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Final Evaluation of the Pan-African Programme for the Control of Epizootics (PACE)

Final Report

Prepared by:

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Final Evaluation of the Pan-African Programme for the Control of Epizootics (PACE)

Final Report – September 2006

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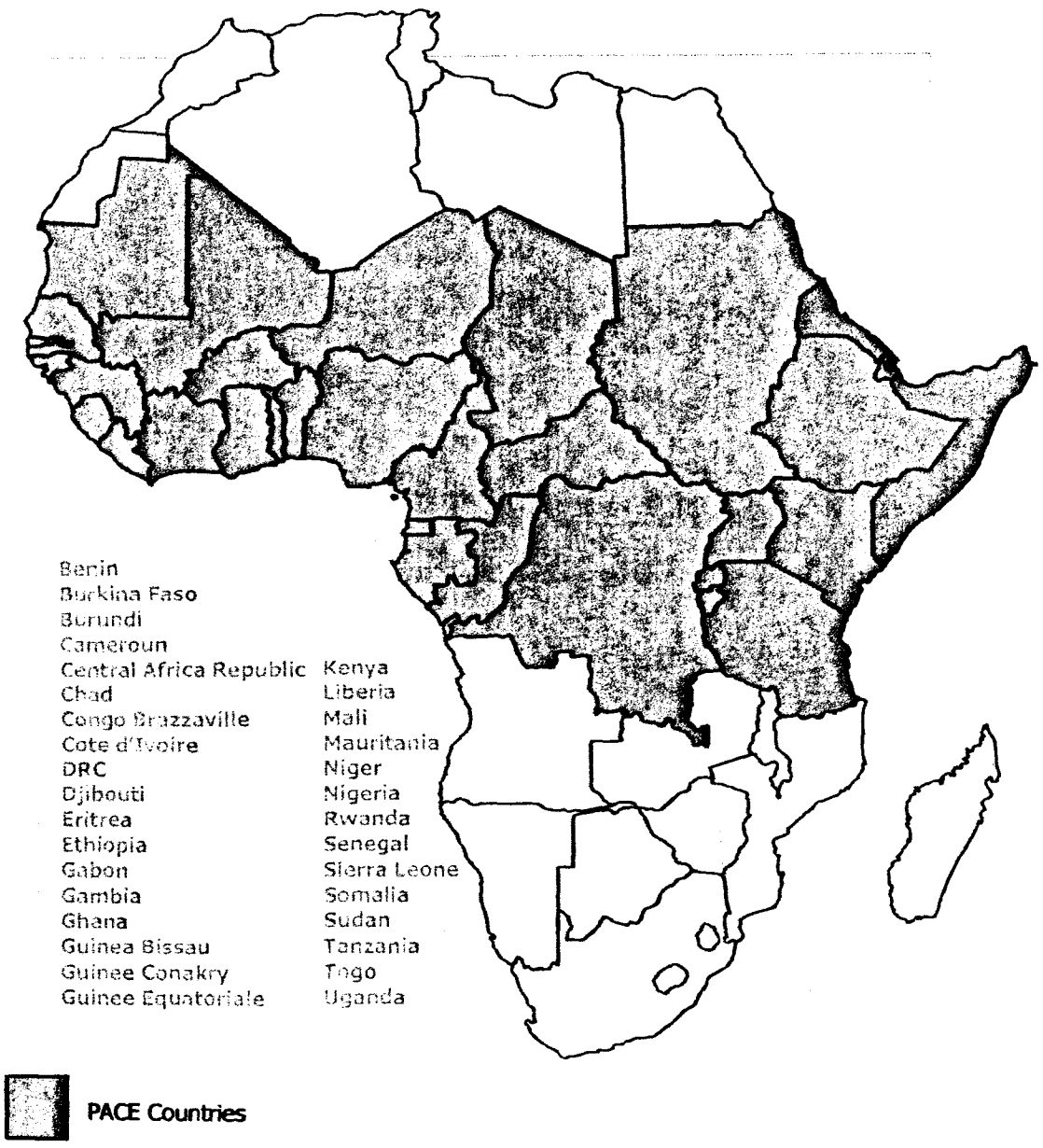
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Acronyms and Abbreviations

AC	Advisory Committee
ADB	African Development Bank
ARIS	Animal resources information system
ASAL	Arid and semi arid lands
ASF	African swine fever
AU-IBAR	Inter-African Bureau for Animal Resources of the African Union
BVD	Bovine virus diarrhoea
CAHW	Community-based animal health worker
CAPE	Community based animal health participatory epidemiology
CAR	Central African Republic
CBPP	Contagious bovine pleuro-pneumonia
CIRAD-EMVT	Centre de coopération internationale en recherche agronomique pour le développement – Département d'élevage et de médecine vétérinaire
CPD	Continuing professional development
DFID	Department for International Development
DVS	Director of Veterinary Services
EC	European Commission
EDF	European Development Fund
EISMV	École Inter-Etats des Sciences et Médecine Vétérinaires de Dakar, Sénégal
ELISA	Enzyme linked immmunosorbent assay
ESS	Epidemio-surveillance systems
EU	European Union
FAO	Food and Agriculture Organisation
FEM	Final Evaluation Mission
FITCA	Farming in Tsetse Controlled Areas
FMD	Foot and Mouth Disease
GIS	Geographical Information System
HPAI	Highly Pathogenic Avian Influenza
IAEA	International Atomic Energy Agency
IAO	Imprest Accounting Officer
ILRI	International Livestock Research Institute
IZSTE	Instituto Zooprofilattico Sperimentale dell' Abruzzo e del Molise, Teramo, Italy
KAP	Knowledge attitude and practice
KARI	Kenyan Agricultural Research Institute
LANADA	Laboratoire National d' Appui au Développement Agricole, Côte d'Ivoire
LANAVET	Laboratoire National Vétérinaire, Garoua, Cameroun
LNERV/ISRA	Laboratoire National d'Elevage et de Recherches Vétérinaires/Institut Sénégalais de Recherche Agricole
MOU	Memorandum of Understanding
MTR	Mid Term Review
NAHRC	National Animal Health Research Centre, Ethiopia
NAO	National Authorising Officer
NGO	Non-Government Organisation
OIE	Office International des Epizooties
OVI	Objectively verifiable indicator
PANVAC	Pan-African Veterinary Vaccine Centre
PARC	Pan African Rinderpest Campaign
PCR	Polymerase chain reaction

PCU	Project Co-ordinating Unit
PE	Programme Estimate
PEU	PACE Epidemiology Unit
PPR	Peste des petits ruminants
QA	Quality Assurance
RAO	Regional Authorising Officer
RCU	Regional co-ordinating unit
RP	Rinderpest
RTA	Regional Technical Assistant
RVF	Rift Valley fever
SAHSP	Somali Animal Health Services Project
SERECU	Somali Ecosystem Rinderpest Eradication Co-ordination Unit
TA	Technical Assistance/Assistant
TCP	Technical co-operation project
Tad Info	Transboundary animal disease information system
ToR	Terms of Reference
VLPU	Veterinary Legislation and Privatisation Unit
VSF	Vétérinaires sans Frontières
WP	Work Plan
WTO-SPS	World Trade Organisation-Sanitary and Phytosanitary

Map of PACE Countries



EXECUTIVE SUMMARY

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General

This Final Evaluation provides an external evaluation of the PACE programme process, achievements and impacts measured against the Programme's Logical Framework. From July 2nd to July 26th 2006, the Final Evaluation Mission undertook in-depth evaluations, including field visits, in 9 PACE countries including Guinea, Senegal, Mauritania, Burkina Faso, Mali, Cameroon, Rwanda, Uganda and Tanzania. The Final Evaluation Mission had also working sessions with PACE Kenya and the Somali Ecosystem Rinderpest Eradication Co-ordination Unit (SERECU). During the 6th Annual Co-ordination Meeting for all National PACE countries in Mombassa from June 27th to 30th 2006, the Mission had discussions with the PACE National Co-ordinators from Burundi, Sudan, Nigeria, Ghana, Guinea Bissau, Eritrea and Ethiopia.

The PACE programme is a major development programme in the field of animal health covering 30 African countries. It was originally planned to cover 32 countries but, because of their economic and political situation, Sierra Leone and Liberia did not continue in the programme. The structure of the PACE Programme includes national operations planned and implemented in each country and regionally co-ordinated under the auspices of the Inter-African Bureau for Animal Resources of the African Union (AU-IBAR). The PACE Programme includes a Programme Co-ordination Unit (PCU) in Nairobi and a Regional Co-ordination Unit in Bamako for West and Central Africa.

The PACE Programme is funded by the European Union (EU). The PACE Financing Agreement (FA) was signed on 5th July 1999 by the European Commission and on 30th August 1999 by the AU-IBAR respectively. The total EC contribution is EUR 77 million: 72 million for the PACE Programme from November 1999 to October 2004 and EUR 5 million to top-up the overall budget for the PACE Programme extension from November 2004 to February 2007. The Fund Commitment of EUR 72 million was from 7th and 8th European Development Fund (EDF) resources and the Fund Commitment of EUR 5 million is from 9th EDF resources. A total budget of EUR 51,680,000 was allocated to the National component (30 countries) and a total budget of EUR 25,320,000 to the Regional Component (PCU, Regional Co-ordination Unit Service Contracts, Audits/Consultancies and Research). The situation relating to commitments, expenditure and balances for the National and Regional Components is provided in Section 4.2.

Epidemio-surveillance and disease control

PACE has introduced and developed epidemio-surveillance networks and disease report analysis throughout the region, and introduced indicators and evaluation criteria to measure and monitor their performance. Disease information is collected through passive and active surveillance by Government and private animal health workers. Data is derived from monthly reports of activities and disease incidence reports, but collection of animal disease information from veterinary laboratories, abattoirs and markets is also encouraged.

PACE has also facilitated the development of animal disease control contingency plans for emergency preparedness and rapid reaction in the face of animal disease emergencies. However, without further support, it is doubtful if these systems will be sustainable as they require financial and logistical resources which national governments may not be able or willing to provide.

PACE has conducted some studies on economics of animal health and cost/benefits o epidemio-surveillance systems and sensitised national animal health services to the importance of economic considerations with regard to animal health control strategies.

Economic analysis of costs and benefits of passive epidemio-surveillance indicate cos benefits ranging from 1.0 to 1.9. As these results are for only one disease (CBPP), anc passive epidemio-surveillance will enable better control of a number of transboundary diseases, overall, cost:benefits should be more positive. Active surveillance systems are more vulnerable because national governments need to be convinced of the need to takeover the extra costs they entail after the PACE programme ends. Unless decisior makers are given specific economic evidence of the benefits of both passive and active epidemio-surveillance, they may not give them their full support.

To get participation of livestock keepers and other stakeholders in epidemio-surveillance systems, and to persuade national Governments to financially support them after PACE epidemio-surveillance should be targeted at specific diseases for which there are contro programmes, and for which economic and public health benefits have been quantified.

In conflict areas, disease information collection and control activities have been developec with the assistance of PACE, through the use of NGOs, professional associations anc community-based animal health workers (CAHWs). These activities have been of particula importance with regard to rinderpest eradication in southern Sudan and that part of Somalia which is in the Somali Ecosystem. They have led to the development of novel surveillance techniques, particularly participatory approaches, while also using other standard active surveillance methodologies, including random sample sero-surveillance.

To analyse and evaluate animal disease information generated by the epidemio-surveillance systems (ESS), PACE, through its Data Management Unit, has developed and introducec across the region an electronic Animal Resources Information System (ARIS). Besides storing and processing animal disease information, it is: a mechanism for reporting ir suitable formats to national Government, IBAR and OIE; it enables, through any GIS programmes such as Arc View or MapInfo, mapping of disease information; it records information on national livestock resources and human resources in the animal health delivery services, and; it reports on the efficiency of the epidemio-surveillance network according to the performance indicators developed by the PACE Epidemiology Unit. While this is a powerful tool, it requires further development, together with more logistical suppor (adequate computer equipment at national and regional level) and training for its users, to make it fully functional.

The diagnostic capacity with regard to transboundary diseases of veterinary laboratories has been improved by training and through the introduction of laboratory equipment anc diagnostic kits.

Exchange of animal disease information between countries in PACE has been enhanced by development of networks through meetings and workshops organised by PACE.

The importance of wildlife surveillance to epidemio-surveillance and control of diseases o livestock has been emphasised by the PACE programme and wildlife surveillance activities have been strengthened.

Rinderpest control and eradication

Through co-ordinated activities of PACE and other organisations, rinderpest has been eradicated from southern Sudan and almost certainly from the Somali Ecosystem, the two

remaining strongholds for the disease at the conclusion of the PARC programme. The last rinderpest vaccinations were done on the Kenya Somali border in 2002/3. A random sample sero-survey has just been completed and the sera are being tested in Kenya and Ethiopia. If the results show that the disease is no longer present in the region, declarations of freedom can be made to OIE for each national zone of the Somali Ecosystem and the zones can proceed down the OIE pathway providing an agreement can be reached regarding the status of Somalia with regard to OIE. This activity needs to continue after the closure of PACE and SERECU is well placed to undertake this and provide emergency preparedness in the face of a possible re-emergence of rinderpest in the Somali Ecosystem.

Regarding other countries in the region, PACE has played a major role in assisting them to undertake the OIE Pathway to declaration of freedom from rinderpest disease and infection. However, some countries will require further support for their active surveillance if they are to complete the OIE Pathway.

Control of other major epizootic diseases

PACE has played an important role in control of the outbreaks of highly pathogenic avian influenza (HPAI) that have occurred in some PACE countries and the epidemio-surveillance networks developed by PACE provide an early warning system for HPAI and other transboundary diseases. Additionally, PACE has assisted countries in the region to prepare contingency plans for emergency preparedness and rapid reaction in the face of an outbreak of HPAI and other transboundary diseases.

PACE has developed control strategies for contagious bovine pleuro-pneumonia (CBPP), Rift Valley fever (RVF) and African swine fever (ASF), but their application has been limited. However, CBPP control is successfully being implemented with guidance from PACE in Senegal, Guinea and Kenya, and a successful control programme has been conducted in Rwanda without PACE support.

With assistance from PACE, Kenya is starting to develop disease free zones through which livestock are being exported to Mauritius.

Through PACE, research programmes have been implemented by international and regional reference laboratories on rinderpest and CBPP diagnosis and control by vaccination, and on treatment of CBPP with antibiotics, but, to date, there has been little application of their results at field level.

Development of epidemio-surveillance capacity across the 30 PACE countries has provided a springboard for further activity with regard to transboundary disease control in the region. Control and early warning of transboundary diseases such as foot and mouth disease (FMD) and CBPP is not just of individual and national importance, but is also of regional and global concern.

Training, Communication and Farmer Linkages

The extensive training at all levels by PACE has impacted significantly and positively on the project's progress. However, greater attention should have been paid to assessing training needs and devising a training strategy early in the project to ensure that all training requirements were covered.

PACE's attempts to support and collaborate with veterinary schools had limited success and did not lead to anything concrete.

PACE has helped to strengthen linkages between farmers and official veterinary service and heighten farmer awareness of the benefits of veterinary services, factors which are ve relevant to successful achievement of the project's objectives. Efforts have been made share examples of successful programme activities during the missions of Common Servic experts and RTAs but unfortunately the documentation and archiving of examples of be practice have been weak. The progress of institutional communication at international lev has been less successful, however, due to the downgrading of the importance of institution communication following the combining of Communication with Data Management in th "Information and Communication Unit".

Privatisation and legislation in the delivery of veterinary services

PACE has effectively strengthened the role of the private sector in the delivery of veterina services by relevant training and the modernisation of veterinary legislation to provide good legal framework for private veterinary services. The principal target groups have bee private veterinarians and CAHWs working under veterinary supervision. However, the lor term effects of legislation amendments will only be realised once legislation has bee implemented and operational for a few years.

CAHWs will continue to play key roles in the delivery of veterinary services in conflict area and remote pastoral areas where conventional veterinary services do not operate. In oth circumstances, however, they may have a limited future. For example it was reported that Southern Sudan in the aftermath of the peace agreement, they are being phased out ar replaced by Government veterinary staff.

In some countries, PACE continued to administer a PARC credit scheme for privatisation which guarantee funds were made available as security against bank loans and credit private veterinarians. Although the results have been very variable, the scheme doe operate successfully provided it is strictly managed and monitored.

Laboratory support, PANVAC and vaccine banks

PACE's support to the Regional and National Veterinary Laboratories has impacte positively and significantly on the capacity of these laboratories to perform the laborato tests required for the diagnosis and surveillance of rinderpest and some other importa epizootic diseases. Unfortunately within PACE countries in West Africa, there is unde utilisation of the diagnostic capacity available.

PACE has contributed significantly to the revitalisation of the Pan-African Veterinary Vaccir Centre (PANVAC) which is now operating effectively with a substantive Director ar budgetary provisions. PACE also contributed significantly to emergency preparednes against rinderpest through establishment of vaccine banks in Gaborone (Botswana Khartoum (Sudan) and Lokichoggio (Kenya).

Technical Assistants (TAs)

During the lifespan of the programme some of the TAs have been changed or left th programme, involving interruption of activities and subsequent reduction of Programm performance. Since October 2005, each Regional TA (RTA) has been responsible for 1 National PACE countries. This compares with the previous 7 and 8 PACE countrie respectively for the 2 RTA for West and Central Africa based in Bamako, 5 for the RT based in Yaoundé and 8 for the RTA for Eastern Africa. The reduction in the number of TA since October 2005 was based on an assumption that the National PACE countries woul have benefited from the transfer of knowledge/training by the TAs during the initial phase c

the programme. In practice, assigning 10 countries per RTA has not allowed efficient support to each National PACE country during the extension phase.

Recommendations

Management and Finance

In any future Regional Programme there will be a need to increase capacity and human resources in relation to Administration and Finance and a more integrated system in the management of the Regional Technical Assistants.

There is a large number of days left for short-term consultants under the GTZ contract to be used to provide assistance to PACE National Co-ordinators in the closure of their Programme Estimates.

AU-IBAR needs to be institutionally strengthened, including management and organisational development in order to become more operational.

Training and Communication

Training should be properly planned and implemented from the outset. Examples of best practice should be properly recorded and training and communication materials should be archived. Institutional communication should be recognised as an important and essential component to ensure satisfactory visibility of any future programme within the international community.

Laboratory services

Continuing support to laboratory services should be an integral part of any future transboundary disease control programmes. Particular consideration should be given to encouragement of field staff to make greater use of diagnostic facilities and more effective involvement of district laboratories in disease diagnosis and surveillance. Greater use of slaughter house findings and sampling should be encouraged, with special emphasis on providing feed back information towards livestock farmers, agents and breeders.

Privatisation and legislation

Any scheme to provide funds as security for bank loans and credit should be strictly managed and monitored. Before providing further recommendations for updating and amending veterinary legislation, current legislation should first be reviewed and evaluated.

Sharing of best practice between countries

Examples of best practice within countries should be properly recorded so that they can be shared with other countries. Consideration should also be given to introducing the concept of " twinning" countries whereby a country that has demonstrated best practice in a certain topic could be twinned with a country that has been less successful in that area.

Priorities for additional Animal Health activities to follow PACE

On the assumption that Rinderpest will be eradicated officially within the near future, new programmes should concentrate on the control of other major transboundary diseases. These will pose new, and in many respects, more difficult challenges to that involved in rinderpest eradication. Consequently the strengthening of the epidemio-surveillance

networks should continue as an essential and integral part of any future disease contro programme. Priority transboundary diseases and their effect on farmers' livelihoods, trade and export markets vary from region to region, and future transboundary disease contro programmes should take regional factors into account. In that context the most importan transboundary diseases in PACE countries today are:

Cattle	-	CBPP, FMD, Rift Valley Fever
Sheep and goats	-	PPR, Rift Valley fever, FMD
Pigs	-	African swine fever
Horses	-	African horse sickness
Poultry	-	HPAI, Newcastle disease

Areas for future donor support

It is recommended that future projects, as well as disease control, should have the followin elements:

- Exploration of economic and socio-economic impact of transboundary
- Diseases; development of marketing strategies which build on transboundar disease control through disease free zones and quarantines.
- Increased use of sentinel wildlife for surveillance.
- Training to increase local and regional knowledge of international requirements an regulation of animal disease control.
- Further research into vaccines for transboundary disease control.

It is also recommended that future projects should be targeted to support the particula disease control requirements of the economic regions in Africa. Thus, with regard to PACI countries, the different priorities for transboundary disease control which are apparer between West, Central and East Africa can be addressed individually. Terms of Referenc for a Feasibility Study for further EC support for future programmes after PACE have bee drafted in Annex 9.

It is strongly recommended that the activities of SERECU continue in the Somali Ecosysten to ensure confirmation of final eradication of rinderpest and to ensure emergenc preparedness in case there is a re-emergence of the disease.

1. INTRODUCTION

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1.1 Final Evaluation

The main purpose of the Final Evaluation is to provide an external evaluation of the PACE programme process, achievements and impacts measured against the Programme's Logical Framework. The Final Evaluation Mission is requested to indicate not only areas/options where continued support is necessary and advisable as a direct result of programme activities, but also in the larger context of addressing constraints for livestock development in the region. Different meetings were undertaken with the PCU and the PACE Regional Co-ordination Unit in Bamako. Furthermore consultations were held with key organisations such as OIE and FAO.

The European Commission's Project Cycle Management (PCM) Integrated Approach has been adopted by the Final Evaluation Mission. In accordance with the Terms of Reference, the following issues have been given particular attention:

- Project preparation and design
- Relevance of the project
- Efficiency
- Effectiveness
- Impact
- Sustainability
- Conclusions
- Recommendations

The original (in the Financing Agreement - FA) **overall objective** of the PACE Programme is to relieve the poverty of those involved in the livestock-farming sector (producers, service providers and consumers) in Africa by improving animal productivity, trade and food security.

The **specific objectives** of the PACE Programme from November 1999 to October 2004 were:

- To strengthen national and regional capabilities to assess the technical and economic aspects of animal diseases, and to generate appropriate programmes for their control.

- To safeguard animal health in Africa against major epizootic diseases.

While the **specific objectives** of the PACE Programme Extension from 1st November 2004 to 28th February 2007 are:

- The eradication of rinderpest, and control of other epizootic diseases.

- The strengthening of surveillance to support policy formulation for the control of major epizootics and better access to global livestock markets.

The Final Evaluation Mission undertook in-depth field evaluations in 9 PACE countries during field visits from July 2nd to July 26th 2006: Guinea, Senegal, Mauritania, Burkina Faso, Mali, Cameroon, Rwanda, Uganda and Tanzania.

In addition to meetings with PACE staff and the EU Delegations the Final Evaluation Mission had working sessions with PACE Kenya, SAHSP and SERECU.

During the 6th Annual Co-ordination Meeting for all National PACE countries in Mombassa from June 27th to 30th 2006, the Final Evaluation Mission had working sessions with the PACE National Co-ordinators from Burundi, Sudan, Nigeria, Ghana, Guinea Bissau, Eritrea and Ethiopia and had discussions with other PACE National Co-ordinators. The Final Evaluation Mission also had working sessions with nine PACE National Co-ordinators in the countries visited by the team.

1.2 Overview of PACE Programme

1.2.1 Description

The PACE programme is a major development programme in the field of animal health covering 30 African countries. It was originally planned to cover 32 countries, but because of the political situation in Sierra Leone and Liberia, these two countries did not continue in the programme. The structure of the PACE Programme includes national operations planned and implemented in each country and regionally co-ordinated under the auspices of the Inter-African Bureau for Animal Resources of the African Union (AU-IBAR). The PACE Programme includes a Programme Co-ordination Unit (PCU) in Nairobi and a Regional Co-ordination Unit (RCU) in Bamako for West and Central Africa.

1.2.2 Financing

The PACE Programme is funded by the European Union (EU). The PACE Financing Agreement (FA) was signed on 5th July 1999 by the European Commission and on 30th August 1999 by the AU-IBAR respectively. The total EC contribution is EUR 77 million: 72 million for the PACE Programme from November 1999 to October 2004 and EUR 5 million for the PACE Programme extension from November 2004 to February 2007.

The Fund Commitment of EUR 72 million was from 7th and 8th European Development Fund (EDF) resources and the Fund Commitment of EUR 5 million is from 9th EDF resources.

A total budget of EUR 51,680,000 was allocated to the National component (30 countries) and a total budget of EUR 25,320,000 to the Regional Component (PCU, Regional Co-ordination Unit Service Contracts, Audits/Consultancies and Research).

Accounting systems are used for the financial implementation of PACE PCU and SERECU while an Excel based monitoring system is used to control the overall financial execution of the PACE programme. The current Financial Controller took up his position in February 2005.

The Finance and Administration Unit includes:

- A Head of Finance and Administration (who leads the Unit).
- An Accountant for PACE.
- An Accountant for SERECU.
- An Administrative Assistant.
- A Pool of 3 secretaries.

The Head of Finance and Administration is also the Imprest Accounting Officer (IAO). The Accountant for PACE is the Accountant for the programme estimates of the PACE PCU. The SERECU Accountant also does the accounting of the financial execution of the service and grant contracts in PACE. The Financial Controller does not supervise the Finance and Administration Unit but operates as an adviser to the Head of Finance and Administration

and is part of the PCU management team. The Financial Controller quality controls the work of the Unit and undertakes financial reporting.

The SERECU Accountant and the Administrative Assistant only joined the PACE Team at the beginning of 2006. This has been very positive and these additional resource persons provide the Financial Controller with improved access to information about programme implementation.

There is no Financial Controller at the RCU in Bamako. There is no need for additional financial control functions in Bamako but building EDF financial management capacity at regional level is an important issue that was underestimated in the design of the programme.

GTZ has a budget of EUR 7.9 Million over a period of 4 years. GTZ now has 4 long-term Technical Assistants: one national TA in Sudan, two regional TAs in Bamako and one regional TA in Nairobi. They can also provide short-term experts.

1.2.3 Organisation and Management

PACE is a regional programme that includes the co-ordination and planning of PACE national programmes for which the Director of AU-IBAR acts as the Regional Authorising Officer (RAO).

The procedures entailed the initial preparation of a Global Work Plan by the PCU including an indicative budget covering the entire 5-year period and the 2-year extension period for each PACE country. The national components are financed through Annual Work Plans based on indicative budget allocations to each country. Subsequently, from the start of the extension phase, a concept note for consolidation of PACE National Components was drawn up by the PCU and approved by the Lead Delegation, giving guidelines for the implementation of the National PACE Components and indicative budget ceilings for each of the National Components. The individual Work Plans elaborated by the National PACE countries were sent to the PCU for their records and comments, if any, with a copy to the Lead Delegation.

The arrangements were different during the two mission phases of the programme:

- Before the extension phase there was consolidation of commitments in April and November each year.

- During the extension phase individual national endorsement was carried out through the local EC Delegation.

Delays in the financial process occurred: when Work Plans were submitted late, and; especially during the extension phase, as a result of the long EDF procedures for engagement and mobilisation of funds. The latter was mostly due to the increased role and responsibility of the Delegations' Finance Contract Sections and, in some cases, a lack of support from EC Delegation rural advisors, whose main focus was on national projects rather than regional programmes.

After preparation by the national co-ordinators, who also operate as Imprest administrators, work plans are submitted for approval to the EDF National Authorising Officers and to the Heads of the local EC Delegations and finally to the PCU for consolidation before transmission to the Lead Delegation. Late submission of national Work Plans has been a major problem and as a result there have been delays of several months in the mobilisation of funds for activities in the Work Plans.

The overall programme is managed and co-ordinated by the Programme Co-ordination Unit (PCU), based in AU-IBAR in Nairobi. The PACE Programme has included external and service contracts with organisations such as GTZ/IS-SATEC, CIRAD, AGRER and FAO as well as collaboration with French Co-operation and the IAEA.

2. PROJECT PREPARATION AND DESIGN

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2.1 Project Design Phase

The PACE Programme was designed to consolidate and build upon the results achieved from the PARC (Pan-African Rinderpest Control) Programme, which ran from 1986 to 1999. However, in contrast to PARC, it was designed as a regional programme managed within IBAR, with 32 participating countries, each country being allocated a portion of the total budget. Within its budgetary limits, each country prepared a five-year global work plan of procurement, training, and other inputs and activities, designed to enhance the physical and intellectual capacity of its veterinary service to detect, diagnose, and assess the epidemiology and impact of major infectious diseases (especially epizootics), and then to design – in conjunction with neighbouring countries if relevant – appropriate, affordable, and socially and economically justifiable, systems for their monitoring and control.

The five-year plan – once approved by the Programme Co-ordination Unit (PCU) – would then be implemented through a series of annual work plans, each of which in its turn had to go through a stringent process of scrutiny and approval by the PCU and by the EC delegations at country and regional level. The length and complexity of this approval system, coupled with the stringency of EC procurement processes has contributed to causing delays in programme implementation and this in turn led to the need for an extension. However, it must also be said that some PACE countries and local EC Delegations have shown much more interest and initiative than others in ensuring progress of programme activities at national level.

The development programmes mounted in each country are backed-up by access to advice and expertise from seven Common Service Units housed in IBAR, Nairobi, and in its regional office in Bamako. These Common Services Units provided specialist expertise in:

- Epidemiology and surveillance systems, including a wildlife component
- Data management
- Economics
- Veterinary legislation and privatization
- Community animal health and participatory epidemiology (CAPE)
- Communications
- Financial Management

The design of the organisation, management and administration failed to recognise the considerable administrative workload of such a large and complex programme and, therefore, to appoint sufficient, appropriate resources to management and administration functions. Nevertheless, the financial resources allocated to the operation of the regional components, i.e. the PCU etc., exceeded the original allocation in the Financing Agreement and that the new allocation under the Extension was to a large extent earmarked for management and administration of the regional activities.

In the design of the Programme, they did not mention that the Regional Authorising Officer (AU-IBAR Director) had to check the efficiency of the PACE National Co-ordinators in the management of the PACE Programme.

2.2 Project Inputs and Objectives

The project has been designed to meet beneficiaries' requirements, country needs and global priorities in terms of control of rinderpest and other major epizootic diseases of livestock. This has been implemented by inputs to meet the following objectives:

- Development of disease surveillance.
- Animal health information systems.
- Continuation of rinderpest eradication and strengthening of control of other major animal epizootic diseases.

PACE has established Epidemiology and Data Management Units for implementation of the surveillance and information system components, their objectives are:

- Enhancement of national capacities in respect of delivery of epidemiological services.
- Facilitation of the eradication of rinderpest from Africa by assisting in the elimination of the virus from the remaining foci of infection and verification that eradication has been achieved.
- Assistance to member countries in the control of other major epizootic diseases.

Support to the privatisation of national veterinary services with amendments to national legislation where appropriate.

A major objective of PACE is to support the privatisation of veterinary services. Inputs to meet this were in the form of technical assistance within the Common Services of the PCU with funding for the appointment of privatisation officers at national level. The technical assistance was provided by the PACE Veterinary and Legislation and Privatisation Unit (VLPU) and the separate UK Department for International Development (DFID) funded Community-based Animal Health and Participatory Epidemiology (CAPE) Project.

Increasing livestock farmers' awareness of the benefits of animal health services and strengthening linkages between central institutions and livestock farmers.

To meet these objectives, technical assistance was provided by Communication Expert TAs based in both Nairobi and Bamako centres from October 2000 to February 2004. Funding was also provided to appoint communication officers in each PACE country.

2.3 Design and Planning of Project Components

Training

There was no single training unit in PACE. Planning and implementation of training interventions was carried out by individual components of PACE at Central, Regional and National levels.

Privatisation and Legislation

The strategy to promote privatisation in the delivery of veterinary services included two main elements:

- Updating veterinary legislation in PACE countries so that there is a framework for privatised veterinary services.
- Provision of relevant training of private veterinary service providers.

TA was provided by two components, namely:

- The VLPU which provided technical assistance to PACE countries to modernize their veterinary legislation.

- The CAPE project which focused on the promotion of the use of Community-Based Animal Health Workers (CAHWs).

In addition, national PACE privatisation officers were appointed to act on the TAs' recommendations and promote privatisation of veterinary services within their own countries. In the case of CAPE, much of the implementation was done through NGOs working in conflict areas and remote ASAL regions where conventional veterinary services are not available.

Although not a planned component, in some countries PACE continued to administer a scheme set up under PARC to provide guarantee funds against bank loans and credit to private veterinarians.

Expanding awareness of animal health services and benefits and improving linkages between central institutions and livestock farmers

In order to achieve these objectives, the Communication TAs in Nairobi and Bamako visited all the PACE countries to advise and train locally appointed national PACE Communication officers on how to strengthen their farmer awareness programmes. This included advice on how to strengthen linkages between central institutions (usually Government Veterinary Services) and livestock farmers. Implementation of these recommendations and advice was the responsibility of the local National PACE Communication Officers under the direction of National PACE co-ordinators.

Laboratory diagnostic services

As part of PACE's objectives to eradicate rinderpest and strengthen surveillance of other major epizootic diseases, national central and district veterinary laboratories were strengthened by training of staff and provision of laboratory equipment and consumables. Three of the National Central Veterinary Laboratories (KARI Muguga, LNERV/ISRA Dakar and LANADA Bingerville) were designated as Regional Rinderpest and PPR Reference laboratories. A laboratory expert seconded by the International Atomic Energy Agency (IAEA) provided TA from 2001 to March 2006.

2.4 Mid Term Review Recommendations

The following section focuses only on recommendations of the Mid Term Review (MTR). The follow-up and implementation of these recommendations are covered in later sections of the report.

The mid-term review (MTR) recommended a no-cost extension to PACE.

Re-structuring of AU-IBAR

The MTR recommended that the Director of AU-IBAR prepare a strategy paper on th possible direction for IBAR's development, to outline the proposed vision, missio objectives, strategic options and organisational structure for IBAR. For this, PACE an CAPE should make available resources to access external expertise to assist with th exercise.

The MTR also recommended that PACE should assist the Director of IBAR to offer solutior with regard to the future of PANVAC, taking into consideration decisions to be made by th Ethiopian Government and the AU.

Planning and Co-ordination

The MTR outlined a number of alternatives to the centralised method of management whic PACE had adopted, namely:

- The PCU could restrict itself to scrutiny of core elements in the work plar (budget ceilings, surveillance and cross-border co-ordination) and leave it t the EU Delegations to scrutinise other components.

- Involvement of the PCU could be further reduced by allowing the PCU only a overall veto of the whole work plan rather than unrestricted line item vetoes.

- The RAO and the PCU could indicate, at the beginning of each year and f each country, guidelines on important issues to be tackled as well as a financi envelope (proposal approved by the lead delegation).

Procurement

The MTR recommended that PACE should establish a procurement assistance unit in one o both of the co-ordination units.

The MTR recommended that the best way to prevent the accumulation of unclosed accoun was to suspend individual programmes and proceed to closure of the programme whe accounts are not closed within a period of 12 months. Unspent funds would be re-allocate to other programmes.

Management of National Programmes

The MTR recommended exchange visits to countries which have progressed further alon the transition to a regulatory service and that management should be more selective i choosing people to be trained. In livestock exporting countries, a combination of governmer intervention, the active role of the private sector and use of participatory epidemiology ha resulted in the creation of more comprehensive and active disease information system Experience in developing these systems needs to be shared with other countries. The MTI recommended that PACE should continue to make available expertise on legislation an regulation and expand its advisory work. Twinning arrangements should be encouraged t facilitate contacts between veterinary boards and associations in PACE countries with thos in EU member states. Also it was recommended that there should be opportunities fc sharing experiences of best practice among PACE countries with regard to implementatio of the PACE project, especially regarding privatisation.

Training

The MTR urged that the remaining training needs assessments be finalised as a matter of urgency and that implementation of training programmes be accelerated. In order to benefit from economies of scale and render training activities more effective, it was recommended that training funds be centralised.

Privatisation and Legislation

Although the CAPE project was designed to complement PACE and VLPU, implementation of this complementarity was problematic. Due to differences in philosophy and approach by the two units, there was a lack of communication. Some activities were duplicated and there was no common planning even if the expected results were the same. The MTR recommended that CAPE and VPLU would be better co-ordinated on a geographical basis. In addition, due to the small size of VPLU, it was recommended that VPLU activities should focus on those countries in the different Regions that were more advanced in the reorganisation of veterinary services but were facing some constraints (some of the West African countries) and those countries where a process of development and improvement of veterinary services had already started (e.g. Uganda). CAPE, on the other hand, would continue assisting countries in Eastern Africa, co-ordinating its effort more closely with VLPU.

Communication

The Communication unit should re-focus on core activities, namely the development of messages and extension materials in relation to surveillance and control of epizootic diseases. The MTR recommended that the unit train national veterinary extension staff in planning, conducting and analysing the results of knowledge, attitude and practice KAP surveys. Public relation type activities could be contracted out as and when needed.

Epidemiology, Economics and data management

The MTR recommended continued support from bilateral donors (France in particular) in the provision of TAs and that additional funds should be sought to enable extension of the contracts of the wildlife epidemiologists. They recommended that actual disease control activities should be left to other, more adequately funded, projects, but work on the design of control strategies should continue under PACE. The Economic Unit that provided crucial inputs in the design of control strategies needed to be brought under the aegis of the Epidemiology Unit

Monitoring

The MTU review recommended that more time and effort should be allocated within the PACE units to monitoring activities.

Policy and Advisory Committees

The Policy Committee had met only once and it was recommended that it should meet again ideally when there is a meeting of African Ministers for Animal Resources, or when there are EU donor co-ordination meetings. The Advisory Committee should become the Steering Committee with more representation from AU, African Governments, ADB and donor agencies. Technical advisory work provided by the current members of the advisory committee should continue on an *ad hoc* basis.

Effectiveness, impact and sustainability

Country level 'needs assessments' for capacity building should be undertaken urgently a should include private sector capacity building. Individual countries should define th priority diseases within List A and targets for their control or eradication. PACE shou continue to experiment with different methods of surveillance and control, including priva sector participation in surveillance. Project proposals for funding should be formulated specific disease control. PACE must not be viewed as a permanent intervention.

It was recommended that country programmes should be extended by at least two yea The logical framework should be updated and co-ordination, data management a epidemiology should be given the highest priority.

The major change after the Mid-Term Review was the deconcentration of the E management system. However, the problems remain the same in terms of:

- Delays in the approval of the Programme Estimates by the local E Delegations and the National Authorising Officers who gave a low priority to t PACE Programmes in each PACE country because of their relatively sm budgets.

- Delays in the mobilisation of funds owing to delays in closing of Work Pla (WPs) which is a prerequisite for opening of new WPs and mobilisation funds.

2.5 PACE Programme Rationale as a Regional Programme

Following the PARC programme, the OAU and the European Commission (EC) agreed the PACE programme. A major objective of PACE was to build on the success of PARC a continue the campaign to eradicate rinderpest from 32 sub-Saharan countries (althou originally included, Sierra Leone and Liberia did not continue in the PACE Programm Because the 30 PACE countries covered a broad band across central Africa encompassi different agro-climatic zones ranging from marginal pastoral desert regions of the Sahara Central African rain forest, regionalisation of the programme was essential. This w addressed by opening two Regional Co-ordination Units (RCUs) in Nairobi, Kenya a Bamako, Mali. Each unit has been headed by a Regional Co-ordinator. The Bamako RC has been responsible for the supervision and co-ordination of the 13 West African and Central African countries, while the Nairobi RCU has had the equivalent responsibility for East African countries.

A Regional Co-ordinator for Eastern Africa was proposed by the RAO but never accepted the Donor. The two positions of Regional Co-ordinator for Eastern Africa and PACE C ordinator have been combined.

2.6 Co-ordination and Complementarities between Activities Funded by EDF and Other Donors

In addition to the EC, the other donors to the PACE programme are French Co-operatic through the Ministère des Affaires Étrangères, the UK Government's Department f International Development (DFID), the Italian Government and the Swiss Government. Th latter two funded part of the intervention in Somalia during the first phase of the programm French Co-operation has funded two Regional epidemiologists in the Bamako RCU, the fir was from November 1999 to September 2003 and the second, still in post, took up h appointment in February 2004. Although funded by French Co-operation, these exper

have been an integral part of PACE and there has been complete complementarity between their activities and other activities funded by the EDF.

DFID funded the CAPE project from October 2000 to September 2004. The purpose of CAPE was *"to establish sustainable animal health services to control diseases that threaten the health and productivity of livestock reared by pastoralists in the Greater Horn of Africa"*. CAPE had two TAs plus support staff based in AU-IBAR in Nairobi, as well as field staff in Uganda, Somalia and Ethiopia. Although working to its own budget (£ 5.426 million) and logical framework, it was planned that CAPE would collaborate with PACE in certain activities. Thus CAPE collaborated effectively with the PACE Project Epidemiology Unit and Data Management Unit in carrying out such activities as organising participatory epidemiology workshops, devising disease control strategies and carrying out surveys of CAHWs in the Greater Horn of Africa. An important part of the PACE/CAPE collaboration, however, was in the area of privatisation and legislation. This proved very problematic (see 4.6.2) and so in this aspect there was poor complementarity between CAPE's activities and those of the VLPU in PACE.

3. RELEVANCE OF THE PROJECT

3. RELEVANCE OF THE PROJECT

3.1 Background and Preparation

The project is relevant at four levels:

- Addressing beneficiary requirements. Through control of major epidemic diseases the project aims to enhance livestock productivity and thereby improve food security and reduce poverty for rural households involved in livestock production. The disease control also creates opportunities for improved marketing and export of livestock and livestock products and increased earning potential for livestock farmers.

- Strengthening economic activity at national and regional level. Improvement of livestock productivity and development of export trade gives rise to the potential for expanding the sector's contribution to gross domestic product.

- Addressing global priorities. The project is relevant in that it contributes to the control and eradication of major transboundary diseases which have had a global impact (for example Rinderpest), still have a global impact (for example FMD) and are emerging as new threats to livestock production and human health (for example HPAI).

- Supporting partners' and donors multilateral efforts.

Partners and donors such as EU, UNDP, FAO, OIE, and DFID recognise the role that livestock play in relation to food security and economic activity in Africa. These organisations have for many years demonstrated a commitment to strengthening the systems for animal disease control in Africa including, for example:

  - The collection, analysis and dissemination of animal health information.

  - Providing expertise and encouraging international solidarity in the control of animal diseases.

  - Supporting the WTO-SPS Agreements to safeguard world trade through the implementation of animal health standards for international trade in animals and animal products.

  - Improving the legal framework and resources of national Veterinary Services.

  - Promoting animal health and welfare through a science-based approach.

The PACE programme is relevant to all the above areas of activity.

3.2 Design

The size and complexity of the PACE programme was not sufficiently recognised in the design of the organisation, management and administration structure and systems. Insufficient resources were allocated to management and administration functions. As a result, excessive management and administration tasks were given to technical staff (veterinarians) at senior regional and county level which constrained the delivery of the technical outputs.

In addition, the design included planning and approval processes that were insufficiently streamlined for the size of the programme covering 30 countries and this resulted in delays

and decreased efficiency, effectiveness and impact. In some countries the EC Delegation appeared to give low priority to the regional PACE programme compared to their nationa projects. However, with the arrival of the Technical Assistants the standard of organisatio and management has improved at national level, albeit not in all countries.

3.2.1 Components

The technical components of the project were loosely grouped under the common service of the Epidemiology Unit (including wildlife and laboratory components), the Dat Management Unit, the Communications Unit (merged into the Information an Communication Technology Unit in the extension phase), the Socio-Economics Unit an Animal Health Service Delivery Unit (including privatisation and legislation). Within th Extension Phase, however, there was no Animal Health Service Delivery Unit.

The activities implemented by the above units were all relevant and can be grouped unde the following themes:

- The development of disease surveillance and animal health information systems
- Continuation of rinderpest eradication and strengthening of control of other majc epizootic diseases of livestock.
- Support to the privatisation of national veterinary services with amendments t national legislation where appropriate.
- Increasing livestock farmers' awareness of the benefits of animal health service and strengthening linkages between central institutions and livestock farmers.

These themes are consistent with the specific objectives of the programme as specified i the logical frameworks of both the initial and extension phases.

3.2.2 Internal Coherence of the Log Frame

The logical frameworks of both the initial phase and the extension phase are shown i Annex 5. The PCU developed a practical logical framework during the workshop i Machakos in 2000 which contained a list of more specific activities.

There was considerable overlap in the Results and Activities of the initial phase of PACE For example, Activity 1.4 (Veterinary Surveillance of Wildlife) was relevant to Result No. (Reinforcing of animal epidemiology services and control of major diseases in participatin countries) and to Result No. 3 (Rinderpest eradicated from Africa: greater control of othe epizootic diseases, especially contagious bovine pleuropneumonia). Some activities in th initial phase, however, proved to have limited relevance to the main thrust of the project notably:

- Activity 2.4 Targeted aid for vet schools.
- Activity 4.5 Continuous environmental monitoring of four regions considered typical examples of traditional husbandry.

Although some progress was made in Activity 2.4, both these activities were discontinued ir the extension phase.

The extension phase logical framework had more results and activities than the initial phase, but they were more targeted and, as such, the overall coherence was improved.

3.2.3 Specific Objectives and Overall Objectives

The objectives of PACE were as follows:

Initial Phase

- Overall Objective - Combating poverty among those involved in stock farming by improving productivity
- Specific Objectives
  - Strengthening the capability (at national and regional level) to assess the technical and economic aspects of animal diseases and generate appropriate programmes for their control
  - Safeguarding of animal health in Africa against major epizootic diseases (OIE List A)

Extension Phase

- Overall Objective - Reduction of poverty and enhanced food security amongst rural communities through sustainable improvements in animal production and productivity and increased trade in livestock and livestock products
- Specific Objectives
  - Eradication of rinderpest and control of other epizootic diseases
  - Strengthen surveillance of other major diseases to provide required information for policy formulation of their control as a prerequisite for access to global livestock markets

As the objectives indicate, the main aim of PACE was to alleviate poverty among livestock farmers by better control of major epizootic diseases. In the extension phase, the emphasis was on the final eradication of rinderpest together with consideration of the trade opportunities stemming from improved control of major contagious diseases. It can be very difficult to measure the financial benefits to livestock farmers resulting from strengthened disease control, but in the case of rinderpest eradication, the greatest benefit is increased livestock and food security. Assuming rinderpest eradication will be achieved within the foreseeable future, this should open up trade opportunities for East African cattle to the Middle East.

In West and Central Africa, the equivalent trade opportunities are less obvious. There is a thriving market for live ruminants from the pastoral areas in the North, and this continues within an environment of endemic diseases such as CBPP, PPR and FMD. Better control or even eradication of CBPP, for example, may not influence this trade, although there would be benefits to livestock farmers who currently need to vaccinate their animals regularly.

3.2.4 Institutional Linkages of PACE

PACE has placed considerable emphasis on strengthening the linkages between livestock farmers and official veterinary services. This is very relevant for achieving maximum co-

operation from livestock farmers with activities being promoted by PACE, especially th associated with disease control and surveillance.

3.2.5 Training

A major aspect of the PACE programme has been the provision of training at all levels fr livestock farmers to senior professional veterinary staff. The training programme of PACI outlined in Section 4.6.1. The main areas of training have included:

- Laboratory diagnostic techniques and QA
- Database management
- Epidemio-surveillance (including wildlife)
- Disease recognition
- Disease control
- The role of CAHWs and auxiliaries in epidemio-surveillance
- International animal health standards
- Integration of farmers and veterinary services in the delivery of veterir services
- Livestock farmer awareness
- Control of veterinary pharmaceuticals
- Communication
- Risk analysis
- Animal health economics
- EDF Procedures (National co-ordinators and PACE accountants)

All of the above topics are relevant to the objectives of PACE. However, the lacl management training for National Co-ordinators has been a serious omission (See 4.6.1).

4. EFFICIENCY

4. EFFICIENCY

4.1 Project Management

The programme started its operations in 1999 with a highly centralised structure, where the EC Delegation in Kenya played a prominent role in financial and administrative matters. All work plans and cost estimates duly signed by the competent Minister, the NAO and the local EC Delegations, were submitted from national programmes to the PACE Co-ordination in Nairobi (via the regional co-ordination of Bamako for West and Central Africa), then approved and consolidated in two batches (April and November) by the PCU and sent to the EC Delegation Kenya for endorsement and opening of commitments.

Starting in 2002 and 2003, this centralised structure was changed as a result of the process of de-concentration of powers and responsibilities launched by the European Commission.

Since 2004, work plans and programme estimates have been formulated in the countries and approved there by the National Authorising Officers and the local EC Delegations, after comment and agreement of the PACE Co-ordinator. Within the EC Delegation the efficiency of the process depends on the willingness and commitment of the key staff, especially the Head of the Rural Development Section and the Head of Finance and Contract Section. The process is affected by how strictly these officers apply EC procedures. In practice there has been some variability (as evidence in the Country Reports, Annex 7) in the level of engagement of the Delegations in the PACE administration process at national level. In addition, the National Authorising Officers have not always been controlling properly the PACE financial documents and have sometimes only acted as a conduit for documents and have not provided the level of verification and control that might have been expected. All PACE countries have developed national work plans but some have not been consistent or approved in time.

At the beginning of the programme the Regional Authorising Officer (RAO) did not understand his major responsibility in the implementation and management of the programme and there was a disagreement between the RAO and the lead EC Delegation in Kenya which insisted that a substantive Director (RAO) be put into place before the start of the extension phase. Moreover, the acting Director of AU-IBAR was deeply involved in the micro-management of the programme, despite the strong complaints of the EC Delegation Kenya and the PACE management. This even resulted in unilateral decisions on appointment and cancellation of contracts of key staff members including Technical Assistants (TA). During the lifespan of the programme some of the TAs have been replaced or left the programme, resulting in interruption of activities and reduction of programme performances as follows:

- The Main TA changed twice, in 2001 and 2005, with interruptions in 2001-2002 and 2004-2005.

- The Financial Controller left the programme in November 2004 and was replaced in February 2005.

- The Regional TA for Eastern Africa (post created in November 2004 following the suppression of the posts of National TAs in Eastern Africa) left in September 2005 and was replaced in January 2006.

- The 2003 replacement Regional TA for West Africa based in Yaoundé left in November 2005, leaving the 20 countries in West and Central Africa under the supervision of the 2 RTAs based in Bamako.

- The National TA for Chad was transferred to Nairobi in November 2004 to become first the Regional TA for Eastern Africa and then the Main TA. As a result, Chad was left under the supervision of one of the 2 RTAs based in Bamako.

- The National TA for Tanzania left in 2003 and was temporarily replaced the same year, to be further replaced in 2004.

- The Data Management Expert left in March 2006, while the Laboratory Expert and the Economy Expert left in May 2006, before the end of their appointments. Only the Data Management Expert was replaced in June 2006.

- The post of regional epidemiologist for West Africa was covered by three different experts, all seconded by the French co-operation.

- The contracts of the PCU (accountant and Imprest Accounting Officer) and the PCU administrative assistant were terminated in September 2005. An accountant was recruited in September 2005 and after one month she was recruited by IBAR as accountant for the institution. A second accountant (present PACE accountant) was recruited in October 2005. The Head of Finance and Administration, the administrative assistant and the SERECU accountant joined early 2006 after the PCU had to embark on an open recruitment procedure which took quite long because of the number of candidates (about 3000 for 7 positions) and the need for evaluation of their CV's, organisation of interviews etc.

The web site is not updated regularly every month so as to provide sufficient information to PACE National Programmes on PACE activities.

Most of the problems mentioned above refer to the initial phase of the PACE programme, and under the management of the present PCU of three staff members the overall performance has improved significantly. In general during the extension phase, programme activities and objectives have been carried out at satisfactory levels.

4.1.1 Institutional Capacity of AU-IBAR

The African Union Inter-African Bureau for Animal Resources (AU-IBAR) is one of the specialised technical offices of the African Union (AU) under the Department of Rural Economy and Agriculture (DREA). AU-IBAR was established in 1951 and was initially known as the Inter-African Bureau of Epizootic Diseases, with a special focus on rinderpest control. In 1956 this mandate was expanded to other major animal diseases, hence its name changed to Inter-African Bureau for Animal Health. In 1964, it was integrated into the Organization for African Unity (OAU) as a specialized agency. In 1970, its mandate was expanded to include all aspects of animal resource development.

Despite this expanded mandate, AU-IBAR has continued to focus largely on animal health issues. The new mandate recognizes, however, that it takes more than animal health services to lead to improvements in animal productivity and animal resources that will contribute significantly to increased incomes and improved rural economies in Africa. In addition, AU-IBAR has been implementing its mandate largely through projects in individual member countries rather than operating at a Regional level. This has limited its ability to up results to address continental issues.

According to the Finance Agreement, AU-IBAR was to take over two PACE experts as permanent AU-IBAR staff. This was agreed as part of the capacity building objectives of the

project. AU-IBAR, however, has not had the experts on a permanent staff contract and at least one expert has left the institution to take up another job.

AU-IBAR did not have the institutional capacity to co-ordinate a programme like PACE and needs to be institutionally strengthened, including management and organisational development. The consequences of this deficiency with regard to efficiency of PACE implementation is outlined in 4.1 above.

4.1.2 Assessment of Project Staff Performance

Assessment of project staff performance was undertaken by GTZ in a special study commissioned in 2005. The study examined staff performance during the period 1 March 2000 to 31 March 2005. The findings were presented in a report entitled "Evaluation of PACE Staff Competencies, the Management Structure, Management Systems and the Working Relations" dated June 2005.

The main finding was that the skills and qualifications of certain members of the PCU administration staff were not commensurate with the positions that they held. The salaries and wages paid to the local staff of the PACE PCU are between 5 and 6 times higher than the normal market rates for persons with similar duties and responsibilities. The PACE PCU salaries are paid in accordance with existing contracts, which stipulate that salaries of the PACE staff will be based on the African Union salary scales. This was explicitly indicated in all the Work Plans (WP) from WP1 onwards and further repeated in all successive Programme Estimates (PE) except for PE7 where a negotiated approach with the EC to salary payment was adopted.

4.2 Administration and Finance

4.2.1 Financial Management by the PCU in Nairobi

After the EC decentralisation, it became increasingly difficult for the PCU Financial Unit to obtain financial data on the Programme Estimates in PACE countries. Also the role of finance control changed and shifted from a direct intervention to a facilitating role. The Finance Unit no longer had control of the execution of Programme Estimates.

There is no system in place for the Finance Unit to obtain regular updates on financial implementation in the PACE countries. However, direct reporting on bottlenecks by the Imprest Account Officers via e-mail or other means was promoted by the Finance Unit.

The new accounting system put in place by the new Financial Controller in 2005 is for the management of the PCU Programme Estimates.

Failure to audit the PACE Programme during the first five years resulted in problems that cannot be solved by the current Financial Unit. According to the various audit reports since 2005, there has been a considerable improvement in systems and overall financial management. A request from the Finance Unit to obtain access to OLAS to collect financial data was turned down by the European Commission.

Detailed financial tables are provided in Annex 4. The following summary tables presents the global financial situation of the PACE Programme as at 19/07/2006:

The Global Financial Situation of the PACE programme by 19/07/2006						
Component	FA Budget	Committed	Paid	Balance	% Paid	Projected Decommitte
Regional Component:	**25,320,000**					
1. PACE PCUs		9,402,588	7,813,842	1,588,746	83	180,(
2. PACE RC Service Contracts		11,515,203	7,653,104	3,862,099	66	428,
3. Audits/Consultancies		420,255	341,366	78,889	81	
4. Research		1,069,000	699,960	369,040	65	75,(
Sub totals Regional Component:		**22,407,047**	**16,508,272**	**5,898,775**	**74**	**683,**
National Component:	**51,680,000**					
Total National Components		**53,575,889**	**39,973,881**	**13,602,008**		**5,941,**
Grand total PACE:	**77,000,000**	**75,982,935**	**56,482,153**	**19,500,782**		**6,624,**

Total of the commitments versus the global budget : **98,68 %**
Total of the payments versus the global budget : **73,35 %**
Total of the payments versus the commitments : **74,34 %**

Reconciliation with OLAS accounting sheets of 19/07/2006

Budget Line	Amount	Committed	Uncommitted	Paid
7 ACP RPR 744	33,687,018	33,589,685	97,333	27,242,139
7 ACP RPR 745	10,000,000	9,957,727	42,273	7,903,813
8 ACP TPS 32	23,312,982	22,863,781	449,201	16,750,765
8 ACP TPS 33	2,000,000	1,991,795	8,205	1,067,726
8 ACP ROC 9	3,000,000	2,547,484	452,516	1,216,484
9ACP RPR 32	5,000,000	5,000,000	0	2,649,133
Totals	**77,000,000**	**75,950,472**	**1,049,528**	**56 830,060**
Reconciliation difference	**0**	**-32,463**		**347,907**

The overall allotment of EUR 51.68 Million for the National Component and EUR 25 Million for the Regional Components has been respected. It should be noted that, in relat to the Regional Component, only 66% and 65% of the committed sums have been paic the case of the PACE Regional Service Contracts and Research, respectively. This rela in part to payments that will become due to Contractors for their services (e.g. CIRAD, (Representative Bamako Year 5, GTZ for short term experts and RP-Pirbright).

According to the tables in Annex 4, the Work Plans 1 to 5 (first phase of PACE Programr for the PCUs Nairobi and Bamako have been closed and the Work Plan 6 (first year of extension phase) is in the process of being closed. The closure of the Work Plans following a correct schedule.

The budget of the Financing Agreement has not been monitored in such a way that it allo for the control of the expenditure per budget line. It would also be almost impossible to so in an efficient manner due to the fact that for each commitment the final results of wl has been spent per budget line is only known after its closure. This does not allow efficient financial planning.

The Financial Unit has increased significantly the financial reporting frequency since 2C which is done on a monthly basis, at least during the last year. The reports are a

distributed to all main stakeholders. Discussions based on these reports are consistently on the agenda of the monthly monitoring meetings between the Nairobi PCU and the Lead Delegation.

