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

TERMINAL REPORT OF TECHNICAL ASSISTANCE MISSION TO THE PAN AFRICAN VETERINARY VACCINE CENTRE

(2nd February 2004 – 31st August 2005)

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SUMMARY :

The European Development Fund (7th and 8th EDF) decided to support the transitional/interim period of PANVAC in the framework of the Pan African Programme for the control of epizootics (PACE, REG/500/005). The Financing Agreement No 6125/REG for the regional PACE programme, funded as a grant from the Regional Indicative programme of the 7 and 8th European Development Fund, was signed between the European Commission and the OAU/IBAR on 30 August 1999. The overall objective of this programme is to relieve, in Africa, the poverty of those involved in the livestock-farming sector (producers, service providers and consumers) by improving animal productivity, trade and food security through effective and efficient animal diseases control programmes.

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This consultancy mission report outlines the activities carried out during this transitional period of PANVAC (1st February 2004 – 31st August 2005) and supported by the European Development Funds through PACE programme, with the objectives to resume PANVAC's core functions and to assist African Union in the institutionalisation process of the Centre as a Regional Technical Office.

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The Consultant wishes to acknowledge the full support of the Government of the Federal Democratic Republic of Ethiopia, the host country for PANVAC.

The Consultant is grateful to the cooperation of the Director (Dr Gerbe Gebreziabher) and the staff of the National Veterinary Institute (NVI) of Ethiopia, the host institute for PANVAC.

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Acronyms

PACE AC	PACE Advisory Committee
AU	African Union
CBPP	Contagious bovine pleuropneumonia
cGMP	Current Good Manufacturing Practices
CIRAD-EMVT	Centre international de recherche agricole pour le développement – Département Elevage et médecine vétérinaire tropicale
EC	European Commission
EDF	European Development Fund
GLP	Good Laboratory Practices
GMP	Good Manufacturing Practices
IBAR	Inter-African Bureau for Animal Resources
FA	Financing Agreement
FAO	Food and Agriculture Organization of the United Nations
NVI	National Veterinary Institute of Ethiopia
OAU	Organisation of African Unity
OIE	International Office for Epizootics
PACE	Pan African Control of Epizootic Diseases
PANVAC	Pan African Veterinary Centre
PARC	Pan African Rinderpest Campaign
PPR	Peste des petits ruminants
REA	Rural Economy and Agriculture of the AU Commission
RECs	Regional Economic Communities
ToR	Terms of Reference
WHO	World health organization
WP	Work Plan

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Introduction

In 1983, when the Inter African Bureau of Animal Resources (OAU/IBAR) reacted to the re-emergence of rinderpest in Africa, by planning the Pan African Rinderpest Campaign (PARC), the availability of GOOD QUALITY RINDERPEST VACCINE was not assured: quantitative shortage of rinderpest vaccine supply, wide discrepancy in the quality of the vaccines and wide variation of non-standardised quality control methods. Since the PARC programme was to hinge on vaccination, it was immediately recognized that the availability of good quality vaccines was essential to the success of the programme. A major Experts Consultation was convened by FAO to devise ways and means to assure the availability of good quality rinderpest vaccine in Africa (Rome, October 1984).

FAO responded to the recommendation of this Experts Consultation on rinderpest, by urging all rinderpest vaccine producing laboratories to participate in an international and independent vaccine quality control scheme and by establishing two Regional Veterinary Vaccine Quality Control and Training Centres at Debre Zeit (Ethiopia) and Dakar (Senegal). These two Centres were then funded, between 1988 and 1992, by the UNDP as a single project, which became known as the PANVAC with the OAU/IBAR as the implementing Agency and FAO-the executing agency. In 1993, the two centres were merged at one site in Debre Zeit due to the lack of immediate funds. Thereafter, the funding of the Centre was successively assured by the FAO (December 1995 - June 1996), the European Commission (July 1996- June 2000 for the Quality control Component) and by Japan (April 1997-March 2002 for the Developmental and standardization Component). During all this period PANVAC was implemented by OAU/IBAR with the technical assistance of FAO. The Centre's achievements have been well appreciated and recognized by various evaluation and review teams, consultants, beneficiary laboratories and governments who reported that PANVAC's activities have resulted in a **significant improvement in the quality of rinderpest vaccine and other priority vaccines produced in Africa**. It was to strengthen these achievements in the interest of Africa that the 67th ordinary session of the OAU Council of Ministers (Addis Ababa, 23 to 27 February 1998) decided to elevate PANVAC to the level of an OAU Specialized Agency.

In 1999, following the recommendation of the OIE evaluation mission of PANVAC to fund the Centre for a 5-year period (September 1997), the European Development Fund decided to support the Centre in the framework of the Pan African Programme for the control of epizootics (PACE, REG/500/005), in order to give time to the then OAU to achieve the institutionalisation of PANVAC.

PANVAC technical execution was tendered in March 2000 and awarded to CIRAD-EMVT. The contract signed, on 15th June 2000, comprised the provision of two technical assistants (one expert in veterinary vaccines for 30m/m and one CBPP diagnostics and vaccine expert for 12m/m). The posting of two experts could not take place at the time, due to the absence of a PANVAC Host country and Host institution agreement between AU and Ethiopian authorities (previously PANVAC had been executed as a FAO project under the umbrella of FAO Representation in Ethiopia) so that the quality control activities of PANVAC were suspended in July 2000 and the developmental activities in June 2002.

The signature of PANVAC's headquarters agreement (28th July 2003) and the financial support of the European Commission (EC), through the PACE programme, permitted the reopening of the Centre in February 2004 with the arrival of the Technical Assistant provided by CIRAD-EMVT (as Chief Technical Advisor – CTA- of PANVAC). Later on, PANVAC was officially launched, as an AU Regional Centre, in Debre Zeit within the compound of its hosting institution, the National Veterinary Institute (NVI) of Ethiopia (12 March 2004).

The mission of the Consultant was to resume PANVAC's core activities and assist AU in the Centre institutionalisation process according to the terms of reference of the Vaccine Specialist/Chief Technical Advisor (please see Annex 1).

1. Implementation of PANVAC Work Plan funded by PACE

Within the framework of PACE programme, the Inter-African Bureau for Animal Resources of the African Union **(AU/IBAR)** was the Agency responsible for the implementation of PANVAC transitional phase activities. The European Development Fund supported these activities by the provision of two technical assistants and operating funds. This support, initially for the period 1st February 2004 - 31st October 2004, has been extended to 31 December 2005 but the contract in force between AU/IBAR and CIRAD ended on 31st August 2005.

