PACE Programme Coordination Unit, particularly since November 2003 with the launch of the consultants' mission in charge of carrying out a study on how the extension could materialize.

The PACE mid-term review carried out in October-November 2002 had highlighted the fact that the programme had turned out to be relevant but that there were significant differences between countries in terms of efficiency (the lack of familiarity with the management procedures of EDF projects had caused delays in the acquisition of equipments). The evaluation report had recommended an extension of the PACE programme until December 2006 in order to give enough time for countries to make the national programme more or less fully operational.

The Advisory Committee of the PACE programme also voiced a favourable opinion for an extension in the course of its 8th and 9th meetings.

In April 2004, the AU-IBAR finalised the PACE extension programme proposal, based on a document prepared by two independent consultants (hired in November 2003) and following extensive debate within the PACE Programme Coordination Unit. This programme, accompanied by an official request, was transmitted in early May 2004 to the Delegation of the European Commission (ECD) in Kenya. The document which was revised in early June 2004 to take into account the observations of the ECD Kenya was transmitted by the latter to the relevant services of the European Commission in Brussels.

1.2.1.13. Coaching of trainees

Three trainees visited and worked at the Regional Coordination in Bamako in the course of the PACE programme :



Miss J. Rauch during a night time visit to the Bamako Abattoir (Jan. 2004). Photo : P.Bastiaensen

Dr. Guillaume KONDOLAS benefited form a 4 month training (May through August 2002) under the supervision of Dr A. MAILLARD as part of his training in DESS-PARC (CIRAD-emvt). The topic covered dealt with animal health information currently collected by West and Central African countries and the possibility that they enable countries and the regional level to improve animal health.

Miss. Julia RAUCH conducted a two week visit as part of the graduation training in veterinary medicine at the Veterinary Faculty of Onderstepoort (Pretoria) in South Africa (Jan. 2004).

Dr. Serge TCHUENTEU NZIETCHUENG received a 4 month training (May through August 2004) at the Regional Coordination under the supervision of Dr F. BENDALI, for his degree training in CEAV (*Certificate of Advanced Veterinary Studies*) in *Epidemio-surveillance and in Animal Pathology in Warm Areas* (PARC, CIRAD-emvt). His work consisted in helping develop performance indicators for the epidemio-surveillance network in Mali EPIVET-MALI (report available).

1.2.2. Common services

The PACE *Common Services Unit (CSU)* is represented in Bamako by both the epidemiology unit and the communication unit.

1.2.2.1. PACE Epidemiology Unit

Livestock epidemiology

This unit consists of 2 epidemiologists, one of whom is supplied through a contract signed between the AU-IBAR and CIRAD-emvt[2] and the other is made available to PACE by the French Cooperation. The main missions assigned to the PACE epidemiology unit are:

- Support the establishment and development of epidemiological surveillance systems for animal diseases in PACE member countries through expert assessment and evaluation missions;
- Define the modalities of coordination and harmonization of the different epidemiological surveillance systems and contribute to the establishment of adequate structures aimed at promoting exchange and the synthesis of animal health and epidemiological information;
- Counsel epidemio-surveillance systems at the regional level and assist in identifying the conditions to render them sustainable at the national level;
- Ensure monitoring and support in implementing *performance indicators* for the monitoring of national epidemiological surveillance systems;
- Help define activities related to epidemio-vigilance and epidemio-surveillance of rinderpest (disease and infection) ;
- Support countries that entered the OIE pathway in obtaining the status of rinderpest free countries;
- Help define and implement control strategies for priority diseases other than rinderpest;
- Support the design and implementation of national emergency intervention / preparedness plans.
- Analyse the epidemiological information gathered at country level or from other sources in order to produce precise summary briefs to the Coordinator of the PACE programme and other members of the technical team of the PACE programme on the state of progress of surveillance systems;
- Provide an immediate report and assistance in case a rinderpest outbreak or a priority disease should occur in a PACE member country;
- Participate and/or organize meetings or workshops on topics related to the activities of the PACE programme;
- Help train senior national officers in charge of animal epidemiology in the PACE countries;

[2] The CIRAD epidemiologist was previously based in N'Djamena (Chad), in charge of the *Cordon Sanitaire* (please refer to the chapter on page 24). Due to the re-organization of this regional branch, he was posted in Bamako as from January 2003.





- Assist in the preparation of national annual and regional programme estimates and in the development of annual progress reports.
- Prepare quarterly reports, mission reports and other reports according to the appropriate format of the PACE programme.
- Draft appropriate scientific articles, to be published through the PACE programme and other international agencies;
- Carry out other tasks which may be assigned by the Director of AU-IBAR or the PACE Programme Coordinator, in accordance with the Programme objectives.

Wildlife epidemiology

The Wildlife epidemiologist for West and Central Africa was hired under the CIRAD-Emvt contract. He was stationed in Bamako from June 2000 through March 2003[3]. The principal missions were as follows:

- Provide appropriate training and supervision to national teams in the specific techniques of sampling and observation of wildlife;
- Identify the priority investigation areas of epizootic diseases in wildlife in PACE member states ;
- Coordinate and harmonize disease surveillance in wildlife populations in selected areas ;
- Establish national networks with key institutions and specialized personnel, and promote the development and routine use of national disease surveillance systems designed to detect the clinical signs of rinderpest and other major epizootic diseases in wildlife populations;
- Encourage countries to develop collaborative ventures between veterinary services and wildlife services for improved surveillance of wildlife;
- Establish a surveillance system for diseases in wildlife in individual countries, in relation with the national epidemio-surveillance system for cattle, and develop appropriate emergency plans;
- Develop, maintain, and transfer to counterpart staff an efficient relationship with national and international institutions in charge of animal health;
- Ensure that appropriate standard quality samples are regularly transmitted to designated laboratories;
- Facilitate and assist in investigations in all suspected cases of rinderpest, including making appropriate samples available to national, regional, or world reference laboratories;
- Advise and help with the random serological monitoring to establish the prevalence of rinderpest anti-bodies (or other existing diseases within wildlife) in the selected areas (also including the establishment of a sampling protocol per disease/combination of species);
- Provide immediate assistance in case of a rinderpest outbreak in a wildlife population, carry out wildlife sampling in specific emergency situations;

[3] The position therefore remained vacant from March 2003 to October 2004, while technical assistance in WCA was provided by the two PACE wildlife epidemiology TA's, based in Nairobi.

- Provide precise and appropriate information to the PACE Programme Coordinator and other members of the technical team of the PACE programme (on subjects such as the current situation and the implications of epizootic diseases of wildlife, including rinderpest);
- Prepare quarterly reports, mission reports and other reports according to the appropriate format of the PACE Programme ;
- Write scientific articles, to be published through the PACE programme and other international agencies;
- Carry out other tasks which may be assigned by the Director of AU-IBAR or the PACE Programme Coordinator, in accordance with Programme objectives.



Training in dosage of anaesthetics by the wildlife expert. Photo : D. Grégoire.

Regional antenna for the N'Djaména *Cordon Sanitaire.*

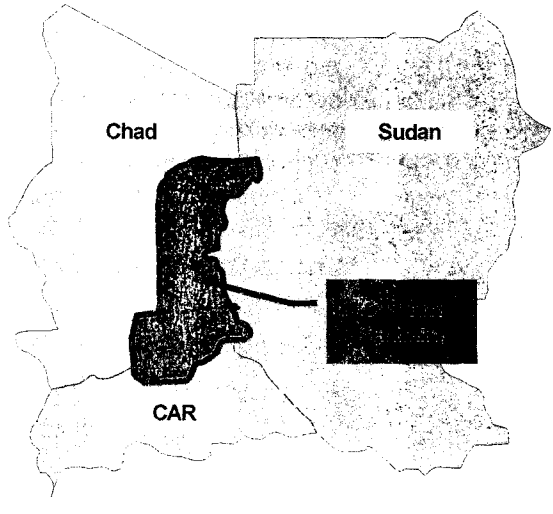
Under the rinderpest eradication strategy in West and Central Africa, a "sanitary cordon" or *cordon sanitaire* has been established in an area encompassing Chad, Sudan and the CAR to protect West and Central Africa from possible re-infection by rinderpest from residual foci in Southern Sudan and East Africa. To coordinate the activities in this cordon in the three countries, a branch office of the Regional PACE Programme Coordination has been established in N'Djamena (Chad) between June 2000 and April 2003. This branch office has been supervised by an epidemiologist hired under a contract signed between the AU-IBAR and CIRAD-Emvt.

The mission assigned to the branch office was meant mainly to:

- Coordinate and harmonize vaccination campaigns against rinderpest;
- Support the setting up and development of national animal disease surveillance systems in the three countries involved;
- Facilitate and help monitoring investigations of all suspect cases of rinderpest, including making appropriate samples available to national, regional, or world reference laboratories;
- Provide an immediate opinion and assistance in case a rinderpest outbreak should occur;
- Support the development of methods for the monitoring of transhumant and slaughter cattle movements in the sanitary cordon area so as to develop a more precise understanding of such movements;
- Provide and supply epidemiological training to national staff in charge of animal epidemiology.

Numerous field missions and technical evaluations of activities were carried out, within this framework of rinderpest-control in the sub-region, in spite the difficulties of access and insecurity.

After a few years, the epidemiological circumstances and strategic parameters (the risk area in Sudan having moved back east of the White Nile, the willingness to stop rinderpest vaccination and their entrance into the OIE pathway for achieving rinderpest free status, the lack of means to ensure an adequate vaccination coverage, and the absence of a genuine harmonization strategy between countries...) have led officials of the countries involved (during a tripartite meeting in Khartoum in November 2001) to decide, in agreement with PACE at the regional level, to stop the sanitary cordon while strengthening the surveillance and early warning systems in case of rinderpest suspicion. These decisions have led to the revision of the control strategy and the reorganization of the activities of the regional branch office and have, among other things, led to the redeployment of the epidemiologist to the Regional Coordination in Bamako. Thus the epidemiologist moved to the Regional Coordination office in January 2003 and the Regional branch office in N'djamena was closed in April that same year.



1.2.2.2. PACE Communication Unit

The first communication technical assistant of the Regional Coordination took up his position in Bamako in October 2000. For personal reasons, he requested that his contract be terminated on March 31, 2001. The second technical assistant took on his job only on October 10, 2001. The recruitment delays of this technical assistant have therefore led to a vacant position for Communication in Bamako for over six months. The second contract expired, as scheduled, on February 28, 2004.



This unit had to carry out the following tasks:

- Assist the national PACE programme coordinations in the preparation and implementation of communication activities in support to national programmes;
- Train the communication officers of PACE member states;
- Prepare and disseminate communication and sensitisation supports on PACE technical themes at the regional and national levels;
- Participate in the institutional development of the PACE programme through institutional communication activities;
- Ensure monitoring of national communication components;
- Contribute to the implementation of the PACE support programme targeted at veterinary schools;
- Contribute to the development, in individual countries, of communication activities which are well integrated into the animal health and livestock sector;
- Advise and assist the PACE Regional Coordination in terms of communication;
- Prepare quarterly, annual, mission, and other reports according to the appropriate format of the PACE programme ;
- Carry out other tasks and conduct any mission assigned by the PACE Coordinator, in accordance with Programme objectives;
- Ensure that the communication of national and regional components of the PACE programme remains a vertical activity which lasts beyond the end of the communication unit.

Missions were conducted in most countries of the PACE programme in order to help structure communication activities. Priority was given however to countries in a start-up phase or which had not received any past technical assistance during the PARC programme. Within the framework of the regional training programme, a training session for communication officers was held in Bamako. A collaboration was established between the PACE programme and EISMV within the framework of the support to veterinary schools planned by the Financing Agreement. To that effect, a training course on "communication" was developed and introduced in the curriculum of EISMV students. Unfortunately, this approach has not been further developed.

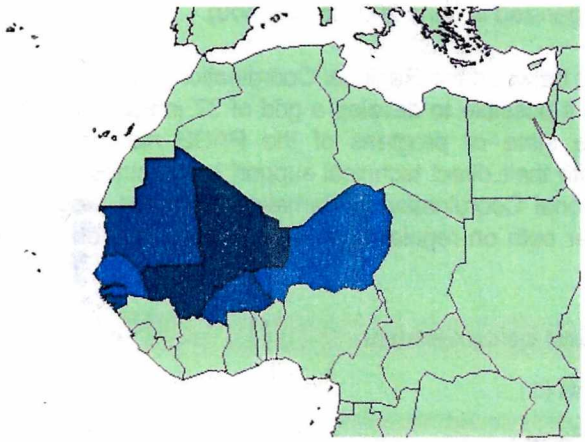
Various other activities were conducted, particularly on:

- development of a 'corporate image' of the PACE programme, with primarily the development of a PACE logo.
- collaboration with communication experts in Nairobi on the preparation of a web site of the PACE programme and the publication of the 'PACE Newsletter'.
- development of manuals and methodological tools for communication activities in member states.
- development and proposal of impact indicators and indicators on the viability of communication activities in member states.
- capacity building of the Regional Coordination (storage and processing of information, data base, publications, etc.)

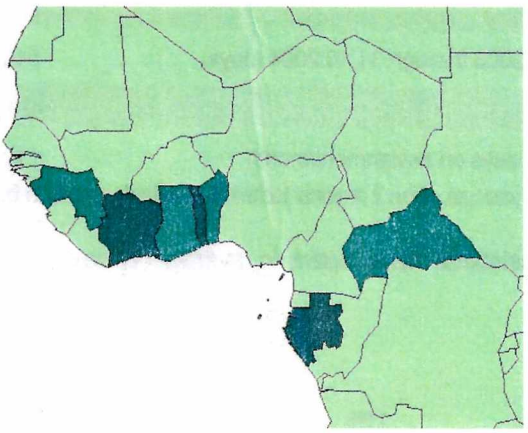
Regional and national technical assistance

The three *Regional Technical Assistants* (RTA), of whom two are based in Bamako and one in Yaounde, intervene under a contract signed between the AU-IBAR and the *GTZ International Services/SATEC-Development* consortium. They are each entrusted with support to a group of countries. In addition, PACE Chad has a national technical assistant (also under GTZ-IS contract).

1.2.3.1. Regional technical assistance (Bamako)



Map 03. Cluster 1 : sahel countries (+ Guinée Bissau)



Map 04. Cluster 2 : coastal countries (+ CAR)

The two technical assistants (one for the coastal and one for the Sahel countries) took up their positions on May 15, and May 30, respectively, in Bamako. It should be noted that their assignment was delayed by about a year and a half against the initial programming. From May 2003 through October 2004, they carried out about 3 missions in each of the countries that they cover.

Their mission was to support national PACE programmes. Their activities were carried out mainly according to a participatory approach to skills transfer. They also played an important role in the monitoring and evaluation of the various programmes. They helped their respective countries develop their programme estimates (and their

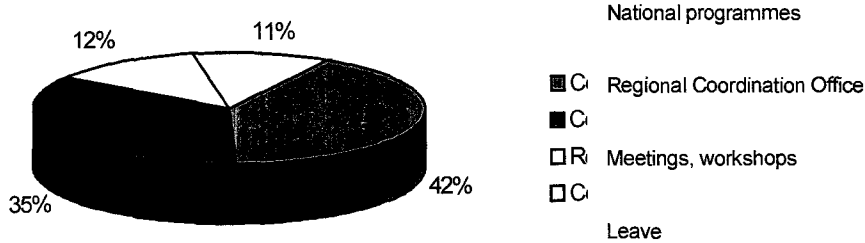
logframes) and make better use of the budgets allocated to them. They maintained regular communication between the national PACE programme coordinators, the Regional Coordination and Common Services Units as well as representatives of the local delegations of the European Commission. Moreover, they submitted several requests to the common services for punctual technical missions. They worked on installing the PID software and on training staff in charge of animal health information management. They developed a monitoring system for the 4 thrusts of the PACE programme according to a detailed list of 100 performance indicators (based on the 40 indicators which had been developed by the regional coordination and presented to the advisory committee held in April 2002 in Bamako as well as at the 3rd annual PACE meeting organized in June 2002 in Cotonou).

A concerted effort between the Regional Coordination, the Common Services and the RTA's has made it possible to develop a grid of 37 indicators for the monitoring and evaluation of the state of progress of the PACE national components. Thus, simultaneously with their direct technical support to countries, their contribution to the work of the Regional Coordination in Bamako developed progressively to meet the needs of the latter both on regular country monitoring and on the preparation of the extension.

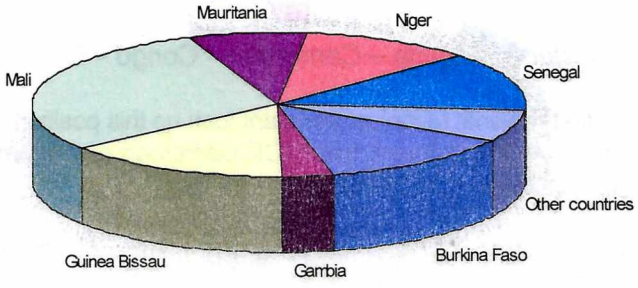
Regional techn. Assistant	A	B
National assignments (d.)	8	N/A
Regional assignments (d.)	162	167
International assignments (d.)	38	49
Total (days)	208	216
Interval from 01.06.2003 through 31.10.2004 (days)	510	519
% assignments	40%	42%
Average number of days on assignment/month	12	12

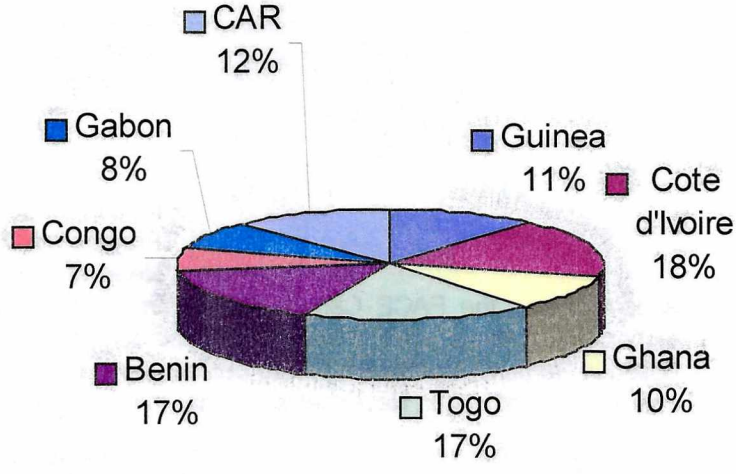
- Table 08. Time-use of the 2 regional technical assistants, based in Bamako.

The technical assistants have spent in average 8 days per assignment and per country.

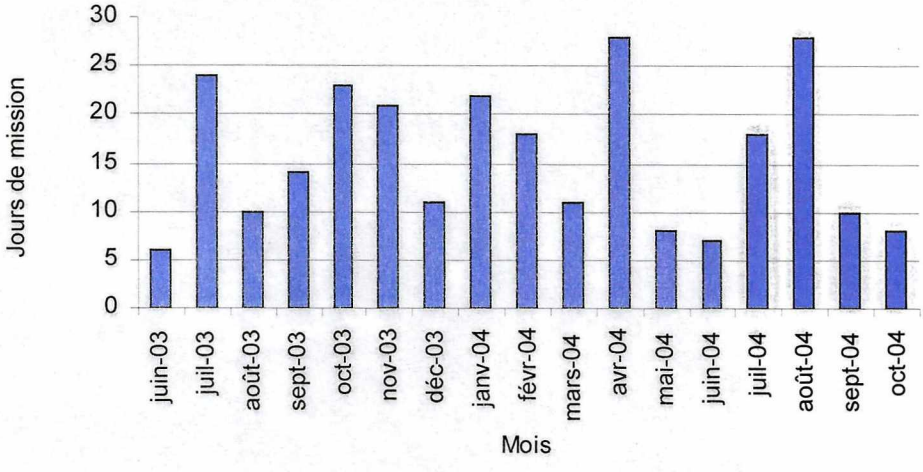


- Graph 1 : Time-use of regional technical assistant (A) based in Bamako (over the last 16 months, from July 1st, 2003 through October 31st, 2004)





- Graph 2 : Time-use of the regional technical assistants, based in Bamako (covering the last 16 months, from July 1st, 2003 until Oct. 31st, 2004).

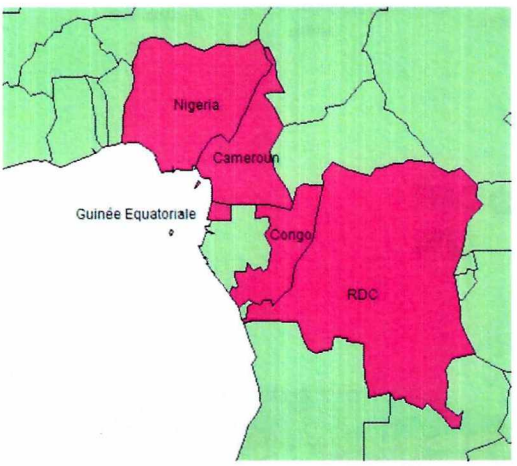


- Graph 3 : Evolution of the number of monthly mission days of a regional technical assistant, based in Bamako (over a 17 months period, from June 1st, 2003 until October 31st, 2004).

1.2.3.2. Regional technical assistance (Yaounde)

Cluster 3 : Nigeria – Cameroon – Congo – DRC – Equatorial Guinea

A first regional technical assistant took up this position in Yaounde (Cameroon) in April 2003. At that moment, the PACE Cameroon programme had not started yet in spite of the approval of a WP+CE n°1.



At the end of September 2003, the contract of the first technical assistant was terminated. A second TA took over the position on October 23, 2003. After this new TA took up his position, a mission of the PACE Programme Coordination Unit visited Yaounde in November 2003 in order to help launch the programme again.

In February 2004, a new National Programme Coordinator and a new Head of the epidemiological unit were appointed and the PACE Cameroon programme could get started. The regional technical assistance position, based in Cameroon differs from that of the other two based in Bamako, because it directly participates in programme management as co-imprest account holder. Nevertheless, he has to monitor five countries.



Handing-over of equipment to surveillance personnel in Cameroon. Photo : C. Squarzoni, 2004



Given the situation prevailing in Cameroon, the ATR could not visit the other countries of the cluster under his supervision at that time (Gambia, Ghana, Nigeria, Equatorial Guinea, and DRC). By common agreement, emphasis was laid on the start-up of the PACE Programme in Cameroon.

In February 2004, there was a rearrangement in the number and distribution of countries between regional technical assistants. The Gambia and Ghana were assigned to the Regional TA's based in Bamako. The Congo on the other hand was included in the group of countries of the Regional TA based in Cameroon. The first missions of the technical assistant outside Cameroon were carried out in DRC in March and May 2004.

1.2.3.3. National technical assistance (Chad)

One single PACE country in West and Central Africa, namely Chad, had the benefit of a national technical assistance just like the five countries of East Africa (Ethiopia, Kenya, Uganda, Sudan, and Tanzania).

As a matter of fact, a resident technical assistant was funded by the European Union to support PACE Chad during three phases :

- from November 2001 through March 2002 ;
- from December 2002 through May 2003
- and from June 2003 through October 2004.

The last appointment by the technical assistant was carried out under the contract signed between AU-IBAR and GTZ-IS/SATEC. The provision of this technical assistance had been decided by AU-IBAR-PACE together with the ECD in Chad and the Ministry of Livestock of Chad to address problems encountered in the management of PACE Chad.

It must also be pointed out that in some cases, other donors have supported PACE by providing national technical assistance to national components of the programme, either full time, or part-time. This had involved Senegal and the CAR until 2003. Presently, 3 countries still receive this type of assistance:

Niger : Dr. Olivier PINGUET (part time technical assistant to PACE)

Nigeria : Dr. Yann MICHAUX (full time technical assistant to PACE)

Chad : Dr. Vincent BRIOUDES (part time technical assistant to PACE)





1.3. At national level

Since the start-up of the PACE Financing Agreement in November 1999, 30 of the 32 countries initially planned have mobilized their funds and have been implementing planned activities. On October 31, 2004, the distribution of the 20 national components of PACE in West and Central Africa based on the number of programme estimates implemented (WP+CE) was as follows (refer for details to table 9 on the following page):

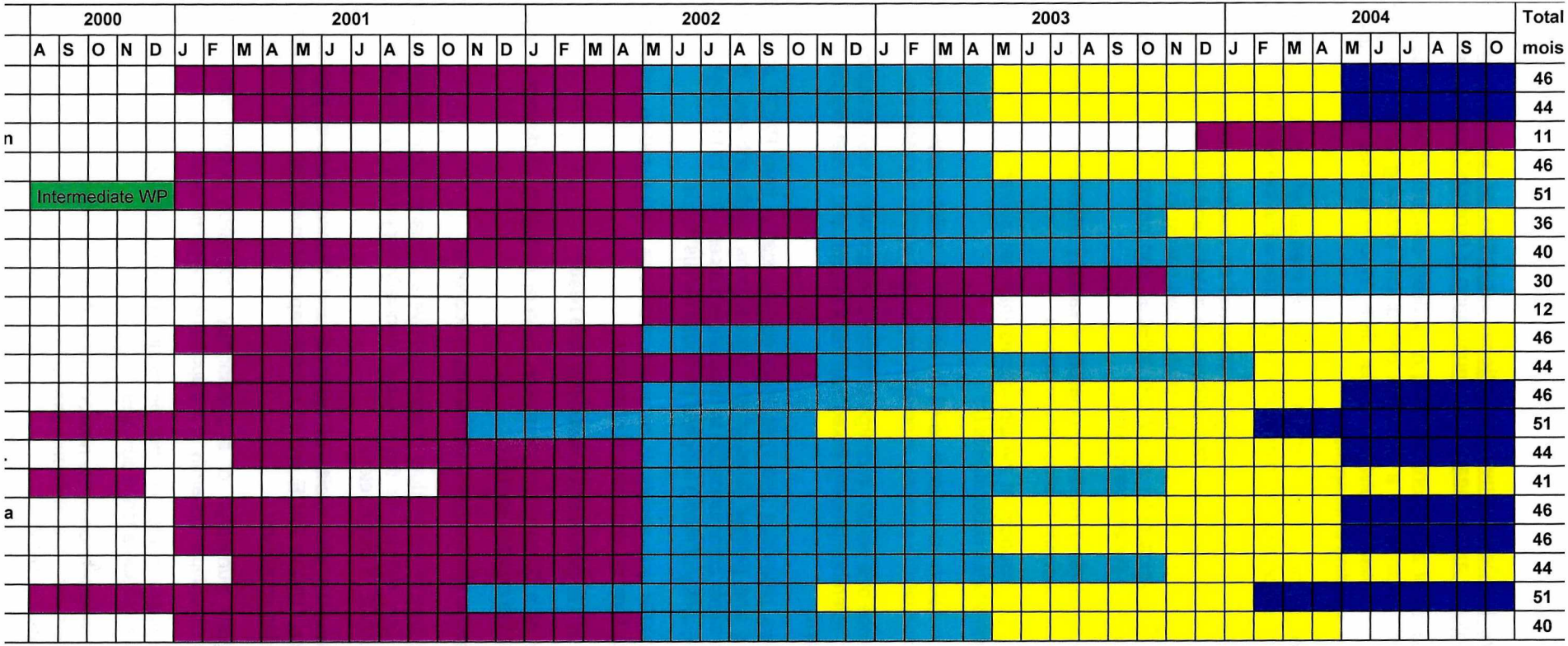
- 9 countries have initiated their 4th work-plan : Benin, Burkina Faso, Ghana, Guinea, Guinea Bissau, Mali, Mauritania, Niger and Senegal,
- 7 countries have initiated their 3rd work-plan : CAR, Congo, Gabon, Gambia, Nigeria, Chad and Togo.
- 2 countries have initiated their 2nd work-plan : Côte d'Ivoire and DRC
- 2 countries have initiated their 1st work-plan : Cameroon and Equatorial Guinea.
- 2 countries remained non eligible to the programme (Liberia and Sierra Leone).

The monitoring of programs in the countries must be taken seriously and the immediate condition, for the coordination and epidemiology units in particular, is to agree on a final set of key indicators. There must be more time and efforts allocated to such monitoring. The funds budgeted for the advisory committee for monitoring-evaluation purposes can be reallocated to the coordination and epidemiology units. Overall responsibility for the monitoring should emanate from the coordination unit. Conclusions of the mid-term review mission (November 2002) concerning monitoring.

Overall, seven reports on the state of progress of the national components of the PACE programme have been presented since the beginning of the programme.

In the last report published in June 2004, a re-evaluation was made of the country results from 37 indicators related to the four (4) objectives of PACE. This work having been elaborated in a more concerted manner between the UCP, the regional technical assistants, the PACE common services and certain national actors (Coordinators, and Technical Assistants), helps get a better understanding of the state of progress of activities in the countries.

The 37 indicators are used in order to monitor and evaluate the progress made in the implementation of PACE programme activities at the national level. The graphic presentation uses 4 degrees of assessment and uses color shades facilitating intuitive interpretation. The 37 different criteria being equally weighed, the exercise enables to generate a general score per country which is the average of scores obtained per criterion. This set of criteria is fully compatible and complementary to the monitoring-evaluation system used by the E.C., which mostly focuses on aspects of programme design and implementation at the level of the management unit, using 5 monitoring criteria, namely *relevance, efficiency, efficacy, impact and sustainability (viability).* The set of 37 indicators presented in this document, is mainly correlated with the impact and sustainability of actions, but goes beyond the limited framework of programme implementation.



- Table 09. Breakdown of months of implementation of work-plans of the national programmes.

WP yr 1 WP yr 2 WP yr 3 WP yr 4

Objective I : Development of national capacities of analysis and action in epidemiology, animal health, communication et projects' management

I.1. Presence of a functional steering or advisory committee; as well as a technical committee, presence of a functional central unit providing efficient support to the epidemio-surveillance network, regular visits to checkpoints, regular training and technical upgrading of its agents ;

I.2. Existence of a charter (rules manual or manual of instructions) defining the network operation system (internal regulation, rules within the network, bases visits);

I.3. Reliability of sanitary information produced on diseases controlled :protocols of surveillance validated, field data validated in quantity and quality, number and quality of reports provided by surveillance posts (checkpoints) to the network body, number and quality (exploitability) of sample collected and provided by the network posts (checkpoints) to the laborator(y)(ies);

I.4. Broad and rapid internal circulation of sanitary information (veterinary services, laboratories, feedback to breeders/producers...);

I.5. Diagnostic capacity of the laboratories (national laboratory functional or efficient foreign laboratories subcontracted) ;

I.6. Action taken at national level to develop a collaboration between veterinary services and wildlife services, in order to implement wildlife surveillance;

I.7. Presence of a person in charge of communication with a well structured work plan (terms of reference properly linked with the 4 thrusts) and a real integration within the PACE team.

I.8. Efficient promotion and institutional communication from PACE at the level of authorities and partner development organisations. Sufficient level of participative approach within communication to breeders-producers, and to the large public with a sufficient quantity of media supports produced versus needs.

I.9. Availability and variety of communication-tools : rural radios, printers, human resources, financial and material resources.

I.10. Use of a computerized zoo-sanitary data base ;

I.11. Use of a Geographic Information System (mapping of diseases, mapping of location of the network agents) ;

I.12. Presence of expertise in animal health economy ;

I.13. Utilisation of a procedure of administrative and financial management compatible with the rules defined for the projects financially supported by the DEF (software-package PACE, TOMgift, etc) ;

I.14. Frequency and quality of technical and financial reports provided to the Coordination Unit of PACE and of sanitary reports provided to OIE and IBAR and to neighbouring countries ;

I.15. Regular publication of a zoo-sanitary information bulletin with printing and distribution in sufficient quantity to the appropriate targeted persons ;

I.16. Progress made in the financial contributions of the government for epidemiological surveillance activities;

I.17. Gradual extension of the network to the other field agents and integration to other stakeholders into the network (private veterinarians, livestock traders, breeders' associations, CBAHW).



Objective II : Improvement of the accessibility and of the drugs and services distribution to breeders

II.1. Organisation of animal health services especially its coherence with the OIE's criteria including a role for private actors ;

II.2. Presence of a private sector to assure animal health services (importation and distribution of drugs and inputs, veterinary services, animal health delivery) ;

II.3. Existence of legal texts and regulation allowing a proper exercise of veterinary professionals and better sharing of tasks between public and private sector ;

II.4. Political action to settle and favour the implementation and development of a private veterinary sector by setting prerogatives of private veterinarians versus public sector agents and para-professionals ;

II.5. Institution of the sanitary mandate and its application's scope (disease surveillance, animal vaccinations, food inspection, prevention and control of diseases) ;

II.6. Encouragement of a policy enhancing the cost recovery not only for products used (drugs, vaccines), but also for veterinary services (fees) ;

II.7. Existence, dynamism and impact of veterinary professional organisations especially : Veterinary Board, Veterinary Associations ;

II.8. Level of organisation of breeders' associations and of other professionals' bodies and their impact on delivery of veterinary services ;

II.9. Development of a community based participatory approach with breeders-producers;

II.10. Regular consultations, meetings or encounters between government veterinary services, private sector and stockholder-organisations;

Objective III : Control of rinderpest

III.1. Vaccination stopped against rinderpest at national level and engagement/adhesion to OIE pathway for the status of freedom from rinderpest (provisionally free, free from disease, free from infection) ;

III.2. Implementation of an efficient clinical surveillance of cattle (active search of stomatitis - enteritis cases);

III.3. Implementation of an efficient serological surveillance of cattle through serum collection;

III.4. Implementation of an efficient epidemio-surveillance (including both clinical and serological surveillance) system for rinderpest in wildlife in countries where significant numbers of susceptible species are present;

III.5. Existence of an emergency intervention plan against rinderpest, adapted to the country conditions, regularly updated and distributed to the various potential actors ;

Objective IV : Control of CBPP and other epizootics

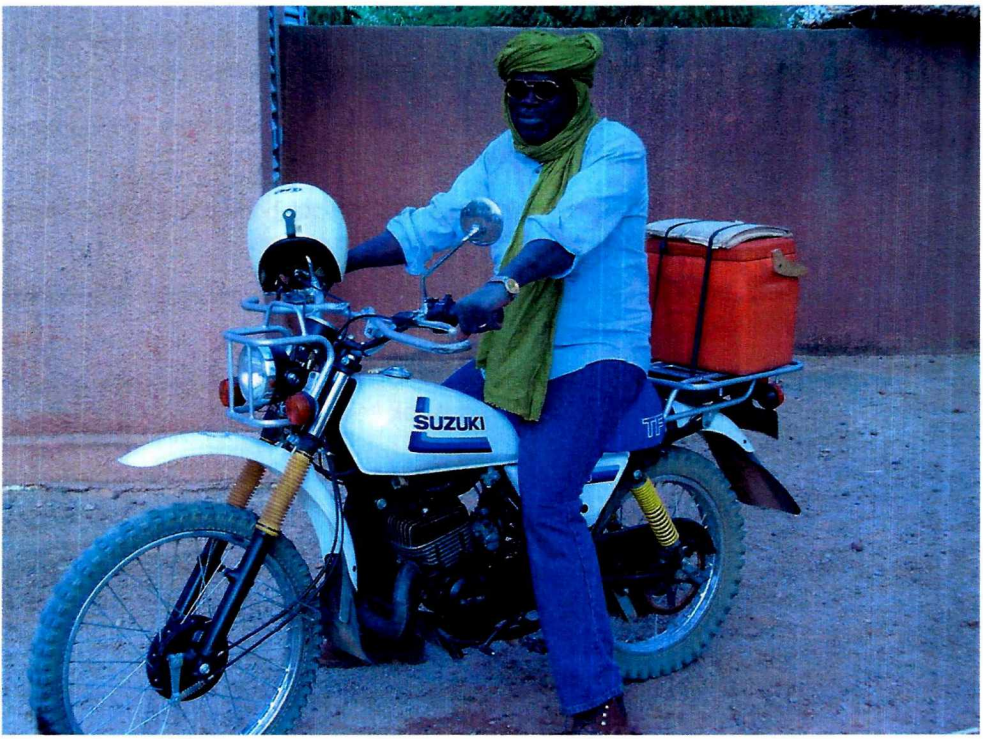
IV.1. Action taken to improve knowledge regarding epidemiological data on animal diseases (spatial and temporal distribution, prevalence, census) ;

IV.2. Existence of validated documents on control strategies for priority animal diseases, including emergency preparedness plans and the establishment of an emergency fund and a stock holders compensation fund;

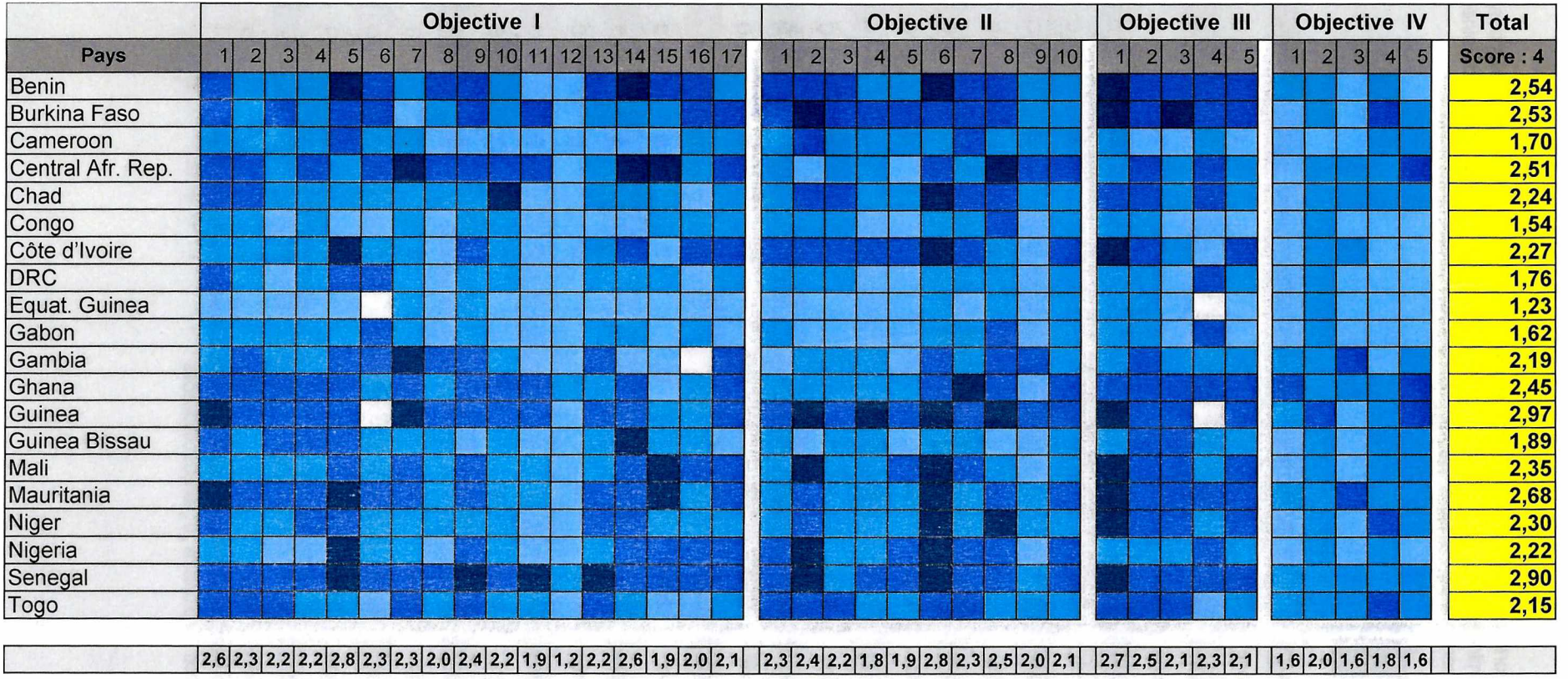
IV.3. Action taken to improve collaboration between veterinary services and public health services for the control of zoonoses (RVF, rabies) in countries where zoonoses are amongst the priority diseases withheld ;

IV.4. Existence of zoo-sanitary agreements with neighbouring countries and the degree to which these agreements have been applied in the field;

IV.5. Existence of animal movement control and tracability measures ([inter]national certificates of transhumance, sanitary laissez passer, branding of cattle, national register, ...)



Surveillance agent, equipped with motorcycle, cool-box and small equipment, Niger
Photo : C. Squarzoni, 2004.



	Objective I																	Objective II										Objective III					Objective IV					Total
Pays	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	1	2	3	4	5	Score : 4
Benin																																						2,54
Burkina Faso																																						2,53
Cameroon																																						1,70
Central Afr. Rep.																																						2,51
Chad																																						2,24
Congo																																						1,54
Côte d'Ivoire																																						2,27
DRC																																						1,76
Equat. Guinea																																						1,23
Gabon																																						1,62
Gambia																																						2,19
Ghana																																						2,45
Guinea																																						2,97
Guinea Bissau																																						1,89
Mali																																						2,35
Mauritania																																						2,68
Niger																																						2,30
Nigeria																																						2,22
Senegal																																						2,90
Togo																																						2,15
	2,6	2,3	2,2	2,2	2,8	2,3	2,3	2,0	2,4	2,2	1,9	1,2	2,2	2,6	1,9	2,0	2,1	2,3	2,4	2,2	1,8	1,9	2,8	2,3	2,5	2,0	2,1	2,7	2,5	2,1	2,3	2,1	1,6	2,0	1,6	1,8	1,6	

- Table 10. Monitoring of west and central African countries based on 37 monitoring indicators (updated June 2004).

: Activities (completely and satisfactorily) implemented (4)
: Activities implemented and in progress (3)
: Activities beginning to be implemented or stagnating (2).
: Activities not implemented yet (1)

☐ : Criteria not relevant to the country (yet)

Furthermore, several national coordinations of the PACE programme have benefited from monitoring missions by the European Commission. The scores obtained are summarized in the following table :



Country	Month	Year	Relevance	Efficiency	Effectiveness	Impact	Sustainability
Benin	June	2002	B	C	C	C	B
Burkina Faso	Oct	2003	B	C	C	B	B
Cameroon	June	2003	C	D	D	D	C
Cameroon	Dec	2004	B	B	B	B	C
CAR	Feb	2003	B	B	B	B	C
CAR	July	2004	B	C	C	C	C
Chad	May	2002	C	C	C	C	B
Congo	June	2002	C	B	B	C	B
Cote d'Ivoire	May	2002	B	D	C	C	C
Côte d'Ivoire	Sept	2003	B	C	C	C	C
DRC	Nov	2004	B	B	C	C	C
Gabon	March	2002	B	C	C	C	D
Gabon	June	2003	C	C	C	C	D
Gambia	Jan	2003	C	C	C	C	C
Gambia	Oct	2004	C	B	B	B	B
Guinea	June	2003	B	B	B	A	B
Guinea Bissau	May	2003	B	B	B	B	C
Mali	May	2003	C	D	D	D	B
Mali	Oct	2004	B	C	C	C	B
Mauritania	Feb	2003	B	B	B	B	B
Niger	Sept	2002	B	B	B	C	B
Nigeria	Oct	2002	C	D	C	C	C
Nigeria	March	2004	C	C	B	C	D
Senegal	Jan	2003	C	C	C	C	C
Togo	March	2003	C	C	C	C	D

- Table 11 : Results of European Commission monitoring missions (in west and central Africa).
  a : very good ; b : good ; c : problems ; d : serious deficiencies



Relevance and quality of design: the extent to which the objectives of a development intervention are consistent with beneficiaries' requirements, country needs global priorities and partners' and donors' policies.

Efficiency : a measure of how economically resources/ inputs (funds, expertise, time, etc.) are converted to results

Effectiveness : the extent to which the development intervention's objectives were achieved, or are expected to be achieved, taking into account their relative importance

Impact to date: positive and negative, primary and secondary long-term effects produced by a development intervention, directly or indirectly, intended or unintended.

Potential sustainability: the continuation of benefits from development intervention after major development assistance has been completed. The probability of continued long-term benefits. The resilience to risk of the net benefit flows over time.

- Source: OECD/DAC, Glossary of key terms in evaluation and results-based management/ Publications, Paris.

Relevance and quality of design: Logical frame of national components are considered rather general and not always adapted to the specificities of countries and almost in every case there is poor corresponding with the model indicated in the Manual of Project Cycle Management of the European Commission. Specific objectives are sometimes confused with results and some activities are not enough specified and are difficult to follow and to assess.

Efficiency : weak efficiency of the implementation of activities due to the slowness noted in the purchase of the equipments in some countries.

Efficiency and impact to date: efficiency and impact are hardly measurable in many cases because of delays accused in the implementation of activities.

Potential viability : if political will exists, these countries should be able to take over the epidemiological surveillance systems which does not require many financial means.

Problems highlighted by the external monitoring reports of the European Commission are usually the same that those reported in the PCU and CSU mission reports, but there are aspects on which the external monitoring reports must be put in perspective.

Chapter
2

The operation of the epidemio-surveillance systems for animal diseases and measures taken or foreseen to ensure their sustainability.

2.1. Operation of the epidemio-surveillance systems

A basic condition to effectively control or eradicate cattle diseases and thus access export markets is that each PACE member state possess an adequate veterinary service. In a first stage, it is essential that countries establish surveillance systems because this is a basic condition to identify and address animal health constraints. For example, an efficient epidemiological surveillance system is an OIE condition for verification of rinderpest eradication. Countries which cannot demonstrate the establishment of an efficient epidemiological system which would be capable of detecting rinderpest if it were present, cannot be declared infection free for international trade reasons. Thus, the epidemio-surveillance systems represent tools and indispensable prerequisites for countries to fully draw the economic benefits of rinderpest eradication, independently of the intervention strategy used to suppress the disease.

Prepared by Emmanuel Tambi, PACE Economics Unit.



Logo of the ESS in Mali : EPIVET-MALI.

According to OIE standards, the veterinary services should be able to demonstrate that they are capable, thanks to appropriate legislation and organization, to have control over the establishment and enforcement of animal health measures as well as international veterinary certification activities. In particular, they must define and document the responsibilities and the structure of organizations in charge of animal identification, control of animal movements, systems of prophylaxis and declaration of animal diseases, epidemio-surveillance and the communication of epidemiological information.

They must also have efficient animal disease surveillance systems and disease reporting systems, according to the provisions of the Terrestrial Animal Health Code.

In order to reach this objective, the PACE, through its epidemiology unit (PEU) strived to help countries establish or consolidate their animal disease surveillance systems also called epidemio-surveillance systems (ESS). Several missions have been conducted since the beginning of the PACE programme in order to help with the





establishment of these systems. In the course of such missions, the following topics were addressed: overall situation of livestock, organization of veterinary services, command lines and information feedback from central units to the field and the other way round, ESS organization and operation, surveillance protocols per priority disease, OIE pathway, emergency preparedness plans, performance indicators and the means to render the systems sustainable, etc.

In addition to missions in the countries, several training sessions were organized and pedagogic tools were produced (CD Rom, brochures).

At the end of October 2004, all countries of West and Central Africa, except Equatorial Guinea, had set up an animal disease surveillance mechanism,

A more in-depth evaluation of these systems however leads to the conclusion that all these countries do not have as yet a fully operational system, i.e.:

- with bodies in charge of supervision (steering committee, technical committee) and coaching (central unit) and a network of field agents visiting farms and collecting animal health information.

- with a surveillance system capable of detecting precise endemic foci and launching rapid alerts to health authorities.

- producing health information on animal health under surveillance according to developed and validated surveillance protocols.

- ensuring an internal flow of health information (veterinary services, feedback to farmers...) as well as external flow (OIE, AU-IBAR, neighbouring countries).

- ensuring laboratory analytic capacities (at the national level or though sub-contracting abroad).

- ensuring good communication with farmers, private veterinarians and all partners involved in animal health issues at the national level.

- using a computerized data base together with a geographic information system, thus helping manage, exploit, and use data collected through the surveillance system.

The monitoring of animal disease surveillance was ensured throughout the programme through missions conducted by the PACE Epidemiology Unit and Regional Technical Assistants (the latter, since May 2003). In addition, evaluation missions of epidemiological surveillance systems have been conducted by the regional epidemiologists in a limited number of countries so far (Burkina Faso, Guinea, Mali, Niger, Senegal, DRC, Congo, Nigeria, and Guinea Bissau).

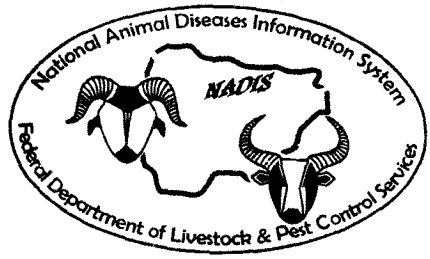
Finally, meetings and trainings including the PEU and national epidemiologists have also been organized in order to contribute to capacity building in epidemio-surveillance for countries.