Unfortunately, the Advisory Committee does not have an expert in the Finance Management who can monitor and provide advice to the Finance Unit.

There will be a remainder of EUR 6 to 7 million at the end of PACE Programme due to non-committed funds, unused funds of national work plans for the last year (first year of the extension phase (ambitious work plans have been put in place) and remaining funds of the regional components (contracts, Programme Estimate of the PCU).

4.2.2 Financial Allocations to PACE National Components

The Financial Allocation to PACE national components provided an indicative global budget for the national components. It seems that national budgets were based on cattle population to the detriment of countries with small cattle populations, even though such countries had unavoidable fixed commitments to reach minimal standards of veterinary services. Thus in these countries there were insufficient budgets, at the beginning of PACE, for infrastructural strengthening of facilities such as cold chain equipment and transport e.g. Congo Brazzaville, Equatorial Guinea. In addition this financial allocation approach did not take into account the special transportation needs to set up epidemio-surveillance networks in very large countries with sparsely populated remote communities e.g. Mali, Niger and Mauritania.

Nevertheless, although budgets provided may have been insufficient to meet actual national needs, the Financial Allocation allowed a drawing right mechanism for the adjustment of national budgets in line with the implementation performance. This mechanism was not used during the initial phase of the programme but technical and budgetary frameworks have been put in place during the extension phase for its implementation. This has allowed for a flexible allocation of national budgets. As PACE was never meant to cover all financial aspects of disease control, it has concentrated on institutional strengthening and capacity building aspects.

According to the financial document "PACE overview of the budgets and commitments on the PACE National Components dated 19th July 2006" (Annex 4), the funding situation can be summarised as follows:

- Four countries no longer receive funding (Burkina Faso, Congo Brazzaville, Djibouti and Rwanda).
- Financial support to Somalia is not via PACE.
- The other 25 countries have had at least one Programme Estimate during the extension phase.
- As at 19 July 2006 75% of the total work plan commitments (total of initial and extension phases) had been paid. The payment level in most countries varied between 75 and 100% but in some countries, in particular, Burundi, Djibouti, Equatorial Guinea and Côte d'Ivoire disbursement rates were very low due to various security and institutional issues facing those countries. Part of the unused funds have now been decommitted – details are provided in Annex 4.

A chart showing the financing decision and execution process for the PACE National Components is shown below.

Financing Decision and Execution Processes

Preparation of technical/budgetary frameworks based on proposals with log-frames b countries and scrutinised by the PCU and RCU, Common Services, Regional Technic Assistants and Finance Unit

↓

Technical/budgetary frameworks based on proposals sent to PACE National Co-ordinato and local EC Delegations

↓

Preparation of Programme Estimates by PACE National Co-ordinators with the support Regional Technical Assistants and in some countries of local EC Delegations

Comment: Delays have sometimes occurred in the preparation of Programme Estimates b PACE National Co-ordinators

↓

Approval of the Programme Estimates by the local EC Delegations and the Nation Authorising Officers

Comments: Delays in the approval of the Programme Estimates by the local E Delegations and the National Authorising Officers have occurred. However, openings commitments and start of implementation of new WP are dependant on the closure of th previous one, and after the deconcentration this was more often the reason for delays.

↓

Two options:

- Programme estimate sent to the PCU and RCU for control then sent back to th local EC Delegation
- Programme estimate sent directly to the lead EC Delegation in Nairobi

Comment: In the second option, the local EC Delegation can bring changes and does n inform systematically the Finance Unit

↓

The lead EC Delegation in Nairobi in collaboration with the Finance Unit opens the financi commitments and informs the local EC Delegations. The PCU informs the PACE Nation Co-ordinators and the Regional Co-ordination Unit. The local EC Delegations execute th Programme Estimates.

Comment: Delays occur in the mobilisation of funds because regional programmes may n have been given the same priority by the local EC Delegations as national programmes.

↓

The Financial Controller collects financial data from OLAS (European Commission) on monthly basis.

Comment: The Financial Controller only receives financial information from a few local E Delegations He does not control the execution of the Programme Estimates. He does n have direct access to OLAS which means that there is no possibility to implement Management Information System on financial execution by countries.

4.2.3 *Financial Management of National PACE Programmes*

The financial management of National PACE Programmes has been an important issue in the success of the PACE National Programmes.

Required skills for the national co-ordinators were only defined during the elaboration of the regional training programme. Adequate training modules aimed at a better understanding of EDF procedures and managerial tools were identified for the national co-ordinators and accountants. Training provided at local level by the National Authorising Officers and local EC Delegations has covered these needs.

Appointment modalities for National Co-ordinators were specified in the Financing Agreement as follows: *"The national components will be managed on a decentralised basis by a national co-ordinator appointed by the (national) administration, working in close co-operation with the regional co-ordinators and the Delegations concerned".*

Thus the appointment of National Co-ordinators is approved by the relevant national Ministry in collaboration with the National Authorising Officer, the local EC Delegation and the Regional Authorising Officer (AU-IBAR Director). Recruitment of National Co-ordinators is not within the authority of the PCU but guidance on these processes has been provided. Recruitment of PACE accountants is organised through the National Authorising Officer in liaison with the relevant technical ministries and local EC Delegations.

The PACE countries have to finalise major activities in such a way that closure of the work plans (PEs) can be achieved by the end of October 2006. Closure in this case means closure at the level of the implementing ministry and the EC Delegation in their respective countries. The closure dossier must be submitted to the EC Delegation by the end of September 2006. The projected number of commitments still to be closed by the end of PACE is 90 over a total of 203 commitments (44%). It will be difficult for PACE countries to respect these deadlines: Ethiopia has 14 closures to do, Kenya and Benin 7 closures, Mali 6 closures (figures given in June 2006). The process for closure is not always agreed upon or not fully understood. There is also a risk of non-acceptance of incurred costs and consequently unbudgeted repayment required.

In the PACE countries visited by the Final Evaluation Mission in West Africa, it was mentioned by Ministers or General Secretaries that after PACE, the Government will include a budget line in the national budget to sustain (partly or fully) the PACE activities. The Governments in the PACE countries did not always entirely use the counterpart funding for PACE activities as stipulated in the agreements with the European Commission and the local Governments in the PACE countries. The situation varies from country to country and the Mission was not able to obtain details of the actual levels of expenditure of counterpart funds.

Recruitment of PACE accountants is organised through the National Authorising Officer in liaison with the relevant technical ministries and local EC Delegations. The PCU and the Regional Co-ordinating Unit have needed to carry out examinations in each project to recruit qualified accountants. Most accountants are not paid by the PACE Programme.

4.3 PACE Co-ordination and Common Services

4.3.1 Internal Monitoring and Evaluation Mechanisms (PACE Advisory and Policy Committees)

Even through no specific monitoring and evaluation unit has been established, tools ha been put in place for monitoring the country programmes and to carry out spec evaluations.

Since September 2005, a monitoring meeting between the PCU and the Lead Delegat takes place on a regular monthly basis.

Different tools put in place by the PCU

Reporting systems

Since the start of the programme reporting systems and formats were put in place for monitoring of country activities on an annual and quarterly basis. Generally, annual repc have been prepared on a regular basis (see Section 5.3.4).

Recommendations from the country annual reports are discussed at the annual ordination meetings.

Country missions

Regular monitoring missions have been undertaken at country level by the PCU (Nairobi a Bamako), Common Services and RTA.

Monitoring Indicators for the follow-up of country execution

Since 2002, indicators have been developed to facilitate the monitoring of the 4 proj themes. 37 indicators have been adopted by the Advisory Committee. The upda indicator data is published in the quarterly progress reports which are used by the NAOs, Delegations and Advisory Committee to monitor progress in the implementation of programme.

EC external monitoring

The EC Monitoring System for the Implementation of Projects and Programmes of Exter Co-operation is used to provide external monitoring of PACE. The Monitors make visits the PCU in Nairobi, the RCU in Bamako and the PACE country projects.

In addition, the PCU and RCU have regular communication with PACE countries through mail and this has helped ensure exchange of information on important issues. Increas use of e-mail has, for example, helped identify more quickly where financial bottlenecks a occurring.

Evaluation of the programme

Since the first quarter of 2004, modalities for the evaluation of the national programmes ha been defined. Evaluation started in August 2004 in Guinea Bissau. The evaluations a carried out by a team of at least 3 people drawn from the PCU/RCU, Common Services a Regional Technical Assistants. The evaluations allow a comprehensive review of

activities undertaken by the PACE countries and the reports analyse the overall implementation of the components and provide recommendations when it is required.

At the time of the PACE Final Evaluation in June-August 2006, a total of 11 countries (Guinea Bissau, Niger, Burundi, Tanzania, Uganda, Ghana, Kenya, Gambia, Chad, Mali and Ethiopia) had been evaluated.

4.3.2 Contributions of Scientific Research Institutes and International Organisations

The PACE programme has been supported by the following International Scientific Research Institutes and International Organisations:

- World Reference Laboratory for Rinderpest, Institute of Animal Health, Pirbright Laboratory, UK
- CIRAD-EMVT, France
- International Atomic Energy Agency, Vienna, Austria
- FAO, Rome.

There has been support from the Regional Veterinary Laboratories from within the PACE countries, namely:

- KARI-Muguga, Kenya
- ISRA Dakar, Senegal
- LANADA Bingerville, Côte d'Ivoire.

And there has been support from National Laboratories, including:

- National Veterinary Laboratory, Kenya
- National Veterinary Laboratory (LANAVET), Garoua, Cameroon
- National Animal Health Research Centre (NAHRC), Ethiopia
- Sebata Laboratory (under SERECU), Ethiopia

4.3.3 Performance of Technical Assistants

During the lifespan of the programme some of the TAs have been changed or left the programme, involving interruption of activities and subsequent reduction of Programme performance. Since October 2005, each Regional TA (RTA) has been responsible for 10 National PACE countries. This compares with the previous 7 and 8 PACE countries respectively for the 2 RTA for West and Central Africa based in Bamako, 5 for the RTA based in Yaoundé and 8 for the RTA for Eastern Africa. The reduction in the number of TAs since October 2005 was based on an assumption that the National PACE countries would have benefited from the transfer of knowledge/training by the TAs during the initial phase of the programme. In practice, assigning 10 countries per RTA has not allowed efficient support to each National PACE country during the extension phase. The situation has been further aggravated by the increasing administrative work load of the Regional Technical Assistants (TAs) at the Regional Co-ordination Unit (RCU) in Bamako. As a result, the time

spent in the RCU has increased to about 45% of their time and the time allocated to country visits has decreased to less than 30%. For procedural reasons, it was not possible to increase the number of TAs to the previous level during the two year extension period.

Nevertheless, the Regional Technical Assistants, through workshops (around 10% of their time) and country visits, are meeting and working with the PACE National Co-ordinators on a regular basis.

A wide variety of important technical functions are performed by the RCU including:

- Analysis of PACE National Work Plans.
- Analysis of some PACE National Emergency plans or RP OIE dossier.
- Preparation of technical leaflets, budget templates (e.g. for HPAI) in collaboration with OIE and FAO.
- Provision of accurate and appropriate information to the PACE Regional Co-ordinator and development of links with epidemiological and related animal health components in other projects and with regional and international bodies.
- Assistance in the preparation of quarterly, annual, mission and other reports in the PACE programme's approved format (all reports are submitted to the PACE PCU).
- Writing of scientific papers, as appropriate to be published through the PACE Programme Co-ordinator and the AU-IBAR.
- Performance of other duties that may be assigned by the PACE Programme Co-ordinator that are consistent with the objectives of the programme.

Translation of PACE documents is generally entrusted to professional translators. However, when the need arises (e.g. at the time of the Advisory Committee Meetings or during the PACE Annual Co-ordination Meetings) the TA assist with translation work.

4.4 Performance of the Programme

4.4.1 Level of Integration of PACE Activities

The PACE programme has an ambitious agenda of activities, results and objectives across 30 countries. Key to the integration of this programme into the main-stream veterinary activities, both public and private, has been the establishment of the epidemio-surveillance networks. From reports received and observations of the Final Evaluation Mission, it is concluded that the epidemio-surveillance networks are well integrated into veterinary services in most of the PACE countries although the degree of integration does vary from country to country. For example the integration is very high in Guinea where the veterinary services work closely with Farmers' Sanitary Defence Committees. A similar situation is developing in Mauritania where veterinary agents located in surveillance sites work closely with their own networks of farmers. The Communication TAs and National PACE Communication Officers have also played a key role in the efficiency of this integration.

4.4.2 Relationships between Activities and Results

The expected results and planned activities of PACE are indicated in the Logical Frameworks in Annex 5. As explained in Sections 4.5 (Epidemiology) and 4.6 (Veterinary Services) the full range of planned activities has been implemented and progress has been achieved in all the result areas with two exceptions. These exceptions related to the 'development of national policies for economically affordable strategies for the control of priority diseases' and 'strategies developed for gaining greater access to livestock markets' where progress has been limited.

4.4.3 Summary of Results Achieved by the Programme

A detailed assessment of activities implemented and achieved are presented in Sections 4.5 and 4.6. A summary is provided below.

The project has improved animal epidemiology services in PACE countries through introduction and improvement of surveillance and reporting activities and by introduction and improvement of data management, including electronic storage and analysis of livestock disease information.

PACE has improved the diagnostic capacity of veterinary laboratories across the region, although the endeavours of PACE did not result in any improvements of the Regional Veterinary Laboratory, KARI-Muguga, Kenya.

Through meetings, workshops and capacity building initiatives, PACE has established an epidemiology network across the 30 participating countries. A set of performance indicators is utilised for monitoring the capability and efficiency of the networks and for making comparisons between countries.

Some studies have been made on the economics of animal health and on the cost/benefit of epidemio-surveillance systems.

Veterinary surveillance of wildlife has been enhanced.

PACE activities have led to greater privatisation of veterinary services and public/private sector linkage in the veterinary field have been strengthened.

Through co-ordinated activities of PACE and other organisations, rinderpest has almost certainly been eradicated from Africa. PACE has assisted member countries to progress along the OIE Pathway with regard to rinderpest for declaration of freedom from disease and infection.

PACE has established greater control of some other epizootic diseases. A notable example has been the assistance given to affected countries to control HPAI. In some countries, disease control strategies formulated by PACE are assisting in the control of CBPP, RVF and ASF.

Communication strategies have been introduced and are now practiced in member countries.

Research programmes have been implemented on rinderpest and CBPP diagnosis and control by vaccination.

4.5 Epidemiology

4.5.1 Implementation of the Programme

For project implementation, the PACE Epidemiology Unit (PEU) has concentrated on th following three areas:

- Enhancement of national capacities in respect of delivery of epidemiologic services.
- Facilitation of the eradication of rinderpest from Africa by assisting in th elimination of the virus from the remaining foci of infection and verification tha eradication has been achieved.
- Assistance to member countries in the control of other major epizootic diseases

In the first year of the programme, seven staff were recruited and offices were equipped a OAU-IBAR (now AU-IBAR) in Nairobi and at the PACE Regional Co-ordination Unit i Bamako, Mali.

An additional office was established in N'djamena, Chad to manage a *cordon sanitaire* c rinderpest vaccination, extending from Central African Republic (CAR), through Chad, int Southern Sudan.

A Main Epidemiologist and a Counterpart Epidemiologist established the PEU in AU-IBAF Nairobi and Bamako. The Counterpart Epidemiologist arrived in the middle of July, 200(and the Main Epidemiologist joined at the beginning of December 2000.

A Regional Epidemiologist (funded by French Co-operation) and a Wildlife Specialist wer placed in Bamako; a Regional Epidemiologist was placed in N'djamena and a Region Epidemiologist and Wildlife Specialist were placed in Nairobi.

A laboratory expert, seconded to PACE by the International Atomic Energy Agency (IAEA joined the PEU team in June 2001.

Due to the favourable rinderpest situation, the *cordon sanitaire* was discontinued in the firs half of year 3 of PACE and the epidemiologist in N'djamena was relocated to Bamak where he assumed responsibility for all countries within Central Africa as well as thre countries in Western Africa (Mauritania, Senegal and The Gambia). At the same time, th wildlife specialist based in Bamako was moved to N'djamena. This did not alter hi responsibilities but enhanced his performance, as most of the critical zones for surveillanc were in that region, and ensured that the PEU continued to be represented in Central Africa

Procedures for reporting and meeting were formalized in a PEU Manual of Procedures an the PEU established close working relationships with the Data Management Unit and th Economics Unit.

For the extension phase of PACE, staff of the PEU were reduced to three: the Counterpa Epidemiologist became the Main Epidemiologist based in Nairobi, and a region epidemiologist for West and Central Africa remained based in Bamako. A second region epidemiologist (regional epidemiologist for East Africa) currently heads SERECU.

4.5.2 Disease Surveillance Systems

To meet its objectives of enhancement of national capacities for delivery of epidemiological services, eradication of rinderpest and assistance to member countries in the control of other major epizootic diseases, the PEU considered its first priority to be to establish or strengthen national disease surveillance systems. This has been achieved by utilising existing animal health delivery systems in each country for reporting disease information. These vary from country to country and at field level may comprise Government veterinary staff in stations in Districts (for example, in most East African countries), or auxiliaries at veterinary posts in prefectures reporting to Government or private veterinarians. In areas where there has been, or is, conflict, surveillance at field level may be undertaken by CAHWs and (as in Somalia) Livestock Professional Associations. Disease information collected by these individuals, is presented, either through monthly reports, or through disease incident reports, through a chain of communication, to regional, and eventually central veterinary authorities. This so-called passive surveillance system has been developed through training and communication strategies and by help with designing reporting formats relevant for each country.

In addition, PACE, guided by the PEU, has introduced and supported active surveillance whereby disease searching methodologies have been developed, using participatory techniques and random sample surveys. This has been achieved through development of mobile teams which travel from Headquarters, regional offices and veterinary laboratories. Also, with varying degrees of commitment and success between countries, collection of animal disease data is undertaken from veterinary laboratories, abattoirs and markets.

To assist and harmonise surveillance activities in the different countries PACE has undertaken much training and communication in disease surveillance. The epidemiologists have introduced a set of performance indicators which can be tailored to each country's requirements and allows them to monitor their surveillance activities. They also have designed a set of evaluation criteria which they can apply to assess and compare the surveillance systems of the different countries.

4.5.3 Information Systems

To make use of surveillance activities, PACE has spent resources on the development and introduction of an electronic Animal Resources Information System (ARIS), which can store and process surveillance data and also census and production data. In most countries, surveillance reporting is on paper from the field, through regional centres to Headquarters. Twenty four of the 30 PACE countries have installed ARIS and are using it in their Headquarters. Four countries are entering surveillance data into the FAO programme Tad Info as well and of the six countries not using ARIS, one (Rwanda) is using Tad Info only, one (Eritrea) is using Access only, Ethiopia is using an Access database which was customised during PARC, and three countries (Equatorial Guinea, Burundi and Djibouti) appear not to be using electronic information systems. Kenya has already introduced ARIS at regional level.

Some countries are analysing the data generated in ARIS using geographical information systems (GIS), such as Arc View and MapInfo to map their surveillance information, Access, Excel and statistics programmes such as SPSS.

ARIS has been developed in Oracle by the PACE Data Management Unit, the programming being done by a commercial company based in Nairobi. It is installed and backed up by the Unit, now merged with the Communication Unit. ARIS can record monthly reports, outbreak reports, results of active surveillance, national livestock resources as well as human

resources in animal health delivery services. It can report on the efficiency of the diseas surveillance system in a country using the performance indicators developed by the PEU The programme does not have a GIS component but can export data in a format that can b imported into commonly used GIS programmes. It can also generate pre-programme reports on animal health and production through the database and edit them in tw languages (French or English). The Portuguese version is also foreseen.

Not only has the Data Management Unit developed and introduced ARIS, it has als established a Local Area Network in IBAR and has undertaken livestock disease an resources mapping using GIS. It has undertaken training and preparation of manuals on th use of the software it has developed. The Unit has also re-launched the PACE/IBAI website.

The introduction and implementation of ARIS in PACE countries faces problems. The mai problems are related to the weak institutional capacity to handle complex databases such a ARIS, the lack of streamlined disease reporting compatible with ARIS requirements and th inability of ARIS to manage data in a user-friendly manner. Potentially, ARIS is a ver powerful tool, but like all developing IT systems, it has its teething problems. Thus appears to be an unfinished product which needs continuing support and development. A additional constraint is the lack of appropriate computers with sufficient capacities (even a headquarters) in most PACE countries.

It was planned that in the extension phase a second version of ARIS should be designe and developed, the first version is over four years old, but a decision to go ahead with thi has not been taken.

An IT consultancy is planned before closure of PACE to recommend what furthe development of ARIS is needed.

4.5.4 Interventions against Rinderpest

At the beginning of the PACE programme, rinderpest was still present in two endemi reservoirs in the cattle of pastoral communities: rinderpest lineage 1 was in Southern Suda and lineage 2 was in those parts of Somalia, Ethiopia and Kenya identified as the Soma Ecosystem. These could act as the source for epizootic extensions of the disease int normally free areas. In these conflict areas the disease attracted little attention and contr operations were difficult to undertake.

At the end of the Pan African Rinderpest Campaign (PARC), the strategy of mas vaccination against rinderpest was being discarded to be replaced by a programme c surveillance using techniques of participatory disease search and participatory epidemiolog and by random sample sero-surveys. Where rinderpest was diagnosed, localised, intensiv vaccination campaigns (so called immuno-sterilisation) were undertaken. In conflict area these were undertaken by CAHWs, trained and managed by NGOs, some of whom, in turr were supported financially by PACE.

Cordon Sanitaire

At the commencement of the PACE programme, a *cordon sanitaire*, involving Chad, CAF and Southern Sudan, of rinderpest vaccination and surveillance in wildlife and cattle wa established as a strategic buffer to stop spread of rinderpest from Southern Sudan westward into West Africa. Vaccine coverage in the *cordon sanitaire* never exceeded 30% wildlife data were negative for recent infection, and the infected zone in Sudan was confine to the east of the White Nile around Pibor. Therefore, a consensus was reached that the

cordon was no longer appropriate. As a consequence, the *cordon* was abandoned and vaccination against rinderpest ceased in Chad at the end of March 2002, in southern Sudan in June 2002 and in CAR in 2003.

Southern Sudan

For more than a decade, rinderpest in Sudan had been largely contained within a small number of cattle-keeping pastoral tribes in southern Sudan and from accounts by veterinarians and livestock owners, cattle belonging to the Murle pastoralists of southern Sudan were affected by rinderpest in late 2000 and into 2001. Intensive surveillance efforts by FAO and PACE led to the belief that the disease observed could be the last focus of infection in Sudan. An intensive vaccination programme of the Murle and associated Jie herds achieved a high coverage and the disease was eliminated as confirmed by subsequent epidemiological investigations. The last rinderpest vaccination ceased in 2002 and subsequent investigations provide no basis for belief that rinderpest is still present in Southern Sudan.

The exercise to control rinderpest in its final stages in Southern Sudan was co-ordinated from Lokichoggio in north west Kenya through government, FAO and 13 NGOs engaged in a humanitarian aid programme (Operation Lifeline Sudan) of UNICEF by three veterinarians paid by PACE, controlling CAHWs who were trained at Lokichoggio by PARC or by CAPE during PACE. A vaccine bank was established in Lokichoggio paid for by PACE. Samples and sera were analysed at Muguga with some laboratory inputs paid for by PACE. Co-ordination meetings were organised at Lokichoggio through PACE which brought together animal health services from both southern and northern Sudan.

In 2003 - 2005, the NGO Vétérinaires Sans Frontières (VSF) Belgium was contracted by PACE to continue surveillance activities in southern Sudan, including in wildlife, supported by the PACE regional TA. After October 2005 VSF Belgium's activities were supported by humanitarian aid until a new contract with PACE started in May 2006, which, together with Sudanese Government Veterinary Services, enables rinderpest surveillance activities to continue.

Somali Ecosystem

The detection in Kenya in 1994 of a Lineage 2 rinderpest virus killing wildlife marked the apparent re-emergence of a rinderpest virus which had not been detected for some 30 years. The source of the virus was traced to north-east Kenya and southern Somalia. A pattern of long-term rinderpest persistence in very mild form with emergence every five or six years of more severe epizootics was disclosed by participatory epidemiological studies. Despite continued description of a stomatitis-enteritis syndrome 'mild rinderpest' in cattle in the Somali ecosystem, no clear evidence of its relationship to rinderpest virus infection has been made since Lineage 2 rinderpest was seen and confirmed (by the FAO World Reference Laboratory for Morbilliviruses at Institute for Animal Health, Pirbright Laboratory, UK) from samples from African buffaloes in the Meru National Park of Kenya in October 2001. Thus, there is little reason to suspect its presence for almost five years (as of 2006).

The last vaccinations carried out in Somalia were in 1998 when around 200,000 – 300,000 cattle were vaccinated, which represented a small percentage of the population. In sero-surveillance surveys at the time, clusters of high seropositivity (around 16%) were detected which seemed too high to attribute to vaccination and possibly indicated previous natural infection.

During PACE, activities in the Somali Ecosystem have been conducted by PACE Somali and then the Somali Animal Health Services Project (SASHP). Both PACE Somalia and th SASHP have pursued their activities through a consortium of NGOs led by Terra Nuova The parts of the Somali Ecosystem within Kenya and Ethiopia were covered by their nationa PACE programmes until a special unit to take care of the Somali Ecosystem was formed The Somali Ecosystem Rinderpest Eradication Co-ordination Unit (SERECU) arose from th Strategic Plan of the 10th Advisory Committee Meeting in Bamako in March 2005. Programme Estimate for SERECU was approved on 22 November 2005 and SERECU became operational in January 2006. This Unit now co-ordinates rinderpest eradicatio activities in the whole Somali Ecosystem.

In 2002 there was rinderpest-like disease in the Kenya/Somalia border region to the East o Meru, which Pirbright Laboratory failed to confirm as rinderpest, raising doubts as to th diagnosis. Nevertheless, vaccinations with the Kabete "O" strain were carried out in 200 either side of the border, 150,000 doses in Garissa District in Kenya and 50,000 doses i Somalia.

Since then, the prevalence of seropositives in subsequent sero-surveillance programme has declined, and in addition, the results of Participatory Disease Search surveys have no shown any indication of active disease.

The most recent sero-surveillance results are for a limited survey carried out in Souther Somalia in February 2006 by SASHP when cattle were concentrated in riverine areas durin the drought. 15-17 animals (1-3 years-old) were sampled at random at each site, and 1- seropositive animals per site were detected in clusters around Bu'aale and Jilib on the Jub River north of Kismayo.

Since then a more extensive random sample serosurvey has been carried out throughou the ecosystem and 6,900 samples have been taken from 460 sites in Ethiopia, 4,99 samples from 333 sites in Kenya and 7,305 samples from 487 sites in Somalia. Th sampling teams were trained to use standard forms stipulating gender, age an geographical-location of animals sampled. As far as is practically possible this shoul ensure that animals of the correct age were sampled and any animals that could have eithe maternal or vaccinal antibodies were excluded.

The samples for Kenya and Somalia are currently being tested at Central Veterinar Laboratory, Kabete and the Ethiopian samples at the National Veterinary Laborator Sebata, Ethiopia, using the highly specific H monoclonal antibody competitive ELISA. Th results of this survey are expected by the end of August.

The results of the survey should provide strong evidence for the presence or absence o rinderpest in the Somali Ecosystem and enable SERECU to make further control activities o declare the Somali Ecosystem free from rinderpest and make the necessary furthe investigations to enable preparation of a dossier to present to OIE for official declaration o freedom from rinderpest disease.

Apart from the vaccine used in 2002/3 on the Kenya/Somalia border, no further rinderpes vaccinations have been given in the Somali ecosystem, or indeed, in Africa. This has tw valuable benefits. Firstly, it is creating an increasingly, now virtually totally, susceptibl population of livestock, within which any lingering rinderpest infection should be clearl disclosed by obvious disease. Secondly, lack of exposure to either wild rinderpest or vaccin virus for some years greatly simplifies drawing up sampling frames for serologica surveillance and the interpretation of results. This is of extreme importance since verificatio

of rinderpest eradication will fundamentally rely on demonstrating absence of antibodies in the population.

Wildlife

In Africa, though wildlife have been shown not to maintain rinderpest virus for long periods in the absence of transmission between cattle and wildlife, they have proved to be one of the most sensitive indicators of rinderpest circulation and during PACE, wildlife within the Somali Ecosystem in Kenya have been surveyed for rinderpest on an annual basis (buffalo, warthogs, kudu and giraffes). It was this routine wildlife surveillance which led to the isolation of Lineage 2 rinderpest virus from samples taken from African buffaloes in the Meru National Park of Kenya in October 2001. Discovery of this infection was a direct result of surveillance in wildlife conducted by the PEU Wildlife Specialist for Eastern Africa and the Kenya Wildlife Service. This appears to be the first occasion on which routine surveillance, rather than a disease report, has resulted in the detection of rinderpest in Africa. It should therefore be considered a singular success for the PACE Programme. Despite continued yearly surveillance of wildlife in the Kenya part of the Somali Ecosystem, rinderpest has not been seen again, further supporting a conclusion that the virus no longer exists.

Surveillance of wildlife (warthogs) for rinderpest in Somalia and Ethiopia in 2005 and 2006 has failed so far, but another attempt is currently being launched in Somalia.

Emergency Preparedness

Despite the failure to demonstrate persistence of rinderpest in the Somali Ecosystem, a contingency plan and emergency preparedness is in place in case of a re-emergence of the disease in the Somali Ecosystem. 500,000 doses of thermostable rinderpest vaccine are held for PACE at the Botswana Veterinary Institute and an emergency fund of 0.5 million Euro has been established under PACE and entrusted to the Office International des Epizooties (OIE) in Paris. This fund is to be used for control of a rinderpest outbreak in a PACE country providing it has a national rinderpest emergency preparedness plan approved by AU-IBAR and is progressing along the OIE pathway.

On the advice of the Advisory Committee, another strategy to deal with re-emergence of rinderpest in PACE countries is being investigated: that is the use of PPR vaccine to provide cross protection against rinderpest without interference with serological tests for rinderpest antibody used to detect previous infection with wild rinderpest virus. A vaccine trial at the National Veterinary Research Laboratory, Muguga, did not produce significant evidence of efficacy and safety in cattle of the PPR vaccine. The Advisory Committee has recommended that a further trial should be conducted with support by a technical expert.

OIE Pathway

The Office international des Epizooties (OIE) has developed a set of procedures for proving that a country is free from rinderpest infection (the so called OIE Pathway). Countries are encouraged to follow the so called OIE Pathway so that the possibility that occult reservoirs of rinderpest infection remain is removed.

Through surveillance and reporting activities developed by PACE, and with help from PEU and PACE technical assistance to prepare dossiers for presentation to OIE, countries have been enabled to follow the OIE pathway to accreditation of freedom from disease and infection so that currently, twelve countries have been accredited as being free from infection and nine have been accredited as free from disease. The remaining countries have started on the OIE Pathway by stopping rinderpest vaccination and declaring themselves to be free

from rinderpest (including the three countries with territory in the Somali ecosystem, on a zonal basis).

The rinderpest status of PACE countries which are OIE members is given in the following table.

PACE Countries Free from Rinderpest Infection and Rinderpest Disease, Resolution no. XXVIII Adopted by the International Committee of the OIE on 23 May 2006[1].

Self-declared Countries Provisionally Free from Rinderpest Disease	
Cameroon	Self-declaration June 1999
Djibouti	Self-declaration 20 October 2003
Gabon	Self-declaration December 2005
Gambia	Self-declaration 1990
Countries recognized by OIE as free from rinderpest infection[2]	
Benin	Guinea
Burkina Faso	Guinea Bissau
Burundi	Mali
Congo	Rwanda
DRC	Senegal
Eritrea	Togo
Countries recognized by OIE as free from rinderpest disease[2]	
Chad	Nigeria
Cote d'Ivoire	Sudan
Ghana	Tanzania
Mauritania	Uganda
Niger	
Countries recognized by OIE as having zones designated as free from rinderpest disease[2]	
Ethiopia	July 2004
Kenya	August 2005

With regard to the 'mild rinderpest' syndrome associated with Lineage 2 rinderpest virus PACE (together with FAO) proposed changes to the OIE Terrestrial Animal Health Cod chapter on rinderpest to address the problem of methods of surveillance for mild rinderpes The PEU also corrected the unfortunate removal by the OIE of Mauritania from the list c countries free from rinderpest disease in August 2003 as a result of the finding of tw serologically positive warthogs in the southwest of that country.

4.5.5 Interventions against Other Major Infectious Diseases

CBPP

Contagious bovine pleuro-pneumonia (CBPP) became a focus of PACE because it wa regularly reported by the epidemio-surveillance systems of member countries and it wa perceived to be the most serious animal disease problem facing the tropical regions of Afric now that the effects of rinderpest had been overcome.

Through workshops, and two modelling studies, decisions were made to investigat treatment of CBPP cases with antibiotics and studies were commissioned by PACE i laboratories in Côte d'Ivoire, Mali, Nigeria and Ethiopia. Only one country has reported o its study so far and that is Mali where it has been shown that, though antibiotics improve th clinical condition of infected cattle, they do not eliminate the infection.

1 http://www.oie.int/eng/info/en_peste.htm
2 According to the provisions of Chapter 2.2.12 of the OIE Terrestrial Code

In addition, based on a regional approach, and taking into account the epidemiological situation, transboundary systems and socio economic conditions, a strategy for CBPP control has been developed by the PEU and adopted by some countries. This includes:

1. Annual vaccination for five years with external quality control of vaccine.
2. Participatory evaluation of impact of CBPP.
3. Slaughter of clinically infected animals.
4. Surveillance.
5. Movement control.

With regard to areas free from CBPP PEU recommended:

1. Verify the absence of CBPP by active surveillance including serological investigations and abattoir surveillance.
2. Ensure a strict control of cattle movements (domestic and cross-border).
3. Enter the OIE pathway for the recognition of a CBPP free country.

The epidemio-surveillance systems, improved diagnostics, communication programmes and economic studies introduced by PACE have improved awareness of CBPP and knowledge of its prevalence and impact. Few countries, however, have taken up systematically the CBPP control programme recommended by the PEU and CBPP continued to be a major proble e.g. in Mauritania despite a compensation system farmers continue to be suspicious about CBPP vaccination and only 19% of the national cattle herd was vaccinated in the most recent campaign. Exceptions in West Africa are:

- Senegal, where vaccination stopped in 2005 and the last outbreak of CBPP was in 1977. Risk of re-entry of CBPP is from Mali and Mauritania, and Senegal is in the process of signing a zoo-sanitary agreement with these countries to control livestock movements. CBPP surveillance will continue with herd surveillance and in 30 abattoirs and slaughter points. Senegal is declaring itself to OIE to be provisionally free from CBPP in order to proceed along the OIE Pathway.

- Guinea, where the country has been divided into four epidemiological zones as follows:

    - Disease free zone - no vaccination.
    - Disease free zone but under surveillance – vaccination stopped 4 years ago.
    - Buffer zone (combination of surveillance, annual vaccination and stamping out of clinical cases with two rounds of ring vaccination).
    - Endemic zone (annual vaccination without sero-surveillance but stamping out of clinical cases).

These measures are in line with OIE guidelines.

In East Africa, Tanzania has good surveillance for CBPP, including abattoir surveillance, a is pursuing annual vaccination against CBPP on a zonal basis. In Uganda, there is al good surveillance, and there are follow-up vaccination campaigns, with cost recovery, whe the disease is diagnosed or there is trace-back from an abattoir. In Kenya, a zonal poli has been adopted for CBPP control:

- Disease free zone without vaccination and slaughter of clinical cases.
- Surveillance zone without vaccination.
- Buffer zone and infected zones where free vaccinations of $T_1$44 are given annually.

Ethiopia has appointed an epidemiologist supported by PACE to implement CBI surveillance and control.

CBPP has only recently been introduced to Eritrea through cattle imported from Ethiopia. control programme has been formulated in collaboration with FAO and PACE, and supp for it has been gained from Government for its implementation. A workshop on CBPP h been undertaken and staff are ready to commence a control programme, but its plann implementation through PACE has not happened because of lack of approval of the w plan.

While it has taken small advantage of the PACE programme, Rwanda has implemente highly successful CBPP control programme in which the entire cattle population w vaccinated five times in three years with $T_1$44 vaccine. Rwanda has the advantage having a small, mainly sedentary, cattle population with a good road network. Neverthele it has succeeded in eliminating CBPP and is safeguarding its CBPP-free status throu stringent movement control, particularly of imported cattle.

ASF

The PEU, recognizing that African Swine Fever (ASF) is an important transbound disease, particularly in Western Africa, has initiated some epidemiological studies on t disease, and as a result, has proposed to member countries that extensive pig husban should be discouraged and should be commercialized in enclosed systems. The PEU h also noted the lack of an effective vaccine against ASF.

PACE (and FAO) have assisted national laboratories to develop the capacity to diagno ASF, though the Laboratory Specialist had to point out that the commercial kit being used test pig sera for antibodies to ASF in PACE countries was faulty. PACE has conducted regional workshop on the disease, thereby increasing awareness of the disease a measures to be taken to control it.

RVF

PACE has conducted a regional workshop on Rift Valley fever (RVF) and the PEU h assisted the OIE to redraft the OIE Terrestrial Animal Health Code to redefine circumstanc under which trade in animal commodities can be sourced safely from "non-free areas". Tl revised chapter also permits the use of vaccine to protect animals intended for trade as lo as it is not administered within three weeks of the animals being slaughtered. Revision the chapter should assist PACE countries in the Horn of Africa to resume their livesto export trade.

FMD

According to the PACE chief epidemiologist, Foot and mouth Disease (FMD) is an escalating problem in Eastern Africa. PACE has increased awareness of the disease through the epidemio-surveillance system and introduction of diagnostic tests in national laboratories to diagnose and serotype FMD outbreaks. The PEU has instigated investigations of FMD outbreaks, particularly in Sudan, where sero-types A, O, C, SAT1 and SAT2 were found to be prevalent. The PEU identified that a regional counter-strategy for FMD is an urgent requirement.

Rabies

PACE has provided no direct inputs into strengthening the control of rabies which is reported as one of the major infectious disease problems in Mauritania.

4.5.6 Highly Pathogenic Avian Influenza in PACE Countries

In the last year of the extension phase of the PACE programme, outbreaks of Highly Pathogenic Avian Influenza (HPAI) had a major impact on project activities, particularly on those of the PEU and the Technical Assistants.

Since the beginning of 2006, HPAI has been diagnosed in seven PACE countries, out of 8 affected in Africa. The first outbreak was reported in Nigeria on 08/02/06 in a mixed poultry farm in Kaduna State. Control measures were put in place, including quarantine and stamping out but have not been fully effective and there have now been more than 900 outbreaks in chickens and wild birds. The disease has now spread to 15 of 36 States, mainly in commercial farms incurring large losses in the poultry industry. Later in the same month, four outbreaks were diagnosed in Niger in domestic ducks, and then in March, two outbreaks were diagnosed in north Cameroon in domestic and wild ducks. In April, four outbreaks were diagnosed in Burkina Faso at Gampela in domestic poultry and guinea fowl. Three outbreaks of HPAI were reported in Khartoum and Gezira States in Sudan, and Cote d'Ivoire reported five outbreaks occurring in ducks and wild birds. In May, there were two outbreaks in poultry and turkeys in Djibouti and an associated, non-lethal, human case.

The disease has caused death or destruction of almost 3 million birds in the PACE countries while 30 million birds have died or been destroyed in 452 outbreaks in a continuing epidemic in Egypt.

Besides infection from wild, migrating birds, traditional marketing systems in the region have played a major role in disease occurrence and spread.

A factor adversely affecting control activities has been poor co-ordination between national and local authorities; basic control measures, such as restriction of animal movements, quarantine, closing of poultry markets in affected areas, and border controls have not been fully implemented and there has been little awareness regarding the risks of HPAI and the protective measures that should be taken.

The main control measures that have been applied are:

- Stamping out, involving destruction of affected and in-contact birds at affected locations by incineration followed by compensation of poultry keepers.

- Stamping out and ring vaccination.

- Active epidemiological surveillance of poultry farms and sampling poultry a wild birds for submission to reference laboratories.

- Disinfection of infected premises and fomites.

- Restriction of animal movements, quarantine, closing of poultry markets affected areas and border controls.

- Quarantine of infected and suspicious farms.

Some countries are considering the use of vaccination: plans have been made vaccination of poultry in Abidjan, Cote d'Ivoire and Burkina Faso and Sudan are consider the introduction of vaccination.

Control measures in PACE countries have been enhanced by the epidemio-surveillance a sampling procedures which the project has introduced and which has been extended domestic and wild birds.

It would not have been possible to deliver the surveillance and control measures for HPA the countries affected if the passive and active epidemio-surveillance systems alre developed through PACE had not been in place.

Through workshops, the PEU and TAs, in co-ordination with other inputs, for exam regional FAO TCPs, have introduced:

- Early warning and outbreak investigation protocols and reporting based on OIE guidelines.

- Technical capacity to diagnose HPAI in PACE countries' laboratories.

- Analysis of HPAI surveillance and diagnosis data through national epidemiol units developed by PACE.

- Exchange of information through PACE's regional networks.

- Public information materials on HPAI through Communication Units develo by PACE.

- HPAI surveillance and control strategies disseminated to PACE countries meetings and workshops.

Specific activities undertaken by PACE in relation to HPAI control:

- 12 regional meetings have been organized to get a co-ordinated internatic management of the crisis caused by the disease.

- 28 missions have been carried out by PEU epidemiologists and TAs to prov technical support to countries with outbreaks and to assist uninfected countr with preparation of national emergency preparedness plans.

- 15 technical information packages have been published on the disease and management.

Since the beginning of HPAI epidemics in PACE countries there have been the following developments:

- Bans on imports of poultry and poultry products from infected countries have been introduced.
- Emergency preparedness plans have been elaborated.
- Surveillance in domestic and wild birds is ongoing.
- Memoranda of Understanding have been made between AU-IBAR and ADB so that funds for control of HPAI are available for eight countries in West and Central Africa.

At the 6th meeting of the Executive Committee of Alive, OIE, FAO and AU-IBAR formalized a Memorandum of Understanding on the installation of a technical framework intended to ensure a better co-ordination of their interventions, in particular with regard to the fight against HPAI in Africa. In line with this framework, a joint consultation between AU-IBAR, OIE and FAO and the regional economic communities has been undertaken in order to evaluate needs and prepare an action plan to prevent and control HPAI and avoid a possible pandemic.

4.5.7 Research

To conduct the research programme budgeted for in the PACE Financing Agreement, the Institute of Animal Health, Pirbright Laboratory, UK were awarded a grant contract for the project: 'Rinderpest (RP) and peste des petits ruminants (PPR) PACE research programme' and CIRAD/EMVT were awarded a grant contract for the project: 'Contagious Bovine Pleuropneumonia (CBPP) PACE Research Programme'. It was agreed that, since the PACE programme is based on capacity building and sustainability, where possible, the research should be carried out in laboratories in Africa, but where there were lack of facilities in African Laboratories, the work would take place in Pirbright and CIRAD/EMVT. The advantages of this approach would be to strengthen the collaborative links and technology transfer between the reference laboratories and the regions where rinderpest and CBPP are still of concern.

Research topics supported by PACE

The research needs identified in the financing agreement were:

- Use of PPR vaccine to protect ruminants against rinderpest.
- Study of cellular immune response induced by rinderpest and PPR.
- Study of rinderpest mild strain in cattle sheep and goats.
- Validation of pen-side test.
- Research on CBPP.

Activities

Use of PPR vaccine to protect ruminants

On the advice of the Advisory Committee, the PCU contracted the National Veterinary Research Institute, Muguga to undertake a study of PPR vaccine to ascertain whether its use in cattle would provide cross protection against rinderpest without interference with serological tests for rinderpest antibody used to detect previous infection with wild rinderpest

virus. This work would validate the efficacy and safety of PPR vaccine if it becomes necessary to use vaccination in the Somali Ecosystem in the face of an outbreak of rinderpest Lineage 2 in its last stronghold.

The test protocol was written by AU-IBAR, technical support was supplied by Pirbright Laboratory and the test vaccine was supplied by CIRAD/EMVT. Pirbright Laboratory was to finance the study from its Grant contract with PACE. However, an audit of PACE Kenya concluded that PACE money given to Muguga was not justified and the PCU was instructed not to further finance Muguga. Nevertheless, the vaccine trial went ahead, financially supported by Pirbright, but it was found that Pirbright Laboratory did not have the €78,000 in its Grant contract needed to support the trial though it had been approved by the EU Delegation as a no cost extension as requested. Also, Muguga overspent this budget on the trial.

The results of the trial were not able to demonstrate significant protection of cattle against rinderpest by the PPR vaccine, but the PACE Financial Controller has been able to get agreement from the EU Delegation to pay for the trial and it is expected that Pirbright Laboratory will be paid in the near future.

After receiving results of the trial, the Advisory Committee recommended that a second trial with more animals and testing the use of larger doses of vaccine should be done at Muguga and that the trial should be supervised by Pirbright Laboratory and by an external manager. However, work has not commenced on the trial because the final budget for the work has not yet been received by the PACE Programme and been approved by the Delegation. It is expected that the budget will be received and approved in the near future so that the trial can be completed before closure of PACE.

Study of cellular immune response induced by RP and PPR vaccines

The research programme which was eventually approved and undertaken in March 2003 appears to have changed from that originally proposed in that the key outputs were to be:

- Development of improved highly specific and sensitive assays to assist in the serological surveillance of rinderpest, capable of differentiating antibodies to rinderpest, PPR and vaccine strain viruses.
- Development of specific diagnostic tests to be able to differentiate serologically PPR from rinderpest.
- Development of a multiplex PCR for the diagnostics of rinderpest and BVD in one tube.
- Development of marked vaccines, which would similarly allow distinction of vaccinated animals from those, infected with either RPV or PPRV using the currently available serological tests.

A consortium of three institutions is carrying out the research activities namely:

- Institute for Animal Health, Pirbright Laboratory (project co-ordinator) to carry out the work on the marked rinderpest vaccine and the improved serological tests for rinderpest (in collaboration with the FAO/IAEA Agriculture and Biotechnology Laboratory, in Austria).

- CIRAD-EMVT (France) for the PPR marked vaccine and the PPR serological tests (in collaboration with the FAO/IAEA Agriculture and Biotechnology Laboratory, Austria).

- FAO/IAEA Agriculture and Biotechnology Laboratory (Austria) for the tests to differentiate RP from stomatitis-enteritis syndrome and the transfer of the different tests developed within the consortium to African laboratories.

The Project Co-ordinator (Pirbright Laboratory) asked for a 'no cost' extension to the project :o cover the PPR vaccine experiment and allow completion of other research objectives. The work at Pirbright Laboratory has been divided into work packages, preliminary results of ∧hich are described below:

Work Package 1: Development and validation of improved serological tests for rinderpest virus to differentiate the serological responses to different rinderpest virus lineages.

The use of peptides to distinguish different lineages was explored. For this, the hypervariable C-terminus of the N gene was sequenced from 15 different strains of rinderpest virus which included several representatives from each lineage.

The predicted amino acid sequence derived from nucleotide sequence data was used to design regions that contain residues that are unique to each lineage and could therefore be used as potentially lineage specific antigen. A series of peptides were then generated but initial trials with these peptides in ELISA gave problems. It was very difficult to completely solubilise several of the peptides which meant that a precise quantitation of the concentration of the peptides was not possible. This in turn made it very difficult to carry out a truly comparative study of these peptides as one could never be sure of the exact amount of peptide present in each well of the ELISA plate. Unfortunately none of the peptides designed from vaccine sequence responded specifically to vaccine sera in these preliminary trials.

It was then decided to express a longer region of the hypervariable region for each lineage in a bacterial expression to see if they could distinguish between the vaccine and each of the lineages. The work to produce the expressed proteins was completed but as the second instalment of money has not been paid, pending submission of proper financial accounts, there was no means to employ a person to complete the work.

Work Package 2: Trials of the rinderpest marker vaccine in Kenyan cattle.

Several candidate marker vaccines were produced using reverse genetics technology to introduce marker proteins into the existing vaccine. These candidate vaccines were to be tested in cattle at Muguga. However, it has not been possible to get permission from the Kenyan biosafety committee to carry out this work (still in the process but moving very slowly).

Instead of testing the recombinant vaccines it was decided at a PACE Advisory Committee meeting that the PPR vaccine should be tested in cattle to see if it could give cross-protection against rinderpest. The initial trial conducted at Muguga is described above. Titration of the vaccine in cattle showed that there was protection but only at the highest dose administered (10^4 TCID50). However, the number of cattle involved was too small to give statistically valid data to evaluate its usefulness

was agreed that a second trial with larger numbers should be carried out and a budget approved. This second trial has been budgeted for in the PE7, but due to a delay in receiving Pirbright/Muguga accounting for the first trial, it has not yet started. Additional funds have been foreseen for the second trial.

Research on CBPP

In view of the limited budget available for the CBPP project, as compared to all of the possibilities for research, a careful selection of priorities was established and validated by a group of African Scientists during an OAU-IBAR consultative meeting. The following research programme which could have short-term results that may have rapid application at field level was proposed:

- Define the dose of T1sr and T1/44 microorganisms that is capable of providing a significant level of protection against challenge.
- Determine a vaccination strategy that provides durable protection.
- Set up a database of candidate genes contributing to the phenotypic differences between strains, which could potentially be applied to develop improved vaccines against, and diagnosis of CBPP.
- Develop tools for detection of chronic carriers of CBPP.

A grant contract was given to a consortium of three main institutions to carry out the research activities namely:

- CIRAD-EMVT to carry out bacteriological and immunological studies; characterization of the animals; use of immunological tools for the selection of potential new vaccines and development of T-cell lines specific for *Mycoplasma mycoides* var *mycoides* small colony MmmSC; screening of the MmmSC antigens; development and immunological screening of potential new CBPP vaccines by expression of MmmSC antigens in suitable vectors.
- IZSTE for immunological studies.
- ILRI for chemotherapy trials; follow up of vaccinated animals; immunological study and analysis of cellular immunity in immunized cattle.
- Moredun Research Institute, UK development of a pen-side test that will allow the rapid detection of CBPP cases in the field.
- KARI, Kenya for boosting effect of revaccination, chemotherapy trials; follow up of vaccinated animals; clinical observation of experimental animals; use of PCR.

Dose/effect vaccine trials were to be done at LANAVET Laboratory, Cameroon and antibiotic trials were done at LANAVET and KARI, Kenya.

Results obtained to date are described below:

The CBPP research project was divided into two main domains. The first one was to re-evaluate the efficacy of the T1 and T1sr vaccine strains and particularly to check if increasing the dose for the primary vaccination or by

protection afforded (which is quite important in case of an emergency vaccination campaign).

These two objectives were performed by the partners in Cameroon and Kenya respectively.

The experiment in Cameroon went well but, unfortunately, it showed that increasing the dosage did not induce a very significant increase of the protection rate.

The experiment in Kenya did not go so well. It was not the fault of the experimenter, as it was obvious that the disease was properly transmitted from the donor group to the other groups (in contact and vaccinated). The problem was that the mortality in the control group was very limited. Hence it was difficult to measure the exact protection afforded by the different vaccines or vaccination procedures. When looking at the number of affected animals and the lesion scores it seems again that giving a booster vaccination did not increase significantly the protection rate.

The final conclusion of the exercise is that, in the field, only yearly repeated vaccination campaigns are likely to give a satisfactory protection rate. In the case of an emergency it remains compulsory to install strict control of animal movement as it is likely that an emergency vaccination campaign in naïve animals will not induce sufficient protection to prevent the progression of the disease.

The second study was to test the activity of antibiotic treatment for CBPP. A preparation of long-acting tetracycline was used. The findings were similar on two occasions: treatment reduced the clinical signs but did not succeed in clearing mycoplasmas from the affected animals. Apparently this did not result from antibiotic resistance. This suggests that treated animals may shed lower quantities of mycoplasmas but may still play a role in the transmission of the disease. This is important and it will have to be taken into account in future control strategies.

The research activities concerned first the characterization of the immune response of recovering animals. This part of the work was performed at ILRI, Kenya. Their results confirmed that recovering animals were developing an immune response involving CD4+ cells and production of interferon gamma.

CIRAD/EMVT focussed on the detection of virulence associated genes and their targeted inactivation by the use of OriC plasmids. Unfortunately they were able only to get an homologous recombination with an insertion sequence but not from the other gene that had been selected. The reasons for this failure were only understood after obtaining results of sequencing a closely related strain: M. mycoides subsp. mycoides LC.

The comparisons between the two fully sequenced genomes showed that MmmSC lacked a number of functional genes that are involved in recombination processes (recgenes). This opens new avenues for the inactivation of MmmSC strains although it will render this task more lengthy and cumbersome.

Validation of pen-side test for CBPP

Field tests to validate a pen-side test for anti-CBPP antibodies which utilises antigen coated latex beads were undertaken in Tanzania and Mali. However, results of the tests revealed that the pen-side test requires further development, especially to achieve better reproducibility.

4.6 Veterinary Services

4.6.1 Training

A major aspect of the PACE programme has been training at all levels from livestock farmers to senior professional veterinary staff. There have been many training interventions throughout the PACE programme. Assessing the training programme as a whole has posed certain difficulties because there was no single unit with responsibility for planning and co-ordination of training activities, and training interventions have been carried out within individual technical components.

No overall training needs assessment was carried out at the beginning of the project in order to outline a training strategy for PACE. However in Bamako in November 2001, a workshop was held to assess training needs for capacity building within the national components. The following training needs were identified:

- *Epidemio-surveillance*
- *Wildlife surveillance*
- *Communication*
- *Animal Health Economics*
- *Zoo-sanitary Data Management*
- *Privatization of Veterinary Services Delivery.*

PACE collaborated with CIRAD-EMVT of Montpellier, EISMV Dakar and ITC of Banjul in this exercise from which the following training modules were recommended:

- Training of National Co-ordinators in management of WP and financial resources as per EDF procedures. Co-ordinators were also to be trained on risk analysis and communication of project results.
- Training of national epidemiologists.
- Training of epidemiologists for Wildlife surveillance.
- Training in Data Management.
- Training of staff in charge of communication.
- Training in Privatisation related issues.
- Risk assessment training for national epidemiologists.

The first module for National Co-ordinators was not implemented at regional level as it was decided that this should be carried out at national level by EC local delegations and the National Authorising Officers. The lists of training interventions organised at Regional or Central level by PACE are shown in Annex 6.

In addition to the above, there were many training courses and workshops carried out at National level, but these have not been documented by PACE and compilation of a list is beyond the scope of this mission. However, as an example of training activities at National level, the training courses organised by PACE Mali, or attended by PACE Mali staff, is shown in Annex 7. It is noted that the recommended topics of the Training Module for National PACE co-ordinators (management of WP and financial resources as per EDF procedures) is not included. During the Final Evaluation Mission, it was noted that none of the National Co-ordinators interviewed had received training in management, and not all had received training in EDF procedures.

The Mid Term Review recommended that training needs assessments be completed as matters of urgency but these were not carried out.

There is no doubt that the extensive training at all levels by PACE has impacted significantly on the project's progress. However, greater attention should have been paid to assessing training needs and devising a training strategy early in the project to ensure that all training requirements were covered. Had this been carried out, the weakness of training of national co-ordinators in management and EDF procedures in some cases might have been avoided. In addition, the lack of training in animal health economics was noted in the PACE Annual Report of June 2002 – May 2003, although this was addressed to some extent by two workshops in Sudan 2003 and Addis Ababa 2004.

4.6.2 Role of the Private Sector

The second result in the PACE Logical Framework is "Greater privatisation of veterinary services and public/private sector linkage in this field". To support the legal status of privatised veterinary services, one of the activities is the "harmonisation of legislative positions on the veterinary profession and veterinary drugs". These activities were refined in the extension phase with the following activities:

- Activity 3.5 Development of national guidelines for CAHW systems, legislative reform, development of licensing procedures for CAHW trainers and trainees, development of agreements with implementing agencies to ensure harmonised approaches and private sector involvement.

- Activity 4.5 Support to privatisation and veterinary legislation.

- Activity 4.7 Provide technical support to DVS and statutory bodies to strengthen their capacity to co-ordinate, regulate and supervise para-veterinary professional systems in accordance with OIE guidelines

The strategy adopted by PACE to address these logical framework activities was to establish the VLPU to work in collaboration with the DFID funded CAPE project. Essentially the VLPU focussed on providing technical assistance to PACE countries to modernize their veterinary legislation to provide a legal framework for privatised veterinary services. CAPE, on the other hand, focussed on the promotion of the use of CAHWs to provide essential veterinary services in areas unlikely to be covered by conventional veterinary systems e.g. in conflict situations and remote ASAL areas. This included addressing issues of the legal status of CAHWs.

Unfortunately the VLPU and CAPE had difficulties in working together harmoniously. The 6th AC Meeting of October 2002 referred to VLPU and CAPE as sub-units within the Animal Health Service Delivery Unit, and commented on the difficulties of harmonisation of the two units, difficulties which were still causing concern in the next meeting in April 2003. Similarly the MTR commented on the difficult working relationships between the VLPU and CAPE, and recommended that the VLPU should focus on a small number of countries that were making progress in the reorganisation of their veterinary services, and that CAPE should continue to assist countries in East Africa.

From the results of a questionnaire survey conducted during the 6th PACE Annual Co-ordination Meeting in Mombassa in June 2006, all countries allow private veterinarians to operate although their activities are restricted in Cameroon. Most countries also allow CAHWs or auxiliaries to work in the delivery of veterinary services, but always under supervision. The exceptions are Benin, Cameroon and Mali. In Mali there is a large cadre of trained technicians working in the delivery of veterinary services. Thus the role of the private sector in PACE countries is very significant and can be roughly divided into two

- Private veterinarians and other trained professionals (engineers) delivering services to meet PACE objectives e.g. participation in vaccination campaigns and official epidemio-surveillance programmes.