The Vaccine Specialist/Chief Technical Advisor (CTA), fielded by CIRAD-EMVT, was joined in September 2004 by the CBPP Specialist under contract arrangements between AU/IBAR and GTZ/SATEC (for an initial 2-month consultancy period that was subsequently extended up to 31st October 2005- ToR in Annex 1). The CTA, in close collaboration with the PACE Coordinator, was responsible for the overall management of PANVAC, functions that should have been progressively handed over to the PANVAC Director recruited by the AU. The CBPP Diagnostic and Vaccine Specialist worked under the CTA as a Consultant.

The transitional phase programme was implemented on the basis of a Work Plan and cost estimates developed by the CTA in close collaboration with the PACE Coordinator, proposed by the Consultant (CIRAD-EMVT) and endorsed by the Director of AU/IBAR (as PACE Regional Authorizing Officer) and the Delegate of the European Commission in Nairobi (EC). The financing of the PANVAC Work Programme was foreseen in the PACE Financing Agreement over the funds of the Regional Component.

According to PANVAC's Headquarters agreement the contribution of the host country government, the Government of the Federal Democratic of Ethiopia, included the provision of laboratory and office spaces, access to utilities (electricity and water) and other facilities usually granted to similar international organizations (duty free privilege, exemption from search, foreign bank account etc...). The National Veterinary Institute (NVI) of Ethiopia, located in Debre Zeit (50km South of Addis Ababa) is the hosting institution of PANVAC.

2. Work done and results achieved

As the initial financial support from the EC was to cover the period 1st February 2004 -31st October 2004, an 8-month Work plan and Budget estimates had been formulated by the Consultant and submitted on March 2004 to the PACE Coordinator and to the Director of AU/IBAR. Although this work plan had been technically approved the release of operating funds (Euro 86,000) did not happen. This administrative setback originated from the misunderstanding of the regional nature of PANVAC and by trying to have the Centre functioning as a PACE national component (e.g.: 1. It took 2 months for the former PACE Financial Controller to admit that the EC Delegation in Ethiopia and PACE-Ethiopia were not responsible for the review and approval of PANVAC work plan and budget; 2. Later on, other question arose over who should be the Imprest account holder and whether PANVAC needed an "Administrative Order" or not?). Therefore, as weeks and months were passing, the work plan had to be revised several times to change the starting date of the operating budget. The last version of the work plan was to take effect from 1st February 2005 to 31August 2005 was approved by all parties in late February but the "Administrative Order" for the release of the operating funds was signed on 14 July 2005, one and half month before the end of the AU/IBAR– CIRAD contract. Consequently the Centre has been running since its re-opening without funds to purchase essential laboratory equipment and materials, to hire local support staff and to undertake essential activities like communication, collection and dissemination of information.

Therefore, for this transitional period, due to time and resources constraints, the **three immediate objectives** approved in the work plan submitted to PACE programme were to:

- **Restore PANVAC's veterinary vaccine quality control activities,**
- **Resume the standardisation of veterinary biological products and the harmonization of veterinary vaccines quality control techniques and**
- **Assist African Union in PANVAC institutionalisation process.**

This report presents the current status in achieving these objectives followed by the Mission conclusions and recommendations.

With regard to Immediate Objective 1: Restore PANVAC's veterinary vaccine quality control activities

To **restore** PANVAC's veterinary quality control activities and have it to **regain its status of an internationally recognised Centre** for veterinary vaccines quality control, it was planned to:

- Re-establish PANVAC's manpower through the training of African Union (AU) own recruited staff by the two experts;
- Restore the Centre's physical capabilities through the supply of essential laboratory and office equipment and consumables;
- Revalidate (or prepare fresh) testing reference preparations for veterinary vaccines quality control;
- Provide quality control testing service for major veterinary vaccines according to internationally recognised standards on a cost recovery basis; and to
- Assist African countries in revalidating the quality of their priority vaccine stocks (emergency bank).

The Consultant proposed a draft of **PANVAC Structure** that has been approved by the AU Department of Rural Economy and Agriculture (REA) and then by the AU Executive Council (November 2004, Addis Ababa). Following this approval, the African Union Commission advertised PANVAC's senior staff positions (Director position in December 2004; one Senior Veterinary Vaccines Officer to be responsible for the laboratory works related to veterinary vaccines and other vaccine biologics international quality control, and one Senior Animal Diseases Diagnosis Reagents Officer to be in charge of the laboratory works related to the local production and the quality control of animal disease diagnostic reagents in July 2005). However, actual recruitment is yet to be done. The delay in these recruitments convinced AU/IBAR to request the European Commission Lead delegation in Nairobi the extension of PACE support to PANVAC up to December 2005. In addition to that the identification of PANVAC's governing bodies members (Board of Trustees and Scientific and Technical Advisory Committee) still needs to be decided.

The **restoration of the Centre physical capabilities** is still also pending. As in October 2002, FAO handed over all PANVAC equipment, vehicles, consumables and reference materials to the National Veterinary Institute (NVI) of Ethiopia, thus it was necessary to provide PANVAC with most of laboratory equipment and materials to carry out its functions (most of the laboratory and office equipment in place were obsolete- please see Annex 3: Indicative list of needed equipment). The operating and investment funds of Euro 900,000, earmarked to PANVAC in 1999 through the PACE programme financing agreement were not any more available. Nevertheless, part of the supply of essential laboratory and office equipment and consumables was included in PANVAC Work Plan and Cost estimates (see Annex 3 & 4 Indicative list of equipment materials) submitted by the Consultant (CIRAD-EMVT) and approved by all parties (PACE-Coordination, AU/IBAR and EC Delegation in Nairobi). However, as earlier stated above, the release of the requested operating funds never happened and it is questionable if the Administrative Order signed only on 14th July 2005, one and half month before the end of the AU/IBAR–CIRAD-EMVT contract, could materialise because of problems of financial responsibility over management of the fund.

The **revalidation of vaccine testing reference preparations** has been conducted on previous PANVAC stock of biologics (rinderpest-RP, contagious bovine pleuropneumonia-CBPP and peste des petits ruminants –PPR; Please see Annex 2: PANVAC's biological materials stock).

New stocks of CBPP vaccine (1ml X 800 vials) and PPR vaccine reference preparation (1ml X 450 vials) have been produced and cross-tested by some PANVAC's network laboratories (LCV-Mali and LANAVET-Cameroon). Similarly a new stock of PPR vaccine seed virus was also prepared (1ml X 200 vials).

The **vaccine quality control testing and certification service** has been undertaken on cost-recovery basis but, so far, vaccine batches were received only from the following laboratories:

- National Veterinary Institute of Ethiopia – NVI (2 batches of CBPP vaccine, for export to Tanzania),
- Laboratoire Central Vétérinaire of Mali –LCV (5 batches of CBPP vaccine, for export to Burkina Faso and Côte d'Ivoire);
- Laboratoire National Vétérinaire of Cameroon – LANAVET (2 batches of CBPP vaccine, 3 batches of PPR vaccine mainly for export purposes to Angola, Guinea, Chad etc).