During the preparation of the extension phase of the programme, an assessment of the operation of epidemiological surveillance systems was again conducted in order to identify the strong points and detect the weak points in order to improve them.



This work which was carried out by the epidemiologists of the Regional Coordination of the PACE programme in Bamako in collaboration with RTAs was presented to the workshop on optimisation of PACE epidemio-surveillance systems, which was held in Dakar (Senegal) in August 2004.

The methodology adopted in this approach consisted in conducting a semi-quantitative evaluation based on knowledge of national ESS accumulated through the various missions carried out in the countries but also information supplied by the progress reports of the national components. The evaluation was carried out using an analytic grid, based on 67 criteria related to 11 components as follows:



Logo of Nigeria's ESS : NADIS

- The national animal health policy,
- Institutionalisation and ESS architecture,
- The establishment and operation of the ESS,
- ESS animation/coaching,
- The management and use of epidemiological data,
- Communication and feedback of health information,
- The operation of diagnostic laboratories,
- Integration of other partners (veterinarians, farmers, NGOs),
- Performance indicators and activity monitoring,
- Overall surveillance of cattle diseases,
- Surveillance of wildlife.

Each component consisted in turn of 4 to 9 criteria (or questions), the answers given being translated into scores ranging from 1 to 4, according to the following grid:

1 = activity yet to be implemented
2 = activity in start-up or inadequately implemented
3 = average or ongoing activity
4 = inadequate (or incomplete) implementation
NA = activity non applicable to the country situation

The 67 criteria have thus made it possible to assess epidemio-surveillance systems set up in PACE member states. An average of the scores per country and per component has then been computed (average out of 4) and histograms were drawn.





In the end, the state of the epidemio-surveillance systems (ESS) of PACE member states in WCA, as assessed by PEU experts of the Bamako Regional Coordination, has shown a certain homogeneity in the design of the ESS and the organization of surveillance in the field, but a certain disparity in the implementation of activities and the results obtained.

Diseases which have been withheld as priority diseases in the countries and which are monitored by the ESS are:

Country	ESS	ASF	CBPP	FMD	ND	PPR	Rabies	RP	RVF	Others
Benin	RESUREP	●	●	●		●	●	●		
Burkina Faso	RESUREP	●	●	●		●		●		
Cameroon		●	●	●		●		●		
CAR	SISAC		●			●		●		Tryp./Bab.
Chad	REPIMAT		●	●		●		●		
Congo		●	●			●		●		
Cote d'Ivoire		●	●	●		●	●	●		
DRC	RENES	●	●			●		●		
Equator. Guinea		●	●			●		●		
Gabon		●	●		●	●		●		
Gambia		●	●	●		●		●	●	
Ghana		●	●		●	●		●		
Guinea	REMAGUI	●	●	●	●	●		●		LSD
Guinea Bissau	RENAVE	●	●		●	●	●	●		
Mali	EPIVET		●	●		●		●	●	
Mauritania	REMEMA		●	●		●	●	●	●	HS.
Niger			●	●		●		●	●	
Nigeria	NADIS	●	●	●		●		●		
Senegal	SNSE	●	●	●		●		●	●	
Togo	REMATO	●	●	●	●	●		●		Anthrax/BQ

- Table 12. Priority diseases (in alphabetical order) of the epidemio-surveillance systems in PACE member countries in WCA.

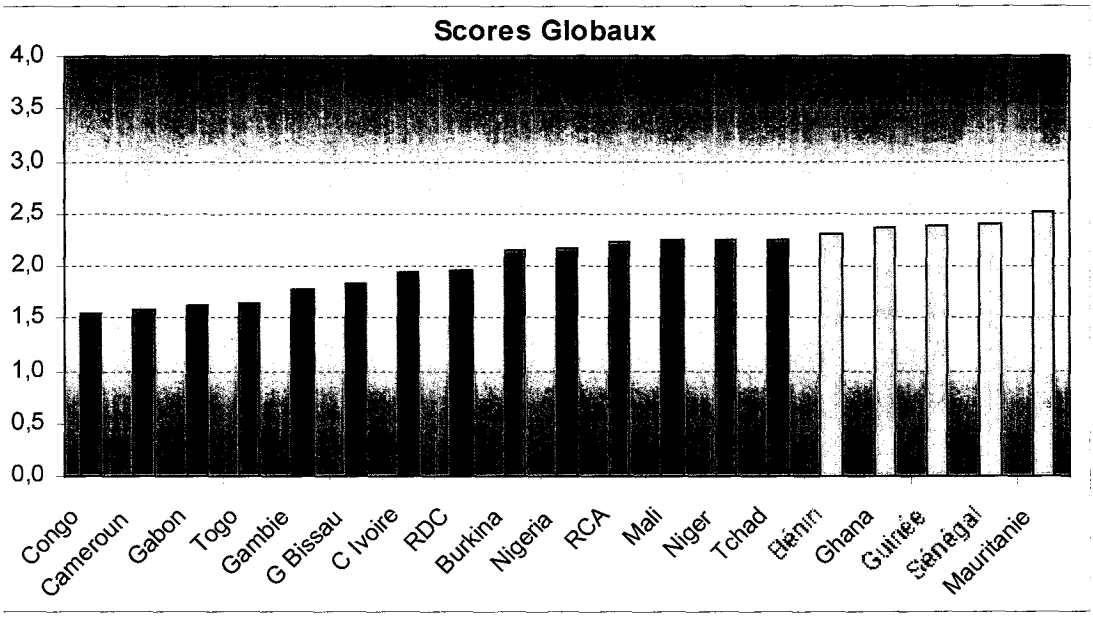
In general terms, the situation of the 20 countries of West and Central Africa can be summarized as follows:

2.1.1. Country analysis

The results of scores of ESS show that 11 countries (out of 19) have scores higher than average (2.00/4.00), including 5 which are higher than 2.25 (considered as having an acceptable level), and for which a large progression margin can still be considered. The countries of this group are characterized by a marked national political willingness, a reduction of the prevalence of major animal pathologies, results achieved in the area of epidemiological surveillance, and all this together with valorised and capitalized human skills.

On the other hand, a group of four countries (with an average lower than 1.6/4.0) requires action and rapid efforts to be implemented in order to reach a correct operation of their ESS and record satisfactory results. The latter should mainly be the object of monitoring assistance. These countries' low rank can be accounted for either by lack of means (for example the Congo), or the relative short track record of the ESS (for example Cameroon), or the low priority given to livestock in national policies (for example Togo, Gabon). Between these two groups of countries, there are 10 other ESS with intermediate scores, of variable levels, consisting of countries recognized for having established functional ESS long ago, but which are experiencing a slow down of their activities for institutional reasons (for example Chad, CAR, Côte d'Ivoire...) or newly established ESS and currently in strong progression (for example Burkina Faso, DRC, Niger...).

This ranking helps distinguish a first group of five countries where disease surveillance activities are deemed correct and have been noted satisfactory (Mauritania, Senegal, Guinea, Ghana, and Benin) and another group of four countries which experience difficulties in the setting up of their ESS for various reasons : Cameroon – late start of activities, Congo – lack of financial means.



- Graph 4. Ranking of countries in WCA (except Equatorial Guinea) by general score (in ascending order)

2.1.2. Subject analysis

The analysis of subject items relative to the evaluation of the PACE epidemio-surveillance system operation (second part of the evaluation), according to the methodology developed, covers 11 thematic principles. The main objective was to develop themes and basic components indispensable for the sound operation of epidemio-surveillance systems and to identify the activities not adequately implemented in order to prioritise them for the upcoming extension phase. The other important aspect of this analysis resided in the identification, for the main themes, of countries where performances have been most remarkable in order to build on these successful



experiences (*success stories*) and share them with other countries, or if not, avoid major mistakes identified and also overcome commonly identified obstacles.

This type of analysis of the PACE epidemio-surveillance systems for West and Central African states (a total of 19 countries) yields the following results :

Theme	**Overall score (: 4,00)**
National strategies and policies	1.84
Legal basis, set-up and organisation of the ESS	1.98
Implementation and operation	2.44
Central and regional animation/coaching of the ESS	2.30
Sanitary information and data management	2.23
Central and regional diagnostic laboratory facilities	2.33
Communication and health information flow	2.17
Monitoring of activities and performance indicators	1.20
Integration of partners	2.00
Surveillance of diseases (other epizootics)	1.92
Wildlife	1.81

- Table 13. Analysis of topics related to the operation of ESS.

Overall, there are 5 major topics which yield scores higher than 2.00/4.00, demonstrating their correct implementation, but nevertheless requiring consolidation and improvement. These are:

- the setting up and operation of the ESS,
- ESS coaching / animation,
- epidemiological data management,
- diagnostic laboratories,
- communication and health information flow.

Partner integration (veterinarians, farmers, associations, ...) yields a score of 2.00/4.00. It's an aspect which is still inadequately accounted for in numerous countries or which has been only recently implemented. It is important to stress the efforts on this topic during the extension phase of the PACE programme, as it intervenes essentially in the operational efficiency of the ESS in the field, its representativity and ultimately its reliability and sustainability. The other topics yield scores below 2.00/4.00 (that is : below average), but remain above 1.75 (except the one related to the monitoring of activities and performance indicators).

They can be divided into 2 sub-groups :

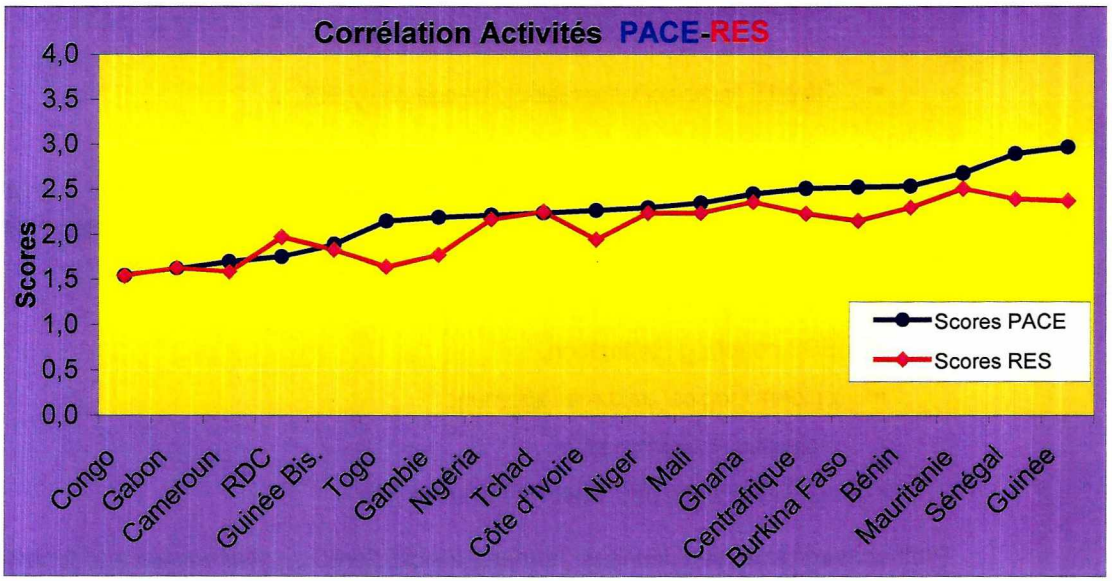
- the institutional aspect (national health policies and ESS legal foundation) and

- the surveillance of other diseases than rinderpest, surveillance of wildlife and development and use of performance indicators.

These two aspects will have to be tackled with priority by the national components because their implementation is generally inadequate, if not inexistent .

2.1.3. Correlation between the activities of the PACE programme and the operation of the ESS.

The classification of countries based on overall scores shows that there is about 1 (one) point difference between the country with the highest score and the one with the lowest. This demonstrates that there is, to-date, no major disparity between the PACE member countries, and that the scores are about average (a general average of 2.6/4.0), but the range of scores between them is visible. The distribution of countries obtained with this analysis confirms what is known about the operation of countries in general and the implementation of the PACE programme in particular. Thus, if one compares the results obtained on the ESS and those recorded for PACE programme activities in general, one observes a strong correlation (correlation coefficient of 0.855) between the degree of progress of countries and the achievement of PACE objectives (4 main objectives of the PACE programme and 37 monitoring indicators) on the one hand and their progress in the setting up of an operational epidemiological surveillance system on the other hand.



- Graph 5. Correlation between scores obtained by countries in overall programme implementation (PACE) and specificaaly for the surveillance implementation (ESS = RES).

In conclusion, the countries which have made more headway in the execution and implementation of PACE programme activities are those which have the most functional, and efficient epidemio-surveillance system, and conversely.

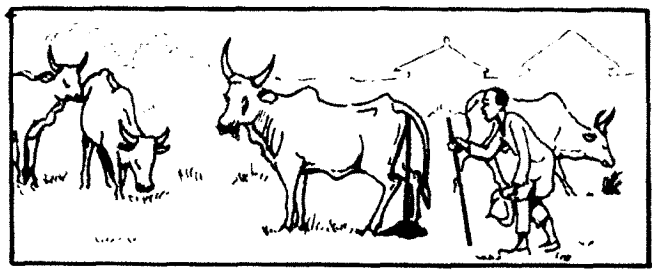


Communication :

A great deal of attention was given to the surveillance systems, essentially for two reasons: make farmers understand what a surveillance system is about and who is part of it, and secondly explain the behaviour to be observed in case of disease suspicion. In nearly all PACE member states, communication tools have been developed to reach this general level of awareness among farmers, as well as other stakeholders: private veterinarians, local and traditional authorities, butchers, traders, etc. Below is presented an example of the visual tool developed in C.A.R., aiming at informing farmers (in French as well as local languages) about the first measures to take in case of disease occurrence in their cattle.

si vous observez ces signes sur vos animaux
to on ngi misaalu nyawu man haa nder na'i mon

ثۆن نجي مسالو نيوو مەن هاا ندر نا'ي مون



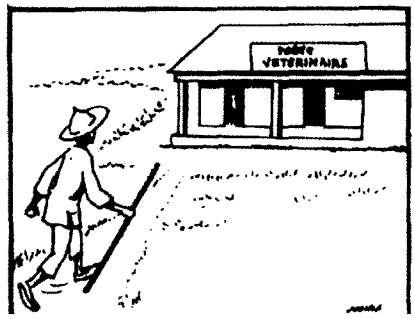
isolez les animaux malades
ndarnee na'i mon nyawdi wakeere feere

دزنل نعي مون نيوبط وكيبر فير



prévenir les vétérinaires (ANDE) le plus vite
andineeka doftaen na'i ko yaawi

عندنيكا دفتن عن نعي كيا و





2.2. Sustainability of ESS

PACE programme member countries have pledged to do their utmost to ensure the continuity of animal disease surveillance activities after the end of the EDF funding. The challenge is therefore to ensure finances based on sustainable national resources in order to maintain an adequate level of ESS activities. In all countries, the government allocates an operating budget to the veterinary services, which is supposed to include the funds for the ESS but in reality such funds are very often inadequate and do not allow a sound operation of the ESS structures.

During the implementation of the PACE programme, a few countries have managed to mobilise counterpart funds (which could exceed the EDF budget) which contribute to funding the purchase of equipments and covering part of programme activities. But the problem with counterpart funds is that they are stopped at the end of the external funding and consequently cannot guarantee any sustainability.

The work of veterinary service officials must consist in sensitising national policy makers with regard to the interest and the economic benefits for countries to invest further and in more sustainable manner in animal health in general and the epidemiological surveillance of animal diseases in particular. The PACE Regional Coordination Unit strives to help them carry out this task by participating in the sensitisation of political authorities on the one hand and by putting at their disposal any relevant information which could serve as an argument for gaining ownership of epidemiological surveillance activities at the end of the programme.

It must also be noted that at the international level, thanks particularly to OIE's commitment, the importance of the tasks of veterinary services is increasingly recognized and initiatives are developed to strengthen investments in animal disease control programmes.

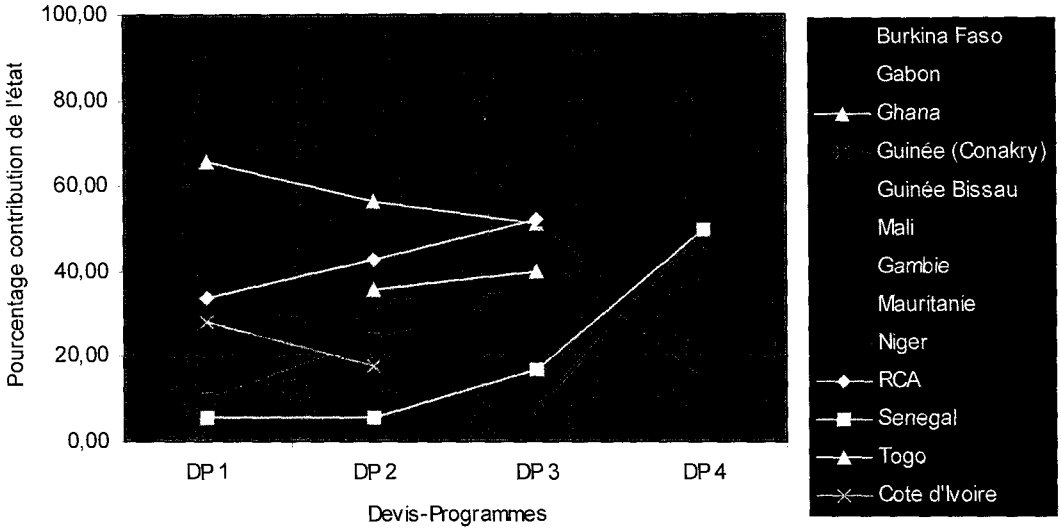
The PACE programme, primarily through its economic unit, strives to develop a toolbox of statistical data which will help veterinary service officials convince their political authorities of the economic interest in investing into animal disease surveillance activities.

A socio-economic analysis was developed using a documentary approach (discussed below). This analysis will be completed as early as the month of February 2005 by case studies in three countries (Benin, Ghana, and Mauritania).

2.2.1. Documentary approach analysis

2.2.1.1. Levels of funding required to sustain the ESS.

The PACE Economics Unit has assessed the cost of a few national epidemio-surveillance systems and has analysed the financial contributions of PACE member countries. Based on these costs, the budgets necessary to sustain epidemio-surveillance systems have been established.



- Graph 6. Relative contribution of governments to the operation of the ESS (%) (devis-programme = DP = work plan; RCA = CAR).

2.2.1.2. The costs of active and passive surveillance

Costs are estimated from the following line items:

Wages / salaries :

Salaries concern staff involved in each type of surveillance activity and have been estimated by taking into account the number of staff in each category, the average annual salary for each category and the proportion of time spent in each type of surveillance activity. Four types of personnel are considered: veterinary surgeons (doctors in vet. med.), laboratory technicians, animal health workers and technicians (AHW/T), and finally back-up personnel (for example: drivers). About half the veterinarians and 80% of AHW/T are involved in passive surveillance. The proportion of veterinarians and AHW/Ts involved in active surveillance is 3 to 11%. On average, veterinarians devote 64% of their time to passive surveillance and 40% to active surveillance. The AHW/T devote more time to passive surveillance (80%) than to active surveillance (60%).

As an example, Côte d'Ivoire is a country that supports a huge wage bill for the passive and active surveillance personnel.




	Passive (continued) surveillance			Active surveillance		
Country	**Wages**	**Allowances**	**Total**	**Wages**	**Allowances**	**Total**
Benin	276.000	105.000	380.000	63.000	75.000	139.000
CAR	203.000	73.000	276.000	81.000	23.000	104.000
Cote d'Ivoire	768.000	220.000	988.000	80.000	212.000	292.000
Guinea Bissau	231.000	54.000	286.000	NA	NA	NA
For comparison's sake :						
Ethiopia	1.810.000	1.485.000	3.294.000	34.000	56.000	89.000

- Table 14. Salary-related expenses for active and passive surveillance (in EUR).

Allowances / gratuities

They are estimated on the basis of the national daily rates (*per diems*) paid to each category of personnel considered, the number of persons carrying out missions in the field and the number of mission days per person per year. The average number of mission days for each veterinarian and AHW/T is respectively 53 and 45. The *per diem* rates vary significantly across countries, being higher in Benin and Côte d'Ivoire, and comparatively lower in C.A.R.

Transport

Transport expenses for surveillance are estimated from three components: vehicle (motorcycle) depreciation, maintenance and operating costs. It is assumed that these equipments have a depreciation period of five years.

Depreciation over equipment

Estimations have been made for laboratory equipment, field and office equipment, taking into account the lifetime of each equipment.

Other costs

They include expenses for the analysis of samples, the processing of information and its dissemination and the training related to epidemio-surveillance. Note that these other costs are relatively low for most countries.

Country	**Transport**	**Depreciation equipment**	**Analyses samples**	**Dissemination of information**	**Training**	**Total**
Benin	49.800	18.000	1.000	4.000	25.900	98.700
CAR	57.600	30.200	2.200	4.000	25.900	119.900
Cote d'Ivoire	341.200	192.300	2.100	3.000	24.800	563.400
Guinea Bissau	18.400	19.900	2.100	900	8.400	49.600

- Table 15. Expenses (in EUR) related to passive surveillance (except personnel).





2.2.1.3. Financial requirements to sustain epidemio-surveillance.

In order to assess the financial means that countries must set aside to sustain their epidemio-surveillance activities after the stopping of the PACE programme, we go from the principle that the budget that each country is currently spending (inflation rate being accounted for) is adequate to sustain passive and active surveillance activities at the national level.

These amounts are presented on tables 16 and 17 for passive and active surveillance. They have not been adjusted for inflation. In order to successfully implement passive surveillance activities, individual governments must mobilize the amounts indicated on table 16.

The importance of the financial contribution of the Government of Côte d'Ivoire mainly reflects the relatively high salary costs and daily allowances rather than the human and animal resources they cover.

Apart for salaries, that most governments must pay anyway, with or without surveillance activities, the financial needs not related to salaries represent about half of the total as far as passive surveillance is concerned. The latter range from 104,000 EUR for Guinea Bissau to about 784,000 EUR for Côte d'Ivoire.

As far as active surveillance is concerned, Côte d'Ivoire requires 521,000 EUR against hardly 20,000 EUR for Guinea Bissau (following tables).

Country	Financial needs (total)	Financial needs (except wages)	Financial needs (except wages) as % of the total
Benin	479.000	203.000	42%
CAR	396.000	193.000	49%
Cote d'Ivoire	1.551.000	784.000	50%
Guinea Bissau	335.000	104.000	31%

- Table 16. Financial means required to sustain passive surveillance activities

Country	Clinical surveillance	Serological surveillance	Wildlife surveillance	Laboratory analyses	Total	% of passive surveill.
Benin	116.000	53.000	71.000	22.000	262.000	55%
CAR	135.000	NA	32.000	60.000	227.000	57%
Cote d'Ivoire	282.000	66.000	101.000	72.000	521.000	34%
Guin. Bissau	14.000	NA	3.000	2.000	19.000	6%

- Table 17. Financial means required to sustain active surveillance activities





Country	Clinical surveillance	Serological surveillance	Wildlife surveillance	Laboratory analyses	Total	% of the total
Benin	93.400	29.800	69.900	5.200	198.300	76%
CAR	86.800	NA	15.300	43.400	145.500	64%
Cote d'Ivoire	252.300	52.100	82.800	54.200	441.500	85%
Guin. Bissau	14.300	NA	3.300	1.900	19.500	100%

- Table 18. Financial means (except wages) required to sustain active surveillance activities

Unit cost of active and passive surveillance

The average amount per head of cattle (VLU), necessary to carry out surveillance for the selected countries is 0.44 EUR for passive surveillance and 0.12 EUR for active surveillance.

		Total cost (€)		Unit cost (€)	
Country	VLU [4]	Passive surveillance	Active surveillance	Passive surveillance	Active surveillance
Benin	1.885.000	479.000	262.000	0,25	0,14
CAR	3.731.000	396.000	227.000	0,11	0,06
Cote d'Ivoire	2.191.000	1.551.000	521.000	0,71	0,24
Guin. Bissau	479.000	335.000	19.000	0,70	0,04

- Table 19. Average amount, per head of cattle (VLU) needed to conduct surveillance in the selected countries.

[4] VLU = *Veterinary Livestock Unit* (all species)





2.2.2. Case study approach (limited/representative selection)

It is very important to advise and convince Government decision makers of the usefulness of continuing funding these systems after the end of the PACE programme; this is in the direct interest of securing production and animal health in the country, and indirectly, through the control of costs incurred (by the State) for the surveillance and control of epizootic diseases. This expected cost-benefit aspect should be the key determinant of any Government support to the operation of these networks. A study initiated under the PACE programme aims at assessing the cost of ESS operation by distinguishing as much as possible the operating cost of the surveillance system as such, from the operating costs of the veterinary services system existing in the country; and identifying the ESS' technical efficiency indicators in order to try and develop a cost/effectiveness approach specific to epidemiological surveillance systems for animal diseases in Africa. This study will be carried out in three West African countries which have set up an epidemiological surveillance system, deemed operational and efficient : Mauritania, Benin, and Ghana.

The choice of the three countries is justified by their distinct characteristics:

a) Mauritania is a very large country with a predominantly Muslim population and presenting a Saharan-Sahelian eco-geographical system, with a large predominance of livestock in the national and agricultural GDP and a livestock system directed towards ruminants and camels. The farming system is predominantly rural, extensive, transhumant and pastoral with intensive (sedentary) dairy development pools. The epidemiological surveillance system is directed toward rinderpest, CBPP, Rift Valley Fever, foot-and-mouth disease, PPR and rabies.

b) Benin is a small, predominantly Christian and animist country presenting an eco-geographic system ranging from Sahelo-Sudanian to equatorial hot and humid (coastal). Livestock represents only a small portion of the gross domestic product, and the agricultural domestic product. Animal husbandry is quite diversified, with (mostly) cattle and other ruminants but also including poultry and pigs, both in rural and sub-urban areas. Ruminant farming is essentially agro-pastoral and semi-intensive with limited transhumant (called *'internal'*) and characterized by a strong integration of livestock into agriculture (cash-, as well as food-crops). The epidemiological surveillance system is directed toward rinderpest, CBPP, foot-and-mouth disease, PPR, ASF, and Newcastle Disease.

c) Ghana, an intermediate size English speaking country, has socio-cultural and eco-geographic characteristics similar to those of Benin, but is specific because of an approach to animal health management, which is still very state oriented, with a very timid and slow privatisation (liberalization) of the veterinary sector. The epidemiological surveillance system is directed toward rinderpest, CBPP, PPR, and Newcastle Disease.

Through the characteristic features of these three countries, the study should contribute to the identification of objective (technical and financial) criteria helping link geographical, agricultural, political, and economic characteristics of a country to the estimated cost of an epidemiological surveillance system, and to its development priorities. Such an approach will be useful for the three countries involved, but also for other PACE countries in the sub-region which live a similar or intermediate context than that of the three countries studied.



2.3. Management of disease information

2.3.1. PACE Integrated Database (PID)

PID is a multi-user and multi-lingual information management system for animal health and production for PACE member states. When used rationally, it makes it possible to provide reliable and timely health information to authorities for sound decision making in the area of controlling main diseases. It also enables to meet international animal health and trade standards for which transparency, reliability of information, and traceability of products are essential requirements.



PID has been installed in 19 of the 20 countries of West and Central Africa (Equatorial Guinea is the one remaining). The two Regional Technical Assistants based in Bamako (who had been trained by the PACE data management expert) have played a very active role in the installation of the PID in countries and the training of national staff.

An internet version of PID – which will be called ARIS or *Animal Resources Information System* – is being developed and takes into account the imperfections of PID and will mainly help networking communication throughout the PACE member states and throughout the continent thanks to its interactive application on the web. The two regional technical assistants have translated the PID into Portuguese and have perfected the French version, thus making it possible to launch the new version of the PID (ARIS) in three languages during the extension phase.



Training of staff in the use of PID by a technical assistant.
Photo : N. Denormandie, 2003. (PACE Benin).



Screen-cap of the PID – ARIS opening screen.

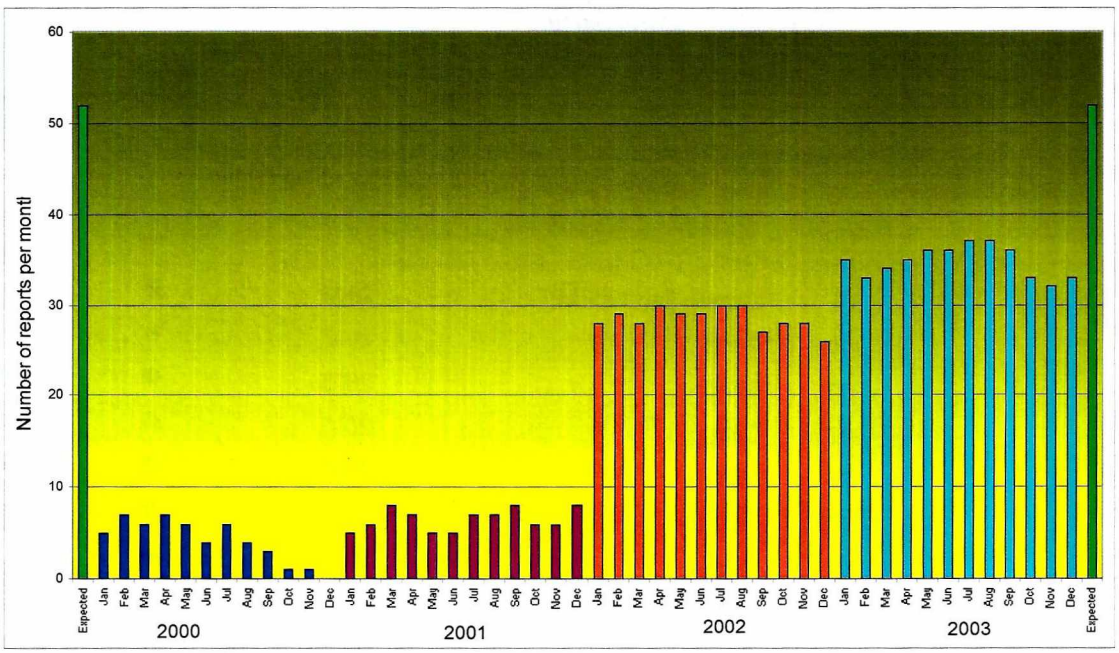
No.	Country / Programme	Installation	Training	Follow-up
01	Gambia (launch PID)	2002	●	
04	Benin	2003	●	●
05	Ghana	2003	●	●
02	Guinea	2003	●	●
06	Mali	2003	●	●
03	Mauritania	2003	●	
07	Nigeria	2003	●	
08	PACE REG Bamako	2003	●	●
09	Senegal	2003	●	●
10	Chad	2003	●	●
11	Togo	2003	●	
12	Burkina Faso	2004	●	●
19	Cameroon	2004	●	
13	Congo	2004	●	●
14	Cote d'Ivoire	2004	●	●
19	Gabon	2004	●	
15	Guinea Bissau	2004	●	●
16	Niger	2004	●	●
17	CAR	2004	●	●
18	DRC	2004	●	
20	Equatorial Guinea			

- Table 20. Installation, training and follow-up of PID in PACE member countries

2.3.2. Disease reporting

The most recent data over a full year that PACE and AU-IBAR possess, concerning the year 2003, is published by the IBAR *Pan-African Animal Health Yearbook,* produced by the PACE DMU in Nairobi.

During the year 2003, IBAR received a total of 417 monthly reports (graph 7). This represents 66% of the expected rate for all AU member states (numbering a total of 53) and 11% more than the preceding year. Likewise, the number of countries submitting reports to IBAR has increased from 37 in 2007 to 40 countries in 2003. The graph below shows the regular increase in the number of monthly reports on diseases submitted by countries to IBAR since 2000. It should be noted that the ideal scenario, where all AU member states submit a monthly report, is illustrated in green.



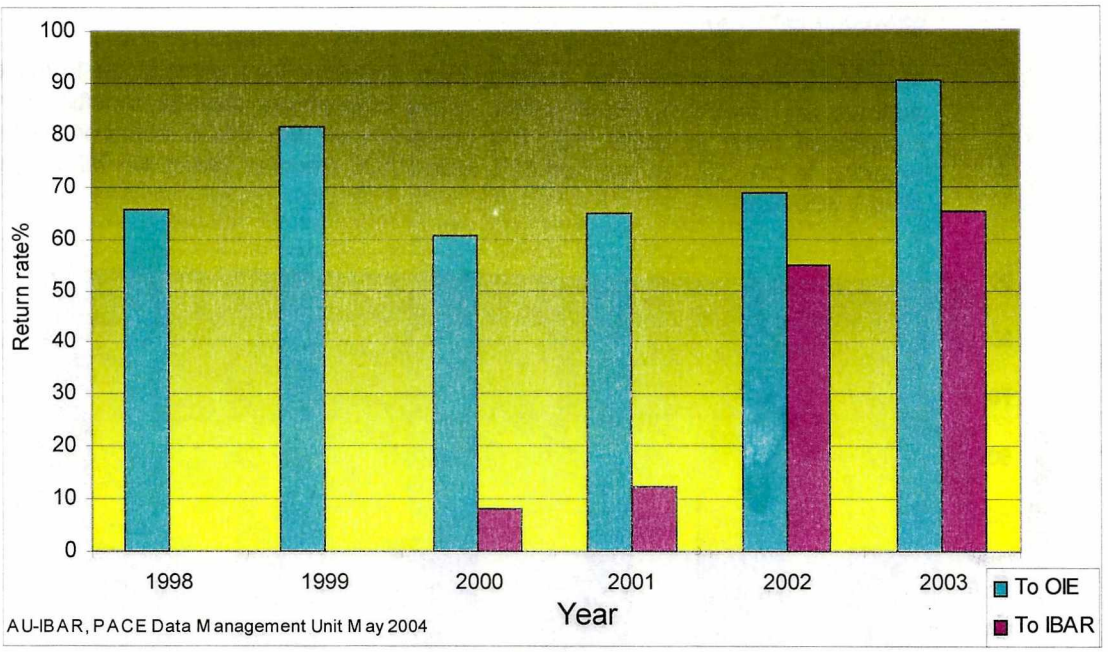
- Graph 7 : Evolution of submission of monthly disease reports to IBAR by African countries (2000 - 2003)

The number of reports on diseases submitted to the OIE by African countries has increased to 91% in 2003, compared to a rate of 69% the preceding year. The following graph (8) presents a comparison between the submission rate of reports by African states to IBAR and to the OIE.

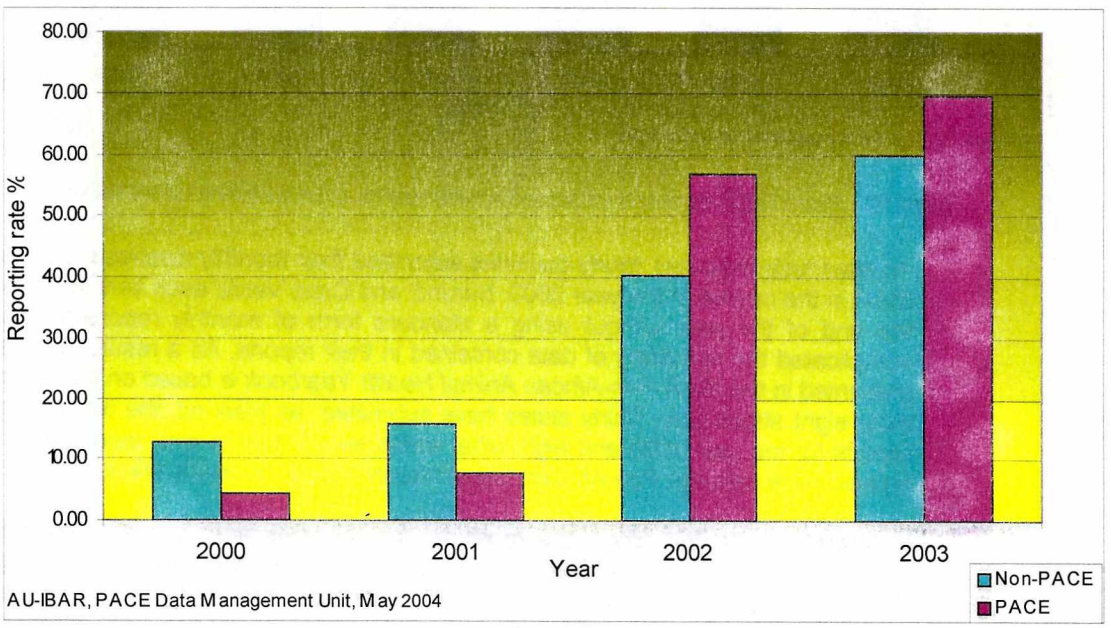
Such improvement, particularly marked for reports sent to IBAR since 2002, is attributed to continued sensitisation of African veterinary authorities about the importance of international disease reporting and regular feedback. When compared to previous years (2000-2001 in particular), the animal health reporting rate from PACE member states to IBAR increased.

Graph 9 makes a comparison between trends in animal health reporting to IBAR from PACE member and non-member states in the last four years. Following intense activities focused on increased surveillance, animal health reporting procedures were instituted in certain countries and reinforced in others; this has led to an overalll

increase in these reports, with a relatively more significant increase for PACE member states.



- Graph 8 : Evolution of submission of international disease reports to OIE and IBAR by African countries (in %).

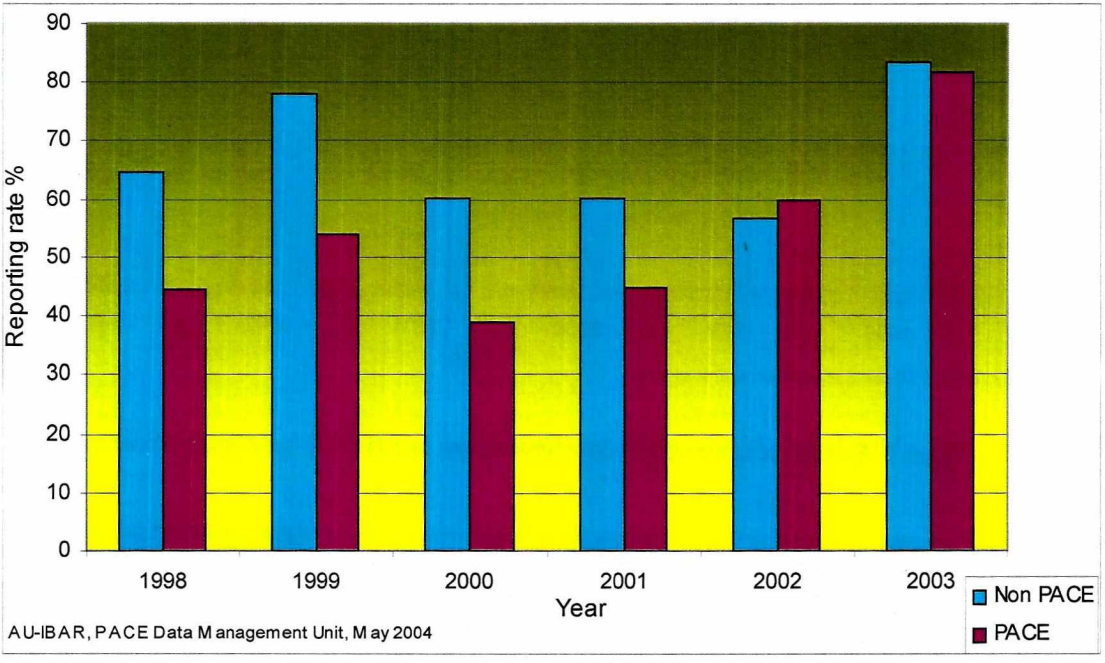


- Graph 9 : Evolution of submission of international disease reports to OIE and IBAR by PACE member-countries and non-member countries (in %).

It is important to note that one of the major objectives of the PACE programme was to achieve strengthened surveillance among participant countries. At the end of the year 2003, the percentage of PACE member states was about 59% (graph 9). Likewise, the number of PACE member states reporting to the OIE increased.

The PACE programme encouraged and helped several countries to become members of the OIE; this too has led to more reporting (including other interactions between members).

The PACE member countries currently have reporting rates comparable to those of northern and southern African states, where international disease reporting is well established (refer to graph 10). The proportion of non PACE member countries reporting to the OIE has reached 83% while PACE member states are following very closely with 82%.



- Graph 10 : African PACE member-countries and non-member countries submitting reports to OIE (in %).

As previously indicated, fourty countries submitted their monthly disease reports to the IBAR in the course of the year 2003. Burundi and Cape Verde each sent in a report at the end of the year without using a standard form of monthly reporting; this has complicated the compiling of data contained in their reports. As a result, the analysis presented in the IBAR *Pan-African Animal Health Yearbook* is based on the reports by thirty eight states only. Thirty states have submitted, as planned, the twelve monthly reports for the year 2003 and eight other states sent in four to nine reports (see table on next page; source: *Pan-African Animal Health Yearbook, IBAR, 2004*).

In West and Central Africa, the most regular countries are : Benin, Burkina Faso, Congo, Ghana, Guinea, Guinea Bissau (since August 2003), Mali, Niger, Nigeria, Senegal, Chad, and Togo. The problem countries remain the DRC, Equatorial Guinea, Gabon, Gambia, Cameroon, and to a lesser extent Côte d'Ivoire and Mauritania (see table on next page).



PACE

Pan African programme for the Control of Epizootics



	2003											
	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												

Chapter
3

Rinderpest eradication



The eradication of rinderpest constitutes one of the key objectives of the PACE programme; it was the primary objective of the two precursor projects, the JP-15 : the *Joint Project 15* (from 1962 to 1976) and then the PARC project, the *Pan-African Rinderpest Campaign* (from 1987). The fight against rinderpest on the continent fits into the world objectives of the *Global Rinderpest Eradication Programme* (GREP), coordinated by FAO and aimed at eradicating rinderpest from the face of the earth by the year 2010.

Global Rinderpest Eradication Programme

The Global Rinderpest Eradication Programme (GREP) is a time-bound programme to eliminate rinderpest from the world by the year 2010. Strategies have been devised and programmes implemented to reduce the clinical incidence of rinderpest to zero. Elimination of disease and infection will be confirmed by statistically valid active disease surveillance programmes.

The control of rinderpest to the point we are at today has been a remarkable triumph for veterinary science and national commitment but it has not been achieved without setbacks. As recently as the 1980s, rinderpest raged across Africa, and this occurred at a time when the disease was thought to have been beaten after a very successful international vaccination campaign through the 1960s and 1970s. A similar pattern of rinderpest epidemics was also experienced in Asia in the 1980s when the disease spread back from South Asia to borders of Europe. The lesson of these events is that near eradication is not good enough.

Even though the effects of the JP-15 have been annihilated for the most part by the renewed outbreak of rinderpest on the African continent, since 1987, a lot of progress has been achieved since. Currently, the great majority of countries no longer report clinical rinderpest, vaccination campaigns have been stopped and a large number of countries are getting close to the objective of being formally declared free of rinderpest. This is particularly the case for West and Central Africa. The only region of Africa (and probably of the world) still hosting the virus in its hypo-virulent form (i.e., with few symptoms and few deaths) is that of the Somali ecosystem in the Horn of Africa (East Africa).

Rinderpest is a contagious viral disease affecting mainly cattle and buffaloes. Its classical signs include particularly fever, erosive lesions in the mouth, secretions from the nose and eyes, a profuse diarrhoea and dehydration. The mortality rate could reach 100 per cent in a herd of sensitive cattle. Bovines and buffaloes are very sensitive to rinderpest and are the most commonly affected species. However, numerous other animal species with paired hooves, wild and domestic, notably sheep and goats, show light signs of the disease.

Brief overview of the OIE pathway

The current goal of the fight against rinderpest is to get to declare countries free of the disease, the ultimate objective being total eradication. It is therefore necessary to institute a system helping reach these phases, and leading to these short term and long term objectives. It is indispensable, on the other hand, to help countries whose trade of cattle and animal products is hampered by the current or past existence of disease.

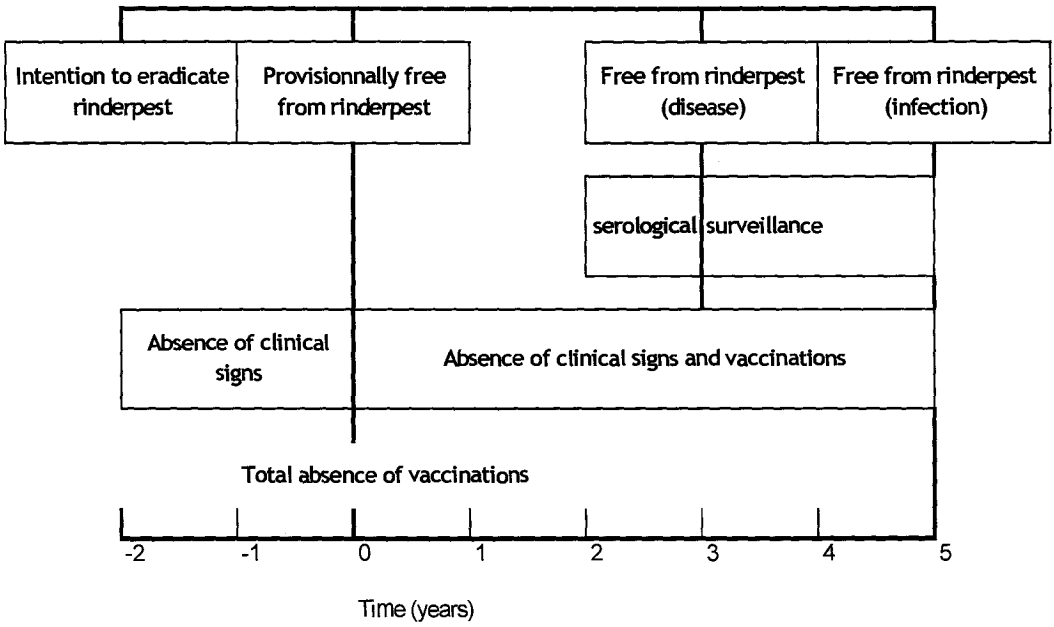


Blood sampling for serology.
Photo : N. Denormandie

In accordance with the general principles developed by the OIE for assessing health situations, a three-step process is foreseen for reaching or demonstrating the status of rinderpest free country.

Once a country is free and that re-introduction of the disease is unlikely, such country can declare itself provisionally free from rinderpest, provided the criteria listed below are met.

The later stages are subject to international control, under the auspices of the OIE. A country declared provisionally free of rinderpest since at least 3 years and meeting the quality criteria (including rigorous active clinical surveillance on a random sample) can be declared free of rinderpest by the OIE. After a new deadline of no less than two years, a country observing more rigorous criteria in terms of rinderpest (mainly active sero-surveillance on a random sample carried out over two years successively without positive confirmed results) may be declared free from rinderpest infection.



- Simplified overview of the OIE pathway : requirements for the declaration of freedom from rinderpest disease and freedom from rinderpest infection Annex 3.8.2. of the OIE Terrestrial Animal Health Code .

In the course of the first phase of the PACE programme, and because of the absence of rinderpest in West and Central Africa, activities were focused mainly on :

- Surveillance of the disease using epidemio-surveillance systems (promotion of '*early warning and rapid reaction*') translating into : the training of national staff and field agents, the sensitisation of farmers, the setting up and improvement of epidemio-surveillance systems,
- Improved capacities of diagnostic (supra-national, national, and regional) laboratories,
- The inclusion of wildlife,
- Countries' commitment to the OIE pathway to receive 'disease', then 'infection' free status.



3.1. In sensitive livestock

3.1.1. Clinical surveillance

The object of clinical surveillance is to assure detection of any residual infection before it could cause serious epidemics, and to provide objective evidence that a given country or region are free from the disease. Random samples of cattle populations and other sensitive species must be examined over a period of three years for possible clinical signs of the disease. The sampling and study methods should make it possible to detect rinderpest with a probability of 95% each year, when prevalence is 1% of livestock or other sampling units belonging to any strata of the sensitive population.



Symptoms of stomatitis : indicative of rinderpest. Photo : PACE - PEU.

Any clinical suspicious case must lead to complete laboratory tests in order to confirm or infirm the presence of infection. After three years, under reserve of modifications of the surveillance programme and of certain conditions, the OIE may declare the country or region 'free from rinderpest'. As a general rule, one may exert caution by using samples of no less than 300 herds, whatever the total number of herds per strata.

More often than not, in fact, a portion of the selected sample may not be available for tests and this for legitimate reasons. For example, a selected village might no longer have animals, or a selected herd might have disappeared. A few additional herds in reserve must therefore be selected in such cases. One would resort to such reserve livestock in the order in which they have been selected to replace the missing herds in the sample. Additional reserve livestock might be selected at a later time if necessary. This system, recommended in the reference document of Andrew James, was set up in most PACE member states and has led, for 12 of them, to the status of ' free from disease '.

