A Joint FAO-USDA/APHIS Workshop in the framework of the RAHC of Bamako

Final Report of the 4th RESOLAB Annual Coordination Meeting
6 -10 December 2010, Bamako, Mali

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Opening ceremony

The opening ceremony of the 4\textsuperscript{th} annual coordination meeting was held under the presidency of Her Excellency the Malian’s Ministry of Livestock and Fisheries, surrounded by the FAO representative in Mali and the USDA/APHIS delegates.

The first speech was made by Dr Jessica MAHALINGAPPA who expressed USDA/APHIS pleasure to support and take part in this important meeting gathering all the West and Central Africa veterinary diagnosis labs.

After that, Mr KEITA, on behalf of FAO’s Representative in Mali, thanked the Government of Mali for hosting this meeting and welcomed all the countries’ delegates. Then, he evoked the circumstances of the RESOLAB’ creation and the objectives pursued before pointing out the opportunity the 4\textsuperscript{th} meeting will offer to all members and partners to discuss the activities outcome and exchange on animal diseases. He also stated some of RESOLAB’s outcomes during the past 3 years and shared his worries about the lack of funds actually faced by the network; regarding the latter concern, a study had been conducted and its results will be shared during the meeting. He therefore invited participant veterinary diagnostic laboratories to take their responsibility and to widely discuss and prioritize transboundary animal diseases for actions to be undertaken. He concluded by acknowledging partners for their support to RESOLAB and the FAO/ECTAD for helping national laboratories.

The Minister began her speech by asking 1 minute silence for the memory of the late OIE Representative for Africa, Dr Abdoulaye Bouna NIANG. Then, she welcomed and thanked all RESOLAB members and the coordinating staff for choosing Mali to hold the meeting; she also congratulated FAO, USDA/APHIS and all partners for their support for this event and to the RESOLAB at large. She reminded the huge mobilization to reinforce veterinary services capacity to face the avian influenza crisis, mobilization that was materialized by the launching of the Regional Animal Health Center (RAHC) of Bamako. The Minister affirmed the important contribution of livestock in the national economy and the need to have an early warning system for animal diseases both at animal and human interface, leading to the “One Health, One World™” concept. She also pointed out some of RESOLAB’s achievements such as the setting up of the quality assurance system and assistance to national laboratories. By the end, she requested all participants to discuss and prioritize animal diseases control strategies beyond avian influenza and to come out with conclusions and strong recommendations; then she declared open the working sessions of the 4\textsuperscript{th} annual coordinating meeting of the RESOLAB.

After that the coffee/tea break intervened.
**Session 1: Introduction**

This session started by putting in place the meeting bureau composed as follows:

- **Chairman**: Dr Yaya THIONGANE, ISRA Dakar, Senegal
- **Vice Chair**: Dr Sylvain ENIKORO, LCV Libreville, Gabon
- **Reporters**:
  - Dr Germaine MINOUNGOU, LNE Ouagadougou, Burkina Faso
  - Dr Papa SECK, ISRA Dakar, Senegal

After that, the meeting objectives, its expected results, method of work and agenda were introduced to participants by Dr Boubacar SECK, coordinator of the RESOLAB for approval before the presentations started. He also addressed acknowledgements to USDA/APHIS, USAID and CIDA, for their continuous support.

**USDA/APHIS Global Activities (Jessica Mahalingappa)**

As the Assistant Director of International Regulatory and Technical Capacity Building, Dr J. Mahalingappa, presented USDA/APHIS AI global activities by structuring her presentation as follows:

- Overall view of USDA/APHIS in Africa;
- USDA/APHIS ITRCB AI Functions/Responsibilities;
- Examples of what ITRCB can provide such as trainings, information exchange, international meetings, classroom and laboratory instructions, provision of laboratory equipments, subject matter experts...
- Focus on Asia and Africa (where HPAI human cases have been diagnosed) through provision of technical assistance, live bird markets and biosecurity training, conduct of training on Incident Command System, Simulation exercises on HPAI outbreaks, Spatial epidemiology training with GPS/GIS, Co-Sponsoring West and Central Africa lab network with OIE and FAO.
- Liaison with State Department, and other agencies
- Support for Crisis Management Center at FAO, Rome
- Various HPAI activities in SE Asia and the Western hemisphere.
- HPAI global activities: delivering training material, laboratory diagnostic techniques at NVSL, providing IATA training, Emergency response training at University of Delaware.
- Others activities and challenges: develop HPAI activities for the regions in FY 2011; searching for others source of funding.

**USDA/APHIS Activities in West Africa (Dr Sadibu Fall)**

Dr S. Fall reminded that APHIS was created in 1972, for the US Department of Agriculture, with the aim to protect agricultural products and natural resources against pests and diseases. He focused his talk on the following:
• International Services of APHIS (IS/APHIS) with the mission to protect and promote animal health;
• The IS/APHIS objectives, missions and main role are to facilitate and secure agricultural exchanges between the US and other countries; he pointed out that for the time being only plant products are eligible for exchanges with US;
• Presentation of the APHIS bureau in Africa whose main role is to achieve capacity building programs such as vet lab, quality assurance; trainings ...

He concluded by pointing out that more information is available on the APHIS website for import-export condition (http://www.aphis.usda.gov).

Report on annual review of RESOLAB activities (Dr Seck)

The third presentation made by Dr SECK reported the annual activities carried out the RESOLAB network and was structured on the:

- Implementation of the 2010 Action Plan: The 2010 Action Plan was drafted to give substance to the recommendations of 2009 annual meeting in achieving the following four targeted outputs:
  - Output 1: Consolidated regional laboratory network
  - Output 2: Upgraded national veterinary labs diagnostic capacity
  - Output 3: Enhanced synergy between epidemiology and lab networks
  - Output 4: Strengthened links with international and regional networks

- The major results achieved include the technical assistance provided to the national laboratories throughout the year, the collection and dissemination of technical information and international guidelines related to lab diagnosis, the conduct of 2 workshops on quality assurance and one in necropsy, sampling, IATA regulations and lab biosafety, the inter-labs proficiency test for all networked labs with the assistance of IZSVe of Padova (Italy), the provision of reagents; support received from national or international organizations or Institutes; relation with regional organizations etc.

- The difficulties and constraints encountered include the following:
  - absence of inter-networks meeting between RESEPI-RESOLAB and RESOCOM not done because of lack of resources, the mobilization of financial resources for which the sensitization of the governments to adequately fund national labs is still needed;
  - improvement of RESOLAB visibility through better communication among RESOLAB’s members and the bulletin (newspaper) not done;
  - establishment of the advocacy committee that was not done because the understanding from the coordination unit was to establish it with the Lab Directors or CVOs from member states. He then invited the participants to discuss this matter during the meeting and come out with recommendations;
  - strengthening of links between national epi and lab actors.
Partnerships and support were received and acknowledged from USDA/APHIS (Co-funding of technical workshop and annual coordination meetings, individual/collective training in regional labs; translation of website French topics into English; Documentation etc); FVI (Support QA workshop); Stop-AI (Co-funding of training activities); EISMV (Support of training activities) and from donors such as CIDA from Canada and USAID.

In conclusion, Dr Seck stated that the main challenges for the network consolidation and sustainability are:

- the National veterinary Laboratories are: the weak political will and basic support to be provided by national governments; the absence of Animal Health policy, programme and strategies; the weak technical capacity; the lack of or weak collaboration with epidemiology, human health sector, other networks and all relevant agencies/organizations.
- the RESOLAB Network itself are the Institutional arrangements at regional level (steering committee, formal links with the Regional economics Communities or RECs etc.) to respond to RESOLAB needs and to supervise its activities and the Sense of ownership to be developed at local, national and regional level.

Discussions on presentations

Comments, questions and responses taken after the presentations were on:

- **UEMOA (Economics and Monetary of Western Africa)** willing to fund a subnetwork composed by its 8 member States and whether a similar position would be adopted for CEMAC – the RESOLAB was approached by UEMOA through a letter asking collaboration for the sub-network. CEMAC was not contacted because ECTAD-Bamako is not in a position to contact the RECs directly.
- The advocacy to have EISMV (Inter-States Vet School of Dakar) benefited support from USAID and APHIS for strengthening its capacities in GIS/GPS training- Dr Jessica APHIS indicated that there are two proposals for training of epidemiologists in using open source GIS software but funds are not secured yet;
- The lab equipment of maintenance and calibration issue – the equipment maintenance is recognized as one of the biggest problems for our labs. The network coordination is still looking for suitable local solution(s) to this problem.
- The access to the RESOLAB private space- a demo shall be made by ECTAD webmaster.
- Dr Niang: comments or reminder on some RESOLAB studies on lab capacity building, the recommendation was done but with no follow up, excepted Togo
- The terms of reference and composition of the suggested RESOLAB Steering Committee – this shall be extensively discussed in work group sessions;
- The network sustainability issues and the position of the various economic blocks that include RESOLAB laboratories- these issues shall also be extensively discussed in work group sessions.
- Two comments were from:
Chad Delegate: The Chad project on the active surveillance of wild ducks- lack of reagents prevented the local testing of samples some of those were send outside the country in absence of collaboration and harmonization with the local authorities. He called for more support for national labs.

