PEOPLES DEMOCRATIC REPUBLIC OF ETHIOPIA

Institutional and Policy Support Team (IPST)

African Union / Interafrican Bureau for Animal Resources (AU/IBAR)

Report of
Consultancy to Support Restructuring of Government Veterinary Services in Ethiopia

by

Peter Moorhouse
Veterinary Epidemiologist

9th June to 20th July 2004

RDP Livestock Services
P.O. Box 523, 3700 AM Zeist
The Netherlands

Tel: + 31 30 69 21566
e-mail: office@grminternational.nl

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List of Abbreviations and Acronyms

AU/IBAR	African Union / Inter African Bureau of Animal Resources
CAHW	Community-based Animal Health Worker
CVO	Chief Veterinary Officer – the Director, Federal Vet Dept
EVA	Ethiopian Veterinary Association
FAO	Food and Agriculture Organisation of the United Nations
NAHIS	National Animal Health Information System
NAHRC	National Animal Health Research Centre
OIE	Organisation International des Epizooties
QIT	Quarantine and Inspection Team
VEPT	Veterinary Epidemiology and Policy Team

1. Executive Summary

This is the report of a 6-week mission to support the Director, Veterinary Department, Government of the Peoples Democratic Republic of Ethiopia in the process of preparing a proposal to restructure veterinary services in Ethiopia.

The first task was to review the current structure of Ethiopian veterinary services. The major finding was the very weak control of federal veterinary services over implementation of national polices due to decentralisation and the establishment of autonomous veterinary departments in each of the ten regions, as a result it cannot consistently implement national policies throughout the country. Similarly the veterinary laboratory service was fragmented. The lack of national policy for privatisation / cost recovery / and possible subcontracting of some public sector responsibilities to the private sector, coupled with decentralisation mean that the regions pursue policies aimed at maintained the status quo.

In summary, federal veterinary services have the responsibilities to protect animal health, safeguard public health, and facilitate trade, etc., but lack the authority to discharge these responsibilities. As a result, with the exception of rinderpest control (which is centralised) disease control is poor, surveillance weak, and there are no policies or opportunities for veterinary services to concentrate on core functions

The main principles applied to design of an improved structure for veterinary services were:

- To base as many activities as possible on international accepted standards and recommendations;

- For public veterinary services to concentrate on core functions and to divest non-core functions to the private sector – the rate at which this can be achieved would depend on growth of the, currently embryonic, private sector. Additionally certain public good activities should be subcontracted to the private sector;

- To centralise control of core activities such that the Director, federal veterinary department has full authority to implement these functions nation-wide;

- To centralise the veterinary laboratory service, establish a national lead laboratory to which the network of regional laboratories would be accountable;

- For policy making to be properly informed by relevant, timely and reliable information. A major policy element should be to promote export trade;

- To establish an independent statutory body to regulate veterinarians and other veterinary workers.;

- To make maximum use of innovatory and community-based animal health delivery systems.

Proposals for restructuring veterinary services were submitted by the CVO to senior decision makers on 22 June 2004. After a period of discussion and relatively minor amendments these proposals were accepted by mid-July and, on 19th July presented at a workshop to representatives of 4 regions (Tigray, Amhara, Oromiya and Southern NP). Broad agreement was obtained and a final document including comments from the workshop is being prepared. This final document will be submitted for approval by the Council of Ministers following which the required legislation will be prepared and enacted.

A series of detailed documents (Annex II) was prepared giving proposals for the restructuring of veterinary services based on the above guidelines.

The process of changing from the current to the new streamlined and technically more challenging system has been addressed, and the provision of a technical support team recommended.

2. Introduction

This is the report of a 6-week mission to support the Director, Veterinary Department, Government of the Peoples Democratic Republic of Ethiopia (CVO) to prepare a plan for the restructuring of veterinary services in Ethiopia and carried out by Peter Moorhouse of RDP Livestock Services from 9th June to 20th July 2004.

The need for more effective veterinary services arose from new opportunities to export livestock and livestock products to a major importing nation. Thus the need for enhanced capability to assure the health and safety of export livestock and livestock products was the driving force for change and the process of planning a new structure to deliver veterinary services became a political imperative and as a result haste became the order of the day.

This political imperative presented the CVO with a unique opportunity to propose a radically new structure for delivery of veterinary services.

A first draft proposal was submitted by the CVO, shortly before mobilisation of the reporting officer on 9th June. This document was rejected as it was poorly structured and did not adequately address the main issues, namely: defining core functions; identify means of effective implementation of these functions; clearly defining the roles of the federal and regional veterinary services; and concentrating on enabling the export trade.

The proposed expert consultation workshop with Ministry of Agriculture and Rural Development staff and experts from AU/IBAR and FAO was overtaken by events and cancelled as its findings and recommendations would have been too late for inclusion in proposals submitted to senior decision makers.