- Technicians, CAHWs and Auxiliaries delivering veterinary services under veterinary supervision.

From the Final Evaluation Mission questionnaire survey, 20 countries stated that PACE had assisted in improving their private veterinary services including the use of CAHWs. This support included training and modernisation of veterinary legislation which is covered in other sections of this report.

Private veterinarians

Under PARC, funds were made available for use as guarantees against bank loans or credit to private veterinarians to develop or start up their veterinary businesses. This scheme has been continued under PACE in some countries. In 4 of the 5 countries visited in West Africa during the FEM (Guinea, Senegal, Burkina Faso, and Mali), 10 private veterinarians were interviewed, 5 of whom had taken bank loans under the scheme of whom 3 had failed to repay the loans. Reasons given for defaulting were inability to reimburse, but the impression given was that attempts to reimburse were not taken seriously as the banks used the guarantee funds for repayments. In Guinea Bissau, although a guarantee fund of about €20,000 has been deposited in the Banco da Africa for over 3 years under PACE for veterinary privatisation, no loans have been granted because of lack of confidence by the bank in the veterinary private sector. It is accepted by the Final Evaluation Mission that the number of private veterinarians interviewed was very small and cannot be regarded as a representative sample. As a follow up to these observations, the PCU has advised that in reality the levels of reimbursement have been very high in some countries (approaching 100% in Kenya and Uganda and 90% in Guinea) and over 50% in Senegal.

In Guinea a credit fund of GNF 100 million (worth approximately FCFA 25 million) was placed at the disposal of the bank (BICIGUI) which in exchange was committed to lending GNF 150 million GNF (or FCFA 37,5 million) to the private veterinarians. To date it has already loaned GNF 120 million GNF (FCFA 30 million FCFA) to 16 participants in the privatisation programme. New negotiations are in process for another phase of loan funds of GNF 100 million (to include 2 urban private veterinary practitioners in August 2006 in Conakry). *NB $1 Euro = GNF 6500 approximately.*

Of the 4 countries visited in East and Central Africa, the PARC loan guarantee scheme has been continued under PACE in Uganda and Kenya. In Uganda the scheme has facilitated the privatisation of 40 veterinarians, 30 of whom are still operating as private veterinarians. The scheme has been operated very successfully in Kenya, under the Kenya Veterinary Association Privatisation Scheme (KVAPS). The scheme started under PARC with a fund of Kshs 30 million (about € 375,000) and since 1994 more than 80 private veterinarians have benefited from the scheme and since 2003 there have been no defaulters. Applications for loans are strictly vetted by the KVAPS before passing to the Co-operative Bank, and borrowers are subjected to stringent conditions including having some basic training in business management. PACE was recently asked to carry out a short-term consultancy to study the suitability of transforming KVAPS into a micro-finance institution. The study was successfully carried out and its conclusions and recommendations are under evaluation of the Kenyan authorities. It was also reported that the scheme has worked well in Nigeria.

Thus the results have been variable, but the Kenya example has demonstrated that the

CAHWs and auxiliaries

These were not included in the PARC/PACE loan/credit guarantee programme.

Over the last 10 years, there has been an increasing consensus that CAHWs or their equivalent can play a significant role in the delivery of veterinary services under certain circumstances, namely in situations where conventional veterinary systems cannot operate e.g. in conflict situations, remote ASAL areas etc. CAHWs by the nature of their background, may have limited education and so require careful supervision and strict restrictions on the veterinary tasks that they can carry out e.g. simple treatments, administration of vaccinations etc. The development of the role of CAHWs in veterinary services has been greatest in East Africa, but auxiliaries are also widely employed by veterinary services in certain West African countries. For example, in Guinea there is a significant cadre (estimated 10,000) auxiliaries linked closely with Farmers' Associations, and several hundred of these are employed by private veterinarians in the delivery of veterinary services. Thus the concept of CAHWs is relevant throughout the entire PACE region.

The CAPE Sub-unit was contracted by DFID and although part of its activities were planned to be linked to PACE by working closely with the VLPU, it appears that CAPE operated semi-autonomously and to its own logical framework. Its purpose was to establish sustainable animal health services to control diseases that threaten livestock in the Greater Horn of Africa, especially rinderpest, and with EDF allocated funds, to carry out analysis/development of CAHW delivery systems in West Africa.

CAPE's final report could not be located by the PCU and so was not available to the Final Evaluation Mission. Thus the exact starting and finishing dates are not known, but CAPE was operational from 2000 through to the end of the first phase of PACE. CAPE was not active in the extension phase of PACE.

The difficulties of harmonisation of the activities of CAPE and the VLPU were noted in the MTR which recommended the following:

- The PCU and the CAPE team come up with a work plan indicating how CAPE activities and outputs are integrated into the national work plans. This can be based on the Somalia programme into which CAPE is totally integrated.

- The work of CAPE and VPLU would be more usefully co-ordinated on a geographical basis, and CAPE should continue assisting countries in Eastern Africa, co-ordinating its effort more closely with the VPLU.

Despite the problems, CAPE was very active in carrying out its PACE linked agenda, namely the strengthening of veterinary services through privatisation and community based animal health. It succeeded in bringing together veterinarians and animal health assistants to establish private veterinary practices for pastoralists in the Greater Horn (Ethiopia, Kenya, Somalia, Sudan, Tanzania and Uganda). This was achieved by training, knowledge sharing and advocacy and by the end of its contract; CAPE had developed CAHW privatisation methodologies which were available to other countries.

It is concluded that the CAPE activities were implemented efficiently in the Greater Horn of Africa, although there is no indication that the development of CAHW delivery systems has been extended to West Africa as originally planned.

4.6.3 Legislative Framework

Possibly as a result of the difficult working relationship between the VLPU and CAPE sub-units, the VLPU component was terminated in February 2004 despite earlier recommendations that the contract be extended up to the end of the first phase of PACE. In the intervening period following the MTR, the VLPU focussed on Uganda, Guinea Bissau, Nigeria, Niger and Burkina Faso.

Despite the problems between the VLPU and CAPE, overall there was good progress in the development of modernised veterinary legislation to provide a legal framework for private veterinary services. From the results of the Final Evaluation Mission's questionnaire survey, of the 27 PACE countries that responded 23 stated that PACE recommendations had been incorporated into their amended veterinary legislation. A detailed description of these amendments and updating is beyond the scope of this report, but they include:

- Delineation of practices allowed by veterinarians and non-veterinarians (engineers, technicians, CAHWs and auxiliaries).
- Regulations concerning mandates to private veterinarians to participate in government activities (e.g. vaccination campaigns, participation in surveillance programmes). This is particularly relevant in francophone West Africa.
- Control of veterinary pharmaceuticals.

Because a comprehensive analysis of the veterinary legislation in each of the PACE countries was beyond the scope of the VLPU, it recommended in the 2nd Annual PACE Report (June 2002 to May 2003) that a one month mission on legislation by an international expert be carried out for each country. This was not implemented.

Unfortunately, although there has been good progress in the elaboration of modernized veterinary legislation to support privatised veterinary services, much of this renewed legislation has still to be approved by respective parliaments. Thus of 11 PACE countries who modernised their legislation as a result of PACE recommendations and were examined in some detail by the Final Evaluation Mission (Guinea, Senegal, Burkina Faso, Guinea Bissau, Mauritania, Niger, Nigeria, Rwanda, Kenya, Tanzania, Uganda and Sudan), only in Niger, Rwanda and Tanzania has the modernised legislation been approved, although approval of the updated legislation in Guinea Bissau is expected very soon. In Mauritania, the elaboration of the existing legislation to include the working practices of veterinarians including private veterinarians, was promulgated in 2004 and the decree applications will be adopted soon.

Overall, the VLPU has operated efficiently. It is probable, however, that if the working difficulties had been overcome and the VLPU contract had been extended as originally recommended, the input by PACE into the modernisation of veterinary legislation would have been more significant.

4.6.4 Expanding Awareness of Animal Health Services and Benefits

This was included in Activity 1.5 of the first Logical Framework as follows:

- Development of methods of communication at national level: animal health training for stock farmers.

This was further refined with Activity 4.6 in the extension phase as follows:

- Attain wider information sharing capacity by improving communication methods

Through an agreement with AGRER, two communication TAs were appointed in October 2000, one posted in Bamako and one posted in Nairobi. The Nairobi TA left PACE in October 2001 and there was a delay of a few months before the appointment of his replacement who resigned in September 2003. The first Bamako TA resigned for personal reasons in March 2001 and his replacement was appointed 7 months later in October 2001. Following the resignation of the Nairobi TA, the Bamako TA covered both Centres. His contract ended in February 2004.

This turn-over of TAs impacted negatively on the progress of the Communication component which was commented on in the 5th and 6th AC Meetings of April and November 2002. It is noteworthy that according to the minutes of the 5th AC meeting, the Communications Unit had the task of promoting the "brand image" of PACE, and to help the veterinary schools to introduce training on communications into their curriculum.

The MTR expressed concern about the direction followed by the Communication component and recommended the following:

> "Communication also needs to (re)focus on core activities. The primary function of the unit is the development of messages and extension materials in relation to surveillance and control of epizootic diseases. Hence, it is important that the unit trains national veterinary extension staff in planning, conducting and analysing the results of KAP surveys. PR-type activities may be contracted out as and when needed."

Despite the disruption to these appointments, it is apparent from the reports that the TAs were very active and visited all PACE countries in support of National PACE Communication Units. It is clear from the Country visits during the Final Evaluation Mission that many communication activities have been carried out by the National PACE Communication units, albeit of variable quality from country to country. From interviews with farmers, the Mission was satisfied that the farmers had a good awareness of the importance of veterinary services available to them and their benefits, and also the importance of disease surveillance. A significant and useful output of the National Communication officers in collaboration with their epidemiology colleagues has been the publication of regular bulletins of the national epidemiology-surveillance networks. Several examples of these bulletins were seen by the Mission team who were impressed with their quality and content. It is noteworthy that PACE Mali has succeeded in sustaining the targeted publication of its bulletin EPIVET-INFO every three months, allegedly the only country to do so (closely followed by CAR with 21 issues by now). Unfortunately, the documentation and archiving of this material has been poor, and the sharing of best practice between PACE countries in this respect has not been sufficient.

Thus it is concluded that the overall efficiency of PACE's contribution to developing National Communication programmes has been satisfactory with the exception of the documentation and archiving of material.

Institutional Communication

In the first few three years or so of PACE, considerable effort was put into institutional communication resulting in a range of outputs as follows:

- CD ROMs on Epidemio-surveillance and rinderpest.
- Pan-African Animal Health Year Books (2003 and 2004) produced and distributed.
- PACE Newsletters in French and English.
- Setting up of the PACE website.
- A PACE Video documentary produced and distributed to national co-ordinators.
- PACE Press kit.
- Assistance to other projects within IBAR to produce outreach materials, e.g. FITCA, CAPE and IBAR itself.
- Video on livestock producers' views produced with CAPE.

Following the end of the Bamako TA's contract in February 2004, it was decided to transfer communication activities to individual national components which have established active communication units, and combine the Communication Unit with data management activities into a combined Information and Communication Technology Unit. As a result the PACE Co-ordination Newsletter stopped and it was decided to recruit additional staff to this new amalgamated unit as follows:

- Webmaster.
- Data-management Assistant (recruited in Feb. 2004).

Since this transfer, according to comments from the PCU following the Final Evaluation Mission's presentation of the Aide Mémoire, institutional communication has remained very weak, with no clear strategy. This has resulted in a very low visibility and insufficient knowledge of PACE achievements during the programme's implementation. To address this weakness, an expert in communication has recently been appointed with the following planned key outcomes:

- A communication strategy.
- The development of a website for the institution (IBAR) and member states.

Thus the progress of institutional communication activities by PACE has been erratic and the overall efficiency has been poor.

Support to veterinary schools

Activity 2.1 in the initial phase stipulated targeted aid for veterinary schools. The Communication TA held meetings with the Deans of Veterinary Schools in Uganda and Senegal with a view to introducing training on communication into the curriculum. As a result the Communication Unit sponsored a pilot module on Communication training in the 4th Year of the Veterinary curriculum at the École Inter-Etats des Sciences et Médécine Vétérinaires (EISMV) in Dakar. However this did not become a permanent part of the curriculum. In fact the curriculum had already been modified in 1999 to include training in rural economics. This stemmed from the early 1990s when, because of the moratorium on

recruitment into the public sector, it was recognised that training for private vets was needed. Thus it means that when students graduate they have some training in economics in preparation for working in the private sector.

In addition, the association of Deans of Veterinary Schools has now been established in order to undertake the curricula review in line with the current development and changes in the livestock sector.

Despite these developments, the AC recommended that further inputs into veterinary education institutes should not be pursued. Nevertheless, there was a further meeting in Addis Ababa in March 2004 of PACE with Deans and Directors of Veterinary Schools and Faculties in which there was an exchange of views and information. In addition PACE has been supporting Continual Professional Development (CPD) training by the EISMV of private vets on business management e.g. by funding of workshops etc.

4.6.5 Improving Linkages between Central Institutions and Livestock Farmers

This aspect is linked to the comments on expanding awareness in 4.6.4. With support from the Communication TAs in the first 3 years of PACE, National PACE Communication Units have continued to be active in strengthening collaboration between veterinary services and livestock farmers. The means vary from country to country e.g. In Guinea, the veterinary services work closely with Farmers' Sanitary Defence Committees who are an integral part of the epidemio-surveillance network. In Kenya, the Ministry of Agriculture's Agriculture Information Centre radio broadcasts play a key role in supporting the various farmer awareness and extension activities of the veterinary services. In CAR, a national radio broadcasts half hour weekly messages developed by the PACE country team. Farmers' associations are very active in West Africa, and the Final Evaluation Mission was satisfied that in the PACE countries visited, every effort was made to involve them in ensuring as far as possible that farmers were aware of veterinary activities in their area. A common complaint from PACE Communication units was that their budgets were too low and with more resources they could do more to increase farmer awareness.

Although the strengthening of these linkages has varied from country to country, it is concluded that overall this aspect has been implemented efficiently. In Guinea, the PACE Communication Officer's post has now been integrated into the Government Veterinary Service Organogram ensuring that communication activities will continue there, but this may not be the case in other countries e.g. the PACE Communication officer in Senegal did not expect to continue his activities once PACE ends as he was not sure if funding would be available to continue his appointment in this role.

4.6.6 Laboratory Diagnostic Services

The collaboration between AU-IBAR and the IAEA (International Atomic Energy Agency) which started during PARC continued under PACE by the appointment of a laboratory expert from IAEA in June 2001. Over the next 4 years the expert was extremely active in strengthening the laboratory diagnostic capacity within PACE countries by training and supervision of the provision of equipment and diagnostic reagents. The relevant logical framework activities for this component are as follows:

<u>First Phase of PACE</u>

- Activity 2.3 Training in diagnostics and other networks needed for the networks.

- Activity 3.4 Continued research into vaccines and diagnostic and therapeutic tools.

Extension Phase of PACE

- Activity 1.3 Assure timely diagnosis assured by supporting both the regional and national laboratories with provision of materials and diagnostic kits.

- Activity 2.4. Improve the laboratory component of ARIS.

- Activity 3.2. Sustain diagnostic services by visiting and assisting countries in establishment of the required capacity for diagnosis of identified priority diseases, assisting in serological surveillance required for obtaining freedom from rinderpest infection and continuing the laboratories rinderpest-testing network.

The first year focussed in assessing the diagnostic capacity of national veterinary laboratories in PACE countries and assisting them with their work-plans. It was recommended that National PACE co-ordinators should involve their national laboratory personnel in drawing up their budgets for laboratory equipment and consumables. Consideration was also given to the designation of Regional Reference Laboratories. In the following 3 years, the expert collaborated closely with the Epidemiology Units to strengthen the diagnostic capacities needed for rinderpest eradication and in support of the surveillance networks.

Regional Laboratories

A major input was the designation of three Regional Reference Laboratories to carry out rinderpest diagnosis by serology, PCR, molecular characterisation and virus isolation. The Regional Laboratories are as follows:

- KARI – Muguga, Kenya
- ISRA - Dakar, Senegal
- LANADA - Bingerville, Côte d'Ivoire

A MOU was agreed between AU-IBAR/PACE and the Directors of the Institutions in charge of the Regional Reference Laboratories accepted by Directors of the institutions.

NB Garoua (LANAVET) in Cameroon was considered, but discounted because of communication difficulties.

Of concern throughout the PACE programme was the poor rate of processing and analysing samples for rinderpest surveillance and diagnosis by Muguga. Although the expert monitored the situation and collaborated with the Director of KARI, the situation was never satisfactorily resolved and Muguga eventually lost its status as an International Rinderpest Reference Laboratory.

National Laboratories

Throughout his contract the laboratory expert visited National Laboratories, developed a database of their capabilities and co-ordinated training activities and the provision of diagnostic kits, reagents and equipment with special emphasis being placed on the laboratory support to the surveillance of rinderpest, CBPP, African Swine Fever and Rift Valley Fever.

By the end of 2005, it was reported that the national veterinary diagnostic laboratories had received diagnostic equipment and their staff trained or retrained. All the PACE countries have a veterinary laboratory functioned and equipped (at different levels) for the diagnosis of rinderpest with the exception of Burundi, CAR, Congo, Equatorial Guinea, Gabon, Rwanda and Somalia.

A detailed inspection of the laboratory diagnostic facilities of the PACE countries was beyond the scope of this mission, but the Final Evaluation Mission team visited the National laboratories of Guinea, Dakar, Burkina Faso, Mauritania, Mali, Kenya Rwanda, Tanzania and Uganda plus the Tenkodogo district laboratory in Burkina Faso. In general staff are motivated and have benefited from training and provision of equipment and consumables under PACE. Because laboratory diagnoses are an essential component of disease surveillance, it was observed with concern that there is serious underutilisation of the diagnostic capacities of the laboratories in West Africa. For example it was reported in Senegal that although the submission rate of diagnostic samples was quite good in the first two years of PACE, thereafter it declined significantly. The basic statistics are shown in the following table.

Submission of diagnostic samples to the Central Veterinary Laboratory in Senegal via the Epidemio-Surveillance Network:

Year	**No. of Submissions**
2001 (Aug. – Dec.)	101
2002	107
2003 (Jan. – April)	2
2003 (May – Dec.)	48
2004	Nil (Network ceased to function prior to the PACE Extension phase)
2005	9
2006 (Jan. – July)	14

Statistics were also provided for diagnostic samples processed in the Central Veterinary Laboratories in 2005 in Mali, Burkina Faso and Mauritania as follows:

Laboratory	**Numbers of diagnostic samples processed in 2005**
Direction du Laboratoire National d' Elevage, Ouagadougou, Burkina Faso	1,028 - for parasitology, rabies, bacteriology, autopsies and Brucella serology
Laboratoire Central Vétérinaire, Bamako, Mali	83 - for infectious diseases 727 – bovine brucellosis 6 – rabies heads 788 – other diagnostic samples (parasitology etc.)
Central Veterinary laboratory (CNERV), Nouakchott, Mauritania	169 – all diagnostic samples

Considering the significant livestock populations in these countries, these statistics represent under-utilisation of diagnostic capacities available.

It is concluded that the support to the Regional and National Laboratories by PACE to carry out the diagnosis and surveillance of rinderpest and some other important epizootic diseases has been carried out efficiently. The problems at Muguga were beyond the scope of PACE to rectify. Within PACE countries in West Africa, however, there is under-utilisation of the diagnostic capacity available.

4.6.7 Role of PANVAC

The Pan-African Veterinary Vaccine Centre (PANVAC) was set up in 1986 with FAO funding to certify the quality of veterinary vaccines produced and/or used in Africa and to develop quality norms in vaccine production. Originally operating out of two centres in Debre-Zeit (Ethiopia) and Dakar (Senegal), the Dakar Centre was closed in 1992 and activities were concentrated on Debra – Zeit. The European Union (through the PARC, then the PACE programmes) has supported PANVAC and in February 1998, the Ministers of Foreign Affairs of OAU member states meeting in Addis- Ababa decided to turn PANVAC into an OAU institution.

At the 7th AC Meeting of April, 2003, concern was expressed about the continuing absence of any significant activity of PANVAC relevant to PACE, especially as there was no other laboratory in the PACE countries that could provide the services attributed to PANVAC. This was followed up by the Director of AU-IBAR at the Conference of African Ministers of Agriculture in Maputo in July 2003, as a result of which a MOU was signed between AU and Ethiopia transferring responsibility of PANVAC to AU. The next step was the recruitment of the PACE Laboratory Expert to become Director of PANVAC working under the Director of IBAR.

Despite some problems over funding, by the 12th AC meeting in April 2006, the AC reported that PANVAC was now operating effectively with a substantive Director and budgetary provisions. Thus this process appears to have been carried out very efficiently, and PACE has contributed very significantly to the revitalisation of PANVAC.

4.6.8 Vaccine Emergency Bank

With the cessation of rinderpest vaccination throughout the PACE countries, cattle populations become increasingly susceptible to infection. This has been recognised by PACE who has established a rinderpest vaccine bank as a precaution against a re-emergence of the disease. A stock of 500,000 doses has been placed at the Botswana Vaccine Institute which takes care of its storage and quality assurance. In addition PACE has established an emergency fund entrusted to the OIE through a convention signed in July 2001 between the AU-IBAR and the OIE. The fund was initially for Euro 2,000,000, but later reduced to Euro 500,000 in association with the preparation of the budget for the extension phase of PACE, This fund is for the rapid mobilization of essential resources in the event of reintroduction of rinderpest virus to a fully susceptible cattle population, and its use would be subject to conditions that the country (ies) concerned set up a clearly defined emergency (intervention) plan against rinderpest. In addition PACE funded a bank of rinderpest vaccine in Lokichoggio in N.W. Kenya and in Khartoum (Sudan) in the final stages of the rinderpest campaign in Southern Sudan (See 4.5.5). These PACE contributions to emergency preparedness against rinderpest appear to have been implemented efficiently, although care is required to ensure that the vaccine bank is replenished when vaccine stocks expire as was noted in the PACE annual report of June 2002 to May 2003.

In April 2006, the 12th ACM recommended that Euro 350,000 be allocated for the purchase of HPAI vaccine. This recommendation was subsequently approved by the EC and the HPAI vaccine bank will be managed by the OIE.

PACE contributions to emergency preparedness against rinderpest appear to have been implemented efficiently, although care is required to ensure that the vaccine bank is replenished when vaccine stocks expire as was noted in the PACE annual report of June 2002 to May 2003.

5. EFFECTIVENESS

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5.1 Level of Integration of PACE Activities

In the Initial Phase, there were 4 Results with 10 Objectively Verifiable Indicators (OVI) to be achieved by 18 Activities. The PACE Programme was modified in the extension Phase, which has 7 Results, 11 OVIs and 36 Activities. Certain activities in the Initial Phase were not continued into the extension Phase in which there was a readjustment of priorities. Thus there were no activities in the Extension Phase to follow up on the results of the following activities of the Initial Phase:

- Activity 2.4 Targeted aid for veterinary schools.
- Activity 4.5 Continuous environmental monitoring of four regions considered typical examples of traditional husbandry.

The extension phase attempted to address the rinderpest situation in which many PACE countries had made good progress along the OIE pathway to certification of either freedom from disease or infection, and the last remaining focus of infection may be in the Somali ecosystem within Somalia, Kenya and Ethiopia. Thus the following new project results with associated OVIs and Activities were introduced:

- Result 1. Committed eradication of rinderpest in the Somali ecosystem.
- Result 2. Verified rinderpest eradication in countries through achievement of the OIE Pathway's freedom from disease and then from Infection.

In addition, during a review of the PACE programme at the start of the extension phase, it was recognised that success in rinderpest eradication and better control of other major epizootic diseases could lead to commercial opportunities and the following Results were introduced:

- Result 4. Development of national policies for economically affordable strategies for the control of priority diseases developed.
- Result 5. Strategies developed for gaining greater access to livestock markets. Because of the complexities of the PACE programme in 30 countries with many cross-cutting issues, integration of Activities was very important if success was to be achieved. Overall it is concluded that there has been good integration of Activities. Problems arose, however, in the Initial Phase with the integration of the following Activities:
    - Activity 2.2 Development of arrangements for distributing care and veterinary drugs through husbandry auxiliaries in remote areas.
    - Activity 4.1 Harmonisation of legislative positions on the veterinary profession and veterinary drugs.

Both these Activities were aimed at the overall objective of strengthening legislative frameworks in support of privatised veterinary services including those delivered by CAHWs under veterinary supervision. It is clear from the reports that a satisfactory level of integration was not achieved which probably impacted negatively on the legislation aspects. This lack of integration was due to differences in style and approach by the experts in the VLPU and CAPE rather than weaknesses in the planning of the Activities.

5.2 PACE Activities in Relation to Achieving Project Results and Objectives

5.2.1 Epidemiology

The PACE Epidemiology Unit (PEU) and the Technical Assistants, through meetings, workshops and country visits have assisted most PACE countries to develop systems for active and passive surveillance. As recommended by the Advisory Committee, they have introduced an effective system for evaluating the surveillance networks: evaluation criteria have been developed to measure performance and compare between countries. As also recommended by the Advisory Committee, countries in PACE have been given performance indicators to assist them to develop efficient and harmonised epidemio-surveillance systems and monitor their performance.

A study has been made to assess and demonstrate the cost-benefits of epidemio-surveillance systems. While the analysis produced positive results, in that benefits were shown to be greater than costs, this type of analysis will be more meaningful when costs of epidemio-surveillance systems used in *specific* disease control activity are compared with the benefits arising from the disease control measures.

The Information and Communication Unit has introduced electronic storage and analysis of epidemio-surveillance data and has introduced its own programme ARIS. Its full implementation has not been achieved due to lack of suitable hardware and technical problems with the system and so, as yet, it is not fully effective.

The introduction of novel methods of epidemio-surveillance, including participatory and risk based methods, together with the use of CAHWs for surveillance in conflict areas have been effective in eliminating rinderpest in its last strongholds.

5.2.2 Training

Although the training carried out has been relevant, its effectiveness has been variable. At livestock farmer level, the overall strategy has been to train field veterinary staff to transfer information to livestock farmers on a range of disease issues. The strategy has been generally satisfactory, but it is apparent that the effectiveness of this training is variable from country to country. For example, farmers in Sikasso Region in Mali stated that training had reached only 50% of livestock farmers. By contrast, representatives of farmers' associations in Mamou in Guinea expressed satisfaction with the level of outreach to the livestock farmer members of their associations. In discussions during the mission on this aspect, the normal view was that the only constraint to greater farmer outreach was budgetary and with more resources the effectiveness would have been greater.

The technical knowledge of veterinary personnel, both public and private, is generally satisfactory and the PACE training programme has contributed to this. The greatest weakness in technical training and support has been in the software usage for the disease information systems. For example all information data that had been entered into the ARIS software in Mali has been lost and is having to be re-entered from original hard copies. Similarly the officer in Burkina Faso expressed having difficulties in using the ARIS software.

During the Final Evaluation Mission, it was noted that none of the National Co-ordinators interviewed had received training in management, and not all had received training in EDF procedures. The overall effectiveness of the PACE programme would clearly have been better had all the National Co-ordinators been properly trained in management and EDF procedures.

In addition, the potential for more widespread dissemination of good quality training materials between countries has not been achieved as effectively as it could have been. In hindsight, the PACE programme should have made provision for systematic validation and archiving of training materials, and dissemination of examples of best practice for the benefit of all.

5.2.3 Privatisation and Legislation

The role of Community Animal Health Workers (CAHWs) has been particularly important in conflict areas of East Africa, notably Southern Sudan and Somalia. In this context the support by PACE to these groups in collaboration with numerous NGOs has been very effective and has been a major contributory factor to the successful pursuit of rinderpest eradication in these difficult areas, and will continue to do so in Somalia. The situation in West Africa is somewhat different in that greater emphasis has been placed on mandating private veterinarians to deliver veterinary services, although this may involve sub-contracting tasks to auxiliaries in addition to technical staff.

For the support of the modernisation of veterinary legislation in PACE countries to provide legal frameworks for the delivery of privatised veterinary services, within the VLPU there was only one privatisation/legislation TA in the first phase of PACE. He was only able to give expert support to a restricted number of countries, although the concepts were noted by PACE countries in general, some of whom contracted their own National lawyers and experts to update their legislation e.g. Guinea, Senegal and Burkina Faso. It is not possible to comment at this stage how effective these inputs have been. The requested detailed audit of the legislation recommended by the VLPU to provide a baseline for comparison was not carried out (see 4.6.3), and much of the modernised legislation has still to be implemented. Any future programme after PACE should follow this up to assess the effectiveness of PACE's inputs prior to any further developments of the legislation.

5.2.4 Strengthening of Farmer Awareness and Linkages between Central Authorities and Farmers

It is clear that a great deal of material to increase farmer awareness and strengthen linkages between the central and field levels has been produced under PACE. Much of this material has been of high quality. It appears, however, that the effectiveness of distributing this material has been variable. In addition, the potential for more widespread dissemination of good quality materials between countries has not been achieved as effectively as it could have been. In hindsight, the PACE programme should have made provision for systematic validation and archiving of awareness materials, and dissemination of examples of best practice for the benefit of all.

5.3 Support to Regional Co-ordination Unit (Bamako) and National Programmes by the PACE Co-ordination Unit and Common Services

5.3.1 Epidemiology

Support to Regional components and national projects by the epidemiologists in the PEU has largely been through organisation of meetings and workshops. Their effectiveness would have been enhanced by more follow up visits to PACE member countries. However, the Laboratory and Wildlife Technical Assistants were very active at country level although it has been reported that training of counterparts by the wildlife TA was given little attention.

5.3.2 Communication

As described above (4.6.4), there was a high turnover of Communication TAs in both Nairobi and Bamako. Despite this, the Communication TAs were effective in supporting communication activities at national level. In the extension phase, communication and data management activities were merged into the combined Information and Communication Technology Unit. This unit was unable to provide satisfactory support for Institutional Communication at Central and Regional levels, although it is noted that Communication activities within individual PACE countries appear to have continued satisfactorily with some support from TAs regarding newsletters, posters, leaflets, handbooks for agents and manual for CAHWs, etc.

5.3.3 Privatisation and Legislation

Within its limited staffing resources, the VLPU provided good support to selected PACE countries, namely Uganda, Guinea Bissau, Nigeria, Niger and Burkina Faso.

CAPE

CAPE provided good support to PACE countries in the Greater Horn of Africa relying on CAHWs to deliver veterinary services, namely Ethiopia, Kenya, Somalia, Sudan, Tanzania and Uganda. However it did not provide any equivalent support to Central and West African PACE countries administered by the Bamako Co-ordination Office.

5.3.4 Other Common Services

A number of other common services (secretarial, clerical, translations) are important to the efficient running of a large complex bi-lingual programme such as PACE. It is important that official reports are published in French and English in a timely way and are of high quality. The following PACE annual reports were made available by the PCU as reference documents for the Final Evaluation Mission (no report for 2000 was provided):

- January – December 2001
- June 2002 – May 2003
- June 2003 – May 2004
- January – December 2005

During 2002-2004 the annual reporting period was changed to June-May to coincide with the work plan period. The gaps (January to May 2002 and June 2004 to December 2004) were covered by half yearly reports.

The first three annual reports were of relatively poor quality. However, the most recent report 2005 is of suitably high quality, but is still to be translated into English. In addition there seems to be no systematic filing system for access of reports.

It is noteworthy that the following report published in English and French was also of the high quality that would have been expected from PACE in general.

- PACE Final Report 1999 – 2004: Regional Co-ordination for West and Central Africa (French and English).

6. IMPACT

6. IMPACT

6.1 Logical Framework Matrix Results

Initial phase

6.1.1 Result 1: Reinforcing of Animal Epidemiology Services and Control of Major Diseases in the Participating Countries

Better surveillance and diagnosis which has been introduced by PACE, have had an impact on knowledge of the epidemiology of transboundary diseases and their distribution. Much has been learned regarding surveillance techniques and been applied, particularly for proof of the non-existence of rinderpest by following the OIE Pathway. The epidemiology services, introduced and improved by PACE have also played a major role in controlling outbreaks of HPAI.

6.1.2 Result 2: Greater Privatisation of Veterinary Services and Public/Private Sector Linkage in this Field

The use of CAHWs in conflict areas of Sudan and Somalia has had a major impact, especially on rinderpest eradication. Without their involvement, it is probable that very little progress would have been achieved. PACE (through CAPE) in collaboration with NGO groups has done much to establish and train them, ensure their acceptability and promote their activities.

In West Africa, privatisation of veterinary services has had a major impact in the delivery of veterinary services including the implementation of government vaccination campaigns against CBPP, PPR, anthrax etc. The impact, however, varies from country to country. For example the delivery of veterinary services in regions of Mali are 100% privatised, but in Burkina Faso, the authorities support the delivery of veterinary services by government appointed staff to the point that private veterinarians have great difficulty making a living in rural areas.

6.1.3 Result 3: Rinderpest Eradicated from Africa; Greater Control of Other Epizootic Diseases, Especially Contagious Bovine Pleuropneumonia

The major achievement of PACE is that with almost complete certainty, rinderpest has been eradicated from its two last strongholds in Africa, Southern Sudan and the Somali Ecosystem.

Less success has been achieved with regard to control of CBPP. Few countries have taken up systematically the CBPP control programme recommended by the PEU. Exceptions in West Africa are Senegal, where vaccination stopped in 2005 and the country is undertaking the OIE Pathway for declaration of freedom from CBPP; Guinea, where the country has been divided into epidemiological zones with regard to CBPP and is taking control measures in line with OIE guidelines; Benin, where a national workshop held in March 2006 initiated a 5 year compulsory CBPP vaccination campaign covering the whole country.

In East Africa, Tanzania is pursuing annual vaccination against CBPP on a zonal basis; Kenya has also adopted a zonal policy for CBPP control and has infected zones where vaccination is biannual, and disease free zones.

Rwanda implemented a highly successful CBPP control programme in which the entire cattle population was vaccinated five times in three years with $T_1$44 vaccine.

While attention has been paid by the PEU to other transboundary diseases, namely ASF, RVF and FMD, there has been little impact on their prevalence and effect.

Bearing in mind that in the TORs, diseases of the OIE former list A were to be addressed by PACE, there are some notable diseases which seem to have escaped the attention of the PACE PEU, for example: PPR, Capripox, African horse sickness and Newcastle Disease.

6.1.4 Result 4: At Pan-African Level, Sustainable Co-ordination of National Animal-Health Systems and Arrangements for Tackling Epizootic Diseases Set Up

Through meetings, workshops and training, PACE has created a network of animal health professionals who now know their counterparts in adjoining countries and are able to co-ordinate with each other on transboundary disease control. PACE has also facilitated the development of animal disease control contingency plans for emergency preparedness and rapid reaction in the face of animal disease emergencies. However, without further support, it is doubtful if these systems will be sustainable as they require financial and logistical resources which national governments may not be able or willing to provide.

6.2 Issues Related to Specific Project Objectives

Initial Phase

Specific Objective 1: Strengthening the capability (at national and regional level) to assess the technical and economic aspects of animal diseases and generate appropriate programmes for their control.

This objective has been achieved in certain respects. The strengthened epidemio-surveillance systems in most PACE countries has resulted in improved frequency and quality of reporting. Some progress has been made in assessing the economic aspects of diseases and some cost-benefit analyses of CBPP control has been completed. More in depth analyses are still required, however, for future disease control programmes.

Specific Objective 2: Safeguarding of animal health in Africa against major epizootic diseases (OIE List A).

Apart from rinderpest eradication control which has been successfully achieved, progress in controlling other major epizootic diseases has been fragmentary within the PACE countries. For example Senegal and Guinea have made good progress in controlling CBPP, but there has been little progress in neighbouring countries. PPR is still endemic in West Africa and vaccination rates are low.

Extension Phase

Specific Objective 1: Eradication of rinderpest and control of other epizootic diseases

See above. Eradication of rinderpest is almost complete. The last remaining possible focus is in the Somali ecosystem.

Specific Objective 2: Strengthen of surveillance of other major diseases to provide required information for policy formulation of their control as prerequisite for access to global livestock markets.

This is achieved to a certain extent. Surveillance systems have been improved, but still require strengthening and development before further transboundary disease control programmes can be implemented.

7. SUSTAINABILITY

7. SUSTAINABILITY

7.1 Epidemiology Services

The flow of animal health information (vaccinations, treatments, outbreaks, disease suspicions etc.) from livestock farmers through the administration hierarchies to the epidemiology-surveillance network managers is still based on entering the required information into appropriate hard-copy forms. Although laborious, it is on the whole reliable and completely sustainable. The software information management systems in use, however, require further development, especially ARIS, and without further technical development and support are very vulnerable and not sustainable.

More difficult to assess, however, is the sustainability of the Epidemiology Surveillance Networks. Currently they are enthusiastically supported at all levels, possibly because of their association with the successful eradication of rinderpest, and the stamping out of avian influenza in Niger, Nigeria, Cameroon and Burkina Faso. There is a risk, however, that if the disease situation enjoys a "quiet" period, the enthusiasm for participating in the networks may wane. It was also noted that livestock keepers' enthusiasm for surveillance systems declined unless they are combined with disease control.

PACE and IBAR have made tremendous efforts to sensitise decision makers (Ministers acting as NAO) to allocate funds for epidemio-surveillance systems in the regular national budget. A workshop with most of the NAOs and Directors of Veterinary Services was organised in Addis Ababa in 2006, while several official letters on the matter have been sent by the RAO to Ministers and NAOs.

Economic analysis of costs and benefits of passive epidemio-surveillance with regard to CBPP control have been undertaken in four West African countries by Professor Cheikh Ly and Dr B.K. Lafia (2005) using a model developed by Dr E. Tambi. Results from the four countries indicate cost benefits ranging from 1.0 to 1.9. As these results are for only one disease, and passive epidemio-surveillance will enable better control of a number of transboundary diseases, overall, cost:benefits should be more positive. However, the study considers only the costs of passive surveillance which utilises already existing animal health field personnel. Active surveillance systems for transboundary diseases have been introduced through the PACE programme, often using staff, equipment and logistics paid for by PACE. The active surveillance systems are important for following the OIE pathway for provision of the necessary evidence for demonstration of freedom from transboundary diseases and to monitor the progress of control programmes, which is important if international trade in livestock and their products is envisaged. Active surveillance systems are more vulnerable because national governments need to be convinced of the need to takeover the extra costs they entail after the PACE programme ends. Unless decision makers are given specific economic evidence of the benefits of ESS, they may not give them their full support.

According to the final report of the PACE Chief Epidemiologist, Mr Gavin Thompson, to get full support from livestock keepers and other stakeholders for epidemio-surveillance systems, and to persuade national Governments to financially support them after PACE, epidemio-surveillance should be targeted at specific diseases for which there are control programmes, and for which economic and public health benefits have been quantified.

7.2 Privatisation of Veterinary Services and Public/Private Sector Linkages

From information collected during the evaluation mission, there are indications that the use of CAHWs in Southern Sudan is declining in the aftermath of the Peace agreement, and

government staff are gradually taking over. Thus their activities may not be sustainable in post conflict areas. In West Africa, there is less use of CAHWs in the private sector. In Guinea, however, there is a significant cadre (estimated 10,000) of CAHWs linked closely with Farmers' Associations, and several hundred of these are employed by private veterinarians in the delivery of veterinary services. In general in West Africa, where CAHWs exist they are well integrated into the veterinary service delivery systems and are thus sustainable. Some "free CAHWs", however, who are not working under veterinary supervision represent competition with officially approved public and private services. Although their services are substandard using poor quality drugs, they are still attractive to farmers due to their low cost and proximity.

With respect to private veterinarians, there is an assured future in the general area of selling veterinary pharmaceuticals, and for many this is their main source of income. This situation probably applies to all PACE countries. In the context of delivering veterinary services in rural areas, however, this depends to a great extent on government policies concerning issuing of mandates to deliver veterinary services and enforcement of compulsory vaccination policies. Thus the sustainability of privatised veterinary services varies from country to country e.g. good in Mali but poor in Burkina Faso.

7.3 Eradication of Rinderpest in the Somali Ecosystem through SERECU

SERECU has funding to the end of February 2007. However, it has a very important role to play for at least four more years. Bearing in mind that the Somali Ecosystem is the last place in the world where there is a possibility that rinderpest virus still exists, and remembering that in the past, rinderpest has re-emerged from a few remaining foci of infection to cause devastating epidemics across Africa and Asia, to ensure sustainable rinderpest eradication, SERECU needs to continue the following:

- Co-ordination of rinderpest surveillance activities of the veterinary services, NGOs, SAHSP, professional associations and CAHWs working on animal health in the Somali Ecosystem.
- Organisation of random sample serum surveys across the Somali Ecosystem, similar to the one which has just been completed and for which results are awaited.
- Design and co-ordinate risk based surveillance activities which include participatory disease search and targeted serosurveillance.
- Design and co-ordinate continuing wildlife surveillance.
- Organise and co-ordinate the required laboratory backup.
- Ensure that contingency plans and emergency preparedness (including all logistics) are in place for rapid reaction to a re-emergence of rinderpest disease in the Somali Ecosystem, including stamping out and emergency ring vaccination, preferably with a marker vaccine.
- Plan and implement, through the national partners and contracted NGOs, the continuing surveillance activities and dossier preparation needed for taking the national zones of the Somali Ecosystem along the OIE Pathway to eventual declaration of freedom from rinderpest infection.

Currently, SERECU is drafting a project proposal in consultation with FAO and the Global Rinderpest Eradication Programme, for the continuation of the Project. It has, as yet, to co-opt the FAO representative to the Project. There will be a SERECU stakeholder meeting from September 26 to 27 to review the results of the recently undertaken serological survey, after which, on 28 September, there will be a steering committee meeting. It is imperative that the operation of the unit continues without disruption as SERECU is currently the only project which has the personnel, expertise and system in place, as well as the good will of the Somalis, to carry out the essential task of achieving final extinction of the rinderpest virus.

7.4 Control of Other Major Epizootic Diseases

There is great variation between PACE countries with regard to sustainability of their disease control systems. In almost all countries, sustainable passive surveillance systems are in place. This is a sustainable outcome of PACE which should give early warning of outbreaks of major epizootic diseases, though unless contingency plans are in place and there are the resources for them to be implemented, early warning does not guarantee disease control. But if epidemics, through surveillance, are identified early as primary outbreaks, their consequences, and the costs of their control are much smaller.

With regard to active surveillance, in many countries, it is supported by PACE and is likely to stop or only continue at a reduced level after closure of PACE. Thus, some epizootic disease control activities which are currently being undertaken are not sustainable without further support. In some countries this includes continuation of activities needed to complete the OIE Pathway for declaration of freedom from rinderpest infection.

7.5 Co-ordination of National Animal Health Systems

Apart from systematic reporting of disease situations to OIE, the main opportunities for the different national veterinary services in the PACE programme to co-ordinate their activities is possibly annual PACE co-ordination meetings and other Regional meetings. Thus the sustainability of co-ordination is at risk when the PACE programme ends.

8. MAJOR CONCLUSIONS AND RECOMMENDATIONS

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8.1 Major Conclusions

Design of the project

The design of the project's specific objectives was relevant to the overall objectives in both the initial and extension phases. The general strengthening of veterinary services with significant achievements such as the official eradication of rinderpest from most of the PACE countries and successful stamping out of outbreaks HPAI in some countries will have contributed to the overall objective of poverty alleviation in PACE countries (West, Central and East Africa).

The internal coherence of the logical frameworks in both phases was satisfactory although the coherence was improved in the extension phase in which the activities were more focussed on the project's results and objectives.

Epidemio-surveillance and information systems

Through PACE, countries have been assisted with development of disease surveillance and control methodologies and strategies, and helped to adopt international standards of disease reporting and protocols to obtain international recognition of freedom from diseases.

Modern tools to handle and process data have been introduced to PACE countries and PACE has introduced its own IT development (ARIS) for epidemio-surveillance data handling and analysis. PACE has also improved facilities and techniques for laboratory diagnosis across the region.

A system of performance indicators and evaluation criteria have been developed to monitor the effectiveness of the epidemio-surveillance networks and through workshops and meetings, PACE has established links between different countries' epidemiology and disease control units, enabling exchange of information to provide early warning of disease and enable the regional co-ordination which is necessary to control transboundary diseases.

Wildlife

The importance of wildlife in transboundary disease control has been recognised by PACE and the project has assisted countries to develop wildlife surveillance activities.

While wildlife surveillance has been an important component of the rinderpest eradication campaign, absence of this disease does not reduce the importance of wildlife surveillance. There are other transboundary diseases in which wildlife do, or may, play a role in maintenance of the disease and its spread. Examples are ASF, rabies and RVF. The role of wildlife (principally the African Buffalo) for maintenance of SAT types of FMD is well known in southern Africa, the role of wildlife with regard to maintenance of FMD requires similar evaluation in other parts of Africa. There are also problems emerging with regard to transmission of disease from livestock to wildlife, for example, the spread of bovine tuberculosis from cattle to African buffaloes and their predators. As wildlife is of increasing importance to rural economies in Africa, this aspect should not be neglected.

Now that HPAI has emerged, 'wildlife' takes a wider dimension with involvement of migratory and sedentary wild bird populations, that might also be harbouring other avian viruses important to domestic poultry, for example Newcastle disease virus.

Transboundary disease control

While attention has been given to other transboundary diseases besides rinderpest, particularly ASF, RVF and FMD, and strategies have been proposed to control them, their prevalence, and effect on rural livelihoods and trade have remained largely unchanged, a notable exception is CBPP control in a few countries, for example, Senegal and Kenya. The impact of PACE on transboundary disease control has been mostly through early warning of outbreaks through the epidemio-surveillance systems that have been developed, and rapid diagnosis, making it possible to introduce control measures before outbreaks become more widespread.

Bearing in mind that in the Terms of Reference, diseases of the former OIE list A should be addressed, there are some notable diseases which seem to have escaped the attention of PACE, for example: PPR, Capripox, African horse sickness and Newcastle disease.

On the other hand, the epidemio-surveillance networks developed by PACE have undoubtedly played an important role in early warning of the emerging transboundary disease HPAI and PACE's role in assisting countries to develop contingency plans and emergency preparedness has been of particular use with regard to HPAI.

Rinderpest

A major achievement of PACE is that, having built on the results of the previous project PARC, continued activity, particularly in southern Sudan and the Somali Ecosystem, has produced the result that rinderpest is almost certainly extinct.

PACE has achieved this through collaboration with international agencies, like FAO, to develop and use novel epidemio-surveillance methods, including participatory techniques, and novel animal health delivery systems, such as use of CAHWs through NGOs, particularly in conflict areas.

However, proof is required of final eradication of rinderpest and SERECU is well placed to undertake this and provide emergency preparedness in the face of a re-emergence of rinderpest in the Somali Ecosystem, provided that funding is secured in time prior to February 2007 when its current budget closes.

Outside the Somali Ecosystem, all PACE countries are pursuing, or have completed, the OIE Pathway for international recognition of freedom from rinderpest infection.

It can be concluded that the development of epidemio-surveillance capacity across the 30 PACE countries has provided a springboard for further activity with regard to transboundary disease control in the region. Targeted control of transboundary diseases of economic, public health and trade significance can have an important role not only in poverty alleviation but also in wealth creation at national and rural levels through increased availability of healthy livestock, some of which could be eligible for export as live animals or animal products.

Control and early warning of transboundary diseases such as FMD and CBPP is not just of individual and national importance, but is also of regional and global concern. Consider how transboundary diseases have made intercontinental leaps during the last five years – FMD from South East Asia to Northern Britain and HPAI from Asia to Europe to Africa. Prior to that, AHS and ASF have jumped from Africa to Europe and RVF jumped from Africa to the Arabian Peninsula. Thus, it is in everybody's interest to control these diseases, not just affected countries.

The following activities have had limited success:

- Development of national policies for economically affordable strategies for the control of priority diseases developed.
- Strategies developed for gaining greater access to livestock markets.

Institutional linkages of PACE and farmer awareness

The strategy adopted by PACE to strengthen linkages between farmers and official veterinary services and heighten farmer awareness of the benefits of veterinary services, whether in the hands of private or government staff, was both relevant to, and successful in achieving the project's objectives. Within the PACE programme there have been some good examples of best practice e.g. production of communication and extension materials. Unfortunately the documentation and archiving of this material has been weak.

Institutional Communication

In contrast to the success of PACE in facilitating institutional linkages at national level within PACE countries, the progress of institutional communication at international level has been less successful. This appears to have arisen from the decision to combine Communication with Data Management into the "Information and Communication Technology Unit" which has resulted in a downgrading of the importance of institutional communication.

Training

The extensive training at all levels by PACE has impacted significantly on the project's progress. However, greater attention should have been paid to assessing training needs and devising a training strategy early in the project to ensure that all training requirements were covered. A notable weakness in the programme was the training of national co-ordinators and accountants in management and EDF procedures.

The privatisation of veterinary services

PACE has attempted to strengthen the role of the private sector in the delivery of veterinary services by two main strategies as follows:

- Facilitation of the modernisation of veterinary legislation to provide a good legal framework for the delivery of veterinary services by the private sector.
- Relevant training e.g. on simple business management.

The principal target groups for the above have been private veterinarians and CAHWs working under veterinary supervision.

It is concluded that PACE has been both efficient and effective in the implementation of the relevant activities in support of the privatisation processes although the long term effects of legislation amendments will only be realised once legislation has been implemented and been operational for a few years. Thus it is difficult at this stage in development to draw conclusions on how these amendments will support the private veterinary sector in the future. In reality, however, the future for private veterinarians is more influenced by national policies rather than legislation and thus their future is good in Mali where privatisation is encouraged, but poor in Burkina Faso where it is discouraged. In general, however, the

tendency of national policies is in favour of privatisation, provided there are resources available to support these policies.

There is a continuing role for CAHWs in certain circumstances e.g. in conflict areas and remote pastoral areas where conventional veterinary services do not operate. However it is concluded that in other circumstances they may have a limited future e.g. it was reported that in Southern Sudan in the aftermath of the peace agreement, they are being phased out and replaced by Government veterinary staff. A similar situation was reported in Tanzania.

In some countries, PACE continued to facilitate a PARC scheme in which guaranteed funds were made available as security against bank loans and credit to private veterinarians to assist them in the development of their veterinary practices. The results have been very variable, but it is concluded that such a scheme can operate successfully provided they are strictly managed and monitored with appropriate conditions attached to the loans or credit.

Support to veterinary schools

PACE's attempts to support and collaborate with veterinary schools had limited success. The introduction of a teaching module on communication into the EISMV in Senegal was not adopted permanently in the curriculum. Meetings with Deans of Veterinary Schools were held but did not lead to anything concrete.

Laboratory diagnostic services

PACE's support to the Regional and National Veterinary Laboratories has impacted positively and significantly on the capacity of these laboratories to perform the laboratory tests required for the diagnosis and surveillance of rinderpest and some other important epizootic diseases (with the exception of the Muguga Regional Laboratory). Unfortunately within PACE countries in West Africa, there is under-utilisation of the diagnostic capacity available.

PANVAC

PANVAC is now entering into a new phase with a substantive Director and budgetary provisions provided by AU. This process has been carried out efficiently, and PACE has contributed very significantly to the revitalisation of PANVAC. It is hoped that PANVAC will now provide the services that it failed to provide earlier (See 4.6.7 above).

Vaccine emergency banks

PACE has made a significant contribution to emergency preparedness against rinderpest through establishment of vaccine banks in Gaborone, Botswana and Lokichoggio, Kenya.

Management and Finance

The PACE Programme is one of AU-IBAR's projects but the sustainability of PACE activity is difficult for AU-IBAR because of its limited finance resources which make it difficult to support a Programme like PACE which has a very substantial budget.

The Regional Co-ordination Unit in Bamako needed more Technical Assistants and more qualified support staff.

PACE aims at building capacity of Veterinary Services which that must be well integrated within the country's administration. National Co-ordinators are chosen by the relevant

Ministry and should be properly trained in EDF management procedures. Accountants have to be selected from the open market with the assistance of the NAOs and the local EC Delegations. Nevertheless, in some PACE countries, an Administrator would have probably performed better than a Veterinarian with no knowledge in administration and finance and difficulties to understand EDF management procedures. In the PACE National Programme, other Veterinarians are part of the national team and could be advisors to the Administrator. In some EC funded technical Programmes, administrators are selected and the specialists in the team are used as advisors, all working for the Administration.

8.2 Major Recommendations

8.2.1 General

Management and Finance

There is a need to increase capacity and human resources in relation to Administration and Finance and a more integrated system in the management of the Regional Technical Assistants.

There is a large number of days left for short-term consultants under the GTZ contract and this can be used to provide assistance to PACE National Co-ordinators to complete activities and close their Programme Estimates.

AU-IBAR needs to be institutionally strengthened, including management and organisational development, in order to become more operational.

Training and Communication

It is strongly recommended that training and communication at all levels are properly planned and implemented from the outset. The outputs should be properly documented and archived, both as hard copies and, where appropriate, electronically so that examples of best practice can be made available to all countries.

Communication should be recognised as an important and essential component to ensure that visibility within the international community is satisfactory. Important outputs such as the annual reports should be bilingual, of high quality, and promptly published and distributed. Similarly, websites should be regularly updated and of suitable high quality.

Privatisation

PARC and PACE have demonstrated that the availability of guarantee funds as security for bank loans and credit can operate successfully provided there is proper management with appropriate conditions. In situations where there is a role for private veterinarians, a similar scheme should operate. Special consideration should be given to those countries that did not benefit from PARC or PACE guarantee funds, namely Ghana, Togo, Benin, Congo, Cameroon, Gabon and CAR.

Legislation

Evaluation and if necessary, updating of veterinary legislation is an essential component. In view of the extensive updating of legislation under PACE which will take a few years before the benefits can be properly evaluated, it is recommended that the legislation should be reviewed prior to introducing further amendments.

Sharing of best practice between countries

Steps should be taken to record examples of best practice within countries that can be used by other countries. These could include:

- Training and communication materials.
- Effective tutors and trainers.
- Laboratory expertise.
- Epidemiological (including wildlife) expertise.
- Data management expertise.

In this context, consideration should be given to introducing the concept of "twinning" countries, an approach that has operated successfully in the recently expanded European Union. Thus a country that has demonstrated best practice could be twinned with a country that has been less successful in that area. Examples of best practice demonstrated in PACE are as follows:

- Guinea - Integration of livestock farmers with veterinary services in the delivery of veterinary services.
- Senegal – Epidemio-surveillance.
- Kenya – Management of guaranteed funds as security against bank loans to private veterinarians.
- CAR - Communication (newsletter, radio, posters) and training tools (exhaustive handbook for epidemiosurveillance agents).

Research

The research component of PACE is producing results, but more effort should be made to transfer results of research to the field. For example, though Pirbright Laboratory has candidate recombinant marker vaccines for rinderpest control, testing of them in cattle has not been facilitated and their further development has been halted. Useful results from CBPP research have not yet been introduced to CBPP control strategy and more could be done through written and oral presentation of research findings to PACE and other stakeholders.

Information Systems and Epidemio-surveillance

The ARIS information system is establishing its value but requires further development.

Potential for additional Animal Health activities to follow PACE

Rinderpest is undoubtedly a very serious transboundary disease, and its final eradication will have immeasurable benefits to not only cattle owners of Africa, but to many other regions of the world in which rinderpest continued to be a major disease hazard until quite recently. Consideration of control of other transboundary diseases will pose new, and in many respects, more difficult challenges to that involved in rinderpest control and eventual eradication. The following could be considered the most important transboundary diseases in PACE countries today:

Cattle	–	CBPP, FMD, Rift Valley Fever
Sheep and goats	–	PPR, Rift Valley fever, FMD

Pigs	–	African swine fever
Horses	–	African horse sickness
Poultry	–	HPAI, Newcastle disease

The systems of performance indicators and evaluation criteria which have been developed are useful tools to monitor the effectiveness of the epidemio-surveillance networks. A mechanism should be found for their sustainability. This may be achieved through more purpose driven surveillance, with specific objectives which are derived from results of economic analysis showing the potential for positive financial benefits which can provide the incentives decision makers need to support the systems financially.

Economics and marketing

Selection of candidate transboundary diseases for targeted surveillance should take into consideration how their control or eradication will affect market access for livestock commodities to other African countries and to international markets.

The economic importance of the diseases should be assessed at various levels: livestock keeper, domestic, and regional and international export.

Areas for future donor support

The evaluators fully recommend further donor support to consolidate and build on the achievements of PACE. Areas proposed for future project support are:

- Further development of regional reference laboratories. In this respect the performance of Muguga has been criticised. Given the need for regional reference laboratories, it is proposed that, rather than discontinue its use, an assessment should be made of the feasibility of taking it over as a regional IBAR laboratory, similar to what has happened with PANVAC.

- A future donor support should, as well as disease control, have the following elements:

  - Socio-economics – to explore local disease avoidance and coping strategies used by livestock keepers.

  - Trade and marketing – for development of marketing strategies, particularly from disease free zones and quarantines.

  - Wildlife - Increased use of sentinel wildlife for surveillance.

  - Policy formulation – based on risk analysis and HACCP; with expertise on ISOs, SPS agreement, OIE Terrestrial Animal Health Code and Codex Alimentarius.

  - Vaccines - development of improved vaccines for CBPP, RVF and ASF.

  - SERECU - It is imperative that SERECU continues its activities with regard to surveillance activities in the Somali Ecosystem to ensure confirmation of final eradication of rinderpest and to ensure emergency preparedness in case there is a re-emergence of the disease.

Since there may be disruption of epidemio-surveillance activities between closure of PACE and the start of a new project, resources allocated to the epidemio-surveillance of HPAI should also be used to maintain general active surveillance.