AU-IBAR and Togo Delegate: The assessments missions fielded by RESOLAB in 2009 into some labs were not followed by any further action for lack of financial resources except in Togo where 50 million FCFA (around 100,000 US$) were allocated for the national lab renovation and in Ghana where the PCR Unit has been refurbished by the National Poultry Association.

Burkina Faso Delegate who reported on his participation to the African Biosafety Association workshop in Bamako (18-22 October 2010).

Session 2: Update on national laboratories activities (countries’ presentations)

Update on National Laboratory Diagnostic activities were taken from Benin, Burkina Faso, Cap Verde, Central Africa Rep, Chad, Togo, Senegal, Congo Brazzaville, DR Congo, Gabon, Guinea and Liberia. Comments, questions and responses taken after these updating presentations were on:

- Benin HPAI free status: Benin’s last outbreaks date as far back as 2008. After a certain period of time and follow up reports, the country declared itself free from HPAI outbreaks. OIE recommends that countries undertake a proper surveillance plan before declaring itself free from the disease.
- Rabies in Central Africa: Does the staff involve in rabies diagnosis are vaccinated against this disease?. In Central Africa, there is a lack of rabies vaccine. The lab diagnosis is done by Institute Pasteur
- Burkina Faso is ready to collaborate with Benin regarding rabies;
- Erysipelothrix insidiosa infection among pig population in Cape verde: This country has not developed capacity to diagnose this disease. As for ASF, assistance is sought from Dakar regional lab.
- A thousand samples reported positive for Newcastle disease (NCD) in Cape verde: Newcastle disease (NCD) outbreaks each year with an average number of 1,000 outbreaks.
- FMD cases reported by DR Congo but no further: DR Congo Delegate states that FMD is not regularly reported, but can’t state here that there is no FMD case in DRC.
- Shipment of rabies samples across border: need to observe strict biosafety measures as rabies is a major zoonosis;
- Senegal and Guinea freedom from CBPP without vaccination: these two countries are encouraged to think about the OIE pathway for freedom of CBPP.
- CBPP is a priority disease in Guinea where the infected region is upper Guinea and from where it is not allowed to export cattle to the South. The procedure was to Stamp out all animals in infected herds; the last recorded outbreak was in 2006; there is still an annual vaccination campaign.
- Senegal did not report CBPP for about 20 years and stopped the vaccination in 2005. The dossier for applying for CBPP free status according to OIE pathway is stuck, for the last two years, by the individual identification problem of the herds across the country.
Day 2

The second day started with day 1 report presentation and adoption. Then the updates on National Laboratory Diagnostic activities were taken from: Cameroon, Gambia, Ghana, Niger and Sierra-Leone.

Comments, questions and responses taken after these countries’ presentations include:

- FMD vaccine production mentioned by Cameroon;
- The lack of funding faced by most of the countries and the need to solve it for sustainability;
- The Newcastle disease I-2 vaccine production, a thermostable vaccine by the laboratory of Ghana;
- Ghana experience in encouraging private veterinarians to send samples to the lab increasing consequently the number of samples received at the lab;
- TB suspicions cases in Niger and dynamization of the 3 lab antenna to contribute to samples collection and basic diagnosis tests;
- The relationship between Sierra-Leone’s veterinary lab and the university as well as research institute;
- Increasing number of Rabies cases confirmed by the lab in Niger and the misreporting by authority;
- Potential support of the FMD control European Union committee to solve the problem of samples shipments to reference laboratories for confirmation.

After that, a succession of presentations was made to share the experiences of the others programs or labs networks and on additional topics:

- An overview of the Emerging Pandemic Threats (EPT)-Program in the Africa Region regrouping 4 mains projects (IDENTIFY, PREPARE, RESPOND, PREDICT) funded by USAID and implemented by different institutions, by Dr B. Mouillé;
- The presentation of the IDENTIFY tripartite (OIE, WHO, FAO) project specific to laboratories capacity building in the Congo Basin (for Africa), by Dr B. Seck;
- The status of the East Africa Labs network, the youngest lab network, by Dr S.Okuthe;
- The FAO/ECTAD support to laboratories within the SADC region in terms of funding activities, capacity building and assessment as well as lab information management system, by Dr. M. Mokopastso;
- The CIRAD network on sanitary risks and emerging diseases in which Dr D. Martinez focused CIRAD strategy is based on research and development on one hand, and education and capacity building on the other hand. The CIRAD programs are privileging partnership with the South on the concept of making a link between research and surveillance. Dr. Martinez gave examples of networks and urged RESOLAB to set up working group and networks on diagnosis and molecular epidemiology and their application to major animal diseases.
- Introduction to Veterinarians without Borders USA by Dr T Graham who spotlighted on this NDO experience in Liberia.
Then, the following session took place.

**Session 3: Technical capacity building**

This session concerning technical capacity building of labs went through 2 presentations about lessons learnt from 2009 workshops organized by RESOLAB respectively on:

- *Autopsy, sampling and lab biosafety and biosecurity workshop* held in Dakar, presented by Dr P. Seck
- *Quality assurance workshops* respectively in Banjul for the 5 Anglophone countries and Douala for the 18 Francophone countries, by Dr F. Baurier

Discussions opened at that time pointed out the:

- Difficulty to know the state of QA system implementation across the labs and the need of proficiency test and audit to assess it;
- Eligibility of countries to benefit with IDENTIFY project and Vet without borders assistance;
- Need to take into account the level of the various labs in defining the objectives regarding QA system;
- Main conclusions of the 2 workshops on QA and the need of guidelines.

Following the answers and clarifications given to the above concerns; participants listened to Nigeria’s report before stepping into the next session.

**Session 4: Diseases Update**

The first two presentations of this session were on:

- *Update of priority diseases* in the RESOLAB by Dr B. Seck who presented the different approaches, reading references, ranking criteria and results from countries’ reports for diseases prioritization.

- *Rift Valley Fever (RVF): epidemiology, lab diagnosis and control in West Africa* by Dr Y. Thiongane, illustrated by a short movie on the disease.

The exchanges from these 2 presentations were about:

- Misreporting of RVF cases in Mali by journalists;
- Summary on the recent outbreak in Mauritania and relationship between animal health and public health systems into this country;
- Interest of others countries in joining and collaborating with the network of RVF surveillance system already set up in Senegal;
- The mention of The Gambia’s collaborative RVF project with IAEA;
- Policies regarding the past FMD outbreaks in dairy farms in Nigeria;
• Comments and suggestions about diseases prioritization as well as clarification about the ranking method and the expected exercise to be done.

The next 2 presentations that took place up to end up the day’s work, were on:

• **CBPP: epidemiology, diagnosis, vaccination and treatment** by Dr M. Niang who emphasized on the need to sensitize farmers and policy makers on the necessity to implement adequate control measure against this disease.

• **Bacterial resistance to antibiotics**, a worldwide concern, was presented by Pr R.B Alamedji who detailed resistance types and their mechanisms, consequences on human and animal health and the need of surveillance to highlight the status of this issue in Africa.
Day 3

The day 3 Sessions started with the reporting of the previous day work. Thereafter, the meeting resumed with the discussions on the previous day’s last two presentations respectively on CBPP and Bacterial resistance to antibiotics of the session 4. The concerns evoked were related to:

- Proliferation and abuse use of veterinary drugs in the field and the need for studies to identify the drugs used and the eventual bacterial resistance to some of them that could be published for withdrawal from field use. This could be done and the data shared among veterinarians and medical doctors and pharmacists;
- The massive use of antibiotics in modern poultry farms and the call for a follow up to detect resistance and then sensitize practitioners regarding the anarchic use and auto-medication by farmers;
- An existing joint report OIE/WHO on antibiotics resistance, going back to 2005, that gives the list of antibiotics facing bacterial resistance;
- The diagnostic of CBPP: concerns were raised on the limits of some diagnostic tests and the need to assess vaccination campaigns;
- The treatment of CBPP regarding the treatment effectiveness, cost, and fears of developing resistance and the possibility to associate vaccination and antibiotherapy. Dr Niang mentioned the difference in attitudes between English speaking countries and the French ones about treatment of CBPP and shared his personal opinion about potential success when treatment occurs at the early stage of the disease;
- The misreporting of Congo Brazza on the map of CBPP distribution although a case has been confirmed in 2010 by CIRAD;
- The nature of CBPP immunity.