The terms of reference for this assignment are presented in Annex I.

3. Approach

3.1 Introduction

Core functions were identified and discussed with the CVO and his senior officers. Due to the speed at which restructuring proposals were required, there was insufficient time to conduct a formal core function analysis, nor to consult widely with stakeholders.

During discussions with the CVO and his senior officers, guidance was offered on the approach that should be taken, including the need to demonstrate and apply their specialist technical knowledge and experience during meetings with senior decision makers.

The current structure of veterinary services was appraised for its ability to support exports of livestock and livestock products. The latter requires an efficient and transparent veterinary services that can gain the trust of veterinary services of importing countries, implying:

- Accurate and up-to-date knowledge of the patterns of disease occurrence in Ethiopia, including knowledge of which diseases are present, where and when they occur, populations at risk and disease frequency.

- Ability to demonstrate, in scientific terms, the absence of a specified disease in Ethiopia, or a defined part thereof

- Implementation of effective polices to control / eradicate important diseases that are known to occur in Ethiopia

- Effective early warning and early reaction capabilities so that disease incursions can be swiftly identified, contained and eradicated

- An efficient veterinary laboratory service that is capable of diagnosing important diseases and that utilises international (OIE) quality standards and recommendations

- A core of veterinarians that is regulated and controlled by a statutory professional body – a veterinary council

3.2 Documents prepared

Having identified the strengths and weaknesses of the current structure of veterinary services, a series of 1-page data sheets and 6-11 page outlines of recommendations, one for each major function was prepared by the reporting officer to assist and inform the CVO in the process of preparing the new restructuring proposal. This new proposal was formally submitted to senior decision makers by the CVO on 22nd June 2004.

To guide and assist national officers a set of background documents was drawn up, copied, bound and distributed to the CVO and his team – documents included Core function analysis, Principles of rational delivery of public and private veterinary services with reference to Africa, FAO, (1997), Animal health services: Finding the balance between public and private delivery, World Bank Research Observer, Vol 9 No 1 71-96, Evaluating the resources of veterinary services (OIE, 2003), Reform of Veterinary Services: A policy framework (FAO, 2001).

Thereafter the reporting officer, in consultation with the CVO, developed the above outlines into detailed proposals, including current and proposed status, economic considerations, prerequisites, mission, organisation and terms of reference, linkages and communications, empowerment, staff and other resources (including terms of reference for staff), and short- and medium-term activities. One such proposal was prepared for each of the following:

- Animal disease control team
- Veterinary epidemiology and policy team
- Privatisation team
- Quarantine and inspection team
- Veterinary Laboratory Services

At the request of the CVO a preliminary proposal was prepared for establishment of a Quality Control Laboratories for (a) livestock products, and (b) veterinary drugs and vaccines.

Copies of the above documents are presented in Annex II.

3.3 Documents consulted

A number of documents was consulted and used during the mission, including:

- International Animal Health Code 2002 of the Organisation International des Epizooties (OIE) - particularly the chapters relating to Evaluation of Veterinary Services
- OIE Manual of Diagnostic Tests and Vaccines for Terrestrial Animals
- Veterinary Services: organisation, quality assurance, evaluation. OIE Scientific and Technical Review, 22 (2) 2003
- Veterinary Institutions in the developing world: current status and future needs. OIE Scientific and Technical Review, 23 (1) 2004
- Organisation of Veterinary Services and Food Safety, in Proceedings of the OIE Seminar, Tunis, September 2002
- Reform of Veterinary Services: A policy framework (FAO, 2001)
- Policy on Community-based Animal Health Workers of the African Union / Inter African Bureau for Animal Resources
- Livestock Development Plan 2000-2004, Ministry of Agriculture, Food and Fisheries, Government of Zambia.
- Core Function Analysis – Experience from Zimbabwe, Anon

- Para-veterinary professionals and the development of quality, self-sustaining, community-based services. Catley et al. OIE Scientific and Technical Review, 23 (1) 2004
- Principles of rational delivery of public and private veterinary services with reference to Africa, FAO, (1997)
- Animal health services: Finding the balance between public and private delivery, World Bank Research Observer, Vol 9 No 1 71-96

4. Current Status of Veterinary Services

Veterinary services in Ethiopia are characterised by a serious disconnect in the control and command structure between the central federal service and the field services which are controlled by the autonomous regions. There are two important exceptions to this general rule (a) rinderpest control, which is an integral component of the regional Pan African Control of Epizootics programme, and (b) quarantine and inspection export services.

This disconnect greatly weakens the federal service: this service has responsibility but very little authority for protecting the health and productivity of national livestock populations, safeguarding public health, facilitating domestic and international trade in livestock and livestock products, and promoting animal welfare.