The National Veterinary Institute of Ethiopia – NVI has been the sole laboratory to submit for testing samples from its **emergency vaccine bank for quality revalidation** (4 batches of rinderpest vaccine).

The volume of vaccine batches received for PANVAC testing and certification is far below the expectations. It has been noticed that the vaccine manufacturers, whose participation in PANVAC vaccine quality control scheme is on a voluntary basis, are inclined to certify only vaccine batches to be exported. The low level of vaccine submission to PANVAC originated also from lack of funding that prevented PANVAC to hold the 3rd Meeting of Directors of Vaccine manufacturing laboratories (to get the commitment of PANVAC's first beneficiaries and common view on cost of the services provided by PANVAC) and to undertake communication/ sensitisation activities towards the Region's National Biologics Quality Control Authorities on benefits for the use of quality certified vaccines. It is hoped that the last PACE 5th Coordination meeting (28 June–1 July, Dakar) strong recommendation to Chief Veterinary Officers, for a strict requirement of PANVAC Certificate for priority vaccines to be used in national immunization campaigns in the Region, would be implemented in the near future.

PANVAC's **cost recovery** bank account, opened at the AU Branch of the Commercial Bank of Ethiopia –CBE (Account No FCY 40309 - Account Name: PANVAC-CR), has been initially credited by AU/IBAR with the balance of the previous PANVAC cost recovery bank account in Nairobi (US$ 4 457.00 on 10th January 2005). The actual balance on 28th August 2005 was US$ 6 850.67 from transfer from JOVAC-Jordan (supply of Vero cells), FAO (training fees) and NVI (vaccine quality control testing fees). Other outstanding payments are expected from LCV-Mali (US$ 3 500.00) and from LANAVET-Cameroon (US$ 3 500.00).

With regard to Immediate Objective 2: Resume the standardisation of veterinary biological products and the harmonization of veterinary vaccines quality control techniques

To reach this immediate objective, which is part of PANVAC's technical support to vaccine manufacturers, the planned activities were to:

- **Expand PANVAC's repository of certified starting biological materials** (vaccine strains, cell lines, reference vaccine preparations, reference antisera and antigens);
- **Promote harmonized quality control techniques** within the Region's laboratories, according to internationally recognised criteria; and to
- **Promote quality assurance principles** and current Good Manufacturing Principles (cGMP) within the Region.

The **expansion of PANVAC's repository of certified starting biological materials** started first with the re-evaluation of the existing stock of these materials (see inventory in Annex 2) and then new batches were prepared and tested (PPR vaccine seed lot). To a large measure this has only been possible with the support of our host institution, the National Veterinary Institute of Ethiopia.

The **promotion of harmonized quality control techniques** within the Region's laboratories, through the production of Standards Operating Procedures manuals and Master Formula and the dissemination of new or improved vaccine quality testing methods, has been heavily impeded by the lack of support personnel and operating funds. Despite these impeding factors, bench training and study tours were organized/ conducted at PANVAC for personnel from laboratories of Chad, Mali, Nigeria and Sudan (See Annex 5: Training and study tours at PANVAC). In addition to that, the French version of a set of manuals on PPR vaccine production and quality control is ready for translation in English language and publication.

The **promotion of quality assurance principles and cGMP** within the Region was to focus on:

- **Improving quality assurance principles awareness** among laboratory Directors and key vaccine personnel;
- **Assisting** the **Region laboratories in quality assurance** and **cGMP** principles **implementation and evaluation**.

The **improvement of awareness** on quality assurance principles amongst laboratory Directors and key vaccine personnel has been partially conducted due to lack of operating funds to undertake communication activities (collection and dissemination of information on veterinary biologics, Directors and key vaccine personnel meetings, PANVAC's web site etc.). The collaboration between PANVAC and the OIE Regional Representation for Africa allowed the inclusion of a presentation page on PANVAC on the latter's Web site that was launched in May 2005 (http://www.rr-africa.oie.int/).

Although previous PANVAC's laboratory network has been reactivated, the **assistance to the** Region laboratories **in the implementation and evaluation of quality assurance and cGMP principles** has been provided so far only to LANAVET-Cameroon thanks to a

FAO Technical Cooperation programme (TCP/CMR/3004) for which the Director of PANVAC was fielded for 2 weeks in Garoua. A similar assistance to the Central Veterinary Research Laboratory of Khartoum-Sudan by the CBPP Specialist has been delayed due to recent social disturbance in Sudan.

With regard to Immediate Objective 3: Assist African Union in PANVAC institutionalisation process

Before year 2000, the legal status of PANVAC had never been worked out as the Centre was operating as a project with a finite life span according to arrangements between OAU/IBAR, FAO, Governments and donor agencies. The **Headquarters agreement** signed on 8th July 2003 conferred to PANVAC the full status of an international organisation in Ethiopia. One of the objectives of this interim phase of PANVAC was also to **assist the African Union Commission and AU/IBAR in the Centre institutionalisation process**, namely by submitting drafts of complementary documents necessary for the establishment of appropriate governance and management structures. The following drafts have been produced by the project and submitted for consideration to AU/IBAR and to AU/REA Commission:

- **PANVAC's Strategic Development Plan:** The draft of PANVAC's Strategic Development Plan 2004-2008, submitted to AU/IBAR and AU/REA in May 2004. This proposal has been taken into account and included in the "Department of REA Strategic plan 2004-2007" that was submitted to the July 2004 Heads of States Summit in Addis Ababa. At the request of the AU Commissioner for REA, this Strategic Plan has been translated into a **5-year project document** submitted in July 2004.

- **PANVAC's Structure and job description:** The draft of PANVAC's Structure and job description was submitted in June 2004. Te reviewed structure by the AU/REA was adopted by 6th Extraordinary Session of the Executive Council (6-7 December 2004, Addis Ababa).

- **PANVAC Constitution:** In February 2005, the draft of **PANVAC Constitution**, including governing and executive bodies composition and mandates, was forwarded to AU/REA and AU/IBAR.

- **Funding policy & actions for PANVAC:** A concept note on "Funding policy & actions for PANVAC" was also submitted for consideration in February 2005. This concept note has to be discussed within AU before submission to potential donors.

- **Concept Paper for Developing the AU/PANVAC:** At the request of the AU Commissioner for REA, the last draft submitted by the project in August 2005 was a "Concept Paper for Developing the AU/PANVAC as an African Regional Centre of Excellence for Veterinary Biologics".