After these clarifications and comments, the FMD Session started.

FMD Session

The session on FMD was animated through 5 presentations followed by discussions.

- The FMD status, surveillance and control strategies in West and Central Africa in which Dr A Traore first summarized the FMD status based on country reports before focusing on Mali’s case. He then stated that 8 countries reported FMD suspicions and most serotypes confirmed in the region were O, A and SAT2; he also insisted on the findings of lack of outbreaks report and laboratory confirmation.

- The General guidelines on FMD epidemiological surveillance in West and Central Africa were presented by Prof E.Couacy who overviewed the FMD situation in the region since the 1990’s and the major achievements of FAO TCP and an EU funded project for FMD control. He asserted the need to set up a surveillance network taking into account all risk factors and above all to strengthen labs capacities for diagnosis before coming up finally with proposals and subjects for further discussions.
• **FMD laboratory diagnosis** was presented by Dr E. Couacy, from samples collection, conservation and transport methods to available lab diagnosis techniques.

• An example of wildlife sample collection for FMD purpose was given through a movie on **wild buffalo sampling** that took place in Botswana and directed by FAO/ECTAD Bamako team with FAO/ECTAD Gaborone team.

• **RESOLAB sub-network on FMD** in which Dr A. Ben Youssef resumed the main points from Drs. Traore and Couacy’s presentations before stressing the importance of information sharing on FMD and on working together, in order to create synergies to better identify threats and initiate common actions by networking. He ended with proposals regarding the role of each member, lab contribution and a 2011 work plan as well as the need to designate a network leader.

The comments and discussions on these presentations pointed out:

• The expensive cost of ELISA diagnostic kit and a call for PCR method to be preferred instead;
• The interest of Guinea taking part in the FMD epidemiological surveillance project;
• The identification of main serotypes circulating in the region before vaccination campaigns;
• The limited capacities of national labs to confirm the disease and the difficulty of sending samples to reference laboratories that raised the need to identify a regional lab within RESOLAB as first line of screening;
• The strength and duration of FMD immunity regarding re-occurrence of clinical cases among previously sick animals;
• The need of differential diagnosis with Rinderpest and the epidemiological role of swine as an FMD reservoir;
• The role of Buffalo and the link with wildlife density in FMD epidemiology;
• The need for proper management of animals’ movements for FMD control;
• The need for FMD economic impact assessment and the evaluation of transhumant animals number;
• The notification of the chronic allergic syndrome to warmth (as a FMD follow up syndrome) by farmers and the need for veterinary services to take action when FMD is declared to encourage case reporting;
• Recommendations for sustainability of the future proposed FMD sub-network.
Session on zoonotic diseases

The zoonotic disease session focused on Rabies through 4 presentations and a proposal to network on it:

- **Overview of Rabies epidemiology**, diagnosis and vaccination by P. De Benedictis.
- **Rabies control experience in Italy**, also by P. De Benedictis.
- **Rabies status and control in Senegal** with a focus on the national plan shared by Dr Y. Thiongane.
- **Rabies status in Burkina Faso** based on samples received at the laboratory for confirmation by Dr G. Minoungou.

Discussions on the subject ended the day and raised the following questions and comments:

- Necessity to strengthen capacity of the regional lab of Dakar to improve its contribution to rabies diagnosis, surveillance and control plan in Senegal;
- Information on Mali program about neglected zoonosis and a collaboration with medical doctors on it;
- Need to sensitize decision makers to consider rabies as a major public health threat;
- The necessity to involve RESEPI and veterinary services in discussing such important subjects as rabies;
- The appeal to assist labs in improving their methods for rabies diagnosis known as a big issue in the disease control strategy;
- Strengthen the collaboration with public health staff, private veterinarians, local communities and pharmacists as experienced within Senegal rabies control plan;
- Vaccination of dogs and dog population control to minimize the risk of rabies;
- Need to confirm negative fluorescent antibodies test (FAT) cases by other techniques such as histopathology, virus isolation on cell culture, LAMP,...
Day 4

After presentation of the recapitulation of the 3rd day’s work, the country report of Guinea Bissau was presented before the starting of the day’s session.

Session 6: Labs technical sustainability

In this session, Dr G. Cattoli delivered 2 presentations related to RESOLAB laboratories technical sustainability:

- **General analysis of the second AI and ND laboratory diagnosis proficiency test results** in West and Central Africa through the following key points: objectives of the test, material and methods used, results obtained from 18 labs out of 23, general comments, recommendations and important suggestions. For this test the turnout of the laboratories was very good (21 out of 23 labs). Dr. Cattoli stressed on the degree of variability in results (especially for serology) among laboratories, reflecting the need for further harmonization of laboratory techniques. He also noted the long delay observed by some laboratories before submitting their results and the shipment of samples and reagents as one of the major constraints for the proficiency test.

- **RESOLAB labs mapping** based on labs survey information from 2007 to 2010, by deriving from this analysis the top main constraints and the trends of routine and surveillance labs diagnosis activities.

  From the analysis of data from 18 laboratories out of 23, it appears that the major constraints faced by the RESOLAB laboratories, in descending order, are: the lack of reagents (for 12 labs out of 18), insufficient qualified technical staff (for 11 out of 18), budgetary issues (for 11 out of 18), lack of equipment and maintenance and calibration problems (for 10 out of 18), the state of infrastructure with electricity and/or water supply problems (for 8 out of 18) and the insufficient number of samples received and processed (for 7 out of 18).

  On this last point, the speaker indicated that increased number of samples submitted and tested means increased workload and can come from collaboration with the Epidemiology Unit in the implementation of surveillance programs. This will put the laboratories in better position to seek and obtain the support of Governments and veterinary authorities for new and trained personnel requests and more funds allocated on regular budgets for reagents and equipment.

  He stressed laboratories support to veterinary services for the implementation of surveillance or monitoring program, their joint involvement in research and development programs, the establishment of collaborative and twinning programs with reference laboratories and the prospects of new funding options for the labs.
He concluded in stressing that obtaining official recognition and legal framework for RESOLAB should be considered as a top priority. This recognition shall open fund raising possibilities at national, regional and international level and it paves the road for medium to long term sustainability.

Discussions

An interesting discussion followed these presentations on:

- The importance to continue such an exercise (interlabs proficiency test) as verifiable indicators of labs capacity and as opportunities providing occasion for more practice to laboratories technicians with regards to the lack of reagents and scarcity of samples to process; labs have been invited to develop initiatives to get more field samples for the maintenance/improvement of their testing capacity.
- The necessity to better organize reagents shipment to labs, preferably straight to laboratory when it is possible; it has been recalled that the use of the FAO channel is an exceptional one taking into account labs specificity;
- The necessity for labs to take into account the deadline for results submission and a call for the organizers to acknowledge the receipt of test results as soon as possible and to avoid long delays for lab results feedback;
- The findings, through the test results, that many labs are neglecting basic diagnostic methods such as AGID and HI; also to confer the proficiency test organization by regional reference labs;
- The need to encourage samples collection through epidemiósurveillance network where capacities have been reinforced with the SPINAP; it has also been pointed out that field staff usually function well on project and release effort after the project is completed;
- The requirement of SOPs to include controls in each test run;
- The wish to discuss some important issues during the group sessions to come out with strong recommendations and the need to respect commitments made through these recommendations;
- The importance to send quarterly report for a better feedback from the RESOLAB coordination;
- The development of good and dynamic relationship with field staff by applying basic techniques and doing confirmatory diagnosis at the national laboratory;
- The taking into account the number of samples processed versus the number of samples received for a better appreciation of the ratio of technicians performing the test per lab and per month or year; a call was also made to identify the reason why some samples have not been processed;
- An invitation for participants to discuss the reasons of the limited number of samples received at labs and to advocate national authority to support labs activities;
- To discern common and individual constraints of labs in order to prioritize actions to be undertaken to solve them.
**Session 7 on diagnosis of labs financial sustainability**

Based on the recommendations of the 3rd annual coordination meeting of 2009, FAO commissioned a study conducted by Dr. Dorothée Ben-Youssef-Romain on *Potential funding of Western and Central Africa National Vet Lab by Private sector (funded by project OSRO/INT/902/USA BABY02-AFRICA)*.

The methodology for this study consisted of documents review, questionnaires analysis and field visits in 3 selected pilot sites (Kinshasa, Bamako and Lomé). On the basis of information collected through the questionnaire, the laboratories were classified into three groups based on their potential to generate funds. The sites visits in selected pilots’ countries allowed testing this hypothesis and getting in more details in each three situations. The speaker ended with recommendations regarding labs’ category. She insisted on the need for labs to communicate and strengthen basic proficiency to attract the private sector on quick and simple responses to their problems. Finally she raised some discussion points and made specific recommendations to each of the three groups of laboratories and participants on the follow-up to this first study and the measures for the year 2011.