An example of clinical surveillance sheets used (example from Niger) is presented on the next page.

PACE
Pan African programme for the Control of Epizootics



MINISTERE DES RESSOURCES ANIMALES
DIRECTION DE LA SANTE ANIMALE
RESEAU DE SURVEILLANCE EPIDEMIOLOGIQUE



FICHE N° 1 : SURVEILLANCE CLINIQUE BOVIPESTIQUE

MOIS : ..... 200... RÉGION : **AZ1 DA2 DO3 MI4 TA5 TI6 ZR7 NY8** (CERCLEZ)

DEPARTEMENT : SEMAINE DE L'ANNEE (SUR 52) :

ARRONDISSEMENT OU COMMUNE :

POSTE DE SURVEILLANCE ACTIVE (PSA) :
(UNITE DE RAPPORTAGE)

NOM DE L'AGENT RESPONSABLE PSA :
(RESPONSABLE DU RAPPORTAGE)

NOM DE L'ENQUETEUR (SI DIFFERENT DU RESPONSABLE DE RAPPORTAGE) : DATE (JJ/MM/AAAA) :

REFERENCE CARTOGRAPH :
LONGITUDE (EST) :
LATITUDE (NORD) :

LIEU / LOCALITE (UNITE D'ENQUETE) :

NOM DU PROPRIETAIRE OU ELEVEUR :

TYPE DE SITE :
- ☐ ELEVEUR
- ☐ VILLAGE
- ☐ MARCHE A BETAIL
- ☐ PARC D'ATTENTE
- ☐ COULOIR DE VACCINATION
- ☐ PISTE DE TRANSHUMANCE
- ☐ POINT D'EAU / PUITS

	TROUPEAU		PRODUCTION		DEPLACEMENT		PATURAGE
ESPECE		LAIT		SEDENTAIRE		NATUREL	
TAILLE		VIANDE		NOMADE		CLÔTURÉ	
RACE PRINC.		MIXTE		COMMERCIAL		ABSENT	

INFORMATION EPIDEMIOLOGIQUE

A-T-IL EU LA PESTE DANS SON TROUPEAU ? OUI ☐ NON ☐

L'ELEVEUR CONSIDERE T-IL QUE LA PESTE BOVINE REPRESENTE UN PROBLEME IMPORTANT ? OUI ☐ NON ☐

Y-A-T-IL EU DES EPISODES PRES DE LA CES DERNIERES 2 ANNEES ? ☐ ☐

DATE DU DERNIER EPISODE

NOMBRE DE MORTS

DETAILS (QUAND, OU, ETC) :

PACE

Pan African programme for the Control of Epizootics



L'ELEVEUR FAIT-IL ACTUELLEMENT ETAT DE SIGNES CLINIQUES EN RAPPORT AVEC LA PESTE BOVINE ?

	OUI	NON
ECOULEMENT NASAL / OCULAIRE		
LARMOIEMENT		
OPACITE CORNEENNE / CECITE		
DIARRHEE		
TOUX		
FIEVRE		
EROSION BUCCALE		
SALIVATION EXCESSIVE		
BOITERIE		
VESICULES SUR LES PIEDS		
HYPERTROPHIE GANGLIONS		
MORTALITE		

L'ENQUETEUR A-T-IL OBSERVE DES CAS DE STOMATITES-ENTERITES ?

OUI	NON

SI OUI, A-T-IL REMPLI LA FICHE D'ENQUETE D'UN FOYER DE LA PESTE BOVINE ?

OUI	NON

A-T-IL EFFECTUE DES PRELEVEMENTS ET REMPLI LA FICHE ?

OUI	NON

PAR LE PASSE, L'ELEVEUR A-T-IL EU LA PESTE BOVINE DANS SON TROUPEAU ?

OUI	NON

DATE DU DERNIER EPISODE	
NOMBRE DE MORTS	
DATE DE LA DERNIERE VACCINATION	
NOMBRE D'ANIMAUX INTRODUITS DANS LE TROUPEAU (VILLAGE) DEPUIS 12 MOIS	

RAISON(S) DE L'INTRODUCTION :

ACHAT	
CADEAU	
PRET	
AUTRE	

ORIGINE DES ANIMAUX :

NOMBRE D'ANIMAUX RETIRES DU TROUPEAU DEPUIS 12 MOIS	

RAISON(S) DU RETRAIT :

VENTE	
CADEAU	
PRET	

DESTINATION :

L'AGENT DU PSA	ACCUSE DE RECEPTION DSA	ACCUSE DE RECEPTION UC
SIGNATURE :		
DATE :		




PACE

Pan African programme for the Control of Epizootics



Surveillance of rinderpest : individual animal information
Herd reference : .....
Date of investigation : .....

Age group				Sex			Vaccination				Clinical signs				Other signs, comments and identification
0-1	1-2	2-3	>3	IF	BF	M	C	0	1	>1	DI	OD	ND	ML	
0-1	1-2	2-3	>3	IF	BF	M	C	0	1	>1	DI	OD	ND	ML	
0-1	1-2	2-3	>3	IF	BF	M	C	0	1	>1	DI	OD	ND	ML	
0-1	1-2	2-3	>3	IF	BF	M	C	0	1	>1	DI	OD	ND	ML	
0-1	1-2	2-3	>3	IF	BF	M	C	0	1	>1	DI	OD	ND	ML	
0-1	1-2	2-3	>3	IF	BF	M	C	0	1	>1	DI	OD	ND	ML	
0-1	1-2	2-3	>3	IF	BF	M	C	0	1	>1	DI	OD	ND	ML	
0-1	1-2	2-3	>3	IF	BF	M	C	0	1	>1	DI	OD	ND	ML	
0-1	1-2	2-3	>3	IF	BF	M	C	0	1	>1	DI	OD	ND	ML	
0-1	1-2	2-3	>3	IF	BF	M	C	0	1	>1	DI	OD	ND	ML	
0-1	1-2	2-3	>3	IF	BF	M	C	0	1	>1	DI	OD	ND	ML	
0-1	1-2	2-3	>3	IF	BF	M	C	0	1	>1	DI	OD	ND	ML	
0-1	1-2	2-3	>3	IF	BF	M	C	0	1	>1	DI	OD	ND	ML	
0-1	1-2	2-3	>3	IF	BF	M	C	0	1	>1	DI	OD	ND	ML	
0-1	1-2	2-3	>3	IF	BF	M	C	0	1	>1	DI	OD	ND	ML	
0-1	1-2	2-3	>3	IF	BF	M	C	0	1	>1	DI	OD	ND	ML	
0-1	1-2	2-3	>3	IF	BF	M	C	0	1	>1	DI	OD	ND	ML	
0-1	1-2	2-3	>3	IF	BF	M	C	0	1	>1	DI	OD	ND	ML	
0-1	1-2	2-3	>3	IF	BF	M	C	0	1	>1	DI	OD	ND	ML	
0-1	1-2	2-3	>3	IF	BF	M	C	0	1	>1	DI	OD	ND	ML	
0-1	1-2	2-3	>3	IF	BF	M	C	0	1	>1	DI	OD	ND	ML	
0-1	1-2	2-3	>3	IF	BF	M	C	0	1	>1	DI	OD	ND	ML	
0-1	1-2	2-3	>3	IF	BF	M	C	0	1	>1	DI	OD	ND	ML	
0-1	1-2	2-3	>3	IF	BF	M	C	0	1	>1	DI	OD	ND	ML	
0-1	1-2	2-3	>3	IF	BF	M	C	0	1	>1	DI	OD	ND	ML	
0-1	1-2	2-3	>3	IF	BF	M	C	0	1	>1	DI	OD	ND	ML	
0-1	1-2	2-3	>3	IF	BF	M	C	0	1	>1	DI	OD	ND	ML	
0-1	1-2	2-3	>3	IF	BF	M	C	0	1	>1	DI	OD	ND	ML	
0-1	1-2	2-3	>3	IF	BF	M	C	0	1	>1	DI	OD	ND	ML	
0-1	1-2	2-3	>3	IF	BF	M	C	0	1	>1	DI	OD	ND	ML	
0-1	1-2	2-3	>3	IF	BF	M	C	0	1	>1	DI	OD	ND	ML	
0-1	1-2	2-3	>3	IF	BF	M	C	0	1	>1	DI	OD	ND	ML	
0-1	1-2	2-3	>3	IF	BF	M	C	0	1	>1	DI	OD	ND	ML	

0-1 = less than 1 year
1-2 = 1 to 2 years
2-3 = 2 to 3 years
>3 = more than 3 years

IF = immature female
BF = mature female
M = male
C = castrated male

0 = no signs
1 = one sign
>1 = more than one sign

DI = diarrhea
OD = ocular discharge
ND = nasal discgarge
ML = mouth lesions

- Table 22. Standardised table for data-collection on individual animals of a visited herd.

3.1.2. Serological surveillance

This phase is intended to confirm by serological methods that rinderpest virus is not circulating. Sero-surveillance is commenced at least two years after the declaration of provisional freedom from disease (one year before declaration of freedom from disease) and is continued for at least two years. These methods of detection of virus activity should be more sensitive than searching for clinical signs of the disease. They are subject, however, to confusion caused by vaccine-related and non-specific reactions, the frequency of which depend on the sampling and antibody detection procedures.

No animal born since the cessation of vaccination should have rinderpest antibody, unless it has maternal antibody, which should not normally be present after the first year of life. This defines animals eligible for sero-surveillance as those born after the cessation of vaccination, and which are more than one year old. Any animal in the eligible age group that has rinderpest antibody provides evidence of circulation of rinderpest virus, or the continued use of vaccine.

The sampling and testing procedures must be designed to give a 95% probability each year of detecting seropositive animals in the relevant age group if any are present in 1% of the herds or other sampling units in any stratum of the eligible population. Cattle and any other susceptible domestic animals must be included in the sero-surveillance programme. Wild susceptible species must be sampled where possible, and domestic stock in contact with them should be sampled intensively. If no evidence of virus activity is found, and subject to review of the sero-surveillance programme and certain other requirements, the OIE may declare freedom from rinderpest infection.

To calculate the number of herds to be sampled to compensate for a possibility of failing to detect a positive herd requires the concept of detectable prevalence. If the true prevalence of positive herds were 0.01 (1%), but the herd testing procedure produced a 0.95 (95%) probability detecting a positive herd (herd test sensitivity), then only 95% of the positive herds would be detectable.



Blood sampling in Mali (2003) Photo : P. Bastiaensen.

Thus, the detectable prevalence of positive herds would be the product of the true prevalence and the detection probability (herd test sensitivity). In this example, the detectable prevalence would be 0.01 × 0.95 = 0.0095 (0.95%). The number of herds to be sampled should be calculated from this detectable prevalence, rather than the minimum prevalence required by the standard.

At least 299 herds have to be sampled to produce 95% probability of detecting 1% prevalence in an infinite number of herds. If the detectable prevalence were 0.95%, the number of herds to be tested would increase to 314.



The required sample sizes show some irregularity in progression, because prevalence is not continuous. For example, if the typical size of a village herd were 500 cattle, to achieve a herd test sensitivity of 95% would require a sample of 56 eligible animals from each village.

The overall number of samples would be 314 villages multiplied by 56 sera, producing a total of 17,584 sera to be tested. If the detection probability were reduced to 75%, the overall number would be 398 villages multiplied by 27 sera, producing a total of 10,746 samples

(Source : A.D. James, 1998)

The procedure described above is applied in those countries which have had recent episodes (in the course of the past ten years) of rinderpest and/or which have vaccinated against rinderpest, notably (but not exclusively) under the PARC programme. For a sizeable number of countries, particularly in Central Africa, countries embark on a shortened pathway, called 'grand father clause'.

The grand father clause.

This clause refers to article 2 of annex 3.8.1. and article 3.c. of annex 3.8.2. of the Terrestrial Animal Health Code of the (OIE - 2003) which stipulates that:

3.8.1.2. Requirements to declare a country, zone or compartment free from disease/infection

1. Historically free :

Unless otherwise specified in the relevant disease chapter, a country, zone or compartment may be recognised free from infection without formally applying a pathogen-specific surveillance programme when:

a) there has never been occurrence of disease, or

b) eradication has been achieved or the disease/infection has ceased to occur for at least 25 years,

provided that for at least the past 10 years:

c) it has been a notifiable disease;

d) an early detection system has been in place;

e) measures to prevent disease/infection introduction have been in place; no vaccination against the disease has been carried out unless otherwise provided in the Terrestrial Code;

f) infection is not known to be established in wildlife within the country or zone intended to be declared free. (A country or zone cannot apply for historical freedom if there is any evidence of infection in wildlife. However, specific surveillance in wildlife is not necessary.)

2. Last occurrence more than 10 years ago and less than 25 years ago :

Countries, zones or compartments that have achieved eradication (or in which the disease/infection has ceased to occur) since more than 10 years and less than 25 years, should add to the previous conditions the requirements for a specific and appropriate surveillance in order to demonstrate the absence of the pathogenic agent.

3.8.2.c. *A country which has not vaccinated against rinderpest for at least 10 years and has throughout that period had no evidence of rinderpest disease or rinderpest virus infection may be declared free from rinderpest infection by the OIE based on conclusions of the OIE Scientific Commission for Animal Diseases, provided that the country has had throughout that period and maintains permanently an adequate disease reporting system.*

These clauses allow countries to request directly the status of infection free country without passing through the previous to steps.

This clause applies to countries such as Gabon, Congo, Equatorial Guinea, Gambia and Guinea Bissau.

On October 31st, 2004, the following countries had entered (year 1 of) the sero-surveillance pathway : Benin, Burkina Faso, Gambia, Ghana, Guinea, la Guinea Bissau, Mali, Mauritania, Nigeria, Niger, CAR, Senegal and Togo.

3.2. In sensitive wildlife species

The interest of associating wildlife to the surveillance of rinderpest, both clinical and serological, is threefold:

a) Wildlife species can serve as a reservoir for the virus. Wild species which do not suffer clinical disease, nor mortalities, can remain infectious for cattle with which they are in contact;

b) Certain wildlife species are very sensitive to the rinderpest virus and trigger a sanitary alert by the high mortality rates that rangers will observe;



Capture of a buffalo by anaesthetic rifle during a training in Chad. Photo : B. Chardonnet.

c) In the absence of vaccination in wildlife, certain species will act as sentinel animals for the detection of the virus. They do not suffer from the disease, but nevertheless remain carriers of antibodies, which proves that rinderpest has been around ;

For these reasons, OIE demands that wildlife (if available) surveillance data be included in the requests for countries to be recognized as free from rinderpest.





Sensitive species are ungulates, primarily buffaloes and antelopes :

- duikers
- reed bucks
- bush bucks
- hartebeests
- sable antelopes
- western kobs

as well as giraffes and wild hogs (warthogs and bush-pigs). The latter two are particularly valuable as sentinel animals.

It is for all these good reasons that activities focussing on the collection of data on wildlife have been implemented in most countries, that is : in countries hosting important wildlife populations. This chapter will cover both types of investigations required by the OIE :

a) the clinical surveillance (for at least two years) ;

b) the serological surveillance (for at least two years).

Country	Hunting sera collected in 2004	OIE Status
Benin	21	DF 05/03
Burkina Faso	?	DF 05/03
Cameroon	0	PF 06/99
CAR	18	PF 02/04
Chad	0	DF ZB 05/04
Congo	0	
Côte d'Ivoire	0	DF 05/04
DRC	0	PF ZB 10/03
Equatorial Guinea	0	
Gabon	0	
Gambia	0 (start up)	PF 1990
Ghana	0	DF 05/03
Guinea		DF 05/03
Guinea Bissau	6 (ongoing)	
Mali	24	DF 05/03
Mauritania	6 (ongoing)	DF 05/04
Niger	0 (start up)	DF 05/03
Nigeria		PF 1998
Senegal	35	DF 05/03
Togo	0	DF 05/03

- Table 23. Situation of hunting sera collected and countries' OIE status in 2004 :
DF : Disease free ;PF : Provisionally free ; ZB : Zonal basis



For those countries which have been able to develop sera collection in the course of legal hunting exercises, this type of sample can help obtain data presenting a nice epidemiological and financial compromise and certainly usable to prove to the OIE the absence of circulation of the rinderpest virus. They represent baseline data for wildlife for certain countries.

However, this type of collection presents limitations which are recognized and integrated into the interpretation of results (problem of sampling method and risk related to sample quality)..

The risk of rinderpest related to wildlife depends on several factors:

- The sensitivity of wildlife populations.
- The density of wildlife populations.
- The size of wildlife populations.
- Contact with cattle populations.

Thus, the sensitive wildlife populations, in high density and numbers and in contact with cattle populations present the most important risk. These populations have been identified by the wildlife unit of the PACE programme and are indicated on map 6.

From left to right :

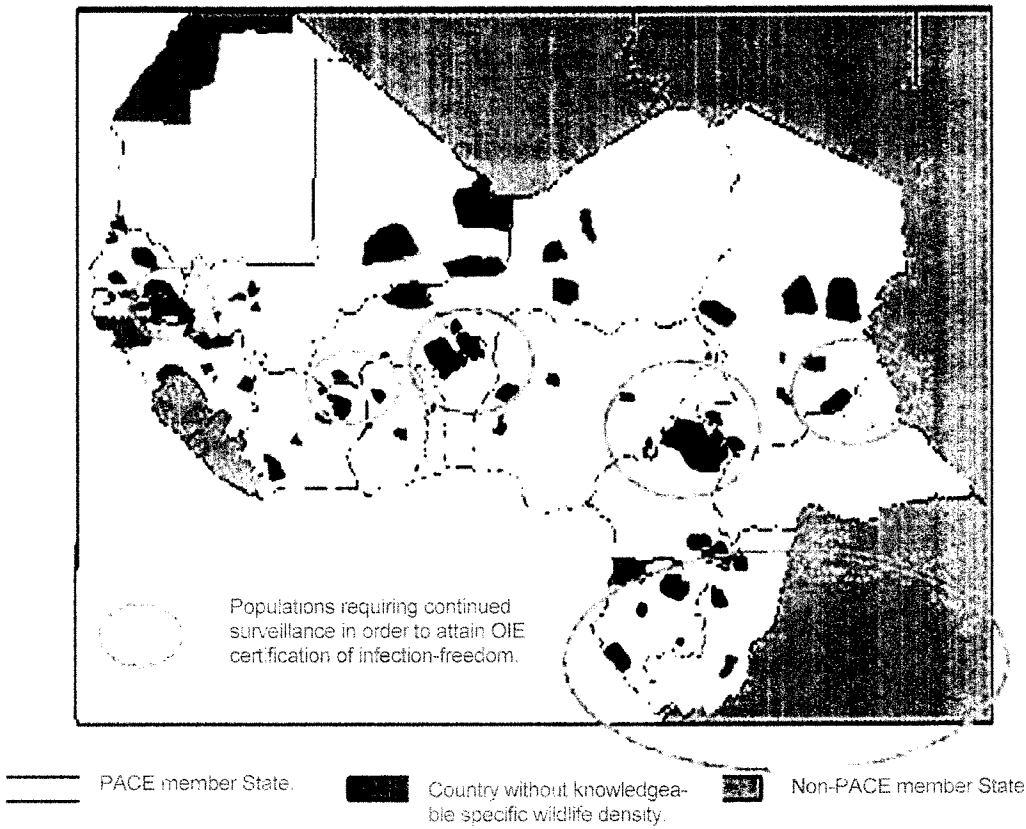
- The Niokolo Koba National Park eco-system in Senegal
- The Comoé / Molé eco-system, between Ghana, Cote d'Ivoire and Burkina Faso
- The Park W eco-system between Niger, Burkina Faso and Benin
- The forest eco-system of central Cameroon
- The Zakouma National Park, in the south east of Chad and adjacent areas in CAR.
- The forest eco-system of Central Africa (Gabon and Congo).

When countries hosting these wildlife populations must prove the absence of circulation of the rinderpest virus on their territory, the use of hunting sera may turn out to be inadequate in areas presenting a higher risk. That is the reason why it has always been advised that in order to strengthen the credibility of national files at the OIE in the course of the two years of serological surveillance for the acquisition of 'infection free' status these populations must be sampled on based on the risk they represent. This approach is complementary and does not therefore replace the collection of hunting sera which provide regular and baseline data at the national level.

Thus, in the course of the past years, targeted campaigns were conducted in Chad, Cameroon, Benin, CAR, and Senegal. These campaigns have largely contributed to improving knowledge on the division of wildlife in West and Central Africa and have also brought health information useful on the other epizootic diseases affecting wildlife (PPR, ASF, etc.).

Because of the impending departure of the international technical assistant for wildlife, a reflection has been conducted on pursing activities in the national components. The problem of inadequate national capacities to conduct such targeted surveillance could be resolved the following way: use the best resource persons in the region and build a team which will implement this task. Such regional team will be selected and will participate in a training seminar at PACE/IBAR headquarters in order to consolidate

and prepare this work. The technical assistant, wildlife expert of the PACE programme (for the first year of extension) will help coordinate activities through the regional epidemiologist (in Bamako) and will be involved in the training when the agendas permit.



- Map 06 : Priority areas from the wildlife perspective (PACE). Source : PACE Wildlife PEU

Key :

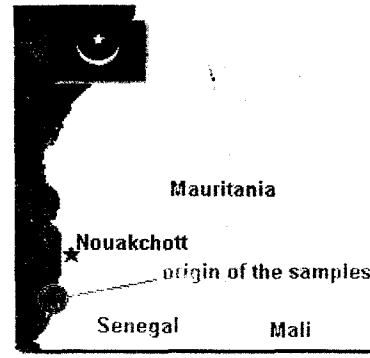
Red : very low density

Dark blue : low density

Green : average density

Yellow : high density

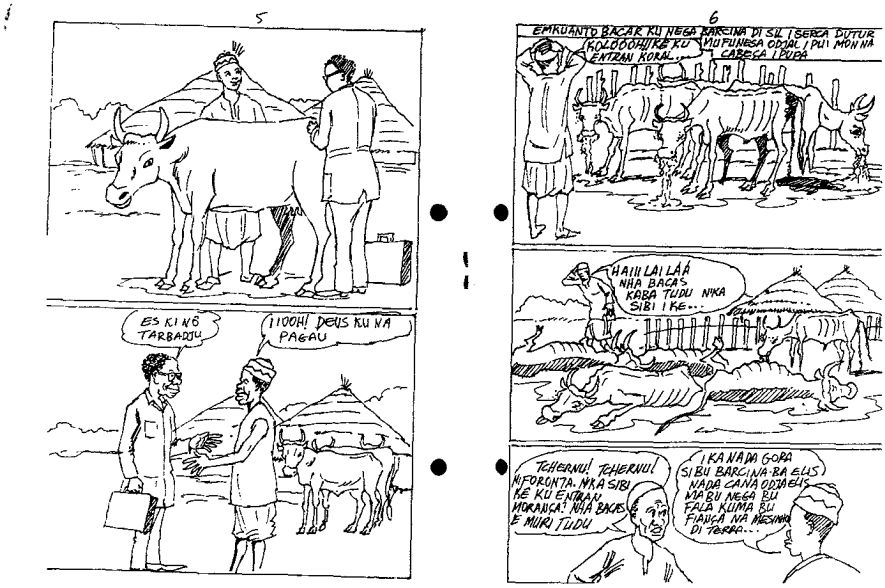
The Mauritania case



In the course of a sero-surveillance campaign conducted by the Mauritanian surveillance system REMEMA, the discovery of two positive sera for rinderpest among warthogs killed in the southern part of the country, has led to a small crisis in which the OIE suspended the rinderpest free status of the country in September 2003, which forced Mauritania to engage in a vast programme of surveillance of cattle and wildlife in the same area, in order to appease the worries of the international community, as well as neighbouring countries. The two samples recognized positive for the RPV were part of a batch of 28 sera, collected between January and March 2003 through collaboration between veterinary agents and sports-hunters and thereafter, c-ELISA tested at the Nouakchott national laboratory (CNERV). The two samples were re-tested by two reference laboratories and the diagnosis was finally confirmed by the international reference laboratory (IAH-WLRL) in Pirbright in the United Kingdom. In addition, the same two sera were also positive for PPR. In October 2003 and January 2004, 1,889 cattle samples and again 6 samples of warthogs were collected and tested for rinderpest. Except for two positive cattle sera, for which it was established that there were too many doubts over the age bracket recommended (an animal presumed to be 2 years old and an animal presumed to be 5), no other positive case have been encountered in the area. Consequently, Mauritania recovered its status of disease free country at the 72nd General Annual Session of the OIE in May 2004 (Paris, France).

Mauritania, who had been declared free from the disease in 2003, should not have lost that status based on the discovery of only two positive samples. Other additional clinical and pathological data could have been taken into account in order to support this decision. On the other hand, it is underlined that the data available is not adequately justify the conclusion of recent or historical RPV infection in warthogs in Mauritania. The presence of antibodies in two warthogs has been recognized, but this fact is found to be incompatible with the biological and epidemiological knowledge on the distribution and transmission of the virus. There are too many persisting doubts on the age of these warthogs, on the specificity of tests for the serum of warthogs, and finally on the interference of PPR in the diagnosis which was established. Finally, the discoveries in Mauritania are a source of reflection on the use of serological testing as the only tool of verification in the eradication of a disease, when the estimated prevalence is equal or less than the specificity of the test/tests used and when the predictive value becomes therefore low.

Communication and rinderpest :



Example of an extension booklet used in Guinea Bissau (in local language : creole).

Communication has played a primary role in the process of sensitisation of farmers. Convincing farmers, who have often had the experience of rinderpest, to abandon the annual vaccination which had been imposed on them for many decades, and to replace it with a *stamping out* and an epidemiological surveillance policy was an enormous challenge, which was nevertheless successfully met.

In many countries, audio-visual communication tools have been developed in order to help surveillance agents ensure farmers' adherence and participation, in a first stage to explain to them why it was necessary to stop vaccination, and in a second stage to explain to them why it is necessary to collect blood from animals under serological surveillance, even those in good health,



Recording the weekly PACE broadcast on national radio, intended for central-African (CAR) farmers. Photo : N. Denormandie, 2003.

This is the case for example in CAR where the national radio has been airing for almost 3 years a weekly 30 minute programme every Tuesday at 3 :00 pm, which is very much appreciated by farmers. .

As a matter of fact, it is thanks to this efficiency / cost ratio that PACE-CAR succeeded in convincing farmers in December 2003 to stop vaccination against Rinderpest in the last remaining area (North and East) of the country.




PACE

Pan African programme for the Control of Epizootics




OIE

OIE : **The Office International des Epizooties** or **World Animal Health Organisation**

The OIE is an intergovernmental organisation created by the International Agreement of 25 January 1924, signed by 28 countries. In May 2004, the OIE totalled 167 Member Countries.

Mission :

1. To ensure transparency in the global animal disease and zoonosis situation

Each Member Country undertakes to report the animal diseases that it detects on its territory. The OIE then disseminates the information to other countries, which can take the necessary preventive action. This information also includes diseases transmissible to humans and intentional introduction of pathogens. Information is sent out immediately or periodically depending on the seriousness of the disease. This objective applies to disease occurences both naturally occuring and deliberately caused.

2. To collect, analyse and disseminate scientific veterinary information

3. To provide expertise and encourage international solidarity in the control of animal diseases

4. Within its mandate under the WTO SPS Agreement, to safeguard world trade by publishing health standards for international trade in animals and animal products

5. To improve the legal framework and resources of national Veterinary Services

6. To provide a better guarantee of the safety of food of animal origin and to promote animal welfare through a science-based approach

Headquarters : 12, rue de Prony, 75017 Paris, France www.oie.int oie@oie.int

Africa Regional Representation : P.o.box 2954, Bamako, Mali sambasidibe.oie@pacereg.org

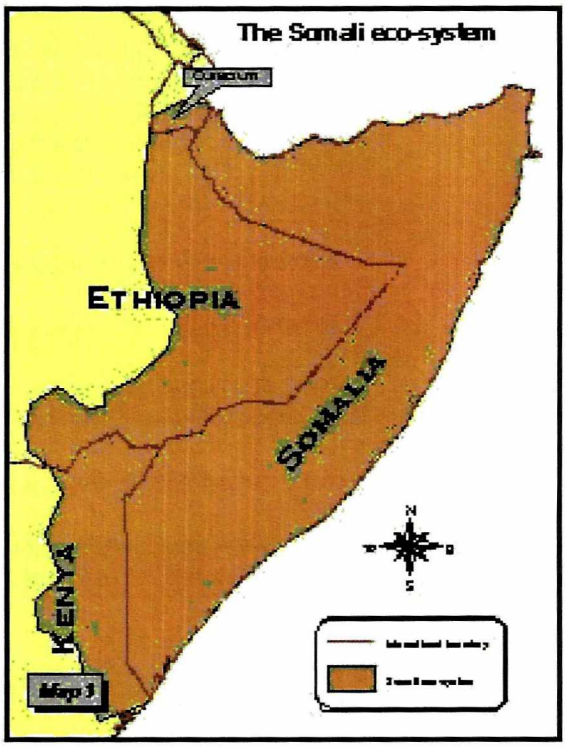
3.3. Situation in October 2004.

With Pakistan's declaration in February 2003, the last country to declare itself "*provisionally free*" from rinderpest, it is very likely that the entire Asian continent be free from the virus. Currently, East Africa is the only region where the disease subsists.

No case of rinderpest has been detected since 2002 in Southern Sudan (focus of the first strain of the virus responsible for the so-called *classical* type rinderpest). The only strain still encountered (the second strain responsible for the so called *mild* rinderpest) is limited to the Somali ecosystem.

This so-called "*Somali Ecosystem*" essentially includes the area inhabited by people speaking '*Somali*'. This area comprises the former Republic of Somalia, the North-eastern provinces of Kenya, the 5th Region of Ethiopia, as well as the southern part of Djibouti.

Apart from the Somali ecosystem, the infection is absent in countries like Burundi, Uganda, Rwanda, and Tanzania. Burundi and Rwanda declared themselves provisionally free from rinderpest in October and July 2003, respectively.



- Map 07 : the somali eco-system (brown). PACE-PEU.

In West and Central Africa where the disease has been absent for decades (or where it has never been identified), the activities are focused on helping countries respond to the OIE requirements for verifying absence of disease or infection.

All countries of West Africa (except Sierra Leone and Liberia) have declared themselves provisionally free from rinderpest since the end of vaccinations carried out during the PARC era.

In addition, of the 20 countries of the sub-region (apart from Congo and Equatorial Guinea where the disease has never been reported), 11 countries have received to-

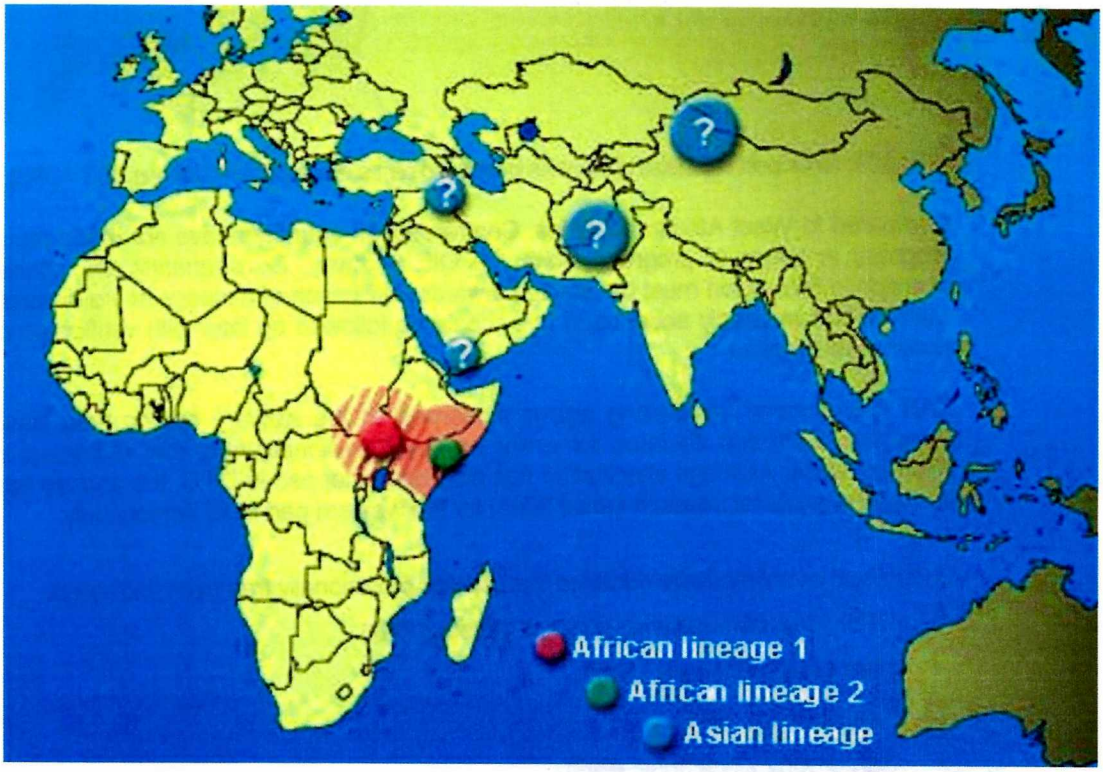
date (2004) '*disease free status*'. Benin, Burkina Faso, Côte d'Ivoire, Ghana, Guinea, Mali, Mauritania, Niger, Senegal, Chad (zonal) and Togo.

In addition, 7 other countries are at a stage of declaring their '*provisional freedom*'.

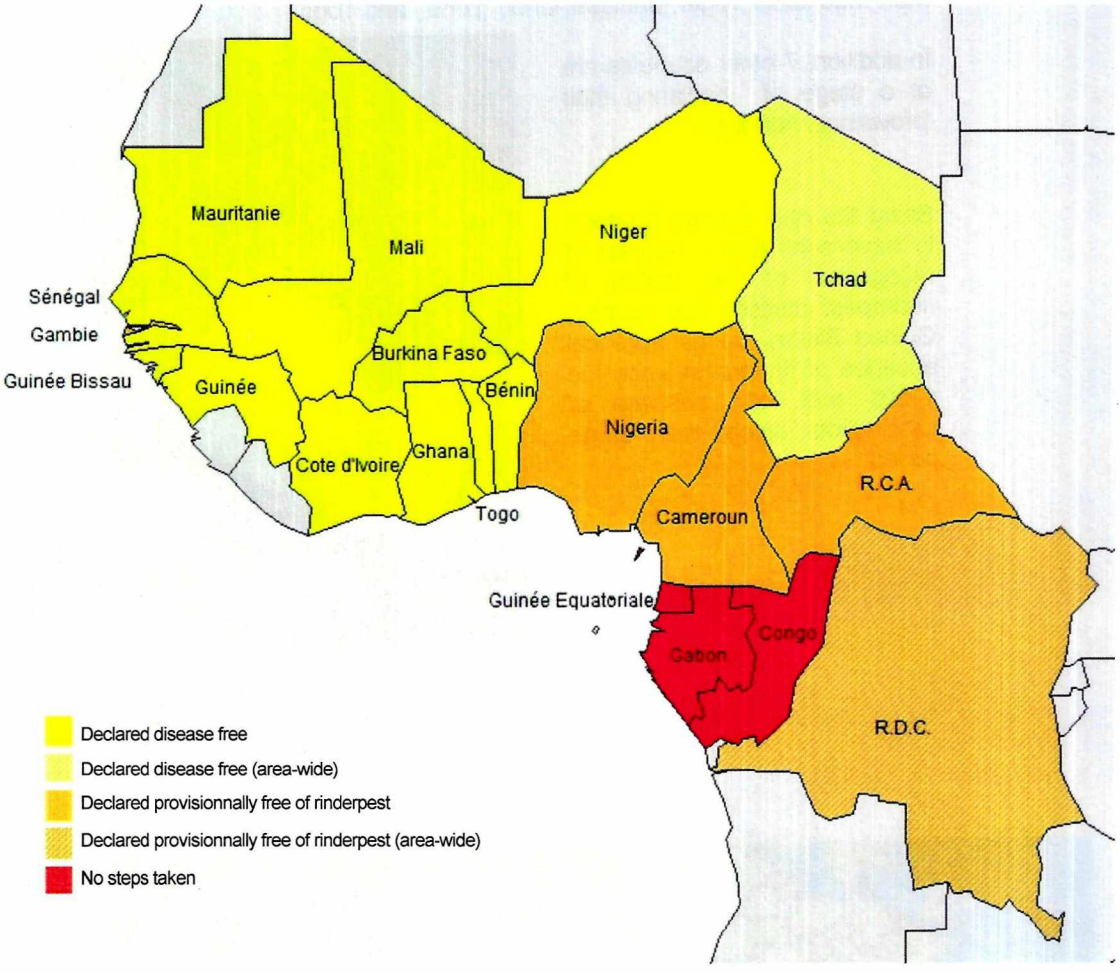
Being the only country (to-date) to have submitted a request of recognition of the status of rinderpest infection free country, Guinea Bissau claims historical absence of rinderpest since the 1960s and total absence of vaccination since that same period.



Training in wildlife capture techniques (Zimbabwe, 2003) Photo : Daniel Gregoire.



- Map 08. World-wide situation of rinderpest : remaining endemic areas. Source : GREP (FAO), 2001.



- Map 09 : Rinderpest OIE status of countries in west and central Africa (RCA = CAR and RDC = DRC).

Compared to West African countries, Central African countries have not made much progress in terms of progress along the OIE pathway. Consequently, the special attention in this region must be directed towards verification of absence of the disease, where it is supposedly absent and this should be followed up later with verification of absence of infection.

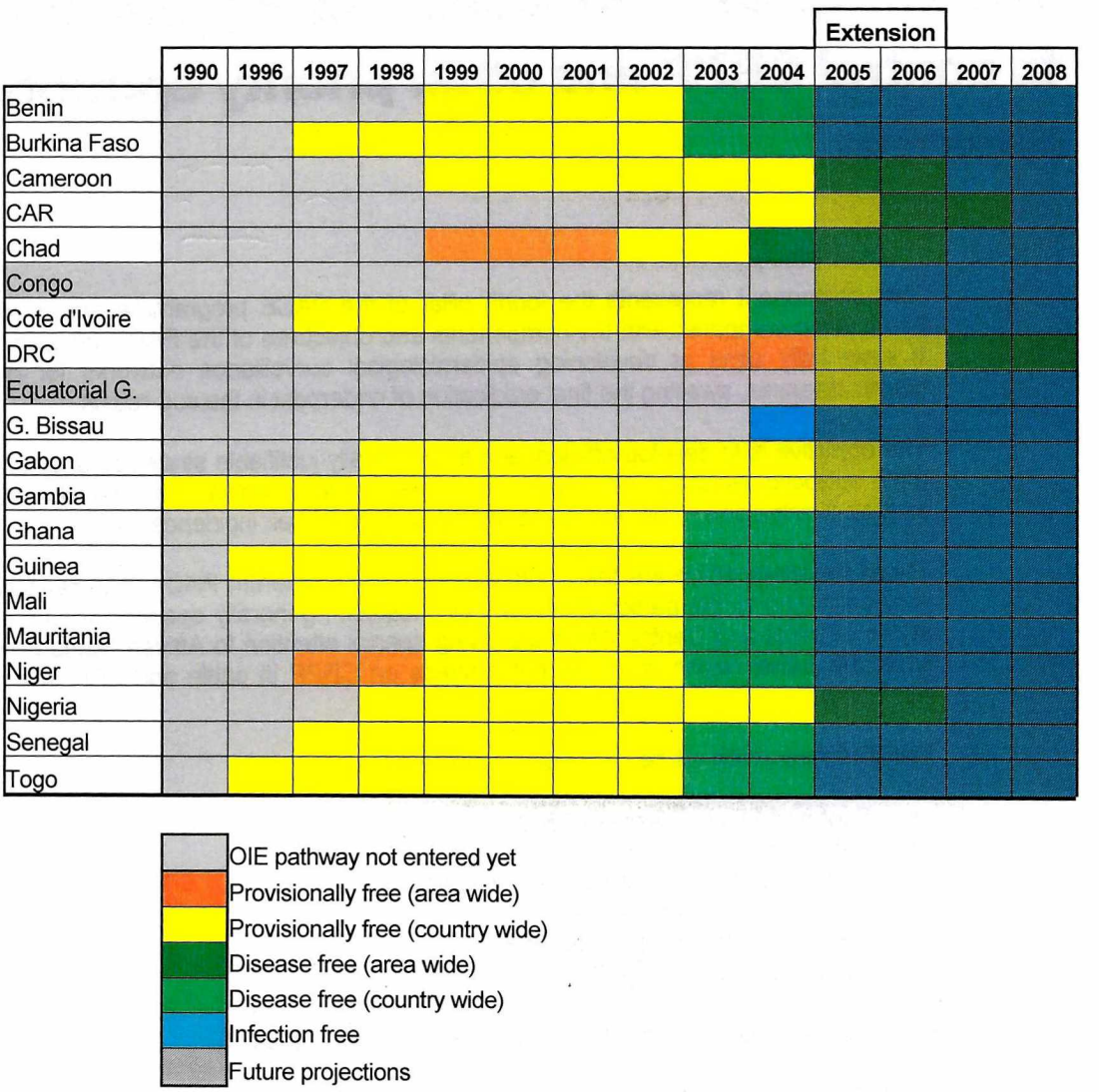
CAR has stopped vaccinating against rinderpest in the *sanitary cordon* area since December 2003 and declared the entire country provisionally free from rinderpest in February 2004. Although vaccination has also been stopped in DRC, the country has declared provisional freedom (since 2003) for the western part of its territory only.

Currently, 4 countries have declared themselves provisionally free from rinderpest:

- DRC (on a area-wide basis) since October 2003
- CAR (since February 2004)
- Nigeria (since 1998)
- Cameroon (since June 1999)



If one takes into account the current state of progress of countries on the OIE pathway, and assuming that these procedures would not incur additional delays (for example because of positive testing of cases), the last countries in the PACE area will be declared free from infection in 2009. The first countries likely to be declared free from infection are Guinea Bissau (in May 2005) and Senegal, Mali, Burkina Faso, Niger, Ghana, Guinea, Togo, and Benin (in May 2006).



- Table 24. Chronology of countries along the pathway for recognition of rinderpest-freedom.

However, it must be pointed out that countries like Congo, Gabon, and Equatorial Guinea can claim the status of rinderpest infection free countries directly – on historical grounds – if one refers to the provisions of article 2 of the annex 3.8.1 and article 3.c. of annex 3.8.2 of the OIE Terrestrial Animal Health Code.

Chapter
4

The strategies developed and implemented to control CBPP and other priority epizootic diseases.

This component represents the fourth pillar of the PACE programme and is really novel when compared with the components and objectives of the PARC programme. It essentially aims at developing epidemiological surveillance networks for other priority diseases, awaiting the final eradication of rinderpest in the sub-region.

The objective is to develop efficient and economically justifiable strategies against the main epizootic diseases and to get to know their epidemiological characteristics, such as their distribution in time and space, their prevalence, their incidence, etc.

Those diseases which are taken into account by the different PACE member states vary according to the particularities of their livestock ; generally speaking the coastal states of West and Central Africa are giving special attention to African Swine Fever, while the Sahel region countries put a stress on CBPP in cattle and PPR in small ruminants.

The diseases which will be discussed in this report are:

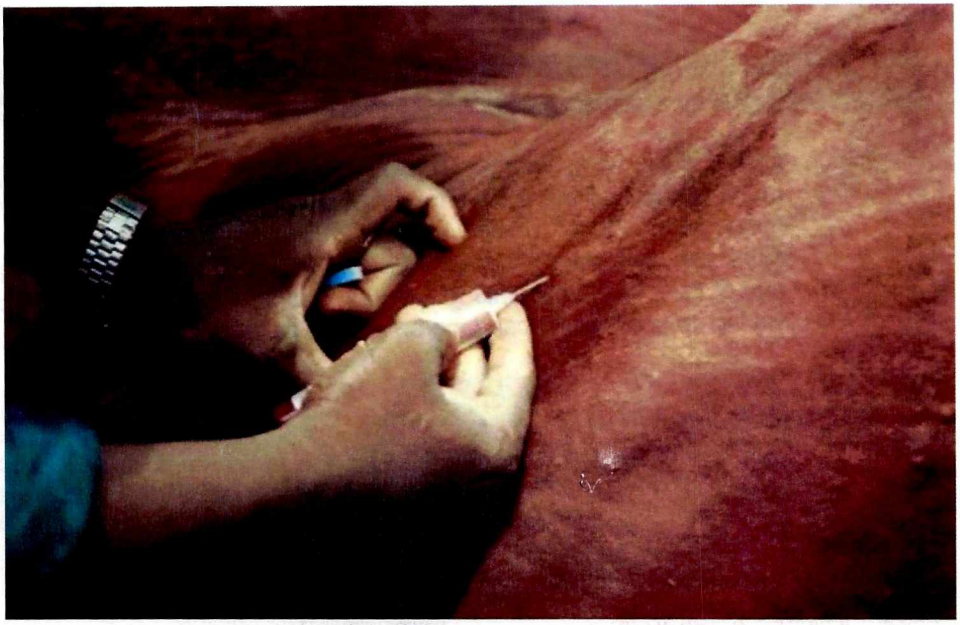
- Foot-and-Mouth Disease (FMD)
- Rift Valley Fever (RVF)
- Contagious Bovine Pleuropneumonia (CBPP)
- African Swine Fever (ASF)
- Peste des Petits Ruminants (PPR)
- Newcastle's Disease (ND)

All these diseases are on the so-called 'list A' diseases of the OIE.

Apart from these diseases, there are other diseases which draw special attention in some countries and which are generally on the OIE list B diseases:

- Black leg (*Clostridium chauviei*, black quarter)
- Anthrax (*Bacillus anthracis*)
- Rabies
- Haemorrhagic Septicemia (*P. multocida*, HS, pasteurollosis)
- Lumpy skin disease

Two of these diseases are zoonoses, i.e., transmissible to man : RVF and Rabies.



Efforts made with regard to rinderpest, namely in respect of serology, may be put to good use for the detection of other diseases such as CBPP, RVF, FMD etc… *Photo : PACE archives.*

The discussion concerning the other priority epizootic diseases, reviews -for each disease- the data made available by IBAR through the *Pan-African Animal Health Yearbook* of 2003 and 2004. For all these diseases, the number of reports is on the rise, in terms of number of outbreaks, deaths, as well as countries affected, in West Africa as well as in Central and East Africa.

It must be pointed out that this increase is <u>not</u> (necessarily) negative ; rather, it demonstrates growing awareness of animal pathological manifestations in countries, mainly through better surveillance and better feedback of health information, two areas of PACE's current focus. Any increase therefore concerning mainly PACE member states, would only seem logical.

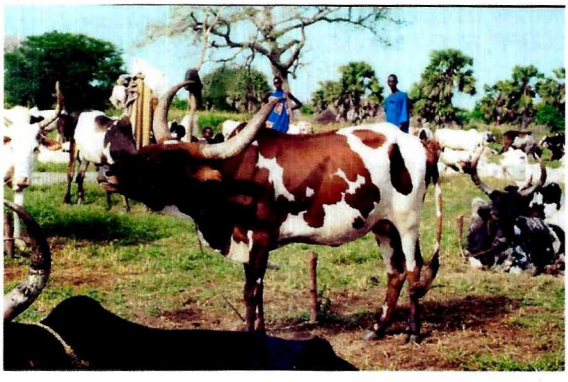
It is only in the medium term that this increasing trend may be reversed, following better action (rapid reaction) of veterinary services to warnings launched from the surveillance systems.



4.1. Contagious Bovine Pleuro-Pneumonia (CBPP)

CBPP is the main priority disease of PACE second only to rinderpest. It received much attention all along the implementation of the programme. As a matter of fact, the meetings of African Union Ministers in charge of Animal Resources held in 1998 at Mbabane (Swaziland) and in 2002 at Addis-Ababa (Ethiopia) recognized CBPP as one of the main constraints to livestock development in Africa and recommended the setting up of a Pan-African programme against this disease.

Contagious bovine pleuropneumonia (CBPP) is an infectious bacterial disease which is highly contagious and observed in cattle and buffaloes in India. It affects the lungs (respiratory difficulties) and sometimes the joints. Various species are sensitive to it. The disease was diagnosed among the Yaks of Asia and the buffaloes of America. Sheep, wild bovidae, camels, antelopes and goats resist to CBPP.