A concept note for the "**Third Pan African Meeting of Directors of Veterinary Vaccine Laboratories**" has been submitted to AU/IBAR for funding through the PACE programme (February 2005). It has to be recalled that only two meetings of this nature have been organized so far in the Region: the first one in Nairobi (27-28 November 1990) and the second one in Dakar (**6 – 8 July 1992) Dakar, Senegal**). The rationale to have a third meeting

is that on one hand **veterinary vaccines manufacturing laboratories are the first beneficiaries of the various services offered by PANVAC** and that, on the other hand, the **sustainability of PANVAC is intimately linked to the viability and well being of these vaccine manufacturers in Africa**. Therefore, such meeting would be crucial to:

- Review the state of veterinary vaccines production, quality control, distribution and post-marketing monitoring in Africa;
- Discuss mechanisms for improving sustainability of veterinary vaccines and other biologics production laboratories;
- Promote the use of standards;
- Agree on biological materials inter-laboratory quality control testing (cross-checking) between PANVAC's networked laboratories (Annex 8) for promoting Quality assurance amongst them;
- Discuss PANVAC's strategic development plan with particular emphasis on the Centre's sustainability factors and on mechanisms to better capture expectations and feedback of its networked laboratories and the community;
- Review the state of veterinary laboratory registration, certification and accreditation in Africa.

In regard to **support mobilization** for PANVAC, in addition to the EC inputs, a substantial input of Euro 200,000 has just been confirmed from the **French cooperation** for the current fiscal year – thanks to the personal action of H.E. Stéphane Gompertz, Ambassador of France in Ethiopia. This funding shall be primarily used to supply PANVAC with part of essential laboratory equipment needed for its programmes. Various personalities honoured PANVAC with visit and their support (see Annex 6: Personalities' visit to PANVAC).

Last but not the least, **AU/IBAR and PACE programme** are also assisting PANVAC for the extension of its transitional period and for bringing the National Veterinary Services and the National Quality Control Authorities to be inflexible on the quality of biologics used for priority diseases diagnostic, surveillance and/or control as witnessed by the recent recommendation of the PACE 5th Coordination meeting (28 June–1 July, Dakar). PACE programme allowed also PANVAC to participate in various important meetings on animal health issues (see Annex 6: Duty Travel).

3. Conclusions and recommendations

PANVAC's programme will fall in line with AU Commission Department of Rural Economy and Agriculture (DREA) Strategic Plan. The Centre remains, so far, the **only African regional institution fully dedicated to the standardization and harmonization of veterinary biologics**. It is intended to be a **regional resource Centre** devoted to developing specific areas of expertise and providing technical assistance for veterinary vaccine and other biological reagents development and quality assurance. By ensuring PANVAC's sustainability, the African Union would have a resource Centre, for the benefit of both **Vaccine Producing Countries** (independent quality control, biological standardisation, technical assistance) and **Vaccine Procuring Countries** (technical services, information services). It is hoped that the adopted Strategic Development Plan and future arrangements will positively contribute to:

- **Capacity building** and **sustainability** of **veterinary vaccine producing laboratories** to assure continuous availability of GOOD QUALITY VACCINES;
- **Capacity building** of **National Quality Control Authorities** in vaccine assessment, licensing and monitoring;
- **Saving of regional resources** by **optimal utilisation** of a central institution to solve common regional concerns;
- Promote Regional cooperation and integration in **quality assurance of veterinary biologics and management of risks associated with these products**.

<u>At this stage, the alleviation of impeding factors to reach these objectives, so that to ensure the Centre overall sustainability calls for:</u>

► **PANVAC's institutionalisation process achievement,** the urgent need to proceed with the:

- **Recruitment and posting of AU staff** to run the Centre;
- Approval of PANVAC's **Constitution by AU Commission**;
- Establishment and the convening of the first meeting of PANVAC's **Governing bodies** (Board of Trustees and Technical Advisory Committee);
- Definition and implementation of **a clear resources mobilization** to **secure regular and relatively stable financial resources** for the implementation of its mechanisms for governance and the management of its programmes on a sustainable basis.

Action: AU Commission

► **Support mobilization for PANVAC**: The Centre's limitations in terms of scientific staff and financial resources and the tremendous expectations of its partners in the region, makes it necessary to develop a sound **collaboration and partnership** with the Region's laboratories and overseas partner institutes so that complementary resources would be available for implementing specific projects. In addition to that, to help in strengthening all facets of its Strategic Plan, PANVAC will need to **gather inputs** from the Region's laboratories and from a wide spectrum of key institutions, agencies and leading scientists for identifying key regional concerns and issues, to give guidelines for its future direction and assist in identifying opportunities for cooperation and collaboration. Therefore, it is highly advisable that the following consultations take place:

- A Meeting of **Directors of the Region's laboratories;**
- **A Technical consultative meeting** with key institutions, agencies and leading scientists; and
- **A Resource mobilization meeting** with donor agencies.

Action: AU Commission
AU/IBAR (Proposal submitted to PACE-Coordination in February 2005 for the funding of the Directors' meeting through PACE programme)
PANVAC

► **PANVAC technical sustainability**: In addition to the posting of **competent and sufficient staffing** to PANVAC, it is essential that the **operating funds** be rapidly available for the purchase of essential laboratory and office equipment and consumables and a vehicle. The Euro 200,000 grant of the French Cooperation could be used for the purchase of laboratory equipment and a vehicle. The expected funds from the AU Commission could be earmarked for the supply of laboratory consumables, reagents and materiel. After the first two or three years, it could be expected that the latter part could be covered by income from the cost recovery scheme.

AU/IBAR and PACE Coordination Unit shall explore arrangements with CIRAD-EMVT for the use of the Euro 86,000 approved by the Administrative Order signed on 14 July 2005. This funding could be used to complete the laboratory equipment and material mentioned above.

While waiting for the posting of AU-Commission staff, every effort should be made to avoid another closure of the Centre (e.g. extension of PACE's support to PANVAC up to December 2005; direct contract of AU-Commission for the experts position etc.).

Action: AU Commission
AU/IBAR & PACE Coordination
PANVAC.

► **Capacity building in the RECs**: As one of the major expectations from PANVAC is the **capacity building of the Region veterinary vaccines manufacturers and the regulatory authorities** (National Quality control Authorities and their National Quality control Laboratories), it will be important to develop and implement sound **communication activities** so that the Centre will be in a position to facilitate the **access** of these institutions or organizations **to training, technical support and information** about veterinary vaccines and other biologics. This will also improve the demand on certified vaccine batches (at least for Africa's major priority vaccines) as stressed again by the recent PACE 5th Coordination meeting (28 June – 1 July, Dakar).

Action : PANVAC
AU/IBAR & PACE Coordination.