**Discussions:**

- The representative of E-ATP, a USAID funded project, welcomed this study as his project is planning to support sanitary quality assurance program in poultry sector in which lab contributions are highly needed;
- It has been suggested to the labs to look for marketing specialist assistance for their communication toward public and potential clients;
- The testimony of Dr Dolo, a private veterinarian in the poultry sector in Mali, attesting the needs of producers to be accompanied by labs to solve their concerns; this has been confirmed by a study conducted in Senegal to identify private veterinarian’s needs in term of labs confirmation;
- The criteria for test price estimation in the labs.

*Annex 3 details the Working track for 2011 and the recommendation for potential funding from the private sector adopted by the meeting.*

**Complement to session 4 on disease updating**

Pr E.Couacy, who could not attend the meeting first days, made a presentation on *PPR epidemiology, lab diagnosis and vaccination* to come to the conclusion that PPR could be eradicated like Rinderpest as the skills and tools exist.

The main discussions following this presentation were on:

- The need for strategies to control animals’ movement to control PPR;
- The necessity for strong actions through governments commitment to assure mass and free vaccination campaigns and for concerted action at regional level;
• The AU-IBAR VACNADA project role in transboundary animal diseases control;
• The appeal to producing labs to make available more thermostable PPR vaccine formulation;
• The role of wildlife in PPR epidemiology and control strategies.

The remaining of the day was devoted to Group work session.

**Group work sessions**

Four Group Works have been constituted to discuss the followings themes:

- RESOLAB sustainability issues
- Rabies networking
- PPR control strategies
- FMD networking.
Day 5

After the discussion and adoption of the Day 4 report, the meeting resumed successively with the:

- Presentation and discussion of Group Works’ Reports;
- Discussion and adoption of the meeting draft report and recommendations;
- Presentation and discussion of the Outlines of RESOLAB 2011 Action Plan
- Discussion of the venue and the dates of 2011 coordination meeting (Date: first week of 28 Nov – 2 Dec or 5-9 December 2011; Venue: Douala to be confirmed)
- Closing Ceremony and end of technical workshop

1. Presentation and discussion of Group Works Reports;

The presentation and discussions on group works reports came out with the following:

1.1. RESOLAB sustainability group

This group worked on RESOLAB new functional organization and recommended the following organization:

- 1.1.1. The Technical Committee
  
  o **Composition:** This Committee consists of all Directors of laboratories.
  
  o **Terms of reference:** The Technical Committee determines
    - General guidelines to safeguard veterinary public health including
    - Regional strategies and priority actions for surveillance and control
    - Recommendations for strengthening the mechanisms and surveillance systems and national and regional interventions

    and during the Annual meeting
    
    - Evaluates the adequacy and effectiveness of the network in terms of addressing the needs of countries in the region;
    - Assesses Working Groups progress reports ;
    - Prepares the recommendations for the following year;
    - State on Actions to pursue or strengthen
    - State on New issues and/ or new working groups
    - Approve the Workplan for following year.

- 1.1.2. The Coordinating Committee

This Committee is responsible for coordinating the implementation of the recommendations of the Technical Committee meeting. It will oversee the Advocacy and Technical Groups activities.
1. Composition

His Bureau is established as follows:

- President: Gabon;
- Vice-President: Nigeria;
- Reporter: Burkina Faso;
- Interim Secretariat: FAO-ECTAD.

2. Terms of reference

- Maintain links between members
- Facilitate the implementation of programs working closely with group leaders
- Organize annual meetings
- Manage information and sharing of information via website or other media
- Assist in the preparation of new projects
- In charge of external communications for events, promotion by the politico-economic organizations and donors.

3. The Advocacy Group

- Composition

  It is made by the Directors based in the country seats of subregional economic organizations as follow:

  - CEAC : Dr Sylvain ENKORO (Gabon)
  - ECOWAS : Dr Mohamed SANI (Nigeria)
  - UEMOA : Dr Lassina OUATTARA (Burkina Faso)
  - CEMAC : Dr Domitien MOKONDJI (RCA)
  - Dr THIONGANE as Dakar Regional Lab Director
  - Interim Secretariat : provided by FAO-ECTAD

- Terms of reference

  - Implement RESOLAB overall Advocacy strategy;
  - Build a business case based on food safety so as the public health impact of veterinary public health;
  - Build the advocacy on the usefulness of the labs and their activities;
  - So capitalize on the RESOLAB gains to sensitize RECs and policymakers: reports of activities of the Network, advanced on Rabies, PPR, FMD.
  - Send a letter to the authorities by presenting what the Network has already done (progress report).
  - Consider the institutional anchorage of the labs in the approach so that authorities like CVOs do not feel short-circuited.
  - Establish a timeframe for the advocacy group, taking into account the programs of thematic working groups.
• 1.1.4. The **Technical Working Groups or sub-networks**: Include currently the 3 Group of priority diseases (Working Groups on rabies, FMD and PPR) and 2 Groups on transversal activities (“Quality Assurance” Group; “Foresight and Development Group” for practical organization for opening labs to private markets).

  o **Composition**
    The composition of each working group is the one that was defined during its group work session (cf, Appendix 2).

  o **Common terms of reference for all Groups**

    ▪ Carry out technical activities aiming to address specific diseases or cross-cutting issues for generating data in animal health, veterinary public health (for veterinary services and health managers) and for capacity building;
    ▪ Gathers partners interested by a particular subject (not necessarily all RESOLAB members);
    ▪ Works all around year as a sub-network;
    ▪ Designate a facilitator (or two).

1.2. Rabies Work Group

The Rabies work group focused on the following: priorities for rabies in the region; identification of the needs of laboratories and veterinary services; interaction with the medical sector (doctors, pharmacists, private veterinarians etc.) and public awareness creation.

**Recommendations**: The Rabies Group recommended to:

  • Create of raise up awareness on the importance and need to fight Rabies;
  • Obtain the commitment of countries to fight the disease;
  • Strengthen the technical capacity to control the disease.

1.3. PPR group:

The group worked on the priorities for PPR surveillance and control in the and on an annual work plan.

**Recommendations**: The PPR Group recommended to:

  • Establish the PPR sub-network with a facilitator and focal points in countries;
  • Strengthen the capacity of diagnostic laboratories;
  • Strengthen PPR epidemiological surveillance;
  • Assess PPR socio-economic impact;
  • Strengthen the vaccine production laboratories capacities.
1.4. FMD group

The discussion points of this Group were on the formulation of an FMD sub-network, the establishment of a communication framework and the fostering of technical activities such as trainings, surveillance and diagnosis in the objective of establishing an FMD Sub-network within RESOLAB to enhance FMD surveillance and diagnosis as well as the sharing of information and data on the disease in West and Central Africa.

Recommendations: The FMD Group recommended to:

- Set up an FMD sub-network;
- Harmonize FMD surveillance, diagnostic activities ...;
- Develop regional collaboration on samples collection and testing system...;
- Enhance laboratories capacities for FMD diagnosis;
- Share relevant information to the region and international communities;
- Designate 2 network animators (Mali and Nigeria were proposed);
- Contribute in monthly and annual reports.

2. Discussion and adoption of the meeting draft report and recommendations;

The two reporters presented the 4th Annual meeting draft report and recommendations. These were discussed and adopted in plenary session.

3. Presentation and discussion of RESOLAB 2011 Action Plan Outlines

Dr B. Seck presented the RESOLAB 2011 Action Plan Outlines emphasizing on achieving the following 4 Outputs:

- **Output 1: Consolidated regional laboratory network through**: Network organization and Advocacy, visibility; Institutional and financial sustainability; Communication across the network.

- **Output 2: Upgraded national veterinary labs diagnostic capacity through**: Direct Support to national labs – transversal activities: QA roadmap, equipment maintenance and calibration; provision of reagents; organization of staff study tours etc ..; Proficiency testing exercises; Local solution for equipment maintenance/calibration; Promotion of Public-Private Partnership; Working Groups animation; Organization of Thematic technical meetings; and Information collection, sharing and dissemination.

- **Output 3: Enhanced synergy between epidemi surveillance and lab networks through**: Improved Communication; Common epidemiology and laboratory network workshops; Common training sessions for lab personnel and field vets; and Field vets staff trained in samples collection and shipment.
• **Output 4: Strengthened links with other networks**

These Outlines were approved by the meeting.

4. **Discussion of the venue and the dates of 2011 coordination meeting**

Date: 28 Nov to 2 Dec or 5 to 9 December 2011 to be confirmed; 
Venue: candidature of Douala (Cameroon) to be confirmed.

5. **Closing Ceremony and end of technical workshop**

The meeting closing speech has been made by Dr S. Tembely, Director of the Central Veterinary Laboratory of Mali, on behalf of the Ministry of Livestock and Fisheries of Mali. He thanked all participants for their contribution to the 4th Coordination meeting success and wished to all of them safe journey back home.