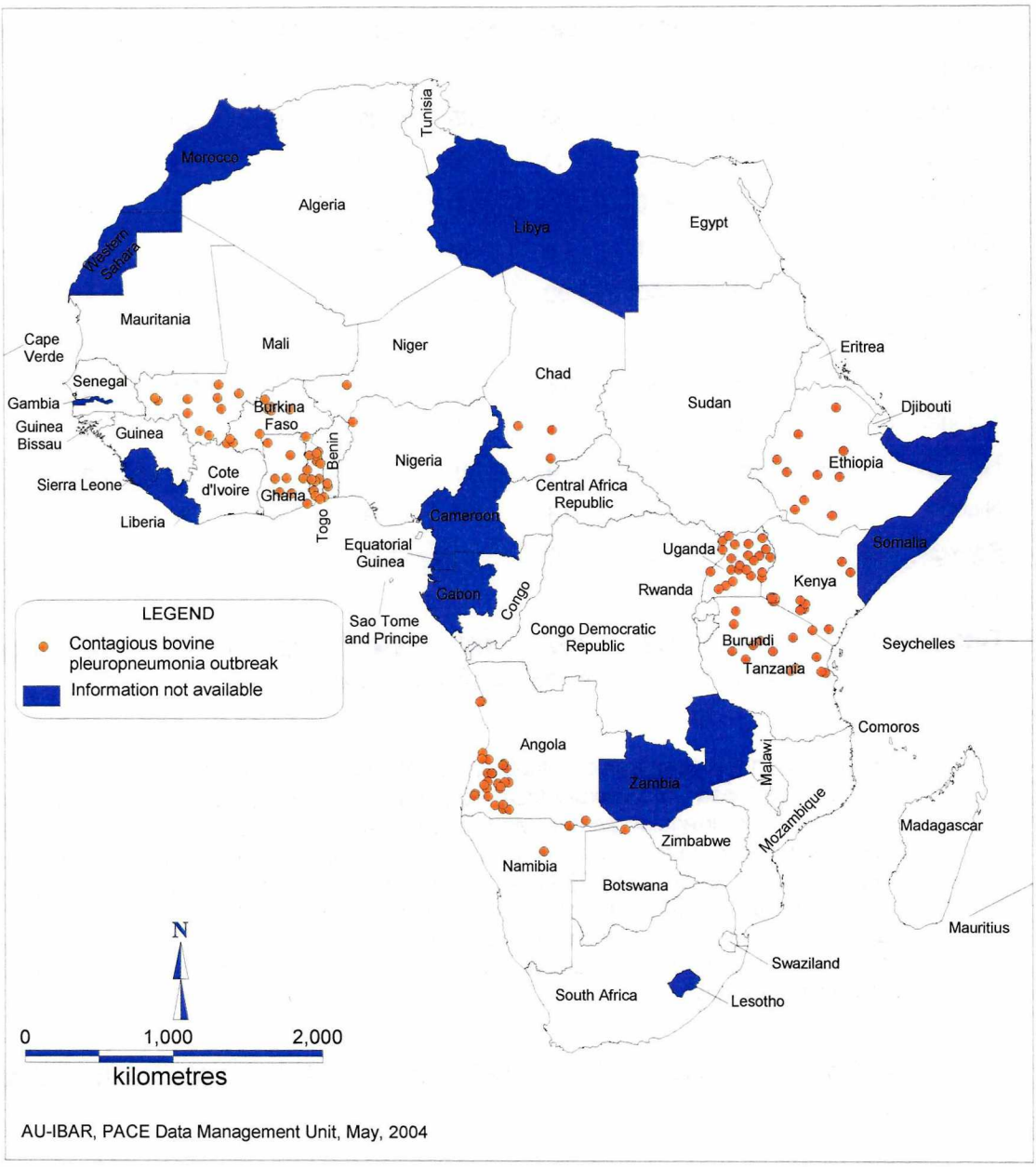


Typical case of CBPP in a herd.
Photo : N. Denormandie

Thus, many workshops and seminars were organized (Accra 2003, Conakry 2004) in order to discuss and develop a common strategy around a consensus for PACE member states. Although CBPP is recognized as one of the most significant diseases in Sub-Saharan Africa, efforts remain to be made in order to quantify the damage that this pathology occasions in order to assess its socio-economic impact and make a cost/benefit evaluation of the various control options. In addition, the livestock systems of African countries in general make difficult an adequate control of cattle movements in country and across borders. Current knowledge on the epidemiology of the disease, means of diagnosis and efficiency of vaccines are limited and require a continuation of research efforts. In addition, the preliminary results of research on the efficiency of antibiotic treatments in the fight against CBPP does not permit as of now to advise their large scale use in the field..

In Sub-Saharan Africa, 251 outbreaks of CBPP occurred overall in 2002, affecting 11 countries.

In 2003, 14 countries reported a total of 272 outbreaks of CBPP, with 7510 cases and 1289 deaths. The disease has affected all the regions of the continent except Northern African Countries. Although West African countries (6) reported the disease more often, there were more epidemics recorded, and more cases and deaths reported in East Africa (4 countries). Refer to map 10.



- Map 10. CBPP outbreaks reported in 2003.

CBPP has been endemic in most West African countries for decades. Table 25, presenting the situation of foci recorded in the course of the past eight years in the countries of the sub-region, shows that, except for Guinea Bissau, Gambia, and Senegal, this disease remains endemic or sporadic in most of these countries. This table shows that a significant number of foci were recorded in the countries from 1994 to 1998. From 1999, there was a decrease and a constant number of foci (an average of 75 foci) over three consecutive years. However, based on this table, one can note that CBPP represents and remains a major concern in this part of the African continent.





Country Year	1994	1995	1996	1997	1998	1999	2000	2001	2002
Benin	20	5	0	2	3	3	5	3	0
Burkina Faso	7	24	33	35	42	16	20	10	12
Côte d'Ivoire	6	12	11	10	8	11	7	8	5
Gambia	0	0	0	0	0	0	0	0	0
Ghana	3	1	5	49	51	23	21	4	26
Guinea	71	50	30	36	11	6	0	1	1
Guinea Bissau	0	0	0	0	0	0	0	0	0
Mali	21	32	12	15	9	15	12	15	5
Mauritania	8	5	7	10	3	3	1	4	1
Niger	6	5	9	0	7	1	1	0	1
Nigeria	4	8	13	15	16	4	9	31	1
Senegal	0	0	0	0	0	0	0	0	0
Togo	0	+							17
Total/year	**146**	**142**	**120**	**172**	**150**	**82**	**76**	**76**	**69**

- Table 25. Number of CBPP outbreaks recorded in West Africa from 1994 to 2002.

Even though the geographic distribution of CBPP is well established in West Africa, it remains confused for Central Africa. As a matter of fact, animal health information is often lacking or irregular, as one can notice on Table 26 ; This situation does not help assess the epidemiological parameters of the disease in the countries of the sub-region. If the data on Table 26 are confirmed, this would imply that the disease is not widely spread in Central Africa. However, the few rare cases recorded show that it appears in a sporadic manner (except in Chad). According to country reports, the disease is not found in Equatorial Guinea, Gabon, and Democratic Republic of the Congo and Congo.

Country Year	1995	1996	1997	1998	1999	2000	2001	2002
Cameroon		1	2		5			
CAR							+	
Chad	1	5	2 (nc)	2	4		+	3
Congo	0	0	0	0	0	0	0	0
DRC	0	0	0	0	0	0	0	0
Equat. Guinea	0	0	0	0	0	0	0	0
Gabon	0	0	0	0	0	0	0	2 (nc)
Total/Year	**1**	**6**	**7**	**2**	**9**		**+**	**5**

- Table 26. Number of CBPP outbreaks recorded in Central Africa from 1995 to 2002.

key: (nc) => suspicion not confirmed by laboratory
(+) => disease reported to OIE, but without numeric data..



Indeed, CBPP had not been observed in the Democratic Republic of the Congo (DRC) since 1981. But following the commercial cattle trade with neighbouring countries (particularly Uganda, District of Karmoja) where the disease is found in an endemic form, it reappeared in DRC in 1989 and remained there until 1992. In a two year interval, the areas of Aru and Mahagi recorded around 1,913 cases of deaths, i.e., 9.2% of the cattle population of the Ituri region. The same question could be asked about the Congo where imports of live animals have increased considerably since 2000.

The impact of vaccination on the occurrence of CBPP remains to be demonstrated. Epidemiological information collected and bibliographic data show that the (T1)/44, T1/SR) vaccines used so far in the fight against CBPP provide a short-term immunity in animals. Also, there is great variability in the immunity response in vaccinated animals (Hubshcle et al., 2002; FAO, 2000; 1998). On the other hand, the absence of an efficient and reliable method of detection of chronic carriers and the importance of (uncontrolled) animal movements render the correct enforcement of control measures against this disease difficult. However, the analysis of country reports shows that the incidence of the disease has considerably diminished during the PARC programme implementation phase because of the massive and systematic vaccination of animals with the bivalent rinderpest –pleuro-pneumonia vaccine.

Country Year	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**
Burkina Faso	491921	834186	1481672	1852898	1391387	1309043	1242857	1337527
	4260900	4345900	4432900	4521500	4611900	4704000	4798000	4992000
Côte d'Ivoire	0	732657	947000	1019282	1012125	1014480	874044	594485
	0	832000	1020000	1082333	1101664	1084654	1409000	1409000
Ghana	11291	5800	6593	1846	0	835650	708190	2434
	1216677	1122730	1247861	1267826	1270000	1288000	1302000	1315951
Guinea	0	404571	414839	994369	902207	835650	708197	665706
	0	950497	757764	1467882	1241893	2368000	2679385	2679385
Mali	1231091	1517668	1962977	1899165	3306051	2849105	3321244	2971545
	5541689	5708000	5882000	5894000	6325764	6521100	6569946	6930000
Mauritania	350000	281877	551557	802153	856115	841876	856598	700000
	1236749	1236302	1163622	1315005	?	1433000	1476000	1500000
Niger	635000	344000	631000	827596	678751	455252	516025	669333
	1968382	2050060	3085575	3138274	3202320	3282378	3382378	2260000
Nigeria	2804346	780291	1235544	522924	1263800	524327	644008	3200000
	?	?	?	?	?	?	?	?
Senegal	1203278	1192728	1203278	1029268	1208809	1450695	1275001	1275000
	2693000	2800000	2870000	2898000	2898000	2898000	2961300	3227000
Total/year	**3572581**	**5031610**	**5847359**	**7624424**	**8499330**	**9592211**	**8628112**	**8216030**
	15680640	**17809187**	**19296100**	**20269815**	**18043341**	**23579132**	**23816322**	**23551649**
Vaccination cover/year	**22,80**	**28,25**	**30,30**	**37,60**	**47,10**	**40,68**	**36,22**	**34,88**

- Table 27. CBPP vaccination data (per country) between 1994 and 2001.

Key : The upper line corresponds to the number of vaccinated animals
The second line corresponds to livestock numbers

For West Africa, the vaccination data for CBPP in the past eight years are represented on Table 27. Although countries are practicing vaccination on a yearly basis, the analysis of the table shows that such vaccination is not carried out in a massive and



systematic manner, which evidently leaves a few pockets untouched. The low average vaccination coverage rate of 32.22% illustrates that fact.

The attempt to illustrate the impact of vaccination on the incidence of the disease in the course of the last 12 years is shown by the ratio between declared outbreaks and the vaccination coverage rate through tables 28, 29, and 30. An analysis of these tables does not enable us to establish a direct link between the number of declared outbreaks in a year and the vaccination coverage rate. This may probably be accounted for by the fact that on one hand vaccinations are carried out in pockets, and are therefore not carried out in a systematic manner, and that on the other hand information supplied to international agencies (OIE, FAO, and AU/IBAR) on outbreaks by various countries are fragmentary and irregular.

Country :	**Year :**	**1990**	**1991**	**1992**	**1993**
Burkina Faso		9	3	10	8
		37,23	35,39	31,54	28,08
Côte d'Ivoire		18	16	9	12
		90,34	71,36	81,71	82,17
Ghana		14	2	0	2
		6,7	0,4	0,7	1,8
Guinea		38	82	49	60
		?	?	?	?
Mali		37	12	24	19
		?	?	?	?
Mauritania				6	8
				?	?
Niger		1	11	11	7
		60,65	49,95	35,93	26,34
Nigeria		71	55	35	29
		?	?	?	?
Senegal		0	0	0	0
		71,70	74,40	41,78	44,30

- Table 28. Ratio between the number of recorded outbreaks and the vaccination coverage rate between 1990 and 1993.

Key : Upper line corresponds to the number of outbreaks.
Second line represents the vaccination coverage rate (%)

Although CBPP is rare or absent in certain countries of Central Africa, vaccination campaigns are nevertheless carried out against this disease. In Gabon, vaccination campaigns against CBPP using the bivalent vaccine (rinderpest and CBPP) were conducted every year in ranches from 1980 through 1997. Since the end of the vaccination efforts against rinderpest in 1998, vaccination against CBPP has also been stopped.

In DRC, since the official reporting of the disease in Ituri in 1992, sanitary police measures have been set up. Such measures have been strengthened by vaccination campaigns carried out in 3 phases from 1993 to 1994. During these campaigns, covering all the livestock areas (Aru, Mahagi, Djugu, and Irumu), 89% of the cattle population has been vaccinated. During the third phase, vaccination campaigns were limited to the areas of Aru and Mahagi and covered 49% of the cattle population.



In Chad, vaccination against CBPP was carried out using a bivalent vaccine (rinderpest and CBPP). This vaccination was free of charge and mandatory until 1993, when the State disengaged itself by granting the sanitary mandate to private veterinarians. Vaccination became charged for. Faced with this situation, farmers became reluctant to pay fees for vaccination. Now, for vaccination against CBPP alone, a few of them select animals to be vaccinated and others totally flee vaccination.

Country Year	1994	1995	1996	1997	1998	1999	2000	2001
Burkina Faso	7	24	23	35	42	16	20	10
	11,55	19,19	33,42	40,98	30,17	27,82	25,90	22,16
Côte d'Ivoire	6	12	11	10	8	11	7	8
	0	88,10	92,84	94	92	94	91	91
Ghana	3	1	5	49	51	23	21	4
	0,9	0,5	0,52	0,14	0	64,88	54,39	0,18
Guinea	30	28	26	22	11	6	0	1
	?	42,56	54,74	67,74	72,64	66,16	57,24	24,85
Mali	21	32	12	15	9	12	12	15
	22,21	26,58	33,37	32,22	52,26	43,69	50,55	42,88
Mauritania	8	5	7	10	3	3	1	4
	?	?	?	?	52,26	58,76	58,04	46,67
Niger	6	5	9	0	7	1	1	0
	32,26	16,78	30,45	26,97	31,86	20,95	25,78	29,61
Senegal	0	0	0	0	0	0	0	0
	44,68	42,60	41,93	35,52	41,71	?	50,05	39,51

- Table 29. Ratio between the number of recorded outbreaks and the vaccination coverage rate between 1994 and 2001

Key : Upper line corresponds to the number of outbreaks.
Second line represents the vaccination coverage rate (%)

Year	Outbreaks	Sick animals	Dead animals	% vaccine coverage
1994	126	633	173	22,78
1995	137	1478	495	28,25
1996	120	1417	186	30,30
1997	170	4437	1007	37,61
1998	147	3061	418	47,10
1999	78	1945	394	40,68
2000	70	2146	439	36,23
2001	73	2212	674	33,88

- Table 30. Comparison between epidemiological parameters and CBPP vaccination data in the sub-region from 1994 to 2001.

Since its introduction into Africa, CBPP has been the object of many control programmes based essentially on:

- Mass vaccination campaigns of animals (applied by the majority of countries of West and Central Africa). In any case, this strategy has had some success in this part of the continent during the PARC era perhaps because the vaccine used at the time was a bivalent vaccine (rinderpest and CBPP). The vaccination coverage was high because it was identical to that of rinderpest and its impact was the considerable reduction of CBPP outbreaks. However, it should be noted that the

overall average coverage rate has significantly decreased in the course of the last three years (particularly since the abolishment of vaccinations against rinderpest in the various countries). The annual vaccination campaigns usually consist of a single intervention. The mobility of animals, the high cost of vaccination campaigns and the post-vaccinal reactions due to the T1/44 vaccine are advanced as the main causes of the low vaccination coverage and the difficulty to proceed on to repeated vaccinations in the course of a single year.

- The more or less rigorous enforcement of sanitary police in certain countries. However, there are certain difficulties in enforcing legislation, including *stamping out* followed by reimbursement of farmers.

- *Stamping out*, an approach difficult to implement because of the financial situations of countries which do not provide for systematic reimbursement of farmers.

- Quarantine together with vaccination is considered as a more appropriate control measure for certain countries.

- In those countries where the disease has never been reported and vaccination not practiced (Guinea Bissau, Congo, etc.) the most appropriate strategy adopted by these countries is to put animals entering the country in quarantine and the systematic *stamping out* of all suspect or infected cases recognized as such.



Vaccination against CBPP in Niger. Photo : C. Squarzoni, 2004.

- Control of cattle movement, a factor limiting the spread of the disease, seems essential in the fight against CBPP.

The strategy against CBPP in Guinea is considered as one of the most exhaustive in the PACE region and rests on the following elements:

- Annual mass vaccination campaigns;
- Stamping out all sick cattle or cattle exposed within foci or even in entire villages, depending on the case;
- Establishment of a sanitary cordon dividing the country into two zones (free or surveillance zone and endemic or infected zone), with a prohibition for cattle originating from the infected zone to enter the surveillance zone, except for slaughtering and this, only per motorized transport and under veterinary escort;
- Tagging the ears of any cattle presented on any market in an infected area;
- Individual identification of cattle by tattooing.



Guinea Conakry : Metallic bill board illustrating the compulsory transport of cattle by truck, when originating from the infected area and intended for slaughter. Cattle market in DOGOMET district in the DABOLA department (Haute Guinée region), CBPP vaccination area, surrounding the cordon sanitaire. *Photo : N. Denormandie. 2003.*



Guinea Conakry : Metallic bill board when entering the DOGOMET district in the DABOLA department (Haute Guinée region), CBPP vaccination area, surrounding the cordon sanitaire. *Photo : N. Denormandie. 2003.*





The CBPP control strategy deployed in Guinea gave very positive results in the field which could be considered as encouraging for those other countries confronted with this disease. The division of the country into different areas with distinct epidemiological status, associated with animal control measures and targeted prophylaxis adapted to the various constraints of the Guinean regions is a success.

Given the current state of progress, it is however recommended to proceed on to serological sampling in order to re-assert the epidemiological status of the different zones (surveillance zone, buffer zone, endemic zone) concerning CBPP and thus to update the figures showing its prevalence. As a matter of fact, its distribution in the country must be shown in a precise manner and must be updated in order to reposition the *sanitary cordon* if it has undergone any change; The results of these samples will help perfect the fight and control actions in the field with regard to this pathology and to potentiate the expected results.

Extract: Evaluation mission report of the epidemiological surveillance network in Guinea (PEU, March 2004).

An analysis of country reports brings out the major constraints limiting the implementation of strategies and the improvement of CBPP control in PACE member states. Such constraints are related to the following factors:

- Inadequate or absent national disease reporting and animal health information systems, in general, leading to an approximate recognition of the epidemiological data of the disease and therefore to weaknesses in the planning and management of its control programmes;

- The difficulties in implementing zoo-sanitary measures, notably control of movements, stamping out, farmer reimbursement, etc. regulated by sanitary police and legislation. This is probably due to the extensive nature of the dominant animal production system over large areas with little supervision by veterinary services and thus leading to weaknesses in the health coverage of herds as well as in the control of cattle movement;

- Inadequate human resources and solid technical structures at the central level for appropriate planning, implementation, monitoring and evaluation of disease control programmes in general.

- Inadequate material and financial resources allocated to agriculture in general and to the livestock sub-sector in particular.

One of the recommendations of the Accra workshop in February 2003 was therefore the development of control strategies against CBPP by countries participating in the PACE programme They should lead to a reduced incidence of CBPP in endemic areas and the protection of those areas where the disease has not been reported. These strategies proposed should rest on a regional approach taking into account the epidemiological situation, the socio-economic conditions as well as the livestock farming systems in countries. They should be accompanied and supported by information, basic education and adequate communication activities.

The workshop on CBPP control strategies held in Conakry from February 25 through 27, 2004, has more or less confirmed these options, recognizing that the strategies to be advocated for controlling CBPP in the short and medium term and for planning its long term eradication from the African continent, require that countries have functional



veterinary services, operational epidemiological surveillance systems including abattoir surveys, adequate laboratory diagnostic capacities ; and that they implement training and farmers' awareness programmes but also a policy aimed at achieving effective control over cattle movements.

The approaches proposed in the course of this workshop were as follows :

1. In those countries where the disease is endemic,

where the objective is to reduce the incidence and the prevalence of the disease in order to improve its control;

- an annual vaccination targeting 80% of the population in the area involved over five years. The vaccines used will be controlled for external as well as internal quality (titer checks at the different storage levels).
- an evaluation of the impact of the disease (such evaluation could be achieved at the regional level through pilot studies based on a participatory approach).
- stamping out of animals which are clinically ill in the foci.
- strict control of cattle movements (internally and across borders).

2 . In those countries where the disease is not being reported

where the objective is to prevent the introduction or re-introduction of the disease,

i) for those countries which are currently vaccinating against CBPP,

- setting up a sanitary cordon (with a buffer zone and a surveillance zone) intended to protect the disease-free area.
- vaccination of cattle in the buffer zone,
- active surveillance in the free and surveillance zone,
- strict control of cattle movements (internally and across borders)
- setting up an intervention plan defining the procedures of admission of animals into this zone (animals for slaughter, livestock, and transhumant animals, etc.).

ii) for those countries which do not vaccinate against CBPP,

- verification of the absence of disease through sero-surveillance,
- active surveillance including slaughterhouses,
- strict control of cattle movements (internally and across borders),
- setting up an emergency plan.
- embarking on the OIE pathway of gaining CBPP free country status.

3. In those CBPP free countries where the disease has just been introduced

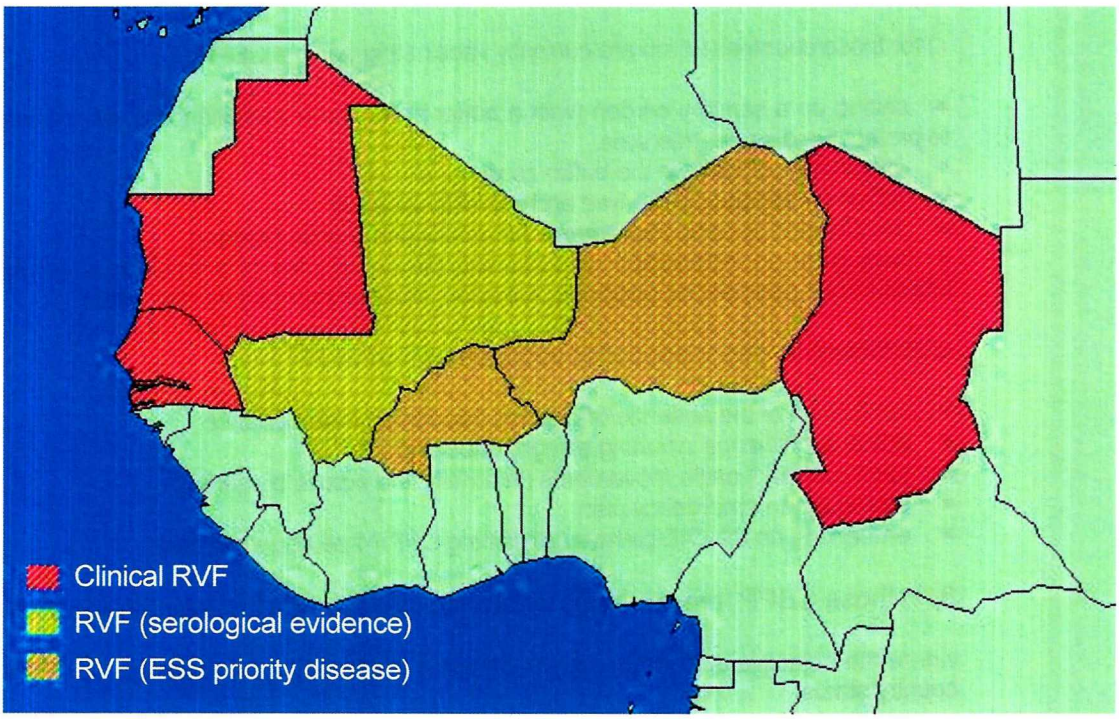
where the objective is to get to rapidly eliminate the focus and recover the CBPP free country status,

- the stamping out of all contaminated herds in accordance with the OIE pathway.



4.2. Rift Valley Fever (RVF)

Rift Valley Fever (RVF) is an acute viral disease (the virus is from the Bunyaviridae family, Phlebovirus type) transmitted by arthropods (*Aedes, Culex...*) which are biological vectors, affecting numerous animal species (such as sheep, goats and cattle) and transmissible to man. The disease is characterized, at the epidemiological level, by cyclic epizootic outbreaks, developing because of favourable exceptional weather conditions (abnormally high rainfall) or in the course of hydrological developments (dams, extensions of irrigated crop areas). The disease develops in its epizootic form when sensitive livestock is present and where climatic conditions permit multiplication of the vector and amplification of the viral replication. An amplification phase of the disease in animals systematically precedes the appearance of clinical signs in man who can get contaminated essentially through the manipulation of infected products of animal origin but also through insect bites. The warning concerning this disease must therefore come from animal health services, when they have a warning system capable of detecting any abnormal phenomenon in terms of animal pathologies.

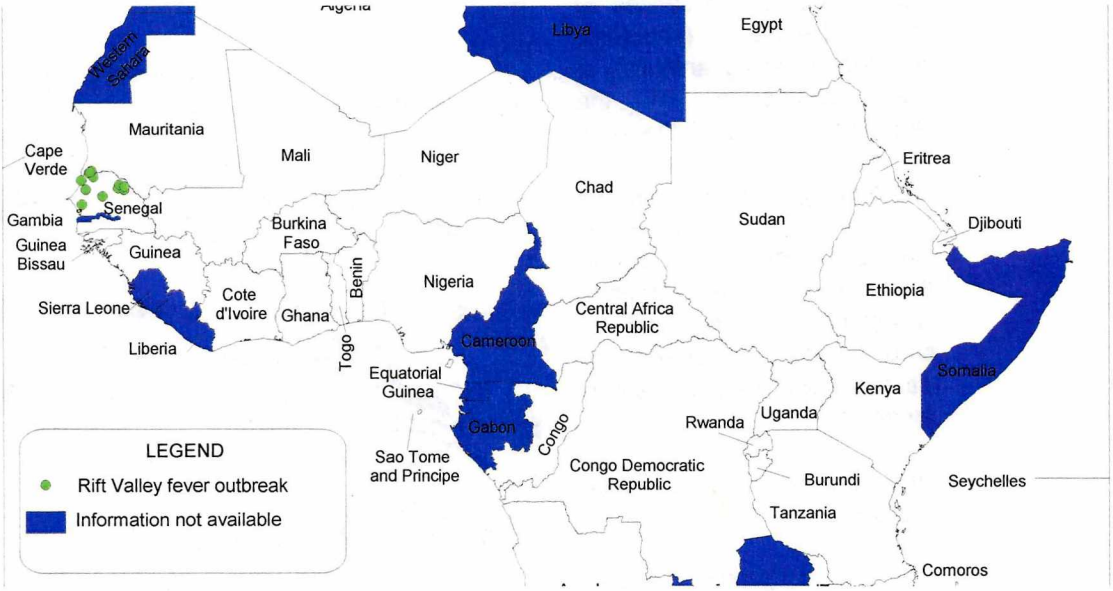


- Map 11. Countries affected by RVF (or applying specific surveillance) in West Africa.

In West Africa, the disease appeared for the first time in 1987 in Mauritania and Senegal. After an inter-epizootic break, and following favourable climatic conditions to vector multiplication, the disease reappeared in 1998 in south-eastern Mauritania, causing several human deaths and a wave of abortions in small ruminants, cattle and camels. This situation triggered a warning in Senegal and Mali where surveillance and prevention measures against the disease were strengthened.

In 2003, there were only two countries in Africa, Senegal, and Mauritania, which reported RVF : refer to map below (●). Not one single case was reported in 2002.

For 2003, overall, 10 outbreaks (in October and November of that year) and 44 cases were recorded ; no deaths were reported.



- Map 12. RVF outbreaks reported in 2003.

FAO has assisted Mauritania, Senegal, and Gambia, by funding two technical cooperation projects (one for Mauritania and another regional project for the 3 states) between May 1999 and December 2000, which helped gain a better knowledge of the disease in the sub-region (confirmation of virus-circulation, establishment of surveillance systems, epidemiology of RVF, consultation and collaboration between actors, regional coordination…).

In the face of the resurgence of outbreaks of Rift Valley Fever (RVF) observed in 2003 in countries such as Gambia, Mauritania and Senegal and its appearance in Central Africa (Chad) a workshop was held in January 2004 in Dakar, bringing together officials of Veterinary and Public Health Services of Gambia, Mali, Mauritania, Senegal, and Chad, as well as representatives of FAO and the Pasteur Institute of Dakar. The objectives of this meeting were to assess the overall situation, exchange information on the last foci and review the latest results of research on the subject in order to consider the various control strategies of RVF possible: vaccination (mode, type…), risk analysis and vector control. The recommendations adopted at the conclusion of the workshop are presented below:

Recommendations of the workshop on RVF (Dakar, August 2004) : § 4.2.1 et 4.2.2.

4.2.1. Control strategies against RVF

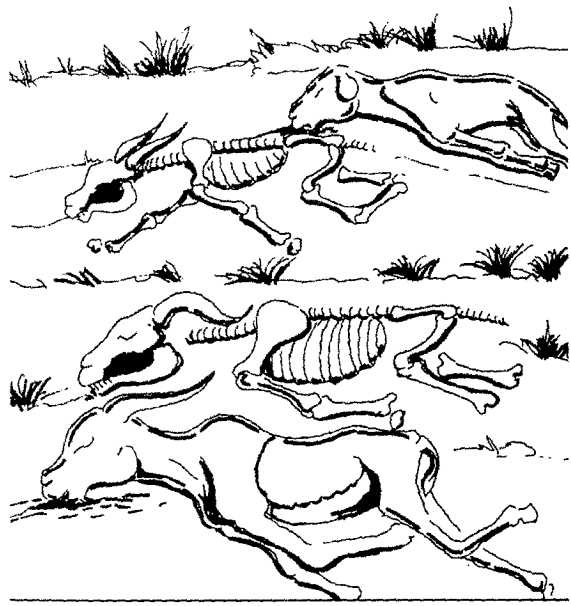
The workshop has noted that knowledge is still inadequate on certain aspects of RVF (analytic epidemiology, definition of risk zones, vector biology, efficiency of insecticides, etc.) and that requires that studies and/or medium or long term research efforts be undertaken. Consequently, in the current state of knowledge, controlling the disease may be envisaged more through vaccination than through vector control.

4.2.1.1. RVF control through vaccination

Vaccination against RVF is aimed at the protection of cattle against the consequences of the disease (abortions, mortality in young animals), at the suppression of the amplification-cycle of the virus in animals and hence, at establishing a protective shield for man in areas where the virus circulates. The workshop therefore recommends vaccination as the tool of choice, both in emergency situations and as a preventive measure.

Two vaccines are currently available :

- an inactivated vaccine which is safer but of lesser efficiency, the cost being high and the availability limited,
- a live modified vaccine which confers greater immunity but which could also contain a residual pathogenic effect in animals and humans.



High mortality in lambs and kids.

Dee gu bari ci xar ak bey yu ndaw yi.

Example from extension posters with regard to RVF used in Gambia (PACE – Gambia).

The workshop recommends that veterinary services, with the support of PACE, FAO, and OIE, do the utmost to gather all available information on the results of vaccination campaigns conducted in the Arabic peninsula (Saudi Arabia, Yemen), in Egypt, Southern Africa and the Far East. Such information should help in the decision making process on the vaccine to be used.

If vaccination campaigns are to be conducted, one presumes that surveillance activities have been carried out for a sound knowledge of the disease situation in the field and for a risk assessment, particularly in countries that do not have any data on the distribution of the disease.

In the short term, it will be useful to carry out cost-benefit studies in order to evaluate the vaccination strategies to be implemented.

In order to improve the availability of vaccines, the workshop recommends:

- That countries, in the short term, proceed to imports from production laboratories whenever the situation requires it and meanwhile develop a local production,



which requires having certified strains of vaccines and further securing the current conditions of vaccine production.

- That the LNERV of Dakar, in collaboration with the Pasteur Institute of Paris, pursues research-activities aimed at the development of a vaccine derived from the R 566 strain by initiating as soon as possible, the necessary procedures to conduct the viral tests and the protection tests in an A3 standard animal environment (South African laboratory, for example).

- That the Pasteur Institute of Dakar (IPD) contributes to the task of validating a vaccine derived from the R 566 strain.

4.2.1.2. Vector control

The workshop acknowledges that several unknown elements remain to be clarified, before recommending systematic vector control.

Nevertheless, the workshop recommends that countries, in the short term, could turn to practical measures aimed at reducing vector numbers and consequently the risk of transmission of the disease. Such measures will aim at :

- Protecting animals through the use of *'pour on'* products and insecticide dipping,

- Protecting humans through the use of repellent products, particularly traditional ones such as smoke screens,

- Moving farmer camps away from ponds by advocating settlement at a distance of no less than 2 kilometres.

Active communication campaigns will be necessary in order to raise awareness amongst the communities involved on the measures adopted.

4.2.2. Management of an emergency situation due to RVF

The workshop considers that there is an emergency of RVF as soon as clinical cases of the disease are observed and confirmed in the laboratory. In such a case, the workshop recommends that countries observe the following line of conduct:

1. Declaration of the disease by veterinary services to : the OIE, FAO, AU-IBAR, neighbouring states and public health services; the latter being responsible for the reporting to WHO.
2. Implementation of sanitary police measures dealing in particular with the restriction or ban on animal movements towards or from the focus area.
3. Vaccination of herds grazing around ponds located in the focus area.
4. Implementation of in-depth epidemiological surveys (including the search for the virus at vector level).
5. Implementation of an information and sensitisation campaign of the population on the risks they run and measures which need to be avoided (stamping out of sick animals, handling of stunted animals).



The management of an emergency situation requires an early warning system. The triggering of the alert could rely on the following steps :

Presence of IgM antibodies in an animal or detection of viral circulation in humans or mosquitoes by virus isolation :

- Strengthening of epidemiological surveillance,
- Multi-disciplinary investigative missions (doctors, entomologists, veterinarians) around the herd involved if not the village and collection of samples to be analysed by the laboratory.

Negative laboratory result, i.e., absence of other IgMs and no clinical cases are reported.

- Maintaining active surveillance in the area concerned.

Positive laboratory result, i.e., increase in the number of IgMs and presence of clinical signs (abortions and/or rate of stillbirths) :

- Launching the alert and implement the measures advocated for emergency situations.

Any efficient fight against RVF requires a close collaboration between veterinary services (VS) and public health services (PHS). To that effect, the workshop recommends that countries which have not done so yet, establish a consulting and coordinating body for RVF related activities.

Countries are strongly advised to update regulations in order to add RVF to the list of mandatory reporting diseases.

Countries are also strongly advised to develop an emergency plan for RVF based on the guidelines developed by the EMPRES programme of FAO.

4.3. African Swine Fever (ASF)

African Swine Fever exists in an endemic manner in most African countries where pig breeding is practiced on a large scale, be it under modern and intensive rearing (seldom) or under family and extensive rearing (frequent). The endemic zone stretches from Gambia, going through Casamance (Senegal), Guinea Bissau, Guinea, Côte d'Ivoire, Ghana, Burkina Faso, Togo, Benin until Nigeria. In Central Africa, the disease is endemic in Cameroon, Gabon, Congo, DRC, and Equatorial Guinea. It therefore involves mainly the coastal countries with partly Christian or animist communities, consuming pork (but also Muslim communities practicing pig-breeding for sale, as in Togo and Benin.).

Although numerous diseases affect pigs (including certain zoonoses), African Swine Fever is considered as the most devastating of pig diseases, because of its extremely high rate of mortality.

African Swine Fever (ASF) is a contagious viral pig disease. In Africa, the virus attacks wild pigs and ticks and is easily transmitted between these two hosts. The sensitivity to the disease varies across pig species. ASF is accompanied by a high rate of mortality among infected domestic pigs, European boars and American wild pigs. However, infected African wild pigs (warthogs and "*bush-pigs*") do not show any clinical signs. The main symptoms of ASF are fever and internal haemorrhages. The virus survives several months in fresh pork meat and processed pork products.



Clinical case of ASF in Congo (Brazzaville). Photo : PACE Congo.



In 2002, a total of fourteen countries reported 224 outbreaks of African Swine Fever. In West Africa, Togo was most hardly hit with 52 foci. Over a population estimated at about 385,113 pigs sensitive to the disease over these acute endemic periods, 36,248 infected cases were recorded and 15,837 pigs died.

In 2003, a total of 15 countries reported 250 epidemics affecting 28,553 animals, of which 19,639 died. Togo recorded the highest number of epidemics (61). Six countries of West Africa, particularly the coastal countries, were most hit with about 40% of all epidemics.

Unlike classical African Swine Fever, it is not possible to vaccinate against ASF, hence the particular problem in controlling it. As a matter of fact, the only control option which can be envisaged is the *stamping out* option. However, this method turns out to be very difficult to enforce in the African context. The great majority of pig farmers in West as well as Central Africa, raise their pigs as stray (scavenging) animals, not having any means to raise livestock in confinement, which requires significant and expensive nutritional inputs. Under these conditions, implementing the establishment of sanitary cordons, control of movements and stamping out turns out to be nearly impossible for three reasons : organizational (linked to straying of animals), social (related to the fact that pig breeders are often the poorest) and financial (related to problems governments experience in correctly paying compensation to farmers). In spite of this, countries such as Côte d'Ivoire and Ghana have been able to control ASF foci by applying these stamping out principles. Unfortunately, the lack of consultation at the sub-regional level has rapidly led to a re-infection of these two countries.

The PACE programme has given some attention to this issue (a workshop was organized in 1999 in Lome, at the heart of the epizootic disease which was hitting the sub-region at the time), but has not been able to reach a consensus over the strategies to be adopted as far as this disease is concerned.

The viewpoints presented below are drawn from documents prepared by the PEU, but are far from being unanimously accepted. However, they do have the merit of proposing several scenarios of solutions, in the short term, as well as the long term, and adaptable to the different situations encountered in the countries (free from disease or not)..

In the short term, and in the coastal countries of West and Central Africa which are currently free from the disease, the rapid detection of ASF when it occurs will remain the cornerstone of any strategy against an epizootic disease. It is essential because all countries are submitted to the risk of introduction of the disease, through their borders, from countries infected in the sub-region.

Such rapid detection depends on :

- an efficient epidemio-surveillance system;
- a competent diagnostic laboratory;
- farmer cooperation – pig owners and their ability to recognize the disease.

These aspects are part of the PACE programme under way, supported by the IAEA as far as the laboratory component is concerned. All countries have been equipped and financed to carry out the first two measures (often also through the FAO TCP programmes). If ASF is detected shortly after its introduction, it ought to be possible limit the infection to a restricted area with a limited number of animals to stamp out. On the other hand, once the infection spreads, stamping-out becomes difficult and the

cost is usually extremely high. In addition, stamping out, once the infection spreads, often means that the "*treatment*" will be worse than the "*disease*".

Finally, it should also be pointed out hat stamping out can be considered only if funds are rapidly available, with concomitant planning and preparation, in order to correctly and rapidly compensate the owners of killed animals, without omitting the ban on marketing or consumption of pork. Without adequate financial compensation, the rapid diffusion of animals (even and particularly in Muslim areas, *a priori* disease-free, and therefore only slightly controlled) and the infection is inevitable, because avoiding the stamping out will become the farmers' main priority. This phenomenon makes the adherence of farmers to preventive measures and a change in existing health regulations indispensable.



Women raising hogs in Guinea Bissau. Photo : D. Grégoire.

A problem which is practically common to all countries is that of securing funds in order to implement all these measures in a short term. By delaying the mobilization of funds, the problem becomes unavoidably uncontrollable after a week or two. This does not prevent several PACE member states to strongly address the issue. Côte d'Ivoire and Ghana have already been mentioned, but there are other countries as well. These countries set up contingency plans and seek means to constitute emergency and compensation funds.

For reasons related to the reluctance of Muslim veterinary agents to intervene in pig breeding activities, certain countries set up specific systems for the pig sector, based on *sanitary defence groups*, focused on farmers and CAHW. This system already exists in Gambia and will be soon experimented in Senegal (Casamance).

A secondary conclusion of epidemiological surveys carried out in Côte d'Ivoire and Ghana in liaison with ASF was that the mortality rate among stray pigs was very high. Traffic accidents, the shooting of pigs by angry farmers whose crops were destroyed, as well as gastro-intestinal diseases resulting from the consumption of inappropriate food, and malnutrition, are the common causes of mortality among scavenging pigs. Such pigs are often confined during the rainy season in order to prevent damage to crops. Drowning due to inundation of makeshift pigpens, pneumonia resulting from inadequate protection against the weather, adds up to the list of factors contributing to mortality.

In any case production is low, 5-6 piglets at 6 month intervals or more are the usual, and pre-weaning mortality seems high, mainly because the sows are underfed or do not survive long enough for piglets to be weaned. The improved breeds of pigs with a higher production potential have food requirements which cannot generally be met in these traditional livestock systems.





Thus there are indisputable arguments for improving the breeding of indigenous pigs by moving towards a more intensive production. In most sub-saharan countries, there are tangible examples of producers making benefits despite a more modern approach. The concept of traditional pig farming being deeply rooted in the culture and that people would strongly resist change for sentimental reasons, may turn out to be incorrect in the future. This low input farming is primarily dictated by economic necessity or technical ignorance, arther than by any emotional attachment to the scavenging system. Undoubtedly, an accessible and practical alternative will be adopted. Thus, the modern pig production systems will gradually replace the traditional systems in Africa, as has also been the case in Europe, given that there be interesting financial perspectives. For the governments, there are other elements which could justify a financial effort on their part, including control of pig cysticercosis in men, because of the maintenance of tape worm in scavenging pigs. Pig cysticercosis represents a serious threat to human health, and as been identified by WHO as the main cause of epilepsy in Sub-Saharan Africa.
Extract : PEU – PACE Strategy paper on ASF (prepared by G. Thomson & M-L. Penrith) 2002.

Ultimately, it is to be hoped that research efforts underway will lead to the production of an efficient vaccine. Studies on vaccine strains (Africa, Madagascar, Asia) are underway, but have been far from successful so far.

A radically different approach is equally possible : the raising of ASF resistant pigs. Toward the end of the 1990s, an attempt to produce genetically resistant pigs from a population in Mozambique which had been known to have a high survival rate following natural infection, was not successful. However, another alternative exists, namely the breeding of resistant pigs through deliberate infection of animals which are passively protected by antibodies to the virus of ASF. It turns out that the antiserum to ASF could have considerable neutralizing capacity even if complete neutralization does not occur (Martins and Leitao, 1994; Thomson, Penrith & Bastos, in press). If such antibodies are present in pigs before they are exposed to virulent infection they may be protected against the deadly infection (Schlafer et al, 1984; Schlafer & Mebus, 1984). Thus, piglets from sows with antibodies against the ASF virus, acquire their antibodies through colostrum and increase the resistance to the pathogenous effects of the infection (Onisk et al, 1994). The major difficulty resides in the fact that the sows would have to maintain high immunity levels. Such an approach could probably be considered in those areas where infection is maintained through a domestic cycle (i.e., where wild hogs are not involved and without passage in vector ticks) and where a single lineage or a reduced number of lineages of the virus are present (Bastos et al.2003). In West Africa both of these conditions are met.



4.4. Peste des Petits Ruminants (PPR)

Peste des Petits Ruminants or Small Ruminant Pest affects only sheep and goats, but the virus responsible for this disease (the morbillivirus) belongs to the same group as the rinderpest virus. This close relationship with the rinderpest virus leads to cross-immunity (inoculation against PPR will protect the animal against PPR and RP and vice-versa). This is an advantage in the context of vaccination but a major problem if one attempts to measure the circulation of the rinderpest virus in a population of sensitive ruminants, as is the case with PACE.

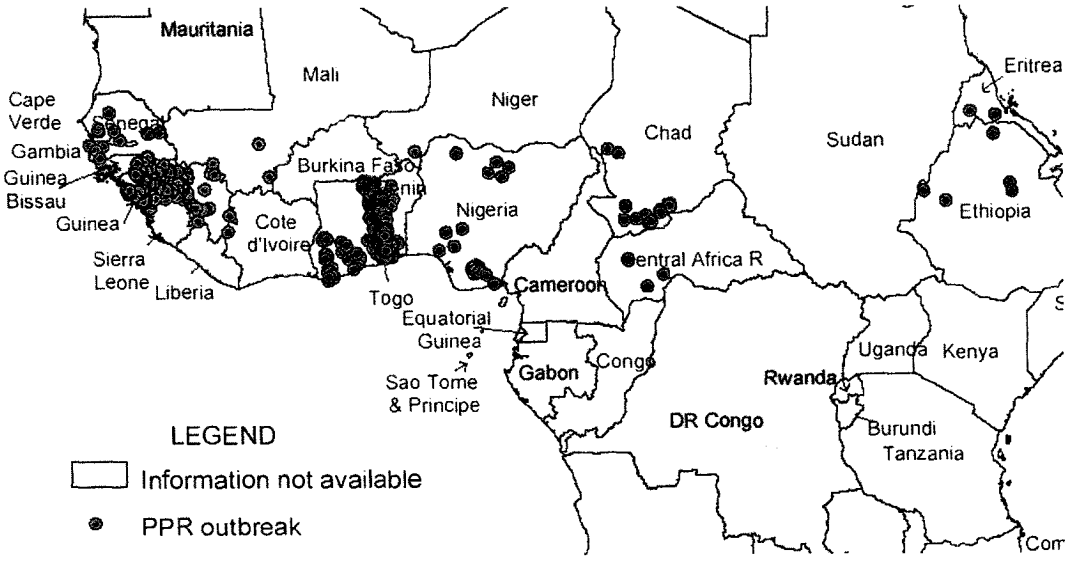
Peste des petits ruminants (PPR), also known as "goat pest" is a viral disease affecting sheep and goats and characterized by fever, mouth lesions, diarrhea, pneumonia, and death. Sheep and goats are its only natural hosts. Goats are usually more seriously affected by the disease than sheep. The deer, the gazelle, and the ibex may also be affected. Pigs and cattle may be infected by the virus, without presenting any clinical signs and cannot transmit it to other animals. The PPR virus is closely related to that of rinderpest.



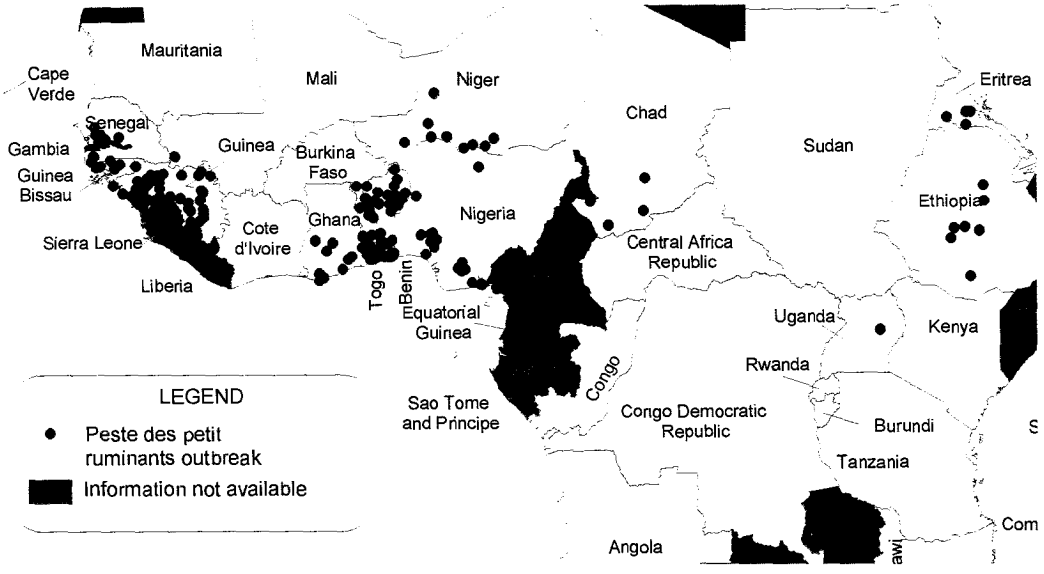
Goat affected by PPR : necrotic mouth and nasal lesions are evident.
Photo PACE/PARC archives.