ANNEXES

Annex 1

Technical Assistants Terms of Reference

Technical Assistants Terms of Reference

(As in Annex 7 of the original Technical Assistance Contract signed on 15 June 2000)

1. Terms of reference of the expert in veterinary vaccine (30m/m)

From the first year of the implantation of the activities, the expert will be responsible for the technical coordination of the work plan of PANVAC, and the overall control and administration of the staff, facilities, equipment, supplies and expenditure at the project site. He/She will work as an advisor to the Director of the AU/IBAR and will work under the supervision of the PACE Programme Coordinator, from whom he may receive directives and to whom he will report (work plans/ programmes, progress reports, technical reports and others as required). These functions should be progressively handed over to the AU/IBAR counterpart who will assume these administrative responsibilities. It should be noted that the expert would conceive an action plan for a sustainable implementation of PACE financial support.

On the technical level, he/she will:

1. be responsible for providing a quality control service for rinderpest, CBPP and other priority vaccines;
2. supervise the standardization of quality control methods for rinderpest, CBPP and other priority vaccines and provide appropriate guidelines to National Authorities on quality control requirements;
3. prepare Standard Operating Procedures and other instruction manuals for vaccines against rinderpest, CBPP and, on request, doer other priority vaccines;
4. prepare and maintain a PANVAC repository of seed material, cell culture, quality control standards and key reference reagents to be used by PANVAC and its network laboratories;
5. carry out appropriate quality control testing and characterization of the materials in the PANVAC repository;
6. co-ordinate the production and distribution of diagnostic reagents and disease diagnostic kits to laboratories in Africa;
7. initiate and oversee the external quality control of the laboratory diagnosis of the main epizootics, starting with rinderpest and CBPP;
8. ensure smooth and efficient collaboration with National laboratories for the production of reagents for the external quality control of diagnostic tests; and
9. supervise research and development partnership with reference laboratories.

On the institutional side, he/she will:

1. be responsible for the overall design and implementation of the PANVAC cost recovery system. Therefore he/she will conceive a comprehensive sustainable plan and strategies;
2. ensure the coordination of the external quality assessment activities, the accreditation of veterinary diagnostic laboratories and the transfer of technology relevant to this process;
3. arrange appropriate linkages with the relevant FAO, IAEA, WHO, International Reference/ Collaborating Centres as the primary sources of vaccine technologies, standards and reference reagents;
4. participate in building up of PANVAC as an AU/IBAR Specialised Agency.

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2. Terms of reference of the CBPP diagnostic and vaccine specialist (10m/m)

The expert will be responsible for the technical activities relating to the diagnosis of CBPP and the quality control of CBPP vaccine. He/She will work as advisor to the Director of the AU/IBAR under the supervision of the PANVAC expert in veterinary vaccines to whom he will report. The CBPP diagnostic and vaccine specialist will:

1. implement the laboratory activities for quality control testing of CBPP vaccine according to international standards;
2. participate in the preparation and/or maintenance of a PANVAC repository of seed material, cell cultures, quality control standards and key reference reagents for use in CBPP vaccine quality control;
3. assist in the preparation of Standard Operating Procedures and other instruction manuals for use in the production and quality control of CBPP vaccine (and other priority vaccines for Africa);
4. assist in the implementation and operation of the cost recovery system for PANVAC's CBPP quality control service;
5. assist the PANVAC vaccine specialist as necessary, in quality control testing of other priority vaccines, and in the introduction of new techniques in accordance with PANVAC standard operating procedures;
6. participate in the implementation of Good Laboratory Practices (GLP), Laboratory Safety Codes for the PANVAC laboratory as well as Training and supervising the work of counterpart personnel and trainees in veterinary vaccines quality control.

Annex 2

PANVAC's Biological Materials Stock (July 2005)

PANVAC's Biological Materials Stock (July 2005)

CELL BANK - (Storage condition: Liquid Nitrogen at -170°C)

MASTER CELL BANK

ITEM	DESCRIPTION	QUANTITY (in vials)
1. CK1/99/93	Primary Calf Kidney cells	29
2. CEF/97	Chicken Embryo Fibroblasts	11
3. CEF-1	Chicken Embryo Fibroblasts	37
4. LK/P2	Lamb Kidney Cells	24
5. Vero CCL 81	Vero cell line, Phylaxia-Sanofi	20
6. Vero WHO/P6	Vero cell line, WHO seed	12
7. Vero CB824/P2	Vero cell line, ECACC	17
8. Vero CCL81/P2	Vero cell line, Phylaxia-Sanofi	18
9. Vero WHO/P2	Vero cell line, WHO seed, ECACC	5

WORKING CELL BANK

ITEM	DESCRIPTION	QUANTITY (in vials)
1. MDBK/P7	MDBK Cells, ATCC	17
2. CEF/97	Chicken embryo fibroblasts	27
3. BHK-K12	BHK Cells, KEVEVAPI	26
4. CK1/97/P3	Calf Kidney Cells	8
5. Vero-WHO/P7	Vero Cells, WHO/ECACC	25

VACCINE SEED - (Storage condition: Freezer -20°C)**

ITEM	DESCRIPTION	QUANTITY (in vials)
1. CBPP/T1/44	CBPP vaccine master seed Strain T1/44, PAN002	155
2. CBPP/T1SR seed/P49	Vaccine master seed (X-IEMVT)	1
3. CBPP/T1SR	PANVAC CBPP vaccine Master seed strain T1sr	245
4. CBPP/T1SR	PANVAC CBPP vaccine Master seed strain T1sr	345
5. CBPP vaccine 1961	Avianized culture (X-KARI)	3
6. CBPP T1/44 seed 1970	Vaccine master seed (X-KARI)	2
7. CBPP T1/44/P45 seed 1959	Vaccine master seed (X-KARI)	2
8. CBPP/T1SR seed/P49	Vaccine master seed (X-IEMVT)	1
9. KSGP/30	Kenya Sheep and Goat pox vaccine seed strain SP30 (X-KEVEVAPI)	2
10. KSGP/30	Kenya Sheep and Goat pox vaccine seed strain SP30	45
11. KSGP/0180	Kenya Sheep and Goat Pox vaccine seed (FADL)	2
12. KSGP/0180	Kenya Sheep and Goat Pox vaccine seed (FADL /PANVAC)	34
13. KSGP0240	Kenya sheep pox vaccine seed (X-IAH, Pirbright)	4
14. KSGP/240	Kenya Sheep and Goat Pox IAH/PANVAC	14