As there are differences in livestock systems and potential markets between the different regions, it is proposed that future regional programmes should be based alongside the soon to be established animal health centres in the economic regions. Thus, there can be more focussed projects which take into consideration particular disease and public health threats and regional opportunities for trade in livestock and their products.

Proposed Activities to Follow PACE

The PACE project, besides delivering the last rites to rinderpest in Africa, has developed animal disease epidemio-surveillance systems with electronic data storage and processing, to 30 countries across western, central and eastern Africa. These have already been tested by the emergence of HPAI in some of these countries. Parts of these surveillance systems are fully sustainable, particularly the passive surveillance components, more vulnerable are the active surveillance mechanisms developed by PACE, which are particularly needed by many countries to continue along the OIE pathway to declaration of freedom from rinderpest infection. Also vulnerable after PACE is the information system (ARIS) which the project introduced. If it is to be useful and sustainable, it needs further development and support.

While it may be argued that countries in the regions covered by PACE should now be fully responsible for maintenance of their epidemio-surveillance systems, this is not correct with regard to transboundary animal diseases. Major transboundary diseases such as CBPP and FMD may have only a limited economic impact in some of the countries where they are endemic. However, they are a threat to other countries in the region which may not have the diseases present in an endemic situation so that their impact is much greater when outbreaks occur, and also their actual or potential trade in livestock may be threatened by these diseases (eg. CBPP is absent from Senegal and Western Guinea but endemic in neighbouring countries). It is noteworthy, however, that an agreement is in process between ministers of Senegal, Mauritania and Mali to mitigate the spread of CBPP within these countries. Essentially transhumant animals crossing borders should have vaccination certificates, especially for CBPP. Mauritania is a major supplier of small ruminants to Senegal and Côte d'Ivoire as they are very popular. There is also movement between Mali and Mauritania. The potential for these diseases to spread between continents (recent examples are FMD and HPAI) mean that their continued existence also presents a global threat. The continued functioning of these epidemio-surveillance systems to provide on time and updated information on where the transboundary diseases persist, and to give early warning of emerging transboundary diseases, is therefore very important.

While PACE did much to introduce epidemio-surveillance systems and to monitor their performance and effectiveness, with some exceptions (rinderpest, HPAI, and to a lesser extent CBPP), less was achieved with regard to control and eradication of transboundary diseases. If the epidemio-surveillance systems are to be sustainable, and Governments are to continue to appreciate their usefulness, the next steps are to harness them to appropriate disease control and eradication programmes which are adequately funded.

Many lessons have been learned from PARC and PACE, and these should be taken advantage of by incorporation into any future PACE programme. These are summarised as follows:

- Management and Finance
    - Ensure adequate capacity and human resources for programme administration and finance.
    - Ensure AU/IBAR has adequate management and organisational development for effective operation.
- Training and Communication
    - Training and communication should be properly planned and implemented from the outset.
    - Training and communication outputs should be properly documented and archived.
- Privatisation and legislation
    - Where there is a role for private veterinarians, properly managed loan schemes should be put in place.
    - Veterinary legislation should be evaluated prior to any further updating.
- Sharing of best practice between countries

  Steps should be taken to ensure examples of best practice can be shared between countries.
    - "Twinning" of countries should be considered.
- Research
    - More effort should be made to transfer results of research to the field.
- Information Systems and Epidemio-surveillance
    - The ARIS information system should continue to be developed.

Regional Approach and the Role of the new Regional Animal Health Centres

There are major differences between regions with regard to their animal disease control priorities. For example, eastern Africa needs to develop export markets for its livestock and their products. This it cannot do from areas where certain transboundary diseases are present. On the other hand, western African producers of livestock already have a large market for livestock and livestock products, particularly in coastal urban centres such as Lagos, which currently does not impose restrictions with regard to presence of disease. Here, the more important issue may be to improve rural livelihoods of livestock keepers through improving the health, and hence the productivity of their livestock. Also, with regard to livestock production, transboundary diseases can produce devastating epidemics (such as African Swine Fever in coastal areas of some countries) and their control is an important reduction of risk to rural livelihoods.

It is recommended, therefore, that follow up activities to PACE should be targeted to a more

given to the role of the 4 Regional Animal Health Centres to be established by IBAR/FAO/ OIE in Nairobi, Bamako, Tunis and Gaborone covering identified Economic Zones of Africa. These Centres will, if they receive adequate funding and resources, be able to provide much of the technical, administrative and logistic support that would be prerequisites to any follow-up activities to PACE.

The Memorandum of Understanding (MoU) signed on 25 April 2006 between AU-IBAR, OIE and FAO to establish Regional Animal Health Centres in the four identified Economic Zones is primarily to co-ordinate and harmonise strategies for the monitoring and evaluation of HPAI control. Thus, the following areas of intervention are particularly with respect to HPAI

The MoU proposes that OIE will:

- Audit and evaluate national veterinary services to help Governments and donor agencies target their investments in the field of animal health.
- Disseminate animal health information and train national OIE delegates and their staff to become focal points for information on animal health, wildlife diseases, and veterinary medicinal products and vaccines.
- Assist in improving animal disease notification systems.
- Assist with harmonisation of disease surveillance and control.

FAO will:

- Investigate the role of migratory birds in epidemiology of HPAI;
- Train in laboratory diagnosis and support regional networks of laboratories and epidemiological surveillance teams.
- Network and exchange data and information.
- Support feasibility studies for national and regional investment programmes.
- Provide technical assistance at Centre and national level to support development of national and regional HPAI control strategies.

AU-IBAR will:

- Strengthen epidemiological surveillance in poultry and wild birds, including in countries and zones not yet affected by HPAI.
- Monitor and evaluate control measures (stamping out and vaccination campaigns.
- Support the development of national and regional HPAI control strategies.
- Harmonise emergency response plans.
- Validate applications from countries seeking emergency funding from AU-IBAR.
- Support the development of control programmes for transboundary diseases, co-ordinate them, and assist with provision of the necessary training.
- Monitor regional laboratory networks and assist with training in diagnosis and quality assurance.
- Provide a technical secretariat responsible for HPAI prevention and co-ordination of responses in the face of outbreaks.
- Support the setting up of emergency response funds aimed at assisting countries in managing HPAI crises.

Together, the three organisations will:

- Define HPAI control strategies.
- Prepare investment programmes for sustainable strengthening of national veterinary services.
- Prepare a regional avian influenza control programme.

It is the considered view of the Final Evaluation Mission team that the Regional Animal Health Centres should not be restricted to strengthening the control of avian influenza. Infectious disease priorities fluctuate and although there is no question of the current importance of avian influenza, the situation could be radically different in a few years time. It is recommended that the Centre should be designed and staffed to support the control of major livestock infectious diseases in general, with immediate priority being given to avian influenza.

Considering the different animal health priorities of East Africa and those of Central and West Africa, the Final Evaluation Mission recommends that as a follow-up to PACE support should be given to development of the animal health programmes of the Regional Animal Health Centres of Nairobi and Bamako. Such support would:

- contribute significantly to the strengthening and development of the Centres;
- broaden their commitment to control and eradication of other important transboundary diseases, in addition to HPAI;
- assist with further strengthening AU-IBAR capacity to co-ordinate animal health activities in the regions covered by the PACE programme.

n preparation for such an initiative it will be important to identify in each area those diseases vhich:

- Are of actual and potential trade significance.
- Reduce, or threaten rural livelihoods.
- Are of actual or potential public health significance.

t is recommended that for each of the two Regions to be covered by the proposed Regional nimal Health Centres for Western/Central Africa and Eastern Africa a feasibility study is arried out to:

- Identify target diseases that are significant in terms of their impact as outlined in the categories above.
- Assess which of these diseases could be subjected to a programme of control/eradication by the strengthened veterinary services within the PACE countries, in particular taking advantage of the improved epidemio-surveillance networks.
- Recommend which disease(s) should be targeted for a regional control/eradication programme.
- Propose a work programme for a project in each region which will continue the functioning of the epidemio-surveillance systems and undertake a programme of control/eradication of the targeted diseases: the programme should be designed to complement and harmonise with the activities of the proposed new Regional Animal Health Centres[4].

carrying out the feasibility study, as well as giving due consideration to the improvements livelihoods and increasing potential for trade, any approved disease control programme ill also continue to support the epidemio-surveillance systems that have been developed by ACE and give them validity as has been demonstrated recently with the outbreak of

Areas of expertise required through technical assistance to support the new initiative might include, for example:

- Veterinary epidemiology.
- Livestock economics and socio-economics.
- Livestock Marketing including WTO SPS regulations.
- Communications skills.
- Data management skills.
- Project management skills.

ANNEX 1

TERMS OF REFERENCE – FINAL EVALUATION

ANNEX 1: TERMS OF REFERENCE – FINAL EVALUATION

EUROPEAID/ 119860/C/SV/multi

LOT N° 1: RURAL DEVELOPMENT AND FOOD SECURITY REQUEST N°

TERMS OF REFERENCE

FINAL EVALUATION OF THE PAN-AFRICAN PROGRAMME FOR THE CONTROL OF EPIZOOTICS (PACE)

Programme Title	**PAN-AFRICAN PROGRAMME FOR THE CONTROL OF EPIZOOTICS (PACE)**
Programme No.	EC Financing Agreement REG/5007/05 Accounting numbers: 7 ACP RPR 744; 7 ACP RPR 745; 8 ACP TPS 032; 8 ACP TPS 033; 8 ACP ROC 009; 9 ACP RPR 32
Grant Value	Euro 77 million (total for programme)
Start / End	November 1999 – February 2007

1. BACKGROUND

The Pan African Programme for the Control of Epizootics (PACE) is funded under a Financing Agreement signed in August 1999 between the European Union and the Organization of African Unity (now African Union). The Financing Agreement which went into force on November 1st, 1999, was completed on 31st October 2004, but was extended until February 28th, 2007 by a rider signed on October 5, 2004. Since November 1st, 2004, the PACE programme has moved into its extension phase.

The initial budget of the PACE programme was 72 million Euros. During the extension phase, it was raised to 77 million Euros; two-third of that amount is allocated to activities conducted by the national components.

A number of European Member States have made additional financial contribution to the EDF resources of PACE, namely France, Italy, UK, Switzerland amongst which the biggest component was the Community Based and Participatory Epidemiology Project (CAPE), funded by DFID. The CAPE component came to an end in September 2004.

A mid term review of the programme was carried out at the end of 2002, while several monitoring missions where undertaken by experts appointed by the EC in the framework of the programmes/projects' monitoring exercise at both central programme co-ordination unit and countries level. The programme, which was initially planned to cover 32 Sub-Saharan

African countries, was reduced to 30 countries in East, West and Central Africa. (Liberia and Sierra Leone could not benefit from the funding because of the European embargo).

The Inter-African Bureau for Animal Resources (IBAR) of the African Union (AU/IBAR) plays the role of Regional Authorising Officer. The RAO is backed up by A Policy Committee, composed by representatives of the relevant institutions and donors active in the livestock sector in Africa and responsible for devising animal health policies in the continent. Moreover, the Programme is guided by an Advisory Committee (AC) composed by a maximum of 7 members representing organisations involved in the programme, under the presidency of the OIE.

The AC is responsible for ensuring that activities at all levels are in line with the programme's objectives, approaches and with the policy guidelines adopted. To date one meeting of the Policy Committee (March 2002) and 12 meetings of the Advisory Committee have been held.

During the implementation of the programme several changes in both the organisational structure and the technical assistance set-up have occurred. The initial structure was based on the following:

- ✓ Programme Co-ordination Unit (PCU), based in Nairobi.
- ✓ Regional Co-ordination Units (RCU), based in Nairobi for Eastern Africa, and Bamako for Western and Central Africa.
- ✓ Epidemiology Unit, with 3 sub-units based in:
  - ➢ Nairobi, for the area where Rinderpest is still endemic;
  - ➢ Bamako, for the countries of Western and Central Africa; and
  - ➢ N'Djamena, for monitoring the Western sanitary cordon protecting West Africa against possible reintroduction of Rinderpest from East Africa.
- ✓ Communication Unit, based in Nairobi with a sub-office in Bamako.
- ✓ Socio-Economics Unit, based in Nairobi.
- ✓ Veterinary Legislation and Privatisation Unit, based in Nairobi and linking with the Community Animal Participatory Epidemiology (CAPE) Unit, also based in Nairobi and dealing mainly with community animal health workers (CAWS), now called para-veterinarians, related issues.
- ✓ Data Management Unit, based in Nairobi.
- ✓ Financial Unit, based in Nairobi.

In the framework of PACE, a contract with the consortium GTZ-IS/SATEC was concluded for the provision of technical assistance to the programme. Five technical assistants were deployed in Eastern African to assist selected PACE countries – namely Tanzania, Uganda, Kenya, Ethiopia and Sudan. In addition three technical assistants responsible for Western and Central African Countries were assigned to Bamako. One TA was later appointed to assist PACE Chad.

During the extension phase, taking into consideration the achievements of the programme at country level and the imminent phasing out of the programme, the structure of the programme was reviewed and amended:

- ✓ The Epidemiology sub-unit of N'Djamena was suppressed, as the sanitary cordon was removed, following the recommendation of the Mid Term Review.
- ✓ The Communication Unit was merged with the Data Management Unit, creating the Information and Communication Unit.
- ✓ The Socio-Economics unit was absorbed by the Epidemiology Unit.
- ✓ The Veterinary Legislation and Privatisation Unit and CAPE ceased their activities.
- ✓ The posts for national technical assistants – with the exception of Sudan- provided under the service contract with the consortium GTZ-IS/SATEC were replaced by Regional Technical Assistants: 3 (lately 2) Regional TAs to cover West and Central Africa based in Bamako and one Regional TA to cover East Africa based in Nairobi.

The overall objective of the PACE programme is to relieve the poverty of those involved in the livestock-farming sector (producers, service providers and consumers) in Africa by improving animal productivity, trade and food security.

The specific objectives/purpose of the programme is:

- To strengthen national and regional capabilities to assess the technical and economic aspects of animal diseases, and to generate appropriate programmes for their control.
- To safeguard animal health in Africa against other major epizootic diseases.

During the extension phase the four initial expected results, as indicated in the original FA, is shown below:

- ✓ In each participating country animal epidemiology services (information, diagnostics and follow-up) and services for the control of major diseases will be reinforced.
- ✓ Greater privatisation of veterinary services and public/private-sector linkage in this field.
- ✓ Rinderpest will be eradicated from Africa and there will be greater control over other epizootic diseases, in particular Contagious Bovine Pleuropneumonia (CBPP).
- ✓ A sustainable system will be set up at Pan-African level to co-ordinate national animal health systems and the fight against epizootic diseases.

These have been re-focused into two result areas:

- Reinforcement of the national capacities, in particular with regard to monitoring of the animal diseases, to support a better formulation of the policies of control of the priority diseases and a better access to cattle markets.
- Eradication of Rinderpest in a verifiable way and control of other epizootics.

The activities at national level varied according to the countries' specific needs, but always fell under four headings:

I. Enhanced national capacity for analysis and action in the fields of epidemiology, socio-economics of animal health, communication and project management.

II. Improved accessibility and distribution of veterinary services and medicines, based on developing a harmonised approach to the privatisation process and coherent links between public services and private operators.

III. Fight against Rinderpest, based on ceasing vaccinations as soon as possible and on providing support to countries to fulfil the OIE pathway i.e. declaration of freedom from disease, active search for the disease, strengthening of the surveillance network and setting up a rapid response system.

IV. Improved control of other epizootic diseases, particularly CBPP, by drawing up epidemiological and socio-economic data enabling the states concerned to assess the advisability of future campaigns based on full cost recovery. Emergency funds have been earmarked for provision of Rinderpest and Avian Influenza Vaccines.

Taking into consideration the consequences of the de-centralisation and de-concentration process undertaken by the European Commission, the rider to the Financing Agreement extending the programme to February 2007, introduced some changes on the procedure for the approval of the National Programme Estimates (PE) giving more responsibility for the national authorities based on the technical and budgetary framework document prepared by the PCU in Nairobi. However, final approval of the National PE has to given by the PCU and the lead Delegation in Nairobi, the latter being responsible for "opening" of the national commitments.

2. DESCRIPTION OF THE ASSIGNMENT

Global objective

The principal mandate of the final evaluation mission (FEM) is primarily intended to provide an external evaluation of the programme progress, achievements and impacts measured against the programme's Logical Framework (LF). Moreover, based on the lessons learnt, the FEM is requested to indicate not only areas/options where continued support is necessary and advisable as a direct result of programme activities, but also in the larger context of addressing constraints for livestock development in the region.

Specific objective(s)

The FEM will analyse and assess the programme's achievements, impact, linkages etc. against the original objectives, plans and contract documents as laid down in the Financing Agreement, LF, Technical Assistance Contracts, Global Work Plans and Framework documents; in particular:

- Analyse the coherence and the relevance of the objectives of the PACE programme.
- Analyse the results, impact and sustainability of the programme.
- Analyse and assess the overall programme design, administration/organisation and implementation.

- Analyse the strategy adopted during the project implementation.

- Formulate recommendations on how lessons learnt, experiences and best practices from the implementation of the PACE programme can be replicated in other similar programmes and advise on identified gaps and/or need for follow–up activities taking into account thematic and geographical priorities.

Requested services

The final evaluation of the PACE programme is expected to assess the achievements of the programme after almost 7 years of implementation and its impact and sustainability at all concerned levels, National, Regional and Institutional. Moreover, the FEM will suggest ways of using the lesson learnt to fine-tune the implementation procedures for suitable future similar interventions. The FEM should therefore undertake in-depth field evaluations of a selected sample of national projects (being Kenya, Mali, Senegal, Cameroon, Sudan and Uganda; however subject to final confirmation). The outcome of this exercise shall reflect the strengths and weaknesses of the current implementation approach. It should also suggest on ways of enforcing the observed strengths as well as improving on the weaknesses. The observed weaknesses and strengths should be explicitly linked to the various stages of project cycle management.

Methodology, tools and approaches

The FEM will collect relevant (primary) data and information as a way of making an independent assessment but will also make reference to the Mid-term Review (MTR) document to avoid duplication. While the aim of the evaluation is to assess success or failure of the Programme, equal attention will be paid to how lessons, experiences and best practices can be replicated and improved in the context of future similar programmes.

The evaluation shall be undertaken in close collaboration with the PACE staff. Where appropriate the evaluation may use the Participatory Evaluation Techniques (PET), which will give the project stakeholders and beneficiaries an opportunity to play a key role and contribute actively in the evaluation exercise. It is considered important that there is a sense of ownership of the process by all the parties concerned.

The FEM will use the European Commission's Project Cycle Management (PCM) Integrated Approach and Logical Framework method to analyse the results in implementation of the Programme. In order to fulfil the objectives of the evaluation mission, the following issues will be given particular attention by the team:

Project preparation and design

The FEM will assess whether the programme, as laid down in the Financing Agreement, was relevant in whole or in parts to the needs and priorities of the development of the livestock sector in Africa. Furthermore the team will perform the following activities:

- Review the project design phase (in particular the process which led to the PACE program), and assess the management and impact of the transition phase PARC-PACE.

- Evaluate whether the inputs proposed were appropriate to meet the various objectives. In particular the management and financial structures for planning, implementing and monitoring the various projects.

- Evaluate whether the design and planning of the project components was valid in order to attain project purpose and whether project purpose has contributed significantly to the overall project objectives.

- Evaluate whether the recommendations of the MTR have been taken into account and incorporated where appropriate.

- Evaluate the rationale underlying the design of PACE as a regional program. This may entail an assessment of the social, institutional and economic environment of the programme.

- Assess the complementarities and coherence between the EDF funded and the other donors funded activities directly related to PACE.

- Assess the potential for PACE to play a facilitating role in the financing of additional activities in the field of animal health in Sub-Saharan Africa.

Relevance of the project

The FEM will assess the extent to which the objectives of the programme are consistent with beneficiaries' requirements, country needs, global priorities and partners' and donors' policies. More in detail they will:

- Assess the internal coherence of the log frame (relationship between goals, purpose and results stipulated in the log frame). Particular attention will be paid to the coherence between the log frame of the financing agreement, and the working log frames designed during the various phases of the PACE implementation.

- Evaluate whether the specific objectives were realistic and relevant to the overall objectives, government policy and problems to be solved.

- Assess the relevance of the objectives pursued (at a regional and national levels) in the context of the trend of livestock development in Africa. Particular attention will be paid to the changes related to trade of livestock products worldwide.

- Assess the Institutional linkages of PACE (OIE, FAO, IAEA, Pirbright and CIRAD World Reference Laboratories, etc) and assess how they affected the relevance of the programme.

Efficiency and effectiveness

The efficiency and effectiveness of the project will be assessed in the light of the specific objectives of PACE. The FEM will measure how economically resources/inputs (funds, expertise, time, etc.) have been converted into results, and to which extent the programme's objectives have been achieved, or are expected to be achieved, taking into account their relative importance. In more detail the FEM will:

- Evaluate the implementation of the programme at all levels, inclusive the newly established Somali Ecosystem Rinderpest Eradication Co-ordination Unit (SERECU) and identify factors that might have affected it.

- Evaluate the level of integration of activities of PACE in addressing its results.

- Assess the management of financial aspects at the level of the PCU, Nairobi.

- Evaluate the relationships between the activities and the results of PACE achieved so far, taking into consideration the resources mobilized.

- Assess the results and outputs achieved by the programme.

Keeping in mind that the expected impacts of PACE lay primarily at the National PACE country projects, which received the largest share of financial resources, the FEM will

- Evaluate the balance of attention devoted to the regional components and to the national projects by the Co-ordination Units and the PACE Common Services. Assess the support provided to the PACE countries.

- Assess (on a sample basis) the results achieved at country level, in particular the establishment of ESS.

- Assess the financial allocation to the PACE country projects, the management of these amounts by the PCU, and the proposed mechanism for reallocation of financial envelopes/drawing rights.

- Assess the financial management of the national PACE projects, and in particular whether the mechanism adopted ensures the smoothest financing of operations together with an adequate financial monitoring and control.

The following issues pertinent to the PACE Co-ordination and Common Services will be addressed, as they affect both their activities and the national PACE projects:

- Analyse to which extend the strategies established by the various PACE services have, contributed to fulfilling the programme objectives, and if that is the case how they have been translated into project activities/work plans.

- Assess the internal monitoring and evaluation mechanisms (both for regional activities and country projects), as well as the timeliness and adequacy of project reporting.

- Evaluate the contribution and role of the Advisory Committee and Policy Committee to PACE.

- Asses whether the contributions of Scientific Research Institutes (CIRAD and AHI/Pirbright) and International Organisations (IAEA, OIE, FAO), financed by separate grants and contract agreements under PACE, have achieved the objectives.

- Assess the performance of the technical assistance provided by the various consultants assigned (GTZ, SATEC, AGRER, CIRAD etc) as well as the causes and implications of the replacements of the technical assistants.

The FEM will also evaluate the appropriateness efficiency and efficacy of the organisation, management systems and reporting channels set up by PACE.

The following issues will in particular be assessed:

- Institutional capacity of AU/IBAR to co-ordinate the PACE programme (including assessment if co-ordination role conflicts with regional authorising functions)

- Mechanism to assess project staff performance.

- Mechanisms to co-ordinate various donors inputs: was the PACE project management given the necessary tools and skills to run a multi donor funded project?

Expected Impact and sustainability

The FEM will assess the impact of the PACE Programme, i.e. the positive and negative, primary and secondary long-term effects produced by the programme, directly or indirectly, intended or unintended. As a related matter, the FEM will also assess the sustainability of the results and actions undertaken so far, namely i) the continuation of benefits from the programme after major development assistance has been completed, ii) the probability of continued long-term benefits, and iii) the resilience to risk of the net benefit flows over time. In particular the FEM will:

- Assess whether the specific objectives are likely to be achieved, and if not identify the reasons impeding the achievements.

- Assess the problems to be resolved which are being addressed, and eventually assess problems that have emerged out of the implementation of the programme.

- Assess the expected impact of the project at the Institutional level on the one hand, and at field level on the other hand.

- Evaluate the measures aimed at ensuring the sustainability of the results of PACE at the national level. Among the accompanying measures listed in the financing agreement, the issue of the progressive contribution to the running costs of the epidemiological surveillance networks will be given particular attention.

- Evaluate the sustainability of the results directly affecting AU/IBAR. Particular attention will be paid to the future of AU/IBAR within the AU structure, and the related staffing and capacity after the end of PACE.

- Assess the support given to external structures (PANVAC, OIE Regional Office for Africa) and their future strategies.

Conclusions and Recommendations

The principal mandate of the evaluation mission is to assess the achievements of the programme. However, based on the lessons learnt, the FEM would also be expected to indicate not only areas/options where continued support is necessary and advisable as a direct result of programme activities, but also in the larger context of addressing constraints for livestock development in the Pan-African region. This should be indicated in the form of draft Terms of Reference for a full feasibility study that could determine the nature of further EC support.

The conclusions of the final evaluation may take into consideration aspects concerning other projects closely linked to PACE. The conclusions should lead to the recommendations. The lessons learned conclusions and recommendations shall appear as separate sections.

The PACE Programme will make available to the final evaluation mission the following documents (tentative and initial list):

- Financing Agreement and its Rider approving the extension phase
- PACE Common Services draft Global Plan
- PACE Manual of procedures
- Advisory Committee meetings reports
- PACE Country Global plans and Work programmes/cost estimates
- PACE consolidated Work Programmes
- Reports from the annual co-ordination meetings
- ST experts and mission reports
- Mid-term Review (MTR) and EC monitoring reports
- PACE SERECU project document

3. EXPERT PROFILES

The mission will be composed of a team of three Experts.

Team Leader, Veterinarian – Livestock Economist (CAT 1)

The Team Leader should be a senior veterinarian or livestock economist with a post graduate degree and with at least 20 years overall experience (Cat 1) and at least 15 years specific experience in the main fields of public veterinary services (policy, planning, legislation, disease control, veterinary public health) and programme management. He/she should have comprehensive knowledge and experience from veterinary programmes in developing countries, preferably in Africa. He/she will have previous experience as a team leader and be familiar with EC rules, procedures and formats, especially in relation to evaluations and the PMC approach. Fluency in English and French required.

As Team Leader he/she will, *inter alia*, be responsible for:

- ✓ Overall aspects and guidance of the mission as referred to in the objectives and plan of work of the mission and for the production of inception, draft and final reports.
- ✓ Supervising the work of individual experts in the team, as he/she will be directly responsible to the EC for the overall quality and consistency of all reports and documents produced by the mission.
- ✓ Carrying out any other task as required by the client, in order to fulfil the objectives of the ToRs of the mission.

As veterinary/livestock economist expert he/she will be responsible for:

- ✓ Overall assessment of the sustainability, efficiency and cost effectiveness of the programme.
- ✓ Assessment of the overall improvement in animal health and cost effectiveness of reducing the risk of animal diseases.
- ✓ Assessment of the institutional capacity building interventions and their relevance and cost-effectiveness.

Veterinary Epidemiologist (CAT 2)

The epidemiology expert will have a degree in veterinary science or related science and at least 10 years proven experience in designing and implementing interventions aimed at

also have experience of animal disease information systems. Experience in sub-Saharan Africa will be an advantage.

Specifically the expert's duties will include, but not be limited to:

- ✓ Assessment of the disease surveillance systems developed.
- ✓ Assessment of the information systems developed.
- ✓ Assessment of the interventions against Rinderpest and other major infectious diseases.

The epidemiology expert will work in close collaboration with and under the supervision of the Team Leader. The expert must be proficient in English or French with a working knowledge in either of the other languages.

Veterinary Services Expert (CAT 2)

The Veterinary Services Expert shall have a degree in veterinary sciences or in a related field relevant to the expertise required. He/she will have at least 10 years proven experience in privatisation of veterinary services and management/delivery of veterinary services to livestock owners preferably in developing countries. He/she should also have proven experience in grassroots organisations in the livestock sector. Experience in sub-Saharan Africa will be an advantage.

The expert's duties will include, but not be limited to:

- ✓ Assessment of the relevance of the training offered by the project.
- ✓ Assessment of the role of the private sector.
- ✓ Assessment of the programme's contribution to the legislative framework and subsequent implementation.
- ✓ Assessment of the programme's contribution to expanding awareness of animal health services and benefits.
- ✓ Assessment of the programme's contribution to improving the linkages between central institutions and livestock farmers.

The Veterinary Services Expert will work in close collaboration with and under the supervision of the Team Leader. Proficiency in French or English with a working knowledge in either of the other languages will be required

4. LOCATION AND DURATION

The final evaluation mission should *start not later than 1 June 2006.* The period of performance is as follows:

Team leader: 70 days (56 days in the field and 14 days for reporting);

Other experts: 63 days each (56 days in the field and 7 days for reporting).

ıe to time constraints for this project, the experts will be required to work over weekends as to complete the field work within 8 calendar weeks and the reporting within 2 calendar eks.

ıe mission team will be mostly based in Nairobi, at IBAR premises. To conduct this signment, the consultants will undertake the following visits:

- AU/IBAR office in Nairobi, where the team will be based and where the evaluation mission could meet the RAO, the Programme Management Team and the staff of the Common Services and SERECU.

- PACE Co-ordination Unit in Bamako.

- The Delegation of the EC in Kenya.

- A sample of PACE countries representative of the different 'batches' of national projects in the three regions (In addition to Kenya and Mali the following sample countries have been selected subject to final confirmation: Senegal, Cameroon, Sudan and Uganda), where the national administration and the EC Delegation will be interviewed.

addition, the reviewers will liaise with the OIE in Paris and the FAO in Rome. Provision is de for visits - if deemed necessary - to the organisations HQs in Europe, as well as for report paration in country of residence.

should be noted that the PACE Co-ordination Unit is planning an Annual Co-ordination eting for all the National PACE Countries third week of June 2006 (Week 25) in Mombassa, ing the evaluation team an opportunity to meet and discuss with all the National PACE Co-inators.

REPORTING

eption report

e *Inception report* will be regarded as a working document and its format must reflect this uirement. It should be a maximum 10 pages. The report will be based on a dossier nprising Financing Proposals, Financing Agreements, various Programme Estimates and orts as well as preliminary discussions with the Regional Authorising Officer (RAO), the EC ıd Delegation in Nairobi, staff of the IBAR Office, the PCU, the Regional Co-ordinators and er key project personnel met.

le Memoire

the end of the field assignment an *Aide Memoire* with the preliminary findings and ommendations will be prepared and submitted in 10 hard copies incl. one electronic version Word format to the PCU as well as three hard copies to the EC Delegation. The Aide moire will be presented and discussed at a one day workshop in Nairobi at the end of the l work.

al report

Final Report should follow as closely as possible the format of evaluation reports ording to the European Union lay out. A self contained summery of not more than 5 es with fully cross referenced findings and recommendations should be included in the

regional and national components. The report must have a list of content incl. Annexes, list of people met, list of all used acronyms, maps and pictures.

The *Annexes* should include: ToR for the Evaluation, list of persons, beneficiaries and organisations met, documents consulted, summery of projects visited, other relevant annexes, maps and pictures.

In addition, a short summery of one page using the Standard DAC Format for evaluation reports summaries should be produced.

The *Draft Final Report* shall be submitted in twenty (20) copies (2 to the RAO, 11 to the PACE Co-ordinator, and 7 to the EC lead Delegation) .The main text of the Draft Report shall be in English with an executive summary in French and English (not more than 5 pages each).

The Draft Final Report must be submitted within 2 weeks after completion of the fieldwork.

The *Final Report* shall be presented within 2 weeks of receipt of written comments from the client and other interested parties. Such comments must be submitted to the consultants 4 weeks after the presentation of the Draft Final Report, by the RAO, the Commission or the PACE Co-ordinator. If no comments are received the contractor may resubmit the Draft Final Report as the Final Report.

The *Final Report* shall be submitted in fifty (50) copies (25 copies in English and 25 copies in French) and distributed as follows: 2 copies to the RAO, 15 to the PACE Co-ordinator and 33 to the EC lead Delegation. Appendices may be presented in any of the two languages. The Final Report must also be provided in an electronic version on a CD-ROM in Word and PDF format. (Two copies for the PCU and two copies for the Delegation.) *The Final Report shall be submitted not later than 30 September 2006.*

6. ADMINISTRATIVE INFORMATION

Other authorized items to foresee under 'Reimbursable'

Provisions for inter-African flights for visiting selected PACE programmes and the Regional Co-ordination office for West and Central Africa in Bamako.

Provision for internal air tickets for attending the 6th PACE Annual Co-ordination meeting, which will be held in the second half of June 2006 in Mombassa, Kenya. Provisions for visits to the FAO and OIE HQs.

ANNEX 2

CURRICULA VITAE OF TEAM

ANNEX 2: CURRICULA VITAE OF TEAM

Proposed role in the project: Team Leader/Economist
Category: I

1. **Family name:** FUSILIER
2. **First names:** Patrick Louis
3. **Date of birth:** 5 February 1951
4. **Nationality:** French
5. **Civil status:** Married
6. **Education:**

Institution [Date from - Date to]	Degree(s) or Diploma(s) obtained:
Vanderbilt University, U.S.A. 1977-79	Ph.D. in Political Science Specialisation: Economic Development
University of Paris France, 1970-76	D.E.A. 3éme Cycle (Master's Degree) Diplôme d'Etudes Approfondies, Economic Sociology

7. **Language skills:** Indicate competence on a scale of 1 to 5 (1 - excellent; 5 - basic)

Language	Reading	Speaking	Writing
French	1	1	1
English	1	1	1
Spanish	1	2	2
Russian	3	3	3

8. **Membership of professional bodies:** American Political Science Association; The World Association of Former United Nations Interns and Fellows, Inc. (WAFUNIF)
9. **Other skills:** (e.g. Computer literacy, etc.) Fully computer literate
10. **Present position:** Associate consultant of Agrisystems Ltd
11. **Years within the firm:** Associate since 2006
12. **Key qualifications:** (Relevant to the assignment)

- Qualified at doctorate level in Political Science with specialisation in Economic Development.
- 25 years experience of technical assistance and consulting work for economic development in Africa, Asia and Eastern Europe.
- Broad background in agricultural and rural development – for example, has provided consulting inputs to programmes such as Support to Rural Development Institutional Reform in Madagascar, the Agricultural Reform Implementation Support Project in Russia, Support to the Agricultural Research Institute in Burundi, Development of an Agricultural Development Agency in Central African Republic and preparation of Gabon's Agricultural Master Plan.
- Experience of veterinary and livestock programmes gained through involvement in missions such as: Evaluation of the EC funded Strengthening Livestock Services and Extension Activities Project in Laos; Mid-Term Evaluation of the AfDB Livestock Development Project Phase II in Gabon and Management Support to the Ministry of Animal Production, Water and Forestry in Madagascar.
- Skilled in project evaluation and review work. Since 1990 has undertaken 12 major end-of-project evaluations and mid-term reviews primarily of EC funded projects. Fully familiar with EC project cycle management and logical framework.
- Experienced in all aspects of financial and economic project analysis (cash flows, rates of return, financial statements, sensitivity analysis etc) including cost-effectiveness analysis.
- Has carried out assignments in 15 sub-Saharan African countries in West, Eastern and Southern Africa.
- Is bilingual in English and French and has excellent written and spoken communication skills.

13. **Specific experience in the region:**

Country	Date from - to	Country	Date from - to	Country	Date from - to
Burkina Faso	2000	Kenya	2000	Rwanda	1999
Burundi	1983, 84, 01	Mali	1986	Tanzania	2000
Chad	1986	Namibia	2005	Uganda	1999, 2000
Gabon	1994	Niger	1986	Zaire	1990

14. **Professional experience**

Date from - to	Location	Company	Position	Description
08-12/ 2005	Botswana, South Africa, Namibia and Mozambique	Resources and Logistics	Private Sector Development Expert	Mid-Term Evaluation of the EU-Southern African Development Community (SADC) Investment Promotion Programme - European Commission
03-04/ 2005	Tunisia	Resources and Logistics	Expert in Privatisation	Mid-Term Review of the Privatisation Programme – Recommendations to improve procedures in the process of privatisation– European Commission
09-10/2004; 12/2004-01/2005	Tunisia	HTSPE	Team Leader – SME Development Expert	Design a new Tool to evaluate the SME Upgrading Programme to be used by the Office of SME Upgrading (Ministry of Industry) – Drafting of a new Evaluation Approach to analyse Effectiveness, Impact and Efficiency of the SME Upgrading Programme – Setting up of an effective monitoring system - Recommendations to use new performance based monitoring and evaluation systems to track the results of the business services provided in the enterprises – European Commission
10-11/ 2004	Morocco	Resources and Logistics	SME Development Expert	Final Evaluation of the Private Sector Development Programme in Morocco (Euro Maroc Entreprise) – EC
02-08/ 2004	Beirut – Lebanon	Thales Engineering & Consulting	Director – Euro-Lebanese Centre for Industrial Modernisation	Support to Private Sector Development – Manage the Activities, Staff and Budget – Co-ordinate and oversee the range of Support Programmes to SMEs under the various components – Design a Strategic View of Industrial and SME Development in Lebanon – Participation to the Country Strategy Paper – European Commission
09-11/ 2003	Egypt	Transtec, JICA, Pacific Consultants International	Private Sector Development Expert	Cairo Transport Authority Commercialisation and Privatisation Study – Organisational and Institutional Reform of the Cairo Transport Authority.
07-08/ 2003	Tunisia	Resources and Logistics	SME Development Expert	Final Evaluation of the Private Sector Development Programme in Tunisia (Euro Tunisie Entreprise) - EC
05-06/ 2003	Morocco – Northern Provinces	Agriconsulting	Team Leader – Economist	Development Strategy of the Northern Provinces – Support to the Programming of European Union Funds – Recommendations for budgetary support approaches and monitoring – Identification of projects and project programming – EC
03-05/ 2003	Egypt	Transtec, JICA , Pacific Consultants International,	Private Sector Development Expert	Cairo Transport Authority Commercialisation and Privatisation Study – Commercial/ Finance/Management/ Privatisation Analysis.
11/2002-02/2003	Morocco	GFA, GTZ	Team Leader/ Management Expert	Study on the Development of Consulting Firms in Management and Industrial Engineering – Strategy for the Promotion and the Development of Moroccan Consulting Firms – Short and Medium Term Action Plan.
02-06/ 2002	Morocco	Schlumbergersema	SME Development Expert	Mid-Term Review of the Private Sector Development Programme in Morocco (Euro Maroc Entreprise) – Recommendations to use new performance based monitoring and evaluation systems to track the results of the business services provided by the consultants in the enterprises – EC
10-12/ 2001	Lao People's Democratic Republic	Natural Resources International	Institutional Development Specialist	Evaluation of the Strengthening Livestock Services and Extension Activities Project – Recommendations for a new project monitoring – EC
08-09/ 2001	Burundi	WM – Global Partners	Team Leader – Expert in Administration and Finance	Evaluation of the Support Unit to the National Authorising Officer – Recommendations to strengthen M&E systems and activities a new effective monitoring system – Recommendations to strengthen role of the NAO as interface and support to line ministries or agencies – EC
01-04/ 2001	Madagascar	NRI/ International Projects Partnership Consultants	Expert in Institutional Reform	Support to the Rural Development Institutional Reform.

11/ 2000	Nigeria, Kenya, Uganda, Tanzania, Zambia, Zimbabwe, South Africa and Botswana	World Ort Union	Financial Economist	Strengthening of African Development Finance Institutions (DFI) – Drafting of a Strategy for the African Development Bank to improve access to information on DFI and contribute the development of enhanced capacities for the programming implantation and monitoring of ADB interventions in DFI – African Development Bank
)7/ 2000	Bosnia	Pacific Consultants International/ Transtec	Industry Specialist	Industrial Growth Assessment in the framework of the National Transport Master Plan – Participation to the Transport Sector Strategy Paper – Japanese International Co-operation Agency (JICA)
)2/ 2000	Burkina Faso	S.R.K. Consulting	Financial Analyst	Financial Audit and Evaluation of the Poura Gold Mine Rehabilitation – European Commission
12/ 1999	Uganda	Agristudio	Team Leader – Economist	Evaluation of the Silk Sector Development Project – Recommendations for a new effective monitoring system – EC
11/ 1999	Burkina Faso	Agrer	Economist	Analysis and Evaluation of fourteen Projects to be transferred to the new Belgian Technical Assistance Structure – Design of a new unit as central responsibility for monitoring, initiator of actions and follow-up
10/ 1999	Burkina Faso	Transtec	Financial Analyst	Drafting of a Financial Reporting System for the Financial Monitoring of the State-Owned Enterprises – Recommendations for a financial-physical management and reporting entity – World Bank
)7/ 1999	Rwanda	GFA International Management Consulting	Team Leader – Economist	Evaluation, Organisational, Financial and Technical Audit of the Tea Sector (STABEX Funds) – Recommendations for new budgetary support approaches and monitoring – EC
)5/ 1999	Egypt	Sofreco	Team Leader/ Privatisation Specialist	Privatisation of two enterprises (tanneries).
'1/ 1998	Tunisia	Belgroma	Management Expert in SMEs and Industrial Development	Economic Development of the Northern Region – Tell Septentrional.
)2/ 1998	Russia	Mundi Consulting (Bern, Switzerland)	Financial and Management Expert	Identification Mission: Promotion of SMEs – Management of two Investment Funds – Financing proposal – Swiss Development Agency
)6 & 09-1997	Bangladesh	Deutsche Forst Consult	Team Leader – Economist	Technical Assistance to Bangladesh Bureau of Statistics: Financial Proposal - Preparation and Appraisal Mission – European Commission
)4/ 1997	Moscow – Russia	Sorca Management Consultants	Financial Analyst	Mid-Term Review of the Agricultural Reform Implementation Support Project – Recommendations fro improving the production of project estimates, indicators and budgetary approach – World Bank
995-997	Azerbaijan	PriceWaterouse/ Transtec	Project Director	Privatisation of large enterprises – NPO Bakkonditioner Restructuring and Privatisation Project.
2/ 1994	Burundi	Belgroma	Financial & Management Expert	Management Audit of the Agricultural Research Institute – Institut des Sciences Agronomiques (ISABU).
7/ 1994	Gabon	Belgroma	Financial Analyst	Mid-Term Review of the Livestock Development Project Phase II – Recommendations for a new effective monitoring system – African Development Bank
4/ 1994	Russia	Techniplan	Financial & Legal Expert	Short and Medium Term TA in the Milk, Meat, Fresh Produce, Wholesale and Retail Distribution in Kaluga Region.
993-994	Central African Republic	AGRER	Economist	Feasibility Study of an Agricultural Development Agency.
992-993	Russia	Carl Bro International	Project Manager	Mead Sector Study and Master Plan.

10/ 1992	Lao PDR	Danagro	Team Leader - Economist	Economic & Financial Evaluation of Luang Prabang Micro-Projects, Define a new budgetary support approach – EC
1991- 1992	Lao PDR	Coopers & Lybrand	Project Manager	Technical Assistance for Supervision of State-Owned Enterprises and Private Sector Development.
05/ 1991	Conakry – Guinea	Coopers & Lybrand	Economist	Study of Regulatory Policies and Systems of major Public Services – Design and execution of appropriate training programmes to monitor the efficiency of the regulatory policies and systems of major Public Services – World Bank
03/ 1991	Madagascar	Coopers & Lybrand	Team Leader	Management Support to the Ministry of Animal Production (Breeding and Fishing) and Water and Forestry.
/1989- /1990	Zaïre	Coopers & Lybrand	Director	Management of Coopers and Lybrand in Zaïre. - Management Audito f the "Zairo – Marocaine de transport". - Organisation of Z.P.R.A (Zaïre Protestant Relief Agency) into an Import – Export Enterprise capable of making profits which can be tumed over to the Church of Christ. - Preparation of a Management Procedures Manual of Ofida. - External Audit of the overall Management Situation within S.N.E.L (National Electric Company). - Organisation of the Administrative and Financial Management Department (Compagnie Sucrière) - Preparation of a Manual for Control System and Financial Reporting of USAID Foreign Exchange Grant and Local Currency Counterpart Fund Programs - Preparation of the Financial Contract between the State and the National Electric Company (S.N.E.L)
10/ 1988	P R Congo	Price Waterhouse	Management Expert	Study on the Reorganisation of the TransCongo Communications Agency (A.T.C.). Congo-Ocean railroad; Autonomous Port of Pointe Noire; Navigable waterways of Ports and River Transport
/1987- /1988	Burundi	ActionAid	Project Director	Administrative and Financial Reorganisation – Restructuring of the Project.
02/ 1987	Guinea Conakry	Sodeteg	Economist	Survey on the Construction and Public Works Sector.
11/ 1986	Mali, Niger and Chad	Price Waterhouse	Team Leader – Financial and Management Expert	Evaluation of the League's Drought Relief Operation (October 1984 – October 1986) – Provide expertise to the League of Red Cross and Red Crescent National Societies to analyse the strengths and weaknesses of the Drought Relief Operation – League of Red Cross and Red Crescent National Societies
09/ 1986	Burundi	Colombi Schmutz Dorthe	Economist	Feasibility Study of the Songa – Mutambara Road.
07/ 1986	P R Congo	BCEOM	Economist	Preparation of the Third IBRD Road Project.
05/ 1986	Malawi	Société Générale pour l'Industrie	Financial Expert	Economic and Financial Study of a Project to supply Water to six Centres.
03/ 1986	Madagascar	Urbaplan	Economist	Urban Development Project of the City of Mahajanga.
11/ 1985	Burkina Faso	Société Générale pour l'Industrie	Financial Expert	Economic and Financial Study of a Project to supply Water to four Centres.
07/ 1985	Turkey	Inbucon	Economist	Urban Development Project in Cukurova Region.
03/ 1985	Andapa Basin-Madagascar	Price Waterhouse	Management Expert	Agricultural Development of the Andapa Basin – Study and Evaluation of the Management and Organisation of a large State-Owned Enterprise (Rice) – European Development Fund
10/ 1984	Burundi	Urbaplan	Economist	Retrospective Impact Evaluation of the Bujumbura – Nyanza Lac Road Project – African Development Bank
9/1984- 2/1984	Burundi	Urbaplan	Economist	Study of the Development of Housing for the Low Income Population of Bujumbura (Musaga) – Drafting of a complete file for a Donors Conference– UNCHS – United Nations (Nairobi, Kenya)

04/ 1983	Cameroon	Urbaplan/ KfW	Economist	Economic Feasibility Study of the Ring Road (385 km).
09/ 1982	Gabon	Urbaplan	Economist	Gabon's Agricultural Master Scheme, Province of Haut Ogooué.
12/ 1981	Switzerland	Battelle – Geneva Research Centre	Socio-Economist Researcher	Regional and Urban Planning – Socio-Political Forecast – Libyan Administration Restructuring Project.
1980-1981	France	S.M.T AMERON	Export Department Consultant	Responsible for Exports to Asian Market – Relations with Banks and Credit Organisations (Product: Epoxy resin pipes).
12/ 1979	Amiens – France	Regional Studies Organisation for Regional Planning of Picardie Region	Economist	Economic and Social Analysis of the Amiens Area Employment Pool – Implementation of a consistent Industrial Policy among the different Social Partners
08/ 1978	New York City – U.S.A.	UN Headquarters	Economic Development Researcher	Research on Development Strategies (Centre for Development Planning, Projections and Policies)
06/ 1978	USA/ Latin America	Vanderbilt University	Economic Development Researcher	Field Study of Opportunities for Increasing Agricultural Production in the Regions of Arequipa, Puno and Cuzco in Peru – Comparative Study conducted in the field on the Implementation of Agrarian Reforms in Argentina, Bolivia, Brazil, Chile, Columbia, Ecuador, Paraguay and Peru.
1977-1979	USA	Vanderbilt University	Assistant Professor (1) Consultant in Economic Development (2)	Teaching Social, Economic and Political Issues in Latin American Countries (1) – Responsible for Studies and Research on Economic Development Problems of Southern States (USA) and focusing on Opportunities for Establishment of New Industries (2).
1975-1976	USA	University of Wisconsin	Research – Consultant in Agricultural Development	Studies and Research on the Development of the Agricultural Economic Sector in the Middle West in order to Increase Production Distribution Capacities, of Cereals in particular.
1974-1975	Tahiti	Lycée of Papeete (1) Officer of Scientific Research in the Overseas Territories (2)	Teacher in Economics (1); Researcher (2)	Teaching in Economics (2); Research on Economic Development of the Islands in French Polynesia.

5. **Other relevant information** (e.g., Publications)

CURRICULUM VITAE

Proposed role in the project: Veterinary Epidemiologist
Category: II

1. **Family name:** **WILSMORE**
2. **First names:** Anthony (Tony) John
3. **Date of birth:** 23 July 1939
4. **Nationality:** British
5. **Civil status:** Married
6. **Education:**

Institution [Date from - Date to]	Degree(s) or Diploma(s) obtained:
Bristol Veterinary School, 10/1957-06/1962	Bachelor of Veterinary Science
Royal Veterinary College, London, 09/969-10/1970	Postgraduate Diploma in Animal Health
Royal Veterinary College, London, 06/1969- 06/1983	PhD "Epidemiology of perinatal mortality in small ruminants"

7. **Language skills:** Indicate competence on a scale of 1 to 5 (1 - excellent; 5 - basic)

Language	Reading	Speaking	Writing
English	1	1	1
Arabic	3	2	3
French	4	3	4
Swahili	4	2	4

8. **Membership of professional bodies:** Royal College of Veterinary Surgeons; British Veterinary Association; Veterinary Research Club (past president); Association of Veterinary Teachers and Research Workers; Sheep Veterinary Soc.; Goat Veterinary Soc.
9. **Other skills:** (e.g. Computer literacy, etc.) Computer literate
10. **Present position:** Director of PAN Livestock Services Limited, Honorary Senior Research Fellow at the Veterinary Epidemiology and Economics Research Unit (VEERU) at The University of Reading
11. **Years within the firm:** 12 years
12. **Key qualifications:** (Relevant to the assignment)

- Dr Wilsmore has a degree in veterinary science and a doctorate in veterinary epidemiology.
- He has forty years experience in designing and implementing interventions aimed at reducing the spread of epidemic animal diseases. He has extensive knowledge of surveillance, information systems and control measures for Rinderpest and other major infectious diseases.
- He has undertaken a series of long-term assignments in developing countries including in Kenya (District Veterinary Officer), Ethiopia (team leader on a veterinary investigation and rinderpest control programme), Yemen (team leader of a veterinary services project), Eritrea (co-ordination of an animal disease investigation and epidemiology project) and Kosovo (team leader/ epidemiologist on a project to strengthen veterinary services). He has also undertaken numerous short-term consulting assignments to plan or evaluate animal disease control programmes.
- Has carried out assignments on EC funded veterinary programmes in Kosovo, Jordan, Uganda and India and is familiar with EC project cycle management and logical framework.
- In Sub-Saharan Africa has worked in Botswana, Djibouti, Eritrea, Ethiopia, Kenya, Nigeria, Somalia, Tanzania and Uganda.
- He is fluent in English and has a working knowledge of French. He has excellent verbal and written communication skills.

13. **Specific experience in the region:**

Country	Date from - to	Country	Date from - to	Country	Date from - to
Botswana	1996-00	Ethiopia	2006, 2001, 2000, 1970-75	Somalia	2001
Djibouti	2001	Kenya	2001, 1996, 1994, 1986-87	Tanzania	1988
Eritrea	1995-97	Nigeria	1994	Uganda	2000

Professional experience

ate from - Date to	Location	Company	Position	Description
006- 2007	Kosovo	EAR, J van Lancker	Consultant multiple visits	Epidemiology consultant and regular backstopping of Project Strengthening Kosovo Veterinary Services Phase II
006	UK	DEFRA VEERU	Team Leader	Leading a group to conduct a qualitative veterinary risk assessment of the introduction of rabies into the UK
006	Ethiopia	NUFFIC, PAN	Consultant	Develop the curricula and arrange for postgraduate training of staff at 2 new veterinary schools, at Gondar and Jijiga.
005-2006	Jordan	EU MEDA, NICO	Consultant multiple visits	Assess the animal health situation and provide advice on epidemiological principles for the development of a national sampling and surveillance programme and develop surveillance programmes for priority diseases such as avian influenza, FMD, PPR, brucellosis, Rift Valley, Bluetongue, BSE
005	UK	DEFRA VEERU	Consultant	Review of the international evidence for an interrelationship between cattle and wildlife in the transmission of bovine tuberculosis
2005	Macedonia	EAR, PAN	Veterinary legislation adviser	Veterinary legislation consultant to an EAR Project for Structural and Legal Reform of the Ministry of Agriculture
2005	UK	DEFRA, VEERU	Team Leader	Assisting DEFRA to reduce its regulatory burden in the fields of animal health and welfare
2003- 2004	Kosovo	EAR, RDP	Team Leader	Managing an EAR Project for Strengthening Kosovo Veterinary Services
2002-2003	UK	DEFRA VEERU	Team Leader	Modelling economic effects of different FMD control strategies. Managed multidisciplinary teams from England, Scotland, Wales
2001-2002	UK	DEFRA, PAN Livestock Services Ltd	Consultant	Worked as a Temporary Veterinary Inspector investigating outbreak reports of Foot-and-mouth disease. Was the focal point for the University of Reading for information to the media on the FMD outbreak. Participated in a Science Audit of the Veterinary Laboratories Agency.
2001	Somalia, Ethiopia, Kenya, Djibouti	FAO	Team Leader	Project Preparation Mission for Support for Livestock Exports from Northern Somalia and the sub-region. The Project involved individual animal identification; movement control, inspection and certification of livestock for export trade of live cattle and sheep / goats.
2000	Uganda	EU	Consultant	Conducted the final evaluation for EU of the Pan African Rinderpest Campaign II Project.
2000	Ethiopia	AfDB	Consultant	Worked on National Livestock Development Project to study the epidemiology and economic effects of PPR and CCPP and devised strategy for their cost effective control.
1999	Tajikistan	Aga Khan Foundation	Consultant	Visited Gorno Badakshan for 1 month to make recommendations for disease control in cattle and small ruminants in the valleys, and yaks and small ruminants in the high plateaux of the Himalayan Pamir range.
1999-2000	Botswana	DFID	Team Leader	Led the animal health team on the Environmental Impact Assessment of Veterinary Fences in Ngamiland, as well as assessing animal health control, focused on the environmental, economic and socio-economic effects of the fences and also their effect on wildlife.
1997	Jordan	DFID	Consultant Veterinary specialist	Review assessing the DFID-funded livestock component of the Badia Research and Development Programme which assisted pastoralists in arid regions of the country.

1996-2000	Botswana	DFID	Consultant	Conducted an investigation into the production and disease constraints of small ruminants in Botswana for DAHP and DFID in Botswana.
1996	Lebanon, Oman, UAE, Yemen and Saudi Arabia	FAO	Consultant	Investigated the rinderpest disease situation in the Arabian Peninsular and proposed a strategy for regional control.
1996	Kenya	ILRI DFID	Consultant	Advised the International Livestock Research Institute, Kabete, and participated in the internally commissioned external review of the animal health improvement programme. Visited Kenya Agricultural Research Institute to advise on the development of the DFID assisted Epidemiology and Socio-Economics Division.
1994	Iraq, Jordan, Lebanon, Kuwait and Turkey	FAO	Consultant	Advised on the Middle East regional animal health and production programme (MINEADEP).
1997-98	India	EU	Veterinary Epidemiologist & Team Leader	One-year assignment as Training and Information Specialist in the Strengthening of Veterinary Services for Livestock Disease Control Project.
1995-97	Eritrea	DFID	Project Co-ordinator and Vet. Investigation Officer	Project Co-ordinator and Vet. Investigation Officer in the Animal Disease Investigation and Epidemiology Project. Established an epidemiology Unit and assisted in the rehabilitation of Cent. Vet. Lab. and development of an animal disease survey, investigation & diagnostic service.
1994	Nigeria		Consultant	Visited the Federal Ministry of Agriculture and Natural Resources to design a livestock information system for Third Livestock Development Project.
1994	Kenya	DFID	Consultant	Visited the Kenya Agricultural Research Institute to assist in the establishment of the DFID supported Epidemiology and Socio-economics Division.
1988	Tanzania	DFID	Consultant	Advised on the development and rehabilitation of animal health services.
1986-87	Kenya		Consultant	Disease investigation at the Goat and Sheep Project, Marimanti.
1986	Sudan	DFID	Consultant	Advisor on animal health and production in Southern Sudan
1983	Syria		Advisor	International Centre for Agricultural Research in Dry Areas (ICARDA), Aleppo. Conducted investigations into lamb losses in Northern Syria.
1979-93	UK	Royal Veterinary College	Senior Lecturer earlier Research Assistant	Senior Lecturer and Director of MSc course in Animal Health. In addition to research and teaching activities numerous consultancies were undertaken. Up to 1983 Research Assistant and up to 1985 Lecturer
1975-79	Yemen	DFID	Team Leader	Team Leader of the British Veterinary Team (DFID) and acting Director of Vet. Services for some of the time.
1970-75	Ethiopia	DFID	Veterinarian	Veterinarian with the British Veterinary Team (DFID) working on veterinary investigation and Rinderpest control and team leader of group working on JP15.
1965-69	Kenya	DFID	District Vet. Officer	District Veterinary Officer in Western. Kenya. Posts were Kitale and Eldoret.
1962-64	UK		Veterinarian	Veterinary practitioner, Hertfordshire

5. **Other relevant information** (e.g., Publications) Scientific communications: over 60 peer-reviewed and other publications.