With a few exceptions, PPR is considered as a priority disease under epidemiological surveillance. At the level of PACE (mainly the PEU), this disease draws little attention because the clinical signs are easily recognizable and the control methods are well established everywhere in the sub-region.

In the course of the year 2003, 14 West, Central, and Eastern African countries recorded 526 outbreaks of PPR, against 13 countries and 439 outbreaks in 2002 (refer to maps below). In 2003, the outbreaks affected 31,820 sheep and goats, and caused 9,248 deaths. The countries of West Africa were the most hardly hit (9 of the 14 reporting countries recorded 93% of all cases of death caused by PPR.) Togo, Guinea, and Benin respectively had 155, 123, and 117 outbreaks. Sheep were the most hit in terms of numbers of cases and deaths.



- Map 13. A. PPR outbreaks reported in 2002 (2003 report)
  Source : Animal Health Year book AU-IBAR (2003).



- Map 13. B. PPR outbreaks reported in 2003 (2004 report)
  Source : Animal Health Year book AU-IBAR (2004).



Two particular aspects deserve special attention:

a) for a long time, vaccination against PPR was carried out with so called heterologuous vaccines, i.e., vaccines developed from cell cultures of the rinderpest virus. These milder strains were protecting small ruminants effectively against PPR. With the abolishment of vaccination against rinderpest and the beginning of active research of serological traces of the virus in all ungulates (therefore including small ruminants), the use of this vaccine is therefore no longer justified. A homologous vaccine, based on milder strains, has been developed and is currently used in most countries of the sub-region. This vaccine however does not prevent sheep and goats from testing positive for rinderpest in ELISA base-line tests. Indeed, cross-immunity is not affected by this vaccine. On the other hand, numerous cattle turn out to be infected by PPR. Even if they do not develop the disease, their immune system does develop antibodies which can test positive for RP in the course of serological testing. PPR has thus become the most common differential diagnosis of rinderpest (as far as serology is concerned) and accounts for a relatively large portion of false positive results. In practice, small ruminants are little accounted for, if at all, in the OIE pathway of rinderpest testing, particularly in those countries where the disease is endemic and/where vaccination if frequent. In addition, the import and distribution of veterinary vaccines often escapes to the control by governments and veterinary services; nothing therefore excludes that heterologous vaccines still be circulating.

As far as wildlife (for which there is no vaccination) is concerned, each test of rinderpest antibodies is therefore very indicative of a viral presence in the environment. However, for warthogs and "*bush pigs*", as well as numerous antelopes (dorcas gazelles notably), PPR is frequently involved as a cause of an erroneous diagnosis of rinderpest. In the case of porcines, the animals are not clinically affected, but they do develop antibodies nevertheless. This is the reason why the wildlife unit currently recommends that a series of 4 tests be carried out on positive results on C-ELISA H RP, in order to exclude any possible cross-immunity with PPR. Such tests are the C-ELISA N RP, C-ELISA N PPR, and the sero-neutralization test against RP and PPR.

b) there are strong suspicions that clinical reporting of PPR be frequently mis-diagnosed. As a matter of fact, the differential diagnosis with two other diseases is particularly difficult : pasteurellosis (*P.haemolytica*) and CCPP (*Contagious Caprine Pleuro-Pneumonia*) ; the latter however does not affect sheep.



4.5. Foot and Mouth Disease (FMD)

Foot-and-Mouth Disease (FMD) is an infectious, virulent, and highly transmissible disease, which affects all animal species of the order of Artiodactyles, domestic and wild, particularly cattle, sheep, goats, and pigs. Elephants, hedgehogs and certain rodents are also sensitive but do not present any clinical signs. The disease does not affect horses. Clinically, the disease is characterized by fever and the presence of lesions similar to lumps on the tongue and lips, in the mouth, on the udders and between the claws. One may observe a reduction of lesions after a week in the adult animal while young animals pay a heavy toll in the form of high death rate. Even though a significant number of animals do recover, they remain weak and asthenic. Economically, foot-and-mouth represents a serious economic burden and is feared by all countries in the world because of its highly contagious nature and its consequences on commercial exchanges of live cattle and derived products. In the herds, foot-and-mouth lowers productivity through reduced milk production and net loss due to death of young animals.

From being sporadic in the 1970's, foot-and-mouth disease has become an enzootic disease as from 1990. Since the epizootic disease which hit West Africa, foot-and-mouth diseases has been regularly recorded each year within the cattle population. Cases have also been reported in the ovine and porcine populations.

In 2002, 310 outbreaks of foot-and-mouth disease were reported in 18 African states. In the course of the year 2003, a total of 754 outbreaks of foot-and-mouth disease, involving 102,292 cases and 1,974 deaths were recorded, still in 18 states. The outbreaks affected all regions of Africa, except the northern regions. Seven countries of West Africa, 5 countries in each of the southern African and eastern African regions and one country in Central Africa reported the disease in 2003. Reports indicated that cattle were the only species affected by foot-and-mouth disease in 2003 (99.9% of the total number of cases).

Once the clinical diagnosis established, samples are collected and sent to the world reference laboratory of Pirbright in England for confirmation and determination of serotype involved. The analyses of samples have shown 4 serotypes which circulated in West and Central Africa in the course of the last few years: SAT1, SAT2, O and A. Nine of the 18 countries reporting foot-and-mouth outbreaks have indicated serotypes of the virus of foot-and-mouth disease. Four of the 7 serotypes of the foot-and-mouth virus, SAT1, SAT2, O, and A, have been identified. SAT1 serotype of the foot-and-mouth disease virus has been recorded in 7 of the 9 countries, followed by SAT2 serotype in 6 countries, O serotype in 4 countries and A serotype in 2 countries.

The control measures advocated for farmers involve contingency of herds, which is unfortunately not applied. On the other hand, certain efficient farms are targeted for vaccination upon farmers' demand. There still are a few countries which carry out 'wild' vaccinations through cheap vaccine importing laboratories.

The spread of the disease is facilitated by cattle movements which disseminate the disease from one country to another, mainly from the Sahel countries, which are exporting, towards the coastal countries, which are importing. Consequently, a better control of the disease must go through regional capacity building to carry out viral isolation, determination of serotypes and molecular characterization of strains which are encountered in the countries of the region.



Foot-and-mouth disease represents a real threat to the cattle-population and it is absolutely necessary that farmer communities and veterinarians maintain efficient vigilance for a rapid detection of suspicious cases. To that end, the clinical diagnosis in the field must be improved through adequate training and regular upgrading of technical agents' skills in order to make it more efficient and early.



Mouth lesions indicative of foot-and-mouth disease (stomatitis) Photo : PACE

The laboratory diagnosis also constitutes a basic element of the disease surveillance and control system. As a matter of fact, any delay in the results of confirmation tests inevitably causes a delay in the setting up of appropriate control measures. The determination of specific serotype and its molecular characterization are essential to the production of a homologous vaccine for contingency vaccination, to establish the origin of outbreaks but also to better understand the epidemiology of the disease.

Controlling foot-and-mouth disease is perceived nowadays as a necessity in order to reduce economic losses for farmers (death of young animals, lower milk production, disrupting work for cattle used for ploughing, etc.). At the request of certain countries of West Africa, FAO has funded, under the Technical Cooperation Programme, a project aimed at building diagnostic, surveillance and control capacities as far as foot-and-mouth disease is concerned (through the introduction of diagnostic techniques and molecular characterization of viral strains) of the national agencies in charge of animal surveillance and control.

The PACE Epidemiology Unit has helped the implementation of the FAO project of diagnostic, surveillance, and control capacity building for foot-and-mouth disease in West Africa.

4.6. African Horse Sickness

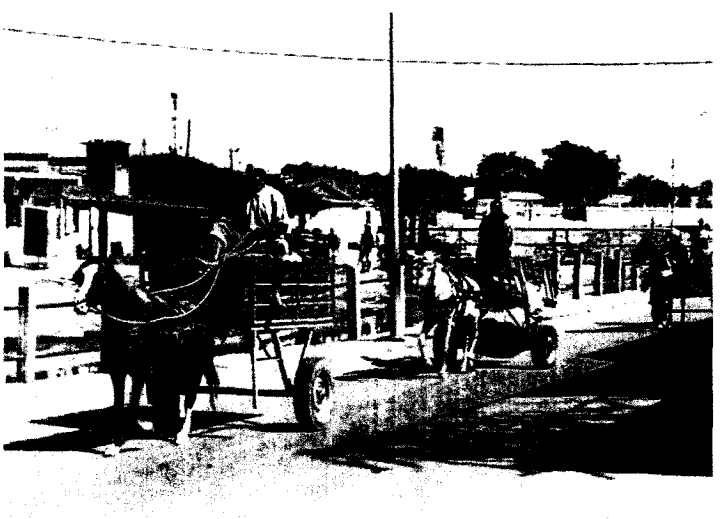
In the course of the year 2002, a total of 152 outbreaks were recorded in 8 separate countries, most of them in South Africa, Ethiopia, and Senegal. In 2003, a total of 196 African horse fever outbreaks were recorded, involving 2,101 cases and 1,431 deaths, in 7 African countries, including mainly South Africa, Ethiopia, and Senegal.

African horse sickness (AHS) or fever is transmitted by insects which affect horses and related species, such as mules, donkeys, and zebras, but it hits horses most hardly. It is caused by a virus comprising nine different strains which all cause a more or less serious illness, ranging from simple fever to sudden death. AHS can be recognized through fever and respiratory and/or circulatory problems. The disease appears suddenly and is very often deadly.

Even though AHS is encountered in several countries of Africa, it is of major importance particularly in Senegal where the major part of animal-traction and agriculture rests on horse traction, without neglecting the primary role still played by the horse in the transport of goods and persons in rural areas.

Senegal has about 500.000 horses, most of which are used for animal traction farming purposes. Such population and consequently agriculture pay a heavy price to African Horse Sickness (AHS).

Vaccination is carried throughout the territory of Senegal, but covers a very small proportion of the equine population (including the large number of donkeys, more resistant to the disease).



Animal traction and animal-powered agriculture, based on horse-traction, are of paramount importance in countries such as Senegal. Photo : Bassirou Fall.

The Livestock Directorate in Senegal has an *Office of the Horse* which handles particularly this aspect, but that office is not integrated into the SNSE surveillance system set up with PACE support. It is only recently that PACE recommended that particular attention be given to this species and this disease. The RP process coming to an end, CBPP having been eliminated from the territory, attention is gradually moving towards ASF (in the Casamance area) and African horse sickness.

The PACE-Senegal programme WP+CE n° 4 already planned for two epidemiological studies focused on these two epizootic diseases ; unfortunately, budgetary constraints imposed on PACE Senegal in the course of approval of programme estimates led to a



delay in conducting these studies. The new logframe for the extension of the PACE programme however includes in its objectives that *"Senegal has precise epidemiological information on African horse fever and adopts a medium term control strategy for this disease »*. To that end, there is a plan to *« ... carry out an epidemiological study on prevalence, incidence and spatial and temporal distribution of African horse sickness in Senegal »*.

Horses Census (Heads)	**Year** 2001	2002	2003
Benin	1,000	1,000	1,000
Burkina Faso	26,500	26,500	27,000
Cameroon	16,500	16,500	16,500
Chad	255,000	261,000	267,000
Congo	65	65	65
Cote d'Ivoire	?	?	?
DRC	?	?	?
Equat. Guinea	?	?	?
Gabon	?	?	?
Gambia	17,000	17,000	17,000
Ghana	2,700	2,700	3,000
Guinea	2,700	2,700	2,700
Guinea Bissau	1,850	1,850	1,850
Mali	165,000	170,000	170,000
Mauritania	20,130	20,000	20,000
Niger	105,000	105,000	106,000
Nigeria	205,000	205,000	205,000
Senegal	492,000	496,095	500,225
Togo	1,600	1,600	1,600

• Table 32. Horse numbers in West and Central Africa (source : FAOSTAT)

4.7. Newcastle Disease

Poultry production systems in Africa are mainly based on free-ranging indigenous chickens found in nearly all villages and households in rural as well as urban areas in Africa. Such systems are characterized by a very low production yield per animal. Nevertheless, over 70% of poultry products and 20% of animal protein consumption in most African countries come from this sector. As a result, an increased rural poultry production could have a positive impact on food security of households (FAO, 2004)

The main constraint to rural poultry production in most developing countries is Newcastle's Disease (ND) (Alexander 1991, Spradbrow 1988). Viral strains of ND capable of causing 100% death unprotected bands circulate in these countries. ND outbreaks are unpredictable if vaccination is not practiced. Thus, farmers soon give up on the idea of really paying attention to the management and well-being of their poultries.



Information poster on Newcastle disease, developed by PACE Nigeria.

Newcastle Disease is on the A list of the OIE which recorded the greatest number of cases of deaths in Africa in 2002 and 2003.

In 2002, 489 outbreaks were reported in 25 African countries. Togo was the leader among those countries and reported the largest number of outbreaks of this disease (128). Over one quarter of cases (27%) and over half the number of deaths (60%) caused by these outbreaks in the course of the year 2003 in Africa were attributed to Newcastle disease. The disease has hit the regions of West, Southern, and East Africa (refer to map 14 below). The 9 countries of West Africa which were hit by ND reported 389 outbreaks (64%). Based on IBAR reporting, Ghana and Togo were the most severely hit by ND in 2003, with respectively 139 (23% of all outbreaks of ND) and 130 outbreaks (i.e., 21%).

Vaccination is the only efficient means of controlling ND. However, vaccines which are currently used benefit mainly industrial poultry farmers whose chickens are raised in large groups, of identical age and in a limited area. Manufacturers produce temperature-sensitive vaccines in multiple dose bottles, often containing 1000 or 2500 doses which must be kept refrigerated ("*cold chain*"). Village poultry is raised in open air in multiple groups, of variable ages and the large bottles of multiple dose vaccines are not appropriate. In addition, it is difficult to maintain the cold chain in village conditions and the commercial vaccines are very expensive. It is therefore very important to support farmer groups which get together to vaccinate simultaneously all the poultry of their members.



Newcastle Disease (ND) is a viral disease which affects a great variety of birds, both those in the wild and those of the farmyard. It concems much of the agricultural community at world scale given the fact that the virus is extremely contagious and that it can cause serious disease in poultry. The strains which lead to light or moderate forms of the disease may be encountered in poultry and in pigeons.

Another major challenge is to incite small farmers to save funds for their poultries, whose value they often consider as too small to justify the cost of vaccines and vaccination. In this sensitisation approach, women may play a crucial role (refer to chapter 10.3)

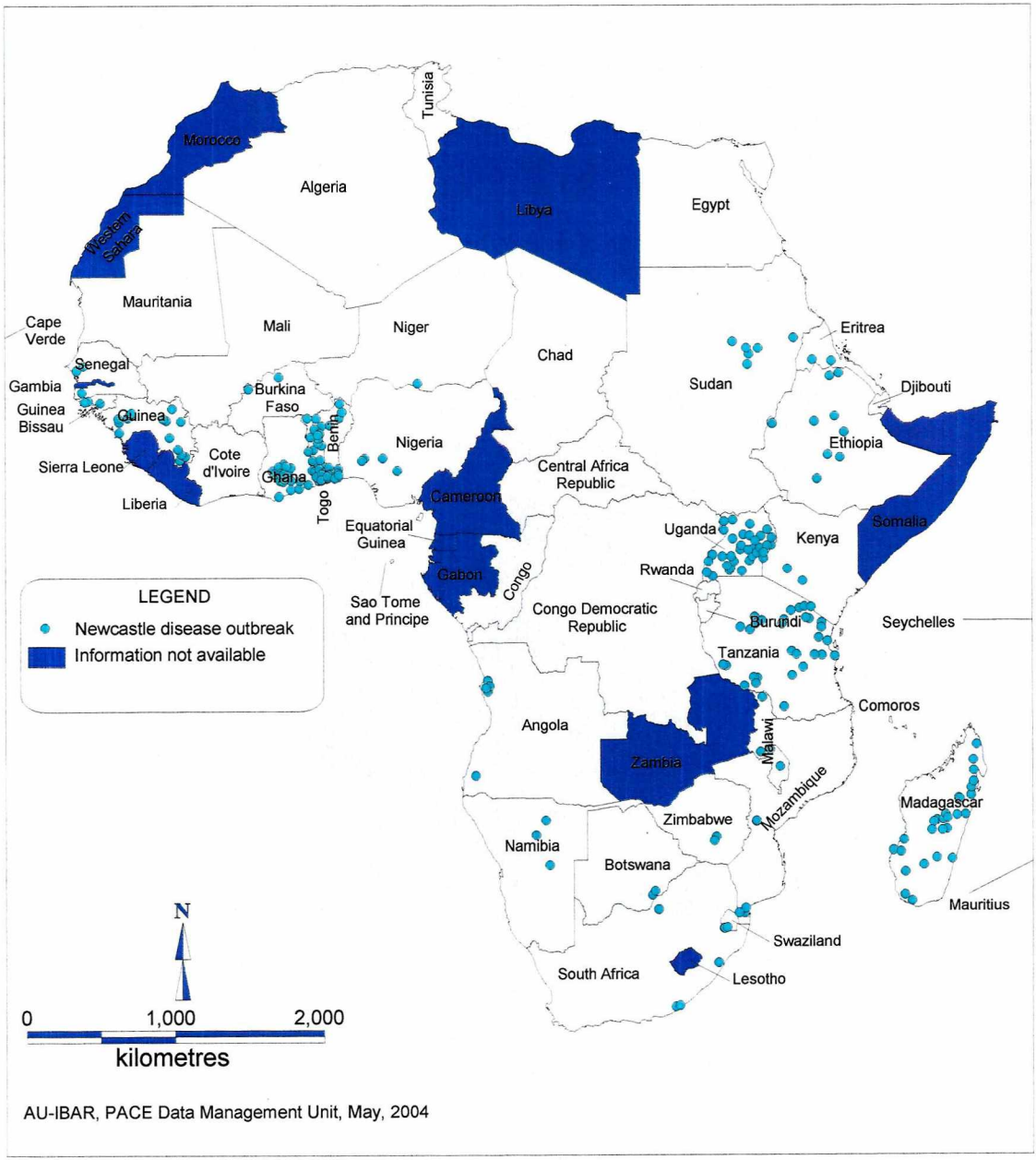


Vaccination of village poultry against Newcastle Disease using inactivated and thermo-stable vaccines. Photo : P. Bastiaensen

Although Newcastle Disease is recognized as a priority disease in a certain number of surveillance systems, it remains that in practice, this disease is not the object of any passive, nor active surveillance. Such attitude might be related to the fact that there already exist projects or NGOs which particularly handle poultry health/prophylaxis, but it is also sometimes due to lack of knowledge of the sector, veterinary services being traditionally oriented towards cattle (since the colonial period).

Likewise, the cattle sector is often better organized and formalized and as a results influences animal health policies and control priorities better than the (family) poultry sector, which is relatively new and informal.

Except for a few isolated cases, as in Guinea Bissau and Congo, the PACE programme does not intervene or intervenes very little in the poultry sector. To this issue is also added the fact that vaccinations in the family poultry sector can be achieved only by a large number of vaccinators, hence the mobilization in some countries of village auxiliaries or *community based animal health workers* (CAHW). The use of these agents and their possible roles is not established or determined in all PACE member states, which sometimes represents a constraint to the organization of vaccination campaigns.



- Map 14 : Newcastle disease outbreaks reported in 2003 (2004 report)
  Source : Animal Health Year book AU-IBAR (2004).

Chapter
5

Initiatives taken in order to assist in the reorganization of veterinary services according to OIE standards.

5.1. Practice of the veterinary profession



The OIE and the notion of quality assurance of veterinary services

For about fifteen years, the OIE has reflected on the issue of reorganizing services and has disseminated, in its international animal health code, a sum of data destined to facilitate such task. The recommendations produced by the OIE are primarily un model and a guide for civil servants in charge of rebuilding services. Next to those, other complementary productions exist, such as those produced by IBAR (*"Guidelines for the reorganization of veterinary services by African states"*). Albeit the OIE documents do not take any stand on the mode of organization chosen by countries to structure their veterinary services, provided they meet the technical recommendations indispensable to a quality certification system, the guidelines produced by IBAR clearly promote the introduction of a private sector in the delivery of animal health services, while inciting countries to design the new organization of their services in a way to observe OIE standards. But these countries encounter specific problems represented by extensive livestock systems penalized by the remoteness of administrative centres; lack of farmer information about the real stakes of animal health; a weak veterinary demographic situation aggravated by lack of fit in assignments; lack of regular re-training of animal health professionals, sometimes leading to a mistrust by farmers towards them; chronic shortage of operating means of government teams, leading to inadequate veterinary presence in the field and in terms of direct contact with animals. This situation has been particularly worsened in the course of the last ten years when there was a chronic deficit of budgets allocated to livestock and particularly to animal health. The recent policies of "privatisation", which are meant to remedy the inability by State services to go to the field by entrusting to private veterinarians the responsibility of providing animal health services, are coming against economic viability problems of installations which promote the appearance of "*urban veterinary pharmacists*" at the expense of true field practitioners. However, the process is still underway and remains full of promise even though, in the course of this transitional phase, the level of services to farmers has often gone down because of a demographic dis-synchronism between the arrival of private veterinarians in the field and the withdrawal of public service.

For all these reasons, it is still difficult for many countries to observe the five basic principles of the international animal health code assuring the quality of veterinary services activities : **professional judgement, independence, impartiality, integrity**, and **objectivity.**





In these conditions, everything should be done in order to improve the conditions of utility of private veterinarians, attract them towards animals and thus develop their comparative advantage over public service personnel. The adoption of the concept of health accreditation mandate or sometimes even contracting services between private veterinarians and the administration for tasks ranging from epidemiological activities of livestock to training farmers helps set up a private health network but having official recognition, hence a network of veterinary authorities, as per the international animal health code. Recourse to livestock auxiliaries, under an efficient technical veterinary supervision, makes it possible centrally to concentrate the weak economic potentials of a large number of farmers in order to secure the economic viability of a veterinary installation. But these solutions are too often opposed administrative dogmas such as refusal by the administration to recognize a professional ethic by private veterinarians in carrying out official tasks or a real inhibition o the acceptance by the state of any payment of services ordered from private veterinarians. The creation of supervision structures of the profession (Veterinary Associations or Councils), independent from the State but invested with official regulatory and disciplinary functions, is necessary in order to address these useless administrative archaisms. The role and status of all para-veterinarians still remains to be specified, notably concerning auxiliaries, called CAHWS (*community based animal health workers*). The activities entrusted to them, under the cover of training which remains very superficial, should be carefully regulated. The "veterinary supervision" often brandished in the description of the legal framework of their intervention requires careful definition. Henceforth, it becomes absolutely necessary to define a regulatory status.
The recommendations issued by the OIE have been capital in the acceptance by countries of the very concept of introducing a private sector in animal health, to the extent that the State was not in a position to maintain public services having the least chance of meeting the quality criteria announced. From simple recommendations, they became international norms, and must more than ever be highlighted, here in order to direct the policies of refocusing public service activities in order to assert the role of veterinary services in veterinary public health, and there in order to regulate the deployment of veterinarians and para-veterinarians at the field level by bringing as much as possible the certifying veterinarian closer to the object of certification itself, i.e., the animal. Their reading by the PED must therefore remain clear and determine re-organizational directions and legislative re-adaptations underway.

Abstract from a policy document prepared byréparé par Dr. Y. Lebrun (PACE – CSU – VPLU), novembre 2002.

The practice of the veterinary profession has undergone significant evolution in the course of the past decades, mainly because of privatization of veterinary services to farmers. Consecutive structural adjustment programme have forced Governments to withdraw from all interventionist and productive activities for a private sector which, in many cases, did not even exist (yet). Since then, the State is supposed to limit itself to its formal and control activities by establishing a framework which is appropriate and motivating for animal production (in our specific case).

A vacant slot being always filled, particularly if it is a legal vacuum, this privatization has not always awaited a favorable legislative framework to be in place ; many countries and law makers have rather been faced with a 'fait-accompli' and had to adapt their policies and legislations to new contexts after the facts. In a large number of countries, the process of privatisation escaped to government control and the attributions of former government veterinary services were transferred, one way or another, to a large number of stakeholders, both in the formal and informal sectors. In certain cases, the government has even encouraged privatization on a somewhat volunteer basis and given little thought to the sudden collapse of government veterinary services and the inability of the private veterinary sector to take over things,



mainly because of the reduced number of veterinary surgeons. Thus, in several countries, animal health is ensured by a large number of actors : veterinary surgeons, zootechnical engineers, livestock technicians, veterinary agents, vaccinators and auxiliaries or *community-based animal health workers* (CAHW). It goes without saying that the great interest that everyone has for the exercise of veterinary profession is evidently related to the fact that this activity, and mainly the sale of veterinary drugs, represents a lucrative business with good growth prospects.

The side-effect which results from it is that some governments have adopted a new legislation on the exercise of veterinary medicine which is not always in line with the quality standards advocated by the OIE.



Private veterinary clinic in south-eastern Senegal.
Photo : P. Bastiaensen.

This is the case in Mali where a law was approved in May 2001 stipulating that '*applied sciences engineers not meeting degree requirements defined under articles 2, 11, and 34 of the present law can access the 'Veterinary Council'*. This phrase entitles implicitly zoo-technical engineers to settle in the private sector as veterinarians or veterinary pharmacists. There are currently in this country 115 listed sanitary mandate holders, including only 20 veterinary surgeons, graduated from recognized universities. This also accounts for the unlikely number of 450 private veterinarians listed in Mali, which is a largely higher number than is encountered in neighbouring states.

In other countries, the approval of a new legislation has been delayed for many years for the same reasons. In Niger, the bill on the subject had to be revised before being submitted to the Cabinet. The same situation had prevailed in Mauritania until adoption on July 13, 2001 of a new livestock code. In Burkina Faso, a bill had practically passed the stage of approval by government when representatives of the professional body of animal production engineers showed interest in the terms of this law. Since then, the bill has remained blocked. In Senegal, a framework document on the exercise of the veterinary profession has been circulating within competent services and institutions for almost 3 years and has not succeeded in meeting the conditions for reaching a consensus agreement between the body of veterinary doctors and zoo-technicians.

It seems that this conflict of competence between the zootechnicians and veterinarians is experienced further in those Sahel countries with a strong extensive livestock potential, therefore *a fortiori*, a strong lucrative potential for animal health and veterinary services. The coastal countries (Togo, Benin, Ghana) have been rather spared. The only ill common to the entire group of these countries being the practice of "*moonlight work*', i.e., private (therefore illegal) exercise of animal health carried out by an administrative worker after normal working hours, but sometimes during service





hours. This type of activity renders obsolete any attempt at helping with installation of private veterinarians, attempts commonly deemed still too timid or not fully applied.

Country	Bill of law developed by veterinary services and PACE	Bill of law approved by government	Bill of law passed parliament and was published
Benin	●		
Burkina Faso	●		
Cameroon			
CAR	●		
Chad			
Congo			
Cote d'Ivoire	●	●	●
DRC			
Equatorial Guinea			
Gabon	●		
Gambia			
Ghana	●	●	●
Guinea	●	●	●
Guinea Bissau	●	●	
Mali	●	●	●
Mauritania	●	●	●
Niger	●		
Nigeria	●		
Senegal	●		
Togo	●		

- Table 33. Advances made in modernising legislation on the veterinary profession in PACE countries.

Apart from the attributions of veterinarians as opposed to zootechnicians, there are numerous other domains which must be regulated on legislative grounds. Those involve the specific attributions of technicians (average level of training) and other stakeholders (low level of training), such as CAHW and farmers.

However, there are countries where the prerogatives of each of the two professional categories (zoo-technicians and veterinarians) are well differentiated from one another and are therefore not put into question. The bills submitted for National Parliament approval in Guinea Bissau, Guinea, Côte d'Ivoire and in Ghana, Benin, and Togo in a near future, are entirely compatible with OIE standards. This is true as well for the Livestock Code which has just been approved in Mauritania.

The conclusion to be drawn from 5 years of implementation of this PACE component, both at the regional and national level, is therefore rather mitigated. On the one hand, there is little doubt that the PACE programme has done its utmost for the modernization of veterinary legislation to be achieved in accordance with the OIE standards. On the other hand, it must also be recognized that the approval of a bill is a sovereign act by a country which is entitled to take legislative measures it deems sound and adapted to the country's conditions and in order to address farmers' needs. Neither the PACE programme (be it at the regional or national level), nor even the veterinary services have the authority to impose bills to their governments. This conclusion has brought several countries, as well as the UCP, to address the issue of privatisation with more caution. It is recognized nowadays that the PACE programme will not be able, on its own, to reach the objective of modernizing veterinary legislation according to its own intentions and visions (shared by the OIE). Such a political will remains the main factor of success. The PACE programmes are henceforth invited to establish a kind of consultation framework between various socio-professional groups, without however imposing itself.



Private veterinary branch office in Koutiala (Mali). Photo : C. Squarzoni, 2004.

Just as for the logframe adopted at the regional level, the vast majority of countries have not withheld objective 2, regarding the privatisation of the veterinary sector, for the logframe for the extension phase. One also needs to take into account the fact that the remaining financial means of the PACE programme – two years away from its completion – do not make it possible to develop genuine credit programmes which would provide a favourable environment to the private exercise of veterinary medicine.





Objective 2. Improving access to and distribution of veterinary services and drugs..

The achievement of this objective in most countries goes through supporting the privatization of veterinary services, with even credit programmes (or guarantee funds) in some cases, in support of veterinary surgeons wishing to establish themselves in the private sector. In certain countries, however, the context is such that a privatisation is not possible, realistic, or even desirable. In Guinea Bissau, as in Gambia, the socio-economic conditions are such that the most efficient approach of improving the distribution of veterinary products and services down to the farmer, remains the network of civil service veterinary agents. This said, privatisation is not (as far as the PACE programme is concerned) an end in itself, but rather a mechanism helping achieve (often but not always) an improvement of animal health services at farmers' level.

5.2. Organisation of veterinary services and sanitary police

5.2.1. Organisation of veterinary services

Decades of structural adjustment programmes and public service reform, very often under World Bank leadership, have led a large number of countries to drop the classical organizational chart of veterinary services. With a concern for saving on human and logistical resources, new organizational charts have been instituted, based on the belief (in the agricultural sector) that everyone must be able to handle 'goats as well as beans'. Thus the extension services of different sectors have often been merged at the expense of the specific character of training provided. They is also true for agricultural research, and finally, for technical services, such as veterinary services. Countries such as Togo, Benin, Mali, and Mauritania are typical cases of such reorganization. In Mali, veterinary services have even ceased to exist (in the nomenclature) and their missions were integrated in two different departements (DGRC and DNAMR), handling both plant health and animal health protection (DPRPAV) and thus loosing the vertical command chain with decentralized services in regions, districts, and communities. In numerous cases, regional officials, in charge of animal health (*inter alia*) did not display any minimal skills in order to take sound technical decisions, as they were engineers, in agronomy, civil engineering, or forestry.

PACE's input has consisted in sensitizing governments on the need to review the organization of their veterinary services in the spirit of what the OIE deems to be a 'model' organization of a country's veterinary services (refer to box below). The principles advocated by the OIE and adopted also by PACE rest on the establishment of a vertical command chain in line with the epidemiological surveillance systems set up. On the other hand, the principle of credibility of national veterinary services toward veterinary services abroad is a key argument for insisting on employment (or resorting to) veterinary degree holders to take care of animal health in the country, be it in the public or private sectors.





OIE : Evaluation of veterinary services

Chapter 1.3.3. of the OIE Terrestrial Animal Health Code 2003

The quality of the Veterinary Services depends on a set of factors, which include fundamental principles of an ethical, organisational and technical nature. The Veterinary Services shall conform to these fundamental principles, regardless of the political, economic or social situation of their country. Compliance with these fundamental principles by the Veterinary Services of a Member Country is important to the establishment and maintenance of confidence in its international veterinary certificates by the Veterinary Services of other Member Countries. The same fundamental principles should apply in countries where the responsibility for establishing or applying certain animal health measures, or issuing some international veterinary certificates is exercised by an organisation other than the Veterinary Services, or by an authority or agency on behalf of the Veterinary Services. In all cases, the Veterinary Services retain ultimate responsibility for the application of these principles.

The Veterinary Services shall comply with the following principles to ensure the quality of their activities:

1. Professional judgement : The personnel of Veterinary Services should have the relevant qualifications, scientific expertise and experience to give them the competence to make sound professional judgements.

2. Independence : Care should be taken to ensure that Veterinary Services' personnel are free from any commercial, financial, hierarchical, political or other pressures which might affect their judgement or decisions.

3. Impartiality : The Veterinary Services should be impartial. In particular, all the parties affected by their activities have a right to expect their services to be delivered under reasonable and non-discriminatory conditions.

4. Integrity :The Veterinary Services should guarantee that the work of each of their personnel is of a consistently high level of integrity. Any fraud, corruption or falsification should be identified and corrected.

5. Objectivity : The Veterinary Services should at all times act in an objective, transparent and non-discriminatory manner.

6. General organisation : The Veterinary Services must be able to demonstrate by means of appropriate legislation, sufficient financial resources and effective organisation that they are in a position to have control of the establishment and application of animal health measures, and of international veterinary certification activities. (...) A similar demonstration should be made by Veterinary Services when they are in charge of veterinary public health activities.

The Veterinary Services should have at their disposal effective systems for animal disease surveillance and for notification of disease problems wherever they occur, in accordance with the provisions of this Terrestrial Code. Adequate coverage of animal populations should also be demonstrated. They should at all times endeavour to improve their performance in terms of animal health information systems and animal disease control. The Veterinary Services should define and document the responsibilities and structure of the organisation (in particular the chain of command) in charge of issuing international veterinary certificates. (...)





7. Quality policy : The Veterinary Services should define and document their policy and objectives for, and commitment to, quality, and should ensure that this policy is understood, implemented and maintained at all levels in the organisation. Where conditions allow, they may implement a quality system corresponding to their areas of activity and appropriate for the type, range and volume of work that they have to perform. The guidelines for the quality and evaluation of Veterinary Services propose a suitable reference system, which should be used if a Member Country choose to adopt a quality system.
8. Procedures and standards : The Veterinary Services should develop and document appropriate procedures and standards for all providers of relevant activities and associated facilities. (...) Inasmuch as the OIE has adopted standards on these matters, the Veterinary Services should comply with these standards when applying animal health measures and when issuing international veterinary certificates.

9. Information, complaints and appeals : The Veterinary Administration should undertake to reply to legitimate requests from Veterinary Administrations of other Member Countries or any other authority, in particular ensuring that any requests for information, complaints or appeals that they may present are dealt with in a timely manner. (...)

10. Documentation : The Veterinary Services should have at their disposal a reliable and up to date documentation system suited to their activities.

11. Self-evaluation : The Veterinary Services should undertake periodical self-evaluation especially by documenting achievements against goals, and demonstrating the efficiency of their organisational components and resource adequacy. (...)

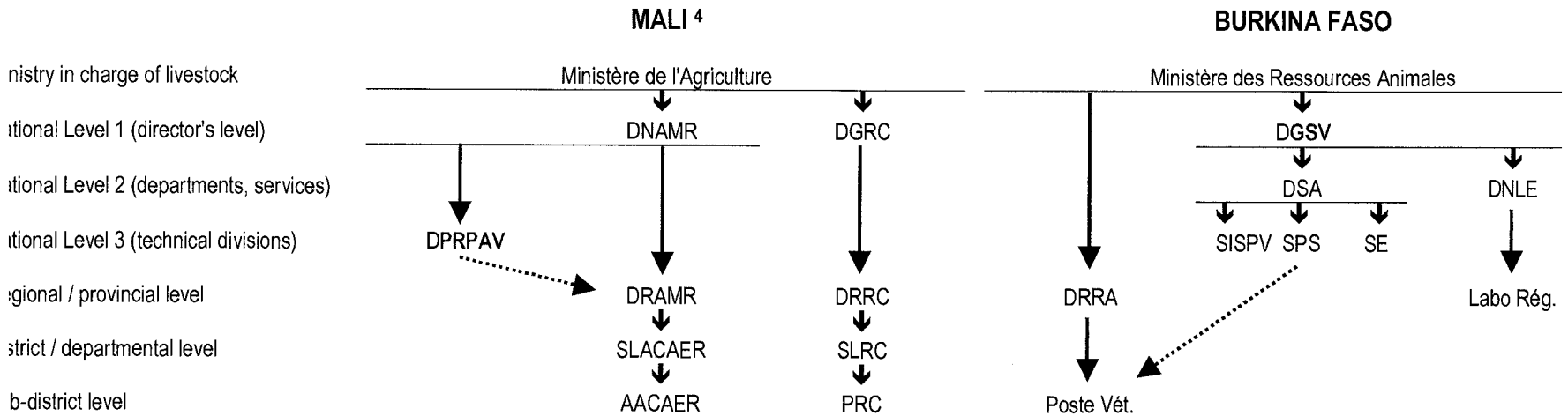
12. Communication : Veterinary Services should have effective internal and external systems of communication covering administrative and technical staff and parties affected by their activities.

13. Human and financial resources : Responsible authorities should ensure that adequate resources are made available to implement effectively the above activities.

Many countries have already begun to review the previous administrative set-up. Countries such as Senegal, Mali, Mauritania, Niger, Togo, Benin, Guinea, Gabon, Congo (where an Animal Health Department will be part of the 5 departments of the General Department of Livestock Services) and Burkina Faso currently have at least one Department of Livestock Services, or even a full-fledged Ministry in charge of livestock (Burkina Faso, Mali, Niger, Senegal, and CAR).

Moreover, the departments mentioned above have control and direct authority over the lower administrative levels, i.e., regional delegations and veterinary posts in communities, districts, provinces or departments. The organization of veterinary services is reviewed briefly on the following pages (for a selection of countries only). The simplified organizational charts clearly demonstrate the command chain between veterinary services at the national and local level; or otherwise, the diagram demonstrates why veterinary services have difficulties achieving this chain of command.

The country's veterinary authority (whatever its denomination) is indicated in **red**.



DNAMR	Dir. Nat. d'Appui au Monde Rural	DGPA	Dir. Gén. Production Animale
DGRC	Dir. Gén. Réglementation & Contrôle	DGSV	Dir. Gén. Services Vétérinaires
DPRPAV	Div. Prévention Risques Protection Animaux & Végétaux	DSA	Dir. Santé Animale
		DNLE	Dir. Nat. Laboratoire Elevage
SLACAER	Service Local d'Appui Conseil de l'Aménagement et de l'Equip. Rural	DRRA	Dir. Rég. Ressources Animales
		SISPV	Service Inspection et Santé Publique Vétérinaire
AACAER	Antenne de l'Appui Conseil de l'Aménagement et de l'Equipement	SPS	Service Protection Sanitaire
DRRC	Dir. Rég. Réglementation & Contrôle	SE	Service Epidémiologie
SLRC	Service Local Réglementation & Contrôle		
PRC	Poste Réglementation & Contrôle		

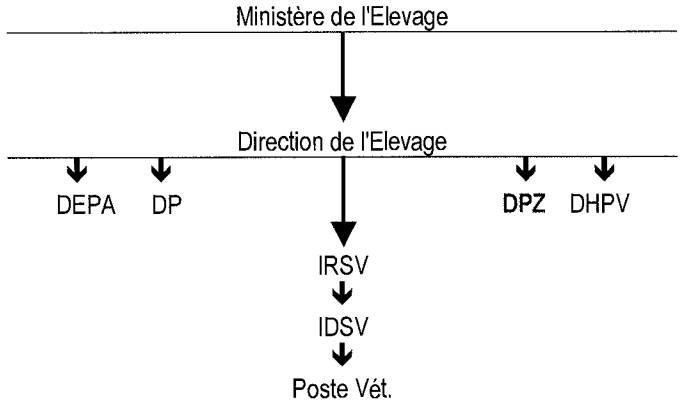
→ *Hierarchical link*

⇢ *Operational link*

[4] A Ministry of Animal Husbandry and Fisheries has been created since mid-2004 and further institutional reforms are ongoing.

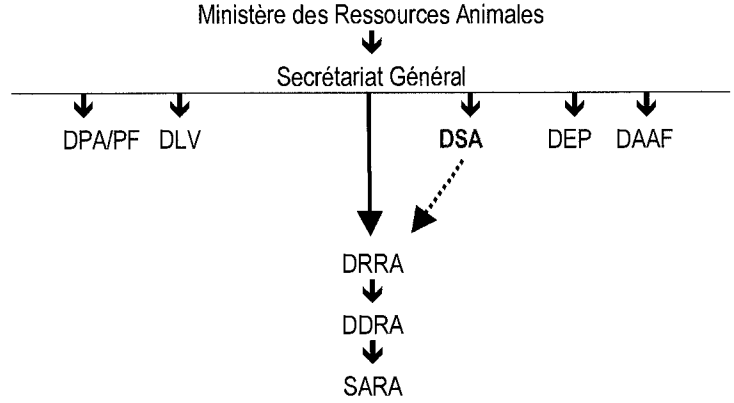
SENEGAL

istry in charge of livestock
onal Level 1
ional Level 2 (departments, services)
ional Level 3 (technical divisions)
jional / provincial level
rict / departmental level
-district level



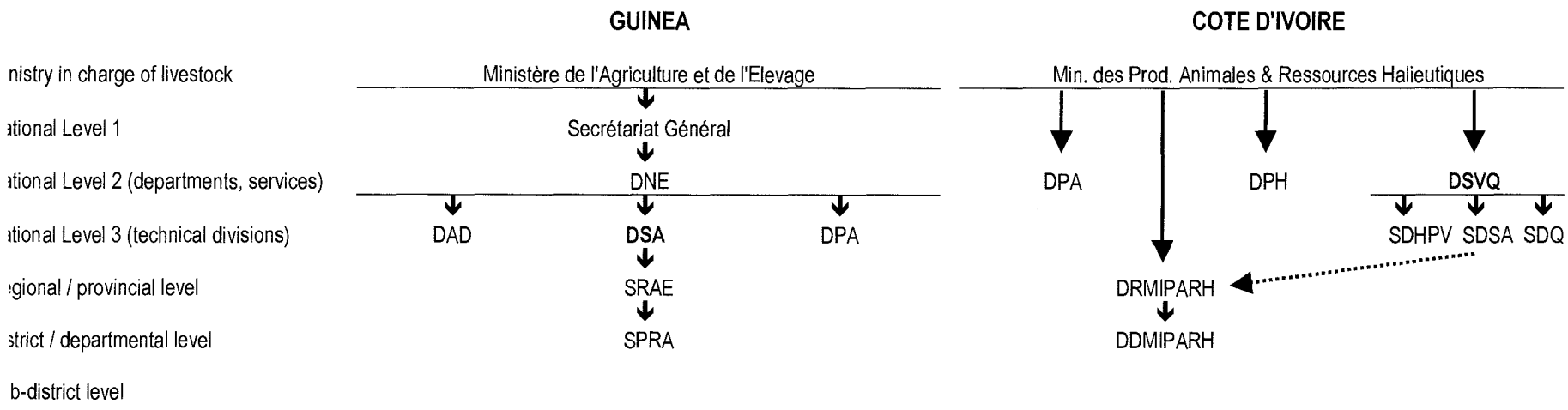
DEPA	Division Economie Prod. Anim.
DP	Division Pastorale
DPZ	Division Protection Zoo-sanitaire
DHPV	Div. Hygiene Publique Vét.
IRSV	Inspection Rég. Services Vét.
IDSV	Inspection Dép. Services Vét.

NIGER



DPA/PF	Direction Production Animale / Past
DLV	Direction Laboratoires Vétérinaires
DSA	Direction Santé Animale
DEP	Direction Etudes et Planification
DAAF	Direction Affaires Admin. & Fin.
DRRA	Direction Rég. Ressources Animales
DDRA	Direction Dép. Ressources Animales
SARA	Service Arr. Ressources Anim.





DNE	Direction Nationale de l'Elevage
DSA	Division Santé Animale
DPA	Division Productions Animales
DAD	Division Appui au Développement
SRAE	Section Rég. de l'Animateur de l'Elevage
SPRA	Section (Promotion) Préfectorale des Ressources Animales

DRMIPARH	Direction Régionale du Ministère de la Production Animale et des Ressources Halieutiques
DDMIPARH	Direction Départementale MIPARH
DSVQ	Dir. des Services Vét. et de la Qualité
DPA	Direction des Productions Animales
DPH	Direction des Productions Halieutiques
SDSA	Sous-Direction de la Santé Animale
SDHPV	Sous-Direction de l'Hygiène Publique
SDQ	Sous-Direction de la Qualité



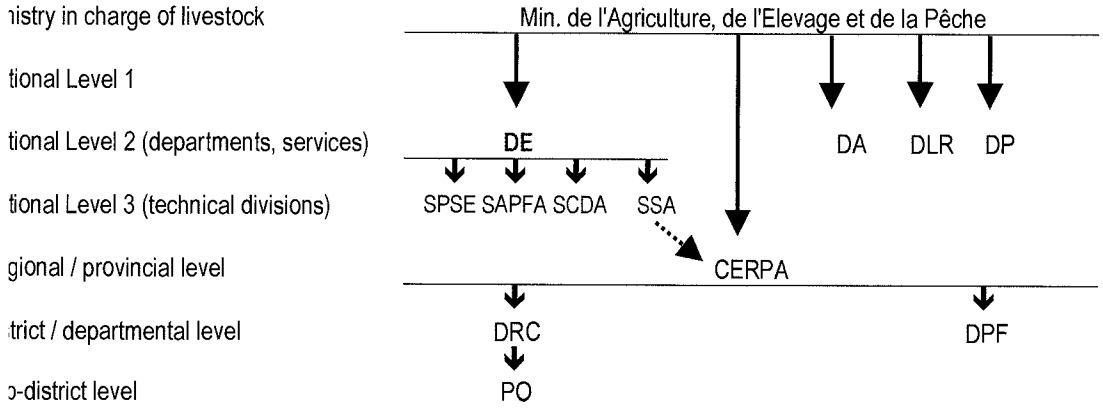
	GHANA	TOGO
istry in charge of livestock	Ministry of Agriculture and Food	Min. de l'Agriculture, de l'Elevage et de la Pêche
ional Level 1		Secrétariat Général
ional Level 2 (departments, services)	DVS	DEP ICAT
ional Level 3 (technical divisions)		DPE **DSA** DLHASPV
gional / provincial level	RDA	DRAEP (DCVR)
trict / departmental level	DVO	DPAEP (DCVP)
o-district level		Poste Vét. (PO)

DVS	Directorate of Veterinary Services
RDA	Reg. Directorate of Agriculture
DVO	District Veterinary Officer

DEP	Direction de l'Elevage et de la Pêche
ICAT	Institut de Conseil – Appui Technique
DSA	Division Santé Animale
DPE	Division Promotion de l'Elevage
DLHASPV	Division de la Législation et de l'Hygiène Alimentaire et de la Santé Publique Vét.
DRAEP	Direction Régionale de l'Agriculture, de l'Elevage et de la Pêche
DPAEP	Direction Préfectorale de l'Agriculture, de l'Elevage et de la Pêche
DCVR	Division de Contrôle Vét. Régionale
DCVP	Division de Contrôle Vét. Préfectorale
PO	Poste d'Observation

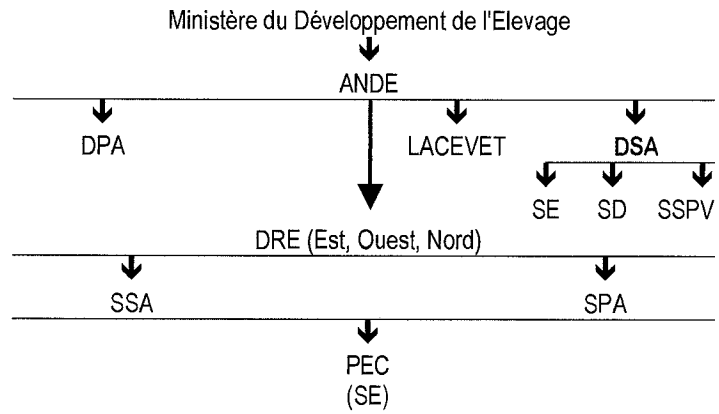


BENIN



DE	Direction de l'Elevage
SSA	Service de la Santé Animale
SPSE	Service Programme Suivi Evaluation
SAPFA	Serv. d'Appui à la Promot. des filières anim.
SCDA	Serv. de Contrôle des denrées anim. et aliments de bétail
DLR	Direction Législation Rurale
DGR	Direction Génie Rural
DA	Direction de l'agriculture
CERPA	Centre Régional pour la Promotion Agricole
DRC	Direction Réglementation et Contrôle
DPF	Direction Promotion des Filières
PO	Poste d'Observation

CENTRAL AFRICAN REPUBLIC



ANDE	Agence Nationale de Dév. de l'Elevage
DSA	Direction Santé Animale
DPA	Direction Production Animale
DRE	Direction Régionale de l'Elevage
SD	Service de Diagnostic
SE	Service Epidémio-surveillance
SSPV	Service de Santé Publique Vétérinaire
SSA	Service Santé Animale
SPA	Service Production Animale
PEC	Poste d'Elevage Central
SE	Secteur Elevage
LACEVET	Laboratoire Central Vétérinaire



istry in charge of livestock	GABON	CONGO
	Min. de l'Agriculture, de l'Elevage et du Développement Rural	Ministère de l'Agriculture, de l'Elevage, de la Pêche et de la Promotion de la Femme
ional Level 1	DGAEDR	DGAE
ional Level 2 (departments, services)	DEIA	DSV, DIHA, DPA
ional Level 3 (technical divisions)	SV (SA), SZ (PA), SIA	SIVZ, SDS, SDP
gional / provincial level	DRAEDR	DREAP
trict / departmental level	SE	SDV, SDSA, SDPA
o-district level		

DGAEDR	Direction Gén. de l'Agriculture, de l'Elevage et du Dév. Rural	DGAE	Direction Générale de l'Agriculture et de l'Elevage
DEIA	Dir. de l'Elevage et des Industries Animales	DSV	Direction des Services Vétérinaires
SV	Service Vétérinaire (Santé Animale)	DIHA	Direction d'Inspection et d'Hygiène Alimentaire
SZ	Service Zootechnique (Prod. Anim.)	DPA	Direction des Productions Animales
SIA	Service Industrie Animale	SDP	Service de Production
DRAEDR	Direction Régionale de l'Agriculture, de l'Elevage et du Dév. Rural	SDS	Service de Santé
		SIVZ	Serv. d'Inspection Vét. et Zoosanitaire
SE	Secteur d'Elevage	SDV	Service de Vulgarisation
		SDSA	Service de Santé Animale
		SDPA	Service de Production Animale

5.2.2. Sanitary police and control of epizootics

An aspect which has received too little attention so far is the modernization of legislation regarding the management of animal health on the national territory (enzootic diseases) and at borders (epizootic diseases). Numerous countries still do not have up-to-date legislation taking into account the notions of 'surveillance system, 'risk analysis', 'contingency planning' or even the hierarchical ranking of diseases according to lists A, B, and C of the OIE, etc..