15. RM65	Sheep and Goat Pox vaccine seed	16
16. SP/EGYPT	Sheep and Goat Pox Egyptian strain	20
17. LSD	Lumpy Skin Disease Neethling strain (Owner: OBP)	15
18. NDV-I2	Newcastle Disease vaccine seed Strain NDV-I2	637
19. ND La Sota 30	ND vaccine Strain La Sota Clone 30	248
20. PPR75/1 LK6 Vero74	PPR vaccine master seed (X-EMVT)	4
21. PPR75/1 LK6 Vero76	PPR vaccine master seed, PANVAC	4
22. PPR75/1 LK6 Vero76*	PPR vaccine master seed, PANVAC	200
23. RBOK/BK95Vero1	RP vaccine master seed (PAN-R001)	25
24. RBOK/BK92Vero4	RP vaccine seed (FADL)	20
25. RBOK/BK95Vero5	RP vaccine seed	85
26. RBOK/BK95/Vero1	RP vaccine seed	330

* New stock
** Need of an ultra-deep freezer at -70°C

REFERENCE VACCINE PREPARATION (Storage condition: Freezer -20°C)

ITEM	DESCRIPTION	QUANTITY (in vials)
1. CBPP T1/44 Ref.	CBPP reference vaccine preparation T1/44	250
2. CBPP/T1SR	CBPP Vaccine T1sr/P51	405
3. CBPP T1/44 Ref.*	CBPP reference vaccine preparation T1/44	800
4. NDV-V4	Newcastle Disease Vaccine V4	125
5. NDV-La Sota	Newcastle Disease Vaccine LS30	248
6. NDV-I2	Newcastle Disease Ref. Vaccine I2	637
7. PPR Ref.	PPR reference vaccine preparation	54
8. PPR Ref.*	PPR reference vaccine preparation	450
9. RBOK/BK95	RP vaccine virus (X-IAH)	43

* New stock

ANTIGEN (Storage condition: Freezer -20°C)

ITEM	DESCRIPTION	QUANTITY (in vials)
1. Egg drop syndrome76	EDS76 antigen	1
2. IBDV	Infectious bursal disease virus	2
3. LSD/Ag	LSD vaccine virus, Neethling strain	1
4. Mmm SC/PG1	CBPP ref. Culture (X-EMVT)	3
5. PG1	*M. m.* subp. m*ycoides* Ref strain PG1	100
6. Myc.Positive	*M. orale* positive culture	154
7. NC-BVDV	Non-Cytopathic BVD virus	5
8. RP Ag	Rinderpest virus antigen	1
9. RBOK/BK95	International RP Ref. Virus	41
10. PPR virus	PPRV Meiganga, Cameroon isolate	2
11. PPR virus	PPRV Garoua, Cameroon isolate	2
12. CBPP isolate	CBPP FD pleural fluid (X-lanavet)	2
13. MmmSC culture	CBPP Gladysdale strain (X-KARI)	3

ANTISERA (Storage condition: Freezer -20°C)

ITEM	DESCRIPTION	QUANTITY (in vials)
1. BVDMAB	Monoclonal antibody to BVD virus	3
2. BVD/AS	BVD antiserum (X-VLA)	1
3. CBPP/HIS	CBPP Hyperimmune serum	112
4. CBPP serum	CFT positive serum (X-KARI)	9
5. CBPP/HIS	Hyperimmune CBPP serum	553
6. PG1 antiserum	MmmSC ref serum (X-IEMVT)	1
7. M. gall/S	*M. gallisepticum* serum	2
8. M. syn/S	*M. synoviae* serum	1
9. Eggs drop syndrom76	EDS HI serum	2
10. IBD/Ab	Infectious bursal disease virus antibody	2
11. LSD/BS/8522	Convalescent LSD bovine serum	2
12. NDV/HI/S	NDV (HI) antiserum (X-VLA)	1
13. PPR +Ve sera	PPR positive goat sera	7
14. PB95	Sheep pox serum (X-IAH, Pribright)	3
15. RP serum	Convalescent calf serum to rinderpest virus	1

Annex 3

Indicative list of urgent needed laboratory and office equipment

Indicative list of urgent needed laboratory and office equipment

	Description	Quantity	Unit Cost (US$)	Amount (US$)
Laboratory equipment				
1	Laminar flow hood Class II	2	14 400	28 800
2	Water purifier 4l/h+Accessories	1	10 000	10 000
3	Water distiller 4l/h+Accessories	1	4 000	4 000
4	Autoclave vertical, 100 litres	1	14 400	14 400
5	Sterilizing oven, ventilated, 230°C	1	8 400	8 400
6	Refrigerated Bench top centrifuge & accessories	1	10 000	10 000
7	Inverted microscope	1	6 000	6 000
8	CO_2 Incubator, 180 litres	1	13 000	13 000
9	Regular Incubator, 180 litres	2	2 000	4 000
10	Liquid nitrogen container 35 litres	1	1 920	1 920
11	Liquid nitrogen container 20 litres	2	1 320	2 640
12	Water bath 30 litres	1	1 200	1 200
13	Magnetic stirrer/Hot plates	3	150	450
14	Rotary shaker	2	180	360
15	Freezer -20°C	4	840	3 360
16	Refrigerator with freezer	2	720	1 440
17	Elisa reader	1	8 000	8 000
18	Micropipette single volume, 3 setsX5	10	144	1 440
19	Mutichannel pipette, 8 channels	4	720	2 880
20	Mutichannel pipette, 12 channels	4	840	3 360
21	Repetitive micropipette	4	400	1 600
22	Water conductivity meter	1	1 920	1 920
23	pH meter	5	480	2 400
24	Air flow meter	2	180	360
25	Filtration unit 90cm	2	1 440	2 880
26	Temperature recorder	4	1 320	5 280
27	Voltage stabilizer	10	90	900
28	Estimated Freight & other costs	1	10 000	10 000
	Total laboratory equipment budget			**150 990**
Office equipment				
1	Desktop Computer	4	1 800	7 200
2	Laptop computer	1	2 000	2 000
3	Laserprinter	1	2 000	2 000
4	Ink jet color printer	1	340	340
5	Scanner	1	190	190
6	UPS	4	120	480
7	Fax machine	1	240	240
8	LCD projector	1	3 600	3 600
9	Desk top Label printer	1	2 000	2 000
	Total Office equipment budget			**18 050**
	Total budget for Laboratory and Office Equipment (US$)			**169 040**
			Euro	**140 867**