_______________________________

Report submitted by Reporters: Dr Germaine MINOUNGOU (LNE, Ouagadougou, Burkina Faso) and Dr Papa SECK (ISRA Dakar, Senegal). 
Report Edited by: Dr. Youssouf Kaboré and B.M. Seck (ECTAD, Bamako).
Annex 1:
TERMS OF REFERENCE OF RESOLAB 4th ANNUAL COORDINATION MEETING
6-10 December 2010, Bamako, Mali

The arrival of H5N1 HPAI in Africa did not catch the continent’s veterinary services unawares but it did highlight their shortcomings in terms of surveillance and, in particular, disease laboratory diagnosis. Since the early stages of the current H5N1 highly pathogenic avian influenza (HPAI) outbreak, FAO has developed, among many other things, initiatives to strengthen veterinary diagnostic laboratories. In particular, in Africa it fostered staff training in the diagnosis of the disease and, in December 2007, launched through a joint FAO-USDA/APHIS workshop, within the framework of the Regional animal health centre of Bamako (RAHC), the “West and Central Africa Veterinary Laboratory Network for the control of avian influenza and other transboundary animal diseases” (RESOLAB).

The RESOLAB network immediate objectives were set to enhance the effectiveness and efficiency of national veterinary diagnostic laboratories, improve communication between laboratories and with national epidemiological networks and stimulate improvement of Avian influenza (AI) laboratory diagnosis expertise within the region, and thereby the quality of animal diseases diagnosis. To achieve those results, the network design took into consideration the different development stages of the region laboratories. The most advanced laboratories (those with better equipment and well experienced staff) were called upon to act as models - and leaders - for the others and to technically assist/help them. The RESOLAB was formalized at its inception meeting in December 2007, during which two laboratories were designated as regional laboratories: the National Veterinary Research Institute (NVRI) of Vom, Nigeria, and the Laboratoire National de l’Elevage et de Recherches Vétérinaires (LNERV) of Dakar, Senegal. These regional laboratories were entrusted with: (a) giving technical opinions and advice and assisting in laboratory surveillance design, if requested; (b) Assisting national veterinary laboratories in HPAI diagnosis; (c) Participating in neighbouring national laboratory staff training; (d) Checking suspected samples submitted by them; and (e) Advising national laboratories on equipment and reagents to select for use, and on good management practice and quality system implementation.

The network, coordinated by the regional office of FAO-ECTAD, has already held three annual meetings with Executive Managers and Head of virology laboratories from each of its 23 laboratory members. On the basis of recommendations resulting from each annual meeting, an Action Plan is proposed for the following year and usually includes activities for: (a) Consolidating the regional laboratory network; (b) Upgrading the diagnostic capacity of national veterinary laboratories; and (c) Enhancing synergy between epidemiology and laboratory networks and with other networks.

Since its launching, the RESOLAB network has been very active in providing technical support to its beneficiary laboratories by organizing training (over 170 lab technicians trained in HPAI laboratory diagnosis, quality assurance including biosafety and biosecurity), procuring standardised reagents for AI and NDV diagnosis, conducting ring trials for AIV serology and molecular testing, developing and launching a website (http://www.faostad-bamako.org/), strengthening the regional laboratories for AI and other TADs and by establishing at FAO-ECTAD Bamako a buffer stock of rapid diagnostic kits and essential reagents for AI and ND laboratory diagnosis. Its value has already been recognized in dealing with outbreaks of AI in the region and establishing links with international reference laboratories. A recent witness of this recognition has been the involvement of many virologists of the network in the publication of a number of scientific articles in international refereed journal on molecular characterization of avian flu viruses isolated in sub-Saharan Africa.

For each RESOLAB annual coordination held so far, USDA/APHIS supported the participation of most of the 23 laboratories Head of virology units and of many guest speakers from USA. Other technical and financial partners were also involved in the funding of these annual meetings and at large in the funding of RESOLAB operations.
FAO and its partners at the Regional Animal Health Centre of Bamako (OIE, AU-IBAR) are organizing the fourth Annual Coordination Meeting of RESOLAB to be held in Bamako (Mali) from 6 to 10 December 2010. This meeting, that will be also attended by many collaborating scientists, will give the opportunity to discuss the following topics:

- Annual Review of the 23 national laboratories diagnostic and quality assurance activities;
- Annual Review of the two regional laboratories, Dakar (Senegal) and Vom (Nigeria), diagnostic activities;
- Report on RESOLAB network coordination activities for 2010;
- Report on the two Quality Assurance workshops (Banjul and Doula) organized in 2010;
- Update on Highly Pathogenic Avian Influenza and other priority diseases in the region;
- Results and comments of the 2009-2010 inter-laboratory proficiency tests organized with IZSVe of Padova, Italy;
- Results of FAO funded Consultation Financial viability and sustainability of national laboratories;
- RESOLAB network viability and sustainability: possible institutional arrangements, member States ownership and support
- Diseases prioritisation
- Rabies: Status in the region, laboratory diagnosis and way forward,
- Rabies: Italian control experience
- CBPP lab diagnosis, vaccination and treatment
- PPR: global status, epidemiology, vaccination and lab diagnosis
- Foot and mouth disease (FMD): Epidemiology in developing countries
- News from other regional networks

1 IZSVe-Padova, OIE/FAO Reference lab for AI and ND
Annex 2: Work Group Sessions

Annex 2.1: Work group 1 : RESOLAB Advocacy Steering Committee

To promote RESOLAB sustainability issues by National Governments and their regional economics organizations (RECs)

RESOLAB today
Functional Organigramme? Coordination by FAO-ECTAD?

Technical Committee = RESOLAB Annual Coordination meeting members (Laboratory Directors/CEO)
With a Chairperson and a Co-chair

Terms of Reference
- Report of working groups results/conclusions
- Actions to pursue or strengthen
- New issues and/or new working groups
- Workplan for following year
- Progress report and annual action plan to submit for discussion and approval by a Steering Committee (TBD) = composed with national and regional policymakers (or international)

Working Groups

Terms of Reference
- Technical actions on a particular disease or a cross-cutting issue (eg QA ...) to generate data in animal health- Veterinary services (for veterinary services and health managers) and for capacity building.
- Gathers partners interested by a particular subject (not necessarily all RESOLAB members).
- Works year-round in subnet;
- A facilitator (or two)

Groupes maladies prioritaires = « Priority Diseases » Groups
Groupes d’activités transversals = Cross-cutting activities Groups (Quality Assurance; Diagnostic methods; Databases; Sanitary information etc) – Construction des capacités= Capacity building

What RESOLAB is lacking today (or need to be consolidated)?

Coordinating Unit

Its composition is strategic and may change over time depending on the maturity of the network. It could include:

- Chair and co-chair = active partners with scientifically and technically international legitimacy
- Supported by a few people (2-3) Representatives of international technical agency, potential donors, major donors (for integration of donor strategies), economic and political organization (like Secretary of a regional organization) ...

Terms of Reference

- Maintain links between members;
- Facilitate the implementation of programs working closely with group leaders;
- Organize annual meetings;
- Manage information and sharing of information via website or other media;
- Assists in the preparation of new projects;
- In charge of external communications for events, promotion by the politico-economic organizations and donors.

Steering Committee

Terms of Reference

Determines

- General guidelines to safeguard veterinary public health;
- regional strategies and priority actions for surveillance and control;
- recommendations for strengthening the mechanisms and surveillance systems and national and regional interventions

during the Annual meeting

- Evaluates the adequacy and effectiveness of the network in terms of addressing the needs of countries in the region;
- Assesses Working Groups progress reports;
- Prepares the recommendations for the following year;
- The Steering committee recommendations, validated by CVOs, are sent to the decision-making body for economic development (ECOWAS / CEMAC in West Africa and Central)

The current technical committee could be or change into a steering committee but a problem arises from the absence of the CVOs and of a representative of Regional Economic Community (ECOWAS, CEMAC).