In addition, the growth of commercial exchange will make it mandatory for countries to harmonize their legislation in the field. Once again, the OIE imposes itself as an international standardisation agency.



The municipal abattoir in Bissau (Guinea Bissau). Photo : P. Bastiaensen, 2003

5.3. Strengthening of the private veterinary sector

From the standpoint of the PACE programme, strengthening of the veterinary sector is not a end in itself but rather a means for improving the accessibility of veterinary services and products to farmers. In most states, one of the efficient means of reaching this objective is to make it sustainable and to take advantage of existing networks of private veterinary services (veterinary surgeons but also veterinary agents and CAHW). The PARC programme has been at the origin of a vast support programme in the form guarantee funds which facilitated access by private veterinarians to bank credit ; the goal being to establish a short and long term confidence relationship between the veterinary profession and the banking sector. Although the results obtained have been very variable, the programme has nevertheless been recognized as a success and it has certainly contributed to the deployment of private veterinary services in rural areas.

In the design of the PACE programme, it was decided not to pursue this system. This does not exclude that in certain countries, guarantee funds mobilized under the PARC programme are still in place (operational or dormant) and that other countries (such as Benin, Guinea Bissau, and Togo) have nevertheless been able to introduce the creation of a guarantee fund in their global plan.



Animal well-being and animal transport standards remain an area of little legislative attention. Photo : C. Squarzoni, 2004.

In Benin, the initiatives developed for the creation of a guarantee fund (of 36 million FCFA) with the banks have not been successful because of the so-said small amount. In exchange, it was proposed that a credit fund be instituted that will be managed by the country's Veterinary Council, but this option was hampered by the principle that the EDF funds could not be used as credit funds.



In Guinea Bissau, an amount of 13 million FCFA (about 20,000 EUROS) to be used as guarantee fund has been placed in the only bank of the country, the *Banco da Africa Ocidental*, for over a year. But the bank remained hesitant to embark in funding a sector of activity which it considers a high risk sector. In Togo, several work sessions involving private veterinary representatives, those of the Delegation of the European Commission (ECD) and PACE with the authorities of the Ministry of Finance have made it possible to find an appropriate solution to the placement and management of the guarantee funds of the bank (BTCI). The modalities for the management of this fund have been the object of a draft convention submitted to the DCE for approval.

Country	Veterinarians in Public services	Veterinarians in Private services	Total	% priv.vets
Guinea-Bissau	23	0	23	0.00
Benin	64	50	114	43.86
Guinea	200	43	243	21.50
Côte d'Ivoire	119	31	150	20.66
Ghana	139	58	197	29.44
Gabon	21	1	22	4,54
CAR	28	0	28	0
Congo	100	10	110	9.00
Togo	30	26	56	46.43
Mauritania	35	18	53	33.96
Senegal	56	93	149	62.42
Burkina Faso	70	54	124	43.55
Mali	117	69 (221) [5]	186 (338)	37.10
Ghana	153	31	184	16.85
Niger	162	17	179	9.50
Nigeria	2738	1467	4205	34.89

- Table 34. The number of veterinarians in the public sector and those active as private veterinarians in West and Central Africa – in 2003 (source : IBAR, 2004 and PACE Regional Coordination, 2004).

It can be considered that PACE's support for the development of the private veterinary sector unfolded along two axes.

- support to modernization of legislation on the veterinary profession in order to supply to the liberal exercise a legal and regulatory foundation,
- insertion of private veterinarians into epidemiological surveillance activities through a broadening of the sanitary mandate system. The results are still timid as only five countries (Benin, Côte d'Ivoire, Guinea, Senegal, and Chad) have embarked so far on this path.

It should be noted that Mali has funded the training of veterinarians using PACE resources. As a matter of fact, five zootechnical engineers have had a scholarship to complete their training at the EISMV of Dakar and graduate as doctors of vet. med.

[5] The figure in brackets represents the number of persons, exercising the veterinary profession, that is : veterinary surgeons (69) and zootechnicians (152). Source : Conseil Supérieur de l'Ordre National de la Profession Vétérinaire au Mali (CSO/02/0281/MD/PT – 2002).





The presence of private veterinarians is variable in WCA states:

14 countries have a relatively important number of private veterinarians and have more or less complete legislation enabling the private exercise of veterinary medicine with or without the enforcement of sanitary mandates, or even surveillance: Benin, Burkina Faso, Cameroon , Côte d'Ivoire, Ghana, Guinea, Mali, Mauritania, Niger, Nigeria, DRC, Senegal, Chad, and Togo.

6 countries have a very limited number of private veterinarians, if any, often limited to urban clients and for whom if an institutional framework exists for the authorization to exercise liberally on paper, such framework is not being translated into concrete facts : Congo, Gabon, Gambia, Guinea Bissau, Equatorial Guinea, and CAR.

In West and Central Africa, the private veterinary sector involves interventions by importers – wholesalers of veterinary products and inputs, veterinary practitioners (rural, as well as urban). With the installation of the sanitary mandate system, certain private veterinarians carry out missions which had been traditionally entrusted to the public sector (vaccination against diseases known to be contagious and occasionally epidemiological surveillance).

Country	Private veterinarians (urban wholesalers)	Private veterinarians (rural)	Mandated private veterinarians	Private vets integrated in the ESS
Benin	●	●		
Burkina Faso	●	●	●	●
Cameroon	●	●		
Congo	●			
Cote d'Ivoire	●	●	●	●
Gabon	●			
Gambia	●			
Ghana	●	●		●
Guinea	●	●	●	●
Guinea Bissau				
Equat. Guinea				
Mali	●	●	●	
Mauritania	●	●	●	
Niger	●	●	●	
Nigeria	●	●		
CAR				
DRC	●	●		
Senegal	●	●	●	●
Chad	●	●	●	
Togo	●	●		

▪ Table 35. Progress with respect to the integration of private veterinary practitioners in different fields of animal health.



5.4. Measures taken in order to support farmers' associations

Apart from those actions conducted in order to improve farmers' access to veterinary services, PACE has had little direct action in helping the strengthening of farmers' unions or associations except in East Africa where the CAPE programme intervened. Among the actions carried out, the training of livestock auxiliaries or *community based animal health workers* remains the most visible. PACE funding has also contributed to carry out information and awareness raising campaigns towards farmers at least to secure better acceptance of their sentinel role and reporting of initial suspicious cases or outbreaks.

Overall in PACE member states, there exists a network of more or less structured farmers' associations. But one has to recognize that the most visible results have been noted in Guinea and in CAR ; in this latter country in particular, the structure of well organized farmers turned out useful to substitute for the critical lack of private veterinarians.

In Guinea, professional farmers' organizations (CCNEG, *Sanitary Defence Committees*) are playing an important role and have been collaborating efficiently in decision making in consultation with the administration and service providers (private veterinarians, wholesalers). About 12,000 trained CAHW exist and ensure primary care. Besides, given the important number of CAHW previously trained in Guinea, the private veterinarians chose from the outset to lean on them by integrating them (a few hundreds) in their activities. The awareness by farmers of their role in the animal health field is evident. They have become real partners.

GUINEA	
Farmers' associations	340 sub-prefectorial associations or SPO (*Stockbreeders Professional Organizations*) Presence of SDC - *Sanitary Defense Committees* (Mostly border areas and CBPP *cordon sanitaire* + moving towards the setup of SDC the interior of the country), each one created from at least 3 basic groups (20 to 50 stockbreeders maximum clustered in a radius of 5 km supervised on average by 3 - 4 CAHW). The SDC report to the veterinary cleckpoint, the veterinary surgeon or the SPRA..
Presence and number of CAHW	12.000 CAHW (a few hundreds are integrated into the veterinary practices by training). The CAHW of a group enable the access to the authorized drugs and vaccines.
Training of which associations benefited	A training in *Basic Animal Health and Animal Husbandry* (SABZ), which is more limited than that delivered to the CAHW, points out the complexity of veterinary care, makes it possible to maintain the confidence of the farmers in the veterinary service delivered by the veterinary surgeons or the CAHW which they supervise. Distribution of boots and raincoats to the auxiliaries or pilot-stockbreeders is a means of promoting associations of stockbreeders in their role of sentinel and early warning for the priority diseases. PACE Guinea takes part in this process for a better adhesion of the farmers.





Comments	Farmers' associations take part in choice of CAHW (in general 4 per association, 2 of which ensure the tattooing of the cattle), selecting the most active of them. The rural radio often approaches the topic: how to encourage the stockbreeders to join groups. The villages still not having their farmers' associations are regularly sensitised. Farmers' associations are represented at all administrative levels A solid cohesion between the various partners (official agents, private operators and stockbreeders) exists and forms a stable and balanced tripod for decisions.
Scope of CAHW's intervention	Many CAHW were trained within the framework of pilot programmes to support village poultry rearing. They are supposed to carry out injections for vaccinations of poultry only. This allows them access to the authorized drugs and vaccines (worm-drenches, acaricides, inactivated vaccines). They are entitled to buy or use neither live vaccines, nor antibiotics. However certain CAHW (in general those previously trained by NGO's such as e.g. *Vétérinaires sans Frontières* in the district of Dabola) nevertheless use a broader range also including antibiotics. It is said that these (tolerated) cases are rare and geographically limited.

In Central African Republic (CAR), farmers have gathered within the FNEC (*National Federation of Central African Farmers*). The latter association closely collaborates with the ANDE (*National Livestock Development Agency*) and lends support in animal disease surveillance activities, particularly in remote areas.

CAR

Farmers' associations	FNEC - *National Federation of the Central African Stockbreeders* [*Fédération Nationale des Eleveurs Centrafricains*] (20 agents of which 6 collaborating agents of the PACE) + 200 GIP (*Union of Pastoral Interests*) [*Groupements d'Intérêts Pastoraux]* structured in 27 FELGIP (*Local Federation of GIP's*)
Presence and number of CAHW	
Training of which associations benefited	Training given to the stockbreeders by the FNEC includes the use of drugs. The farmers take financially part in their training (7 days) which is ensured by veterinary checkpoint agents of the locality (5 days on the diseases and drugs) and of FNEC staff (2 days of training on 'institutional matters': identification of the problems, liaison of the farmers with the existing structures and the potential donors...) A technical school for future stockbreeders is in the course of rehabilitation.
Comments	Now, creation of four regional federations of stockbreeders' unions of the Central African Republic (FERGEC): in Bambari, between Bozoun and Bossangoa, in Bouar and Birao.

Chapter
6

Institutional embedding of the programme and its relation with other veterinary service structures.

The PACE programme has a more institutional than operational vocation, which differentiates it from the PARC project. In the design of PACE, national coordinations play more of a programme administrative and financial management role, leaving to veterinary services the technical implementation aspect.

While the eradication of rinderpest is put forward as a PACE success, the operation as much as strengthening of veterinary services is as important. With the implementation of the PACE programme, improvements in the capacities of veterinary services are nowadays tangible in most countries.

The concern of the PACE programme as a development programme is primarily to ensure that the surveillance systems established with its support are maintained and extended further after the completion of the programme. The current analysis shows that this will not be difficult to achieve in a certain number of countries (Benin, Burkina Faso, Côte d'Ivoire, Ghana, Mali, Mauritania, and Senegal).

Table 36 tries to highlight the variation existing between countries as far as this integration of the PACE programme into veterinary services is concerned. The table rests on three criteria likely to define the level of integration (even if none of these criteria represents by itself a measure of success or failure) : (a) physical distance between the PACE programme and veterinary services, (b) institutional integration, be it formal or legal, of the PACE programme within veterinary services and (c) integration of veterinary service staff into the operational organization chart of the PACE programme.



Country	Integration		
	Physical	Institutional	Staff
Benin	●●●	●●●	●●●
Burkina Faso	●●●	●●●	●●●
Cameroon	●●	●●	●●
Congo	●●●	●●●	●●●
Côte d'Ivoire	●●●	●●●	●●●
Gabon	●●●	●●	●●●
Gambia	●●●	●●●	●●●
Ghana	●●●	●●●	●●●
Guinea	●●●	●●●	●●●
Eq. Guinea	●	●	●●
Guinea Bissau	●●●	●●	●●●
Mali	●●	●●	●●●
Mauritania	●●	●●●	●●●
Niger	●●	●●●	●●●
Nigeria	●●●	●●	●●●
CAR	●●●	●●●	●●●
DRC	●●	●●	●●●
Senegal	●●●	●●●	●●●
Chad	●●●	●●●	●●●
Togo	●●●	●●●	●●●

• Table 36. Institutional embedding of the PACE programme in the State's veterinary services.

Chapter 7

State of enforcement of the recommendations formulated at PACE meetings and workshops.

One of the missions of the regional coordination is to work on the harmonization of the strategies implemented in the countries in achieving the objectives of the PACE programme. This leads to the organisation of an annual meeting to assess the state of progress and share in the successes and failures of the programme but also the organisation of thematic workshops intended to develop knowledge on a given subject. In addition to holding such meetings, the regional coordination sees to it that the recommendations adopted are indeed implemented at the national level. This chapter presents the overall picture on the state of implementation of recommendations adopted at the annual coordination meetings and thematic workshops organized by the PACE programme.



Presiding the PACE regional workshop on CBPP control in Conakry (February 2004). Photo : C. Squarzoni, 2004.





7.1. PACE annual coordination meetings

Venue and date	Recommendations	Compliance in countries
Ouagadougou, June 2001	To re-adjust the period of execution of the programme estimates of year 1.	Completed in all the countries (20)
	To strengthen the training of staff intervening in the activities of the PACE.	Completed in all the countries, except Equatorial Guinea (which took part in only one training – PID, 2002).
	To collect data on African swine fever (ASF) and to take part in the workshop on the possible control strategies of this disease in Lome (Togo).	Completed in 10 of the 13 countries affected by ASF.
Venue and date	**Recommendations**	**Compliance in countries**
Cotonou, June 2002	To improve the regularity and quality of the reports to be transmitted to AU-IBAR/PACE and OIE.	13 countries out of 20 regularly send their reports to IBAR and OIE.
	To reorganize the veterinary services according to standards defined by OIE.	Efforts were noted but this reorganization is still insufficiently implemented. It is necessary however to highlight the recent measures taken in Mauritania and the reform which is in hand in Mali.
	To improve the contribution of the governments in the financing of epidemio-surveillance activities	This contribution is on the rise in 8 countries, nevertheless, since these contributions are often counterpart-funds, rather than a true long-term contribution (regular budget), efforts of sensitizing are still necessary.
	To associate the persons in charge for laboratory diagnostics in the preparation of the WP and to ensure their representation in the management bodies of the ESS.	Implemented in the countries concerned.
	To submit monthly financial reports (by electronic mail) to the PACE Programme Coordination Unit (PCU) and in particular to the Financial Controller.	2 countries do it regularly: Guinea Bissau and Niger.



Venue and date	Recommendations	Compliance in countries
Arusha, June 2003	To prepare the requested to be submitted to OIE to obtain the status of country free of rinderpest	Carried out everywhere except in Gambia, Equatorial Guinea, Gabon and Congo.
	To implement an external quality-assurance policy in national laboratories.	Very little implemented
	To take communication aspects into account when preparing WP's.	Carried out in the majority of the countries.
	To close the outstanding WP's and to proceed to the de-commitment of the remaining funds.	Delays were observed in the operations of closure and de-commitments, which are now being resolved.
	Work towards the organisation of the financial audits.	Audits were carried out in 5 countries. It is to be specified that these audits are organized by the local ECD.
	To produce quarterly and annual progress reports according to the format suggested by the PCU and to respect the delays agreed for their transmission.	Nine countries out of 20 are more or less regular in their monthly and annual reporting.

Venue and date	Recommendations	Compliance in countries
Yaoundé, June 2004	To validate the logical frameworks elaborated and negotiated during the annual coordination meeting in order to prepare the global plan (over 2 years) and the PE of year 1 of the extension phase.	Completed.
	To proceed without delay to the closure of completed WP's and the decommitment of the remaining funds.	In progress in all 20 countries. Problems of a structural nature are encountered in Gambia and in Chad.
	To implement the recommendation adopted at the Summit of Heads of States of the African Union in Maputo in July 2003 relating to the allowance of 10% of the national budget to agriculture thereby ensuring that the share of livestock production is sufficiently taken into account, as well as the recommendations adopted at the time of the meetings organized by the PACE in Cotonou in June 2002 and Addis-Abeba in March 2004	Not yet carried out
	To peruse the PID/ARIS software for the management and the validation of zoo-sanitary information	Good use of PID is carried out in 8 countries.





7.2. Technical workshops

Venue and date	Recommendations	Compliance in countries
	Regional workshop African Swine Fever	
Lomé, Oct. 2001	To strengthen the effectiveness of the veterinary services in particular through the definition of clear command lines between the central level and the field level.	The process of strengthening of the veterinary services is ongoing, but only 3 countries currently have central veterinary services with a direct chain of command to the teams in the field.
	To strengthen the monitoring activities in order to prevent any infection of ASF and to improve data management on this disease.	This surveillance is carried out in 7 countries out of the 13 countries affected by ASF.
	To compile information on the socio-economic impact of ASF directed to political authorities in order to obtain their support for the eradication programmes.	Carried out in 6 countries out of the 13 countries affected by ASF
	Workshop Emergency Preparedness Plans and OIE Pathway	
Abidjan, Feb. 2002	To finalize the emergency preparedness plans for rinderpest and to send them to the PACE epidemiology unit for observations.	Carried out in almost all the countries, but not always updated regularly.
	To strengthen the operation of the veterinary services and to maintain clear command lines	The process of strengthening of the veterinary services is ongoing, but only 3 countries currently have central veterinary services with a direct chain of command to the teams in the field.
	To pay more rigorous attention to the movements of the cattle by updating knowledge on the ways of transit (trade and transhumance) and to adopt a suitable control system.	Few concrete measures were taken in the countries, however the efforts made in Burkina Faso and in CAR are worth mentioning.
	Workshop CBPP Control Strategies	
Accra, Feb. 2003	To update the epidemiological and socio-economic data on CBPP	Carried out in the countries concerned although work is not yet exhaustive.
	To prepare a provisional document of policy and control strategies against CBPP at national level	Carried out



Participants at the PACE regional workshop for the validation of CBPP control strategies, Conakry (Guinea) February 2004. Photo : PACE.

Venue and date	Recommendations	Compliance in countries
Regional Workshop Validation of RVF Control Strategies		
Dakar, January 2004	To resort to vaccination against RVF (in emergency cases as well as a preventive measure) by using one of the two currently available vaccines: the safer inactivated vaccine but which effectiveness is less, the cost higher and the availability limited ; or the modified live vaccine which confers a better immunity but which still seems to possess a residual pathogenic capacity in animals and man.	Applied nowhere until now in the countries concerned (Gambia, Mali, Mauritania, Senegal and Chad). A study in being prepared in Gambia in collaboration with the ITC of Banjul.
	With the support of PACE, FAO and the OIE, take all necessary action to collect all information available on the results of the vaccination campaigns carried out in the Arabic peninsula (Saudi Arabia, Yemen), in Egypt, in Southern Africa and in East Africa.	Carried out by the PEU. This information is available and has been distributed.



	In order to improve the availability of the vaccines, to resort, in the short run, to import s from the producing laboratories if the situation requires it and to develop a local production, which requires to have stocks of certified vaccines and to improve the current safety conditions for the production of vaccines.	Not yet carried out
	Within the framework of vector control, to resort in the short run to practical measures intended to decrease the vector pressure and consequently the risk of transmission of the disease aiming at protecting the animals by the use of pour on products and insecticide dips; and protecting humans in particular through the use of traditional repellent products like smoke screens and evasive measures (moving the animal parks away from ponds by advising their establishment at a distance of at least 2 kilometers).	In progress (being studied)
	As of the appearance of clinical cases of RVF followed of confirmation of laboratory, to declare the disease at the OIE, FAO, AU-IBAR, border countries and the public health services ; the latter are entrusted with the reporting to the WHO.	Applied in the countries concerned (Senegal and Mauritania).
	To apply sanitary police measures in particular related to the restriction or the prohibition of animal movements towards or coming from the outbreak area. To vaccinate the herds which attended the ponds located in the outbreak area.	Not applied
	To carry out thorough epidemiological investigations on the presence of the virus in vectors	Applied in the countries concerned (Senegal and Mauritania).
	To implement a public awareness campaign and sensitisation of populations on the incurred risks and the behaviours to be avoided	Applied in the affected countries (Senegal, Gambia and Mauritania)
	To update legislation in order to include RVF among the notifiable diseases.	Not yet effective in all the countries.

Regional Workshop Validation of CBPP Control Strategies

Conakry, Feb. 2004	To verify the absence of CBPP by an active surveillance including serological investigations and abattoir surveillance.	This work is not rigorously implemented but one can nevertheless mention steps taken in Guinea and Guinea-Bissau.
	To ensure a strict control of cattle movements (domestic and cross-border)	Implemented only in Guinea.
	To set up an emergency preparedness plan	Several countries wrote EPP's but they remain to be validated and applied.
	To enter the OIE pathway for the recognition of CBPP free country.	Not yet applied.

PACE

Pan African programme for the Control of Epizootics



Participants at the PACE regional workshop for optimisation of the ESS's operation, Dakar (Senegal) August 2004.

Venue and date	Recommendations	Compliance in countries
	Regional Workshop for Optimisation of the ESS's Operation	
Dakar, Aug. 2004	To implement the key measures intended to optimize the operation of the ESS and which relate mainly to the development of the standard operating procedures of the ESS, the development of the surveillance protocols for the priority diseases, the strengthening of coaching at the level of the various components of the ESS, the diversification and the intensification of communication means, the improvement of the collection and forwarding of samples, the strengthening of the operation of the national laboratories, the effective use of PID and the improved implication of partners in the ESS.	In progress in the majority of the countries.
	To implement the common performance indicators adopted during the workshop while keeping the possibility of adding performance indicators, specific to the ESS of each country	In preparation in the majority of the countries.
	To identify, for each indicator, data to be collected, expected values and rate of calculation; and to transmit the results of this work to the PEU.	Work is ongoing and remains to be validated by missions of the PEU.





	In Central and West Africa, to promote pragmatic serum-collection in wildlife killed through hunting, while leaving the capture operations to the regional teams, in the ecosystems with a strong wildlife density.	The planning is already worked out and will be carried out during the extension.
	To quickly provide relevant and necessary information to complete the economic analyses of the ESS in order to demonstrate and convince decision makers of the need for increasing funding of the veterinary services.	In progress

Regional Workshop of PACE Regional and National Veterinary Laboratories Collaborative Network

Accra, Sept. 2004	To finalize the reports on the serological epidemiological surveillance of rinderpest and to send them to the PEU at the latest on October 8, 2004.	That was done in the countries concerned except in 2 countries (Côte d'Ivoire and Chad).
	To suspend the use of the AGID and the ASF kit.	Done
	To systematically send sera coming from wildlife killed by hunters, to the (regional or world) reference laboratories.	To verify during the year 2005.
	To designate a staff member to be responsible for quality assurance in the laboratories which have not done so yet	To do
	To use the ARIS software for the management laboratory data.	To do
	To associate the representatives of the national laboratories in the drafting of the WP's so that their concerns are taken into account.	Carried out.
	To associate the laboratory technicians in the serum-collecting field teams order to improve the quality of sera collected.	In progress in the countries concerned.

Chapter
8

Administrative and financial management procedures applied

8.1. In general

PACE is funded on 7th and 8th EDF funds. This applies to the regional coordination, and to the national programmes.

Project ID – numbers were :

7 ACP RPR 744

7 ACP RPR 745

8 ACP TPS 32

8 ACP TPS 33

8 ACP ROC 9

The consecutive work plans of the regional coordination were booked as follows :

Work plan	Commitment
Start-up work plan	8 ACP ROC 009
Work Plan 1	7 ACP RPR 744
Work Plan 2	8 ACP ROC 009
Work Plan 3	8 ACP ROC 009
Work Plan 4	8 ACP ROC 009
Work Plan 5	8 ACP ROC 009

The respective budgets of the Regional Coordination have been funded exclusively on EDF funds, excluding any other funding. It should be noted that Nairobi has received funds from the British cooperation agency under the implementation of the CAPE programme.



In managing these funds, the Regional Coordination has applied the "*OVERALL REGULATION RELATIVE TO CONTRACTS FUNDED BY THE EDF*" in accordance with the provisions of Decision no. 3/90 of the ACP-EEC Council of Ministers, of March 29, 1990, bearing adoption of the overall regulation, scope of work and conciliation and arbitration process regulation, relative to contracts for work, supplies and services financed by the *European Development Fund* (EDF) and concerning their enforcement (Official Journal no. L 382 dated December 31, 1990, p. 0001 – 0107).

Since mid-2004, the PACE team has been partially applying the terms of the Financial Regulation of March 27, 2003, applicable to the 9th EDF (1.4.2003 L 83/1 Official Journal of the European Union). The enforcement of rules and procedures of the 9th EDF will be fully observed in the course of the extension of the PACE programme, as the latter will be partially funded on the 9th EDF.

The process of approval of programme estimates of the Regional Coordination has been reviewed in the course of implementation. Since the beginning of the PACE programme, the coordination units and common services in Nairobi and Bamako developed a single programme estimate with separate budgets to be approved by the Director of the AU-IBAR, Regional Authorizing Officer of the PACE programme, and the Head of the Delegation of the European Commission in Kenya, chief delegate for the implementation of the PACE programme.

In May 2004, under the preparation of the Year 5 programme estimated, the ECD in Kenya advised the AU-IBAR that henceforth approval of programme estimates and other related operations, notably payments will be handled by the ECD in Mali, having reached the status of decentralized delegation. Consequently, Regional Coordination programme estimates are currently approved by the Director of AU-IBAR, Regional Coordinator of the PACE programme and the Head of the Chief Delegate of the European Commission in Mali.

A manual of procedures of the Regional Coordination of the PACE programme in Bamako has been developed and was updated in 2004. The inventory of fixed assets has also been updated.

8.2. Software

At the level of the Regional Coordination, the accounting system is managed on Microsoft Excel (spreadsheet). This is also true for most national components. The use of this software requires relatively advanced knowledge of the software (including macros) in order to avoid computational errors, notably with summary tables. This does not raise any problem at the level of the Regional Coordination, nor in most member states.

In 2003, the PACE Coordination Unit (PCU) had a in-house software developed ; this software was called *REGIE IBAR* (IBAR IMPREST, under MS-DOS). The software was distributed to all national components, but did not have much success, partly because of its presentation (MS-DOS, considered as an obsolete platform) and partly for its limited domain of EDF control, without any possibility of inclusion of specific commitments or financial contributions from Governments. To our knowledge, this software is only used in Guinea and Guinea Bissau. In Niger and DRC, the reports

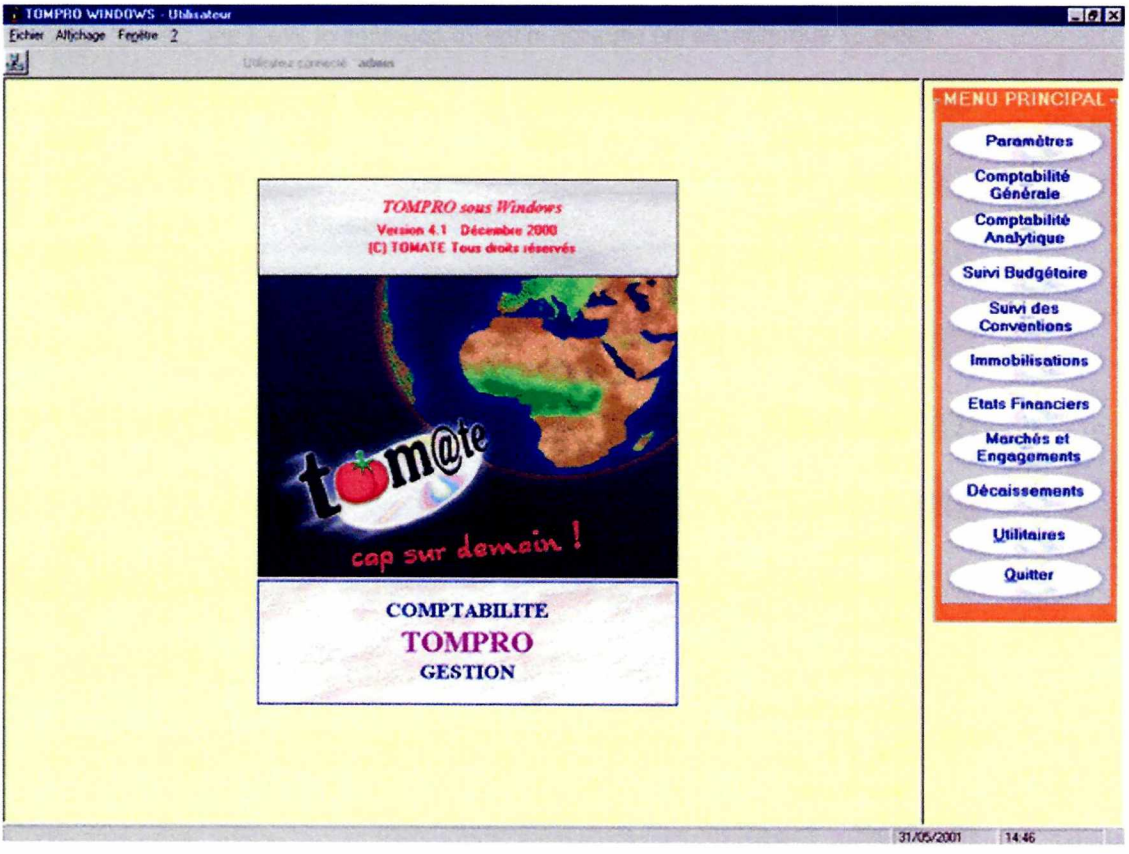


produced through this software have not been found acceptable by the (support) offices to the NAO) and its use was rapidly abandoned.

Tomate TOMPRO

The *Computerized Financial and Technical Management software* (GIFT) designated TOMPRO (edited by Tom@te, French editor) is used in a growing number of EDF projects. In most cases, the purchase of this software is financed by the national delegations of the European Commission. This is particularly the case in Senegal and soon in Côte d'Ivoire. The software not only enables an integration of the monitoring of programme estimates by EC delegations, but it also provides all the modules necessary to the implementation of a complex regional programme suchs as PACE with several countries, several donors, etc.

The PACE Coordination Unit has proposed purchasing of this software by those national coordinations which still do not have it.



Screencap of the TOMPRO software main page.





8.3. Audits

The PACE regional coordination in Bamako has been the focus of a financial audit of programme estimates 1 through 3 in December 2003 by Mme Marie-Catherine BARNARDINE, expert accountant hired by the Regional Authorizing Officer of the PACE programme in Nairobi, together with the ECD in Kenya. The audit report and comments by the PACE Regional Coordination are available.

At national programme level, all components have been advised by the Regional Authorizing Officer to prepare the audit of completed programme estimates. In spite of the fact that the hiring process of an auditing consulting agency was initiated in nearly all countries, very few countries have achieved auditing to-date. Delays are imputable to a series of factors such as difficulties in identifying appropriate terms of reference, funding sources (Regional PACE, National PACE, EU, NAO framework contracts), the determination of a ceiling for the budget allocated by the PACE programme on EDF funds, the difficulties in identifying reliable consultancy agencies at the national, level, the non compliance with EDF procedures of acquisition of goods and services, etc. Table 37 summarizes the situation in the 20 countries of West and Central Africa :

	Audits conducted		
Country	**2002**	**2003**	**2004**
Benin			
Burkina Faso			
Cameroon			
CAR			●
Chad		●	
Congo			
Cote d'Ivoire			
DRC			
Eq. Guinea			
Gabon			●
Gambia			
Ghana			●
Guinea			
Guinea Bissau			
Mali			
Mauritania			
Niger			
Nigeria			
PACE REG Bko			●
Senegal			
Togo		●	

• Table 37. Audits (both financial and / or organisational) conducted in PACE member countries in WCA.

Chapter
9

The visibility of activities carried out by the PACE programme.

9.1. Visibility of means acquired under PACE (EDF) funding

At the onset of PACE, no effort has been spared in order to give maximum visibility to the programme, both in terms of communication, and in terms of means acquired on PACE and EDF funds. For a long period of time the absence of this visibility in local veterinary services and farmers has been considered as a negative criteria of efficiency of the national programme.



Vehicles identified with the PACE logo. Photo : P. Bastiaensen.

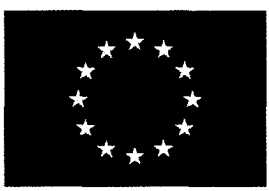
However, there currently exists a growing number of countries in which the visibility of the PACE programme is no longer considered a priority. As a matter of fact, those countries consider that PACE is an institutional support project and that for that reason it is not advisable to make it look as a full fledged donor project. On the other hand, these countries put a particular emphasis on the visibility of their own veterinary services. Countries such as Mali and Nigeria put a lot of emphasis on the visibility of their epidemiological surveillance system. The concern being not to associate the existence of surveillance systems with the PACE programme whose life-span is limited in time.

On the other hand, the visibility of the PACE project through central administrations, development partners, and policy makers remains valid. Moreover, this visibility approach does not exclude the visibility of the European Union as a donor (refer to next chapter).

9.2. Visibility of the European Union at PACE level

The PACE programme implements - within the limits of its means - the guidelines from the document titled "*EU visibility guidelines for external actions*" (November 2002) :

> Contractors and/or implementing partners are responsible for giving adequate publicity to the project or programme that they are implementing and to the support from the EU. The communication strategy must be defined in the corresponding contract/agreement or developed during its implementation.
>
> Any vehicles used in projects supported by the EU must carry vehicle panels.
>
> Photos showing the progress of all projects must be taken where appropriate, so that they can be used in any publicity material. The disclaimer must be included in all publications.



The EU logo is clearly displayed on all reports and documents produced by the Regional PACE Coordination, most often on the front page. Likewise, the communication material (posters, brochures, manuals) always mentions at least the EU as donor, in general (if printing resources permit) with the EU logo in blue/yellow colour, or black/white. The PACE sign board of the Regional Office at Sotuba (Bamako) bears the EU logo.



Sensitisation poster produced by the PACE Communication Unit, bearing the EU logo.

In its technical instructions to PACE member countries, the Regional Coordination insists on the same principles of visibility. The inclusion of these visibility rules varies greatly from one country to another and from one aspect to another (visibility on equipment and vehicles, visibility on documents, visibility in offices).

This inclusion is very often related to the customs and traditions of certain countries and in certain delegations of the EC. In some countries having experienced crisis periods (war, famine, etc...) and being used to humanitarian assistance, one can note that the European Union visibility, particularly on buildings and vehicles, does not cause any problem (probably because of the need to gain recognition as such in times of crisis).

Without going into details, one can state that the visibility of the EU in all areas is very good in the Congo, in Guinea Bissau, in DRC, and in Nigeria.



9.3. Communication material developed by the PACE programme

The vast majority of communication tools have been developed at the national level, taking into account the particular characteristics and official and local languages of individual states. To that end, communication officers at the national level have received trainings and communication material development tools: picture models and icons, software, manuals, etc ....



PACE information newsletter (in English and French).

At the regional coordination level, several tools and aids have been developed, for greater programme visibility and homogeneity in PACE identity, first through the development of the PACE logo and through development of a series of pictures and colours (green and brown) strengthening PACE's corporate identity in all documents and other audio-visual aids produced since then, including the web site (refer to next chapter).

It would be impossible to make an inventory of all the material and the different audio-visual aids developed by communication officers of PACE member states.

The present report addresses the topic of communication in the technical chapters dealing with ESS and priority diseases. The Regional Coordination of the PACE programme is currently developing an electronic data base for a large number of tools developed by PACE in the different countries. This data base will be available on CD-rom in 2005.

The table on the next page summarizes the PCU's appraisal of implementation indicators related to communication (including the 37 indicators used): I.8, I.9, I.15.

One of the key results which deserves to be mentioned in detail is the set-up of animal health newsletters in the various PACE member states. Certain countries, notably CAR have already produced their 16th (quarterly) bulletin, published regularly and distributed on a large scale to livestock and animal health partners. The necessary resources for editing these newsletters are provided by PACE but other assistance has also been sought from certain veterinary laboratories against publicity inserts. Such strategy may partially ensure the sustainability of the medium, when EDF funds run out.



Generally speaking, countries also try to persevere in the quest for broadcasting of radio messages, an *a priori* cheap and efficient medium as it makes possible a large diffusion of radio messages to the majority of farmers (even if they are illiterate) ; they target rural radios and translations of communication tools into local languages. It has also been suggested that countries contact private veterinary laboratories regarding their availability to provide a form of sponsoring on a regular basis, so as to reduce message broadcasting costs.

Country	Efficient promotion and institutional communication from PACE at the level of authorities and partner development organisations. Sufficient level of participative approach within communication to breeders-producers, and to the large public with a sufficient quantity of media supports produced versus needs.	Availability and variety of communication-tools : rural radios, printers, human resources, financial and material resources.	Regular publication of a zoo-sanitary information bulletin with printing and distribution in sufficient quantity to the appropriate targeted persons.
Benin	●●●	●●●	●●●
Burkina Faso	●●	●●●	●
Cameroon	●●	●●●	
CAR	●●●	●●●	●●●●
Chad	●●	●●	●
Congo	●	●●	●●
Cote d'Ivoire	●	●●●	
DRC	●	●●	●●
Equatorial Guinea	●	●●	
Gabon	●	●●	
Gambia	●●●	●●●	
Ghana	●●	●●●	
Guinea	●●●	●●●	●●
Guinea Bissau	●●	●	●●
Mali	●●●	●●●	●●●
Mauritania	●●●	●●●●	●●●
Niger	●●●	●●	●●●
Nigeria	●	●●●	●●●
Senegal	●●●	●●●●	●●●
Togo	●●	●●●	

- Table 38. Communication activities conducted in PACE countries.

PACE

Pan African programme for the Control of Epizootics





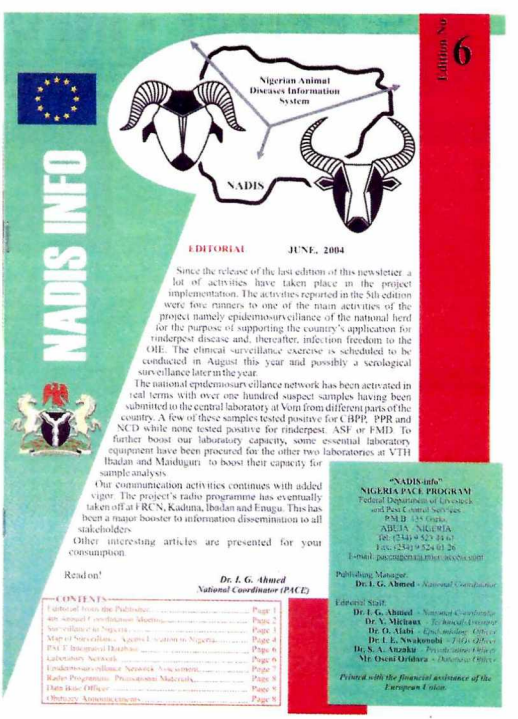
Mauritania (arab and french)



Niger (french)



Benin (french)



Nigeria (english)

PACE

Pan African programme for the Control of Epizootics



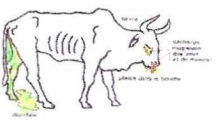
RENES - INFOS

RÉseau National d'Epidémio Surveillance de la RDC

BULLETIN N° 2 MARS 2004

la peste bovine !

Si vous voyez ces symptômes...



informez immédiatement

le service de santé animale

NPM. Les trois « D » de la PB / TERRIBLE, AFFECTIONS ET DEUIL

SOMMAIRE

PAGE 1 : Les trois « D »
PAGE 2 : Au portefeuille du savoir
PAGE 2 : L'Epidémiosurveillance de la Faune sauvage
PAGE3 : La Peste Bovine en RDC
PAGE 3 : LA RDC indemne de la Peste Bovine
PAGE 4 : La Peste Porcine Africaine en RDC
PAGE 4 : Alerte sur la Fièvre Aphteuse
PAGE 6 : Nouvelles en bref.

EDITORIAL

La fin de l'année 2003 voit le PACE-RDC souffler sa première bougie d'anniversaire.Une année d'activité vient de s'écouler.

Comme un enfant apprend à marcher, notre composante «Y est mise à 100% dans l'execution des activités prévues pour cette première année.

Les rapports fructueux avec la Délégation de la Commission de l'Union Européenne, la détermination des agents sur terrain et les sacrifices multiples de l'equipe technique ont été à la base de ce succès.

Cette première année aura été très chargée : l'identification des partenaires , le choix des agents du Réseau au niveau des diverses zones épidemiologiques, leur formation, la mise en place du Réseau National d'Epidémiosurveillance(RENES), le suivi régulier de leur travail sur terrain , la participation aux divers ateliers et reunions organisés au niveau régional ont constitué la charge utile du portefeuille de la Coordination Nationale.

A l'aube de cette seconde annee, dans le souci d'une efficacité toujours grandissante, nous ne pouvons que compter sur une volonté inébranlable de reussite de tous les agents, la conservation des bonnes relations avec la Délégation de la Commission de l'Union Européenne et une participation financière de la part de l'Etat Congolais.

Aussi mobilisés comme un seul homme au travail, nous gagnerons ensemble le pari de la reussite pour la satisfaction aussi bien des bailleurs des fonds que de toute la nation congolaise et pourquoi pas de l'Afrique toute entière.

Dr Damien NGOMA KASONGO

Coordonnateur National

Point de contact : Coordination PACE-RDC
Avenue de la Libération n° 18-20
Commune de la Gombe
Tél : 24394 16 65 ; 24 03 81 74 01
E-mail : pace_rdc@ymail.com

DRC (french)



15

PACE

SISAC—info

SANTE ANIMALE

Bulletin du Système d'Informations sur la Santé Animale en Centrafrique

EDITORIAL

Missions et Formations

Dr Raphaël NGAYE-YANKOISSET
Directeur Général de l'ANDE

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Mali (french, below)

CAR (french)

Chad (french, below)

EPIVET - INFO

Bulletin trimestriel d'information du Réseau National de Surveillance Epidemiologique Vétérinaire du Mali

N° : 008 JANVIER 2004

EDITORIAL



La détermination des autorités en charge de la promotion des activités d'élevage de renforcer les capacités nationales d'analyse et d'action en santé publique vétérinaire se confirme davantage. En effet cette volonté politique a obtenu des acteurs du sous secteur un écho favorable eut. l'engagement de chacun a été perceptible tout au long du parcours réalisé dans la lutte contre la peste bovine et des maladies prioritaires réglées dans le cadre du réseau EPIVET MALI.

L'absence des moyens appropriés de travail sur le terrain déplacement surtout n'a suffisamment influencé les acteurs du sud et des autres, ce qui nous a valu un acquis très significatif qui est l'éradication du statut de pays indemne de peste bovine malade.

L'annonce de l'ultime phase dont la réussite consistera l'eradication de la maladie sur toute l'étendue du territoire qui signifiera liberté totale de toutes possibilités de réapparition de la peste bovine dans notre pays n'est dénuée sans difficultés majeures. Cet état de fait se justifie aujourd'hui en partant en compte les préoccupations de certains éleveurs dans les difficultés localités du pays et analysés au laboratoire central vétérinaire. L'étape réalisée dans un état collaborative franche et de faillissant inconditionnelle de tous les acteurs du processus.

(Voir page 2)

SITUATION ZOO-SANITAIRE DES FOYERS DE NOVEMBRE 2003 A JANVIER 2004

Pendant la période concernée la situation sanitaire d'ensemble a été marquée par l'evolution des foyers de PPCB, Pasteurellose bovine, DNCB et du Charbon Symptomatique. Ils se sont tous produits dans les localités relevant des régions de Kayes et Koulikoro à l'exception d'un seul foyer de PPCB qui a éclaté à Kati dans la préfecture de Kadiolo de la région de Sikasso. (Voir Situation détaillée dans le tableau ci-dessous).

Affections	Localité	Cercle	Nbre de foyers	Effectif malades	Malades	Morts	Abattus	Période
Pasteurellose bov.	Kenieroumana	Kita	1	306	14	11	3	Novembre
Charbon symptom.	Sénakoro Centre	Kolokani	1	173	6	6	0	Décembre
PPCB	Kati	Kati	1	96	56	2	14	Décembre
PPCB	Kenieroumana	Kolokani	1	16	5	0	0	Décembre
PPCB	Sanféla Diarrakoroba	Kolokani	1	100	9	0	0	Décembre
DNCB	Tiongolobougou	Kolokani	1	162	10	0	0	Décembre
Pasteurellose bov.	Tomodo (Diéma)	Nioro	1	100	5	3	0	Janvier
PPCB	Kadiolo	Kadiolo	1	135	12	7	0	Novembre
Pasteurellose bov.	Falouba	Koulikoro	1	980	289	38	0	Novembre
Pasteurellose bov.	Bamakonodji	Dioïla	1	265	140	25	19	Janvier
PPCB	Sanféla	Kolokani	1	73	6	2	2	Janvier

Il ressort de l'analyse de ce tableau que ces foyers sont survenus dans des localités distinctes. L'application des mesures de police sanitaire a permis de contrôler ces maladies. Ainsi, il n'a été constaté aucune propagation en direction des localités voisines. Ainsi l'extinction des maladies a été limitée comme les témoignent les effectifs malades et morts.

SOURCE : DPRPAV

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♥Activités des services de surveillance épidemiologique vétérinaire ... 3
♥La synthèse des rapports produits par les services locaux de la surveillance épidémiologique ... 3
♥Rapport ... 4
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♥Rencontre ... 6

Chad (french, below)

LE BULLETIN DU REPIMAT

REPIMAT — ME "LEVE' DERA' DOP'DEFRVE'

Réseau d' EPIdémiosurveillance des Maladies Animales au Tchad

N° 12 Mai 2000

Editorial

Les quelques années d'existence du Réseau d'Epidémiosurveillance des Maladies Animales au Tchad (Répimat) ont permis au Laboratoire de Farcha d'évaluer sa capacité en matière de diagnostic.

Autrefois laboratoire de référence le Laboratoire de Farcha traverse actuellement des difficultés qui sont liées au vieillissement des infrastructures, des équipements et au manque de personnel.