Annex 4

Indicative list of needed essential laboratory consumables

Indicative list of needed essential laboratory consumables

	Description	Unit	Quantity	Unit Cost (US$)	Amount (US$)
	Biological products				
1	GMEM- Glasgow Minimum Essential Medium	10Liter	4	84	336
2	Hanks BSS	10X1L	4	26	106
3	Trypsin 1:250	100g	2	120	240
4	Penicillin G	10million IU	10	18	180
5	Streptomycin Sulphate	5g	2	14	29
6	Tryptic Soy Broth	500g	4	36	144
7	Yeast extract	250g	2	114	228
8	Brain Heart Infusion Broth	250g	4	110	442
9	Tryptose Phosphate Broth	500g	4	38	154
10	Fluid Thioglycollate medium	500g	2	84	168
11	Skimmed Milk Powder	500g	4	12	48
12	Agar, Bacteriological	500g	2	24	48
13	Fœtal calf serum	500ml	4	132	528
14	Newborn calf serum gamma irradiated	500ml	4	146	586
15	Thymic DNA	5X5mg	2	264	528
	Subtotal budget for biological products				**3 763**
	Chemicals				
1	Sodium Chloride	Kg	2	42	84
2	Digitonin	5g	2	390	780
3	Pyruvic Acid, sodium salt	100g	2	82	163
4	Ethanol absolute	2.5L	5	84	420
5	PBS	12X1L	2	48	96
6	Dimethylsulfoxide (DMSO)	100ml	2	42	84
7	Ethylene diamine tetra acetic acid (EDTA)	100g	2	38	77
8	Trypan blue	25g	2	36	72
9	Phenol red	25g	2	54	108
10	Glycerol	250ml	2	96	192
11	Phosphate disodique anhydrous	500g	2	72	144
12	Phosphate monopotassique anhydrous	500g	2	72	144
13	D-Glucose	500g	2	36	72
14	Phenolphtalein sodium diphosphate	100g	2	31	62
15	Tetrazolium chloride	25g	2	72	144
	Subtotal budget for chemical products				**2 642**
	Consumable & others				
1	Bijoux disposable, 7ml	700/Pkg	10	96	960
2	Universal, plastic, 30ml	400/Pkg	5	72	360
3	Pipette 1ml, disposable, plastic, single wrap	500/Pkg	6	80	482
4	Pipette 5ml, disposable, plastic, single wrap	200/Pkg	3	62	187
5	Pipette 10ml, disposable, plastic, single wrap	500/Pkg	1	228	228
6	Combitips, 2.5ml capacity	1000/Pkg	2	150	300
7	Whatman, Membrane filter, cellulose nitrate 0.2µm, 142mm	25pcs/Pack	5	198	990
8	Propipette caoutchouc	10/pack	5	22	108

	Description	Unit	Quantity	Unit Cost	Amount
9	Anaerobic gas generating kit	Pack of 10	10	180	1 800
10	Microplate sealer adhesive film, thickness 2mil	Pack of 100	5	114	570
11	Petri dishes, 90 x 12mm triple vent, disposable	Pack of 500	4	156	624
12	Autoclave tape with colour indicator roll of 55mx19mm	Roll	20	10	192
13	Culture flask 75cm2 straight neck	box of 50	10	60	600
14	Tissue culture microplate, 96 well, single wrap	Pack of 50	10	76	756
15	Microplate, U-bottom, 96 well, sterile, single wrap	Pack of 50	10	55	550
16	Ion/organic removal cartridge, LC103 for deioniser Elgastat	Pcs	10	60	600
17	Security propipette	Pcs	4	14	58
18	pH paper 6.0 to 7.7	100 strips/pkg	4	14	58
19	pH paper 7.50 to 9.5	100strips/pkg	4	16	62
20	Reusable filtering funel 250ml	Piece	4	125	499
21	Membrane micronsep 0,22µ	100/Pkg	2	168	336
22	Membrane micronsep 0,45µ	100/Pkg	2	156	312
23	Filtering syringe 0,2µ	50/Pkg	2	131	262
24	Penicillin glass vial 5ml	5000/Pkg	2	480	960
25	Stopper for penicillin vial	5000/Pkg	2	96	192
26	Aluminium cap for penicillin vial	5000/Pkg	2	240	480
	Subtotal budget for Laboratory consumables				**12 526**
	Estimated Freight cost			2 000	**2 868**
Total budget for laboratory biologics, reagents and consumables US$					**21 800**
	Euro				**18 166**

Annex 5

Training and Study tours at PANVAC

Training and Study tours at PANVAC

From Vienna, Austria

Louis Fisher, Direcor Labovet, Vienna, (12 October 2004) **on bacterial vaccines production and quality control**

From Vom-Nigeria

Drs K.A. Majiyagbe (FAO, Abuja), A.E. Itodo (Vom), T.M. Joanis (Vom) C.I. Nwosufi (Vom) du Nigéria (November 2004) **on quality assurance principles implementation into vaccine producing laboratories**

From LCV-Mali:

Abba Agmour Maiga (LCV-Mali) (December 2004) **on Xerovac technology.**

From NVRI- Sudan

Training for one senior staff and one technician on **CBPP vaccine quality control techniques** (May 2005).

Annex 6

Duty Travel

Duty Travel

- 10th PACE Advisory Committee Meeting, Bamako, Mali (29-31 Mars 2005)
- 1st Consultative Meeting between AU/IBAR and Chief Veterinary Officers of the Region Paris, France (21 Mai 2005)
- 73rd Session of the OIE International Committee, Paris, France (22-27 Mai 2005)
- PACE Coordination Meeting (28 June – 1st July 2005 Dakar, Senegal)
- Technical backstopping of LANAVET for the production and quality control of PPR and Newcastle vaccines - Garoua, Cameroon (19 July- 5 August 2005).

Annex 7

Personalities' visit at PANVAC

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Personalities' visit at PANVAC

Since its reopening PANVAC has been honoured with the visit of the following personalities:

- H.E. Regina Kurwijila, AU/REA Commissioner and her staff (26 May 2004) et son staff
- Ambassador Moussa Camara, Ambasador of Francophonie in Ethiopia (12 March 2004)
- Mr Abebe Bekele, Counsellor Ethiopia Ministry of Foreign Affairs (12 March and 20 November 2004)
- Dr Emmanuel Camus, Director of CIRAD-EMVT (12 March 2004)
- Mr Aguibou Tall, ILRI Administrator in Ethiopia (12 March 2004)
- Mr Richard Rouquet,, Attaché de coopération, French Embassy in Ethiopia (12 March 2004)
- Dr René Bessin, Coordinator of PACE programme, Nairobi, Kenya (12 Mars 2004)
- Dr Raphael Coly, APHIS Office, Dakar, Senegal (2 September 2004)
- Dr Mahamat Hassane, Director Laboratoire de Recherches Vétérinaires of Chad (10 December 2004)
- Dr Yves Leforban, Conseil Général Vétérinaire, France (22 April 2005)
- Dr Michel Lombard, Consultant in vaccine production (22 April 2005)
- Dr Denis Depommier, CIRAD Regional Director (8 June 2005)