CURRICULUM VITAE

Proposed role in the project: Veterinary Services Expert
Category: II

1. **Family name:** **HUNTER**
2. **First names:** Archibald George
3. **Date of birth:** 9 September 1944
4. **Nationality:** British
5. **Civil status:** Married
6. **Education:**

Institution [Date from - Date to]	Degree(s) or Diploma(s) obtained:
Edinburgh University, 1962-1967	Bachelor of Veterinary Medicine and Surgery
Edinburgh University, 1968-1969	Diploma in Tropical Veterinary Medicine
UK Meat Hygiene Service, 2002	Certificate – Official Veterinary Surgeon

7. **Language skills:** Indicate competence on a scale of 1 to 5 (1 - excellent; 5 - basic)

Language	Reading	Speaking	Writing
English	1	1	1
French	3	2	2
Arabic	4	3	5
Vietnamese	5	5	5

8. **Membership of professional bodies:** Royal College of Veterinary Surgeons; British Veterinary Association; British Veterinary Wildlife Association; Association of Veterinary Teachers and Research Workers; Fellow of Royal Society of Tropical Medicine and Hygiene; Edinburgh based NGO, VET AID; Tropical Agricultural Association
9. **Other skills:** (e.g. Computer literacy, etc.) Computer literate
10. **Present position:** Associate consultant of Agrisystems Ltd
11. **Years within the firm:** **Associated since 1988**
12. **Key qualifications:** (Relevant to the assignment)

- Qualified with degree in veterinary medicine and post-graduate diploma in Tropical Veterinary Medicine.
- 35 years professional experience of veterinary work in the UK and in developing countries.
- Worked as a District Veterinary Officer in Botswana where he was involved in the management and delivery of veterinary services to livestock owners. Later managed a Veterinary Services Project in Yemen with responsibility for the development of veterinary services for the country. Since 1980 has combined training, research and consulting work. This had included consulting assignments for the strengthening of veterinary services in countries such as Lithuania, Vietnam, Bolivia, Somalia and Sri Lanka where he has been involved in advising on a wide range of areas including the training of veterinarians (public and private sector), institutional issues (linkage between central institutions and livestock farmers), privatisation issues, strengthening technical operations, and initiatives to expand awareness of animal health.

  Throughout his career has always had close linkage with grassroots (local veterinarians, pastoralist groups, livestock associations, etc.). He is familiar with EU/international veterinary legislation.

  He is fluent in English and has a good command of the French language.

3. **Specific experience in the region:**

Country	Date from - Date to
Somalia	1994, 1991, 1988
Zambia	1987
Swaziland	1984
Botswana	1984, 1969-72
Tanzania	1982

. **Professional experience**

ate from - Date to	Location	Company	Position	Description
5/2005- ate	UK	Scottish Agricultural Colleges Veterinary Division	Veterinary Investigation Officer	Edinburgh and Dumfries Disease Surveillance Centres. Carry out laboratory based veterinary diagnosis and disease investigation.
2/2004- 3/2005	Lithuania	Scottish Agricultural Colleges	Residential Twinning Adviser	State Food and Veterinary Service, Vilnius, Lithuania. EU Twinning Project. Management and co-ordination of EU Twinning Project "Strengthening of Control of Infectious Diseases of Animals".
4/2002- 0/2003	UK	Scottish Veterinary Investigation Service	Veterinary Investigation Officer	Carry out laboratory based veterinary diagnosis and disease investigation. (part-time)
002	St Helena	DFID	Project Advisor, Supervisor	Co-management of DFID Veterinary Training Project in St Helena. Advised, supervised and managed project from Edinburgh University
3/2001- 5/2001	UK	Ministry of Agriculture, Food and Fisheries	Temporary Veterinary Inspector (TVI)	Participation in foot and mouth disease emergency; appointed on special contract to train other TVIs on emergency procedures.
4/1982- 1/2002	UK	Centre for Tropical Veterinary Medicine	Senior Lecturer in Tropical Animal Health	Responsible for running MSc courses in Tropical Animal Health and supervision of research by post-graduate students. Specialised in training in veterinary diagnostics, veterinary laboratory management, protozoal and vector-borne diseases of livestock and wildlife diseases.
6/1998- 8/2000	Vietnam	EC Veterinary Services Project	Human Resources Adviser	Responsible for developing training plans for Vietnam veterinary services and implementation of some specific training activities.
996-1998	Bolivia	Edinburgh University	Project Co-ordinator	Project co-ordinator of scientific link programme between the National Diagnostic Laboratory of Bolivia (LIDIVET) and the Centre for Tropical Veterinary Medicine of Edinburgh University.
9/1997	Vietnam	SAC	Consultant	Project feasibility visit for EU Project "Strengthening of Veterinary Services". Recruited by SAC to carry out liaison visits
2/1996	Bolivia	ODA	Project Co-ordinator/Advisor	Advised ODA on feasibility of a proposed professional veterinary partnership programme between LIDIVET and a UK Institution.
3-04/ 995	India	VETAID	Veterinary Advisor	Review VETAID Livestock Project. Poverty relief project to facilitate dairy development in a selected Tamil Nadu community.
7-08/ 992	Somalia	VETAID	Veterinary Advisor	Review VETAID Animal Health Project. Post Conflict Rehabilitation Programme in Northern Somalia focusing on veterinary assistance to pastoralists
7/1992	Sri Lanka	FAO	Veterinary Advisor	Participated in FAO/UNDP project to support Veterinary School in Peradiniya. Veterinary academic advisor on mission to review and advise on this training project.
8-08/ 991	Somalia	VETAID	Veterinary Advisor	Feasibility mission prior to implementation of VETAID/ACTIONAID relief and rehabilitation project.
2/1990	Sri Lanka	AsDB	Veterinary Advisor	Programme to expand and develop the country's diagnostic laboratory services. Reviewed and recommended future programme of this project.
3-04/ 989	Peru, Bolivia, Paraguay & Brazil	ODA	Veterinary Advisor	Advised on training needs and implementation of training for local staff working in these four projects.

)3/1989	Peru	ODA	Veterinary Consultant	Carried out mid-term review of ODA veterinary laboratory projects in Arequipa Peru and Cajamarca.
)8-09/ 988	Somalia	Macdonald Agricultural Services	Veterinary Advisor	Carried out end of project review of World Bank "Bay Region Rural Integrated Development Project". Reviewed the project's veterinary component.
0/1987	Yemen	FAO	Veterinary Advisor	Participated in FAO mission to review livestock sector and advise on eradication of rinderpest and the development of the country's veterinary services.
)6/1987	Zambia	British Council	Visiting Lecturer	Visiting lecturer to Lusaka Veterinary Faculty.
0/1984	Swaziland	Edinburgh University	Veterinary Advisor	Liaison visit to Veterinary Department to organise Edinburgh University research team conducting research on ticks and tick-borne diseases of livestock in Swaziland.
)9-10/ 984	Botswana	Edinburgh University	Senior Lecturer	University adviser of Edinburgh University veterinary research team.
)7-08/ 983	Somalia	Huntings Technical Services	Veterinary Advisor	Advised on veterinary component of the Bay Regional Agricultural Development project (mid term review). Part of Multidisciplinary team.
)7/1982	Tanzania	British Council	Lecturer	Visiting Lecturer from Edinburgh University to Sokoine University Veterinary Faculty.
)3/1977-)4/1980	Yemen	ODA	Project Manager	Veterinary Services Project. Initially responsible for setting up veterinary diagnostic services for the country. Promoted to project manage with responsibility for overall development of veterinary services.
1/1972- 4/1982	UK	Scottish Veterinary Investigation Service	Veterinary Investigation Officer	Carried out laboratory based veterinary diagnosis and disease investigation.
1/1969- 4/1972	Botswana	Botswana Department of Animal Health	District Veterinary Officer	Responsible for delivery of veterinary services in 2 districts of Botswana.
7/1967- 0/1972	UK	Various private veterinary practices	Veterinary practitioner	Veterinary clinical practice in large and small domestic animals. (07/1967-07/1968; 07/1969-10/1969; 04/1972-10/1972).

5. **Other relevant information** (e.g., Publications)

- **Books –**
  1. Hunter, A. "La santé animale – agricultures tropicales en poche", published by CIRAD, CTA, Karthala.
     Volume 1. Généralités (2006)
     Volume 2. Descriptif des maladies (In Press)
  2. **Hunter, A. G. (2000). "Handbook on animal diseases" (in Vietnamese), published by SVSV Project, Hanoi, printed by HQ Vision Co. Ltd., Hanoi.**
  3. Hunter, A. G. The Tropical Agriculturalist – Animal Health; Published by CTA and Macmillan.
     Volume I – General Principles (1996).
     Volume II – Specific Diseases (1994).
  4. Hunter, A, G. – Editor (1991). "Biotechnology in Livestock in Developing Countries – Proceedings of Conference in Edinburgh University, September 1989; Published by the Centre for Tropical Veterinary Medicine. 518 pp.
- Papers presented - **19 scientific papers at various British and international conferences, symposia etc. on various aspects of animal health**
- Papers published - **28 papers published in refereed journals on various aspects of veterinary medicine**
- Reports
- **21 technical reports on consultancies, missions etc.**
- **Quarterly and Monthly Reports for EU Twinning Project, "Strengthening of Control of Infectious Diseases of Animals".**

ANNEX 3

LIST OF PEOPLE MET DURING MISSION

ANNEX 3: LIST OF PEOPLE MET DURING MISSION

AU/IBAR	
Dr Modibo Tiémoko Traoré	Head of Mission, Director, AU/IBAR
Jean Jacques Delate	Veterinarian, Advisor to the Director
PACE, Nairobi	
Dr Rene Bessin	Programme Co-ordinator
Dr Andrea Massarelli	Main Technical Assistant
Alex Saelaert	Financial Controller
Dr Bidjeh Kebkiba	Main Epidemiologist
Dr Baba Soumare	Head, Information and Communications Unit
Dr Philippe Leperre	Regional Technical Assistant
Michael Lennertz	Communication Consultant
Dr Daniel Bourzat	Previous Main Technical Assistant, Special Counsellor to the Prime Minister, Federal Republic of Somalia
PACE, Bamako	
Dr Bouna Diop	Regional Co-ordinator Western and Central Africa
Dr Nicolas Denormandie	PACE Regional Technical Assistant
Dr Patrick Bastiaensen	PACE Regional Technical Assistant
Dr Cecile Squarzoni	PACE Veterinary Epidemiologist
EC DELEGATION, Nairobi	
Otto Egholm Moller	First Counsellor (Agriculture)
David Mwangi Njuru	Rural Development Officer
FAO	
Dr William Amanfu	Animal Health Officer, EMPRES
Dr Felix Njeumi	Animal Health Officer, EMPRES
Dr Joseph Litamoi	TCP Regional Project Co-ordinator
ILRI	
Dr Henry Kimathi Kiara	Research Officer
PANVAC	
Dr Karim Tounkara	Director
OIE	
Dr Amadou Samba Sidibé Dr Caroline Planté	OIE Regional Representative for Africa Technical Assistant
BURKINA FASO	
Alexandre Sanadogo	Secrétaire Général, Ministère des Ressources Animales
Sophie Pelletier	Chargée de Programme Environnement, EC Delegation
Marie Cécile Kabré-Zerbo	Gestionnaire – Comptable, EC Delegation
Zaré Ibrahima	Chargé de Programme, National Authorising Officer Office
Dr. Mamadou Pare	Director General of Veterinary Services, Ministère des Ressources Animales, Direction Générale des Services Vétérinaires
Dr. Kanyala Estelle	Director of Animal Health, Ministère des Ressources Animales, Direction Générale des Services Vétérinaires

Dr. Poda Godefroy	Director of the Central Laboratory (Laboratoire National d'Élevage - DLNE), , Ministère des Ressources Animales, Direction Générale des Services Vétérinaires
Dr. Ouedraogo Marcel	PACE National Co-ordinator
Dr. Sidibe Mamadou	PACE RESUREP Co-ordinator
Oumarou Serdebeogo	RESUREP Database Manager
Sarvadogo Disudosse	Responsable pour le Poste de Surveillance Active de Pouytenga, Kourittenga Province
Ouedraogo Pasnel	Technicien Supérieur d'Elevage, Chef de Poste de Surveillance Active de Bittou, Boulgou Province (Frontier Post)
Mme Kabore Nathalie	Director, DRRA Centre East, Tenkodogo
Dr. Lassina Ouattara	i/c of the Tenkodogo Regional Laboratory, DRRA Centre East, Tenkodogo
Wangrawa Amadou	Laboratory technician, DRRA Centre East, Tenkodogo
Dr. Samuel Minoungou	Private Veterinarian, VETO IMPACT, Tenkodogo
Belemkoabgu S. Lament	Chef de Poste de Surveillance Active de Garango
Sondé Moussen,	President of the Farmers' Association
Bambara Sidobrr	Farmer
Barry Laya	Farmer
Sondé Saidou	Secretary, Farmer
Sondé Berra	Farmer
Sondé Salon	Farmer
Sondé Mamoudou	Farmer
Dr. Berenger P. Nikiema	Private Veterinarian, Private Veterinary Clinic and Pharmacy, Manga, Centre Sud Region
BURUNDI	
Dr. Maurice Ntahiraja	PACE National Co-ordinator, Director General of Animal Production
Mrs. Estella Nzitonda	EC Delegation, Bujumbura, Burundi
CAMEROON	
Michel Schleiffer	Rural Development Section, EU Delegation
François Kwongang	Rural Development Section, EU Delegation
Oumarou Ousmanou	Director of General Affairs, Ministry of Animal Husbandry, Fish and Animal Industry
Dr Dawa Oumarou	Inspector General, Ministry of Animal Husbandry, Fish and Animal Industry
Dr Hamadou Saidou	Director of Veterinary Services, Ministry of Animal Husbandry, Fish and Animal Industry
Dr Baschirou Moussa Demsa	PACE National Co-ordinator
Dr André Ngangnou	National Veterinary Laboratory (LANAVET), Garoua
Dr Nchare Amadou	Chief, Epidemiology Unit
ERITREA	
Aferwerke Mehreteab	Animal Health Assistant
ETHIOPIA	
Dr Daginet Yioneru	PACE National Co-ordinator

GHANA	
Dr Joseph Gaari-Kweku	PACE National Co-ordinator
Dr G.A.Opoku-Pare	Director, Veterinary Laboratory
GUINEA	
Elie Fassou Damey	Secrétaire Général, Ministère de l'Agriculture et de l'Elevage
Didier Niels	Chef de Section Développement Rural, EC Delegation
Lamine Touré	Chef de Division UE/ACP, National Authorising Officer, Direction Nationale de la Coopération, Ministère de la Coopération
Dr. Sény Mane	PACE National Co-ordinator, Directeur National de l'Elevage, Direction Nationale de l'Elevage, Ministère de l'Agriculture et de l'Elevage
Dr. Mamadou Lamarana Souare	Chef Cellule Technique d'Appui et la Privatisation de la Profession Vétérinaire, Direction Nationale de l'Elevage, Ministère de l'Agriculture et de l'Elevage
Marie Camara	Directrice du la Laboratoire Centrale de Diagnostic Vétérinaire (LCDV) et Coordinateur of REMAGUI, Direction Nationale de l'Elevage, Ministère de l'Agriculture et de l'Elevage
Dr. Sory Keita	Directeur National Adjoint de l'Elevage, Direction Nationale de l'Elevage, Ministère de l'Agriculture et de l'Elevage
Dr. Aly Conté	Chef de la Division des Services Vétérinaires, Direction Nationale de l'Elevage, Ministère de l'Agriculture et de l'Elevage
Dr. Mamadou Daliou Diallo	Chef du Personnel, Direction Nationale de l'Elevage, Ministère de l'Agriculture et de l'Elevage
Dr. Dore Molou	Secretary General of the Guinea Veterinary Association and i/c veterinary drugs
Dr. Ahmed Tidiane Balde	Consultant to the Ministry, Direction Nationale de l'Elevage, Ministère de l'Agriculture et de l'Elevage
Oumar Cherif	Responsable Administratif et Financier Programme PACE, Direction Nationale de l'Elevage, Ministère de l'Agriculture et de l'Elevage
Dr. Daouda Bangoura	Vice Président Commission Régionale OIE Afrique
Dr. Saki Alfred Soropogui	Chargé des informations zoosanitaires, Direction Nationale de l'Elevage, Ministère de l'Agriculture et de l'Elevage
Dr. Alphonse Gourman	Head of Bacteriology, Direction Nationale de l'Elevage, Ministère de l'Agriculture et de l'Elevage
Dr. Souleymane Timbi Diallo	Head of Virology and i/c Réseau REMAGUI, Direction Nationale de l'Elevage, Ministère de l'Agriculture et de l'Elevage
Local staff (Director not available)	Ecole Avicole Ela Kahere (On the road to Mamou)
Dr. Abdoulaya Gassama, Private vet i/c of the clinic	Kindia Vet. Office and Clinic
Monetan Diallo	Head of Section (Mamou)
Abdulaye Sanguré,	Animal Health Section and member of the Active Surveillance Group (Mamou)
Habib Sidibe	i/c Animal Production (Mamou)
Yeli Yeli Onikoyanim	Lady vet. and Chef de Poste of the Urban Animal Health Section (Mamou)
Alphu Ouman Savane	Private Veterinarian (Mamou)

Themmo Alareny Bah	President of an Association of 130 Farmers' Groups (Mamou)
Bombacan Camara	Prefectural President of the Farmers' Association (Mamou)
Algha Yaya Diane	ACSA (Mamou)
Mamadan Bobo Bary	ACSA (Mamou)
Dr. Baggi plus colleagues	Programme d'Appui au Sous Secteur de l'elevage. Cellule d'Appui à la Société Civile
Thiuno Hassana Diallo	Member of the CDS, Linsan Private Vet. Pharmacy/Clinic (Branch of the Clinic in Kindia)
Amadou Camara	Vet. (technician) I/C of the Vet. Clinic/Pharmacy, Linsan Private Vet. Pharmacy/Clinic (Branch of the Clinic in Kindia)
Douzo Laye Moussa	Chef de Post for Linsan and a network member
GUINEA BISSAU	
Bernardo Cassama	National PACE Co-ordinator
KENYA	
Francis N.Chabari	Co-ordinator, PACE Support Programme, GTZ
Dr Joseph Musaa	Director, Department of Veterinary Services
Dr Harry Oyas	PACE National Co-ordinator
Dr Murithi Mbabu	PACE Epidemiologist
Dr Sophycate Njue	Data Manager
Dr Grace Gachacha	PACE Communication Officer
Dr Jagi	Private – Public linkages officer
Dr Mignon	Epidemiology/data management
Rose Matua	Serum banking and Laboratory Technician
Dr Jiko	Epidemiology Unit
Dr John Kamau Kibeu	Executive Officer of the Kenya Veterinary Board
Dr Kasiiti	Rinderpest surveillance
Dr H.S.N. Kiniiya	Project Manager, KVAPS
MALI	
Yacouba Samake	Secrétaire Général, Ministère de l'Elevage et de la Pêche
Dr Kassoum Diakité	Conseiller Technique, Ministère de l'Elevage et de la Pêche
Dr Mamadou Kané	Directeur National des Services Vétérinaires, Ministère de l'Elevage et de la Pêche
Irene Horejs	Ambassadeur, Chef de Délégation, EC Delegation
Alain Houyoux	Chargé de Programme, EC Delegation
Daouda Touré	Gestionnaire Comptable, EC Delegation
Oumar Camara	Coordinateur de la CONFED, National Authorising Officer, Ministère des Affaires Etrangères et de la Coopération Internationale
Mamadou Baidy	Contrôleur de Gestion, CONFED, Ministère de l'Elevage et de la Pêche
Mme Sango Diénébou Kone	Chef de Section Contrôle de Gestion, CONFED, Ministère de l'Elevage et de la Pêche
Mohamadou Touré	Chargé de Suivi de projet, CONFED, Ministère de l'Elevage et de la Pêche
Dr. Mamadou Racine N'Diaye	National PACE Co-ordinator

Dr. Adama Samake, i/c PACE	Communication
Mr. Ougimane Baby	Gestionnaire/comptable
Mr. Ba Ibrahim	Chargé Administratif et Logistique, Responsable Volet Renforcement des Services aux Eleveurs
Dr. Lassina Doumbia	Head of the Epidemiololgy and Surveillance Section, Directorate of National Veterinary Services (DNSV)
Dr. Mahmoudou Diall	PACE Epidemiologist, Directorate of National Veterinary Services (DNSV)
Dr. Soumana Diallo	Deputy Director, Directorate of National Veterinary Services (DNSV)
Dr. Souleymane Camara	Directorate of National Veterinary Services (DNSV)
Dr. Amaiguere dit Amadou Napo	Assemblée Permanente des Chambres d'Agriculture du Mali
Dr. Tounkara	Directorate of National Veterinary Services (DNSV)
Mme. Sanogo Diarata Traore	COVEM (Veterinary Collective)
Dr. Saïdou Tembely	Director General, Laboratoire Central Vétérinaire (LCV)
Dr. Mamadou Niang	Head of Diagnosis and Research, Laboratoire Central Vétérinaire (LCV)
Dr. Oumou Sangaré	Head of Virology
Koné Bakary	Chef de Secteur Bougouni
Amadou Coulibaly	Poste vétérinaire Bougouni-Central
N'Golo Traore	Agricultural Office (Bamako)
Brahima Coulibaly	Vice President of the Local Council (Bougouni)
Zana Justin Dembele	Animal Production (Bougouni)
Marc Dembele	Representative of the local butchers (Bougouni)
Tiékoro Diakite	Livestock farmer (Bougouni)
Mamoudou A. Cisse	Livestock Farmer (Bougouni)
Alassane Kane	Livestock Farmer (Bougouni)
N'Golo Traore	UPIA Manakoro (Bougouni)
Mme Konate Maimouna	Mandated Private Veterinarian (Bougouni)
Mme Ould Tenin Diarra	Vet. Services Agent (Bougouni)
Seydou Sogoba	Regional Director, Sikasso
Mme Kelly Diahara Haidara	Sikasso
Bougoussama Coulibaly	Sikasso
Ousmane Thiero	Sikasso
Binafou Dembele	Sikasso
Kata Coulibaly	Sikasso
Aboubacari Kelly	Farmers' Union, Sikasso
Ibréhima Dia	Livestock Farmer, Sikasso
Seydou Sall	Livestock Farmer, Sikasso
Abdoulaye Z Bamba	Private Veterinarian, Sikasso
Antoine Diarra	Private Veterinarian, Sikasso
Adama Sangare	Private Veterinarian, Sikasso

MAURITANIA	
Gandega Silli	Ministre du Développement Rural et de l'Environnement
Wolfgang Schlaeger	Chef de Section,Développement Rural et Sécurité Alimentaire, EC Delegation
Ricardo Diez	Chargé de Programme, EC Delegation
N'Dongo Abdrahmane	Analyste financier à la Cellule d'Appui à l'Ordonnateur National
Dr. Fall Mokhtar	Director, Direction de l'Élevage (DEL)
Dr. Lemrabott Ould Mekhalla	Deputy Director and PACE National Co-ordinator, Direction de l'Élevage (DEL)
Dr. Mohamed Ould Baba Ould Gueya	Responsible for Wildlife, Direction de l'Élevage (DEL)
Dr. Sidi Bouna Ould Gaouad	Responsible for Communications in REMEMA, Direction de l'Élevage (DEL)
Dr. Doumbia Baba	PACE Animator of REMEMA, Direction de l'Élevage (DEL)
Mr. El Hacen ol Talele	President du Groupement National des Cooperatives des Associations Agro-Sylvo Pastorales
Dr. Idrissa Diarra	Director of Central Veterinary Laboratory (CNERV)
Dr. Isselmou, Abdatt,	Deputy Director of Central Veterinary Laboratory (CNERV)
Dr. Ahmed Bezeid Ould El Mamy	Central Veterinary Laboratory (CNERV)
Dr. Mohamed Ould Saleck	Central Veterinary Laboratory (CNERV)
Ekaterina Isselman	Central Veterinary Laboratory (CNERV
Mohammed Radhy Ould	Central Veterinary Laboratory (CNERV)
Elhmane Sau Doro	Central Veterinary Laboratory (CNERV)
Dr. Mohamed El MochayOfmeol Maouloud,	Chef Service Epidémiologie, Central Veterinary Laboratory (CNERV)
Cheikhna ould Mohamed Salem	Délégué Régional du Ministère du Développement Rural et de l'Environnement, Rosso, Traaza Region
Dr. Mohamed M Saleny	Chef du Service Elevage, Ministère du Développement Rural et de l'Environnement, Rosso, Traaza Region
Dr. Abdellahi Ould Menneya	Private veterinarian
Abou Ndiath	Inspector + Agent, including wildlife, Keur Macene, Traaza Region
NIGERIA	
Dr. Ibrahim Gashash Ahmed	National PACE Co-ordinator, Department of Livestock and Pest Control Services, Abuja.
Dr. S. A. Anzaku	PACE Privatisation Officer, Department of Livestock and Pest Control Services, Abuja.
Oridara Oseni Abefe	Data Manager
Winifred Emeka-Okolie	Communications Officer
Dr. Joseph Nyager	Deputy Director, Dep. Of Livestock and Pest Control Services, Abuja
RWANDA	
Jérôme LeRoy	Head of Section Contracts and Finance, EU Delegation
Pascal Ledroit	Attaché, Rural Economy, Food Security, Decentralisation and Environment Section, EU Delegation
Ernest Ruzindaza	Director of Planning, Ministry of Agriculture and Animal Resources

Dr Théogène Rutagwenda	Chairman, Rwanda Animal Resources Development Authority
Dr Isidore GAFARARSI Mapendo	Head of Diagnostic and Epidemiology and former PACE National Co-ordinator, Rwanda Animal Resources Development Authority
SENEGAL	
Moussa Ka	Directeur de Cabinet, Ministère de l'Elevage
Dr Rokhayatou Fall	Chargée de Programme PSON FED, National Authorising Officer, Ministère de l'Economie et des Finances
Dacoumba Dieng	Gestionnaire financier, EC Delegation
Pape Meïssa Fall	Responsable Administratif et Financier, National Authorising Officer, Direction de la Dette et de l'Investissement, Ministère de l'Economie et des Finances
Dr. Serigne Mamadou Bousso Leye	PACE National Co-ordinator, Direction de l'Elevage
Semou Dieng	Responsable Administratif et Financier du Programme PACE
Dr. Maisse	i/c PACE Privatisation and Legislation Component Direction de l'Elevage
Dr. Joseph Sarr Dr. Baba Sall	Directeur du Laboratoire National d'Elevage et de Recherches Vétérinaires (LNERV) Chef du Bureau de la Prophylaxie et de la lutte contre les zoonoses (i/c of PACE epidemio-surveillance programme)
Dr. Mbargou Lô	Chef du Division de Protection Zoosanitaire
Dr. Mamadou Lamine Diané	Chargé de Communication du PACE
Professor Louis Joseph Pangui	Dean, École Inter Etats Science et Médecine Vétérinaire (EISMV)
Professor Ayayi Justin B. Akapo	Head of Microbiology and Immunology
Dr. Doune Pathé Ndoye	Vétérinaire Inspecteur Regional de Services Vétérinaires de Thies, Thies Regional Veterinary Office
Dr Babacan Camara	Inspecteur Départemental des Services Vétérinaires de Thies, Responsable du Laboratoire Régional de Thies, Thies Regional Veterinary Office
K A Mody	Président de la Maison des Eleveurs (MDE) Thies
Dr. Omer Samuel Gomez	Vétérinaire privé, Manager de Cabinet VETOCONSULT de Thies
Dr. Mamadou Moustapha Thiah	Inspecteur Régional des Services, Kaolack Regional Veterinary Office
Saibh Danfakha	ATE, Koutal District Office, Kaolack Region
Oumou Khary D'Allo	President of the Regional Farmers' Association
Kalidou Ba	Livestock Farmer
Alpha Lamime Diallo	Livestock Farmer
Bouba Ka	Livestock Farmer
Goumba Seok	Treasurer of the Regional Women's Farmers Group
Sounkarou Diop	Directeur Technique Maison des Eleveurs de Kaolack
Kalidou Ba	Livestock Farmer
Dr. Amadou Ndéné Faye	Cabinet Vétérinaire Ndouwumene, Kaolack Private Vet. Clinic/Pharmacy

SERECU	
Dr Dickens Chibeu	SERECU Co-ordinator and PACE Regional Epidemiologist for East Africa
Dr Annie Lewa	CAHWS Expert
Dr Ahmed Mohamed Hash	Somalia Liaison Officer
Dr Bernard M. Mugenyo	Kenya Liaison Officer
Dr Elisabeth Wambwa	Wildlife Expert
SOMALIA	
Dr Friedrich Mahler	Livestock and Environment, EU Delegation, Somalia Operations
Dr Mohamed F. Dirie	National Co-ordinator, Somali Animal Health Services Project
Dr Henry Wamwayi	Chief Technical Advisor, Somali Animal Health Services Project
Alessandro Zanotta	Regional Representative, Terra Nuova
SUDAN	
Dr Mohamed Abdel Razig	Director, Epizoootic Diseases Control
Dr Bashir Taha Mohammed	Director General for Animal Health and Disease Control, PACE National Co-ordinator
Dr Agol Malak Kwai	Director General Veterinary Services, Government of Southern Sudan
Dr Wilfried Horst Hartwig	PACE Technical Assistant
Dr Bryony Jones	Rinderpest Project Manager, Vétérinaires sans Frontières, Belgium
Dr. Mohammed Abdel Raziq	Director of Epizootic Disease Control, Ministry of Animal Resources
TANZANIA	
Dr Das	Dr Das, Director of Central Veterinary Laboratory
Dr Mohamed M. Bahari	PACE National Project Co-ordinator
Dr Peter Z. Njau	Deputy Director of Veterinary Services
Dr Pascal Minjauw	PACE epidemiologist
Dr Kapaga	Director of Veterinary Services, Eastern Zone
Dr Masaba	Liaison Officer
Dr Catherine Joseph	Director of Policy and Planning, Ministry of Livestock Development
Razi Latif	Natural Resources Attaché, EU Delegation
Nyamtara D. Mukome	Deputy National Authorizing Officer, Ministry of Finance
Sadick S.A. Magwaya	Senior Programme Support Officer, Ministry of Finance
Dr D.N.Kabialo	Private veterinarian
UGANDA	
Patrick Seruyange	Operations Officer, EU Delegation
Joe Willy Haguma	Principal Finance Officer, Ministry of Finance, Planning and Economic Development
Dr Noelina L. Nantima	PACE National Co-ordinator
Dr William Olaho-Mukani	Director of Animal Resources
Dr E.D. Musiku	PACE Communications Team Leader
Dr Rose Ademun	Head of Central Veterinary Laboratory
Dr Simon Gould	National TA

Michael Oluka	PACE IT Consultant
William Mugisha	Senior Laboratory Technician (Serology)
Erima Naphtal	Data entry clerk
Esther Nambo	Data entry clerk
Sudu Sam	Data entry clerk
Zacc Dubuga	Laboratory Technician
Bahati Milton	Laboratory Technician
Mary Nanfuka	Laboratory Technician (Quality Assurance Manager)
Dr Joseph Sserugga	Data Management Officer

ANNEX 4

OVERVIEW OF THE BUDGETS AND COMMITMENTS ON THE PACE NATIONAL COMPONENTS ON 19/07/06

ANNEX 4: OVERVIEW OF THE BUDGETS AND COMMITMENTS ON THE PACE NATIONAL COMPONENTS ON 19/07/06

No.	Countries	Commit WP1	Commit WP2	Commit WP3	Commit WP4	Extention		Specific Commit	Total Commit	Total Paid	% Paid	Proj Decom WP	Proj Decom Sp Com	Total Proj Decom	Scenario
	Pays	Engagé DP1	Engagé DP2	Engagé DP3	Engagé DP4	Y1	Y 2	Engagem Spécifiq.	Total Engage	Total Paye	% Paye			Without last PE	30% last WP balance
301	BENIN	127,905	162,243	176,277	[illegible]	[illegible]	[illegible]	152,603	1,131,028	855,770		94,366	28,489	122,854	71100
302	BURKINA FASO	338,999	238,888	[illegible]	[illegible]			129,871	1,077,758	890,500	82.63	187,092	166	187,258	0
303	BURUNDI	[illegible]	[illegible]			[illegible]		0	576,672	263,502	45.69	313,170	0	313,170	0
304	CAMEROUN	343,195				341,201	[illegible]	190,485	1,474,881	1,005,226	68.16	0	0	0	180000
305	CAR	506,886	205,158	126,423	70,395	[illegible]	[illegible]	25,000	1,398,262	1,073,695	76.79	36,478	90	36,568	86400
306	CHAD	517,046	1,166,337	846,464	89,479	[illegible]		0	3,100,531	2,745,192	88.54	0	0	0	144600
307	CONGO Brazz	42,332	[illegible]	[illegible]				0	163,532	160,158	97.94	3,373	0	3,373	0
308	CONGO (Dem. Rep.)	315,003	120,089			[illegible]	[illegible]	0	1,143,131	907,349	79.37	35,485	0	35,485	89968.2
309	DJIBOUTI	[illegible]	[illegible]	[illegible]				94,741	725,741	315,271	43.44	405,800	4,671	410,471	0
310	ERITREA	109,790	110,209	[illegible]	106,299	[illegible]		281,016	1,220,414	828,472	67.88	105,398	0	105,398	112230
311	ETHIOPIA	264,546	886,357	231,464	248,131	[illegible]	[illegible]	1,026,746	3,222,243	2,532,191	78.58	12,248	96,527	108,775	234000
312	GABON	206,445	164,783	99,216		[illegible]	[illegible]	13,339	641,083	544,763	84.98	12,838	0	12,838	32160
313	GAMBIA	137,772	184,390	[illegible]		[illegible]		0	542,676	456,082	84.04	26,012	0	26,012	45153.9
314	GHANA	164,555	169,719	143,977	56,440	[illegible]		79,019	1,031,709	763,882	74.04	0	0	0	125400
315	GUINEE BISSAU	214,021	131,476	102,180	42,146	[illegible]	[illegible]	0	750,923	592,027	78.84	32,614	0	32,614	54000
316	GUINEE CONAKRY	189,445	333,728	164,055	75,129	[illegible]		0	848,157	843,621	99.47	0	0	0	25740
317	GUINEE EQUAT.	45,300				[illegible]	[illegible]	0	191,700	73,050	38.11	41,650	0	41,650	23100
318	IVORY COAST	316,502	[illegible]			[illegible]		68,780	973,282	549,271	56.43	395,222	4,989	400,211	0
319	KENYA	813,935	434,545	[illegible]		[illegible]	[illegible]	213,959	3,211,439	2,544,150	79.22	95,369	2,056	97,425	312300
321	MALI	164,520	179,615	238,300		[illegible]	[illegible]	303,706	1,238,142	1,047,070	84.57	74,925	7,607	82,532	44100
322	MAURETANIA	157,025	182,366	128,227	71,987	[illegible]	[illegible]	190,298	1,049,698	877,663	83.61	27,877	4,691	32,568	59572.5
323	NIGER	268,978	277,425	146,175	69,469	[illegible]	[illegible]	112,623	1,198,329	1,090,797	91.03	0	0	0	74310
324	NIGERIA	199,740	[illegible]	[illegible]			[illegible]	232,253	1,963,384	1,484,103	75.59	4,050	0	4,050	186000
325	RWANDA	125,538	115,166					4,490	245,194	245,187	100.00	0	7	7	0
326	SENEGAL	360,942	338,348	235,713	[illegible]	[illegible]	[illegible]	12,200	1,673,320	1,220,111	72.92	107,300	0	107,300	125400
328	SOMALIA	868,584	323,787	939,882	[illegible]			0	3,192,253	3,188,481	99.88	3,772	0	3,772	0
329	TANZANIA	515,720	550,164	303,177		[illegible]	[illegible]	412,662	3,494,031	2,406,472	68.87	176,914	0	176,914	368792.4
330	TOGO	151,045	96,379	111,796		[illegible]	[illegible]	36,700	668,920	566,316	84.66	5,426	105	5,531	57000
331	UGANDA	505,748	557,543	481,679	323,678	[illegible]	[illegible]	179,638	3,054,286	2,500,321	81.86	104,642	0	104,642	246900
	Fight agst. Line. 1-S-	[illegible]					[illegible]		2,578,171	2,268,143	87.97	69,857		69,857	20000
	Fight agst. Line. 1-N-	[illegible]					[illegible]	616,302	2,310,181	616,302	26.68			0	169235.6
	Special Fund	[illegible]							500,000	500,000	100.00			0	
	SERECU						[illegible]		1,832,000	469,162	25.61			0	274800
	GTZ support to countries	[illegible]					[illegible]		5,152,818	3,549,579	68.89			0	257600
	Total	17,729,036	7,698,508	6,341,105	2,627,269	5,334,516	9,469,024	4,376,431	53,575,889	39,973,881	74.61	2,371,878	149,398	2,521,275	3,419,863
														5,941,138	

The Global Financial situation of the PACE programme by 19/07/2006

Component	FA Budget	Committed	Paid	Balance	Projected Decomm
Regional component:	**25,320,000**				
1.PACE PCUs		8,986,588	7,859,370	1,127,218	180,000
2. PACE RC Service Contracts		11,515,203	7,934,417	3,580,786	428,174
3.Audits/Consultancies		420,255	341,366	78,889	0
4.Research		1,069,000	699,960	369,040	75,000
Sub totals Regional comp.:		**21,991,047**	**16,835,113**	**5,155,934**	**683,174**
National Component:	**51,680,000**				
Total national Components:		**53,172,459**	**41,652,863**	**11,519,596**	**5,941,138**
Grand total PACE:	**77,000,000**	**75,163,506**	**58,487,976**	**16,675,530**	**6,624,312**

Total of the commitments versus the global budget : **97.61** %
Total of the payments versus the global budget : **75.96** %
Total of the payments versus the commitments : **77.81** %

Reconciliation with OLAS accounting sheets of 19/07/2006

Budget Line	Amount	Committed	Uncommitted	Paid
7 ACP RPR 744	33,687,018	33,453,646	233,372	27,826,379
7 ACP RPR 745	10,000,000	9,953,850	46,150	8,063,773
8 ACP TPS 32	23,312,982	22,632,731	680,251	17,209,051
8 ACP TPS 33	2,000,000	1,991,795	8,205	1,067,726
8 ACP ROC 9	3,000,000	2,547,484	452,516	1,216,484
9ACP RPR 32	5,000,000	4,584,000	416,000	3,104,572
Totals	**77,000,000**	**75,163,506**	**1,836,494**	**58,487,985**
Reconciliation difference	**0**	**0**		**-9**

PACE Programme: **Financial Overview : Up to** **07/19/2006**

Financial Information based on EC - OLAS system

COMMITMENTS AND PAYMENTS for the PACE REGIONAL COMPONENTS

1.1. Financial Overview : The Work Programmes for the Project Coordination Units (PCUs - Nairobi and Bamako

Work Programmes PCU Nairobi:	Committed	Paid	Balance	Paid %	Commitment Number OLAS	Status
Inception budget	54,145.48	54,145.48	0.00	100	7ACPRPR744-3	Closed
1/1/2000-31/3/2000						
Year 1 WP	1,090,259.09	1,090,259.09	0.00	100	7ACPRPR744-7	Closed
1/4/2000-28/2/2001						
Year 2 WP	1,367,987.16	1,367,987.16	0.00	100	7ACPRPR744-30	Closed
1/6/2001-31/5/2002						
Year 3 WP	1,071,544.30	1,071,544.30	0.00	100	7ACPRPR744-50	Closed
1/6/2002-31/5/2003						
Year 4 WP	932,903.09	932,903.09	0.00	100	7ACPRPR744-77	Closed
1/6/03-31/6/04						
Year 5	235,580.59	235,580.59	0.00	100	7ACPRPR744-109	Closed
1/7/2004- 31/10/2004						
Year 6 (Extension)	611,800.00	486,923.41	124,876.59	80	9ACPRPR32-5	To be closed
1/2/2005-31/08/2005						
Year 7 (Extension)	2,219,000.00	1,046,049.58	1,172,950.42	47	9ACPRPR32-6	Open
01/09/2005-28/02/2007						
Totals:	7,583,219.71	6,285,392.70	1,297,827.01	83		

PCU Nairobi expected amount to be de-committed: **124,876.59**

Work Programmes PCU Bamako:	Committed	Paid	Balance	Paid %	Commitment Number OLAS	Status
Inception budget	19,595.24	19,595.24	0.00	100	7ACPRPR744-4	Closed
1/1/2000-31/3/2000						
Year 1 WP	376,620.09	376,620.09	0.00	100	8ACPROC9-1	Closed
1/4/2000-28/2/2001						
Year 2 WP	363,881.94	363,881.94	0.00	100	8ACPROC9-2	Closed
1/6/2001-31/5/2002						
Year 3 WP	194,489.30	194,489.30	0.00	100	8ACPROC9-3	Closed
1/6/2002-31/5/2003						
Year 4 WP	191,672.45	191,672.45	0.00	100	8ACPROC9-4	Closed
1/6/03-31/5/04						
Year 5 WP	64,909.70	64,909.70	0.00	100	8ACPROC9-5	Closed
1/6/04-31/12/2004						
Year 6 (Ext.)	274,000.00	217,187.25	56,812.75	79	9ACPRPR32/3	To be closed
1/1/2005-31/12/2005						
Year 7 (Ext)	174,200.00	100,093.32	74,106.68	57	9ACPRPR32/9	Open
01/01/06 - 28/02/2007						
Year 7 (Ext)	160,000.00	0.00	160,000.00	0	8ACPTPS32/77	Open
01/01/06 - 28/02/07						
Totals:	1,819,368.72	1,528,449.29	290,919.43	84		
PCU Bamako: expected amount to be de-committed:						56,812.75
Totals PCUs Nairobi- Bamako:	9,402,588.43	7,813,841.99	1,588,746.44	83		
Expected De-commitment	181,689.34					

1.2 Financial Overview PACE Regional Service Contracts and other Regional Expenses

Regional Service Contracts	Committed	Paid	Balance	Paid %	Commitment Number OLAS	Status
1.Service Contracts						
Connor	419,049.44	419,049.44	0.00	100	7ACPRPR744/1	Closed
Financial Controller (Mertens)	951,135.51	951,135.51	0.00	100	7ACPRPR744/2	Closed
Financial Controller II (Saelaert)	362,000.00	204,410.79	157,589.21	56	9ACPRPR-32/4	Open
Main TA (Massarelli)	291,000.00	116,062.74	174,937.26	40	8ACPTPS32/73	Open
Rossiter-Service	4,500.00	4,500.00	0.00	100	7ACPRPR744/5	Closed
Agrer	1,822,000.00	1,626,645.02	195,354.98	89	7ACPRPR744/8	To be closed
Cirad-Emvt (W)	2,249,000.00	1,168,750.16	1,080,249.84	52	7ACPRPR744/9	Open
Cirad-Emvt (E)	2,317,000.00	1,406,676.78	910,323.22	61	7ACPRPR744/10	Open
FAO	1,067,814.70	852,077.36	215,737.34	80	7ACPRPR744/11	To be closed
Main TA	507,391.30	507,391.30	0.00	100	7ACPRPR744/59	Closed
OIE Represent. Bamako Yr2	121,000.00	105,611.25	15,388.75	87	8ACPTPS33/2	To be closed
OIE Represent. Bamako Y3	141,487.26	141,487.26	0.00	100	8ACPTPS33/3	Closed
OIE Represent. Bamako Y4	127,000.00	125,306.39	1,693.61	99	9ACPRPR32-2	To be closed
OIE Represent. Bamako Y5	80,000.00	24,000.00	56,000.00	30	7ACPRPR745/21	Open
STE Costs GTZ	1,054,825.01	0.00	1,054,825.01	0		Open
sub-total:	**11,515,203.22**	**7,653,104.00**	**3,862,099.22**	**66**		
2.Audits/Consultancies						
Consult-Fox	45,468.02	45,468.02	0.00	100	8ACPTPS32/1	Closed
Framework contract	24,007.72	24,007.72	0.00	100	8ACPTPS32/9	Closed
Mid term-consult	141,984.12	141,984.12	0.00	100	8ACPTPS32/31	Closed
Audit PCU Nairobi WP 4-5	4,860.00	4,860.00	0.00	100	7ACPRPR/744-123	Closed
Start Up Audit PCU Nairobi WP7	4,000.00	3,600.00	400.00	90	7ACPRPR745/19	To be closed
Audit Nairobi WP 6 and 7	4,950.00	4,455.00	495.00	90	7ACPRPR744/133	Open
PACE Final Evaluation	194,985.00	116,991.00	77,994.00	60	7 ACPRPR 744/139	Open
sub-total:	**420,254.86**	**341,365.86**	**78,889.00**	**81**		
3.Research						
Research - CBPP-Cirad	563,200.00	507,000.00	56,200.00	90	8ACPTPS32/10	Open
Research- RP-Phirbright	505,800.00	192,960.00	312,840.00	38	8ACPTPS32/44	Open
sub-total:	**1,069,000.00**	**699,960.00**	**369,040.00**	65		
Totals	**13,004,458.08**	**8,694,429.86**	**4,310,028.22**	**67**		

Expected decommitment for the contracts	428,174.7
Expected global decommitment PE's Nbi Bko and Contracts	609,864.0

1.3. Global Overview of Commitments and payments for PACE Regional Components

ITEMS	Committed	Paid	Balance	Paid %
1. PACE PCUs - WPs	9,402,588.43	7,813,841.99	1,588,746.44	83
2.PACE Regional service Contracts	11,515,203.22	7,653,104.00	3,862,099.22	66
3. Audits/Consultancies	420,254.86	341,365.86	78,889.00	81
4. Research	1,069,000.00	699,960.00	369,040.00	65
Totals:	22,407,046.51	16,508,271.85	5,898,774.66	74

ANNEX 5

LOGICAL FRAMEWORKS

ANNEX 5: LOGICAL FRAMEWORKS

Logframe for Initial Phase of PACE

		OVIs	Sources of verification	Assumptions
Overall objective	Combating poverty among those involved in livestock farming by improving productivity			
Specific objectives	Strengthening capability (at national and regional level) to assess the technical and economic aspects of animal diseases and generate appropriate programmes for their control Safeguard animal health in Africa against major epizootic (List A) diseases	Quantity and quality of epidemiological reports and animal health programmes Eradication of rinderpest in Africa No. of outbreaks of other epizootic diseases	Periodic reports from countries involved, OIE and OAU/IBAR	Improvement in market for animal products Financing of additional programmes to tackle other selected epizootics
Results	Re-inforcing animal epidemiology services (information, diagnostics and follow up) and control of major diseases in participating countries Greater privatisation of veterinary services and public/private sector linkage in this field Rinderpest eradicated from Africa; greater control of other epizootic diseases, esp. CBPP At pan-African level, sustainable co-ordination of national animal health systems and arrangements for tackling epizootic diseases set up	Veterinary stations supply relevant information Establishment of national epidemio-surveillance networks (NESN) Analysis of samples collected Vaccination rate achieved by various agents (private, auxiliaries, public) Demand for treatment and drugs satisfied, within rules established by law and practice No. of outbreaks and losses Rapid and co-ordinated reaction to any outbreaks of rinderpest Projects for combating animal diseases submitted for financing Information genuinely transmitted to OAU/IBAR Co-ordination Unit Establishment of harmonised NESN and reaction arrangements	Reports from national components and summaries from OAU/IBAR Co-ordination Unit Technical unit consultation reports Reports from individual enquiries National component activity reports OIE reports Technical unit consultation reports Project docs Annual OAU/IBAR and programme reports	Minimum local safety conditions and access to difficult areas Continued AU support for IBAR AU member countries continue to recognise its role in co-ordinating actities for livestock development in Africa

Activities	Assistance for drawing up inventories of local epidemiological situations Establishment of an epidemiological surveillance network in each country Developing expertise on economics of animal health Veterinary surveillance of wildlife Development of methods of communication at national level; animal health training for stockfarmers Allocation of vaccination funds to private vets Development of arrangements for distributing care and vet drugs thru' husbandry auxiliaries in remote areas Training in diagnostics and other techniques needed for the networks, improvement of private vets' training in management and communication Targeted aid for vet schools Campaigns for active, clinical and serological research into rinderpest Assistance with following OIE pathway for presently rinderpest-free countries until they are declared "free from infection" Harmonised and synchronised vaccination campaigns in countries with cordons sanitaires and in countries where disease is endemic (using husbandry auxiliaries in remote areas) Continued research into vaccines and diagnostic and therapeutic tools Harmonisation of legislative positions on the vet profession and vet drugs Establishment of a pan-African epidemiology network Integration of the various epidemiological surveillance networks in Africa (IBAR, OIE, FAO) Development of an animal health and animal economics database (OIE/IBAR) Continuous environmental monitoring of four regions considered typical examples of trad. husbandry	<u>Cost of programme (million €)</u> National components 53 Common Services 17 Consisting of: Epidemiology (5.4) Communication (1.8) Economics (0.54) Help with privatisation (0.54) Husbandry auxiliaries (0.45) Financial monitoring (1.95) Data processing (0.36) PANVAC (0.9) Research (1.3) Advisory committee (0.27) Other monitoring (0.18) Vet Schools (0.27) Reviews/evaluations (including environmental monitoring) (0.8) Co-ordination (3.24) Contingencies (2.0) Total 72.0	Enforcement of legislative texts Veterinary costs fully covered Each individual country will lay the basis for preserving the co-ordinated network of epidemiological surveillance developed thru' PACE programme Continued support for the process of privatising veterinary medicine

Logframe for PACE Extension

	INTERVENTION LOGIC	VERIFIABLE INDICATORS	SOURCES OF VERIFICATION	ASSUMPTIONS
OVERALL OBJECTIVE	Reduction of poverty and enhanced food security amongst rural communities through sustainable improvements in animal production and productivity and increased trade in livestock and livestock products			
SPECIFIC OBJECTIVE	1.Eradication of rinderpest and control of other epizootic diseases 2.Strengthen of surveillance of other major diseases to provide required information for policy formulation of their control as prerequisite for access to global livestock markets			Funds available for national and regional components and countries contribution mobilized.
RESULTS	1.Committed eradication of rinderpest in the Somalia ecosystem	Participatory fieldwork leads to sampling of fresh cases, and to info on recent occurrences Design of a practical and affordable eradication strategy by Dec 2005 Eradication project proposal submitted to donors by Feb 2007	Viruses finger printed by WRL Strategy document Donor correspondence	Donor funds can be found to pursue RP eradication after PACE Agreement on national CAH fieldwork funding and co-ordination.
	2. Verified rinderpest eradication in countries through achievement of the OIE Pathway's freedom from disease and then from Infection	At least 15 dossiers submitted and found acceptable by OIE by 2007.	OIE Animal health status reports.	Governments support epidemiological surveillance work. Laboratories adequately equipped to perform the analysis
	3. Reinforcing of animal epidemiology services and control of major diseases in the participating countries	All countries have their established ESS functional	Reports on performance appraisal of ESS Mission reports	Mechanisms for the sustainability of ESS developed
	4. Development of national policies for economically affordable strategies for the control of priority diseases developed	PDIA trainers trained and selected teams active by June 2005 Economic impact assessment studies	Reports on workshops Study reports	Improvements in economic outputs and in communication strategies and outputs
	5. Strategies developed for gaining greater access to livestock markets.	Sites of pilot projects on export zones identified	Documents are available	National Gov'ts accept policy on restructuring and promotion of private sector services
	6. The programme is implemented in accordance with the approved work plan.	Work plans are rafted, approved and implemented according to the established planning.	Signed work plans Progress reports	Improved programme management and simplification of administrative procedures.
	7. The PACE National Programmes receive support to implement their national programmes and are subject to monitoring and evaluation.	National WP are analysed and technical and budgetary framework documents are drafted for year 1 and Year 2 on the extension. A final report is drafted.	Framework document signed by the RAO and the lead-ECD in Kenya. Final report	

ACTIVITIES	1.1.Implement SERECU (*Somali ecosystem rinderpest eradication co-ordination unit).*
	1.2.Improve surveillance of mild rinderpest by improving and implementing participatory disease searching, incorporating private veterinarians, CAHWs and veterinary paraprofessionals, carrying out targeted serological surveillance to delineate zone of mild rinderpest and pperforming annually targeted wildlife surveillance in the Somali ecosystem
	1.3.Assure timely diagnosis assured by supporting both the regional and national laboratories with provision of materials and diagnostic kits
	1.4.Strengthen collection and analysing data from Somali eco-system
	1.5.Assist in information gathering and analysis for developing strategy for Somali-eco-system
	1.6.Define required interventions with regard to CAHS through assessment of the delivery systems in the three countries in the Somali ecosystem
	1.7.Stimulate continuous dialogue between countries and the PACE by co-ordinating surveillance and control activities through establishment of national and regional taskforces and organising regular meetings of the established rinderpest Somali ecosystem co-ordination body
	1.8.Develop a regional follow-up project to finalize the eradication of rinderpest and seek donor funding.
	1.9.Monitoring of the activities of the Somalia Ecosystem Rinderpest Eradication Co-ordination Unit (SERECU)
	2.1.Improve surveillance for rinderpest by incorporating private veterinarians, veterinary paraprofessionals, performing wildlife surveillance in line with the requirements of the OIE based on regional approach.
	2.2.Improve national and international disease reporting.
	2.3.Enhance emergency notification of diseases
	2.4.Improve the laboratory component of ARIS
	2.5.Facilitate policy initiatives to support integrated veterinary service delivery in support of rinderpest eradication
	2.6.Assist countries in the preparation of OIE dossiers for recognition of freedom from disease and infection.
	3.1.Improve epidemiological surveillance systems in PACE member countries by continuing the performance appraisal of surveillance systems initiated in West Africa on the basis of the guidelines developed by PEU in all PACE member countries and assisting countries in developing their owns PIs and implementing the adopted common indicators in Dakar 2004.
	3.2.Sustain diagnostic services by visiting and assisting countries in establishment of the required capacity for diagnosis of identified priority diseases, assisting in serological surveillance required for obtaining freedom from rinderpest infection and continuing the laboratories rinderpest-testing network.
	3.3.Implement training programmes to improve epidemiology capacities in countries.
	3.4.Support national and regional laboratories to perform the tasks of sero-surveillance and diagnosis by re-establishing laboratory network for serological protocols, analysis of results and follow-up investigation work and implementing external quality assurance of national laboratories
	3.5.Develop of national guidelines for CAHW systems, legislative reform, development of licensing procedures for CAHW trainers and trainees, development of agreements with implementing agencies to ensure harmonised approaches and private sector involvement.
	3.6.Develop and improve further ARIS and implement in all PACE member countries
	4.1.Re-asse animal diseases priorities by determining relative diseases priorities using participatory impact assessments method, improving epizootic disease control strategies (linked to market opportunities), undertaking cost-benefit analysis studies for a limited number of priority diseases and meta-analysing the costs and benefits of national ESS in a number of countries taking into consideration characteristics of the local livestock and livestock products markets.
	4.2.Create capacity in modern data analysis and information management at IBAR and in PACE member countries
	4.3.Improve disease reporting rates within PACE member countries and from these to international organizations
	4.4.Harmonize data collection and reporting procedures with international organizations
	4.5.Support to privatisation and veterinary legislation
	4.6.Attain wider information sharing capacity by improving communication methods
	4.7.Provide technical support to DVS and statutory bodies to strengthen their capacity to co-ordinate, regulate and supervise para-veterinary professional systems in accordance with OIE guidelines.
	5.1.Develop strategies for gaining greater access to livestock markets by developing capacities on understanding of epidemiological issues associated with trade in livestock and livestock products such as Diseases free zones (DFZs), export zones, export systems and commodity based-trade, identifying sites for pilot projects to establish export zones or commodity-based trade and seek funding for them and developing methods for credible and internationally acceptable for livestock costs/ benefits of national surveillance systems in a number of countries taking into consideration characteristics of the local livestock and livestock products markets
	5.2. Give support to the reorganisation of veterinary services in line with OIE standards
	6.1.Establishment of a functional project team for the implementation of the PACE extension
	6.2.Draft a technical and budgetary framework document for the national components.
	6.3.Identification, planning and organisation of specific activities
	6.4.Liaison with International and regional organisations
	7.1.Monitoring of national components/programmes
	7.2.Evaluation of national components/programmes

Comparison by PCU of Achievements and Logframe Expected Results – Initial Phase of PACE

Expected Results (from Logframe)	OVI	ACHIEVEMENTS (2006)	% SUCCESS
1. Reinforcing of animal epidemiology services (information, diagnostics and follow up) and control of major diseases in the participating countries	Veterinary stations supply the relevant information	Sanitary information sent by countries to the OIE and to PACE increased progressively until 2004, touching 80% of reporting over the year. Following the changes in the reporting procedures of the OIE (now bi annual instead of monthly) reporting rate dramatically dropped to less than 10% for the first semester of 2006. Training courses organised for PACE reference laboratories and selected national programmes on ELISA and PCR techniques and quality assurance	75
	Establishment of National Epidemiosurveillance networks	All PACE countries established functional epidemio surveillance systems	100
2. Greater privatisation of veterinary services and public/private sector linkage in this field	Analysis of the samples collected	Sampling was conducted in the framework of the OIE pathway for rinderpest and in case of suspicion of notifiable diseases. Data and perfomance on the ration of analysis done vs samples collected and sent to the lab vary from country to country. The return of information from the labs to the vet services inthe field is always a major issue	75
	Vaccination rate achieved by the various agents (private, auxiliaries, public)	Mandatory vaccination against rinderpest was progressively halted. Last vaccination in Chad (2002) Kenya (2003). Private services were satisfactorily involved in the vaccination exercise representing sometimes more than 50% of the animal vaccinated. Sanitary mandates were issued to this purpose in most of the countries (especially in Western Africa). Trial undertaken on the use of PPR vaccine as a marker vaccine to protect cattle against rinderpest	75
	Demand for treatment and drugs is satisfied, within the rules established by law and practice	A huge variability in the achievement of this result was noted, mainly due to geographical constraints and limited human resources. Cost recovery for vet treatments is widely introduced and accepted by livestock owners. The commerce of veterinary drugs is in the hands of the private sector, even if in some cases there is an unfair competition with public services. Propoer legislation ruling the veterinary profession and the delivery of veterinary	60