Avec l'avènement du future Programme Panafricain de Contrôle des Epizooties (PACE) dont l'objectif principal est la mise en place des réseaux d épidémiosurveillance efficaces, les laboratoires nationaux représentent des outils indispensables.

Conscient de ce rôle, le laboratoire de Farcha, avec l'appui de la coopération française est engagé dans un processus de réhabilitation des infrastructures de ses laboratoires de diagnostic et de recherche. L'enjeu est d'améliorer les méthodes, les outils et les conditions de diagnostic et de recherche.

Dans ce nouveau contexte, les chercheurs et les techniciens du Laboratoire de Farcha qui ont toujours montré leur bonne volonté et leur disponibilité continueront à apporter l'appui nécessaire au Répimat.

Il est opportun de noter que le laboratoire de Farcha avec le Répimat sont des outils stratégiques du PACE.

Le soutien et la collaboration de tous sont souhaitables pour permettre au Laboratoire de Farcha d'assurer les missions qui lui seront dévolues dans le cadre du PACE.



Dr Guelmbaye Ndoutamia
Directeur de Laboratoire de Farcha

REPIMAT : Les leçons de quatre années de fonctionnement

Les resultats obtenus en quatre années de fonctionnement du Repimat nous permettent d'affirmer que la mise en place des réseaux d'épidémiosurveillance est possible dans le contexte africain en général et celui du Tchad en particulier.

En effet, différentes évaluations externes ont permis de confirmer l'operationalité du Répimat tout en apportant des propositions visant à améliorer son fonctionnement.

Plusieurs propositions ont déja été prises en compte, d'autres, nécessitent encore des efforts de la part des responsables du réseau.

La réussite du Répimat passe par une bonne collaboration institutionnelle. Cette dernière est un problème de fond qui doit obligatoirement être résolu pour que le réseau remplisse son rôle au niveau national. A cet effet, le comité de pilotage, le comité technique et la cellule d'animation doivent jouer pleinement leur rôle pour assurer l'efficacité du réseau. Ces organes ne doivent pas être uniquement formels mais également effectifs au travers de contacts et de collaborations quotidiennes.

Le laboratoire occupe une place importante dans un réseau d'épidémiosurveillance. Si les prélèvements ne sont pas analysés c'est l'ensemble du système qui s'effondre, quel que soit le sérieux des autres intervenants.

Enfin, notons qu'une confusion est généralement faite entre la notion d'intérêt collectif et la notion d'intérêt individuel. Par définition, un réseau d'épidémiosurveillance a des objectifs d'intérêt collectif et ne doit pas se fixer des objectifs d'appui au diagnostic individuel sur le terrain. Les résultats d'un réseau d'épidémiosurveillance doivent pouvoir faire régulièrement l'objet de synthèses pouvant servir à des actions de portée collective.

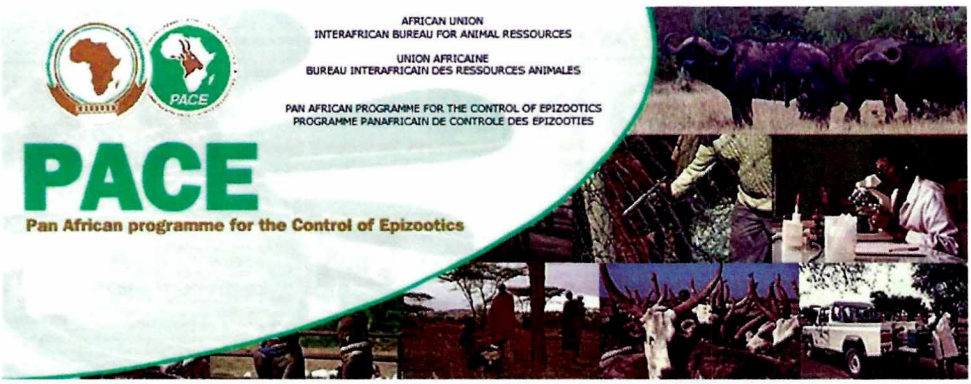
M. Ouagal

SOMMAIRE

Page 2 : Données collectées de juin 1995 à décembre 1999
Page 3 : Peste bovine - peste des petits ruminants
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Page 7 : Maladies tellurique - Brucellose bovine
Page 8 : Avis des agents de terrain - La vie du réseau

Quelques exemples de bulletins zoo-sanitaires : RDC, Bénin, Niger, RCA, Nigeria, Mauritanie, Mali, Tchad

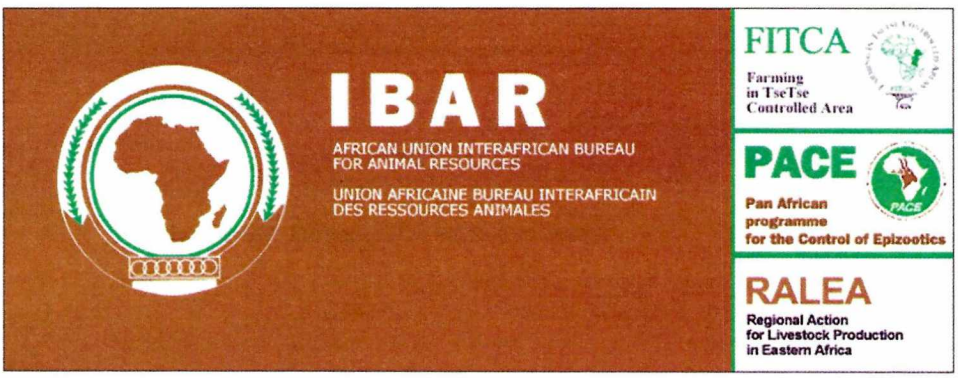
9.4. The PACE internet site



PACE's communication expert in Bamako has taken an active part in the development of the IBAR web site created under the aegis of PACE. This site, which was launched in February 2004, can be accessed at the following URL address :

www.au-ibar.org

The IBAR site home page provides access to the three ongoingcprogrammes : FITCA, RALEA, and PACE.



The PACE site contains general information, targeting a large public which would wish to be informed on the programme, its organization, funding, staff, activities, and objectives. It also contains technical documents, produced by the common services and press releases on the current health situation (for example, the situation of rinderpest in the Somali ecosystem). The site is well illustrated with numerous pictures and maps. In the coming months, several initiatives are planned in order to give greater visibility to the site and consequently, to PACE programme activities.

A larger number of partners will be informed by e-mail about the launch of the site in order to incite interested parties to visit the site. The site will also be introduced in the various search engines (*Altavista, Yahoo, Google*) and will be related to the web sites of PACE partners such as the OIE, FAO, etc. The PACE internet address is included henceforth in all official documents produced by the PACE programme. Finally, a monthly electronic information bulletin sent by e-mail will regularly inform subscribers on new items presented on the site.



As far as the table is concerned, the site will be completed by specific information on each member state ; it will have to be related to the data management software ARIS (formerly PID) and will have to be entirely available in two languages.



Screen-cap of the PACE website home page.



9.5. Reports produced by the Bamako Reg. Coordination

9.5.1. Mission reports (Bamako – staff)

Sidibe S.A.

Mission report SIDIBE / Togo 2000
Mission report SIDIBE / Senegal 2000
Mission report SIDIBE / Togo 2001
Mission report SIDIBE / Tanzania 2001
Mission report SIDIBE / Cameroon 2001
Mission report SIDIBE / Gambia 2001
Mission report SIDIBE / Senegal 2001
Mission report SIDIBE / Kenya 2001
Mission report SIDIBE / Guinea 2001
Mission report SIDIBE / Côte d'Ivoire 2001

Diop B.A.

Mission report DIOP / Kenya, February 2001
Mission report DIOP / Guinea, Senegal, Burkina Faso, March 2001
Mission report DIOP / Mali, April 2001
Mission report DIOP / Senegal (workshop FAO, RVF), April 2001
Mission report DIOP / Burkina Faso, June 2001
Mission report DIOP / Chad, July 2001
Mission report DIOP / Cameroon, July 2001
Mission report DIOP / Benin, octobre 2001
Mission report DIOP / Togo, octobre 2001
Mission report DIOP / Sudan (Tripartite), November 2001
Mission report DIOP / Niger, Jan. 2002
Mission report DIOP / Chad, February 2002
Mission report DIOP / Côte d'Ivoire, July 2002
Mission report DIOP / Mauritania, September 2002
Mission report DIOP / Burkina Faso (workshop FAO, CBPP), Oct. 2002
Mission report DIOP / Senegal (workshop UEMOA), December 2002
Mission report DIOP / Chad, Jan. 2003
Mission report DIOP / Ghana (workshop CBPP), February 2003
Mission report DIOP / Nigeria, March 2003
Mission report DIOP / Congo, May 2003
Mission report DIOP / DRC, May 2003
Mission report DIOP / Equatorial Guinea, May 2003





Mission report DIOP / Burkina Faso (cross-border meeting), October 2003
Mission report DIOP / Senegal (workshop RVF), Jan. 2004
Mission report DIOP / Guinea (workshop CBPP), February 2004
Mission report DIOP / Guinea Bissau, August 2004
Mission report DIOP / Senegal (workshop ESS), August 2004
Mission report DIOP / CAR, July 2004
Mission report DIOP / Ghana (workshop lab), September 2004

Chardonnet B.

Mission report CHARDONNET / Benin, Togo, Ghana, Chad, CAR, Niger, 2000
Mission report CHARDONNET / BF, Cameroon, Gabon , Nigeria, 2000
Mission report CHARDONNET / Senegal-Guinea, October 2000
Mission report CHARDONNET / Gambia, November 2000
Mission report CHARDONNET / Mali, November 2000
Mission report CHARDONNET / Mauritania, December 2000
Mission report CHARDONNET / Wildlife capture, Chad et RCA.
Mission report CHARDONNET / Identification mission, Congo.
Mission report CHARDONNET / DRC
Mission report CHARDONNET / Wildlife capture Jan.-May 2002.
Mission report CHARDONNET / DRC (Katanga)
Mission report CHARDONNET / Wildlife capture , Sudan
Mission report CHARDONNET / Wildlife capture, Nigeria, Benin

Gregoire D.

Mission report GREGOIRE / Burkina Faso 2001
Mission report GREGOIRE / Sudan, Nairobi - Meeting tripartite 2001
Mission report GREGOIRE / Benin 2001
Mission report GREGOIRE / Gabon 2001
Mission report GREGOIRE / Congo 2001
Mission report GREGOIRE / Togo 2002
Mission report GREGOIRE / Senegal 2002
Mission report GREGOIRE / Cameroon 2002
Mission report GREGOIRE / Côte d'Ivoire 2002
Mission report GREGOIRE / Mauritania 2002
Mission report GREGOIRE / Ghana 2002
Mission report GREGOIRE / Equatorial Guinea 2002
Mission report GREGOIRE / DRC 2002
Mission report GREGOIRE / Guinea 2003
Mission report GREGOIRE / Guinea Bissau 2003
Mission report GREGOIRE / Nigeria (ECOWAS) 2003
Mission report GREGOIRE / Nigeria 2003
Mission report GREGOIRE / DRC 2003





Mission report GREGOIRE / Senegal 2003
Mission report GREGOIRE / Chad 2003
Mission report GREGOIRE / Guinea (CBPP) February 2004

MAILLARD A.

Mission report MAILLARD/ Mauritania, November 1999
Mission report MAILLARD/ Senegal, December 1999
Mission report MAILLARD/ Niger, Jan. 2000
Mission report MAILLARD/ Burkina Faso, Jan. 2000
Mission report MAILLARD/ CAR, March 2000
Mission report MAILLARD/ Kenya, March 2000
Mission report MAILLARD/ Côte d'Ivoire, May 2000
Mission report MAILLARD/ Togo, June 2000
Mission report MAILLARD/ Benin, June 2000
Mission report MAILLARD/ Togo, July 2000
Mission report MAILLARD/ Benin, July 2000
Mission report MAILLARD/ Ghana, July 2000
Mission report MAILLARD/ Gambia, August 2000
Mission report MAILLARD/ Mauritania, August 2000
Mission report MAILLARD/ Benin, December 2000
Mission report MAILLARD/ Cameroon, December 2000
Mission report MAILLARD/ Kenya, December 2000
Mission report MAILLARD/ Togo, Jan. 2001
Mission report MAILLARD/ Senegal, Jan. 2001
Mission report MAILLARD/ Ethiopia, Jan. 2001
Mission report MAILLARD/ Guinea Bissau, February 2001
Mission report MAILLARD/ Congo, March 2001
Mission report MAILLARD/ Gabon, March 2001
Mission report MAILLARD/ Senegal, April 2001
Mission report MAILLARD/ Nigeria, May 2001
Mission report MAILLARD/ Guinea, May 2001
Mission report MAILLARD/ Togo, June 2001
Mission report MAILLARD/ Gabon, July 2001
Mission report MAILLARD/ Ghana, July 2001
Mission report MAILLARD/ DRC, August 2001
Mission report MAILLARD/ Senegal, November 2001
Mission report MAILLARD/ Guinea Bissau, December 2001
Mission report MAILLARD/ Nigeria, Jan. 2002
Mission report MAILLARD/ Chad, February 2002
Mission report MAILLARD/ Côte d'Ivoire, February 2002
Mission report MAILLARD/ Benin, March 2002
Mission report MAILLARD/ Mali, March 2002
Mission report MAILLARD/ Niger, April 2002





Mission report MAILLARD/ Burkina Faso, May 2002
Mission report MAILLARD/ Equat. Guinea, July 2002
Mission report MAILLARD/ Cameroon, July 2002

Bendali F.

Mission report BENDALI/ Cordon Sanitaire – Zone North (Chad), February 2001
Mission report BENDALI/ CAR, February 2001
Mission report BENDALI/ Cordon Sanitaire – Zone South (Chad et RCA), March 2001
Mission report BENDALI/ Evaluation of operations of the Cordon Sanitaire, May 2001
Mission report BENDALI/ Tripartite Sudan, November 2001
Mission report BENDALI/ Workshop OIE-EPP, Cote d'Ivoire, February 2002
Mission report BENDALI/ ESS, Djibouti, March 2002
Mission report BENDALI/ Workshop PRASAC, Cameroon, May 2002
Mission report BENDALI/ Workshop CBPP, Ghana, February 2003
Mission report BENDALI/ ESS Senegal, March 2003
Mission report BENDALI/ ESS Mauritania, March 2003
Mission report BENDALI/ Training Epidemiology Senegal, April 2003
Mission report BENDALI/ ESS Benin, June 2003
Mission report BENDALI/ ESS Togo, June 2003
Mission report BENDALI/ Management Suspicion RINDERPEST, Oct. 2003
Mission report BENDALI/ ESS & Suspicion RINDERPEST Mauritania, Oct. 2003
Mission report BENDALI/ Meeting Tripartite Senegal, November 2003
Mission report BENDALI/ Workshop RVF Senegal, Jan. 2004
Mission report BENDALI/ ESS Mali & Burkina, Jan. 2004
Mission report BENDALI/ Workshop CBPP, Guinea, February 2004
Mission report BENDALI/ ESS Guinea, February 2004
Mission report BENDALI/ ESS Niger, March 2004
Mission report BENDALI/ ESS Mali, July 2004
Mission report BENDALI/ Workshop Optimisation ESS Senegal, August 2004

Denormandie N.

Mission report DENORMANDIE /2003/01/TG-BN : Togo, Benin, June 2003
Mission report DENORMANDIE /2003/01/GUI : Guinea, July 2003
Mission report DENORMANDIE /2003/01/CON : Congo, July - August 2003
Mission report DENORMANDIE /2003/01/CAR : CAR, August 2003
Mission report DENORMANDIE /2003/01/RCI : Côte d'Ivoire, August 2003
Mission report DENORMANDIE /2003/01/GAB : Gabon, octobre 2003
Mission report DENORMANDIE /2003/02/TOG : Togo, November 2003
Mission report DENORMANDIE /2003/02/BEN : Benin, nov – Dec.. 2003
Mission report DENORMANDIE /2004/II/RCI : Côte d'Ivoire, Jan. 2004
Mission report DENORMANDIE /2004/II/CAR : CAR, February 2004
Mission report DENORMANDIE /2004/II/CON : Congo, February 2004



Mission report DENORMANDIE /2004/II/GUI : Guinea, February - March 2004
Mission report DENORMANDIE /2004/III/BEN : Benin, April 2004
Mission report DENORMANDIE /2004/III/TOG : Togo, April - May 2004
Mission report DENORMANDIE /2004/I/GHA : Ghana, May 2004
Mission report DENORMANDIE /2004/II/GAB : Gabon, July 2004
Mission report DENORMANDIE /2004/III/CAR : CAR, July 2004
Mission report DENORMANDIE /2004/III/RCI : Côte d'Ivoire, Sept 2004
Mission report DENORMANDIE /2004/III/GHA : Ghana, Sept - Oct 2004

Squarzoni C.

Mission report SQUARZONI/ Workshop CBPP, Guinea, February 2004
Mission report SQUARZONI/ Workshop Optimisation ESS Senegal, August 2004
Mission report SQUARZONI/2004/01/Guinea
Mission report SQUARZONI/2004/01/Congo
Mission report SQUARZONI/2004/01/DRC
Mission report SQUARZONI/2004/02/Cameroon
Mission report DIOP SQU BAS/2004/04/GW : Guinea Bissau, August 2004
Mission report BAS SQUARZONI/2004/02/ML : Mali, sept 2004
Mission report BAS SQUARZONI/2004/02/NG : Nigeria, oct 2004

Bastiaensen P.

Mission report BASTIAENSEN/2003/01/SN : Senegal, July 2003
Mission report BASTIAENSEN/2003/01/GW : Guinea Bissau, August 2003
Mission report BASTIAENSEN/2003/01/BF : Burkina Faso, sept 2003
Mission report BASTIAENSEN/2003/02/SN : Senegal, oct 2003
Mission report BASTIAENSEN/2003/01/NE : Niger, nov 2003
Mission report BASTIAENSEN/2003/02/MR : Mauritania, Dec. 2003
Mission report BASTIAENSEN/2003/01/ML : Mali, Dec.. 2003
Mission report BASTIAENSEN/2004/03/SN : Senegal, April 2004
Mission report BASTIAENSEN/2004/02/GW : Guinea Bissau, Jan. 2004
Mission report BASTIAENSEN/2004/03/GW : Guinea Bissau, April 2004
Mission report BASTIAENSEN/2004/02/BF : Burkina Faso, February 2004
Mission report BASTIAENSEN/2004/02/NE : Niger, March 2004
Mission report BASTIAENSEN/2004/03/MR : Mauritania, Jan. 2004
Mission report BASTIAENSEN/2004/01/GM : The Gambia, May 2004
Mission report BASTIAENSEN/2004/01/CG : Congo, July 2004
Mission report BASTIAENSEN/2004/01/DC : DRC, July 2004
Mission report BASTIAENSEN/2004/03/NE : Niger, August 2004
Mission report BASTIAENSEN/2004/03/BF : Burkina Faso, August 2004
Mission report BAS BDP CSQ/2004/04/GW : Guinea Bissau, August 2004
Mission report BASTIAENSEN CSQ/2004/02/ML : Mali, Sept. 2004
Mission report BAS SQUARZONI/2004/02/NG : Nigeria, Oct. 2004.





9.5.2. M & E reports

Country programme progress monitoring table (ACM, Annual Coordination Meeting)

Progress report countries (ACM, Annual Coordination Meeting)

PACE Guinea Bissau evaluation report (September 2004)

9.6. Scientific papers produced by Bamako Reg. Coord. staff

9.6.1. Scientific papers

Une méthode d'épidémio-surveillance de la faune sauvage.

Chardonnet B.

In 'Les réseaux d'épidémiosurveillance', P.Hendrikx et B.Dufour (éd.), CIRAD [in press].

Liens entre agents non-professionnels et services vétérinaires officiels en Afrique au Sud du Sahara.

Diop B.A. & Bessin R. [6]

Rev. Sci. Tech. Off. Int. Epiz. (2004) 23 (1) p. 147 – 156.

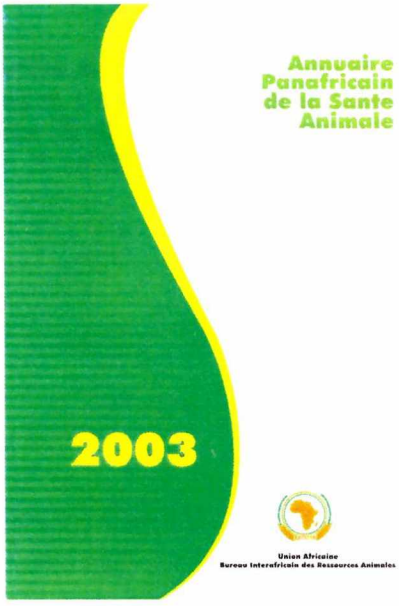
Rinderpest: the limits of serology ? The case of Mauritania.
Peste bovine : les limites de la sérologie ? Le cas de la Mauritanie.

Lemrabott O. M., Elmamy B.O., Diarra I., Baba O.M., Bastiaensen P., Bendali F., Diop A.B., Kock R., Tounkara K. , Bidjeh K., Thomson G., Fall M.

Revue d'Elev. Méd Vét. Pays Trop. [submitted].

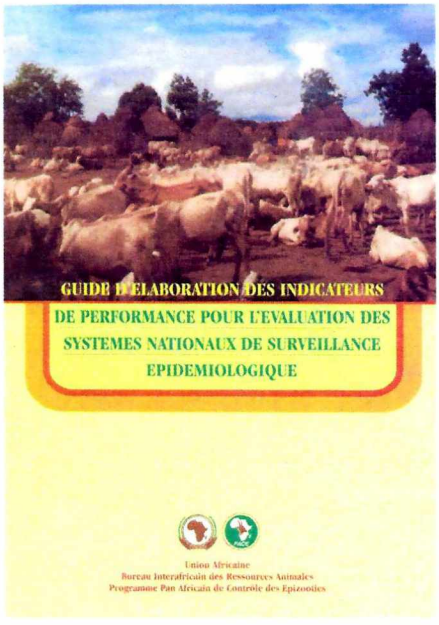
[6] Underligned : staff PACE Bamako.

9.6.2. Publications



Since 2002, IBAR has been publishing its *Pan-African Animal Health Yearbook,* which presents – like the international OIE yearbook – the health situation in Africa, not only for PACE member states, but for all AU member states.

The guide is published by IBAR based on information compiled by the DMU of PACE in Nairobi and includes contributions from experts of the Regional Coordination in Bamako.



The PACE Epidemiology Unit (PEU) has designed and edited a document titled « *Guide for the Development of Performance Indicators for the Evaluation of Epidemio-Surveillance Systems.* This document in two languages (French and English) is intended to provide people in charge of epidemio-surveillance systems a basis for the development of performance indicators for their epidemiological surveillance system. The work was published by IBAR, but with the active participation of the epidemiologists of the Regional Coordination in Bamako.

PACE

Pan African programme for the Control of Epizootics





Barbara DUFOUR Pascal HENDRIKX

La surveillance épidémiologique en santé animale

Avec la collaboration de

Isabelle Arzul
Farah Bendali
Didier Calavas
Myriam Chazel
Bertrand Chardonnet
Thierry Chillaud
Charlotte Lazard
Claire Moussu
François Moutou
Mahamat Ouagal
François Roger
Cécile Squarzoni
Anne Thebault
Jérôme Thonnat

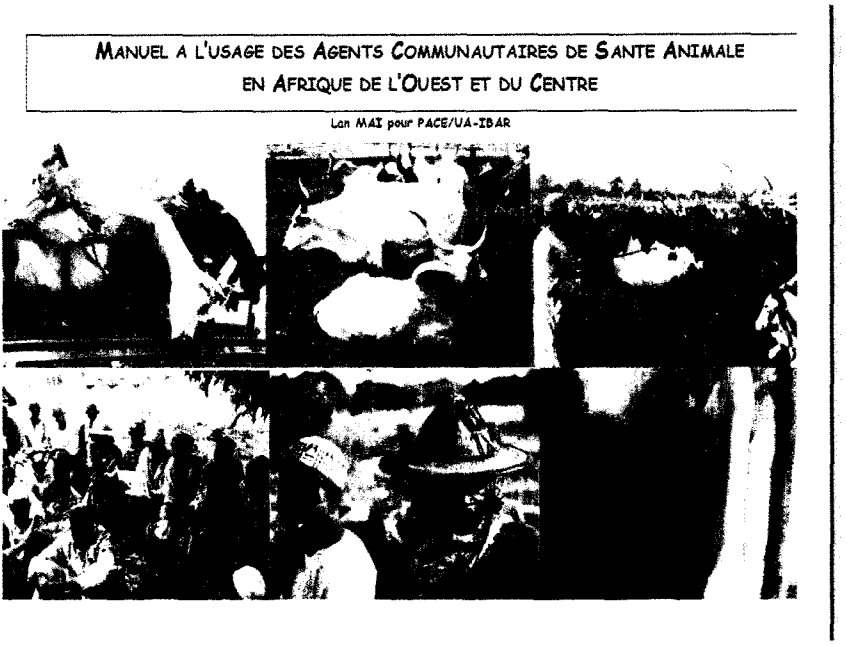


AEEMA

CIRAD

' La surveillance Epidémiologique en Santé Animale ' [Epidemio-surveillance in animal health] In press (French only), HENDRIKX P. et DUFOUR B., editors (co-authors, CHARDONNET B., BENDALI F. and SQUARZONI C.), 2004

'Manual for community based animal health workers in West and Central Africa' In press (both French and English), MAI Lan, editor, 2004.

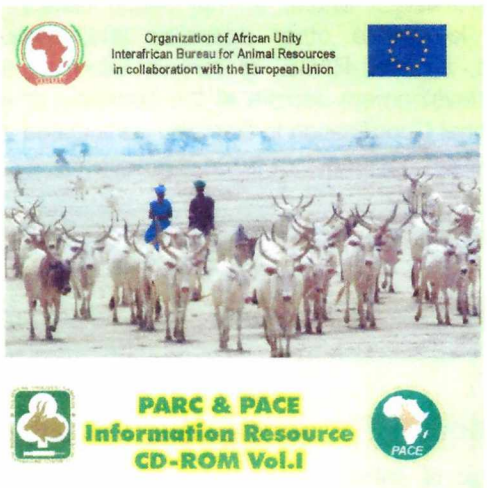


This work was conducted in collaboration with the regional coordination team in Bamako.



9.6.3. CD-Roms produced

2001. CD-rom Information Resource n° 1. Library of pictures, software, reference documents (OIE, PACE, PARC, FAO), training material. PACE Regional Coordination WCA.

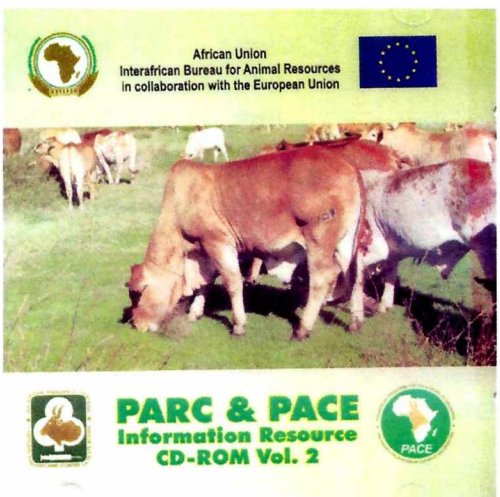


2002. CD-rom *'Epidemio-surveillance of wildlife'* (in French and English versions) : training documents, articles, reference documents, illustrations of capture equipment. 200 Mb. PACE Regional Coordination WCA.

2002. CD-rom (in French) Training of field and ESS staff with regard to wildlife surveillance. Power Point Presentations. 24 Mb

2002. CD-rom (in French): Training of staff with regard to wildlife capture and release techniques. 41 Mb

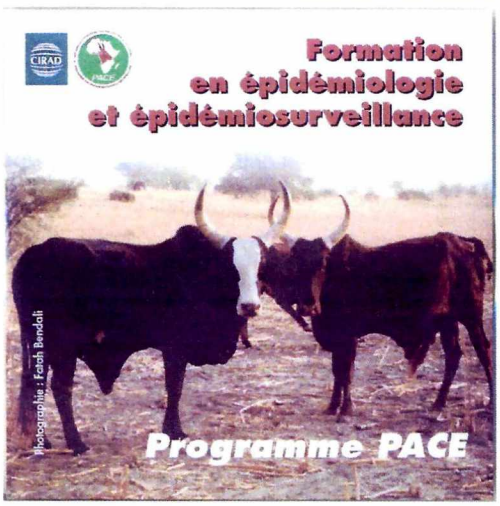
2002. CD-rom PARC & PACE Information Resource CD-ROM vol. 1



2003. CD rom PARC & PACE Information Resource CD-ROM vol. 2

2003. CD-rom (in English): Training of staff with regard to wildlife capture and release techniques. 56 Mb

2003. CD-rom *'Formation en épidémiologie et épidémiosurveillance'* [Training in epidemiology and epidemio-surveillance] PACE PEU (in collaboration with CIRAD). This training CD-rom has been conceived and developed by the regional epidemiologist (in collaboration with CIRAD). It aims to provide PACE country epidemiologists with pedagogical tools and reference techniques which they will need in their work :



- Basis of epidemiology
- Principles and tools of epidemio-surveillance
- Bio-statistics, case studies…

Another CD-rom on **CBPP** is at present being developed by the PACE Epidemiology Unit (Nairobi and Bamako).



9.7. The presence of PACE at regional and international forums

PACE, as one of the major programmes intervening in the animal health sector on the African continent, regularly participates in events of agencies or institutions which handle directly or indirectly livestock and/or animal health issues. This participation helps make PACE known to other agencies and individuals represented in these conferences, and for PACE, to remain informed about initiatives taken in other livestock development sectors at the continent or world level. Thus, executives of the Regional Coordination in Bamako participated in the following events:

Conference	Venue	Date
68th OIE General Session	Paris	Mai 2000
14th Conference of the OIE Regional Commission for Africa	Arusha	January 2001
69th OIE General Session	Paris	Mai 2001
26th Conference ISCTRC - CSIRLT 2001	Ouaga	October 2001
6th Conference of Ministers in charge of Animal Resources in Africa	Addis Ababa	March 2002
Colloquium PRASAC (Animal husbandry in the warm savannah areas of Africa)	Garoua	Mai 2002
70th OIE General Session	Paris	Mai 2002
World Veterinary Congress	Tunis	September 2002
15th Conference of the OIE Regional Commission for Africa	Maputo	February 2003
71st OIE General Session	Paris	Mai 2003
27th Conference ISCTRC – CSIRLT 2003	Pretoria	September 2003
The *'Journées Scientifiques'* of CIRAD	Montpellier	September 2003
3rd Consultative Group meeting FAO/OIE/IAEA/AU-IBAR on CBPP	Rome	November 2003
72nd OIE General Session	Paris	Mai 2004
AEEMA Congress Paris	Paris	Mai 2004
Colloquium sustainable development : lessons and perspectives (*Organisation Internationale de la Francophonie).*	Ouaga	June 2004
Meeting of the pluri-discplinary team on transhumance, organised by ECOWAS	Lomé	August 2004
The *'Journées Scientifiques'* of CIRAD	Montpellier	September 2004
Joint OIE - IBAR Congress : Application of international animal health standards : what are the solutions ?	Cairo	October 2004

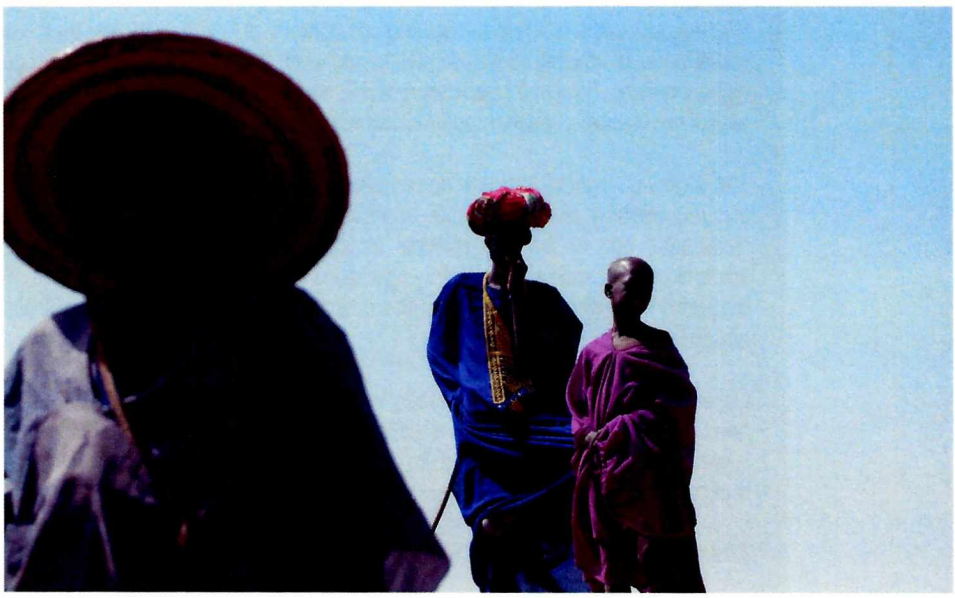
■ Table 39. Participation of PACE-REG representatives at external meetings.

Chapter
10

Impact of PACE

10.1. Impact of the PACE programme and implementation of activities at the Regional Coordination level.

The final objective, as displayed by the PACE programme is to alleviate poverty among cattle farmers by improving productivity. Food security is specifically mentioned in the complementary logframe referred to as 'Machakos'[7] as an additional final objective while international trade is often cited as rationale for PACE's activities, although it is not explicitly mentioned in any of the logframes.



Peuhl (fulani) herdsmen in Mali (photo : N. Denormandie).

At the conclusion of the first five years of the PACE programme, few elements enable us to assess the impact of this programme, using objectively verifiable indicators. The main sources of information currently available refer to impact studies of the previous project, the PARC, and to a series of participatory impact assessments carried out by the CAPE in East Africa. The final evaluation of the PARC programme has estimated that the losses due to RP were reduced from about 200,000 heads of cattle per year between 1980 and 1985 to 'a few thousand' at the end of the PARC programme. The economic benefits expected through the PACE programme must materialize through

[7] The financing agreement contains a summary of the PACE logical framework (CL), as established during the preparation phase. As of the starting of the PACE, an attempt was made to update this logical framework. This updated logical framework was developed during a workshop in Machakos (Kenya) and one refers to it as being the Machakos logical framework. This logframe must be regarded as an operational logframe which supplements, but does not replace the original logframe.





a reduction of productivity losses attributable to rinderpest (39%), savings on the costs of vaccination (59%), and productivity gains resulting from improved access to veterinary services (2%). The direct beneficiaries would be farmers, consumers and those who pay for the vaccinations.

Generally speaking, the PACE programme continues to be of considerable relevance to a majority of the countries concerned. Nevertheless, there are indications of animal health and of epizootics being of less concern than before. In part this is due to the success of PARC and of vaccination campaigns which have contained the threat of diseases and contributed to an increase in livestock numbers. In part this may also be due to the fact that PACE, with its' emphasis on surveillance rather than vaccination, has a lower visibility and 'action' content. Other, non-disease, factors have become more relevant as well: drought is a major factor affecting the fate of livestock in several countries, export markets have dwindled and Africa, as a continent, has become a net importer of animal products. Not all of the 32 PACE countries are affected to the same extent: PACE is more important and relevant for countries with larger livestock populations in East Africa and in the Sahelian zone than it is for countries further south with smaller livestock populations. Indications of weakening relevance are not strong enough to signal a major problem with respect to the relevance of the programme as a whole but there is a need to continuously review relevance.

With respect to the different thrusts and components of PACE, it is clear that thrusts 1 (epidemio-surveillance, at national as well as pan-African level) and 2 (veterinary services) generally have the highest priority. Thrusts 3 (eradication of RP) and 4 (other epizootics) continue to enjoy popularity even if the feasibility of achieving eradication has diminished.

The continued high relevance of epidemiology is affected by a number of considerations relating to the (im)possibility of obtaining OIE certification of freedom from Rinderpest. Control of livestock movement, one of the requirements for certification, is virtually impossible. Sustainability of epidemio-surveillance and laboratory operations also remains doubtful and this, in turn, affects the long-term feasibility of surveillance. The desirability and need of this surveillance is not in doubt however.

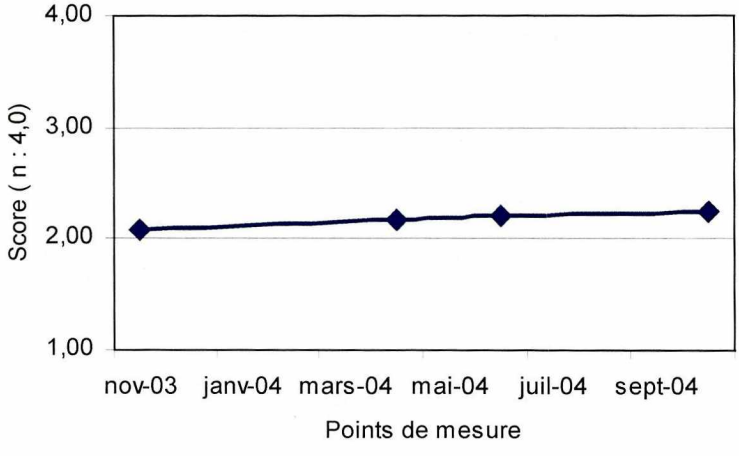
Organisation and delivery of veterinary services remains important from the point of view of the needs of the beneficiaries. Continuation and strengthening of the privatisation process and improving the legal framework for the delivery of veterinary care and access to drugs countrywide is of continued relevance therefore.

Abstract :Mid – term review (MTR) report, November 2002.

One of the important tasks to be carried out by the PACE Coordination in the course of the extension will involve the organization of the PACE programme final evaluation mission. This mission should be carried out by a body, external to the PACE programme and will have to rule over adequacy and achievement of results and objectives and the standards established in the logframe; this at the level of national programme and regional bodies alike, particularly IBAR. The Regional Coordination is striving, through the setup, *inter alia*, of a monitoring system for national components, to provide regularly and in a timely manner detailed information, enabling national programmes on one hand to position themselves with respect to objectives and other countries of the PACE programme, as far as their level of activity implementation is concerned and, on the other hand, to the evaluators to conduct their work. This approach is described in detail in Chapter 1.3.

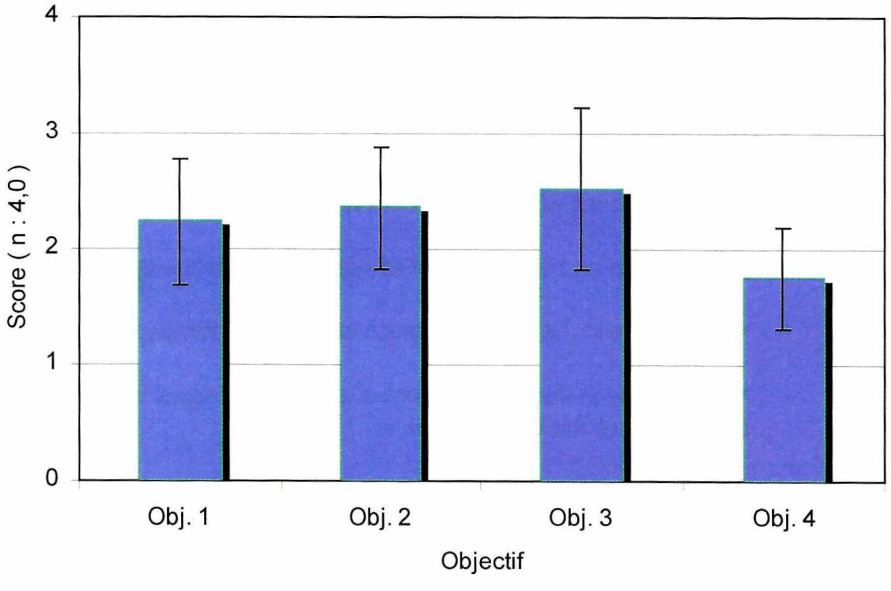


This is a summary analysis of the overall state of progress of the PACE programme in the 20 countries of WCA. The first graph represents the average evolution of the state of progress of the 20 countries in the course of the last year (between November 2003 and October 2004), based on the 37 monitoring indicators. This trend represents a 8.5% increase.



■ Graph 11. Evolution of progress in WCA countries (2003-2004). *'Point de mesure'* = measuring points.

The following graph represents the (average and standard deviation) implementation of the four thrusts (linked to the four objectives of the PACE programme) in October 2004.



■ Graph 12. Implementation (average and standard deviation) of the four thrusts of the PACE programme. *'Objectif'* = objective



Development of logframes for the extension of PACE during the Annual PACE Regional Coordination Meeting in Yaounde (Cameroon) in June 2004. Photo: C.Squarzoni.

As far as the regional level is concerned, the present chapter will be limited to the evaluation of the degree of achievement of activities that the Regional Coordination had targeted for itself.

The activities involve:

- assistance in the preparation of global plans and annual programme estimates (WP+CE) of PACE national programmes
- analysis of programme estimates (WP+CE) of national programmes in view of their consolidation
- the monitoring of national programmes
- assistance and evaluation of epidemio-surveillance systems for animal diseases
- assistance in the implementation of the OIE pathway for rinderpest eradication
- assistance in the development of control strategies for priority animal diseases such as CBPP and Rift Valley Fever
- assistance in improving the management of animal health data through installation of PID in countries and training national staff in its use
- development of a training programme
- organization of the PACE programme annual coordination meetings and the Advisory Committee meetings



The extent to which these activities were carried out in the course of the past 5 years of implementation, is presented in the following table in a synthetic manner.

Activity	Relative (on 10)	Absolute	Results, Comments
Support to the preparation of global work plans and annual programme estimates of the national programmes	●●●●●●●●●	20/20	The program is implemented in 20 countries of Central and West Africa. Only 2 countries are not concerned (Liberia and Sierra Leone) because of the embargo of the European Union.
Analysis of PE of the national programmes and their consolidation.	●●●●●●●●●	20/20	All the national components are operational with programme-estimates in progress. The programme in Equatorial Guinea is suspended by the ECD until further notice.
Monitoring of national programmes	●●●●●●●●●	20 / 20	All the national components are followed in a regular way, through field missions and by means of communication (telephone, fax, email). The total number of missions led in the 20 countries between 1999 and 2004 is 272.
Support and evaluation of the animal diseases epidemio-surveillance systems	●●●●●●●●○○	16/20	To date, 16 countries out of 20 were the subject of one or several evaluations of their epidemiological surveillance system. The countries which remain to be visited are: Ivory Coast, Gabon, Gambia, Equatorial Guinea.
Support to the eradication of rinderpest along the OIE pathway	●●●●●●●●○○	17/20	To date, 17 countries out of 20 have entered the OIE pathway to be declared free from rinderpest. The remaining countries are Congo, Gabon and Equatorial Guinea.





Activity	Relative (on 10)	Absolute	Results, Comments
Support to the establishment of priority diseases control strategies, e.g. CBPP and Rift Valley Fever	●●●●○○○○○○	3/6	Compared to the 6 diseases considered as a priority by the countries, only 3 (ASF, CBPP and RVF) were the subject of a particular attention by the Regional Coordination (organization of workshops or seminars which led to consensual regional strategies). The way the workshops' recommendations were followed-up by the countries is presented in chapter 7.2.
Support to the improvement of zoo-sanitary data management through the installation of PID and training of staff in its use.	●●●●●●●●●○	19/20	PID is currently installed in 19 countries; these countries benefit from a regular follow-up on behalf of the RTA's; Equatorial Guinea is the only country which does not have this software.
Organisation of the annual PACE regional coordination meetings and the advisory committee meetings	●●●●●●●●●●	6/6	All the meetings scheduled were organized.

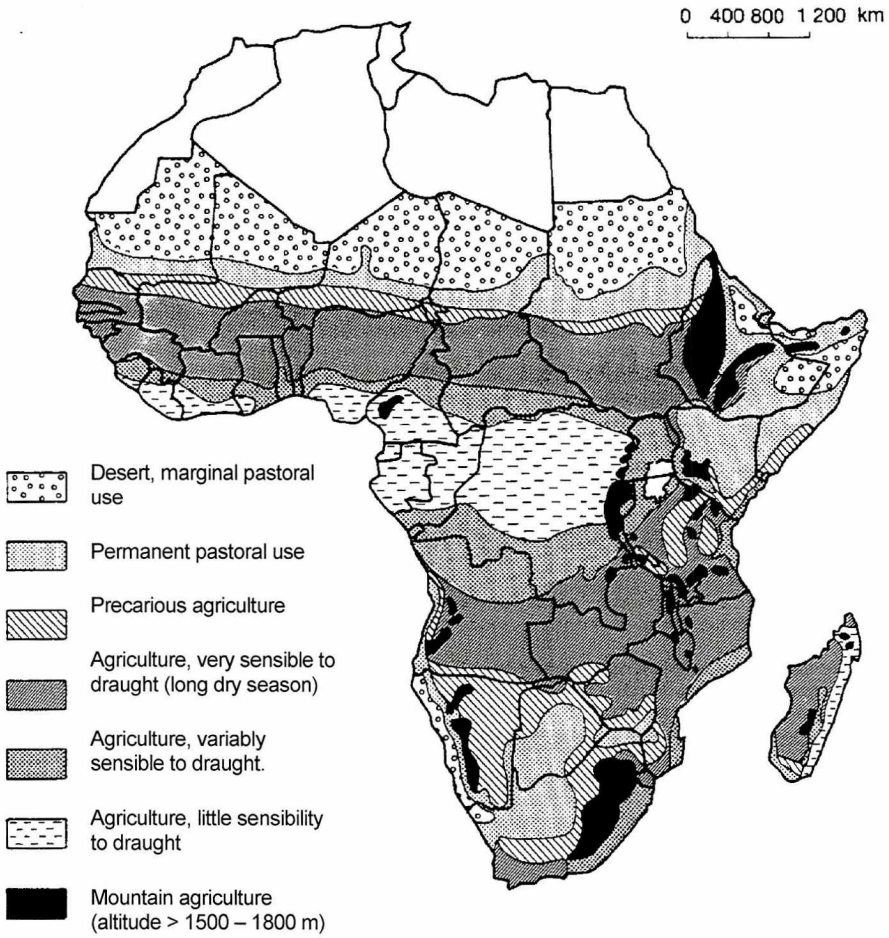
■ Table 40. Schematic presentation of implementation of activities according to the logical framework in the course of the last 5 years.



10.2. PACE and the environment

Schematically, from the Sahara to the humid tropical area, three agro-climatic zones can be distinguished:

a) a permanent pastoral zone where the average rainfall is less than 200mm;
b) a precarious agricultural zone with an average rainfall of 600 mm which has now dropped to less than 400 mm for a decade;
c) a zone corresponding approximately to the Sudano-Sahelian, Sudanese and Sudano-Guinean areas, where rainfall of the mono-modal type (a single rainy season) is comprised between 500 and 1,100 to 1,200 mm (Pieri, 1989).



- Map 15. The major agro-climatic regions of Africa. Source : Pieri P. (1989)

The environmental impact of PACE's actions involve more directly cattle (bovines and camelids) in the Sudano-Sahelian zone in West Africa, already under heavy demographic –and therefore agricultural – pressure. The zones further north (Sahelo-Saharian) are exclusively pastoral, while those areas located further south (Sudano-





Guinean) show low cattle densities and a strong integration of livestock and agriculture.

It is therefore the Sudano-Sahelian zone, called semi-arid, which is the most threatened and the most sensitive to livestock changes.

The exploitation of (natural) pastureland by cattle and the productivity of pasturelands which results from it, is influenced by several processes at the same time : physical degradation of pastures through stamping of hooves and increased losses by runoff water, the physical decay of soils (N and P) and finally changes in the plant system characterized by annual plants which replace the pluri-annual ones, and the species with heterogenous or slow germination which will dominate the rapid germination species. In addition, runoff waters bring about shorter cycle species (Breman et al, 1991).

The (maximum) livestock pasture load (or stocking rate) is thus defined as: « *the amount of cattle which can be sustained by the pastureland without deteriorating, while cattle has to stay in a good maintenance state, or even gain weight or produce milk* » (Boudet, 1975).

Farming system	J	F	M	A	M	J	J	A	S	O	N	D
Nomadism	0,1	0,1	0,09	0,08	0,07	0,07	0,07	0,3	0,3	0,3	0,2	0,2
Transhumance												
--- delta	0,2	0,1	0,1	0,2	0,2	0,2	0,5	1,9	1,9	1,6	0,7	0,4
--- savanna	0,09	0,08	0,08	0,08	0,08	0,2	0,7	1,9	1,9	1,6	0,5	0,1
Sedentary												
--- south-Sahel	0,1	0,1	0,1	0,1	0,1	0,1	0,2	1,1	0,5	0,3	0,2	0,1
--- delta	0,1	0,08	0,08	0,1	0,2	0,2	0,3	1,2	3,0	1,6	0,7	0,3
--- savanna	0,09	0,06	0,06	0,06	0,06	0,1	0,4	1,1	1,5	0,6	0,2	0,1

- Table 41. Livestock stocking rate in the course of a year with normal rainfall, for 6 farming systems in TLU/ha. Source : Breman et al., 1991.