NdR: This poses the problem of interaction between lab and epidemiological surveillance network/ veterinary services. A laboratory network not linked to an Epi network will receive few samples and will be of very limited use, is not visible in terms of relevance to public health and food safety. Ultimately it is the CVO, who are in charge of animal health issues in a country (excluding research), who will bring programs by Ministerial departments. We should move towards a regional animal health and veterinary public health network.
REPORT OF GROUP 1 : SUSTAINABILITY OF RESOLAB

Group Composition

1. Chair person: Dr Sylvain ENKORO, (Gabon)
2. Vice Chair : Dr SANI Mohamed, NVRI, Vom (Nigeria)
3. Rapporteur : Dr Lassina OUATTARA, LNE, (Burkina Faso)
4. Dr MOKONDJI Domitien, LACEVET, RCA
5. Dr ABDOUNLADIRI Souley, LANAVET, Cameroun
6. Dr DAFFEH Kebba, CVL, Gambie
7. Dr ROMAIN Dorothée, FAO
8. Dr SECK Boubacar, FAO ECTAD
9. Dr THIONGANE Yaya, ISRA/LNERV, Sénégal
10. M. AWOUME Félix Kodzo, LCV, Togo
11. Dr MARTINEZ Dominique, CIRAD, France
12. Dr BAURIER Florence, FVI, France

RECOMMENDATIONS FOR RESOLAB FUNCTIONAL ORGANOGRAM

- Technical Committee,
- Coordinating Committee and
- Advocacy Group
- Four Thematic Groups (04) with one focal point: per group: Rabies Working Group, FMD working Group, PPR Working Group and Quality Assurance (QA) Working Group.

1. ADVOCACY GROUP

Composition :

The advocacy group in charge to promoting RESOLAB by regional decision makers will include 5 persons including Directors based in the country seats of regional or subregional economics organizations (RECs) and the director of the regional laboratory of Dakar:

- UEMOA : Dr Lassina OUATTARA (Burkina Faso)
- ECOWAS : Dr Mohamed SANI (Nigeria)
- CEMAC : Dr Domitien MOKONDJI (RCA)
- CEAC : Dr Sylvain ENKORO (Gabon)
- Dr THIONGANE as Director of Dakar RESOLAB regional laboratory.

Internal Organisation of the advocacy Group is identical to the one of the Working Group (Chair, Vice-chair and rapporteur). For the time being, the Secretariat will be assured by ECTAD Bamako.

Terms of reference

- Build a business case based on food safety so as the public health impact of veterinary public health;
- Build the advocacy on the usefulness of the labs and their activities;
- So capitalize on the RESOLAB gains to sensitize RECs and policymakers: reports of activities of the Network, advanced on Rabies, PPR, FMD;
- Rationale: opportunities already offered by some RECs and policymakers at the example of ECOWAS which has notified by letter funding of 100 000 dollars for the lab and SV but not unlocked;
- Send a letter to the authorities by presenting what the Network has already done (progress report).
• Consider the institutional location of the lab in the approach so that authorities like CVOs do not feel short-circuited;
• Establish a timeframe for the advocacy group, taking into account the programs of thematic working groups;
• Advocacy STRATEGY: Once the arguments have been built, the advocacy can be defended by the President at events thus not necessarily by all members of the Advocacy Committee.

2. TECHNICAL COMMITTEE

Composition: All Directors of RESOLAB laboratories.

Terms of reference
The Technical Committee determines

- General guidelines to safeguard veterinary public health including;
- Regional strategies and priority actions for surveillance and control;
- Recommendations for strengthening the mechanisms and surveillance systems and national and regional interventions and during the Annual meeting
- Evaluates the adequacy and effectiveness of the network in terms of addressing the needs of countries in the region;
- Assesses Working Groups progress reports;
- Prepares the recommendations for the following year;
- State on Actions to pursue or strengthen;
- State on New issues and/ or new working groups;
- Approve the Workplan for following year.

3. COORDINATING COMMITTEE

Bureau
Chair person: Dr Sylvain ENKORO (Gabon)
Vice Chair: Dr SANI Mohamed (Nigeria)
Rapporteur: Dr Lassina OUATTARA (Burkina Faso)

Terms of reference

- Maintains links between members: emails, monthly conference call for the initiation of activities before a physical meeting of the Coordination Committee;
- Prior to the monthly conference, emphasize on abundant emails towards RECs;
- Facilitates the implementation of Working group action plan by liaising closely with leaders of the thematic working groups;
- Organization of annual coordination meetings;
- Manages information and its sharing via the website or other media;
- Contribute to new projects preparation

Management Transitional phase between RESOLAB and ECTAD and the Technical Committee.

• The opportunity to create a Development Plan Group, has been debated (Is a Thematic Group Development Plan Network laboratories appropriate?). The facilitation of the Development Plan should take at each laboratory level but with Terms of reference shall be finalized by the Advocacy Committee to promote this activity within the RESOLAB.
STEERING COMMITTEE: to set up in the medium term.

- **URGENT to set up: The Advocacy Committee (Groupe de plaidoyer).**
- However, the technical thematic groups shall start to operate in the short term (before the next coordination meeting de2011) pending a functional Steering Committee with donor funding through the RECs;
- But how to manage the transitional period?
- Formalize the existence of the RESOLAB Coordinating Committee;
- Absolute need of recognition by the veterinary committee of RECs.

4. Technical Working Groups or sub-networks

The Technical Working Groups or sub-networks: Include currently the 3 Group of priority diseases (Working Groups on rabies, FMD and PPR) and 2 Groups on transversal activities (“Quality Assurance” Group; “Foresight and Development Group” for practical organization for opening labs to private markets).

Composition

The composition of each working group is the one that was defined during its group work session (cf. Appendix 2).

Common terms of reference for all Groups

- Carry out technical activities aiming to address specific diseases or cross-cutting issues for generating data in animal health, veterinary public health (for veterinary services and health managers) and for capacity building;
- Gathers partners interested by a particular subject (not necessarily all RESOLAB members);
- Works all around year as a sub-network;
- Designate a facilitator (or two).
Background

Rabies is a neglected zoonosis endemic in the African continent. Reservoir of rabies in the Western and Central African region is the dog, which is also recognised as the principal cause of human death. In the region, surveillance in the animal reservoir is scant, and the real burden of rabies in the animal reservoir as well as in humans is underestimated.

Veterinary Services with appropriate financial support of the public budget including from Ministries of Health in all infected countries should actively contribute to the goal of eliminating human rabies at the animal source.

Comprehensive and sustainable national programmes for rabies elimination should be designed and implemented, if necessary with the assistance of international agencies. The control/elimination programme strategies should be harmonized between neighbouring countries until rabies has been eliminated.

Public awareness and education on rabies should be a priority and be increased through the exchange of information, experience and cooperation between medical, veterinary and environmental authorities.

Surveillance and reporting of rabies (including bat rabies) should be improved on a global scale. National authorities should maintain or establish an effective mechanism for collating, processing, analysing and disseminating rabies data with the technical support of international and regional organisations.

Rabies diagnostics must be undertaken using only the recommended techniques.

Tasks of the working group

- Defining priorities for rabies;
- Identification of needs for veterinary labs;
- Interaction with medical sector;
- Advocacy of public sector
Report of the working group on rabies

Group Composition:

Chad, Burkina Faso, Mali, Niger, Benin, Togo, Sierra Leone, Guinée-Bissau, RCA, Cap Vert, Senegal, Congo Brazzaville, Dr Alamedji (EISMV), Dr Mouillé (FAO), Dr De Benedictis et Dr Cattoli (IZSVe)

Issues discussed

• A. Priorities for rabies;
• B. Identifying the needs of laboratories and veterinary service personnel;
• C. Interactions between the health sector (doctors, pharmacists and private veterinarians);
• D. Public awareness / Ministries

A. Priorities for rabies

• Involvement of field staff;
• Commitment of veterinary services, including public veterinary clinics;
• Advocacy, communication;
• Strengthening laboratory capacity

B. Identifying the needs of laboratories and veterinary service agents

• Decentralize in the field the diagnosis / screening
  - Strengthen the synergy between CVOs (central Office) and field staff
  - Involve of veterinary-posts, eg training for sampling, packaging and shipment of samples to the labs;
  - Identify field staff and vaccinate them against rabies and train them sample collection and provide them with the necessary material for to collect and to forward samples to the laboratory);
  - Motivate field staff since the disease is a deadly one to humans;
  - Provide sampling protocol forms ;
  - Forms for case reporting that could be sent to the Department;
  - Provide closed stalls for suspected dog monitoring (Quarantine of biting dogs) at the Veterinary Offices.

• Each country must be able to make rabies diagnosis at central level (reference lab) with two OIE recommended techniques : immunofluorescence and cell isolation (this pose the problem of cells maintenance )

• The region should use the same reagents to allow comparison of results;
• Provide real-time diagnosis;
• Provide a permanent presence at the laboratory;
• Take care of dead animals carcasses received at the lab (incinerator);
• Manage databases for reliable statistics;
• Maintenance and supply of equipment;
• The network should compare prices and performances of the various reagents and make these findings available at the next RESOLAB annual meeting.