Expected Results (from Logframe)	OVI	ACHIEVEMENTS (2006)	% SUCCESS
		services has been promulgated and/or updated in all PACE countries. The privatisation process initiated by PARC was continued but results are not always encouraging, being often linked more to drug selling and official vaccination campaigns than to the mere veterinary practice.	
3. Rinderpest eradicated from Africa; greater control of other epizootics diseases, especially CBPP	Number of outbreaks and losses Rapid and co-ordinated reaction to any outbreaks of rinderpest	Outbreaks ocurring are promptly reported and relevant actions taken with a reasonable delay. Examples of FMD, rinderpest suspicions, avian influenza. The disease is virtually eradicated, suspicions existing only in the Somali ecosystem. Specific programmes for the control of CBPP are drafted in most countries. A workshop held in 2003 in Guinea detailed the guidelines for the control and eradication strategy of CBPP at national level. The strategy has been widely accepted and set up in most of the countries.	90
4. At pan-African level, Sustainable co-ordination of national animal-health systems and arrangements for tracking epizootic diseases set up	Projects for combatting animal diseases submitted for financing	Some countries (e.g. Uganda, Sudan, Burundi, Cameroon, Chad, Guinea) drafted after PACE projects aimed at continuing the activities carried out during PACE and consolidate the achievements of the programme. All countries have been sensitised to prepare and submit animal health related projects.	75
	Information genuinely transmitted to AU/IBAR Co-ordination Unit	PACE PCU is receiving regular progress reports. The specific situation of all countries ais updated at least twice a year during the AC meetings. Few countries whose PE is not running or approved, or that have specific management problems have not issued regular reports	85
	Establishment of harmonised National Epidemiological Surveillance Networks and reaction arrangements	See comments for result 1. Moreover, PACE organised regular technical harmonisation meetings aimed at harmonise animal health startegies on transboundary diseases among neighbouring countries	100

Comparison by PCU of Achievements and Logframe Expected Results – PACE Extension

Expected Results (from Logframe)	OVI	ACHIEVEMENTS	% SUCCESS
1. Committed eradication of rinderpest in the Somalia ecosystem	Participatory fieldwork leads to sampling of fresh cases, and to info on recent occurrences	Introduction of PDS in order to understand rinderpest epidemiology in the SES. 2 serosurveillance campaigns carried out in the 3 countries involved, including surveys on wildlife. Some delay accused due to the late start of the SERECU initiative	90
	Design of a practical and affordable eradication strategy by Dec 2005	Due to the delay in the commencement of SERECU, the strategy was discussed and agreed with some delay and only recently endorsed by the parties. Some refining work will be done	90
	Eradication project proposal submitted to donors by Feb 2007	Not yet fully implemented: a follow on project is under discussion and preparation with the collaboration of further potential partners	50
2. Verified rinderpest eradication in countries through achievement of the OIE Pathway's freedom from disease and then from Infection	At least 15 dossiers submitted and found acceptable by OIE by 2007.	Through surveillance and reporting activities developed by PACE, and with help from PEU and PACE technical assistance to prepare dossiers for presentation to OIE, countries have been enabled to follow the OIE pathway to accreditation of freedom from disease and infection so that currently, twelve countries have been accredited as being free from infection and nine have been accredited as free from disease, The remaining countries have started on the OIE Pathway by stopping rinderpest vaccination and declaring themselves to be free from rinderpest (including the three countries with territory in the Somali ecosystem, on a zonal basis).	100
3. Reinforcing of animal epidemiology services and control of major diseases in the participating countries	All countries have their established ESS functional	Completely achieved, Burundi and Rwanda are the last countries where the ESS is put in place	100
4. Development of national policies for economically affordable strategies for the control of priority diseases developed	PDIA trainers trained and selected teams active by June 2005	Economic studies on the impact of animal diseases and the cost/benefit analysis of the control of major animal diseases (CBPP, RP) carried out in a sample of 7 PACE representative countries. Economic studies on the impact of Avian Influenza ongoing	
	Economic impact assessment studies		100
5. Strategies developed for gaining greater access to livestock markets.	Sites of pilot projects on export zones identified	Pilot studies undertaken in Kenya and Sudan. Further information are still needed; benchmarks settled	75

Expected Results (from Logframe)	OVI	ACHIEVEMENTS	% SUCCESS
6. The programme is implemented in accordance with the approved work plan.	Work plans are drafted, approved and implemented according to the established planning.	Difficult to quantify the implementation of each national PE so far. If we consider the number of countries executing at least a PE during the extension phase, the ratio is 24/29	80
7. The PACE National Programmes receive support to implement their national programmes and are subject to monitoring and evaluation.	National WP are analysed and technical and budgetary framework documents are drafted for year 1 and Year 2 on the extension.	Totally achieved, 3 technical and budgetary frameworks implemented	100
	A final report is drafted.	Not yet implemented	0

ANNEX 6

LIST OF TRAINING, WORKSHOPS AND MISSIONS

ANNEX 6: LIST OF TRAINING, WORKSHOPS AND MISSIONS

Training implemented by PACE (Source PCU, Nairobi and Bamako Regional Co-ordination Units)

PACE UNIT	TRAINING SUBJECT	DATE	VENUE
EPIDEMIOLOGY			
	Wildlife training workshop	8–12/01/01	Niokolo Koba National Park Senegal
	Wildlife training workshop	09-13/07/01	Lopé National Reserve, Gabon
	Wildlife training workshop	30/07-02/08/01	Shaï Hills National Reserve, Accra,Ghana
	African swine fever workshop	Oct. 2001	Lomé, Togo
	Wildlife training workshop	17-21/12/01	Natitingou and Pendjari Parks, Benin
	OIE Contingency planning workshop	Feb. 2002	Abidjan, Cote d'Ivoire
	Information System	2001	Gambia
	Wildlife training workshop	14-18/01/02	Yankari National Park, Nigeria
	Wildlife training workshop	23-28/09/02	Shange, Zimbabwe
	Wildlife training workshop	29/11-03/12/ 02	Arusha, Tanzania
	Wildlife training of the KWS veterinarian Dr Ndere and provision of technical assistance	2002	Kenya
	Participatory disease search (PDS)	2002	Tanzania/Kenya
	Wildlife training workshop	12-16/01/03	Bénoué, Garoua National Park, Cameroon
	Wildlife training workshop	19-23/01/03	Bénoué, Garoua National Park, Cameroon
	Wildlife training workshop	17-21/02/03	Kainji Lake National Park, Nigeria
	CBPP Control Workshop	Feb. 2003	Accra, Ghana
	Training of field experts involved in epidemio-surveillance	2003	Djibouti
	Epidemiology & Epidemio-surveillance to francophone countries	2003	Senegal
	Training workshop in Epidemiology and Epidemio-surveillance	14-25/04/03	Dakar, Senegal
	Validation of strategies to control CBPP - Regional workshop	Feb. 2004	Conakry, Guinea
	Wildlife training and support to wildlife epidemio-surveillance	2004	Cameroon
	Optimal functioning of networks (with performance indicators) -Regional workshop	Aug. 2004	Dakar, Senegal
	Co-ordination of national and regional laboratories of PACE countries - 1st Regional Workshop	Sep. 2004	Accra, Ghana

PACE UNIT	TRAINING SUBJECT	DATE	VENUE
	Co-ordination of national and regional laboratories of PACE countries - 2nd Regional Workshop	Sep. 2005	Entebbe, Uganda
	Highly pathogenic avian influenza - AU-IBAR Symposium	Sep. 2005	Nairobi, Kenya
	Wildlife regional training workshop	July 2005	Mole national Park, Ghana
	Risk Assessment workshop (Anglophone)	2005	Malawi
	Animal health politics, the evaluation of veterinary services and the role of livestock farmers in the surveillance of diseases of livestock - Regional OIE/AU-IBAR/FAO seminar	Feb. 2006	N'Djamena, Chad
	Harmonisation of the plans of prevention and control of Highly Pathogenic Avian Influenza - IBAR-PACE Regional Workshop	March 2006	Bamako, Mali
	Risk Assessment workshop (Francophone)	Jan–Feb. 2006	Dakar, Senegal
	Training course on Quality Assurance	2006	Tanzania
	Co-ordination of national and regional laboratories of PACE countries - 3rd Regional Workshop	June 2006	Bamako, Mali
	Consolidation of the experiences of epidemiology in PACE - workshop	July 2006	Douala, Cameroon
	Training of laboratory personnel-Abuja		Nigeria
DATA MANAGEMENT			
	Computer training for PCU	1999	Kenya
	Data Management and GIS training	2002	Gambia
	PID workshop	2003	Ghana
	Training PACE National TAs on PID	2003*	Ethiopia
	Training PACE Regional TAs on PID	2003*	Mali
	PID and GIS regional training session for Eastern Africa	2003	Kenya
	PID training	2004	Uganda
	ARIS training	2004	Nigeria
	ARIS training	2005	Tanzania
	ARIS refresher training	2006	Addis Ababa, Ethiopia
COMMUNICATION			
	Training in Communication Skills	2002	Mali
	Communication research		Uganda
	Message development		Kenya
	Communication skills		Ethiopia
	Communication strategy development and knowledge management		Eritrea
	Communication research		Ghana
	Communication research		Nigeria
	Communication research		Sudan
	Communication research		Tanzania
	Communication skills (Vet schools students)		Senegal

PACE UNIT	TRAINING SUBJECT	DATE	VENUE
SERECU			
	Training in Wildlife sero-surveillance	2006	Kenya for Ethiopia and Somalia
	Training in GIS Random Sampling techniques	2006	Ethiopia/Kenya
FINANCE			
	Management of Workplans	2005	Kenya
	EDF procurement and contract procedures	2006	Kenya (ECD)
	Contract management Management of Imprest Account and Work Programme	January, 2006	Kenya
	Navision Accounting System	June, 2006	Kenya
ECONOMICS			
	Training workshop on economic impact assessment of animal diseases	2003	Sudan
	Training Workshop on budgeting to sustain national livestock development activities in PACE member countries	29-30/03/04	AU-Headquarters Addis Ababa, Ethiopia
	Interactive workshop on influencing and meeting international standards; Challenges for Developing countries	22-24/06/05	Geneva - Switzerland
PCU			
	Management of Imprest Account/Work Programme	November, 1999	ECD Nairobi
	Team building workshop between PACE and the lead Delegation	10-11 May, 2005	Aberdare's Country Club, Kenya
	Training on MS Office applications for secretaries. Further training has recently started for PACE staff in Nairobi.		Nairobi
	Contract management Management of Imprest Account and Work Programme	January 2006	ECD Nairobi
	Training seminar for implementation of PVS (Performance, Vision and Strategy)	10-13/07/06	OIE, Paris, France

* This training was provided to TAs in order for them to provide in-country training.

PACE-Mali Training, Workshops, Seminars and Meetings

Subject of the mission	Participants	Location	Date
TRAINING			
Training in laboratory diagnostic techniques	Laboratory mangers from neighbouring countries	Bamako	December 2001
Training on data-base management and geographical information systems	DR Lassina DOUMBIA	Banjul, Gambia	Sept. 23 to Oct. 4, 2002
Training in epidemio-surveillance of wildlife	DNAMR, DNCN, PACE-MALI	Garoua, Cameroon	January 13 – 17, 2003
Training on database management and its application to epidemio-surveillance.	Mahmoudou DIALL/PACE-MALI	Montpellier, France	December 1-19, 2003
Training of the agents participating in the epidemio-surveillance network of Mali (EPIVET/MALI)	CFPE- PACE-MALI	CFPE/SOTUBA	10-14 December, 2003
Introduction to veterinary epidemiology	106 Private veterinarians with an animal health service mandate	Bamako	3 training sessions: February 16 to 20, 2004 February 23 to 27, 2004 April 19 to 23 2004
Training of field agents in wildlife epidemiosurveillance and the utilisation of GPS and other geographical positioning methods.	4 forestry agents 2 DPRPAV agents 5 trainers	Baoulé, Bafing (Bamafélé) and Niénendougou, Mali	June 21 to 25 2004
Retraining of field agents in the Mali epidemio-surveillance network, EPIVET-MALI	-	-	February 2005
Training on epidemio-surveillance to participants in the network.	DNSV agents	Bamako, Mali	September 27 to 29 2005
Training in veterinary diagnostic laboratory quality assurance	Dr. Mamadou DIALLO (LCV)	Arusha, Tanzania	February 20 to March 3, 2006
TRAINING WORKSHOPS			
Training workshop : Introduction to the recognition of rinderpest and CBPP	Farmers and other participants in the livestock sector of Kayes	Kayes, Sikasso, Ségou	November 12 – 16, 2001
Workshop on OIE contingency plans and procedures for the eradication of rinderpest	PACE-MALI, DNAMR	Abidjan, Côte d'Ivoire	February 11to 15 2002
Workshop : The role, place and legal status of the non-diplomate CAHWs in a national animal health network	DPRPAV	Paris, France	May 24 to 25 mai 2003
Workshop on the training of PACE national and regional epidemiologists	PACE-MALI	Dakar, Senegal	April 14 to 25 2003
Workshop on the strategies to control CBPP in Africa	DNAMR, PACE-MALI	Accra, Ghana	February 3 to 6, 2003
Regional workshop of the validation of CBPP control strategies in PACE countries	Dr. Soumana DIALLO/ Mr. Mahmoudou DIALL/PACE-MALI	Conakry, Guinee	February 25 – 27, 2004

Subject of the mission	Participants	Location	Date
Workshop on budget planning for the sustainability of the national epidemio-surveillance networks in the PACE countries	Dr. BAH Konipo/DPRPAV M. Modibo SYLLA/ Chef Division des Dépenses	Addis Ababa , Ethiopia	March 28, 2004
Workshop on international zoosanitary standards	DNAMR, PACE-MALI	Cairo, Egypt	October 11 to 13, 2004
Training workshop for field staff on wildlife epidemio-surveillance	Lassina DOUMBIA/DPRPAV Birama Niakaté/DNCN Mahmoudou DIALL/PACE-MALI	Koulikoro, Mali	January 14 to 17, 2004
Workshop to evaluate the veterinary epidemio-surveillance network of Mali	PACE-MALI-EPIVET-MALI	Mopti, Mali	May 6 to 8, 2004
Workshop on the awareness of zoonoses	DNSV, LCV, Centre national de lutte contre la maladie, EISMV de Dakar	Bamako, Mali	August 25 to 26 2005
Workshop on Rift Valley Fever	DPRPAV- PACE-MALI DPLM/DNS	Dakar, Senegal	January 20-22 , 2004
Workshop on the quality control of veterinary pharmaceuticals in sub-Saharan Africa : the situation in Mali	DNSV National PACE co-ordinators Intrernational companies Pharmaceutical companies Pharmaceutical QC laboratories Private wholesalers Ministers of Health	Bamako, Mali	February 22 to 25, 2005
Workshop to consider the development of a concept note on national strategies to control CBPP		Katibougou (Koulikoro), Mali	October 15 to 17, 2004
Team Building workshop between PACE and the Lead Delegation	PCU and Lead Delegation	Aberdare's Country Club	May 10 to 11, 2004
OIE/FAO/AU-IBAR MEETINGS			
OIE/FAO/MS/BM seminar on the organisation of veterinary services and food safety at the 2nd World Veterinary Congress	DNAMR, PACE/ MALI	Tunis, Tunisia	September 25 to 29, 2002
OIE/AU- IBAR seminar on the application of international animal health standards: any solutions?	Dr. Soumana DIALLO	Cairo, Egypt	October 10-13, 2004
Regional OIE/AU-IBAR/FAO seminar on animal health politics, the evaluation of veterinary services and the role of livestock farmers in the surveillance of diseases of livestock.	Docteur Soumana DIALLO (DNSV)	N'djamena, Chad	February 13to 15, 2006

Subject of the mission	Participants	Location	Date
INFORMATION AND AWARENESS MISSIONS			
Information and awareness mission on the renewal of the authority of the Veterinary Order and to make contact with Livestock Farmers' associations through the Regional Agricultural Offices.	Mr. Ibrahima BA/PACE-MALI Dr. Daouda DIARRA/DGRC Dr. Cheic k Oumar TOUNKARA/	Sikasso, Mopti and Gao, Mali	March 14 to 26, 2004
Information and awareness mission on the authority of the Veterinary Order.	PACE-MALI Conseil Supérieur de l'Ordre	Ségou and Tombouctou, Mali	April 28 to May 8, 2004

ANNEX 7

COUNTRY REPORTS

ANNEX 7: COUNTRY REPORTS

Burkina Faso

July 16 – 19, 2006 (Patrick Fusilier + Archie Hunter)

1. People met

Ougadougou - Ministère des Ressources Animales

Direction Générale des Services Vétérinaires

- Dr. Mamadou Pare, Director General of Veterinary Services
- Dr. Kanyala Estelle, Director of animal Health
- Dr. Poda Godefroy, Director of the Central Laboratory (Laboratoire National d'Élevage - DLNE)
- Dr. Ouedraogo Marcel, National Co-ordinator of PACE
- Dr. Sidibe Mamadou, PACE RESUREP Co-ordinator
- Oumarou Serdebeogo, RESUREP Database Manager

Field visits (18/7 – 19/7/06)

Poste de Surveillance Active de Pouytenga, Kourittenga Province

- Sarvadogo Disudosse, Responsable pour le Poste

Poste de Surveillance Active de Bittou, Boulgou Province (Frontier Post)

- Ouedraogo Pasnel, Technicien Supérieue d' Elevage, Chef de Poste

DRRA Centre East, Tenkodogo

- Mme. Kabore Nathalie, Director
- Dr. Lassinia Ovattara, i/c of the Tenkodogo Regional Laboratory
- Wangrawa Amadou, Laboratory technician
- Dr. Samuel Minoungou, Private Veterinarian, VETO IMPACT

Poste de Surveillance Active de Garango

- Belemkoabgu S. Lament, Chef de Poste

Farmers

- Sondé Moussen, President of the Farmers' Association
- Bambara Sidobrr
- Barry Laya
- Sondé Saidou, Secretary
- Sondé Berra
- Sondé Salon
- Sondé Mamoudou

Private Veterinary Clinic and Pharmacy, Manga, Centre Sud Region

- Dr. Berenger P. Nikiema, Private Veterinarian

2. PACE Management and Administration

National Co-ordinator

45 auxiliaries financed by PACE Programme until the end of 2003 (end of PE3). They were civil servants but they were getting extra salary and operational costs from PACE such as boxes for samples, patrol, maintenance of the motorbikes.

From 2004 until now, the Government is financing the operational costs for the epidemiologic surveillance network on the ordinary national budget and PACE staff under contract (10). The auxiliaries are still keeping the extra salary which was paid before by PACE.

PE3 and PE4 are not closed because the EC Delegation is not pleased with the quality of the financial documents. Many rejections of the financial documents because expenses are not eligible or do not have any support documents. The Government would have to pay the amount of the expenses not approved by the EC Delegation; the last estimate during our visit was 40,000,000 FCFA.

Since 2004, the EC Delegation did not fund the PACE Programme anymore which is operating on the State budget. In 2004 the Government voted 66,000,000 F CFA, in 2005 84,000,000 F CFA and in 2006 82,000,000 F CFA.

The accountant is not qualified and does know what accounting means.

Since 2004, the follow-up of the epidemiologic surveillance network and the private veterinarians, i.e. purchase of technical equipments, the regional and international meetings have been reduced.

In 2002, PACE Burkina Faso received 4 cars.

He does not get any feedback from the Regional Co-ordination Unit in Bamako on the reports he is sending to them.

The Financial Controller (October 2005)and the PACE Co-ordinator (December 2005) from the PCU in Nairobi went to Ouagadougou to try to solve the financial problems with the Government and the local EC Delegation but no result obtained up to now. One of the conditions was to dismiss the accountant but she is very well protected.

The present PACE National Co-ordinator started to work with PACE in January 2002.

Since 2002, 3 accountants worked for PACE Burkina Faso: the first accountant for PE1, the second accountant for PE2 and the third and last accountant for PE3 and PE4.

The accountant and the PACE National Co-ordinator did not have any training on EDF procedures but according to the low level of qualification in accounting from the accountant and the fact that the PACE National Co-ordinator does not have any background in finance and management and low level of motivation, this training would not have any impact on a better preparation of the financial documents.

National Authorising Officer

The PACE accountant got some training in accounting organised at the National Authorising Officer Office.

The National Authorising Officer did not control properly the financial documents transmitted by the PACE National Co-ordinator and the accountant. He was acting as a mail box. He had to refuse the financial documents and not sending them to the local EC Delegation. One person is in charge of the control at the National Authorising Officer Office but he is not competent.

EC Delegation

They rejected 3 times the financial documents to close PE3 and PE4. The National Authorising Officer was only a mail box because he did not control the financial documents provided by the PACE National Co-ordinator and the accountant. They received the support documents in a box without any explanation.

The PACE National Co-ordinator and the accountant did not try to improve their work.

An amount of 50,000,000 F CFA for expenses could not be justified.

The PACE National Co-ordinator does not understand anything in finance. The Ministry of Animal Resources did not try to provide any solution.

In the Provinces it is difficult to collect the support documents from the auxiliaries such as receipts for the few litres of petrol used by the motorbikes.

The PACE National Co-ordinator must be an Administrator with veterinarians as technical advisors.

3. General Veterinary Services

Under the Direction Général des Services Vétérinaires (DGSV), there are two Directorates, Animal Health and The Central Veterinary Laboratory.

Staff in the Government veterinary service are as follows (2004 statistics):

- Veterinary Doctors 48
- Ingénieurs d' Élevage 87
- Techniciens Supérieurs d'Élevage Specialisés* 36
- Techniciens Supérieurs d'Élevage* 281
- Agents Techniques d' Élevage* 240

* Trained at L'École Nationale de l'Élevage et la Santé Animale

The administrative infrastructure comprises 13 Regions, 45 Provinces and 100 Postes Vétérinaires (Active and Passive Vet. Surveillance Posts)

The veterinary posts are administered at Regional level by the Direction Regional des Ressources Animales (DRRA) but receive their technical direction from the DGSV. They are staffed by Techniciéns Supérieures and Agents Techniques (see above). Technicians can have contracts with farmers to provide basic veterinary care to their animals. With experience (5 years) and more training, the Agents can be promoted to Technicians.

Only veterinarians can have a mandate to do veterinary work.

4. Reporting

The National Director of the DGSV reports the animal health situation to the Ministry every month.

5. Epidemio Surveillance

The network Réseau de Surveillance Epidémiologique des Maladies Animales (RESUREP) started in January, 1999 before PACE and was approved by the Ministry. The Constitution of RESUREP includes a Steering Committee. RESUREP comprises 100 Surveillance Veterinary Posts, 45 Active and 55 Passive. Eighteen of these posts are Frontier Veterinary Posts, six of them actually on the borders with the main function of inspecting animal movements across the border (checking vaccination and international movement certificates).

The primary objective of RESUREP has been surveillance for Rinderpest, but now that the country is infection free, the emphasis has shifted to other important diseases, namely CBPP, FMD, PPR, ASF and HPAI.

Passive surveillance posts are responsible for the following:

- Delivering vet. services including treatments
- Reporting outbreaks or suspicions of disease
- Local co-ordination of vaccination campaigns
- Taking and sending of laboratory samples for diagnoses
- Meat inspection at abattoirs.

Active surveillance posts do the same job but in addition carry out routine surveillance visits to 300 randomly selected villages throughout the country (at least one surveillance visit per year), plus cattle markets (when they occur, e.g. every 3 days) and at risk villages (every month) which are categorised as follows:

- VF Frontier village
- VFS Village that has a risk of wild animal contact
- VFC Village with heavy livestock concentration
- VT Village with transhumance

NB: Livestock movement is significant in Burkina Faso. For example in Pouytenga Post in Kourittenga Province with the largest cattle market in the country, large numbers of cattle come from Niger, Nigeria, Mauritania, and are exported to Nigeria, Benin, Ghana and Côte d'Ivoire.

The RESUREP co-ordinator checks the surveillance visit reports ("validation") of the visits to the randomly selected villages, at risk villages and cattle markets and enters the data into his own computer using Excel Software. The forms are then passed to the DLNE for entry to the PACE ARIS Database.

NB: From the three active surveillance posts visited, the impression gained was of very low technical levels of operation and poor organisation (all 3 agents had great difficulty finding reports, extension documents, vaccination certificates etc.). Farmers met at Manga referred to the agent as Dr., and this may be part of the problem in that the staff are acting as if they are veterinarians when in fact they are not qualified to do so.

Reporting

Report forms are completed in triplicate and submitted monthly to the Regional Office via, where appropriate, the Provincial Office. The reports are then passed to Ougadougou.

General Information from all veterinary posts is processed by the DSA and seems to be regarded as separate from PACE (Active surveillance) data. Likewise the results of diagnostic tests on laboratory samples (very few are taken) are recorded separately. These can go to one of the Regional laboratories who, if deemed necessary, pass them on to the DLNE who are notified in advance by telephone, or they can go direct to the DLNE . There seems to be no problem of samples and ice boxes going astray.

Data management

The manager processes data from the Active Surveillance Posts only after validation by the RESUREP Co-ordinator. Thus the database is not an integral part of the national Veterinary Services and does not include other data e.g. passive surveillance information, laboratory data or vaccination data. He enters data into the PACE Integrated Database (ARIS) database which has the following deficiencies:

- He can't print from it
- It is laborious to link the data to other software e.g. GIS, ARCVIEW and EXCEL.

He was trained by the Bamako TA on two occasions in 2004. Apparently the first visit was not very successful as the software did not work well. He would like more training on epidemiology and GIS, and has recommended Intranet link-ups to Regional Offices

NB: It is quite clear that this is regarded as a "Project" rather than an integral part of the main stream activities of the DSA. Thus there is incomplete integration of the Active Surveillance data with general veterinary data.

Training and Feedback

If funds permit, a meeting is held every 3 months in Ougadougou for the 45 Active Surveillance Posts. This is to provide an update of the findings of the previous 3 months and the plans for the next 3 months. The last meeting was in November 2005. The next meeting will depend on the PACE co-ordinator.

PACE Support for RESUREP

PACE has facilitated the Active Surveillance Posts with the means to do surveillance including submission of laboratory samples by training and the provision of cold chain and sampling equipment. PACE has provided no motor bikes, but the posts have motor-bikes from other posts.

6. Rinderpest Eradication

Vaccination against Rinderpest was ended in 1998. The 2005 OIE Dossier included serological results of samples taken from 2003 and 2004, namely 7156 bovine, 1140 small ruminant and 60 samples from various species of wild life. The country was certified infection free in 2006

7. Control of other major epizootic diseases

HPAI

There were 3 outbreaks, 1 in April and 3 in May, but no outbreaks since. Eradication was funded by the Government, but birds are still being submitted.

FMD

Not regarded as a major problem. Serotypes O, A and C are endemic. There is an FAO FMD Surveillance Project.

ASF

Regarded as a major problem. Transmission is thought to be domestic pig to domestic pig, although no research has been done on warthog involvement. It is very difficult to do research on wild life because of difficulties of having to work through another Ministry.

CBPP

CBPP vaccination is obligatory. Vaccination rates noted in the field visits ranged from 25% to about 70%. Low vaccination rates were attributed to lack of resources rather than poor farmer co-operation.

Transhumant/Trade Animals

Transhumant or trade animals going across the border must have international transhumance certificates (OIE Standardised) issued by the government Veterinarian at the point of origin and specifying the itinerary. CBPP is the only obligatory vaccination for the certificate, but others may be included (i.e. BQ and pasteurellosis).

There are no obligatory vaccinations for sheep and goats. Virtually all of the movement is on foot. Trade animals move from N. to S. whereas transhumant animals go back and fore.

8. Laboratory services

DLNE

The DLNE has 25 staff including 5 veterinarians, 1 zootechnician and 15 technicians. The DLNE is primarily concerned with diagnosis with sections of Bacteriology, Virology, Parasitology, Biochemistry, Histopathology and Microbiology of food of animal origin. DLNE Diagnostic tests carried out are as follows:

- CBPP
  - AGID + CFT + ELISA antibody detection (no culture capability)
- FMD
  - ELISA (Antibody + Antigen)
- PPR
  - ELISA (antibody) and AGID (antigen)

- ASF
  - 4 technicians trained on ELISA + PCR, but no testing as no response to the request for kits from the Reference lab. in Spain (the Dakar kit is regarded as not effective).

- HPAI
  - Rapid antigen detection by chromatography. Samples forwarded to the reference lab.in Italy for confirmation.

NB: 3 Agents and two private vets interviewed in the field visit stated that they are hardly submitting any samples at all. The summary of the Active Surveillance Activities for 2005 showed that of the 43 reported suspected outbreaks of disease, samples were submitted from only 4 outbreaks. The Active Surveillance Posts are supposed to be the vet. posts that are equipped and trained for lab. sampling.

The total number of samples for 2005 is as follows (excluding rinderpest serology and tuberculin testing results):

Type d'Examens	**Nombre d'Echantillons Animaux (E.A)**
Parasitologie	151
Virologie (Rage : par Immunofluorescence Directe)	285
Bactériologie	126
Autopsie	181
Test séro-agglutination et ring-test de Brucellose	285
Total	**1028**

Source – DLNE Annual Report (2005)

This represents an average of 19-20 diagnostic samples per week which is low for a national veterinary laboratory.

Regional Laboratories

There are 4 Regional laboratories, but they are poorly equipped. The Tenkodogo laboratory was visited. Although well appointed, with some equipment from PACE and with two technicians trained to do simple diagnostic procedures, it was clearly underused for farm animal diagnoses with most of the samples coming from the nearby clinic. Surveillance samples are tested free of charge, but samples from the clinic are charged according to rates stipulated by Ougadougou e.g. about 500 FCFA for a worm egg count. Even brains examined for rabies are charged for.

9. The role of the private sector

Today there are about 55 Private vets with pharmacies and clinics, about half of them in and around Ougadougou, and their main income is from selling drugs. They benefited from PARC by receiving Guaranteed assured Bank Credits, with the first phase of privatisation in 1997/98. Loans were not repaid and the bank (Banque Agricole et Commerciale du Burkina Faso) reimbursed itself from the Guarantee Fund.

NB: In the field visit, two private vets were interviewed who both claimed that they were discriminated against, as the system allowed the government vet. services (i.e. through the 100 Postes Vétérinaires) to deliver such services as routine treatments but supported by the government. This provides unfair competition. Both private vets said that the only way they could make a living was by diversifying e.g. by doing consultancy work for NGOs).

10. The legislative framework

The existing legislation is dated 1989, but legislation has been revised by lawyers but has yet to be implemented. All Vets have to be members of the Veterinary Order, dated 1991, and under the existing legislation certain vets were mandated to carry out vaccinations (Rabies and CBPP) and they can sub-contract to auxiliaries. The Private Vets have their own council (COVEP – Collective de Vétérinaires Privés). They have to report their vaccinations and also disease suspicions by telephone to the Regional Director of Animal Resources.

Private vets have to be licensed, the conditions for which are:

- Have a vet. degree
- Be a Burkina National
- Have facilities (Clinic, Pharmacy)

11. Expanding Awareness of Animal Health Services

The RESUREP Bulletin is not functioning. Only one issue was produced, in December 2002. There seems to be no regular or formal communications or feedback between Central Authorities and the Regions, and Staff in the Regional Offices play the key role in co-ordinating communication links with farmers.

Veterinary staff liaises with village association heads and representatives of farmers' associations on veterinary issues. The information from the field visits indicated good co-operation between the farmers and the local veterinary services.

Burundi

Venue	6th PACE Co-ordination Meeting, Mombassa
Date	29/06/06
Present	1. FEM Team (All) 2. Dr. Maurice Ntahiraja, PACE Co-ordinator, Director General of Animal Production 3. Mrs. Estella Nzitonda, EC Delegation, Bujumbura, Burundi

General

Veterinary personnel in Burundi is as follows:

- 53 vets (5 private and the rest in Government services)
- 150 Medium level technicians (4 years training), with 1 in each commune
- 357 Low level technicians (2 years training), 3 in each of the 119 Communes (each commune has 3 zones).

In addition to the above, there are animal production technicians.

Apart from the 5 private vets, all are in Government services. The vets have trained in various vet. schools around the world.

Burundi has 16 Provinces, each with a PVO.

Vets in Burundi are employed at all levels (high level, abattoirs, various projects funded by different donors etc.)

Epidemio-Surveillance

The PACE programme was late starting, and the PEs 1 and 2 are still not closed. PE 3 (1st year of the extension) has been implemented and PE 4 is expected to be signed soon. As a result, the ESN has not been implemented, although an expert from CHAD has been identified and will start in July. The TORs have been drawn up by PACE.

The diseases recognised as dangerous are:

- ASF
- ECF
- LSD (Mild form)

Privatisation/Legislation

Burundi animal health legislation was set down in the 1950s and there are 4 relevant laws as follows:

- Animal movement control
- Privatisation including the role of the veterinary association
- Vet. pharmaceuticals

Privatisation is not being promoted by the Government, and currently there is no legislation to for the regulation of private veterinary practice, although this is in process and is expected to be passed in a few weeks.

A new law is coming out concerning animal movement control. The TA from PACE assisted in re-drafting this legislation, and the process involved many PACE workshops.
Legislation concerning disease information systems will be updated.

PACE has contributed to this general updating of the legislation.

Laboratory

There is a CVL in the Capital, plus 1 regional lab. in the centre of the country (non-operational). The labs used to be supported by GTZ but not any more which has caused difficulties. PACE has provided kits, equipment, computers and cars for the Central lab.

Training

Burundi staff have received training of a range of subjects, e.g.:

- Lab.techniques at Regional workshops
- Computer training
- Geographical Information Systems

NB: The Co-ordinator has only recently taken over and was unsure of much of the PACE activities in his country.

Cameroon

Dr NCHARE Amadou	Head of Epidemiology Unit
Dr BASCHIROU Moussa Demsa	National PACE Co-ordinator

Cattle and goats are transhumant between Cameroon and Nigeria, Chad and Niger.

Trade cattle move between Chad (some are coming from Sudan) and Nigeria across the northern tip of Cameroon on foot.

Important transboundary diseases

CBPP, mostly on border with Nigeria
FMD Types O, SAT2 and A
PPR
ASF – no vaccine – control is by movement control (the epidemiology of ASF in Cameroon is not clear)
HPAI outbreak has been controlled
Newcastle Disease

Disease control

CBPP

Annual vaccination against CBPP with $T_1$44 charged for but highly subsidised. In 2005 there was an epidemic of CBPP in North Province. Numbers of cattle vaccinated increase when there is an outbreak. There are no reagents in the Veterinary Laboratory for CBPP diagnosis.

Rinderpest

Cameroon has made a Provisional Declaration of Freedom from rinderpest disease to OIE.

PPR

PPR is endemic with few clinical signs and therefore problems of diagnosis.

General

Surveillance is passive, active and targeted. There are two mobile clinics and teams, one each at Yaounde and Garoua (they were used to control the HPAI outbreak). They are a sustainable output of PACE.

There is a plan for 10 mobile teams, one for each of the 10 regions = 7 existing PACE vehicles + 3 vehicles requested.

Garoua Central Veterinary Laboratory:

Activities:

1. Vacc. production: CBPP T_1SR & $T_1$44; BQ; *Pasteurella multocida;* PPR; ND Hitchner B_1 and La Sota; LSD; ND; Fowl Cholera;
2. Research and diagnosis: RP & PPR cELISA and i/cELISA; FMD antigen and antibody detection ELISAs; PCR for RP;

3. General administration;
4. Vaccine control;
5. Maintenance.

EU Delegation

HPAI surveillance and control

EU has Envelope B funds for emergencies - €2.6m for HPAI control + UN Development Programme:

$200,000 USAID
$100,000 China
$100,000 UN
$300,000 AfDB (animal health) + $200,000 AfDB (human health)

Ministries involved (11 in total within the Interministry Committee) in HPAI control to whom the money will be allocated:

Ministry of Environment and Nature Protection

Ministry of Wildlife and Forestry

Ministry of Livestock, Fisheries and Animal Industry (this Ministry should get a major part of the emergency funding because of the surveillance and disease control mechanisms already started by PACE)

FAO/USAID provided protective clothing for HPAI

n.b. poultry meat and hatching eggs imported from Europe.

General

The EU Delegation has missed the input of the Regional TA since he left the programme.

EDF 10 starts in January 2008. It will give money for Agriculture (including Livestock Development).

NAO

A visit was made to the equivalent of the NAO in Cameroon (Office of Linkage between Ministry of Finance and EU).

CEBEVIRHA (Commission Economique du Bétail, de la Viande et des Ressources Halieutiques (Economic Community of Livestock, Meat, fisheries and other Sea Products Resources) was described.

Epidemio-surveillance activities

A new computer with ARIS installed by in Nairobi was received in January 2006. Its performance is good but there is not enough fields in ARIS for all outbreak information for active surveillance.

Epidemio-surveillance Network:

Cameroon has 10 Provinces, with a total of 40 Departments. Each has a veterinarian paid by Government plus a surveillance allowance from PACE. They undertake passive surveillance, active surveillance, clinical and sero-surveillance for rinderpest and clinical surveillance for HPAI.

The surveillance teams do not have GPSs so there is no good mapping information. Spatially, data are captured at District, and not village level. The Epidemiologist would like to use ArcInfo and currently maps from co-ordinates in an atlas.

Outbreak reports and summaries are forwarded monthly on paper to Yaounde and there entered into ARIS. Monthly activities reports are stored separately (not in ARIS). Before ARIS was installed, data was stored and analysed in EXCEL.

Training

There are three Training Schools for animal health auxiliaries. 3,000 auxiliaries are working, mostly in the public sector, but some are working privately with private veterinarians or breeders associations.

Private veterinarians are mostly working with small animals in Yaounde and Douala. Five in rural practice obtain most of their income from selling drugs. There is no Government employment for private veterinarians. Though legislation allows it, private veterinarians do not have the right to do Government work.

Wildlife

Wildlife surveillance has not been introduced in Cameroon by PACE. There is no capture/immobilisation equipment and no training has been given.

Eritrea

Background

Eritrea has six regions, each with a regional veterinarian.

Reporting

Veterinary staff in sub-regions conducts epidemio-surveillance and submit reports to Regional Veterinary Officers who consolidate them and forward them to Headquarters. Active disease surveillance teams operate in the six regions.

The data manager in Headquarters (Aferwerke Mehreteab, Animal Health Assistant) compiles and analyses data in Access and reports to the Ministry of Agriculture. Level of reporting is 95%. Until computers have been received, only one regional office has access to Headquarters by internet.

Emergency disease reports are sent by telephone. Six monthly Reports are sent to OIE at six-monthly intervals.

HPAI

A National Task Force has been established with an emergency preparedness plan. PACE is supporting with laboratory diagnostic kits and equipment, allowances, vaccines and protective clothing.

Animal Health Delivery

There are no private veterinarians operating in Eritrea. Services of Government veterinarians and Animal Health Assistants have been disrupted by the requirement for them to do military national service. CAHWs have been used in the south west of Eritrea where they were trained and supported by Vets sans Frontière but they appear to have discontinued operating.

Compulsory vaccination programme

Vaccination programmes are conducted against PPR, Sheeppox and FMD (trivalent A, O and SAT2 vaccine). Vaccines supplied by Government are free of charge and PACE provides vehicles, fuel and per diems to enable their delivery. Results are not as good as expected: it is postulated because of lack of movement control.

Co-ordinating Unit

Regional TA Philippe Leperre has visited.

Transboundary and other diseases of importance

PPR, Capripox, including sheep pox and LSD, FMD (seen in cattle and once common in dairy herds but has been controlled by vaccination and no case has been seen in the last nine months), rabies. Recently, there have been outbreaks of CBPP. There are seasonal occurrences of anthrax, blackleg and AHS.

Poultry suffer from ND, ILT & infectious coryza. n.b. regarding HPAI, Eritrea is in the second flyway of wild bird migration routes.

Epidemics of CCPP have occurred previously but are not currently reported.

Materials and support supplied by PACE:

Surveillance and vaccination teams

Vehicles, running costs and per diems for eight surveillance and vaccination teams: each team is comprised of one veterinarian and two Animal Health Assistants. Besides undertaking active surveillance and vaccination, the teams have emergency preparedness and rapid response functions in the face of animal disease emergencies.

Laboratory diagnostic support

Support to diagnosis has been given by PACE in the Central Veterinary Laboratory, Villagio, Asmara, the Regional Laboratory at Geish/Barka, and to District Laboratories at Mendefera and Keren.

Proficiency in agar gel and ELISA techniques have been developed and links with World Reference Laboratories have been made.

PACE activities

PACE Eritrea was operative for four years up to the Extension Phase, but the fourth year work programme was not completed and a rider was given to extend the fourth year work programme to April 2005. May to July activities were covered by Government funds, and the Extension Phase work programme started in August 2005.

Activity	Achievement
Strengthen ESS for data collection and reporting through purchase of computers and accessories and link to internet.	Not fully achieved due to delays in procurement.
Collect and analyse data on cost-benefits of ESS as promoted by the PACE Economics Unit.	Workshop organised, experts recruited for the analysis. Proposals submitted to Government.
Workshops to sensitise Government officials for funding ESS and gather information on its day to day requirements.	Government is committed to permanent budget support for the ESS.
Develop and implement a system for passive surveillance.	Workshops organised for training in passive surveillance. Reporting formats upgraded and submitted regularly.
Develop and implement a system for active surveillance	Surveillance teams travel to grazing and watering points and report. Surveillance reports sent to OIE.
Strengthening diagnostic capacity of laboratory	Laboratory equipment purchased, laboratory staff trained in diagnostic methods.
Control of CBPP (recently introduced to Eritrea).	Control programme made in agreement with FAO and PACE and authority gained from Government to control CBPP. Workshop organised and staff updated.

Activity	Achievement
	Activities ready to commence if PACE work plan is approved on time.
Progress down OIE Pathway	After submitting a dossier of serosurveillance activities, OIE has declared Eritrea's freedom from rinderpest infection.

Extension Phase

In the PACE extension programme, vehicle spare parts and computers are being purchased but, despite good co-operation between the PACE National Co-ordination Unit and the EC Delegation, procurement procedures require more time and may not be completed before closure of the programme.

Training

Training on surveillance, including for HPAI, has been undertaken and areas for surveillance identified.

250 farmers have been trained in infectious diseases and reporting;

30 Animal Health Assistants in disease surveillance and sample collection;

10 laboratory technicians in diagnosis.

Ethiopia

Daginet Yioneru	National PACE Co-ordinator

Background

Ethiopia has 9 regions and two Administrative Councils. There are 630 Districts. Twenty seven of these Districts are in the Somali Ecosystem where SERECU operates. Otherwise, Ethiopia receives no financial support from SERECU.

Outbreaks of FMD have recently stopped exports of meat and live animals from Ethiopia to other countries, including Egypt.

The Animal Health Department is in the Ministry of Agriculture and Rural Development where there are three Vice Ministers. One is for the Animal Health Department

Activities of PACE

PACE supports an Epidemiology and Disease Control Team staffed as follows:

1. National Co-ordinator
2. Privatisation Officer
3. Rinderpest Epidemiologist
4. CBPP Epidemiologist
5. Planner
6. Communications Officer
7. Emergency Preparedness Officer.

Only one of the above is employed by Government, the others are on contracts supported by PACE and will discontinue their work when the PACE project closes.

PACE has 8 Branch Co-ordination Offices in the following towns:

1. Awassa
2. Harar
3. Bedele
4. Bahar Dhar
5. Kombolcha
6. Addis Ababa
7. Mekele
8. Dodola.

Surveillance activities

Passive surveillance: all District report disease information to Federal level by mail. ARIS has been delivered but has not been commissioned. An Access database developed nationally during PARC is being used.

Laboratory

The National Veterinary Laboratory is at Sebata. It is not in the Animal Health Department but is under Agricultural Research. PACE has supplied it with vehicles, diagnostic kits and operational costs.

Sustainability

Government is willing to take over PACE activities but doesn't have the resources.

Privatisation

Veterinarians are not willing to enter private practice as they face too much competition from Government veterinarians for private work.

Central Government has stopped importing veterinary drugs and is leaving that to the private sector. However, Regional Administrations continue to import drugs.

Legislation

The latest proclamation which was approved by the Council of Ministers for the control of animal diseases was promulgated by the House of Representatives in 2002 (proclamation No. 267/2002 – Proclamation to provide for the prevention and control of animal diseases), which replaced the 1961 Animal Disease Control Proclamation. When the proclamation is enforced it would address some of the policy issues which constrained the rational delivery of veterinary services and be instrumental in the control of major trans-boundary livestock diseases. Four regulations were prepared and submitted to the Council of Ministers in the year 2004, to be issued in the shortest time possible. During PARC era, there was not any proclamation in Ethiopia related to control of animal diseases.

Legislation includes regulations on:

1. Privatisation
2. Disease control
3. Quarantine and Inspection
4. Registration of Professionals

Outputs of PACE

Disease Control Strategy.

Emergency Preparedness plans for Rinderpest and RVF.

Emergency Preparedness relies on PACE – without PACE, there will be no Emergency preparedness.

Communications: public information materials are produced and broadcast in five languages using the PACE budget.

CAHWs

AHAs are being trained to take over from CAHWs. 3,000 AHAs are being trained per year for three years at the AHA Training School, Zwai.

Veterinary training

400 veterinarians will graduate per year from six schools at:

1. Debre Zeit
2. Jimma

3. Makelle
4. Gondar
5. Jigjiga
6. Awassa

Important diseases

FMD
PPR
CBPP
CCPP
ND
Capripox
AHS
Trypanosomosis.

An FAO TCP for RVF produced equivocal results – seropositive animals were found in unusual places. The ELISA results are being re-evaluated.

Training

Training has been done by PACE in:

- Disease reporting
- Emergency Preparedness
- Business management
- Wildlife
- GIS
- Data management.

Wildlife

Wildlife surveillance has not been very successful (for example, there was a failure to capture and sample warthogs for rinderpest surveillance).

Ghana

Dr Joseph Gaari-Kweku	PACE National Co-ordinator
Dr G.A.Opoku-Pare	Director, Veterinary Laboratory

Background

Ghana had an epidemiology project prior to PACE supported by GTZ which set up a livestock and health database in the Livestock Planning and Information Unit. Support to Veterinary Services has also been received from IAEA and Dutch bilateral aid.

Ghana has a Central Veterinary Laboratory at Ponj-Tamale and a Regional Veterinary Laboratory at Accra. No virology is done except for serological testing.

Reporting

Ghana has submitted a dossier to OIE for declaration of freedom from rinderpest infection.

Two national random serum sample surveys have been undertaken for rinderpest, CBPP, PPR, ASF, ND and HPAI. A third is ongoing and a serum bank has been established.

Animal Health Delivery

CBPP control is by free vaccination and a test and slaughter programme.

Movement of livestock for breeding may only be done after they have been tested free from bovine tuberculosis, brucellosis and CBPP.

Seventeen veterinarians left Government service to enter the private sector but some are returning as they cannot compete with Government veterinarians who are also undertaking private practice.

CAHWs are licensed and supported by the NGOs OIC International and Action Aid.

Epidemio-surveillance system

There are surveillance zones in the north and central parts of Ghana. Sentinel clusters of cattle, small ruminants, poultry and coastal birds have been established.

ARIS was installed in 2003 at National level.

Transboundary and other diseases of importance

CBPP, PPR, ASF and ND.

Materials and support supplied by PACE:

Laboratory

PACE supplied equipment, reagents and consumables to enable the laboratory to test for rinderpest, CBPP, ASF and HPAI.

PACE activities

PACE gave support to the development of the following units:

- Laboratory
- Epidemiology
- Wildlife
- Economics
- Communications.

Training

Private Practitioners

An impact assessment of privatisation has been done and PACE has assisted private practitioners with business management training.

Livestock keepers

The Communications Unit of PACE has undertaken training of livestock keepers.

Laboratory

PACE provided no laboratory training, nor did it set up a laboratory information system or train in laboratory quality assurance, apart from regional workshops.

CAHWs

CAHWs require training in business management.

Legislation

Veterinary Legislation has been reviewed in 1961 and 1983. There is enabling legislation for CAHWs, private practice and food hygiene.

Guinea

July 2 – 7, 2006 (Patrick Fusilier + Archie Hunter)

1. People met

Conakry Ministère de l'Agriculture, de l'Elevage, et des Eaux et Forêts et le Laboratoire Central Vétérinaire de Diagnostic (LCVD)

1. Dr. Sény Mane, Directeur National Elevage
2. Dr. Mamadou Lamarana Souare, Chef Cellule Technique d'Appui et de Privatisation de la Profession Vétérinaire
3. Marie Camara, Directrice du Laboratoire Central de Diagnostic Vétérinaire (LCDV) and Coordinatrice du réseau REMAGUI
4. Dr. Sory Keita, Directeur National Adjoint de l'Elevage
5. Dr. Aly Conté, Chef de la Division des Services Vétérinaires à la DNE
6. Dr. Mamadou Daliou Diallo, Chef du Personnel
7. Dr. Dore Molou, Secretary General of the Guinea Veterinary Association and i/c veterinary drugs
8. Dr. Ahmed Tidiane Balde, Consultant to the Ministry
9. Dr. Oumar Cherif, Administratif et Financier, Responsable Financier du Programme (PACE)
10. Dr. Daouda Bangoura, Vice Président Commission Régionale OIE Afrique
11. Dr. Saki Alfred Soropogui, Chargé des informations zoosanitaires
12. Dr. Alphonse Gourman, Head of Bacteriology
13. Dr. Souleymane Timbi Diallo, Head of Virology and i/c Reseu REMAGUI

Field visits (4/7 – 5/7/06)

Ecole Avicole Ela, Kahere (On the road to Mamou)

- Local staff (Director not available)

Kindia Vet. Office and Clinic

- Dr. Abdoulaya Gassama, Private vet i/c of the clinic
- Local government veterinary office staff

Mamou Vet. Office and Clinic

- Monetan Diallo, Head of Section
- Abdulaye Sanguré, Animal Health Section and member of the Active Surveillance Group
- Habib Sidibe, i/c Animal Production
- Yeli Yeli Onikoyanim, Lady vet. and Chef de Post of the Urban Animal Health Section
- Alphu Ouman Savane, Private Vet.
- Themmo Alareny Bah, President of an Association of 130 Farmers' Groups.
- Bombacan Camara, Prefectural President of the Farmers' Association
- Algha Yaya Diane, ACSA
- Mamadan Bobo Bary, ACSA

Programme d'Appui au Sous Secteur de l'Elevage. Cellule d'Appui à la Société Civile, near Mamou Vet. Office and Clinic

- Dr. Baggi plus colleagues

Linsan Private Vet. Pharmacy/Clinic (Branch of the Clinic in Kindiya)

- Thiuno Hassana Diallo, Member of the CDS
- Amadou Camara, Vet. (technician) I/C of the Vet. Clinic/Pharmacy
- Douzo Laye Moussa, Chef de Post for Linsan and a network member

2. PACE Management and Administration

National Co-ordinator

The PACE programme in Guinea is facing problems with the Contract/Finance Department at the local EC Delegation. The person responsible for the financial approval of the Programme Estimate refuses to approve the Programme Estimate because he is applying a strict level of control on the financial documents. The PACE Programme in Guinea would not have any Programme Estimate during the PACE Extension Phase. An endorsement to Programme Estimate 5 has been only approved at the end of June 2006.

Accountant

They have already prepared the tender documents for new computers (less than € 30.000), small laboratory equipments (less than € 30,000) and motorcycles. However they would not have the time to obtain the motorcycles (€ 80,000) because of the next closure of the PACE Programme in October 2006 and the budget is over € 80;000. From 2000 to 2004, the previous Financial Controller was requesting quarterly financial reports from the PACE National Co-ordinators and accountants.

Secretary General

The government will provide a budget of one billion Guinean Francs in 2007 to support the livestock sector in Guinea and has decided to financially support PACE activities when PACE will stop.

National Authorising Officer

The National Authorizing Officer is taking too long, sometimes more than a month, to control the financial documents transmitted by PACE because of their internal audit department which is not performing well. They are complaining about the Contract/Finance section at the EC Delegation creating problems.

EC Delegation

The Rural Development Officer is globally pleased with PACE Guinea. The Head of the Contract./Finance Section refused to meet the evaluator and he is difficult to work with. He refused to approve financial documents from different projects and some of them have been stopped.

3. General Veterinary Services

The Division of Veterinary Services is in the Ministry of Livestock and Agriculture, and the services are delivered through the following administrative hierarchy:

- 5 Regions (Low Guinea/Middle Guinea/High Guinea/ Forested Guinea/ Conakry)
- 38 Prefectures – each with a veterinary office headed by a Chef de Section
- 340 Sub-Prefectures (Posts)

There are 200 veterinarians in Government service plus 43 private veterinarians, some of whom have a government mandate. The ratio of vets trained locally to vets trained in foreign countries (mostly socialist) is 60:40. There is 1 vet. school, the course lasts 5 years and graduates 46 students a year. Teaching was suspended as part of the Government's policy to reduce the number of civil servants, but reopened last year and one batch will graduate this year. The need for better technical training of private veterinarians is now recognised as a priority in the vet. school, and the curriculum is being updated accordingly, but without direct involvement of PACE.

In addition there are veterinary technicians who receive 3 years training after leaving school at the Technical Training Centre in Labé. PACE has made recommendations on training needs and what should be included in their training programme.

4. Reporting

The last report of the Division of Veterinary Services covered 1995 – 2000. The next report (2001-2005) is in the process of being published. Data is submitted from field staff on official forms and is analysed by various software (ARCVIEW, Excell, Oracle + PID/ARIS) although existing hardware has insufficient capacity for optimal use of the PID/ARIS software. Annual reports are submitted to OIE, but for some reason no official annual report is compiled.

5. Epidemio Surveillance

The epidemio surveillance network (REMAGUI) was set up under PARC and operates through veterinarians in 31 offices in the field and has focused on the following major diseases:

- By Active Surveillance – sampling from 314 randomly selected "village multi-owner" herds (15% of the total).
    - Rinderpest and CBPP.

- By Passive Surveillance (Everything else but in particular):
    - FMD, PPR, Lumpy skin disease, Rift Valley fever, African swine fever and Avian influenza.

The network has been strengthened under PACE by provision of training, motorbikes, equipment (e.g. fridges and equipment for the cold chain) and blood sampling equipment. It has been integrated into the official veterinary service programme with the support of a steering committee and a team carrying out extension to explain to the farmers what is going on. Involved in the network are Veterinarians (both Government and private), 43 wildlife agents working in protected forest sites, Livestock Resource Associations, ACSAs and Farmers' Sanitary Defence Committees mostly found in border areas and along the CBPP cordon sanitaire.

6. Rinderpest Eradication

Rinderpest was last seen in 1959. Sero-surveillance was started under PARC and serum samples were tested in the laboratory by Competitive ELISA for antibody and Capture ELISA for antigen. Quality control was provided by the reference laboratories in Vienna and Nairobi. Guinea was declared free of infection on May 25, 2006. The PACE programme contribution to this has included the provision of laboratory equipment and training. REMAGUI has worked well in this programme.

7. Control of other major epizootic diseases

CBPP

The control of CBPP is based on OIE guidelines and is focused on a North-South cordon sanitaire (CS) in the centre of the country. There are 4 epidemiological zones as follows:

- West of the CS
  - Disease free- no vaccination.
  - Free but under sero-surveillance (CFT) plus stamping out if required (the last cases were seen in 1997). Vaccination stopped 4 years ago.

- East of the CS
  - Buffer (Tampon) zone where there is a combination of sero-surveillance, vaccination and stamping out.
  - Endemic. Annual vaccination + stamping out.

Vaccination is compulsory and vaccines used are imported (e.g. from Bamako, Mali, Senegal, Cameroon etc.). It is thought there is no risk of CBPP from neighbouring countries south of the CS (Sierra Leone and Guinea Bissau) and no animals enter from Sierra Leone or Liberia. It is also regarded that there is no risk from Senegal which is in the process of eliminating CBPP and vaccination is no longer allowed. Animals can move from West to East through the CS, but not vice versa.

Surveillance also includes a specific programme to detect CBPP cases at the abattoirs and slaughter points backed up with a tracing system based on documentation and ID ear punches. Confirmatory *Mycoplasma* culture in the laboratory is planned.

Since 1989, outbreaks have dropped from a peak of 91 in 1990 to only 1 outbreak in 2005 (Bilan Animaux Santés, 2001 – 2005). Recent outbreaks have been attributed to smuggled cattle from Mali and Côte d'Ivoire.

FMD

FMD was last seen in March 1999. No vaccination is carried out now, and the emphasis is on passive surveillance combined with movement control.

PPR

This is endemic and a major problem throughout Guinea. Vaccination is voluntary and paid for by farmers, but the authorities want it to be compulsory.

LSD

There is no formal programme and farmers can opt for vaccination if they wish.

RVF

There is no formal programme of control, and clinical RVF has not been recorded.

8. Laboratory services

This is a small basic laboratory on the top floor of the Ministry Building and has 5 sections (Epidemiology, Food Hygiene, Parasitology, Virology and Bacteriology).

Research Programmes

Rift Valley Fever

There is currently a research project funded by the AU. RVF is recognised serologically in lower Guinea with high rainfall and extensive surface water for mosquito hatches. Research is based on IgG and IgM Indirect ELISAs. However according to data available in the most recent 5 year report (Bilan Animaux Santés, 2001 – 2005), no clinical cases or outbreaks have been recorded in Guinea. Also an FAO research proposal has been lodged.

PPR

PPR is endemic and currently, only post vaccination serology is carried out using a Competitive ELISA. BAL samples can also be tested for antigen.

African swine fever

Following an outbreak in Côte d'Ivoire in the 1990s, samples were submitted to the reference laboratory in Madrid (all negative). Since then its detection has relied on passive surveillance. No cases have been recorded in the last 5 years.

Avian influenza

The OIE Reference laboratory in Padova is providing all the reagents for the HI and AGID tests.