From this definition stems the notion of overgrazing or overstocking, the harmful environmental impact feared in all livestock development programmes or projects in this area.

The impact of PACE activities is targeted on animal health, with a reduction of the mortality and morbidity rates as well as an increase of the production and reproductive rate. This in a first phase, leads to larger populations. One now needs to know how the farmers – pastoralists will react to this increase in their populations, confronted with a small margin of extension of their grazing areas (given the demographic pressure and increase of food and cash crops).

At this time, PACE does not have any data confirming the direct impact (improvement of health, production, and reproductive parameters enumerated above), nor the indirect impact (changes in the farming systems).



However, Behnke and Abel (1996) argue that marketing in the cattle production sector has a positive effect on stocking rates in Africa. On the other hand, the evolution from subsistence cattle farming towards commercial farming also diminishes animal production, as well as the capacity of pasturelands to provide income to human populations.

The mutation from African traditional cattle farming towards a more market oriented farming and fattening could have as a consequence a reduction of stocking rates. The price to pay is the quite probable reduction of productivity in terms of animal products per surface area. Pastoralists manage to have 2,5 times more energy through mixed production of meat and milk than through simple fattening production. This can be explained by the better conversion of energy, as well as nutrients (mainly nitrogen) in fodder (and therefore pasture) and milk. Milk, fiber (silk), fertilizer and traction are animal products from live animals, while meat, skin and other products are derived from carcasses, after a slaughtering process. For meat production, the maximum density of cattle is that which enables the most surplus animals for slaughtering. On the other hand, for the production of animals on foot, the maximum cattle density is that which supports an existing and stable herd, rather than a herd in rapid dynamic evolution.

Behnke and Abel (1996) point out that as the size of the herd increases, one can observe a conversion of milk production towards meat production. These changes in management objectives go hand in hand with changes in herd management and the very structure of the herd. Among the Masai in Kenya, one can observe that big farmers have a trend towards exploiting the demand of milk cows among neighbouring agricultural farmers. This is confirmed by the fact that big farmers maintain the bulls and oxen of fattening age in their herds. Likewise, the small Borana farmers in Ethiopia have a tendency to extend to the maximum the lactation period of their cows, in order to increase milk production, but at the expense of calving rate and meat production. The Borana farmers having important cattle populations, on the other hand, accept a shorter lactating period and lower milk yield, but put emphasis on improved calving rate and an increase in meat production.

This indicates in conclusion that the expected improvement of production parameters, thanks to the intervention of PACE, will lead in a first stage to higher population figures which will be followed by a mutation from the traditional type farming system towards the commercial type which is characterized by a reduction of the stocking rate and therefore pressure on grass-land.

The stake will therefore be to know the end result of this market orientation. What will be the outlets for these products? Countries such as Mali, Burkina Faso, and Niger have an important meat production potential on which they have to cash-in by promoting cattle exports towards the sub-region. And it is precisely in this area that PACE strives to act.

10.3. PACE and gender issues in livestock

The active female population was estimated in 2001 at 62.2% of the total active population (Sub-Saharan Africa, UNDP, 2002). The majority of women work in the agricultural sector where they ensure most of the food production. Rural women ensure half the food production in the world and, in the majority of developing countries, their contribution ranges from 60% to 80% (FAO 2004). Generally speaking, they are under-represented in policy making bodies (with the rare exception of Mali, where one third of cabinet ministers are women) and occupy less than 5% of executive positions in the administration.

The constraints which weigh on the status of rural women are particularly related to land tenure rights and succession rights, as well as their matrimonial and parental rights. Their economic status remains characterized by a heavy dependence on their husband. The management of income is traditionally entrusted to men and women rarely participate in decision making.

To the extent that one can currently note a strong reduction in men's participation in agriculture, because of rural out-migration towards cities and because of the heavy price paid by men to HIV/AIDS, agriculture is increasingly being dominated by women. This trend has resulted in an increase in the number of households led by women. About one third of the total number of rural households in Sub-Saharan Africa are now headed by women. Studies have shown that women-heads-of-households are generally younger and less educated than their male counterparts. They also have less land to work and less capital and manpower outside the family to help them with their work. On account of lacking manpower and capital, these women are often compelled to alter the distribution of crops and agricultural farming systems.



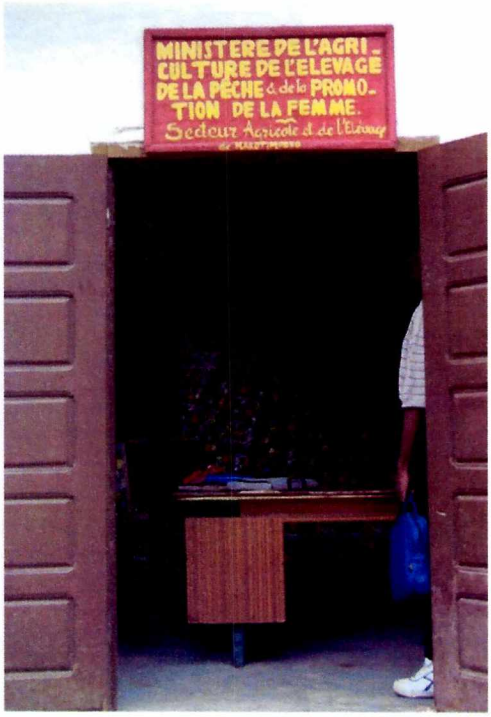
Woman – livestock farmer in Togo (photo : P. Bastiaensen).

Such adjustments have led to lower production and in certain cases, to a shift towards less nourishing crops. It is therefore not totally unexpected that these households often experience a worsening of their malnutrition and food insecurity (FAO 2004).

At the same time, discrimination against women and indifference towards their problems persist : decision makers, planning and development officials and agricultural service providers, start from the principle that agricultural and animal farmers are men. Given that fact, women have more difficulties than men to access valuable resources, such as land, credit and agricultural inputs, technologies, extension, training and other services which would strengthen their production capacity.

As far as livestock is concerned, women mostly contribute through maintenance and care to animals. In general, few women are present and/or active in cattle farming, if not to care for calves (very important) and in the sale and processing of dairy products, which nevertheless provides them with significant income.

One can also mention an initiative reported from Benin and which tends to generalize. In order to avoid that unmarried youth in charge of transhumant cattle be distracted from their job by the quest for a partner on their path, which could lead to conflicts, the villages (which served as departing points for transhumance) or nomadic families tend to motivate young couples to go with transhumant animals immediately after their wedding. This phenomenon has a twofold advantage. On the one hand, it helps limit potential conflicts; on the other hand it helps the couple save over several months on animal products (for example milk) without being obliged to share on a daily basis the fruits of cattle production at the source with the family. It thus enables young couples to prepare in the course of this "*honeymoon*" a little capital (for future sedentarisation) before making room for other young couples.



The combination of agricultural services and gender equity : a specific case in Congo. Photo : C. Squarzoni, 2004.

The three sectors where women play a significant role are short cycle livestock farming areas: small ruminants, pigs, and poultry farming. In all cases, the woman manages her farm in an autonomous way and takes advantage of the income generated. Very often the small herds of stock represent savings, rapidly available and exchangeable for cash in case of need.

Diseases which, in West and Central Africa, affect animal farming the most in those sectors mentioned above are respectively PPR, ASF, and ND. In the particular

case of ASF, the distribution area of pig breeding is limited (with a few exceptions only) to the non Muslim area, along the coasts of West and Central Africa.

If one analyses the attention which was given by PACE (both national and regional) programmes to these three diseases, the result is relatively mitigated. The only disease to have been the focus of some sub-regional level consultation was African Swine Fever in the countries involved. Very often, one or several such diseases are not found on the list of diseases deemed priority diseases by the epidemiological surveillance systems, even though they have always been present.

As a matter of fact, the choice of priority diseases selected in ESS's activities has not been the object of genuine epidemiological and socio-economic risk analysis, but was most often based on traditional conceptions and biases from decision makers regarding certain sectors and certain diseases; it is therefore characterized by a strong male bias. Few countries grant real importance to the poultry farming sector, which remains an important lever to fight against poverty and contribute to food security.



Women livestock farmers in Guinea. Photo : C. Squarzoni.

As far as women's participation in the technical implementation of PACE is concerned, the result is not any better: there are very few women executives in national coordinations, and even fewer in veterinary services supported by the PACE programme (refer to tables on the following page). .





The relative participation of women in the various entities involved in the PACE programme and the achievement of its objectives are briefing summarized on the table below.

Country	Nat. PACE Coord.	Vet. Services	Private Vets	Farmers
Benin	●	●	●	●
Burkina Faso	●	●	●	●
Cameroon	●	●		
Congo	●	●		
Cote d'Ivoire		●	●●	
Gabon	●●●	●	●	
Gambia	●●	●		
Ghana		●		●
Guinea		●●		
Guinea Bissau	●	●●●	N/A	●●●
Guinea Equat.				
Mali	●	●	●●	●●
Mauritania		●	●	●
Niger	●	●	●	●
Nigeria	●			
CAR		●	N/A	
DRC	●●			
Senegal	●●	●●●	●	●●
Chad		●		
Togo	●	●●		

• Table 42. Relative participation of women in PACE actions.

At PACE level itself, including expatriate technical assistance, the situation is as follows :

	Men	Women	Total	%
Senior Staff PACE Regional Bamako	4	1	5	20
Senior Staff PACE Regional Nairobi	11	0	11	0
Nat. Programme Coord. PACE WCA	18	2	20	10
Nat. Programme Coord. PACE EA	9	1	10	10

▪ Table 43. Participation of women in PACE - Situation on October 31, 2004

Chapter 11

Conclusions

This report on the implementation of the PACE programme in West and Central Africa over the period 1999-2004 has reviewed the various activities of the programme at the national and regional level by trying, in a very objective manner, to analyse the results obtained and their potential impact. Even though all PACE objectives were not met during that period (which would not have justified the extension request made by the African Union and accepted by the European Union on October 5, 2004), it is undeniable that tangible progress has been made towards the expected results.

The surveillance capacities of animal diseases have been reinforced in 19 of the 20 countries involved through training activities, definition and application of new operating procedures, equipment with vehicles and miscellaneous material as well as regular assistance of the regional team (Bamako and Nairobi). Performance indicators have been developed in order to enable an internal and external evaluation of the operation of epidemiological surveillance systems. Of course these systems now need to be consolidated and their funding must be made sustainable using national resources.

Rinderpest has disappeared from West and Central Africa. Eleven countries already have been granted the OIE status of disease-free country : Benin, Burkina Faso, Côte d'Ivoire, Guinea, Ghana, Mali, Mauritania, Niger, Senegal, Chad (on a zonal basis) and Togo. Nigeria ought to receive this status at the next OIE annual session in May 2005. Countries such as Congo, Gabon, Guinea Bissau and Equatorial Guinea are in a position to directly claim the status of infection free countries – on a historical ground – without going through the two preceding steps, as foreseen in article 3.c of Annex 3.8.2 of the OIE Terrestrial Animal Health Code. Taking into account countries 'current state of progress on the OIE pathway and assuming that these procedures will not suffer any additional delays (for example because of the discovery of positive cases), the last countries of this PACE area will be declared free from infection in 2007.

For the first time, a large number of Sub-Saharan African countries (except states like Botswana or South Africa) have been able to align themselves on international standards in the field of animal health. Perceived under this angle, the efforts undertaken to declare countries free from rinderpest are also perceived as an excellent means to learn to develop reliable epidemiological surveillance systems, in relation with international standards, which will be useful for similar processes in the future, for example for Contagious Bovine Pleuropneumonia (CBPP) or Foot-and-Mouth Disease.

Strategies have been developed using a participatory approach, associating country representatives in order to ensure better control of priority animal diseases such as CBPP, African Swine Fever and Rift Valley Fever.

On the other hand, important diseases such as foot-and-mouth disease, PPR, and Newcastle disease have not been adequately taken into account.



Transhumant herds crossing the Bani river at Sofara (northern Mali).
Photo : N. Denormandie.

The PACE programme has facilitated meetings between veterinary service officials and sometimes officials of veterinary professional associations to strengthen exchanges and promote better coordination of activities.

In relation with the IAEA (*International Atomic Energy Agency*) expert based in Nairobi, assistance was provided to national veterinary laboratories in the form of methodological tools, training and donations of equipments and reagents.

The PID (*PACE Integrated Database*) developed by the officer in charge of the PACE data management unit, has been installed in 19 countries and local staff was trained with the support of regional technical assistants in Bamako. This PID a multi-user and multi-lingual system of health information and animal production management whose exploitation helps provide more reliable and timely sanitary information. However, it must be recognized that currently less than half of the countries are regularly exploiting the PID.

The AU-IBAR web site launched in February 2004 was developed with close involvement of PACE and the Regional Coordination.

Some actions aimed at reorganizing veterinary services in order to adapt them to the quality standards advocated by the OIE of veterinary services have been initiated but a lot remains to be done in this field. This is to be viewed in relation with the fact that, as the OIE stipulates, veterinary services must demonstrate through their structure, fields of activities, scientific capacity and technical resources, that they are capable to guarantee and certify animal health and the safety of animal products or implement programmes and actions improving the national, regional, and world health situation. The reorganization of veterinary services covers several domains, including the very organization of services, but also veterinary legislation and the liberalization of the





animal health sector, the introduction of the sanitary mandate system, etc. PACE's involvement in these fields has had some limitations. The approval of new legislation and the liberalization of veterinary services are choices which are to be made by sovereign governments. The PACE programme, as has demonstrated the experience acquired to-date, must limit itself to the role of informer and facilitator of technical and political discussions at the national level which might or might not achieve intended goals.

At the level of the monitoring of programme implementation, the delays observed in the acquisition of equipments essentially because of the lack of familiarity with the management procedures of the EDF, were gradually internalised, except for one country, Equatorial Guinea. A monitoring system for national programmes has been established in order to provide regular and timely detailed information, enabling national components to determine their position with respect to their state of progress in the achievement of PACE's goals and to NAOs and local ECDs to have synthetic but relatively broad information on their country but also on the other countries of the PACE programme.

The real impact of the programme has not been measured yet ; this will be done in the course of the final evaluation planned some time in the year 2006.

In the course of the extension period, the overall objective of the PACE programme remains its contribution to poverty alleviation and to the development of the livestock sector in Africa through an appropriate context of health security. On the other hand, the four initial objectives were reduced to two:

- strengthening surveillance systems in order to promote a better formulation of policies of control of priority diseases and better access to livestock markets.

- eradication of rinderpest and control of other epizootic diseases.

This remains an important challenge that can be met with a determined commitment by all stakeholders involved.

Chapter
12

Annexes

Annex 1 : List of abreviations

ACP	Africa, Caribbean and the Pacific (Cotonou agreements, EDF)
AIDCO	Europe Aid Cooperation Office (CE)
ARIS	Animal Resource Information System (PID)
ASF	African Swine Fever
ASP	Active Surveillance Post (or check-Point)
AU	African Union
CAHW	Community-based Animal Health Worker
CAPE	Community-based Animal health and Participatory Epidemiology (PACE)
CAR	Central African Republic
CBPP	Contagious Bovine Pleuro-Pneumonia
CCU	Central Coordination Unit (of an ESS)
CEMAC	Communauté Economique et Monétaire de l'Afrique Centrale
CF	Coopération Française
CGIAR	Consultative Group on International Agricultural Research
CIRAD	Centre International de Recherche Agricole pour le Développement (France)
CIRDES	Centre International de Recherche – Développement sur l'Elevage en zone Subhumide
CORAF	Conférence des Responsables de Recherche Agronomique Africains
CoU	Communication Unit
CSU	Common Services Unit
CVO	Chief Veterinary Officer
DfID	Department for International Development (Royaume Uni)
DMU	Data Management Unit
DRC	Democratic Republic of Congo
DVS	Department of Veterinary Services
EA	East Africa
EC(D)	European Commission (Delegation)
ECC	European Community Commission (EC)
ECOWAS	Economic Community of West African States
EcU	Economics Unit
EDF	European Development Fund (EC)
EFSA	European Food Safety Authority (EC)
EMPRES	Emergency Prevention System for Animal and Plan Pests and Diseases (FAO)
EPP	Emergency Preparedness Plan (Contingency Plan)
ESS	Epidemio-Surveillance System (RES)
EU	European Union
EUR	Euro (€)
FAO	Food and Agriculture Organisation
FCFA	Franc CFA
FITCA	Farming In Tsetse Controlled Areas
FMD	Foot and Mouth Disease (FA)
GREP	Global Rinderpest Eradication Programme
GTZ	Gesellschaft für Technische Zusammenarbeit
IAEA	International Atomic Energy Agency
IAH	Institute for Animal Health (WRLR) Pirbright, Royaurne Uni
IBAR	Bureau Inter-africain des Ressources Animales (UA)
IFAD	International Fund for Agricultural Development (WB)
ILRI	International Livestock Research Institute
ITC	International Trypano-tolerance Center (Gambie)
JP-15	Joint Project 15 (PC-15)





LANADA	Laboratoire Nationale d'Appui au Développement Agricole, Côte d'Ivoire
LNERV	Laboratoire National de l'Elevage et de la Recherche Vétérinaire (ISRA) Sénégal
MTA	Main Technical Assistant
MTR	Mid Term Review (mission d'évaluation à mi-parcours)
NAO	National Authorising Officer (ON)
ND	Newcastle Disease
NIB	National Indicative Budget (PACE)
NPC	National Programme Coordination / Co-ordinator (PACE)
OAU	Organisation of African Unity
OIE	Office International des Epizooties
OLAS	Online Accounting System (CE)
PACE	Pan-African Programme for the Control of Epizootics
PACE-REG	PACE Regional Coordination Unit, Bamako
PARC	Pan-African Rinderpest Campaign
PCU	Programme Coordination Unit
PE	Programme Estimate (WP+CE)
PEU	PACE Epidemiology Unit (Unité d'Epidémiologie du PACE)
PI	Performance Indicator(s) (of an ESS)
PID	PACE Integrated Database (Base de données intégrée du PACE)
PPR	Peste des Petits Ruminants
PROCORDEL	Programme Coordonné de Recherche sur l'Elevage (UE)
RALEA	Regional Action for Livestock production in Eastern Africa
RAO	Regional Authorising Officer (Ordonnateur Régional FED)
RCI	République de Côte d'Ivoire
RCU	Regional Coordination Unit
RP	Rinderpest
RPV	Rinderpest virus
RTA	Regional Technical Assistant
RVF	Rift Valley Fever
SADC	Southern African Development Community
SDC	Sanitary Defence Committee
SPS	Sanitary and Phyto-Sanitary
TA	(national) Technical Assistant
TAD	Trans-boundary Animal Disease(s)
TLU	Tropical Livestock Unit
ToR	Terms of Reference
UCP	Unité de Coordination du Programme PACE
UEMOA	Union Economique et Monétaire Ouest-Africaine
UNDP	United Nations Development Programme
VLU	Veterinary Livestock Unit
VPLU	Veterinary Privatisation and Legislation Unit
WCA	West and Central Africa
WP + CE	Work Plan and Cost Estimate (EDF)
WP	Work Plan
WRLR	World Reference Laboratory for Rinderpest (IAH)
WTO	World Trade Organisation

Annex 2 : Local staff of the regional coordination

Name	First name	Position	Since
Bagayoko	Aissata	Main secretary	April 2000
Mariam	Fane	Deputy secretary	February 2000
N'Diaye	Youma Sadio	Accountant	February 2000
Sangaré	Alou	Administrative aid	June 2001
Koné	Souleymane	Clerk	February 2000
Traoré	Mamadou	Driver	February 2000
Simega	Mamadou	Day guard	February 2000
Keita	Namory	Night guard	February 2000
Coulibaly	Nianian	Night guard	February 2000

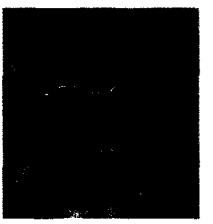
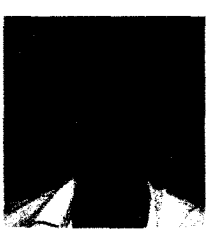


Personnel of the Regional Coordination office and PACE Mali National Coordination[4]

[4] As well as the OIE Regional Representative for Africa, Samba A. Sidibé and his staff.



Annex 3 : Short presentation of the PACE experts

Name and position	Start /end of contract	Employer	Picture
Dr. Samba A. Sidibe Regional Coordinator for West and Central Africa	November 1999 31.05.2001	OAU-IBAR	
Dr. Bouna A. Diop, Regional Coordinator for West and Central Africa	December 2000 31.10.2004	AU-IBAR	
Mr. Didier Bernard Communication officer (CoU)	October 2000 31.03.2001	agrer	
Mr. Daniel Grégoire, Communication officer (CoU)	October 2001 28.02.2004	agrer	
Dr. Antoine Maillard, Regional epidemiologist (PEU)	November 1999 September 2003	Ministère des Affaires Etrangères	
Dr. Cécile Squarzoni, Regional epidemiologist (PEU)	07.02.2004 31.10.2004	Ministère des Affaires Etrangères	

PACE

Pan African programme for the Control of Epizootics



Dr. Fatah Bendali, Regional epidemiologist (PEU)	20.06.2000 31.10.2004	CIRAD	
Dr. B. Chardonnet, Wildlife specialist (PEU)	June 2000 March 2003	CIRAD	
Dr. N. Denormandie, Regional Technical Assistant West African coastal countries + CAR and Gabon	15.05.2003 31.10.2004	SATEC DEVELOPPEMENT INTERNATIONAL	
Dr. Hanns-Achim Krebs, Regional Technical Assistant Central Africa (except CAR and Gabon)	01.10.2003 31.10.2004	gtz	
Dr. P.X.M. Bastiaensen, Regional Technical Assistant Sahel Countris	30.05.2003 31.10.2004	gtz	
Dr. Andrea Massarelli, National Technical Assistant and PACE Chad National Programme Coordinator	01.05.2003 31.10.2004	gtz	



Annex 4 : List of equipments purchased during PACE

ID number	Designation	Date of purchase	Value (FCFA)	Service and/or Location
2342/GEN/01/01/CR	Groupe électrogène Genelec	12/01/01	11.541.700	Cour
2342/GEN/02/01/CR	Abri pour groupe électrogène	10/08/01	1.450.000	Cour
2441/COPY/01/PARC/AT	Photocopieur Canon NP6212	PARC		Epidémiologie
2441/COPY/03/00/CR	Photocopieur Canon NP6317	22/01/00	3.296.900	Secrétariat PACE
2441/REL/01/99/CR	Relieuse LAMIREL	30/12/99	450.000	Salle conférence
2441/CAL/01/00/CR	Calculatrice SHARP CS 2194	17/11/00	85.000	Comptable
2441/CAL/02/03/CR	Calculatrice CASIO fx-82TL	03/01/03	13.000	Comptable
2441/CAL/03/03/CR	Calculatrice CASIO fx-82TL	03/01/03	13.000	Coord. Régional
2441/RETRO/01/99/CR	Rétroprojecteur KINDERMANN	30/03/99	713.248	Agent administ.
2441/REG/03/01/CR	Régulateur de tension	01/10/01	22.500	Coord. Régional
2441/REG/04/01/CR	Régulateur de tension	01/10/01	22.500	Cafétéria
2441/COF/01/PARC/CR	Coffre fort LEECO	PARC		Comptable
2442/MICRO/01/PARC/CR	Micro Packard bell	PARC		Secrétariat PACE
2442/MICRO/02/PARC/CR	Micro IBM	PARC		Agent administ.
2442/MICRO/06/99/CR	Micro Compag Presario MV500	11/01/99	816.367	Comptable
2442/MICRO/07/00/CR	Micro Compag Presario MV520	28/01/00	1.186.200	Secrétariat PACE
2442/MICRO/09/01/CR	Micro Compaq Presario 5000	12/01/01	1.500.000	Serveur
2442/MICRO/10/04/CR	Micro Compaq Presario 9500	Récupéré de l'AT Communication		Coord. Régional
2442/MICRO/11/04/SC	Micro Compaq	Récupéré de l'AT Communication		Epidémiologie
2442/PORT/02/01/SC	Portable Compaq Presario 1700	20/12/01	1 639 800	Epidémiologie
2442/PORT/03/01/CR	Portable Compaq Presario 1700	20/12/01	1 639 800	Comptable
2442/PORT/04/04/CR	Portable Toshiba Satellite	Récupéré de l'AT Communication		Coord. Régional
2442/IMP/06/00/CR	Imprimante HP Desk jet 610C	28/01/00	186.900	Secrétariat PACE
2442/IMP/07/02/CR	Imprimante HP 1200	04/03/02	385.000	Coord. Régional
2442/IMP/08/NDJ/SC	Imprimante Canon LBP 800	Récupéré de N'djamena		Epidémiologie
2442/IMP/09/NDJ/SC	Imprimante HP 970 C	Récupéré de N'djamena		Epidémiologie
2442/IMP/10/04/CR	Imprimante HP Deskjet 5150	10/06/04	145.000	Secrétariat PACE
2442/IMP/11/04/SC	Imprimante HP couleur	Récupéré de l'AT Communication		Epidémiologie
2442/IMP/12/04/CR	Imprimante Canon portable	Récupéré de l'AT Communication		Agent administ.
2442/SCAN/01/04/CR	Scanneur HP ScanJet 5300C	Récupéré de l'AT Communication		Coord. Régional
2442/OND/04/99/CR	Onduleur MGE système	11/01/99	260.000	Comptable
2442/OND/07/00/CR	Onduleur APC 650 VA	28/01/00	218 800	Secrétariat PACE
2442/OND/08/01/CR	Onduleur APC 650 VA	25/10/01	200.000	Secrétariat PACE
2442/OND/10/04/CR	Onduleur Pulsar MGE	Récupéré de l'AT Communication		Coord. Régional
2443/TEL/01/PARC/CR	Téléphone	PARC		Coord. Régional



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ID number	Designation	Date of purchase	Value (FCFA)	Service and/or Location
2443/TEL/03/00/CR	Interphone Panasonic	12/06/00	25.000	Coord. Régional
2443/TEL/05/00/CR	Interphone Panasonic	12/06/00	25.000	Comptable
2443/TEL/07/00/SC	Interphone Panasonic	12/06/00	25.000	Secrétariat PACE
2443/TEL/08/00/CR	Interphone Panasonic	12/06/00	25.000	AT Régionaux
2443/TEL/09/00/AT	Interphone Panasonic	12/06/00	25.000	Epidémiologie
2443/TEL/10/00/AT	Interphone Panasonic	12/06/00	25.000	Epidémiologie
2443/TEL/11/00/AT	Interphone Panasonic	12/06/00	25.000	AT Régionaux
2443/TEL/12/00/CR	Interphone Panasonic	12/06/00	25.000	Agent administ.
2443/TEL/14/O2/CR	Poste opérateur	01/11/02	135.000	En panne
2443/TEL/15/O4/CR	Téléphone satellite THURAYA	Récupéré de l'AT Communication		Coord. Régional
2443/TEL/16/O4/CR	Autocom Panasonic	04/11/04	385.000	Secrétariat PACE
2443/CEL/01/01/CR	Téléphone cellulaire Alcatel	24/12/01	90.000	Agent administ.
2443/CEL/02/03/CR	Téléphone cellulaire Alcatel	29/04/03	80.000	Chauffeur
2443/FAX/04/00/CR	Fax Panasonic KX-FP302	23/04/04	215.000	Secrétariat PACE
2443/GPS/01/04/CR	GPS Etrex Venture	Récupéré de l'AT Communication		Agent administ.
2443/PHOTO/01/04/CR	Appareil photo numérique Nikon	Récupéré de l'AT Communication		Coord. Régional
2443/PHOTO/02/04/CR	Sac étanche pour appareil photo	Récupéré de l'AT Communication		Coord. Régional
2443/ENR/01/02/SC	Magnétophone Philips Ag6455	02/09/02	60.020	Agent administ.
2443/LCD/01/02/CR	Vidéo projecteur TOSHIBA	08/01/02	3.275.000	Agent administ.
2443/LCD/02/NDJ/SC	Vidéo projecteur	Récupéré de N'djamena		Agent administ.
2443/TEL/01/PARC/SC	Téléviseur Gold Star	PARC		Salle conférence
2443/VID/01/PARC/SC	Magnétoscope Gold Star	PARC		Salle conférence
2444/BUR/01/PARC/AT	Bureau avec renvoi	PARC		Epidémiologie
2444/BUR/04/CIRAD/AT	Bureau avec renvoi	Récupéré de l'AT Faune sauvage		AT Régionaux
2444/BUR/05/00/CR	Bureau avec renvoi	22/06/00	300.000	Secrétariat Pace
2444/BUR/06/00/SC	Bureau avec renvoi	22/06/00	300.000	Secrétariat Pace
2444/BUR/07/00/CR	Bureau avec renvoi	22/06/00	300.000	Comptable
2444/BUR/08/00/AT	Bureau avec renvoi	22/06/00	300.000	AT Régionaux
2444/BUR/09/01/CR	Bureau avec renvoi	27/09/01	277.072	Coord. Régional
2444/TAB/03/00/CR	Table de conférence	09/05/00	430.000	Salle conférence
2444/TAB/04/00/CR	Table de TV	11/07/00	55.000	Salle conférence
2444/FAU/02/00/AT	Fauteuil Directeur (défectueux)	03/01/00	390.000	AT Régionaux
2444/FAU/03/00/CR	Fauteuil Directeur	09/05/00	240.000	Coord. Régional
2444/FAU/05/01/CR	Fauteuils visiteurs simili cuir	25/10/01	300.000	Coord. Régional
2444/CHAI/03/00/CR	Chaises (20)	09/05/00	650.000	Salle conférence
2444/CHA/04/01/CR	Chaises visiteurs (2)	27/09/01	100.000	Coord. Régional
2444/CHA/05/03/CR	Chaise Directeur	29/04/03	69.000	Secrétariat Pace
2444/CHA/06/03/SC	Chaise Directeur	29/04/03	69.000	Secrétariat Pace
2444/CHA/07/03/CR	Chaise Directeur	29/04/03	69.000	Comptable
2444/CHA/08/03/CR	Chaise Directeur	29/04/03	69.000	Agent administ.



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ID number	Designation	Date of purchase	Value (FCFA)	Service and/or Location
2444/MEUB/01/PARC/CR	Buffet 4 portes	PARC		Coord. Régional
2444/MEUB/02/PARC/CR	Buffet 4 portes	PARC		Comptable
2444/MEUB/06/99/AT	Meuble de rangement 2 éléments	11/01/99	70.000	Epidémiologie
2444/MEUB/07/00/CR	Étagère vitrée surmontée	09/05/00	125.000	Coord. Régional
2444/MEUB/08/00/CR	Étagère vitrée surmontée	09/05/00	125.000	Comptable
2444/MEUB/09/00/CR	Bibliothèque de rangement	09/05/00	280.000	Salle Serveur
2444/MEUB/10/00/CR	Meuble bibliothèque 8 éléments	09/05/00	1.224.000	AT Régionaux
2444/MEUB/11/04/SC	Armoire	Récupéré de l'AT Communication		Epidémiologie
2444/MEUB/12/04/SC	Etagères	Récupéré de l'AT Communication		Epidémiologie
2444/CAN/03/PARC/CR	Cantonnière	PARC		Comptable
2444/CAN/04/PARC/CR	Cantonnière	PARC		Salle serveur
2444/CAN/05/00/CR	Cantonnière	09/05/00	37.500	AT Régionaux
2444/CAN/06/00/CR	Cantonnière	09/05/00	50.000	Salle conférence
2444/CAN/07/00/SC	Cantonnière	09/05/00	35.000	AT Régionaux
2444/CAN/08/00/SC	Cantonnière	11/07/00	35.000	Epidémiologie
2444/CAN/09/00/CR	Cantonnière	11/07/00	35.000	Secrétariat Pace
2444/CAN/10/00/SC	Cantonnière	11/07/00	35.000	Coord. Régional
2444/CAN/11/00/CR	Cantonnière	11/07/00	35.000	Communication
2444/MOQ/01/01/CR	Moquette collée	21/09/01	98.000	Coord. Régional
2445/CLIM/02/PARC/CR	Climatiseur Bel Air	PARC		Salle conférence
2445/CLIM/03/PARC/AT	Climatiseur Zénith Air	PARC		AT Régionaux
2445/CLIM/04/PARC/CR	Climatiseur HUSHON	PARC		Coord. Régional
2445/CLIM/06/00/CR	Climatiseur SANYO	26/12/00	400.000	Comptable
2445/CLIM/08/00/CR	Climatiseur SANYO	26/12/00	400.000	Secrétariat Pace
2445/CLIM/09/00/AT	Climatiseur SHARP	01/02/00	390.500	Epidémiologie
2445/SPLIT/02/00/CR	Climatiseur Split	26/12/00	900.000	Salle conférence
2445/SPLIT/03/04/CR	Climatiseur Split Airwell 2 CV	06/07/04	450.000	Coord. Régional
2445/SPLIT/04/04/SC	Climatiseur Split Airwell 1,5 CV	06/07/04	350.000	Epidémiologie
2445/SPLIT/05/04/SC	Climatiseur Split Airwell 1,5 CV	06/07/04	350.000	Epidémiologie
2445/FRIGO/01/01/CR	Réfrigérateur INDESIT	27/09/01	250.000	Coord. Régional
2445/FRIGO/02/01/CR	Réfrigérateur ARISTON	27/09/01	285.000	Cafétéria
2451/VEH/04/03/CR	Peugeot 406 berline	08/01/03	13.750.000	Coord. Régional
2451/VEH/05/03/SC	Nissan Terrano II 4 x 4	Récupéré de l'AT Communication		Epidémiologie

nnex 5 : Financial report of the Regional Coordination Unit

The Regional Coordination Unit conducted 6 work plans between February 2000 and October 2004, one of which a start-up WP (amounts are in FCFA).

Work Plan	Interval covered	Budget	Payments	Expenses	% Expenses/Budget	% Expenses/Payments
WP start up	1/02/2000 – 31/03/2000	12.756.500	12.756.500	12.737.793	99,8 %	99,9 %
WP 1	1/04/2000 – 31/05/2001	295.702.495	295.562.229	243.072.569	82,2 %	82,2 %
WP 2	1/06/2001 – 31/05/2002	286.919.000	265.406.650	238.240.508	83,0 %	89,8 %
WP 3	1/06/2002 – 31/05/2003	227.774.509	138.665.943	130.614.273	57,3 %	94,2 %
WP 4	1/06/2003 – 31/07/2004	142.303.968	129.347.708	125.348.943	88,1%	90,9%
WP 5	1/08/2003 – 31/10/2004[5]	46.727.097	42.831.210	42.564.746	91,1%	99,4%
Totals		**1.012.183.569**	**884.570.240**	**792.578.832**	**87,4%**	**89,6%**

The financial situation of PACE member countries in WCA on October 31st , 2004, is presented on the following page.
They present estimates, as several de-commitments remain to be confirmed.

e	Country	National Indicative Budget	Provision Tech. Assistance	Provision Audits	Drawing Rights 1 + 2	Revised National Indicative Budget
	BENIN	997.000	-59.317	-15.000	20.664	943.347
	BURKINA FASO	1.329.310	-79.088	-15.000	0	1..235222
	CAMEROUN	2.658.620	-158.177	0	-1.000.000	1.500.443
	RCA	1.993.970	-118.633	-20.000	-256.337	1.599.000
	TCHAD	3.323.280	-270.000	-20.000	129.922	3.163.202
	CONGO	166.170	-9.886	-8.000	115.052	263.336
	CONGO (RDC)	1.329.310	-79.089	-10.000	-100.000	1.140.221
	GABON	664.660	-39.544	-10.000	-26.116	589.000
	GAMBIE	664.660	-39.544	-10.000	-51.644	563.472
	GHANA	996.890	-59.311	-10.000	0	927.579
	GUINEE BISSAU	664.655	-39.544	-8.000	0	617.111
	GUINEE CONAKRY	996.990	-59.317	-15.000	87.300	1.009.973
	GUINEE EQUATO.	166.165	-9.889	-8.000	0	148.276
	COTE IVOIRE	996.985	-59.316	-8.000	0	929.669
	LIBERIA	166.165	0	0	-166.165	0
	MALI	1.329.310	-79.088	-10.000	0	1.240.222
	MAURITANIE	996.985	-59.316	-10.000	58.020	985.689
	NIGER	996.985	-59.316	-15.000	114.934	1.037.603
	NIGERIA	2.658.620	-158.178	-20.000	-300.000	218.0442
	SENEGAL	1.329.310	-79.088	-17.000	72.184	1.305.406
	SIERRA LEONE	166.165	0	0	-166.165	0
	TOGO	664.655	-39.544	-20.000	0	605.111



e	Country	Imprest account Commitments WP1	WP2	WP3	WP4	Specific commitments	Estimated de-commitments WP1	WP2	WP3	WP4	Estimated balance [6]
	BENIN	127904,5	162242,7	215000	174000	163930	0	0	25000	0	125270
	BURKINA FASO	338998,8	361000	269000	101000	109641,33	0	106000	100000	0	261582
	CAMEROON	593000	0	0	0	0	0	0	0	0	907443
	CAR	535000	377000	383000	278000	25000	25000	130000	50000	0	206000
	CHAD	517046,1	1726000	970000	121000	0	0	500000	160000	0	489156
	CONGO	42331,62	107100	14000	0	0	0	95	0	0	99999
	CONGO (DRC)	407567	153755	0	0	0	45000	0	0	0	623899
	GABON	273000	244000	146000	0	0	29000	49000	0	0	4000
	GAMBIA	137772,4	426700	0	0	0	0	230000	0	0	229000
	GHANA	214000	258000	229000	109000	74644	23000	112000	50000	0	227935
	GUINEA BISSAU	214021,32	166000	123000	42200	0	0	34000	5000	0	110890
	GUINEA CONAKRY	189444,6	333728,3	250000	116800	0	0	0	80000	0	200000
	EQUATO. GUINEA	114000	0	0	0	0	68000	0	0	0	102276
	COTE IVOIRE	507000	344000	0	0	0	190000	0	0	0	268669
	LIBERIA	0	0	0	0	0	0	0	0	0	0
	MALI	164520,2	241000	326000	0	299339,33	0	61000	0	0	270362
	MAURITANIA	157025,4	182365,6	218000	113000	190298	0	0	80000	0	205000
	NIGER	268977,9	277425,25	174000	74000	110200	0	0	5000	0	138000
	NIGERIA	199739,7	834000	807000	0	239000	0	300000	0	0	400702
	SENEGAL	360941,9	338348	416000	140116,5	12200	0	0	150000	0	187800
	SIERRA LEONE	0	0	0	0	0	0	0	0	0	0
	TOGO	151044,8	96379,37	147200	0	56930	0	0	40000	0	193557

[6] On October 31, 2004.

Annexe 6 : List of contacts

PACE Programme Coordination Unit
Inter-African Bureau for Animal Resources IBAR
Mandeleo House
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Tel. : (254-20) 251 517 / 226 651 / 334 550 / 318 877 / 90 / 92
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PACE Regional Coordination Unit for West and Central Africa
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Fax : 33 – (0)1 42 67 09 87
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www.oie.int

OIE Regional Office for Africa
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PACE

Pan African programme for the Control of Epizootics




E-mail contacts of national PACE programmes :

Country	E-mail	National Programme Coordinator
Benin	pacebeni@intnet.bj	Honoré Assogba
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CAR	nam_emma@yahoo.fr	Emmanuel Namkoisset
Chad	pacechad@intnet.td	Adam Hassan Yacoub
Congo	valentin_okombo@yahoo.fr	Valentin Okombo-Ngassaki
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Togo	pacetg@yahoo.fr	Nouréni Lawani-Ganyou

• Table : E-mail addresses and PACE national programme coordinators.

E-mail contacts of PACE Regional Coordination staff :

Position	E-mail	Name
Regional Coordinator	bouna.diop@pacereg.org	Bouna A. Diop
RTA Sahel countries	patrick.bastiaensen@pacereg.org	Patrick X.M. Bastiaensen
RTA coastal countries	nicolas.denormandie@pacereg.org	Nicolas Denormandie
RTA Cameroon	hannsachimkrebs@hotmail.com	Hanns-Achim Krebs
Regional epidemiologist	cecile.squarzoni@pacereg.org	Cécile Squarzoni

• Table : E-mail addresses of PACE regional coordination staff.



Annex 7 : Bibliographic references used [7]

Printed resources

Anon. (1994) International Atomic Energy Agency (IAEA) – *Recommended procedures for disease and serological surveillance as part of the Global Rinderpest Eradication Programme* (GREP). *A joint undertaking by the Food and Agriculture Organization of the United Nations (FAO) and the International Atomic Energy Agency* (IAEA). IAEA-TECDOC-747. AIEA, Vienna, 51 pp.

Anon. (1996) *Advanced Veterinary Information System* (AVIS) (*Institute for Animal Health*, Food and Agriculture Organisation, Office international des épizooties & The Telos Group) – *Rinderpest: a suite of multimedia programs designed and built for specialist use in the field of animal medicine (Rinderpest: the complete program).* Telos Bioinformatics Ltd, London (http://www.fao.org/waicent/faoinfo/agricult/aga/agah/empres/empres.htm).

Anon. (1999) *Recognizing Peste des Petits Ruminants : a field manual.* FAO-RADISCON-EMPRES, Rome.

Anon. (2002) *Human Development Index* 2002, UNDP, New York.

Anon. (2002) Report : mid-term review (MTR) of PACE, the *Pan African Programme for the Control of Epizootic diseases,* DRN, Brussels.

Anon. (2003) *Pan-African Animal Health Yearbook 2002*, IBAR, Nairobi.

Anon. (2004) *Pan-African Animal Health Yearbook 2003*, IBAR, Nairobi.

Bastiaensen P. (1998) "*Fertilité et fragilité des sols, taux de charge des pâturages, intégration agriculture - élevage en Afrique de l'Ouest avec référence au Togo. Recueil de références bibliographiques.*" Technical report Project GCP/RAF/347-BEL, Sokodé, Togo.

Bastos, A.D.S., Penrith, M.-L., Crucière, C., Edrich, J.L., Hutchings, G., Roger, F., Couacy-Hymann, E. & Thomson, G.R., (2003). Genotyping field strains of African swine fever virus by partial p72 gene characterisation. *Archives of Virology*.

Behnke R. & Abel N. (1996) in « *Revisited : the overstocking controversy in semi-arid Africa* », World Animal Review, vol. 2. , p. 9 – 17, FAO, Rome

Breman H., Cissé I.B. and Djitèye M.A. (1991) in « *La productivité des pâturages sahéliens : une étude des sols, des végétations et de l'exploitation de cette ressource naturelle* », F.W.T. Penning de Vries and M.A. Djitèye (Eds), Pudoc, Wageningen

Connor Robert (2001) *Handover notes from the PACE main technical assistant*, PACE, Nairobi.

[7] Excluding documents produced/published by PACE itself.



James A.D., (1998). Guidelines for the epidemiological surveillance of rinderpest. Rev. Sci. Tech. Off. Int. Epiz. Vol. 17 (3) 810 – 824.

Lemrabott O. M., Elmamy B.O., Diarra I., Baba O.M., Bastiaensen P., Bendali F., Diop A.B., Kock R., Tounkara K. , Bidjeh K., Thomson G., Fall M. (2004) *Peste bovine: les limites de la sérologie ? Le cas de la Mauritanie*. Revue d'Elev. Méd Vét. Pays Trop. [in press].

Martins, C.L.V. & Leitão, A.C., (1994). Porcine immune response to African Swine Fever virus (ASFV) infection. *Veterinary Immunology and Immunopathology*, 43, :99-106.

Onisk, D.V., Borca, M.V., Kutish, G., Kramer, E., Irusta, P. & Rock, D.L., (1994). Passively transferred African Swine Fever virus antibodies protect swine against lethal infection. *Virology New York*, 198, 350-354.

Piéri P. (1989) « *Fertilité des terres de savanes, bilan de trente ans de recherche et de développement agricoles au sud du Sahara* », Ministère de la Coopération française et CIRAD-IRAT

Schlafter, D.H. & Mebus, C.A., (1984). Abortion in sows experimentally infected with African Swine Fever virus. Clinical features. *American Journal of Veterinary Research*, 45, 1353-1360.

Schlafter, D.H., McVicar, J.W. & Mebus, C.A., (1984). African Swine Fever in convalescent sows. Subsequent pregnancy and the effect of colostral antibody on challenge inoculation of their pigs. *American Journal of Veterinary Research*, 45, 1361-1366.

Thomson, G.R., Penrith, M-L & Bastos, A.D., in press. African swine fever. *In:* Infectious Diseases of Livestock. Second edition. Oxford University Press: Cape Town, London.

Internet resources

http://earthobservatory.nasa.gov/Newsroom/MediaResources/Rift_Valley/

http://europa.eu.int/comm/europeaid/visibility/pdf/europaid_guidelines_en.pdf

http://europa.eu.int/eur-lex/en/lif/reg/en_register_114030.html

http://faostat.fao.org/faostat/

http://www.aciar.gov.au/web.nsf/doc/ARIG-62F8DU

http://www.africa-union.org/home/Bienvenue.htm

http://www.fao.org/ag/AGA/AGAH/EMPRES/grep/e_rinder1.htm

http://www.fao.org/ag/AGA/AGAH/EMPRES/index.asp

http://www.fao.org/ag/againfo/subjects/fr/infpd/manual.html

http://www.fao.org/Gender/fr/agri-f.htm

http://www.iaea.or.at/

http://www.indiaveterinarycommunity.com/profperspective/featuredarticle/Jan-03/art-drscott.asp

http://www.inspection.gc.ca

http://www.oie.int

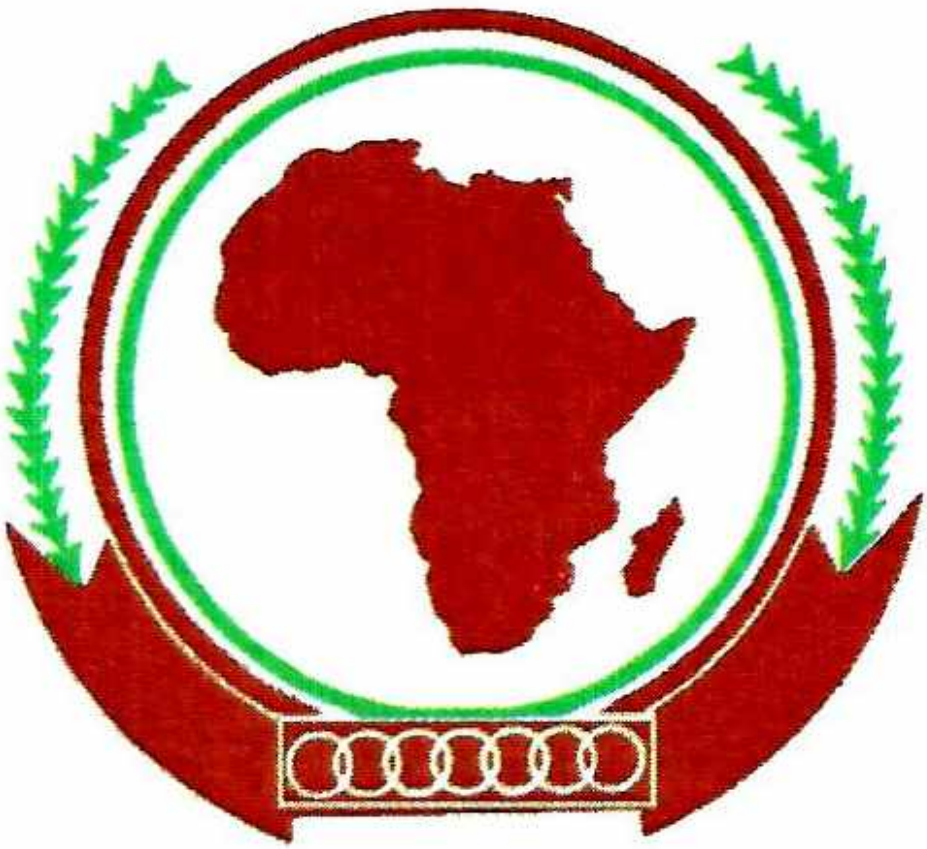
http://www.refer.sn/eismv/eismv.htm



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