C. Interactions among health sector (doctors, pharmacists and private veterinarians)
• Networking and meetings with public health doctors,
• Regular exchanges between physicians and veterinarians in the region, in particular exchange of data: number of human cases and deaths (statistics), and the veterinary sector the number of vaccinated animals;
• Integrated monitoring, data analysis to get a clear picture on disease prevalence and geographical distribution, and for data reliability;
• At the local level, help to establish the recognition, by the human health authority, of the competence of the veterinary sector to control the disease at the animal source and thus reduce human cases figures;
• Organize training for staff working in the medical sector (hospitals officers, pharmacists and Heads of districts) to enhance their knowledge of the disease;
• Each lab shall commit to organize training in the veterinary service;
• Educate the medical sector to have a stockpile of human vaccines and serum against rabies in the regions (state subsidy);
• Involvement of private veto, eg training, awareness (information sheets), particularly with regard to other pets susceptible to rabies;
• Sensitize veterinarians to ensure bitten animals monitoring.

D. Public awareness / Ministries

• Involve public health sector and local authorities, the Ministry of Interior (police), so they have a clear idea about the mechanisms of rabies control;
• In case of refusal of the owners of a biting dog to have his dog kept under observation, inform and involve the police;
• Involve the Ministry of Education and encourage information in schools;
• Involve the media, mainly because they disseminate information, and do not forget the local language and insist on public and community radios;
• Carry out awareness campaigns on dogs vaccination or sterilization campaign or stray dogs elimination campaign, if possible at least annually or when dog population or number of rabies cases increase;
• During vaccination campaigns, make mandatory the tattoo of pets who are vaccinated and undertake the census of the canine population.

Recommendations

1. Reinforce the awareness on the importance of the fight against rabies and communication:
   Action Points:
   - Awareness creation of Ministries, CVO / central services and field staff;
   - Sensitization of private veterinarians and public health sector and development of regular exchanges between physicians and veterinarians (and public / private veterinary clinics) in the regions;
   - Media outreach;
   - School Outreach

2. Mobilization and / or liability for rabies control of:
   - States to allow / finance dogs vaccination campaigns and stray dogs elimination campaigns;
   - Veterinary and Public Health services;
   - Laboratories to develop their capacity to rapidly diagnose rabies at the central level with two OIE recommended techniques (immunofluorescence and isolation cell), and to organize training.

3. Strengthening the capacities of actors to control rabies:
   - intervention capacity in the regions: stockpile of vaccines to set up;
- capacity of surveillance of vet field staff, surveillance posts staff, eg vaccination, arrange closed boxes, train officers in sample collection, packaging and shipment to the labs; provide them with the necessary material to do so;
- capacity of laboratories: eg maintenance and supply of equipment, use of same reagents, incinerators, etc.

The World Rabies Day is everyday!
Annex 2.3. : Report of the working group on PPR

Composition :
- PRESIDENT: Prof. Emmanuel COUACY
- RAPPORTEUR: Dr Vincent BONKELA Congo RD
- Congo: Jean Ikoulakoumou
- Mali: Kassoum SAMAKE
- Libéria: Roosevelt GWEH, Solomon N. BROMNE
- Gabon: Placide MOUDOUMOU
- Niger: Aminata Bakary DJIBO
- Guinée Bissau: Maria Henriqueta R. VIEIRA
- Guinée Equatoriale: Deogracias NFUBE, Antonio Bonifacio MBA
- Nigeria: SOLOMON Ponman
- Cameroun: André NGANGNOU
- Guinée Conakry: Mamadou Ramadan DIALLO
- Sierra Léone: Gabriel A. KOROMA
- BIRA-UA: Mamadou NIANG

Group’s priorities

- In a view of PPR eradication, a series of actions shall be included in the work plan, namely:
  - Strengthen laboratory capacity for diagnosis and research;
  - Vaccination against the disease in using a thermo-labile vaccine with a strengthened thermal stability. The packaging of this vaccine must be 25 to 50 doses;
  - Good communication / awareness activities;
  - Continue to record PPR outbreaks and collect samples for laboratory analysis and for epidemiological study to assess the disease prevalence;
  - information on small ruminants numbers and movements as well as geographic distribution;
  - Quantitative assessment of PPR socio-economic impact;
  - Create a sub-network having a coordination office and a focal point within each country.
All these elements shall convince the decision makers and donors that PPR eradication can be achieved.

Annual Workplan

- Capacity building for PPR lab diagnosis and research;
- Gathering information and samples in small ruminant herds;
- Laboratory analysis;
- Awareness creation;
- Monthly, quarterly, annually reporting

Group recommendations

The following recommendations have been made in view of PPR eradication in Africa:
1. Implement a sub-regional network with a main leader and focal points in each country;
2. Strengthen the diagnostic capabilities (training or retraining of personnel and acquisition of laboratory reagents and consumables);
3. Strengthening epidemiological surveillance of PPR (Awareness, sample collection and lab analysis) based on previous experiences from PARC, PACE, etc....
4. Conduct a study on PPR socio-economic impact.
Annex 2.4. : Working Group on FMD

FMD Main points in WACA:
- Lack of information;
- Lack of activities on FMD diagnostic;
- Some countries initiated control actions against FMD;
- Lab capacities need improvements.

Networking on FMD, Why?
- Work together/create synergies;
- Better identify FMDV threats;
- Share knowledge on FMD related topics;
- Identify possible common actions;

Benefits from networking
- Coherent with Risk assessment requirements: provide viral intelligence feeding into reports on a regular basis;
- Comply with PCP approach;
- Interact with EuFMD Research Group;
- Action in coherence with GF-TADS Africa objectives;
- Contribute to the Global OIE/FAO FMD Lab network and make outputs available to global community;
- Specialised support provided through the Regional Animal Health centre (RAHC) in Bamako

Main questions
- Proposals of colleagues in BAMAKO
  - What do labs expect from networking on FMD?
  - What would be interesting for you to read?
  - What can they provide?
  - What could be in the regular reports?
- Main topics to be included in 2011 work plan and who can contribute?
  - All network members have to prepare something in year?
- Who does what?

Who does what?
- Focal points within labs or epidemiologic teams;
- One (two?) coordinator(s)/leader(s);
- Through RESOLAB;
- Monthly report;

Labs contribution?
- What do labs want from networking?
- What can they provide?

Proposal of work plan 2011 / priorities
- Monthly report;
- Annual workshop;
- Lab training
FMD GROUP WORK REPORT

Group Members
1. Adel Ben Youssef  FAO-Rome (Chairman)
2. Tony Joannis  Vom-Nigeria (Vice Chairman)
3. Papa Seck  Dakar-Senegal (Rapporteur)
4. Charlotte Tshunguta,  RDC
5. Souleymane Diallo,  Guinea
6. Joseph Adongo Awuni,  Ghana
7. Saidou Tembley,  Mali
8. Sam Okuthe, FAO-ECTAD Nairobi
9. Abdallah Traore,  Mali
10. Mahamat Hamid Mohamet,  Chad
11. Oddoye James Jerry,  Ghana
12. Borrie Jabang,  Gambia
13. Kakpo Lamidi,  Benin
14. Couacy Hymann Emmanuel,  Cote d’Ivoire
15. Francisca Dos Santos, Cap Vert

Objective: Establish FMD Sub-network within RESOLAB to enhance FMD surveillance and diagnosis and the sharing of information and data on FMD in West and Central Africa

Discussion points:
1. Formulation of the FMD sub-network (designation of 2 animators);
2. Establishment of a communication framework;
3. Fostering of technical activities such as trainings, surveillance and diagnosis.

Main questions
• Proposals of colleagues in BAMAKO
  – What do labs expect from networking on FMD?
  – What would be interesting for you to read?
  – What can they provide?
  – What could be in the regular reports?
• Main topics to be included in 2011 work plan and who can contribute?
  – All network members have to prepare something in year?
• Who does what?

Who does what?
Part III – Proposal of work plan 2011 / priorities

- Monthly report
- Annual workshop
- Lab training

**Monthly report: proposals**
- Contribution of labs:
  - Labs can explain what they do (serosurvey, diagnostic, samples received for diagnostic);
  - Or what they think;
  - (Eg) Discuss the content of the countries 6 months reports to OIE;
  - Possibly reported outbreaks or ongoing investigations;
- Relevance of tests/papers for use in the region;
- Discuss and share the FMDV findings by the national labs and/or the FAO/OIE WRL;
- Translation and/or comments on published FMD papers relevant to West/Central Africa;
- Share information on relevant projects in the region;
- Share information on important epidemic events.

**Annual report: proposal**
- Summary of annual workshop;
- Main findings of regional labs and isolated strains of FMDV in the region;
- Main epidemic events.

**Lab training – issues**
- FMDV confirmation and typing methods: ELISA, PCR based typing and Penside®;
- Serology;
- All labs in 2 years.

**Terms of reference for Network leader (s)**
- Assist in organising Regional workshops;
- Communicate the collected data within the network, and to EuFMD;
- Provide regular reports on the obtained data;
- Act as a contact point for risk assessment of potential new developments;
- Contribute to the network website;
- Can be requested to represent the network in external meetings.