Annex 8

PANVAC's Network of Vaccine Producing Laboratories

PANVAC's Network of Vaccine Producing Laboratories

Afrique du Sud
Onderstepoort Biological Products (OBP)
Private Bag X07, Onderstepoort, South Africa
Téléphone : (27) 12522 1500, Fax : (27) 522 1591
Email : sales@obpvaccines.co.za, Website : www.obpvaccines.co.za

Botswana
Botswana Veterinary Institute (BVI)
Lejara Road, Private Bag 0031, Gaborone, Botswana
Téléphone : (267) 312711, Fax : (267) 356798, Email : hcoupier@bvi.co.bw, info@bvi.bw

Cameroun
Laboratoire National Vétérinaire (Lanavet)
BP 503 Garoua, Cameroun
Téléphone : (237) 227 1305 / 999 9818, Fax : (237) 999 9875, Email : lanavet@lanavet.com

Egypte
Veterinary Serum and Vaccine Research Institute
PO Box 131, Abassia, Cairo, Egypt.
Telephone: 4821009/ 4821866, Fax: 2858321, E-mail : Svri@idscgov.eg,
Web site: www.vvri.Eg.com

Ethiopie
National Veterinary Institute of Ethiopia (NVI)
PO Box 19, Debre Zeit, Ethiopia
Téléphone : (251) 1 338411, Fax : (251) 1 339300, Email : nvi-rt@ethionet.et

Kenya
Veterinary Vaccines Production Centre (KVPC)
Road A, Off Enterprise road, Industrial Area, PO Box 53260, Nairobi, Kenya.
Téléphone : (254) 2 536043, Fax : (254) 2 537744, Email : vaccines@wananchi.com

Mali
Laboratoire Central Vétérinaire du Mali (LCV)
BP 2295, Bamako, Mali.
Téléphone : (223) 224 33 44, Fax : (223) 224 9809, Email : labovet@labovetmali.org

Namibie
Central Veterinary Laboratory of Namibia
Private bag 13187, Windhoek, Namibia.
Téléphone : (264) 61237684, Fax : (264) 61 221099, Email : cvl@cvl.com.na

Mozambique
National Veterinary Research Institute
P.O.BOX 1992, Maputo, Mozambique
Fax: (258) 1-475172, E-mail : invei@teledata.mz

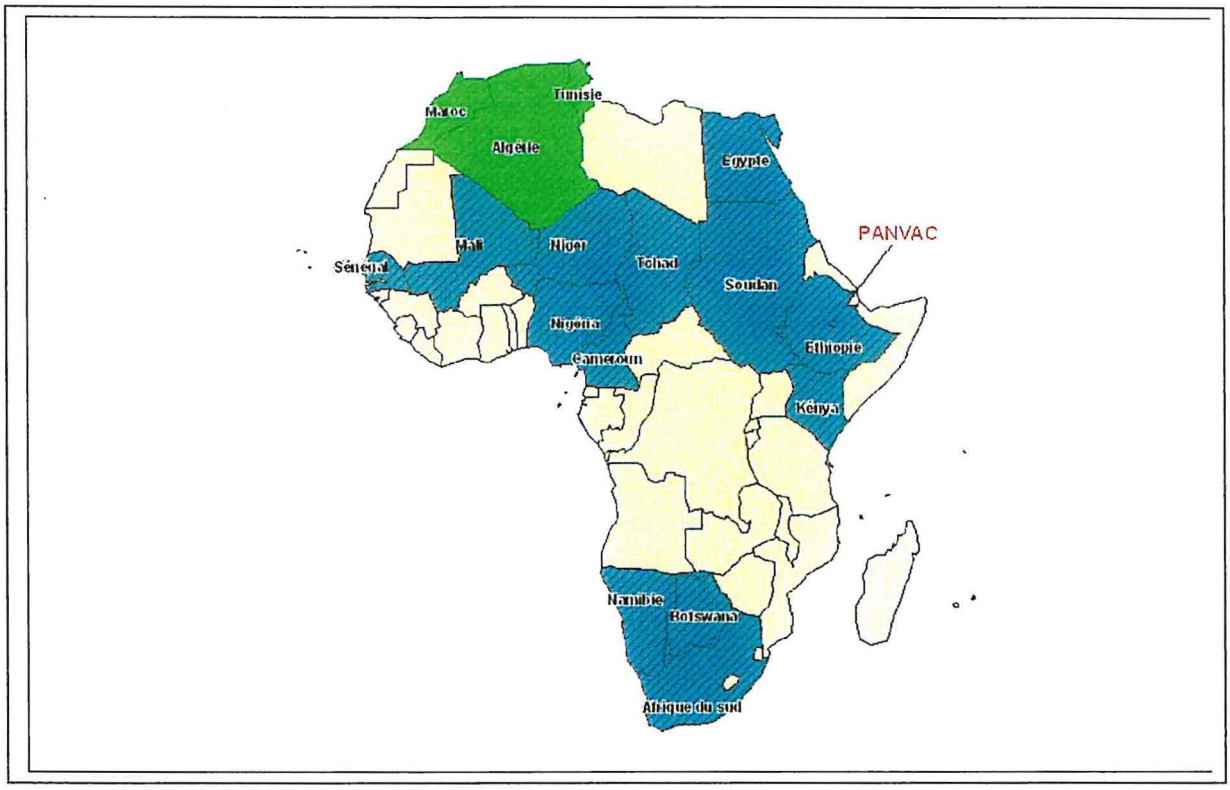
Niger
Laboratoire Central de l'Elevage du Niger (Labocel)
BP 485, Niamey, Niger
Tel : (227) 73 2008

Nigeria
National Veterinary Research Institute (NVRI)
P.M.B. 01, Vom, Plateau State, Nigeria
Téléphone: (234) 073 281453, Fax : (234) 073 460006/ 073 281452,
Email : nvri1924@yahoo.com, Web site : www.nvrinigeria.org

Sénégal
ISRA Production
Laboratoire National d'Elevage et de Recherches Vétérinaires (LNERV)
BP 2057, Dakar, Sénégal.
Téléphone : (221) 832 2762, Fax : (221) 832 21 18, Email : israprod@sentoo.sn

Soudan
Central Veterinary Research Laboratory
PO Box 8067, Alamarat, Khartoum, Sudan.
Téléphone : (249) 11-38 00 10, Fax : (249) 11 380011, Email : cvrl12@sudanet.et

Tchad
Laboratoire National de Recherches Vétérinaires de Farcha (Farcha)
BP 433, N'Djamena, Tchad
Téléphone : (235) 527476, Fax : (235) 51 0054, Email : hmahamat@intnet.td



PANVAC Network Laboratories Countries

Countries Not Producing Veterinary vaccines

Vaccine Producing countries but not part of PANVAC network (Non PACE Countries)