PACE Support

- Rinderpest
  - Repeated training of the network of field agents
  - Equipping of agents with materials and equipment for the cold chain
- CBPP
  - Material support to the REMAGUI network

9. The role of the private sector

Veterinarians

A guarantee fund of about 100 million Guinean Francs (about €20,000) was handed over from PARC to PACE and 17 vets have been privatised as a result. A local working party monitors the repayments of the loans and repayments are running at 98%. Private veterinarians purchase pharmaceuticals from around 5 companies licensed to import drugs. These companies supply drugs down the chain to smaller vet clinics owned by private vets.

Farmers, including poultry breeders, can also get their vet. drug supplies from these shops/clinics.

CAHWs (Acronym in Guinea is ACSAs)

There are 10,000 ACSAs of which 750 have been trained under the PACE (others have been trained by NGOs). They come from livestock farmers' groups and are authorised to purchase and administer veterinary drugs under veterinary supervision. By law, their activities are restricted to helminth treatment, disinfection of livestock premises, wound treatment, castration, disease recognition and Newcastle disease vaccination.

10. The legislative framework

With TA from the PACE legislation expert, a local consultant was employed to update the legislation to cover the activities of both private veterinarians and ACSAs. The updated legislation has still to be implemented. The Guinean Veterinary Association functions according to Guinean legislation, and is mostly concerned with veterinarians' issues (e.g. professional conduct, professional problems and practical guidelines on the delivery of veterinary services). In theory all veterinarians in Guinea should be members of the Association, but in practice this is not the case.

11. Expanding Awareness of Animal Health Services

The PACE Communication Unit (responsible officer not available) and extension services are now integral parts of the Government veterinary services. The programme has effectively heightened the awareness of livestock farmers and the general public about the benefits of animal health services. This has included sub-contracting to professionals e.g. media, rural radios etc. Also journals, conferences, theatre, traditional songs, fliers, brochures, posters etc. have all been produced. The Director was confident that a real network has been established with this Unit.

Guinea Bissau

Venue	6th PACE Co-ordination Meeting, Mombassa
Date	27/06/06
Present	3. FEM Team (All) 4. 2. Bernardo Cassama, National PACE Co-ordinator, Guinea Bissau

Within Guinea Bissau there are only 14 vets, all in public services. Three are field officers which the NPC said is enough for the livestock which are concentrated in 8 regions. The other vets are all in the Capital in offices, labs etc.

Privatisation issue

There is €20,000 available from PACE as guarantee for any bank providing loans/credit to anyone starting up in private practice. Unfortunately neither of the two banks were prepared to advance loans or credit as they have no knowledge/confidence of the livestock sector. The banks wanted to use the guaranteed funds as the loan! A compromise was suggested and rejected, namely that the bank put up 90% of a loan and the remaining 10% could come from the PACE guarantee funds. The loan application was 4 veterinarians. The money would have been used to purchase pharmaceuticals, fridges, small equipment etc.

Private practice was then discussed in general, and although all the vets are in the public sector and by law are not allowed to do private work, in reality they do. This is essential to supplement the very low Government salaries. Despite their lowness, the vets would rather have the security of a government job than risk the private sector. For example, the NPC takes the opportunity of foreign travel to purchase and import veterinary pharmaceuticals. No vet. pharmaceuticals are imported officially by the Government who knows what's going on and turn a blind eye to this practice.

Kenya

Kenya has eight provinces with a total of 71 Districts.

People met

Dr Harry Oyas	National Co-ordinator
Dr Murithi Mbabu	PACE Epidemiologist
Dr Sophycate Njue	Data Manager
Dr Grace Gachacha	PACE Communication Officer
Dr Jagi	Private – Public linkages officer
Dr Mignon	Epidemiology/data management
Rose Matua	Serum banking and Laboratory Technician
Dr Jiko	Epidemiology Unit
Dr John Kamau Kibeu	Executive Officer of the Kenya Veterinary Board
Dr Kasiiti	Rinderpest surveillance

PACE activities

PACE has supported the Epidemiology Unit, the Laboratory, Communications, Data Management and Training.

Diseases of Importance

CBPP; FMD; RVF; (RP); PPR; ASF; (Rabies); ND (dead birds collected and tested for HPAI, ND and other paramyxoviruses).

Communications

The Communications Unit sensitises by meetings with stakeholders, involves them in making work plans; identifies target audiences and gives them the information they require; undertakes Participatory Disease Searches; conducts Participatory Rural Appraisal (PRA) with grass roots stakeholders; organises implementer workshop: makes work plans and organises public information campaigns; organises retreats to formulate messages; hires commercial graphic artists and designers.

Tools used for communication are radio, posters, role play and workshops.

The Agriculture Information Centre owned by Ministry of Agriculture does the broadcasts.

Distribution funds for communication messages are very important. 10% of budget should go to communication but in reality in Kenya it is generally about 6%.

Training

PACE is sensitising livestock keepers in ASAL to disease surveillance. PACE bought radio call sets for the ASAL remote areas but they have been supplanted by mobile phones.

PACE has trained PRA methodologies.

Guest lectures to the six Animal Health Training Institutes have been given by PACE on public/private roles of veterinarians.

Short courses on project management.

The PACE National Co-ordinator has a Certificate in Project Management

Disease free zones (DFZs)

Kenya is exporting live animals to Mauritius through DFZs:

Catchment areas for livestock are Laikipia, Uasin Gishu and Taita. Livestock moved to quarantine ranches at the coast, for example Galana.

A Study of DFZs was funded by PACE and a feasibility study for a DFZ in the Coastal Region of Kenya was funded by GTZ.

Disease control

General

Clinical disease reporting forms submitted by DVOs via Provincial Veterinary Office to the Epidemiology Unit.

CBPP

Zonal control policy.

Zones: disease free zone (slaughter); surveillance zone (no vaccination); buffer zone; infected zone.

Biannual free vaccination with $T_1$44 (tail tip) in the infected zone.

Other epizootics pushed to one side.

The random sample sero-surveys for rinderpest are also being analysed for CBPP.

Rinderpest

Zones outside Somali Ecosystem were recognised by OIE as free from rinderpest disease in May 2006.

Two serosurveillance random sample surveys have been completed from a sampling frame of villages and sub-locations. 15 or 25 animals bled from clusters plus wildlife surveillance.

In Somali Ecosystem Participatory Disease Surveillance (PDS) was done in 2004 plus serosurveillance except that no serosurveillance was done in Garissa or Dijara Districts where vaccinations were carried out. The PDS survey was negative but seropositive animals were found in Mandera and Tana River. To complete the OIE pathway to declaration of freedom from infection will require further donor funding for the active surveillance needed.

FMD

A, O, C, SAT2 serotypes reported and SAT1 remerged in 1999 after 10 years absence.

A socio-economic study is being done on the impact of FMD and demand for vaccine.

FMD quadrivalent and trivalent vaccine produced by Kenya Agricultural Research Institute (Ministry of Agriculture) and QA done at Kabete Central Veterinary Laboratory (Ministry of Livestock & Fisheries Development).

RVF

Five sentinel herds at Trans Nzoia, Nakuru, Machakos, Taita and Garissa are visited yearly immediately after rains by Research Laboratories (clinical examination and serology):

Failures of PACE

PACE took time to be accepted by Government; no specific funding for communication in place; PACE was a disappointment after PARC, PACE did not have much funding compared to PARC as it was assumed that Government of Kenya (GoK) would allocate adequate counterpart funds in addition to PACE funding. Unless the GoK allocates more financial resources to the Ministry of Livestock and Fisheries Development it is unlikely that GoK will be able to maintain PACE activities.

Stronger PACE backup team needed at IBAR. PCU has hardly been in contact with the project. There has been more contact with the Delegation than with the PCU. Slow release of funds into the Project account has caused delays in programme implementation. As highlighted in the Financial Audit carried out by Moore Stevens (External Auditors appointed by the European Commission) it was evident that that the PACE Kenya component was initially weak in administration and financial management and these were main reasons for delay in release of funds.

Achievements of PACE

Good surveillance in place by the time of emergence of HPAI. PACE helped with the establishment of a disease free zone.

Privatisation (promoted by World Bank)

Must pay for FMD vaccine

Epidemio-surveillance and Information System

District meetings have been facilitated by PACE and the disease reporting system has been improved by PACE and Nairobi University.

ARIS

Computers have been procured for operating at Provincial level and 23 people trained to use ARIS. The system is working at Provincial level but can only save information onto floppy disks for transfer to the Central ARIS system. The PMU has visited twice but not been able to fix the problem. The IT TA, Berhanu Bedane is missed.

Currently, analysis of data is done in Excel.

The Epidemiology Unit at the Central Veterinary Laboratory (CVL), Kabete has the capacity to install ARIS in the provinces and undertake the training.

Mapping

To map information in ARIS, currently it is necessary to export a file from ARIS as a .csf file to Dbase4, to Exce,l to Notepad, to ArcView. Kenyan disease data is georeferenced to sublocation. Active surveillance teams take GPSs for georeferencing.

Modules used in ARIS are for: passive surveillance and active surveillance for RP; RVF; CBPP, ND plus basic information and planning and performance indicators.

There is a Local Area Network at CVL with provision for data analysis and reporting. Ten computers will be procured before closure of PACE for priority districts (PMU reduced the number from 50). Access database and Excel spreadsheets are used for other diseases and economic data. TadInfo was used for one year.

Structure of Animal Health Services

Ministry of Livestock Services & Fisheries Development has three Departments:

Dept of Vet Services;
Dept of Livestock Prod;
Dept of Fisheries.

All staff working in PACE are government staff except for an office messenger, mechanic and driver, giving continuity after closure.

USAID has an animal health programme in Garissa.

There are about 1,000 CAHWs. Government has not been employing Certificate holders for 10 years. Average age of staff is consequently high (48) – retirement age of staff is 55.

HPAI Surveillance

Government and PACE funding supports multisectoral surveillance, several ministries are involved.

Kenya Wildlife Services works together with the CVL Epidemiology Unit.

Action plan

Rapid response teams in Kabete and Regional Laboratories Respond to reports of dead birds (wild and domestic) – so far more than 600 have been received.

Analysis of samples is conducted at Kenya Medical Research Institute (KMRI) CDC Laboratory where they have PCR and Class 3 containment (RT PCR), and at CVL, Kabete (egg inoculation and HI).

Targeted surveillance focussed on: national wetlands; lakes; Nairobi chicken markets
FAO TCP has provided training and an early warning, prevention, detection and control workshop was funded by DFID.

Privatisation

The Kenya Veterinary Board is the regulating body for veterinary professionals.

The Veterinary Surgeons Act Chapter 366 has rules for Diploma and Certificate holders (other animal health providers) drafted in 1999, finalised but still not promulgated. Stipulates what can be undertaken by Diploma and Certificate holders.

PARC contracted private veterinarians to do vaccinations but no similar programme implemented since.

There are about 200 pivate veterinarians. In Nairobi they work on pet animals, one specialises in horse work. In rural areas private veterinarians do clinical work and sell drugs and acaracides. Economy in agricultural sector has weakened and has affected veterinarians' livelihoods.

Where there is a private veterinarian no clinical services can be provided by Government veterinarians. Complaints regarding contravention of this regulation can be made to the Veterinary Board.

Government stopped buying veterinary drugs.

CAHWs have been trained and supported by the NGO ITDG. CAPE has also done some training. CAHWs are supervised by DVOs.

A policy for their use has been drafted with assistance from PACE.

Privatisation has given clinical work, dip control and Artificial Insemination (AI) to the public sector.

Examples of private animal health delivery in ASALs in the private sector:

Private veterinarian based at Kapenguria, working with two Certificate holders, covers Turkana and West Pokot. He does clinical work and AI and supplies CAHWs with drugs and acaracides.

One veterinarian working in Wajir.

Marsabit – Two Livestock Officers supported by Farm Africa use CAHWs for delivery.

Moyale – one veterinarian, one Livestock Officer and one Animal Health Assistant are using 15 CAHWs.

Legislation

PACE has assisted adjustments of:

Disease Control Act;
Animal Diseases Act;
Training of Inspectorate;
Drugs Inspectorate.

CVL Kabete

PARC developed RP,CBPP, PPR ELISAs and training with FAO/IAEA.PACE provided RP kits (and CBPP kits irregularly).

CBPP

CVL still does CFTs for CBPP. The test has good specificity, but poor sensitivity and there is poor correlation between CFT and ELISA.

Western blots are done at the Technology Centre.

Staff has been re-trained by PACE using Hezron Wesonga, from Muguga.

Equipment supplied thru' PACE

Freezers for serum bank; computers; consumables; Sample taking kits, PCR equipment, plate reader, ELISA kits for RP and ASF (the latter gives false positives).

Serum Bank

Operating a serum bank is expensive. 40,000 sera in the bank, mostly from cattle. Currently using sera to evaluate an indirect LPPQ ELISA for CBPP.

Training by PACE

Surveillance
Sample taking and submission
Training in Quality Management (for laboratory).

Work Plans

Involvements in getting a work plan approved:

Work Plan ↔ PCU ↔ EU → PS → NAO → Delegation.

There have been delays at all levels in getting work plans approved.

Time frame for a work plan can be extended for up to 18 months.

In Kenya, 4.5 work plans have been completed:

1st Oct 2001 for €1,249,000
2nd Nov 2002 for €1,249,000
3rd Nov 2003 for €982,000 to Oct 2004
4th May 2005 – there has been a 6 month delay in releasing money during which time, no active surveillance took place.

Regarding procurement – the PACE National Co-ordinator has to satisfy both Government and EU procedures, for example for vehicle procurement.

Due to slow release of funds, PACE supplies received in January still not paid for – payments have to be prioritised to allow scheduled activities. The reason for the delay in release of funds was due to objection of the Finance and Contract Section (FCS) at the lead Delegation because the project had not closed any of the old work plans, which was a prerequisite for release of new money. According to the EC/Delegation, due to poor administrative skills of the project personnel (in particular the Accountant) the PACE Kenya project was not able to adhere to the minimum administrative and financial requirements of the EDF.

National Technical Assistant, employed under the GTZ contract, was a good go-between the project and the Delegation. He has been missed in the extension Phase. The PACE bonus has only been approved once (during the TA's year with the project).

Wildlife

The Epidemiology Unit can only do wildlife surveillance through the PACE programme as Wildlife is in a separate Ministry. Thus wildlife surveillance will suffer after closure of PACE. Wildlife diseases of interest in Kenya are: rinderpest, ASF, FMD, RVF and Anthrax.

Other donor funding

2 TCPs with FAO.

Somali Animal Health Services Project

PACE activities in Somalia are through the Somali Animal Health Services Project (SAHSP).

SAHSP is funded by PACE until the programme is closed in February 2007. From then it receives further funding from EC Delegation, Kenya, until September 2007. A contract to implement SAHSP has been awarded to a consortium of NGOs headed by Terra Nuova.

SAHSP's link with the EC Delegation in Kenya is through Mr Friedrich Mahler who represents EU with regard to livestock programmes in Somalia.

The Project Management Unit has the following staff:

National Project Co-ordinator	Henry Wamwayi
Counterpart	Mohamed Dhirie
National Epidemiologist	Mohamoud Ali Hassan (Jebra)
Epidemiologist	Steran Tempia
National Administrator	Mohamed Haibe
Administrator	Dario Zakini

For project purposes, Somalia has been divided into four zones:

1. Somaliland with a headquarters in Hargeisa;
2. Puntland with a headquarters in Garowe;
3. Central Somalia with headquarters in Beletweyne or Johar;
4. South Somalia with a headquarters in Dinsor.

A Technical Assistant (Zonal Co-ordinator) is assigned to each of the four zones. In addition, each zone has an administrator, secretary and support staff.

SASHP has the following themes:

1. Passive disease reporting and surveillance, using the ARIS database for data storage and analysis under the control of an IT manager (Francis Sudi).

2. Operation of veterinary pharmacies.

As Central and South Somalia is part of the Somali Ecosystem, SAHSP has a memorandum of understanding with AU/IBAR to implement activities of SERECU in Somalia.

Samples for disease surveillance and diagnosis are shipped to laboratories in Kenya via EU flights (to North and South Somalia three times weekly).

Animal Health Delivery in Somalia

There are five Livestock Professional Associations[3] in Somalia, one for each zone plus one extra in Somaliland. The Associations provide disease reporting focal points down to District level in each zone.

There are CAHWs in southern Somalia who have been trained by CAPE. CAPE also produced a Code of Conduct for their operation in Somalia. Currently, linkages between members of Livestock Professional Associations and CAHWs are poor and SASHP is working on these linkages to develop animal health delivery through a combination of their manpower and resources. Veterinary Laboratories are being developed in Somaliland and Puntland.

EU, through Terra Nuova and Uno, is supporting the development of a Veterinary School at Sheikh, near Berbera, which is teaching a three year veterinary diploma course.

Legislation

Somaliland has already got a veterinary code and the Somaliland, Ministry of Livestock has produced a veterinary law which was amended on its passage through Parliament, but the Ministry of Livestock does not approve of the amendments as there is too much private involvement for their liking.

SASHP are supporting development of a veterinary code and Veterinary Board in Puntland.

Communications

As part of its communication strategy, SASHP is providing livestock disease information to farmers through radio programmes.

Important diseases of livestock in Somalia

CBPP, PPR, CCPP, RVF and FMD.

With regard to HPAI, an outbreak has occurred in neighbouring Djibouti. Therefore, SAHSP has provided diagnostic kits for HPAI and undertaken training on surveillance for HPAI.

[3] Livestock Professional Associations are composed of veterinarians and animal health technicians.

Mali

July 20 – 25, 2006 (Patrick Fusilier + Archie Hunter)

1. People met

Bamako

PACE regional Office, Bamako

- Dr. Cecile Squarzoni, PACE Epidemiologist
- Dr. Nicolas Normandie, PACE Regional TA
- Dr. Patrick Bastiaensen, PACE Regional TA

PACE National Office, Bamako

- Dr. Mamadou Racine N'diaye, National PACE Co-ordinator
- Mr. Adama Samake, i/c PACE Communication
- Mr. Ousmane Baby Gestionnaire/comptable PACE
- Mr. Ba Ibrahim, Strengthening Services to Farmers

Directorate of National Veterinary Services (DNSV), Bamako

- Dr. Lassina Doumbia, Head of the Epidemiololgy and Surveillance Section
- Mr. Mahmoudou Diall, PACE Epidemiologist
- Dr. Soumana Diallo, Deputy Director of the DNSV
- Dr. Souleymane Camara,
- Dr. Amaiguere Dit Amadou (Farm advisory services)
- Dr. Omar Tounkara, Ordre des Vétérinaires
- Dr Modibo Kouyate
- Mme. Sanogo Diarata Traore, COVEM (Veterinary Collective)

Laboratoire Central Vétérinaire (LCV)

- Dr. Saïdou Tembely, LCV Director General
- Dr. Mamadou Niang, LCV Head of Diagnosis and Research
- Dr. Oumou Sangare, Head of Virology
- Dr. Mahmoudou Diall, PACE Epidemiologist

OIE Representative's Office, Bamako

- Dr. Amadou Samba Sidibé, Regional Representative for Africa.
- Dr. Niang, OIE
- Dr. Sec, FAO
- Dr. Caroline Planté, OIE TA

Field visits (21/7 – 22/7/06)

Secteur Bougouni Office, Sikasso Region

Bougouni Public Services

- Koné Bakary, Secteur Chef, Veterinarian trained in Kiev.
- Amadou Coulibaly, Poste vétérinaire Bougouni-Central
- N'Golo Traore, Agricultural Office, Bamako
- Brahima Coulibaly, Vice President of the Local Council
- Zana Justin Dembele, Animal Productionist
- Marc Dembele, Representative of the local burchers

Farmers

- Tiékoro Diakite, Livestock farmer
- Mamoudou A. Cisse, Livestock Farmer
- Alassane Kane, Livestock Farmer

Private Vets

- N'Golo Traore, Mandated Private Veterinarian, Manakoro
- Mme Konate Maimouna, Mandated Private Veterinarian
- Mme Ould Tenin Diarra

Sikasso

Sikasso Region

- Binafou Dembele Regional Director
- Seydou Sogoba, Head of Regional Epidemiology Unit
- Adama Sangare, Chief Veterinary Sector
- Mme Kelly Diahara Haidara
- Bougoussama Coulibaly
- Ousmane Thiero
- Zoumana Kante
- Kata Coulibaly

Farmers

- Aboubacari Kelly, Farmers' Union
- Ibréhima Dia
- Seydou Sall

Private Veterinarians

- Abdoulaye Z Bamba
- Antoine Diarra
- Adama Sangare

2. PACE Management and Administration

Secretary General

PACE has consolidated PARC. The Government is financially supporting PACE on the ordinary budget. One of the main strengths from PACE was the work done on transboundary diseases. The Government did not allocate any budget for the other diseases like they did for CBPP.

EC Delegation

The Rural Development Officer is new and did not know anything about PACE. The person in charge of PACE at the Contracts/Finance Section was pleased by the financial documents provided by PACE Mali.

National Authorising Officer

They are pleased with the financial documents presented by PACE Mali to them.

PACE National Co-ordinator

Only once 3 proforma invoices were missing but they solved the problem the next days.

3. General Veterinary Services

Mali has the following administrative infrastructure:

- 8 Regions + Bamako District (Each with a Regional Vet. Services Department)
- 49 Secteurs (Each with a Chef Secteur for Vet. Services)
- 4-5 Postes Vétérinaires/Secteur (200 in total throughout the country). These can be staffed by either private or public service vets.

The following statistics on staff numbers were provided with considerable difficulty:

• Members of the Vet. Order (Vets and Engineers)	418
• Mandated private veterinarians (included in the above)	124
• Other vets and engineers (not practising)	500 (approx.)
• Animal health technicians	Unknown

At a meeting in the DNSV, impressions of PACE Mali were summarised as follows:

- Positive
  - Accreditation of freedom from Rinderpest infection
  - Surveillance system established
  - Good integration between public and private vet. services and farmers
- Negative
  - Variable levels of vaccination cover in different areas and for different diseases
  - Strong evidence of misuse of trypanocides and resistance to them
  - The EPIVET-MALI database has been problematical and all data was lost and is having to be re-entered from original hard copies.

4. Reporting

The Regional Offices report to the National Director's Office as follows:

- Weekly flash to the Ministry by Fax/Email (For faxes, he uses the Agriculture Office)
- A summary report every 3 months
- Annual reports

5. Epidemio Surveillance

The epidemiology surveillance system is based on field level personnel (private vets and public) recording their various activities in appropriate forms which were adapted to meet the needs of ARIS. These are submitted weekly and monthly. During PACE, EPIVET – MALI was set up with data being entered into ARIS and the production of a three monthly bulletin which is now up to Issue No. 16. PACE provided training as follows:

- GIS 15 day course in Gambia in 2001
- ARIS 3 day course by the TA from Nairobi in 2003
- Some training on two occasions to Regional level staff on the collection of data required for ARIS. No formal training has been given to staff at lower levels so there may be a training gap here.

NB: It was revealed that all the surveillance data entered into ARIS was lost. This arose because of some problems in installing a new computer and the data entered up to that point becoming corrupted. The EPIVET-MALI section had to re-enter all the original data from hard copies again.

Active Surveillance

27 Active Surveillance posts were equipped under PACE for the sero-surveillance of Rinderpest, but the Deputy Director stated that all Veterinary Posts (55 comprising 49 Secteurs plus Bamako District communes) should be equipped and trained to the same level. Currently there is no active surveillance for any diseases, although passive surveillance throughout the country is ongoing.

Suggestions for the future

The surveillance system should be maintained to cater for avian influenza. More training on surveillance is needed and greater extension of the EPIVET-MALI bulletin to the field

6. Rinderpest Eradication

After a period of clinical surveillance for two years, Mali became disease free and proceeded to sero-surveillance during which serum samples taken by field staff (private and public)were submitted to the LCV. Mali was accredited infection free in 2006.

7. Control of other major epizootic diseases

The Deputy Director then responded. According to a Statute dated May 2006, the priority diseases in Mali are CBPP, RVF, PPR, FMD and Rinderpest.

CBPP

Farmers perceive this as a priority problem. The Deputy Director pointed out that up to last year, the Vet. services did not have a direct chain of command but under Government restructuring, this is no longer the case and it will be possible to ensure higher levels of cover. The target of 80% is the same throughout the country regardless of who is delivering the services (public or private). In Sikasso Region, there is a high level of sedentarisation and so a cover >80% has been achieved. This has included enlisting the help of the President to launch the campaign.

At national level, however, the overall %age cover is 65%. However, there is now a new 5-year programme (2006-2011) in which additional Government funds will be secured to achieve a national cover of 80%.

Trypanosomosis

Seen in all areas and all seasons, with peaks in the rainy season in Sikasso Region where there is concern of trypanocide resistance, possibly associated with misuse of trypanocides and farmers not respecting treatment schedules. The Deputy Director recommended laboratory testing of the different trypanocides in use in the country.

FMD

Vaccination is very expensive for farmers. FMD is particularly associated with returning transhumant animals. Cows mostly affected.

PPR

Annual vaccination is obligatory. Vaccination rates quoted in Sikasso Region were 35-40%. Last year, however, there was a lack of vaccine. In addition, not all farmers present their animals for vaccination because the extension of information did not reach all farmers.

8. Laboratory services

LCV

The LCV is separate from the DNSV and comes under the Ministry of Livestock and Fisheries. It has 5 Departments, namely Research and Diagnosis, Vaccine Production, Virology, Parasitology and Accounting. Vaccine production and research are the main activities. Vaccines produced for use in Mali and export are CBPP, Rinderpest, PPR, BQ, Anthrax, HS, and Ovine pasteurellosis *(P.multocida).* ND vaccines are under development. At the end of each campaign in May the mandated vets give their vaccine requirements to the Chef Secteur who forwards them to the National Directorate Office. There then follows the annual large meeting with the Central Vet.Lab.to agree the vaccine requirements and production for the following campaign.

Research projects include:

- Regional RVF research involving Senegal, Mali and Mauritania
- IAEA/ILRI Research Project on trypanosomiasis including trypanocide resistance
- CCPP. There is a high serological prevalence (35%) of CCPP in Mali, but the clinical/ epidemiological situation is not clear.

Regional Labs

There are 5 Regional laboratories and all received equipment from PACE. However it was reported that none are operational. The LCV has no control over these laboratories. There should be a consensus within the LCV that the Regional Labs should be part of the LCV. It was pointed out that the LCV does not have the mandate to strengthen/equip regional labs. if they have the means.

Sample Submission

This is problematical because of the large distances. There were many complaints of samples being received that have to be discarded. Samples of suspicious cases of FMD and PPR have been submitted, and although the Virology section has the capability to confirm both infections, it has never succeeded in doing so.

It was stated that at the beginning of PACE there was a high level of sample submission, but this has tailed off significantly. Samples for bovine tuberculosis and brucellosis in peri-urban areas are quite common.

The possibility of paying incentives to submit good quality samples was discussed.

9. The role of the private sector

Privatisation of veterinary services started with the promulgation of the Law in July 1986. The exact numbers of veterinarians and engineers in private veterinary practice is not clear but seems to be between 120 and 220 in a ratio of about 30:70 respectively. In general, where a private veterinarian (vet. or engineer) applies for a mandate, it will be favoured over that area being covered by a government veterinarian. Thus some areas (e.g. Sikasso Region) are 100% privatised. Mandated vets employ technicians to do the work under their supervision. Under their mandates, private veterinarians carry out the following vaccinations:

- Annually
    - CBPP, PPR, Anthtrax and Newcastle disease

- Every 6 months
    - Black Quarter, Ovine pasteurellosis (*P.multocida*), HS

About 100 veterinarians received a loan guaranteed by PARC but most did not reimburse their loans. Despite that there were requests for more financial assistance to private veterinarians.

10. The legislative framework

The current legislation was approved in May 2001 and May 2002, and PACE was not involved in any way, although PARC was. Key points from the legislation are as follows:

- There is no difference between veterinarians and engineers in terms of what they are allowed to do under Mali law.
- In order to practice, vets and engineers have to be members of the Veterinary Order.
- Zootechnicians (Animal production engineers) cannot do any veterinary interventions.
- Since 2000, the training of veterinary engineers in Mali has stopped with the emphasis now on zootechnician training.

- The long term objective is to phase out veterinary engineers and have only veterinarians trained abroad (there is no veterinary faculty in Mali).
- Animal health technicians trained at special technical training centres in Mali, are not included in the legislation. Their numbers are not known (this lack of information was attributed to the recent Government restructuring of veterinary services which has made it difficult to acquire such data). They carry out treatments and vaccinations under supervision of both private and public veterinarians.

Meat Inspection

Only carried out by Government veterinarians.

Pharmaceuticals

All veterinary pharmaceuticals are imported and are covered by the legislation. There are 11-12 importers and they have to get an import licence from the DNCC (Direction National du Commerce et de la Concurrence). Public service veterinarians prescribe to the farmers who buy the drugs themselves. They can also help with injections and general animal health advice. In essence, public and private veterinarians do the same job except public veterinarians do not have pharmacies.

It is illegal for farmers to purchase pharmaceuticals directly (but they probably do) and officially they can only purchase drugs through the veterinarian by prescription.

11. Expanding Awareness of Animal Health Services

EPIVET-INFO

The bulletin is produced every 3 months (the only PACE country to achieve this) and the most recent issue is No. 17 (April 2006). Initially 500 copies were produced routinely, but this was increased to 800 in 2004, and to 1600 for special issues (e.g. No. 15 on avian influenza). The bulletin is distributed to all the private and public personnel involved in veterinary services. It appears that they will not be able to maintain this after PACE and negotiations are underway for Government support to take over the funding of the bulletin; however it is felt that Government support will only stretch to 300 copies. The Bulletin is published by an outside Company.

Communications to farmers

In general, only 50% of farmers are being reached due to budget constraints. At the beginning of PACE, there were a series of workshops for farmers in 2001 and 2003. These workshops had certain main themes e.g. CBPP in one, RVF and FMD in another, wildlife in another. The teaching manuals (Guide Pratique de Terrain) were published in French and the 6 local languages. Farmers met in the field visits expressed their appreciation of this training and wished for more.

The vaccination campaigns are highly publicised. They are announced on local radio, letters are sent to the village chiefs and the President launched the CBPP campaign by symbolically vaccinating the first animal on television. In general the promotion of the campaigns is the responsibility of the mandated veterinarians and farmers stated that they feel well informed. Surveillance programmes are similarly publicised.

Training of field agents

This was done in 6 training sessions (3 for public staff and 3 for private vets) in 2003-04 using the Manuel de Formation des Agents d'Exécution du Réseau EPIVET-MALI. In addition other manuals were distributed without any supportive training (2 copies provided) and high quality posters produced, including posters with no text, the idea being that this enforced veterinarians and agents to explain the graphic messages about animal diseases in the posters. Posters were shown with graphics of FMD, PPR, Rinderpest and Rift Valley Fever.

The Deputy Director recommended more training of veterinarians to deliver extension messages to farmers plus general strengthening of extension messages to farmers on what action to take when confronted with disease problems in their livestock. This should involve greater involvement of farmers' groups. Many farmers are illiterate and cannot read the bulletin.

Mauritania

July 12 - 15, 2006 (Patrick Fusilier + Archie Hunter)

1. People met

Nouakchott (Ministère du Développement Rural et de l'Environnement)

Direction de l'Élevage (DEL)

- Dr. Fall Mokhtar, Director
- Dr. Lemrabott Ould Mekhalla, Deputy Director and PACE Co-ordinator
- Dr. Mohamed Ould Baba Ould Gueya, Responsible for Wildlife
- Dr. Sidi Bouna Ould Gaouad, Responsible for Communications in REMEMA
- Dr. Doumbia Baba, PACE Animator of REMEMA
- Mr. El Hacen ol Talele, President du Groupement National des Coopératives des Associations Agro-Sylvo Pastorales

The Central Veterinary laboratory (CNERV)

- Dr. Iohissa Diarra, Director of CNERV
- Dr. Isselmou, Abdatt, Deputy Director of CNERV
- Dr. Ahmed Bezeid Ould El Mamy
- Dr. Mohamed Ould Saleck
- Ekaterina Isselman
- Mohammed Radhy Ould Elhmane Sau Doro
- Dr. Mohamed El Mochay Ofmeol Maouloud, Chef Service Epidémiologie

Field visits (14/7/06)

MDRE, Traaza Region, Rosso

- Cheikhna ould Mohamed Salem, Delegué Regional du MDRE

Service Elevage, Traaza Region, Rosso

- Dr. Mohamed M Saleny, Chef Service Elevage
- Dr. Abdellahi ould Menneya (Private veterinarian)

Keur Macene Department, Traaza Region

- Abou Ndiath (Inspector + Agent, including wildlife)

2. PACE Management and Administration

Minister of Rural Development

The Government is more financially involved in the livestock sector and will vote a budget for it. Other donors are interested in the livestock sector. They will organise a management audit of Veterinary Services.

EC Delegation

They think PACE Mauritania is a good project with positive results. The PACE co-ordination was efficient until last year then the quality of the financial documents went down with the new PACE co-ordinator because he did not supervise enough the work provided by the accountant.

They took 5 months to prepare the tender documents that imply they would not have the time to get the equipment. The EC Delegation has never been to the field to follow-up PACE activities.

3. General Veterinary Services

There are around 100 vets in the country, most of whom are private or unemployed. There are 16 government veterinarians (13 in Nouakchott and 3 in the regions) with plans to recruit 5 in 2006 and more in following years. There are 20 active private veterinarians, 10 veterinarians working in the fisheries sector and 6 veterinarians working on projects funded by donors. The veterinary services are delivered through the following administrative infrastructure:

13 Regions

Each is under the direction of the Regional Delegate and has a Chief of Regional Vet. Services. They are mostly engineers or assistants (technicians) but two are veterinarians. Assistants are trained at a Veterinary Technical School in Mauritania (funded by FAO), whereas vets and engineers have all trained in universities abroad.

47 Departments

Most Departments have a head of Animal Health, mostly assistants, and some veterinary nurses (Bache laureate level).

>200 Communes

Private auxiliaries operate at this level, and provide simple treatment and assist in vaccination campaigns. They are the front-line and are in contact with agents and other field personnel. Although the arrangement is informal, they have good working relationships with Departmental level staff.

4. Reporting

- OIE - every 6 months
- IBAR/PACE - every 6 months or immediately if necessary (e.g. the two warthog seropositives)
- Neighbouring countries – as required
- Agents – by telephone

5. Epidemio Surveillance

The Réseau Mauritanien d'Epidémiosurveillance des Maladies Animales (REMEMA) was set up in 1998 towards the end of PARC under a Ministerial decision, and modified in 1999 to include communication on wildlife, and will probably be modified again to include HPAI.

The objectives of REMEMA are:

- The provision of zoo-sanitary information for the Ministry.
- The surveillance and detection of the priority diseases selected for their economic and health (including public) importance, namely RVF, Rinderpest, CBPP, PPR, Rabies, FMD, Camel pasteurellosus, and HPAI.
- Set up a network to comply with OIE and WTO recommendations.
- Provide rapid alert as part of contingency plans for Rinderpest and HPAI.

The network is co-ordinated by a central unit (DEL + CNERV) under a steering committee. Field Personnel include Government vet staff, private vets, agents etc. PACE has supplied motor bikes, cold-chain equipment and sampling equipment.

REMEMA Activities (Passive Surveillance)

Throughout the country there is a network of 60 agents located in 32 surveillance sites. These agents include government vet staff plus 5 private vets. Each agent has his own network of farmers with whom he works closely. Most of the agents are along the southern border where most livestock are concentrated. The surveillance comprises reporting either absence of disease or suspicion of disease and what follow-up action was taken e.g. laboratory samples. The information flow starts with filling in the appropriate forms including a monthly report (General summary report) on any interventions for the 7 diseases listed above.

The information flow is as follows:

Agents→Regional Co-ordinator (who validates them)→REMEMA Animator (further validation – given a score) → the CNERV for entry into the database and analysis.

REMEMA Activities (Active Surveillance)

Rinderpest

Mauritania is free of disease and submitted the dossier for application for freedom from infection in January 2006. Certification of freedom from infection is expected by 2007. Submission of the dossier was delayed by the change of government. Included in the serological survey results in the OIE Dossier were the results of 64 warthogs sampled between 2002 and 2005 in co-operation with hunters during the hunting season. Two warthogs along the Senegal River were sero-positive in 2002/03 but they were also PPR positive. There was a detailed follow-up of cattle in the area.

Rift Valley Fever

Since 1999 as an early warning strategy, there has been sero-surveillance for RVF of 12 sentinel herds of small ruminants - 1 along the south border with Senegal and one in the Central/South of the country. Sampling follows a strict protocol as stipulated by FAO in their TCP for RVF in Mali, Senegal and Mauritania as follows:

- 1st Visit At the start of the rainy season. 30animals per herd are identified by ear tagging, blood sampled and general epidemiological information collected.
- 2nd Visit (1 month later) 15 sero-negatives of the 30 are re-sampled.
- 3rd Visit (1 month later) Repeat of the second visit.

There have been no outbreaks since 1998 but there was a high prevalence of IgM seropositives in 2003 indicating a silent circulation of the virus. The situation is similar in Senegal. The reason for this peak is not known as 2003 was a very dry year. In 2004/05 only IgG was detected at very low levels.

Rabies

It is planned to carry out active surveillance with WHO.

Management of information

All reports from the field (monthly report forms, individual lab. sampling forms and investigation forms) go first to the REMEMA Animator for validation which involves being scored out of 10 for indicators such as quality of information, samples etc. The forms are then passed to the CNERV for entry to the database using ACCESS, PACE's PID and GIS. The validation score is included in any feed-back to the agents and Regional Offices.

Feedback

Results are summarised in the REMEMA Bulletin. This was intended to be quarterly, but it now appears to be annually. Lab. results (for the small numbers of samples submitted) are reported back ad hoc whenever there is a result to report, usually by telephone first, followed by a report.

PACE Contribution

PACE has provided materials, sampling equipment, training and funding of financial inducements to staff.

6. Rinderpest Eradication

Dossier for freedom from infection submitted to OIE (See above).

7. Control of other major epizootic diseases

FMD

Serotypes A and O are endemic but not regarded as a major problem as there are no major livestock export trades dependant on FMD control. It is being increasingly reported from an area in the South.

CBPP

Major problem. Vaccination is obligatory and farmers only have to pay for the vaccine (reportedly very cheap and not a constraint). Any animal that has been vaccinated and still contracts the disease is slaughtered and disposed of with compensation to the farmer (80% of market valuation). But clinical cases that have not been vaccinated are slaughtered without compensation. This results in farmers trying to hide the disease.

Vaccinators are comprised of agents and 14 private vets mandated to do this work. There is an annual vaccination campaign which starts in November and runs for 4 months. There are no precise data on animal numbers to estimate the percentage vaccine cover achieved. The official estimate of the cattle population is about 4 million, and 750,000 (19%) were vaccinated in the most recent campaign. There is still suspicion about the vaccine amongst

farmers, and this is further complicated by transhumance of livestock; there is an East ↔ West transhumance along the south of Mauritania, the North of Senegal and the West of Mali.

PPR

Is endemic and have multiple detections of disease. The incidence of reports has increased since 2002. Vaccination is not compulsory.

Rabies

Major problem. There were 15 confirmed cases in various species in 2005. There is no formal programme of control, nothing is being done to reduce the infection and it is a major problem in poorer communities. The wildlife reservoir situation is not clear. From 1990-2005 there have been 99 confirmed cases in a range of species (wild and domestic).

Camel pasteurellosis

The respiratory form due to *P. haemolytica* is regarded as the main infectious disease of camels in Mauritania. Predisposing stress factors are not clear, but cold weather has been implicated. Vaccination (Pasteurelox – a bovine product) is perceived as beneficial. Herders have to pay.

HPAI

There are two wetland areas on the coast which are major resting sites for large numbers of migratory birds. There was a recent FAO HPAI workshop with provision of sampling materials and protective clothing. With FAO support, agents and public health doctors have been trained on disease recognition, sampling, biosecurity, sanitary measures etc. With FAO and CIRAD, some wild bird surveillance has been carried out. Cloacal swabs from 74 wild fowl in the wetlands along the coast in the south and middle were taken, plus 30 samples from poultry. All have proved negative. A contingency plan with assured Government funding is in place.

The Senegal/Mauritania/Mali agreement

The agreement is in process between ministers. Essentially transhumant animals crossing borders should have vaccination certificates, especially for CBPP. Mauritania is a major supplier of small ruminants to Senegal and Côte d'Ivoire as they are very popular. There is also movement between Mali and Mauritania.

8. Laboratory services

The CNERV is the only veterinary laboratory in the country. It was built in 1973 with French Co-operation which continued its support until 2000. Now receives no French Co-operation assistance and it is very run down. It is primarily a diagnostic facility and the State supports no research. The total staff is 55 including 14 graduates and 6 vets. It is an integral part of REMEMA and is responsible for:

- The diagnosis of infectious diseases
- Management of the REMEMA database

The infectious disease service comprises serology, bacteriology and food hygiene. For the priority diseases hey have a range of serological tests based on kits (mostly BDSL) as follows:

- Rinderpest — Competitive (C) ELISA (Last sero-surveillance done last year)
- FMD — C ELISA (antigen detection)
- CBPP* — CFT + ELISA (post vaccination)
- PPR — C ELISA (diagnostic confirmation)
- Rabies — Immunofluorescence (no working safety hood but all staff are vaccinated)
- RVF — C ELISA for surveillance
- Camel pasteurellosis — If reagents available, culture (e.g. from lungs and trachea)
- HPAI — 3 staff can do HI trained by FAO (2 in Morocco and 1 in Mali)

There was a plea for support to strengthen the capability to diagnose CBPP.

Numbers of samples

Despite the poor working conditions of the laboratory, the staff feel that the facilities are underutilised. In 2205, there was only a total of 169 submissions. Logistical difficulties of submitting samples from the field were reported during the field visits.

PACE Support

All the reagents, kits etc./funding of field trips/ financial support to technical staff/ refrigerators/ training.

9. The role of the private sector

There are about 50 vets (public and private) operating in the country. There is no Council, but vets have to have a licence to work, the conditions for which are as follows:

- Proper veterinary degree
- Facility to conduct treatments, surgery and autopsies
- Good local knowledge of the area.

Five of the private vets are also REMEMA agents. Private vets employ local auxiliaries to do simple treatments etc. and some have mandates to do vaccinations.

Currently there is no control over veterinary pharmaceuticals for which there is a "free market".

10. The legislative framework

The elaboration of the existing legislation to include the working practices of veterinarians, including private veterinarians was promulgated in 2004 and the decree applications are in the process of adoption. The transition government is in favour of the adoption of the regulations in the text and several decrees will be adopted soon. The elaboration was done by staff in the Central Unit with TA input from PACE.

11. Expanding Awareness of Animal Health Services

REMEMA Info was started in 2000 and 1-2 issues per year have been published.

The Communication Unit advise/instruct the field staff (especially the REMEMA network of agents) on how to communicate to farmers on a regular basis the benefits of veterinary services. It was stated that farmers are increasingly notifying disease suspicions and outbreaks to the agents. All agents now have their own networks of farmers who increasingly turn to the agents for advice on animal disease issues. Extension materials include the REMEMA" Guide de Communication pour les Agents de l'Elevage", and "flip chart" aids.

PACE has funded a digital camera, digital Projector, desk top publishing equipment, travelling (convenes three meetings a year + meetings with journalists, media (radio) personnel and the publication of REMEMA Info.

The Central Unit is distributing electronically daily and weekly bulletins on HPAI (national and international perspectives) to certain organisations e.g. FAO, EU Delegation, and IBAR etc. There is no cost to PACE.

Farmers' Associations

Key points from a meeting with the President were as follows:

- His Association has 600,000 members (about 85% of farmers).
- Membership benefits include administrative support, participation in NGO projects.
- Everyone in Mauritania is a livestock farmer.
- Mauritania is self sufficient in livestock and a net exporter of meat and live animals.
- It provides 71.2% of its milk requirements.
- Livestock contributes significantly to poverty alleviation by a system of Islamic taxation (Zakat, Hobs and Mneha).
- He appreciates the efforts of the Veterinary Services and PACE and understands very well the importance of disease surveillance.
- There is a need to research transhumance to Guinea, Burkina Faso and Mali; animals sometimes return with CBPP and PPR and need to know if the infections were acquired during transhumance movements.

NIGERIA

Venue	6th PACE Co-ordination Meeting, Mombassa
Date	28/06/06
Present	1. FEM Team (AH) 2. Dr. Ibrahim Gashash Ahmed, National PACE Co-ordinator, Dep. Of Livestock and Pest Control Services, Abuja. 3. Dr. S. A. Anzaku, PACE Privatisation Officer, Dep. Of Livestock and Pest Control Services, Abuja. 4. Dr. Joseph Nyager, Deputy Director, Dep. Of Livestock and Pest Control Services, Abuja

Legislation and Privatisation

There are 5 established vet schools in Nigeria, plus two new ones with no graduates yet. In total there are about 4000 vets in Nigeria, of which about 1700 are in private practice and the rest in public services.

There are no CAHWs as such, but a new food security programme involving NGOs is about to start up that will use CAHWs. Essentially the concept of CAHWs is very new to Nigeria and this programme will represent their introduction to the country. The programme will start with some pilot areas in peri-urban areas.

Animal Health Legislation in Nigeria was last reviewed in 1998. With PACE's help, they have established an ESN within the last 2-3 years and it has been decided that the legislation should be updated to include epidemio-surveillance requirements. The updating process is in its second and final phase. PACE has contributed significantly (70%) to this in two ways:

- Funding
- TA (most important)

The PACE VPLU representative is now integrated into the National vet. services i.e. his duties in this respect are now part of his official duties.

The Veterinary Council is responsible for registering all veterinarians (private and public) and by law, any officially qualified veterinarian can do government work. In reality, however, most government work is carried out by government veterinarians. Private veterinarians limit themselves largely to the usual duties and there is no sanitary mandate such as in West Africa .

Legislation concerning privatisation is also being updated, again spear-headed by PACE. The revised legislation will include the regulation of veterinary practice (The Veterinary Practice Act). This has involved the TA of an expert and entailed consultation with stake-holders.

The Group also described a loan scheme which has been inherited from PARC and is now administered through the PACE programme. € 200,000 is available as guarantees against bank loans, and this has enabled several vets to start new practices or expand their businesses. As a result, the banks have acquired confidence in the economic viability of

private veterinary practice and vets are now able to secure loans or credit directly. This marks a distinct shift in attitudes by the banks.

The privatisation process has included extensive training through PACE of private veterinarians in business management and how to operate within the legislation.

In addition PACE has also been involved in amending the curricula of the vet schools to include training on the skills essential for managing a veterinary practice, e.g.

- Business management
- IT skill

Extension and Communication

Prior to PACE, there was no formal system of animal health extension. Extension messages have been produced by various projects, especially on animal production. Things have improved considerably as a result of PACE. Programmes on TV and radio, posters etc have been produced with the help of PACE, especially for avian influenza. The National PACE communication TA feels that Nigeria now has the capability to carry on these activities by themselves.

Sustainability

The group expressed confidence that the progress achieved under PACE will be maintained and specified the following:

- Updating the Animal health legislation is well under way.
- The PACE Epidemiology Unit is now integrated into the Federal vet. services.
- All the training modules introduced by PACE will be continued.

Government Financial Support

The Government has established a budget line for epidemio-surveillance and laboratory reagents, although concern was expressed about how timely this will be paid.

The future in general

The group felt that the PACE programme has "kick started" a number of veterinary interventions that may not have otherwise have happened, and most importantly the Government now recognises the importance of epidemio-surveillance e.g. for avian 'flu.

Rwanda

Dr Isodore GAFARARSI Mapendo	Former National PACE Co-ordinator and now Head of Laboratory

Rwanda borders Uganda, Tanzania, Burundi and DRC where the border is Lake Kivu. At the north end of Lake Kivu, Gisenyi, a popular tourist place, there is an export point for livestock to DRC. The southern end of the lake is also an export point to DRC.

Rwanda has 60 veterinarians, only six are private (five involved in animal production). In addition, three are private consultants.

There have recently been changes in the framework of Rwanda's Ministry of Agriculture: three agencies have been formed from January this year, one of which is for Animal Health and Production. There is a National Agricultural Strategy (PSTA) with a working group for formulation and implementation. There is a strategy for one cow per household with production goals for dairy cattle, chickens and eggs.

In 2005, Government started a policy of decentralisation to 30 districts. The Ministry of Agriculture's framework remains weak and there is a lack of human resources within it (the best qualified nationals work for NGOs).

The 10th EDF will give budget support for capacity building with grants to rural families through farmer co-operatives.

The 10th EDF will have a fixed tranche and a variable tranche for which there are bench marks. Emphasis will be on education and health. However, the 10th EDF will continue the programme of the 9th.

Training

44 CAHWs have been trained and provided with bicycles (training done by CAPE).

Training for farmers is also provided.

PACE has provided training materials for training in disease control, livestock movement control and on animal products, for technicians, farmers and consumers.

Legislation

Legislation has been updated to accommodate private veterinarians and allow operation of CAHWs through farmer's co-operatives. This was done without assistance from PACE except for getting advice and ideas at Co-ordination meetings.

Contingency plans

A contingency plan has been made for RP (with assistance from PACE through Dr Karim Tounkara, Epidemiology Unit) as part of achieving freedom from rinderpest infection on the OIE Pathway. FMD and HPAI contingency plans are being prepared, but the contingency plan formulated for HPAI has not been found acceptable to PACE. Resources for implementation of contingency plans for HPAI are available from Government (not from PACE).

Epidemio-surveillance and control and the information system

Passive reporting

Monthly reports submitted by AHAs and Regional veterinarians.

Market surveillance where cattle for slaughter are identified by numbered ear tags.

Meat inspection reports.

Active serosurveillance for RP – samples banked and tested at Kabete (2004).

Disease control

Quarantine stations are placed at the borders to control the considerable numbers of livestock that are imported for slaughter. Cattle from Tanzania and Uganda are also transited through Rwanda on their way to DRC. Animals for breeding normally come to Kigali by air and are quarantined at a facility at the Central Veterinary Laboratory. Rwanda had a disadvantage because it did not have a full PARC programme to build on. PACE commenced in Rwanda in 2001. Cattle entering Rwanda for slaughter are quarantined at border posts for two months and marked with a numbered ear tag before going for slaughter. Animals for breeding are tested for brucellosis and vaccinated against TB, FMD and CBPP (quarantine station at head office for breeding livestock coming by air).

There is an identified need for an electronic information system to record animal ID and for GIS.

The quarantine station at Kigali and the quarantine stations at the borders have been renovated by PACE.

RP

Rwanda has completed the OIE Pathway, assisted by PACE, and has been declared by OIE to be free from rinderpest infection. RP serology was done at Kabete.

FMD

FMD cannot be serotyped in the laboratory: samples have been sent to Pirbright Laboratory and more recently to Ondestepoort for typing which takes time and delays start of vaccination. A trivalent vaccine is used.

CBPP

A vaccination campaign of five vaccinations over 3 years has eradicated CBPP in Rwanda using T1/44 vaccine.

There is one central and four regional veterinary laboratories, markets.

ARIS

Training for ARIS and installation of the programme is in the 3rd Work Programme but this is too late to be financed before closure of PACE. TadInfo is used for data storage and analysis. Three personnel, operate it. It is fully sustainable because the employees are all paid by Government. Similarly, the ESS is fully sustainable.

Difficulties of PACE in Rwanda

Several attempts have been made to revitalise the PACE Rwanda Programme. A problem has been with ineligibility of some expenses that the PACE Co-ordinator approved and made without having support of an approved Work Plan. The Rwandan Government should have reimbursed these expenses which are detailed in a financial audit carried out by an external firm in April 2005. No reimbursement was made, therefore the pending Work Plans were not closed and according to the EC regulations a new Work Programme was not opened. In spite of this regulation and showing an unusual flexibility, the EC Delegation in Rwanda proposed a solution to start a new Work Programme, provided the Co-ordinator was changed and that a written commitment to reimburse the non-eligible expenses incurred during Work Programme 2 was made. The National Co-ordinator was changed and a new Work Programme was prepared in collaboration with the Regional TA (now the main TA) and submitted to the EC Delegation in November 2005. The EC Delegation asked for some changes but they were not made by the Rwandan authorities. Therefore the dossier for the Work Programme was not processed by the EC Delegation.

A last attempt was made to revive the PACE Programme during a visit of the Regional TA in January 2006. However, by the time a Work Programme and closing report for the previous Work Programme were prepared, it was too late to authorise the new programme.

Reporting

No reports have been sent to EC Delegation as no finance has been received from PACE for the last 12 months, similarly, there have been no reports to PACE Regional Programme Co-ordinator and there have been no reports to the PACE Financial Controller.

Because of lack of finance, no representative was sent to the PACE Annual Co-ordination Meeting in Mombasa or to the Workshop on Consolidation of Epidemio-Surveillance Achievements in Douala.

Visits from Technical Assistants

Two visits from the PACE Co-ordinator, five visits from the PACE Financial Controller, two visits from the Regional TA Philippe Leperre and six visits from Andrea Masarelli (three visits as Regional TA and three visits as Main TA).

Other funding

ADB Livestock (Dairy) Development Project.

EU Delegation

Pascal Ledroit, Attaché, Rural Economy, Food Security, Decentralisation and Environment Section, has recently replaced Arnaud M. Demoor. Jerome Leroy is Acting Chargé d'affaires and Head of Section for Finance and Contracts.

Work Plan 3 not yet been signed and EDF rules will not allow implementation of it to start before the end of PACE: it takes one month for concurrence after signing.

Met at the Delegation the Acting National Authorising Officer from Ministry of Finance and Economic Planning (the full time NAO is on maternity leave).

Diseases of importance

FMD
CBPP (recently eradicated)
ASF (epidemics in pigs in the south)
BQ
Brucellosis in cattle
Bovine tuberculosis
Rabies in man and dogs
ND
Fowl Typhoid.

Wildlife

There is a wildlife park in the north east of Rwanda, but currently no wildlife surveillance is being undertaken.

Central Veterinary Laboratory

The Dutch built the laboratory in the 1980s. The Laboratory used to be very well equipped and had good human resources before the war. It is a good laboratory building.
The laboratory has a rapid test for HPAI.

Laboratory needs:

Plate reader; plate washer and rocker, pipettes and disposables.

ELISA kits for FMD, CBPP, PPR, ND, HPAI and labelled antibody for rabies FAT. Agglutination tests for *Salmonella gallinarum, S.pullorum* and other salmonellae and HPAI.

The laboratory would also like to have equipment for PCR and Tissue culture and would like to start vaccine production.

Dr Toma Basawasonga, Head of Parasitology has ELISA antibody tests for *Theileria parva, Babesia,* and *Anaplasma* serology and IFAT tests to detect the parasites. This is through collaboration with the Institute for Tropical Medicine, Antwerp.

Equipment not working

2 x -70^{0}C fridges.

Cold room.

Following the war, 90% of the staff have been replaced. Antonio diMalio (Ethiopian) revitalised lab.

Since the war (1992), there has been an FAO TCP to revitalise the bacteriology laboratory.

Visits

Visits were made to two abattoirs in Kigali where ear-tagged animals were slaughtered. Meat inspection was being undertaken with full recording.

A visit was made to a quarantine station on the border with Tanzania where imported cattle for slaughter were being held for two months and ear tagged before being taken to Kigali by lorry.

Senegal

July 7 – 12, 2006 (Patrick Fusilier + Archie Hunter)

1. People met

Dakar

Direction de L'Elevage, + Laboratoire National d'Elevage et de Recherches Vétérinaires (LNERV)

- Dr. Serigne Mamadou Bousso Leye, PACE National Co-ordinator
- Dr. Maisse, i/c PACE Privatisation and Legislation Component
- Dr. Joseph Sarr, Director of the LNERV
- Dr. Baba Sall, Chef du Bureau de la Prophylaxie et de la lutte contra les zoonoses (i/c of PACE epidemio-surveillance programme)
- Dr. Mbargou, Chef de Division de Protection Zoosanitaire
- Dr. Mamadou Lamine Diané, Chargé de Communication du PACE

École Inter Etats des Sciences et Médecine Vétérinaires (EISMV)

- Professor Louis Joseph Pangui (Dean)
- Professor Ayayi Justin B. Akapo (Head of Microbiology and Immunology)

Field visits (10/7 -11/7/06)

Thies Regional Veterinary Office

- Dr. Doune Pathé Ndoye, Vétérinaire Inspecteur Régional de Services Vétérinaires de Thies
- Dr. Babacan Camara, Inspecteur Départemental des Services Vétérinaires de Thies; Responsable du Laboratoire Régional de Thies
- K A Mody, Président de la Maison des Eleveurs (MDE) Thies
- Dr. Omer Samuel Gomez, Vétérinaires, Manager de Cabinet VETOCONSULT de Thies (Private veterinarian)

Kaolack Regional Veterinary Office

- Dr. Mamadou Moustapha Thiah, Inspecteur Régional des Services.
- Saibh Danfakha, ATE, Koutal District Office, Kaolack Region

Farmers

- Oumou Khary D'Allo, President of the Regional Farmers' Association
- Alpha Lamime Diallo
- Kalidou Ba
- Bouba Ka
- Goumba Seok, Treasurer of the Regional Women's Farmers Group
- Sounkhowu Diop
- Kalidou Ba

Kaolack Private Vet. Clinic/Pharmacy

- Dr. Amadou Ndéné Faye, Cabinet Vétérinaire Ndouwumene

2. PACE Administration and management

National Co-ordinator

There is no Monitoring and evaluation Unit in Bamako and Nairobi. The last time the Regional Technical Assistant went to Senegal was more than a year ago. He is going to Dakar only when they have problems because the Regional technical has too many countries under his supervision.

Since 2004, taking into consideration the deconcentration of EC management, national budgets are prepared in Nairobi then sent to Bamako. Next step is that the Regional Co-ordination Unit in Bamako is dispatching the budget to PACE countries. The country is not consulted on the budget amount.