**Recommendations to the 4th RESOLAB Coordination meeting:**

- Labs should agree to form a sub-network on FMD;
- Harmonise activities on FMD surveillance and diagnosis;
- Collaborate in the area of sample collection, analysis and shipment;
- Enhance laboratories capacities for FMD diagnosis;
- Share the information relevant to the region and to the international community;
- Two Network animators: Mali & Nigeria;
- Contribute in the monthly and annual reports
Annex 3: Study on potential funding sources from the private sector for the national veterinary laboratories of Center and Western Africa

Working tracks for 2011 - RESOLAB 2010 Recommendations

- Stop everything?
- Keep on working work in the three pilot countries (step 2)?
- Initiate in parallel the same work in some willing laboratories (step 1)?
- Reinforce competences in basic veterinary lab skills?
- Acquire marketing and commercial skills?
- Anyway, follow what happened in 2011 during next RESOLAB meeting?

Recommendations for Group A Laboratories

- STATE OF MIND: labs that really want to change can manage it. The motivation of the management is crucial for this;
- ENPOWERMENT: Get more institutional and financial autonomy: build a budget and a price list, get the authorization to charge for the analysis, struggle to have regular State subsidies;
- INCREASE THE NUMBER OF SAMPLES
- QUALITY ASSURANCE: it has to progress (improved), and quality documents have to be completed soon to give confidence to all clients and improve lab skills;
- VETERINARY SKILLS: it is obviously important to have vet skills in a vet laboratory;
- COMMERCIAL AND FINANCIAL SKILLS: to get sooner or later. Learning with qualified labs can help too;
- CONCLUSION: Group A labs will benefit with commercial and financial relationships with private sector. Nevertheless, because of the small size of the market, they can not expect to be totally financially independent (autonomous).

Recommendations to Group B laboratories

- ALL RECOMMENDATIONS TO LABS of GROUP A APPLIED, AND IN ADDITION THO THESE:
- PREPARE to WELCOME PRIVATE SECTORS:
  - modify the lab’s organization so that clients feel welcomed;
  - prepare to meet clients’ requirements and be ready to answer to them
- COMMUNICATE:
  - build a communication plan to contact each stakeholders. One at a time;
  - communication tools: newspaper (8pages, 3 times a year), information meetings, leaflets ...
- PROPOSE NEW SERVICES all-in-one, linked to preventive and effective medicine, easy to implement, without revolutionize the lab like:
  - Control of one-day old chicks;
  - disinfection operation quality control;
  - water quality control...
- CONCLUSION: with better marketing and commercial skills, this Group B of labs should easily gain/ attract new customers and better meet their country’s needs

Recommendations to Group C laboratories

- ALL RECOMMENDATIONS TO LABS of GROUP A and B APPLIED, AND IN ADDITION THO THESE:
• BOARD of DIRECTORS: get all required authorizations;
• COSTING: study the cost of each analysis and build a specific and precise price-list based on this cost analysis and market price;
• LOGISTICS: labs must organize samples collection;
• COMMUNICATE:
  – (see REC to Labs B);
  – Use the scientific possibilities of the lab;
  – Communicate also to other labs and countries (within RESOLAB for instance);
  – THINK TO BUILD AN AMBITIOUS STRATEGY PLAN:
    For example, becoming a reference in 5 years: a laboratory that makes money by charging analysis that entrepreneurs and producers are happy to pay for; a lab that help producers to improve their performance and thus their income.
Annex 4:
Provisional agenda of the 4th Annual coordination Meeting of the RESOLAB,
Central Veterinary Laboratory, Bamako, Mali, 6-10 December 2010

<table>
<thead>
<tr>
<th>Time</th>
<th>Monday 6 December</th>
<th>Tuesday 7 December</th>
<th>Wednesday 8 December</th>
<th>Thursday 9 December</th>
<th>Friday 10 December</th>
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<tr>
<td>8:30 – 9:00</td>
<td>Registration</td>
<td>Day 1 Summary, Reporters</td>
<td>Day 2 Summary, Reporters</td>
<td>Day 3 Summary, Reporters</td>
<td>Day 4 Summary, Reporters</td>
</tr>
<tr>
<td>9:00 – 9:30</td>
<td>Opening ceremony</td>
<td>Update on other networks: *EPT, B. Mouillé and *IDENTIFY, B. Seck;</td>
<td>FMD session General Guidelines on FMD epidemiological surveillance, E. Couacy</td>
<td>Session 6: Technical Sustainability Second Int’l Proficiency Test for AI and ND, G. Cattoli</td>
<td>Group Work Report Discussion</td>
</tr>
<tr>
<td>9:30 – 10:00</td>
<td>Coffee/Tea Break</td>
<td>*East Africa Lab , S. Okuthe; * SADC, M. Mokopastso</td>
<td>FMD lab diagnosis, E. Couacy</td>
<td>Discussion</td>
<td>Working Group Report Discussion</td>
</tr>
<tr>
<td>11:30–12:00</td>
<td>Discussion</td>
<td>Lessons learnt from Banjul and Douala Quality assurance workshops, F. Baurier</td>
<td>Discussion</td>
<td>Diagnostic lab funding study, D. Romain-Ben Youssef</td>
<td>Discussion of Outlines of 2011 Action Plan, B. Seck Dates for 2011 coordination meeting</td>
</tr>
<tr>
<td>12:00–12:30</td>
<td>Session 2: Update on national labs diagnostic activities: Benin, Burkina</td>
<td>Discussion</td>
<td>FMD: RESOLAB sub-network on FMD, A. Ben Youssef</td>
<td>Discussion</td>
<td>Adoption of Meeting Report and recommendations</td>
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<tr>
<td>Time</td>
<td>Monday 6 December</td>
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<td>12:30-13:00</td>
<td><strong>Update on national labs:</strong> Cape Verde, Central Africa Rep, Chad</td>
<td><strong>Session 4: Diseases Update</strong> Diseases prioritisation, B. Seck</td>
<td>Discussion Buffalo sampling, O. Adier, M. Mokopafeso</td>
<td></td>
<td>Closing Ceremony and end of technical workshop</td>
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<tr>
<td>13:00–14:00</td>
<td><strong>Lunch Break</strong></td>
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<tr>
<td>14:00–14:30</td>
<td><strong>Update on national labs:</strong> Côte d’Ivoire, Congo, Congo DR,</td>
<td><strong>Session 5: Zoonotic disease session</strong> Rabies epidemiology, diagnosis and vaccination, E. Couacy-Hyman</td>
<td><strong>Session 8: Group Work session</strong></td>
<td></td>
<td><strong>Session 10: Tour of Laboratoire Central Vétérinaire de Mali</strong></td>
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<tr>
<td>14:30–15:00</td>
<td><strong>Update on national labs:</strong> Gabon, The Gambia, Ghana</td>
<td>Discussion Rabies control experience in Italy, P. De Benedictis</td>
<td><strong>Group Work session</strong> (cont’d)</td>
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<td>15:00–15:30</td>
<td><strong>Update on national labs:</strong> Guinea, Guinea Bissau, Equatorial Guinea,</td>
<td><strong>Session 6: Group Work session</strong> Rabies status and control in Senegal, Y. Thiongane</td>
<td><strong>Group Work session</strong> (cont’d)</td>
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<tr>
<td>15:30–16:00</td>
<td><strong>Update on national labs:</strong> Liberia, Mali, Niger</td>
<td>Discussion Discussion</td>
<td><strong>Group Work session</strong> (cont’d)</td>
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<td>16:00–16:30</td>
<td><strong>Coffee/Tea Break</strong></td>
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<td>16:30–17:00</td>
<td><strong>Update on national labs:</strong> Sao Tome &amp; Principe, Sierra Leone, Togo</td>
<td>Bacterial resistance to antibiotics, R. B. Alambedji</td>
<td>RESOLAB sub-network on Rabies, De Benedictis, G. Cattoli, Y. Thiongane</td>
<td><strong>Group Work session</strong> (cont’d)</td>
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<tr>
<td>17:00–17:30</td>
<td><strong>Update on regional labs activities (LNERV, Dakar &amp; NVRI, Vom)</strong></td>
<td>Discussion Web Site Rabies blueprint, O. Adier</td>
<td>Discussion</td>
<td><strong>Group Work session</strong></td>
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<td>17:30–18:00</td>
<td>Discussion</td>
<td>Discussion</td>
<td>Discussion</td>
<td><strong>Group Work session</strong></td>
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<td>18:00</td>
<td><strong>End of Session</strong></td>
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Annex 5 :
List of participants to RESOLAB Annual meeting, Bamako, 6 - 10 December 2010

<table>
<thead>
<tr>
<th>No</th>
<th>Country/ Orgnaiz</th>
<th>First name</th>
<th>Last Name</th>
<th>Title</th>
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<td></td>
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