During the first phase of the PACE Programme until 2004, PACE Senegal was sending a quarterly report to Bamako then for the extension only a report every six month is required by Bamako. This report is also sent to Nairobi. There is no feedback from PACE Programme in Bamako and Nairobi.

They could not get a PE6 because the previous Co-ordinator left at the end of the first phase and that took few months to replace him. They could obtain a PE 5 and an endorsement to the PE5. The PACE Programme has to be more adapted to the national livestock environment in each PACE country.

PACE financed trainings but they did not get enough visits from the Regional Technical Assistant.

Some training sessions were on PACE national budget, particularly on ARIS but the Regional Technical Assistant told them that the expert who was supposed to organise this training left and the training was cancelled. Why not to use short-term expert on GTZ contract?

There are trainings which are not on PACE national budget organised by Bamako or Nairobi and they could not participate because a lack of financial resources.

They need 260,000,000 F CFA to continue PACE activities after the closure of PACE Programme. The Government has voted 300,000,000 F CFA for 2007.

PACE was a good programme because it was the only programme covering the whole country.

They closed PE1, PE2 and PE3. PE4 is not closed but it is only a delay from the EC Delegation because they were waiting for the audit report.

The endorsement to the PE 5 was for computers, motorbikes and spare parts, some equipment for veterinary posts.

The total PACE budget is 597,918,380 F CFA.

The control of PACE financial documents by the National Authorizing Officer and the local EC Delegation can take up to a month.

The national Co-ordinator started this position on 17 August 2005.

Director of Cabinet

The Director of Cabinet at the Ministry of Livestock explained that the Government wants to build new abattoirs and new butcheries. The other priorities are food security, agro pastoral equipments (dairies). Increase poultry production. PACE reinforced the epidemiologic surveillance network. He thinks that the farmers have to be more involved in the network.

The counterpart fund from the Government was 540,000,000 F CFA and 150,000,000 F CFA from PACE Programme.

The national budget for livestock is 4 billion and a half F CFA.

EC Delegation

PACE Senegal was one of the best projects for the preparation of financial documents.

The local EC Delegation needs from 10 to 15 days to control the technical part and the financial part of the documents.

They did not close PE4 because they were waiting for the audit report. They received it three weeks ago and they will close PE4 in the next future.

National Authorising Officer

They have a very good collaboration with PACE Senegal. The financial documents are prepared properly. They helped the new accountant on the technical and financial aspects of the documents.

The National Authorising Officer is at the Ministry of Finance and controls the documents in an average of 10 days.

The audit reports were satisfactory and only mentioned a rejection of 600,000 FCFA (less than € 1,000).

They are pleased with the support to epidemiologic surveillance network from PACE Programme

The Government provides 150,000,000 F CFA the last two years to support PACE Senegal..

They want to rehabilitate the veterinary posts at the border.

3. Veterinary services – General

The administrative structure for the veterinary services is as follows:

- 11 Regions – each headed by a Regional Veterinary Inspector (a veterinarian)
- 34 Departments (3 per Region except Dakar which has 4) – each headed by a Departmental Veterinary Inspector (an engineer in animal production with 3 years University training)

- Approximately 350 Vet. Posts – each headed by a Field Agent (a technician trained in animal production at the technical school). Many are vacant.

There are about 150 veterinarians in Senegal, approximately 50 Government and 100 private. Since privatisation in 1989, the Government has only recruited 2 vets into the Public Sector. Recruitment has just started again as it is estimated that about 150 Government veterinarians are needed with many vacancies at the Regional level and District Veterinary Posts. Ten new veterinarians graduate from the EISMV each year.

Meat inspection is carried out by the public sector. Dakar has two abattoirs and there is one in each Regional capital. Below that slaughter is carried out at slaughter points.

NB: It was pointed out in the field visit that >50% of Senegal animal slaughter is illegal. This is regarded as a major problem

Seven private vets have a mandate to carry out annual vaccinations against CBPP, ND, PPR and AHS. All vaccines, except AHS, are subsidised by the Government.

In addition there are 317 auxiliaries who carry out simple treatments under the supervision of private vets. This is an informal arrangement with some training. These auxiliaries are also used by NGOs.

4. Reporting

- Weekly zoosanitary report to the Ministry
- Monthly report to PACE PCUs in Bamako and Nairobi and neighbouring countries
- Six monthly report to the OIE

5. Epidemio Surveillance

The Epidemiosurveillance Network was started in 2001 with a period of training of the network participants using several training manuals. Information (disease suspicions, treatments, samples, vaccinations etc) is entered into the appropriate form in quadruplicate and is passed along the hierarchical chain (See above) to the PACE Network office for entry into the database. Private vets use the same forms. To assist the field personnel, the office has produced a practical laminated leaflet of high quality with guidelines and instructions about sampling for the most important 8 diseases (Rinderpest, CBPP, RVF, FMD, PPR, AHS, LSD and ASF.

Data is processed by TADINFO and extracted to ARIS. Also ARKVIEW is used. Arrangements are being made for an expert from Toulouse to come in September to help with the harmonisation of TADINFO and ARIS.

Electronic Trial

A trial was carried out with 9 agents for RVF surveillance doing the whole process electronically with hand-held computers and GPS devices. Although it worked well, they ran into problems with the equipment which got too dirty and stopped working. Nevertheless it is planned to persevere with the target of providing the agents with desk top computers (and presumably an intranet connection). Currently all Regions and Departments now have Desk Tops and Intranet connections.

Reporting

- Weekly zoo-sanitary bulletins to the Ministry.
- Quarterly to the OIE (plus when disease events occur)
- Annual reports to the Ministry

PACE Contribution

TADINFO was set up by FAO, but otherwise PACE has set up the whole network, including ARIS, the documentation, training of field agents, transportation, sampling materials etc.

Sustainability

The government has been increasing their financial support of the network, and the EU less and less. The Head of the Unit is confident that this Government support will continue after PACE. It was stated that strengthening of the regional labs is important to overcome some of the problems associated with transportation of samples to Dakar. At the moment, the Regional Labs. are little more than "Post Offices" forwarding samples to Dakar.

6. Rinderpest Eradication

The last outbreak was in 1968 and vaccination stopped in 1996. Senegal has been OIE disease free since 2003 and infection free since May 2005. However surveillance is ongoing.

7. Control of other major epizootic diseases

CBPP

Vaccination stopped in 2005 and Senegal is now applying under the OIE pathway for freedom. The last outbreak was in 1977. Livestock movements from the South (Guinea and Guinea Bissau) and from the Gambia are not regarded as a risk and the perceived risk is from Mali and Mauritania. Senegal is in the process of signing a zoo-sanitary agreement with these countries to control livestock movements. This will (by law) only allow in animals certified as free of certain diseases, and animals will only be allowed through official controlled and inspected entry points. There are three kinds of movement, and all will be included in the agreements:

- Trade
- Transhumance (Later reports in the field indicated that cattle returning after the peanut harvest at the end of the year often come back with FMD)
- About 100,000 Imported sheep for the Tibaski Festival which moves back about 2-3 weeks every year (this year is in February). These pose the risk of introducing PPR and sheep pox.

CBPP surveillance will continue with herd surveillance and in 30 abattoirs.

RVF

As a result of retrospective studies using the serum bank, it is now known that the prevalence of infection increased dramatically following the Senegal River dam becoming operational in 1987. Prior to this the prevalence was about 4% in small ruminants and cattle. The first outbreak was in 1988. Sero-surveillance is carried out on 12 strategically positioned sentinel cattle herds and sheep/goat flocks in high risk areas, 2 in the South and

10 along the Senegal River. In return for their co-operation, the farmers receive free veterinary services in return as an incentive.

There was an outbreak in 2003 with many clinical cases along the Senegal River which borders Mauritania. Numbers of cases have declined dramatically and only one seropositive IgG animal (clinically normal) was detected in 2005. FAO gave a RVF alert in 2003 because of the climatic conditions (heavy rains after a dry period) and so the relevance of the dam is not clear.

It is a seasonal disease and last year RVF caused some abortions in the South of the country. The disease is now known to be endemic along the Senegal River and in the South.

Currently no vaccination is being carried out, just surveillance.

ASF

There are about 30,000 back-yard pigs along the coast where Christians live. Cross bred pigs in the North can suffer heavy casualties. In the South, the indigenous pigs are trypanotolerant and ASF prevalence is about 10% with chronic cases being common. Random sero-surveillance is carried out. Control is by trying to control movements of pigs from S. to N. across Gambia. There is no evidence of warthog involvement and infection seems to be maintained by domestic pigs.

PPR

PPR is endemic. The vaccination rate is low (about 20%) and no systematic surveillance is carried out. Outbreaks are diagnosed as they arise.

AHS

There is a large horse population in Senegal; very important for transport. The endemic serotype is Type 9. Veterinary services carry out regular vaccination campaigns as part of the annual vaccination campaigns. Use serosurveillance for early warning and advice about when to vaccinate.

Avian viruses

ND and Gumboro disease in back yard flocks are controlled by diagnosis and vaccination. So far HPAI has not been recorded.

Quarantines and livestock movement control

Currently there are quarantines in Rosoo on the border with Mauritania (World Bank Funded, still to be equipped) and in Kitira – a new quarantine on the Mali border funded by the Senegal Government.

Camel movement

Camels coming in from Mali and especially from Mauritania for grazing are a concern because of overgrazing, environmental degradation and the introduction of disease, especially sarcoptic mange. There are only 5,000 camels in Senegal.

Trypanosomosis

This is a problem in the South where tryanotolerant Ndama cattle and Djallonke sheep and goats predominate, but recrudescence of G. palpalis along the coast N. of Dakar is of concern. Some programme of control funded by the IAEA is underway although details have not been decided. There is some very intensive farming along the coast using exotic breeds (including Holstein Friesian for milk) which are more susceptible. Also resistance to trypanocides is a concern.

Animal products

Senegal is not yet sufficient in animal products, but there is a programme of upgrading cattle by artificial insemination; 10,000 cattle are now inseminated every year. Animal products are allowed in under licence, and vet inspections of semen, eggs etc are carried out at airports, ports etc.

8. Laboratory services

LNERV

The laboratory is an FAO, IAEA and AU Reference laboratory for Rinderpest, RVF, ASF and PPR and it recently hosted an FAO regional course on the diagnosis of HPAI with participants from 20 countries. The LNERV comprises sections of Parasitology, Virology/Serology, Nutrition and Bacteriology. There is around 100 staff and vaccines produced include PPR, AHS and heat-stable ND.

LNERV tests carried out

Rinderpest - indirect ELISA for surveillance. For antigen detection and/or suspicion - capture ELISA, Competitive ELISA, VNT and PCR.

RVF - IgM and IgG detection by ELISA for sero-surveillance; also virus isolation and VNT. Vaccine research is in process with the Pasteur Institute.

ASF - sero-surveillance by antibody detection ELISA; the kit is produced in the LNERV and is used throughout Africa. Also immuno-fluorescence for virus detection for diagnosis.

AHS - CFT to detect IgM to see if the infection is circulating; also IgG and IgM ELISAs plus VNT.

HPAI – PCR, HI, gel precipitation and virus isolation. The diagnostic protocol is to start with the PCR and proceed to virus isolation if necessary.

District laboratories – submission of field samples

There are 6 district labs around the country, with plans to train staff in ELISA technology and provide them with readers. Submission of diagnostic samples from the field to the LNERV in good condition has been difficult. PACE provided ice boxes are sent by public transport which can result in delays or even losses of boxes completely. Delivery can take at least a day, and the transporters don't look after the samples en route. Some samples (90/300 between May 2001 to May 2003) have to be discarded on arrival as they were unsuitable.

After the initial enthusiasm under PACE, the diagnostic sample submission declined sharply because of slow reporting of results by the Central Laboratory and ice boxes not being

returned. The situation is now much improved with results being reported back in about two weeks. However the diagnostic sample submission rate to the LNERV is still very low.

PACE Help and sustainability

Almost 80% of the budget for the above is now provided by the Government and it is expected the surveillance programme will continue after PACE.

Laboratory Information Management System

This was set up under PARC, and all surveillance/diagnostic results are transferred to the PACE Epidemio-surveillance Unit. When samples are collected in the field, hard copies of the sampling form are completed in triplicate and one copy is forwarded to the National PACE Office for entry to the database.

9. The role of the private sector

Privatisation started in 1989-90 during PARC with a guarantee fund of 500,000,000 F CFA against Bank loans to private veterinarians. The loan scheme was abused by linking it to political elections, vets who received loans did not pay them back and the bank (Crédit Agricole) used the guarantee fund to be reimbursed. No loans/credit has been available since 1999.

The main jobs of private vets are running vet. pharmacies, treatments, and work in poultry production. Also they are mandated to carry out annual vaccinations (PPR, ND and AHS). The actual job is then further sub-contracted to auxiliaries who work under their supervision. The auxiliaries are necessary for the vaccination campaigns to be carried out in remote areas. In situations where no private vets are available, the job is done by Government vets.

PACE Support to privatisation

Professor Cheikh Ly conducted one-week training of private vets in vet. business management in the economics department of the Dakar Vet. School in two phases; one in PARC and one at the beginning of PACE.

10. The legislative framework

Order Vétérinaire

This covers all vets (private and public) and describes the functions and responsibilities of veterinarians in Senegal. PACE has supported the Ordre Vétérinaire financially.

Legislation

PACE funded Professor Ly and Dr. Maisse to work on the new draft legislation. to cover the activities of vets, technicians and auxiliaries, plus prescription and selling of pharmaceuticals by veterinarians. The draft text is expected to be passed by the end of the year. Prior to this amendment, the legislation only covered the activities of Government veterinarians. Technicians wanted the same authority, but this was not approved. In general, technicians can, under veterinary supervision, carry out treatments, vaccinations, advice to producers and sell some drugs (NOT antibiotics and vaccines)

Auxiliaries can visit herds and do very basic treatments.

Pharmaceuticals

About 3-5 companies have a licence to import pharmaceuticals which they retail through their own shops. Samples are tested in the Vet. School for efficacy, toxicity and conformity with the label at the importer's expense. Individual private vets can then purchase their supplies legally from these licensed importers/retailers. PACE has not been involved in this in any way.

11. Expanding Awareness of Animal Health Services

PACE has funded seminars conducted by private vets and Regional Inspectors to sensitise the auxiliaries on PACE activities (in the network, the auxiliaries always report their suspicions etc. to the private vets). Sensitisation is an ongoing process involving professional organisations (butchers, farmers' associations etc.). ND vaccinations (eye inoculations) are mostly carried out by women auxiliaries.

NB: Lack of funds has prevented Dakar PCU staff going into the field in the last two years, so sensitisation is largely in the hands of the Regional Inspectors.

BIMASE

The information Bulletin (BIMASE – Bulletin Information des Maladies Animales au Sénégal) is produced every 3 months and is distributed to all interested stake holders and partners, including the 20% of farmers who can read; 30 copies are provided to each Regional Inspector for distribution at Regional level.. Initially, 1000 copies per issue were produced, but it is decided that this is too much as the information is technical and not of general interest, and only 500 copies were produced for the last issue.

Posters

One each has been produced for the 9 priority diseases plus now, avian flu.

NB: The posters are very professional with high quality graphics, but the language is a mixture of French and Wolof, some in Arabic script. There were some adverse comments about the language used in some of the posters.

Some of the posters were actually produced under French Co-operation in 2000 and they have been adapted to the PACE programme by adding the PACE Logo. They were extensively used in workshops to explain the message of the posters, and they can now be found throughout the country. The CBPP poster needs to be updated as vaccination had now stopped.

Local Community Radio

This is used sometimes (there are about 20 in the country) to communicate with farmers in the most appropriate language. Wolof is understood by everyone. The best language for farmers is Fulani (about 90% of the farmers speak Fulani) although Sere is used in the S.W.

Farmer Awareness of the benefits of disease control

It was stated that this is only fairly good because of programmes being compromised by opportunistic local peasant NGOs, and communication is not reaching livestock herders whose awareness is poor.

Ministry's Awareness of farmers' needs

In his view, the Authorities understand very well the needs of the farmers. The Minister herself is a veterinarian.

12. Ecole Inter-Etats des Sciences et Médecine Vétérinaires (EISMV), Dakar (10/07/06)

The EISMV was founded by 13 member countries (Senegal, Mauritania, Togo, Côte d'Ivoire, Benin, Burkina Faso, Niger, Chad, CAR, Cameroon, Congo, Gabon, and Rwanda) who agreed that this one Regional vet. school would provide their vet training needs. In addition, however, students now come from other countries e.g. Madagascar, Djibouti, England, Ethiopia, and Mali. This year there are 18 nationalities represented among the students. The EISMV is the only Regional Vet. School for West and Central Africa. There was one in Zaire, but this may have closed as a result of the war. The school graduates are about 50 students per year. This year there are many students from Rwanda and Cameroon.

The course lasts 5 years, even for recruits of students who are already engineers, although they are hoping to change this to 2-3 years.

Privatisation Training

From the early 1990s, because of the moratorium on recruitment into the public sector, it was recognised that training for private vets was needed. The Curriculum was adapted in 1999 to include training in rural economics so that when students graduate they are prepared for the private sector.

PACE Support

PACE has had no input into the undergraduate curriculum changes, but with the advent of this training, PACE has been supporting CPD training of private vets on business management e.g. funding of workshops etc.

Future PACE support

The Dean and his colleague stated that it would be necessary to get funding for the CPD programme.

Epidemiology distance training

The school is planning to provide epidemiology training by distance learning (E learning) because it is felt that vets need the training and don't have the time/money to come to the school.

SERECU

SERECU arose from the Strategic Plan formulated at the 10th Annual Co-ordination Meeting held in Bamako, March 2005. Work plans and cost estimates were presented on 22 November 2005 and SERECU became operational in January 2006.

Results of serosurveillance

In 2005, because of drought conditions cattle moved to areas with permanent water (in Somalia close to Shabelle and Juba rivers). In view of the resultant uneven dispersion of cattle through the region, purposive serum sampling, rather than random survey serosampling was undertaken in the Somali ecosystem as below:

Kenya: July – August 2005 368 sera were taken from cattle in the 1-3 year old age group. 1.25% of them were positive for rinderpest antibodies.

Somalia: from 3 Districts in Central and Southern Somalia, between February and March 2005 2130 sera were collected, of which 2 were positive for rinderpest antibodies. Less than 0.2% positive compared with 2.8%, 5.9% and 0.8% in the three districts.

During the drought from November 2005 to March 2006, purposive sampling was made at 92 sites in Kenya, 144 sites in Somalia and 29 sites in Ethiopia. Of 2,136 sera collected from cattle of 1 to 3 years old in Somalia, 13 were positive, and 14 Ethiopian cattle were positive.

Random serosurvey 2006:

Ethiopia: 6,900 samples from 460 sites
Kenya 4,995 samples from 333 sites
Somalia 7,305 samples from 487 sites.

There has been a delay in recruiting the FAO adviser for SERECU. He should be paid for by EU funds remaining from the budget for the Chief Epidemiologist but FAO has yet to finalise closure of the account.

SERECU has funding to the end of February 2007. However, it has a very important role to play for at least four more years. Bearing in mind that the Somali Ecosystem is the last place in the world where there is a possibility that rinderpest virus still exists, and remembering that in the past, rinderpest has re-emerged from a few remaining foci of infection to cause devastating epidemics across Africa and Asia, SERECU needs to continue the following:

- Co-ordination of rinderpest surveillance activities of the veterinary services, NGOs, SAHSP, professional associations and CAHWs working on animal health in the Somali Ecosystem.

- Organisation of random sample serum surveys across the Somali Ecosystem, similar to the one which has just been completed and for which results are awaited.

- Design and co-ordinate risk based surveillance activities which include participatory disease search and targeted serosurveillance.

- Design and co-ordinate continuing wildlife surveillance.

- Organise and co-ordinate the required laboratory backup.

- Ensure that contingency plans and emergency preparedness (including all logistics) are in place for rapid reaction to a re-emergence of rinderpest disease in the Somali Ecosystem, including stamping out and emergency ring vaccination, preferably with a marker vaccine.

- Plan and implement, through the national partners and contracted NGOs, the continuing surveillance activities needed for taking the national zones of the Somali Ecosystem along the OIE Pathway to eventual declaration of freedom from rinderpest infection.

Currently, SERECU is drafting a project proposal in consultation with FAO and the Global Rinderpest Eradication Programme, for the continuation of the Project. It has, as yet, to co-opt the FAO representative to the Project. There will be a SERECU stakeholder meeting from September 26 to 27 to review the results of the recently undertaken serological survey, after which, on 28 September, there will be a steering committee meeting.

SUDAN

Venue	6th PACE Co-ordination Meeting, Mombassa
Date	27/06/06
Present	1. FEM Team (All) 2. Dr. Bashir Taha Mohammed, Director General for Animal Health and Disease Control, N. Sudan 3. Dr. Agol Malak Kwai, Director General, Vet. Services, S. Sudan and PACE Co-ordinator 4. Bryony Jones, VSF Belgium, Rinderpest Project Manager, 5. Dr. Wilfred Horst Hartwig, PACE National TA, N. Sudan 6. Dr. Mohammed Abdel Raziq, Director of Epizootic Disease Control, Ministry of Animal Resources

South Sudan

Since the war ended, there has been a separate Government for South Sudan. The entire country is now disease free and on the OIE pathway to freedom of infection (application next year). South Sudan is also dependant on other donor funds (e.g. STABEX, Humanitarian Relief). Anticipate that if STABEX funding is provided, will be able to finish surveillance and get infection free status.

Since the peace agreement, there has been a shift towards greater involvement of Government vets, and NGO (in this case VSF Belgium) supervised staff doing less and less. CAHWs will continue to be utilised, especially in very remote areas, but overall to a lesser extent.

North Sudan

The classic Government supervised approach still prevails, and CAHWs are only used in very remote areas. North Sudan employs 500 Government vets, and are in the process of recruiting 1000 more at National and Federal levels. This is part of the Government's policy to strengthen the livestock sector.

Legislation/Privatisation and Use of CAHWs

Legislation is in place that allows the use of CAHWs and private vets to operate. By law, the CAHWs can only carry out 14 primary health care duties e.g.

- Deworming
- Vaccination under supervision
- Wound care
- Castrations
- Ectoparasite treatment

CAHWs also participate in surveillance thus:

- Disease reporting
- Participatory Disease Searching
- Sero-surveillance (CAHWs are the "entry" to villages and communities)

CAHWs get paid daily for participating in surveillance, but not for disease reporting. The same situation applies both in the North and the South.

Veterinary legislation

With respect to privatisation of vets, this is being encouraged. Duties are things like drug sales, surgery, vaccinations. The Government's role is to supervise/monitor. The Veterinary Council is essentially in charge of veterinary legislation, and CAPE has contributed to amending the legislation to allow CAHWS to carry out the duties described above. The legislation has still to be passed, but it is in process.

The following additional information was provided on June 30 by Wilfred. PACE's involvement in privatisation of vets was scaled down in the Extension phase during which it has remained at Activity level only. There are no PACE funds to be made available as guarantees for bank loans or revolving funds, and in North Sudan there are no residual funds from PARC (cf Guinea Bissau and Nigeria) for this purpose and so without this, facilitating vets to enter the private sector didn't really materialise. There are private vets operating e.g. in urban areas, but they are there by their own initiative.

NB: The comment was that there was little input from the VPLU.

Laboratory Support

PACE has supported the Central Vet. Lab.in Khartoum plus the 9 Regional Labs. plus a specific ELISA Unit. The Regional labs. are only carrying out very basic diagnostic tests.

Samples sent to the ELISA lab are split into 3 aliquots and tested as follows:

- Tested by the ELISA unit
- Tested by CVL in Khartoum
- Retained in case of any disagreements of results

15,000 samples have been tested with very good correlation.

Bryony pointed out that the support from PACE for Muguga has been weak, although the support for other labs. has been good (i.e. kits, reagents, training).

Training

N. Sudan

Since 2003, there has been 48 one-week (±) training courses on a range of topics e.g.

- Participatory Disease Searching
- Disease Surveillance and use of ARIS in some states.
- Computer use and data handling

At first, tutors came from the Regional PACE office, but increasingly by training the trainers, Sudan used its own trainers. In addition there has been refresher follow-up training. Lab. courses were conducted in collaboration with the Berlin Free University (Prof. Max Bauman).

All trainees were assessed after courses. CPD is now under consideration.

South Sudan

At the beginning of PACE, the only vets available for training were attached to NGOs. Training was more basic with the emphasis focussed on orientation towards charging and the requirements for Rinderpest control (Vaccination and Surveillance).

Awareness and Communication

North Sudan has a formal extension and communication unit under PACE, but it has received relatively little input from the PACE Communication Unit.

In South Sudan, when vaccination stopped, CAPE recognised there would be a shortfall in information and communication and the need to heighten the awareness of this decision. With CAPE support, a lot of extension was carried out to communicate this (flip charts, posters, songs) to explain why this decision had been made. Otherwise, there was little input from the Communication Unit.

Wildlife Surveillance

Richard Kock provided support here, and various species of wildlife of different ages were darted and sampled; all were Rinderpest negative.

The future

The potential for linking a programme to trade routes was discussed e.g. Sudanese cattle to Uganda.

Concerns were also expressed about other ongoing disease problems: e.g ECF, FMD, CBPP.

Also concern was expressed about the termination of PACE before Dossiers were completed.

Support in General

The group were very satisfied with the inputs and support received from the Epidemiology and Data Management Units, and also from Emmanuel Tambi (this contradicts earlier comments about poor support from the Communication Unit).

Reporting and monitoring

There are monthly disease reports, and twice yearly reports to GTZ and PACE, also an annual report for the Annual Co-ordination Meetings. The group felt that they had not received sufficient monitoring visits.

Tanzania

The Directorate of Veterinary Services, is within the Ministry of Livestock Development, (Wizara ya Mandeleo ya Mifugo), headquarters at Temeke, Dar es Salaam.

People met:

Dr J.O. Mollel	Director of Veterinary Services
Dr Das	Dr Das, Director of Central Veterinary Laboratory
Dr Mohamed M. Bahari	Pace National Project Co-ordinator
Dr Njau	Deputy Director of Veterinary Services
Dr Pascal Minjauw	PACE epidemiologist
Dr Kapaga	Director of Veterinary Services, Eastern Zone
Dr Masaba	Liaison Officer
Dr Catherine Joseph	Director of Policy and Planning, Ministry of Livestock Development

PACE Training and HRD support

About 30 private veterinarians have been trained in business management.

Through PACE, a Private Veterinary Chapter has been formed within the Tanzanian Veterinary Association.

Training has been given on sample taking and diagnostic techniques.

Attendance at International Meetings has been supported.

An individual has been trained to Diploma level in Laboratory Techniques.

Disease control

CBPP is considered to be of public good (free vaccines) and FMD is considered to be of private good (vaccination charged for).

Central Veterinary Laboratory (CVL) - Tanzania Livestock Research Institute

The laboratory can diagnose: RP, ASF, HPAI, CBPP, FMD and PPR with ELISA kits. HI and AGID are used for HPAI diagnosis.

The laboratory has a serum bank and sampling equipment.

The Laboratory has a biosafety committee.

The Laboratory has collaboration with Minnesota University for a joint project on HPAI.

The FAO regional TCP on HPAI has provided protective clothing for the CVL and for Veterinary Investigation Centres (VICs).

The CVL is developing a high security FMD laboratory.

I_2 thermostable vaccine is produced for ND control.

Laboratory requirements:

Training in QA.

Upgraded biosafety (for handling HPAI and rabies).

Re-establishment of cell culture techniques.

Biotechnology laboratory.

Training for Diploma in Lab.Tech.

Legislation

A revised Veterinary Act was promulgated in 2003.

11 regulations include recognition for veterinarians, certificate holders, diploma holders (200 graduates per year from schools such as one at Mpwapwa, more that 50% are self employed) and CAHWs (NGOs are training CAHWs – CAPE trained the trainers and paid for the training).

Zonal VICs

There are seven zones in Tanzania, each with a VIC.

Mpwapwa Zonal VIC

Mpwapwa VIC receives Government and PACE funding for active surveillance for CBPP, rinderpest, brucella, TB and ASF.

PACE provided project vehicles – 5 to HQ, 1 to each VIC and 1 for rinderpest surveillance. Bicycles and motorbikes have also been distributed to staff.

The VIC produces a newsletter.

Ondestepoort is used as the reference laboratory for ASF.

Mpwapwa VIC may move to the national capital, Dodoma because communications are bad at Mpwapwa, though internet and telephones are available on a national grid.

Constraints

Development of action plans took a long time at the beginning of PACE.

Disbursements were slow because of authorisation by:

1. Local Delegation (very difficult Rural Development Adviser for first 2 years, but was replaced and now there is an excellent relationship with the RDA)
2. Nairobi Delegation
3. Regional Authorising Officer (Director of IBAR)
4. National Authorising Officer (no problem here).

Replenishments devolved to Local Delegation, involves:

1. RDA
2. Financial Controller
3. Project Officer

At start of PACE in 1999, the RDA was overwhelmed by the Global Plan and Annual Plan.

EU Delegation was not geared up to make available funds for start up phase.

Training and field surveillance was delayed by lack of funds.

There was better progress after the Bagamoyo workshop in 2000.

Procurement procedure

Three levels:

1. International – EDF tender
2. Local – EDF tender
3. Quotations and payment from imprest.

NAO office

Discussed auditing, replenishment and interim audits, derogations and difficulty of getting local tenders for PCR equipment.

Discussed closure and end of financial agreement for PACE in February.

Delegation

Meeting with Razi Latif – RDA.

EDF: delays to start up of EDF 10 because: n = financial proposal. n + 3 years to signing contract. EDF 10 should start in 2007.

EDF 10 has a basket approach to funding. Financing agreements already made will continue in EDF 10.

STABEX supports the National Agricultural Development Programme (NADP).

The Directorate of Livestock plans to introduce Identification and Registration of livestock and Pastoral Systems Development.

The Directorate's website and Information System needs improving.

The Tanzania Wildlife Research Institute (TAWIRI) handles wildlife disease surveillance (Richard Hoare is a contact).

Private vet

Dr Kabialo. PACE helped to form the Private Veterinary Organisation and provided short courses in entrepreneurship and seminars on disease reporting.

Also assisted the change to the legislation which allowed restructuring of veterinary services.Dr Kabialo has done Government work on livestock movement mapping (PACE contract).

Private veterinarians are supposed to give monthly disease reports to their District Office but Dr Kabialo has not given one lately. His business seems to be mostly drug retailing.

Uganda

Uganda has STABEX funds available for 18 more months to use on PACE activities.

Dr Nantima	PACE National Co-ordinator
Dr E.D. Musiku	PACE Communications Team Leader
Dr Rose Ademun	Head of Central Veterinary Laboratory
Dr Simon Gould	National TA
Michael Oluka	PACE IT Consultant
William Mugisha	Senior Laboratory Technician (Serology)
Erima Naphtal	Data entry clerk
Esther Nambo	Data entry clerk
Sudu Sam	Data entry clerk
Zacc Dubuga	Laboratory Technician
Bahati Milton	Laboratory Technician
Mary Nanfuka	Laboratory Technician (Quality Assurance Manager)
Dr Joseph Sserugga	Data management officer
Patrick Seruyange	EC Kampala Operations Officer
Joe Willy Haguma	Principal Finance Officer, Ministry of Finance

Central Veterinary Laboratory

Staff are mostly employed by Government, giving sustainability after PACE. However, the laboratory is expensive to operate and could do with more technical support.

Epidemiology Unit

Epidemiology Unit's staff are mostly employed by PACE, therefore the Unit will suffer after closure of PACE and STABEX support.

Surveillance

Besides passive and active surveillance, abattoir surveillance is undertaken.

Disease control

Rinderpest

OIE declared Uganda's freedom from disease in May '06. A third round of serosurveillance is being undertaken.

CBPP

CBPP has spread across the country. Vaccine is mostly provided on a cost recovery basis. There is not enough finance available to implement PACE's regional strategy for CBPP of annual vaccination for five years.

FMD

FMD is currently infecting 20 districts of Uganda.

General

Uganda is considering introduction of disease free zones. They consider a zone could just be one production unit – commodity based zone.

1 dose of FMD vaccine costs shs 3,000 but is sold at shs 600. CBPP vaccine is sold at shs 300 – not full cost recovery – is it worth collecting? By comparison, 1 litre of milk costs shs 500 and 1Kg of meat costs shs 2,000. A sachet of Berenil costs shs 1,000.

To assist disease control, there is a programme in Uganda for cattle to be identified by District brand.

Districts

There are 56 districts + 21 newly formed districts – 69 are functional.

In each district PACE has installed 2 focal point officers: District PACE co-ordinator and assistant. They have been given motorcycles and running costs. Their salaries are paid by Central Government, while District Veterinary Officers are paid by the District.

Constraints

70,000 cattle with their owners have been expelled from Tanzania across the border into Uganda.

Privatisation

€2million for loans to private veterinarians was available from PARC and €2million for loans has been made available from PACE (even though PACE wasn't programmed to support this). 40 people took loans and 30 remain in practice.

There is no legal framework to allow private veterinarians to do Government work.

The Uganda Veterinary Board (UVB) has had support from PACE. The UVB is to become the UV Council by Act of Parliament – facilitated by PACE, but not yet implemented.

The UVB is encouraging veterinarians to take loans from its loan fund which is now worth shs 800 million.

EC Delegation

EC provides:

1. General budget support through a basket of funds together with DFID, World Bank , USAID and ADB. Government decides how to spend: health and education are priorities.

2. Sector support:
   - Agricultural extension
   - Agricultural research
   - Animal health sector through a financial agreement (e.g. PACE).

Uganda are still completing closure of PARC. The local Delegation will close PACE accounts.

National Authorising Officer (NAO)

The Principal Finance Officer, Ministry of Finance, acts for NAO with regard to PACE. PACE has implemented 6 work programmes. The NAO is currently concerned with the ALIVE Programme.

Visit Hoima District Office

Meeting with the DVO, Permanent Secretary for the District and the District Chair Person.

Hoima is noted for presence of FMD, but is currently FMD free and has enhanced control of CBPP. It has had quarantines for CBPP and FMD.

Hoima is in the Lake Albert belt – semi-arid but good for livestock production.

Feed quality assurance needed, also a marketing structure for milk, beef, eggs and chickens. About 20 chickens are kept per household.

Illegal movement of livestock is a problem. Penalties for illegal movement are not enough to restrict them.

There is 10 veterinary staff in the district but there is no Holding Ground to facilitate movement control.

Farmers' complaints:

Lack of communication between farmers and PACE.

Veterinary staff is not under direct control of National Headquarters.

Visit Masinde District Office

Benefits of PACE: vaccination campaign has controlled CBPP. Masinde has been without quarantines for more than 18 months. The District has mostly nomadic pastoralists. Cattle from Teso are moving in. If they come, they must move officially. The District Office wants to see nomadism abolished here. Animal health delivery has a transport problem. Decentralisation has spoiled disease control.

Tsetse and trypanosomiasis is a major problem in livestock and people. Sleeping sickness is encroaching from two sides. PARTIC addresses tsetse control on a continental basis and COCTU (a project supported by DFID, Edinburgh University and Uganda Government) is looking at spread to new areas of *rhodesiense* sleeping sickness.

Masinde is to receive motorcycles and computers through the PACE programme.

Farmers' complaints:

Communication problem noted by farmers, what is PACE? They see cars with the PACE logo but do not know what they are doing.

Steering Committee Meeting

The EC Kampala Operations Officer proposed that a follow up to PACE should address trade associated diseases; there should be increased project visibility and disease control

should be strengthened in the districts; more use should be made of the capacity of the Faculty of Veterinary Science, Makerere University.

The National TA, commented on the disease implications of the 100,000 cattle that have recently moved from Tanzania to Uganda. He also described the disease implications of livestock movement across other borders, including the Karamoja/Turkana and Uganda/DRC borders. He recommended that projects like PAC should have a border harmonisation component.

The good collaboration between Makerere University, Ministry of Agriculture, Ministry of Wildlife and National Agricultural Research Organisation was noted.

ANNEX 8

MAIN DOCUMENTS CONSULTED

ANNEX 8: MAIN DOCUMENTS CONSULTED

- Financing Agreement between the Commission of the European Communities and OAU/IBAR. Agreement No. 6125/REG – May 12 1999
- PACE Annual Reports
    - January – December, 2001
    - June 2002 – May 2003
    - June 2003 – May 2004
    - January – December 2005 (Electronic in French)

  NB: Gaps January to May 2002 and June 2004 to December 2004 were covered by half yearly reports.
- PACE Mid Term Review; Final Report + Annexes, May 2003
- Proposal for the extension of the financing agreement of PACE, 1st November 2004 – 28th February 2007. Dared June 7, 2004
- PACE Advisory Committee Meetings Reports: Nos. 1 – 12
- PACE Final Report 1999 – 2004 : Regional Co-ordination for West and Central Africa (French and English)
- Review of PACE National Programmes Progress and Country Poster Presentations (French and English)
- Sixth PACE Annual Co-ordination Meeting, Mombassa, June 27 – 30, 2006 (Documents)
- Concept Note for Consolidation of PACE National Components – 31/10/2004
- Cadrage technique et budgétaire des devis – Programmes An 2 des Composantes Nationales du PACE
- PACE SERECU Project Document
- Evaluation of PACE Staff Competencies, the Management Structure, Management Systems and the Working Relations. GTZ – 23/06/2005
- Handing Over Report by Francis Inganji, PACE Communication Unit, August, 2004
- Short-term experts and mission reports
- PACE consolidated Work Programmes
- PACE Country Global Plans and Work Programmes/cost estimates
- Data Management Unit- Final Report, July 2000 – October 2004, Berhanu Bedane, December, 2004
- ALIVE Partnership for Livestock Development, Poverty Alleviation and Sustainable Growth
- PACE Manual of Procedures

NB: In addition to the above, the FEM team consulted many internal PCU Documents, National PACE Documents and Official National Reports.

ANNEX 9

DRAFT TERMS OF REFERENCE FOR A FULL FEASIBILITY STUDY FOR FURTHER EC SUPPORT

ANNEX 9: DRAFT TERMS OF REFERENCE FOR A FULL FEASIBILITY STUDY FOR FURTHER EC SUPPORT

Recruitment of three experts to formulate the next phase of the EC support to the Pan- African Programme for the Control of Epizooties (PACE).

1. BACKGROUND

1.1 PACE

The Pan African Programme for the Control of Epizootics (PACE) was funded under a Financing Agreement signed in August 1999 between the European Union and the Organization of African Unity (now African Union). The Financing Agreement which went into force on November 1st, 1999, was completed on 31st October 2004, but was extended until February 28th, 2007 by a rider signed on October 5th, 2004. Since November 1st, 2004, the PACE programme has moved into its extension phase.

The initial budget of the PACE programme was 72 million Euros. During the extension phase, it was raised to 77 million Euros; two-third of that amount is allocated to activities conducted by the national components.

Additional bilateral funding from France, Italy, Switzerland and the UK was made available to support PACE activities. The largest bilateral intervention was the DFID funded Community Based and Participatory Epidemiology Project (CAPE) which finished in September 2004.

The overall objective of PACE (as indicated in the logical framework for the extension plan of PACE) was 'Reduction of poverty and enhanced food security amongst rural communities through sustainable improvements in animal production and productivity and increased trade in livestock and livestock products'. The specific objectives included: A) Eradication of rinderpest and control of other epizootic diseases; and B) Strengthen surveillance of other major diseases to provide required information for policy formulation of their control as pre-requisite for access to global livestock markets. The five main expected results included:

1) Committed eradication of rinderpest in the Somalia ecosystem.
2) Verified rinderpest eradication in countries through achievement of the OIE Pathway's freedom from disease and then from infection.
3) Reinforcing of animal epidemiology services and control of major diseases in the participating countries.
4) Development of national policies for economically affordable strategies for the control of priority diseases.
5) Strategies developed for gaining greater access to livestock markets.

The Inter-African Bureau of Animal Resources of the African Union (AU-IBAR) played the role of Regional Authorising Officer for PACE which also had a Policy Committee composed by representatives of the relevant institutions and donors active in the livestock sector in Africa. The PACE structure included:

- a Programme Co-ordination Unit and Financial Unit based in Nairobi;
- two Regional Co-ordinating Units based in Nairobi for Eastern Africa and Bamako for West and Central Africa;

- National Components implemented in 30 countries in Eastern, West and Central Africa;
- common services provided by an Epidemiology Unit (with sub-units in Nairobi and Bamako), an Information and Communication Unit (based in Nairobi with a sub-office in Brussels) and a Veterinary Legislation and Privatisation Unit (which ceased activity in the extension phase).

The activities at national level were grouped under the four following themes:

- The development of disease surveillance and animal health information systems.
- Continuation of rinderpest eradication and strengthening of control of other major epizootic diseases of livestock.
- Support to the privatisation of national veterinary services with amendments to national legislation where appropriate.
- Increasing livestock farmers' awareness of the benefits of animal health services and strengthening linkages between central institutions and livestock farmers.

External evaluations of PACE were carried out in the form of a Mid-Term Review at the end of 2002 and a Final Evaluation from June to August 2006. The Final Evaluation Mission reported a high level of achievement across the five main result areas of the programme. In respect of rinderpest eradication it should be noted that the participating countries have been enabled to follow the OIE pathway to accreditation of freedom from disease and infection. Currently 12 countries have been accredited as being free from infection and nine have been accredited as free from disease. The remaining countries have started on the OIE Pathway by stopping rinderpest vaccination and declaring themselves to be free from rinderpest (including the three countries with territory in the Somali ecosystem, on a zonal basis).

PACE suffered from some financial and human resource management difficulties in its early years. However, the standard and effectiveness of the programme management improved considerably in the extension phase.

1.2 Regional Animal Health Centres

Following from PACE AU-IBAR is planning further actions to continue strengthening the surveillance of major animal diseases and the development policies and actions for disease control and eradication in Africa. It is promoting a regional approach which includes the establishment of Regional Animal Health Centres. AU-IBAR, in co-operation with OIE and FAO, has proposed four such Centres to be located in Nairobi, Bamako, Gaborone and Tunis. The formal agreement to establish the first of these centres, the Regional Animal Health Centre for West and Central Africa in Bamako, was signed by AU-IBAR, OIE and FAO on 25 April 2006. Under this agreement the three institutions will implement a new concept that enables them to pool and harmonise their mandates and resources for the benefit of preventing and controlling animal diseases particularly high pathogenic avian influenza (HPAI) in this region. The focus on HPAI in West and Central Africa stems from the first occurrences of HPAI in Nigeria in February 2006 followed by its propagation to Niger, Cameroon, Burkina Faso and Côte d'Ivoire and the risk of its rapid spread to other countries.

The Regional Animal Health Centres will provide an operational framework for the co-ordination and harmonisation of strategies for the surveillance of disease threats and the monitoring and support of regional level animal disease control eradication efforts. Each of the participating organisations will provide experts and intervene in its area of competence with the aim of bringing together expertise for joint activities. A combination of short and medium term activities are envisaged for the Centres.

Short Term Activities

The following short-term activities will be carried out:

- Analysis, harmonisation and technical follow-up of national and sub-regional emergency preparedness plans.
- Strengthening of epidemiological surveillance.
- Training in laboratory techniques for disease diagnosis and monitoring of regional laboratory networks.
- Audit of the capacities of Veterinary Services to prevent and control of priority animal diseases.
- Participation in socio-economic studies of the impact of priority animal diseases.
- Provision of technical assistance to countries to support the implementation of the prevention and control of priority animal diseases.
- Analysis and validation of applications from countries seeking emergency funding.
- Support for the dissemination of animal health and technical information.
- Public awareness and information campaigns.
- Monitoring and evaluation of activities in the field.
- Co-ordination of the Technical Secretariat of the Sub-Regional Co-ordination Mechanism for the prevention and response against priority animal diseases.

In the case of the Regional Animal Health Centre in Bamako activities will initially aim at supporting the fight against the avian influenza virus at its animal source in those countries infected and prevention of the spread of the disease in free countries. These activities lie within the framework of strategic orientations defined at the global and regional level.

Medium Term Activities

The medium term activities will aim on the one hand at consolidating prevention and control activities engaged in emergency and on the other hand at building in a sustainable manner the capacities of Veterinary Services in the countries of the region. They will focus on the following activities:

- Implementation of audit and evaluation of the Veterinary Services with regard to OIE standards to help Governments and donor agencies target their investments in the animal health field.
- Support for feasibility studies of national and regional investment programmes.
- Training of OIE Delegates and their collaborators.
- Actions aimed at improving the disease notification system.
- Strengthening of epidemiological surveillance in animals.
- Participate in socio-economic studies on the impact of priority animal diseases.
- Training in laboratory techniques (diagnosis, quality assurance) and monitoring of regional laboratory networks.
- Provision of technical assistance to countries for the prevention and control of priority animal diseases.
- Support for the dissemination of animal health and technical information.
- Public awareness and information campaigns.
- Monitoring and evaluation of activities in the field.
- Support for the development of control programmes for transboundary and priority diseases and their sub-regional and regional co-ordination, and for associated training.
- Co-ordination of the Technical Secretariat of the Sub-Regional Co-ordination Mechanism for the prevention and response against avian influenza.

The establishment of the Centres will require multi-donor support, financially and in the form of technical assistance. The possible justification for EDF funding (following from the support provided to PACE) needs to be first explored in the form of a feasibility study. The study will focus on potential support to the Regional Animal Health Centres in Nairobi and Bamako.

2. DESCRIPTION OF THE ASSIGNMENT

a) Beneficiaries

The final beneficiaries include the farming and pastoral communities whose livelihoods depend on raising productive and healthy farm animals and the winder population for whom disease free meat and animal products contribute to achieving public health. Increased trade in animals and animal products resulting from improved animal disease studies will also bring wider economic benefits at national and regional level.

The project partners will be the national governments who participate in the programme and the implementing agencies including AU-IBAR, OIE and FAO. At national level the public and private veterinary services will also be important project partners.

b) Objectives

- ***Global Objectives***

  The overall objective is reduction of poverty and enhanced food security amongst rural communities and improved public health in the wider population through improved animal disease surveillance and control.

- ***Specific Objectives of the Mission***

  The mission will contribute to the global objectives by assessing the relevance and justification for potential EC support to the establishment of Regional Animal Health Centres for West and Central Africa (based in Bamako) and Eastern Africa (based in Nairobi). A programme feasibility and formulation document will be the main output of the mission.

c) Scope of the Feasibility Study Mission and Requested Services

The Formulation Mission will accomplish the following tasks:

- Examine the existing documentation and plans for the Regional Animal Health Centres in Bamako and Nairobi and relevant background and sectoral information.
- Undertake a stakeholder analysis to identify the beneficiaries, project partners and implementing agencies and to analyse the coherence and complemetarity with the interventions of donors and govemments in the sector.
- Carry out an analysis of problems, objectives and strategy in line with the logical framework approach.
- Identify the need and specific role for EU support (both financial and technical assistance) in the development of Regional Animal Health Centres in Bamako and Nairobi.

- Develop a logical framework for the EU support including global objectives, specific objectives, expected results, activities, means and costs. The logical framework should include objectively verifiable indicators.
- Define the administrative, institutional, legal and management framework for the achievement of the objectives of the programme.
- Identify the factors ensuring feasibility and sustainability including lessons learned from previous programmes (especially PACE). Identify the assumptions, critical conditions for success and major risks of the programme.

Throughout the above process there must be regular consultation with the EC Delegations in Kenya and Mali and with stakeholders including AU-IBAR, OIE, FAO, national governments and other donors in order to discuss the scope of the possible EU support, including design, implementation, funding and sustainability issues.

In assessing feasibility issues consideration should be given to: identifying target diseases that are significant in terms of their impact; assessing which of these diseases could be subjected to a programme of control/eradication by the strengthening veterinary services within the PACE countries (taking advantage of the improved epidemio-surveillance networks), and; recommending which diseases should be targeted for the regional control/ eradication with assistance from the Regional Animal Health Centres.

3. EXPERTS PROFILE

To be in position to fulfil the objectives of the mission, the team of experts will be composed as follows:

a) Team Leader – Programme Management and Financial Expert (EU expert Category 1):

The person should have the following educational background and professional experience:

The Team Leader should have a university degree (or equivalent professional qualification) and have a minimum of 15 years overall professional experience (Cat 1) with at least 10 years specific experience in programme management and finance. He/she should have experience of large regional multi-donor funded programmes, preferably in Africa. Previous experience in the veterinary/livestock sector will be an advantage. He/she will have previous experience as a team leader and be familiar with EC rules, procedures and formats, especially in relation to project formulation/financing proposals and the PMC approach. Fluency in English and French required.

As Team Leader he/she will, *inter alia*, be responsible for:

- ✓ Overall aspects and guidance of the mission as referred to in the objectives and plan of work of the mission and for the production of inception, draft and final reports.
- ✓ Supervising the work of individual experts in the team, as he/she will be directly responsible to the EC for the overall quality and consistency of all reports and documents produced by the mission.
- ✓ Carrying out any other task as required by the client, in order to fulfil the objectives of the ToRs of the feasibility study mission.

b) Veterinary Epidemiologist (CAT 2)

The epidemiology expert will have a degree in veterinary science or related science and at least 10 years proven experience in designing and implementing interventions aimed at reducing the spread of epidemic animal diseases, including Highly Pathogenic Avian Influenza. The expert should also have experience of animal disease information systems. Experience in sub-Saharan Africa will be an advantage.

Specifically the expert's duties will include, but not be limited to:

- ✓ Appraisal of the epidemiology activities planned for the Regional Animal Health Centres in Bamabo and Nairobi.
- ✓ Preparation of recommendations about diseases that should be targeted for control/ eradication within a regional programme.
- ✓ Identification of areas of epidemiology technical support suitable for inclusion in a EU funded programme.
- ✓ Participation in the analytical and report writing process of the study.

The epidemiology expert will work in close collaboration with and under the supervision of the Team Leader. The expert must be proficient in English or French with a working knowledge in either of the other languages.

c) Veterinary Services Expert (CAT 2)

The Veterinary Services Expert shall have a degree in veterinary sciences or in a related field relevant to the expertise required. He/she will have at least 10 years proven experience in privatisation of veterinary services and management/delivery of veterinary services to livestock owners preferably in developing countries. He/she should also have proven experience in grassroots organisations in the livestock sector. Experience in sub-Saharan Africa will be an advantage.

The expert's duties will include, but not be limited to:

- ✓ Appraisal of the veterinary services support activities planned for the Regional Animal Health Centres in Bamako and Nairobi.
- ✓ Assessment of mechanisms and strategies for linking programme activities with public and private veterinary services in the region.
- ✓ Identification of areas of veterinary services technical support suitable for inclusion in a EU funded programme.
- ✓ Participation in the analytical and report writing process of the study.

The Veterinary Services Expert will work in close collaboration with and under the supervision of the Team Leader. Proficiency in French or English with a working knowledge in either of the other languages will be required

4. LOCATION AND DURATION

The feasibility study mission should start as soon as possible after the signature of the contract.

The period of performance is as follows:

Team leader: ..... 54 days
Other experts: ..... 49 days each

Experts	Mission Stage	Location	Days
EC experts	International Travel	Europe/Kenya/Europe	**2**
All experts	Briefing	EC Delegation Nairobi	**1**
All experts	Consultations, including field visits, stakeholder meetings, etc.	Kenya, Mali (with some visits to countries in region)	**30**
All experts	Preparation and delivery of draft final report, logical framework and financing proposal	Nairobi	**13**
All experts	End-of-mission report briefing	EC Delegation Nairobi	**1**
	Commission comments on draft within 14 days		
EC team leader Two other EC Experts	Incorporation of EC comments and submission of final documentation	Consultant HQ	**7** **2 (each)**

Total working days of EC Expert – Team leader	**54**
Total working days for the two other EC Experts	**98**
Total days (working)	**152**

Due to time constraints for this project, the experts will be required to work over weekends so as to complete the mission work within 7 calendar weeks and the final report revision work within 2 calendar weeks.

To conduct this assignment, the consultants will undertake the following visits:

- The AU/IBAR office in Nairobi, where the team will be based
- The Regional Animal Health Centre for West and Central Africa in Bamako.
- The Delegations of the EC in Kenya and Mali.
- A sample of countries representative of the regional participation.

In addition, the reviewers will liaise with the OIE in Paris and the FAO in Rome. Provision is made for visits - if deemed necessary - to the organisations HQs in Europe, as well as for report preparation in country of residence.

5. REPORTING

All reports of the feasibility study mission will be prepared in English:

a) The work plan for the mission will be submitted to the EC Delegation to Kenya for comments within 4 days of arrival in Nairobi.

b) The draft report logical framework and financing proposal will be submitted to the EC Delegation for comments by the end of the mission work. Separate annexes of the final report will record the itinerary of the mission, the person met and the institutions they represent, as well as summaries of the various meetings and views expressed.

c) The Experts will continuously exchange information with the EC Delegation in Nairobi and a meeting preferably on weekly basis, will be arranged in the Delegation.

d) The final report and financing proposal with incorporated the comments received will be delivered within 15 days of receiving the European Commission's comments.

e) An electronic copy of all files and documents will be transmitted by e-mail, simultaneously with the submission of the draft and final documents to the EC Delegation. The final report will also be provided on a CD-ROM to the EC Delegation to Kenya.

f) Draft Report documents will be submitted in five copies and Final Report documents in 20 copies.

6. ADMINISTRATIVE INFORMATION

Other authorized items to foresee under 'Reimbursable':

- international airfares;
- regional and local travel (inter city).

ANNEX 10

QUESTIONNAIRE

ANNEX 10: QUESTIONNAIRE

To be filled in by all the PACE National Co-ordinators During the Conference in Mombassa

COUNTRY:	
Name:	**Position:**
What are the most important transboundary animal diseases in your country? ***Quelles sont les plus importantes maladies animales transfrontalières dans votre pays?***	
What are your surveillance and control methods? ***Quelles sont les méthodes de surveillance et de contrôle que vous utilisez ?***	
Who is involved in animal disease surveillance and how is it reported?[4] ***Qui est impliqué dans la surveillance des maladies animales et comment cela est il rapporté ?***	
Does your veterinary legislation allow private veterinarians and Community Based Animal Health Workers to assist in providing government veterinary services? ***Votre législation pour les services vétérinaires autorise-t-elle des vétérinaires privés et des auxiliaires vétérinaires communautaires ?***	

[4] farmers, CAHWs, paravets, private vets, Government vets, other?

Have any of PACE's recommendations for changing veterinary legislation been incorporated into your law? ***Des recommandations du PACE pour modifier la législation des services vétérinaires ont-elles été incluses dans la loi de votre pays ?***	
Has PACE assisted in any way in improving private veterinary services including Community Based Animal Health Workers? ***PACE a-t-il aidé en améliorant les services privés vétérinaires et d'auxiliaires privés vétérinaires communautaires ?***	
For what animal diseases do you have contingency plans for emergency preparedness and rapid reaction? ***Pour quelles maladies animales avez vous un plan d'urgence pour une intervention rapide ?***	
Are the identified manpower, equipment, transport, drugs/vaccines and finances available to implement them? ***Est ce que le personnel, l'équipement, le transport, les médicaments/vaccins et des ressources financières sont disponibles pour mettre en place ces interventions rapides ?***	
Who is involved in management of transboundary animal disease information? ***Qui est impliqué dans la gestion de l'information sur les maladies animales transfrontalières?***	

What system(s) do you use for analysis of transboundary animal disease information? ***Quel(s) système(s) utilisez vous pour l'analyse de l'information sur les maladies animales transfrontalières?***	
To what extent is your transboundary animal disease information system supported by your Government? ***Ce système d'information sur les maladies animales transfrontalières est il encouragé par votre Gouvernement ?***	
Will your transboundary animal disease information system survive after PACE? ***Votre système d'information sur les maladies animales transfrontalières survivra-t-il après la fin de PACE ?***	
What training has PACE provided your veterinary services (government and private) and how relevant is it? ***Quelle formation fut dispensée par PACE pour les services vétérinaires (fonctionnaire et privé) et comment cela a été valorisé ?***	
What contribution has PACE made to improving public awareness of transboundary animal diseases in your country? ***Quelle est la contribution du PACE pour accroître l'attention du public sur les maladies animales transfrontalières dans votre pays ?***	

What have been the successes of PACE in your country? ***Quels ont été les succès de PACE dans votre pays ?***	
What have been the failures to meet expectations of PACE in your country? ***Quels ont été les échecs de PACE dans votre pays?***	
Will your government meet the full cost of the surveillance network after completion of PACE? ***Votre Gouvernement assurera-t-il le coût total du réseau de surveillance après la fin de PACE ?***	
How many times have you reported to the rural development advisor at the EC Delegation on finance and technical matters over the last twelve months? ***Combien de fois avez-vous envoyé un rapport au conseiller du développement rural de la CE Délégation pendant les derniers douze mois?***	
How many times have you reported to the Regional Programme Co-ordinator over the last twelve months? ***Combien de fois avez vous envoyé un rapport au Coordinateur Régional du Programme pendant les derniers douze mois?***	

How many times have you reported to the financial controller in Nairobi over the last twelve months? ***Combien de fois avez vous envoyé un rapport au contrôleur financier pendant les derniers douze mois?***	
How many visits did you receive from the Regional Technical Assistant during the last twelve months? How useful were these visits? ***Combien de visites ont été effectuées par l'assistant technique régional pendant les derniers douze mois dans votre pays ? Quel bénéfice en avez-vous retiré ?***	
Is the PACE financial allocation sufficient to achieve the programme's objectives in your country? ***Le budget du PACE a-t-il été suffisant pour atteindre les objectifs du programme dans votre pays?***	
What other donor support does your animal health service receive besides PACE? ***Quels sont les autres financements destinés aux services de santé animale autre que PACE dans votre pays?***	
What are your requirements for further donor support? ***Quelles sont vos exigences pour de nouveaux financements?***	