The veterinary laboratory service is fragmented and uncoordinated and lacks a national lead laboratory. It basically consists of 10 regional laboratories that are under the control of regional authorities. A further 4 regional laboratories are under construction.

There is no independent statutory body to control and regulate the veterinary profession.

The CVO lacks the power to implement national polices, as a result disease control measures (with the exception of rinderpest) are uncoordinated, disease surveillance is poor and incomplete, and there can be no national policy for public-private partnerships in provision of veterinary services.

Export quarantine stations are of poor quality and certainly do not meet international requirements.

There is no clear policy of divesting non-core activities to the private sector. The provision of veterinary clinical and artificial insemination services should be a clear contender here. However regional policies are to embed provision of these (highly subsidised) services in the remit of the public sector, and indeed to expand provision of these services by constructing more clinics.

5. Proposed Status of Veterinary Services

5.1 Principles

The following principles were applied to the new structure for delivery of animal health services:

- Central control (by the CVO) over implementation of core functions must be restored so that national disease control and other policies can consistently be applied across the whole country, and compliance and quality of disease surveillance and monitoring programmes are substantially increased.

- Full cost recovery must be applied for: inspection and certification services (meat inspection, export inspections and certification, veterinary drug and vaccine inspections etc); and veterinary clinical services.

- Non-core activities should be divested to the private sector: the rate at which this can be implemented will be determined by the size of the private veterinary sector

- The veterinary laboratory service (VLS) must be re-centralised, establish a lead national veterinary laboratory (which should work towards accreditation as a regional reference laboratory for 1 or more diseases), encourage regional laboratories to specialise, and develop a prioritised research programme for the VLS,

- The development of innovative community-based animal health delivery systems must be encouraged to enable delivery of these services, assure early warning capability, and improve disease surveillance in the pastoral (and other) areas

- Public-private partnership arrangements are to be encouraged, particularly:

    - To enable development of new systems to ensure compliance of export livestock with requirements of the importing country - these may include construction of quarantine stations, establishment of secure stock routes, and development of compartments for export stock.
    - For implementation of public good and contestable activities such as: implementation of vaccination campaigns; implementation of field studies and surveys; meat inspection; market inspections; and management of quarantine stations.

- An independent veterinary council must be established to regulate the veterinary profession, para-veterinarians, and community-based animal health workers

- A system is required to manage the significant changes implicit in implementation of the above, and to provide required technical support.

It is proposed that the number of federal veterinary teams be expanded to four as shown below and a veterinary laboratory service be re-established:

- Disease control team
- Veterinary epidemiology and policy team
- Quarantine and inspection team
- Veterinary privatisation team

In addition a policy advisory team, comprised of the CVO and his team leaders would be formed to review and amend the policies of the Veterinary Department.

During the transition between the current decentralised system and the new system it is proposed that a technical advisory group be established to assist and advise the CVO and his staff to:

- Manage the change.
- Acquire the new technical skills that will be required (for example preparing tenders and contracts for subcontracting contestable activities to the private sector, managing public/private partnerships, informed policy making, analysis and evaluation of data, etc)

A summary of recommendations is presented below, by function. Full details are provided in Annex II.

5.2 Disease control team

The key features for the disease control team are:

- Recentralise control over control of important diseases
- Coordinate use of federal and regional funds to maximise effectiveness
- The disease control team will: ensure efficient implementation of national disease control policies; lead the process of emergency preparedness to enable swift and effective action is taken in event of disease emergencies; and to monitor the implementation of disease control policies and their affects.
- Disease control policy making to be informed by output of national animal health information system
- Need full legislative support
- Capacity building particularly in policy, planning and regulation

5.3 Veterinary Epidemiology and policy team

The key issues for the Veterinary Epidemiology and Policy Team (VEPT) are:

- Develop an effective early warning system, including conducting risk assessments to identify and prioritise disease hazards to Ethiopian livestock populations, maximising use of community based animal health workers, and raising awareness.
- In close collaboration with regional veterinary epidemiology units take advantage of the new direct linkages between the Federal Veterinary department and veterinary field officers, maximise coverage by the passive disease reporting system and work with the VLS to improve the quality of reported data
- Establish database management systems, collectively the national animal health information system (NAHIS) incorporating GIS facility, to handle data from field, laboratory and abattoir reports
- Draw up a prioritised programme of active field studies and surveys to be carried out by the veterinary field service , and maximise use of participatory epidemiological methods in pastoral (and other) areas.
- Using NAHIS data, conduct economic analyses and evaluations in order to identify the most appropriate and cost effective polices for control of selected diseases.
- Using NAHIS data monitor the implementation and effectiveness of disease control policies

5.4 Quarantine and Inspection team

The export-oriented activities of the quarantine and inspection service are largely centralised. The most important issue for the Quarantine and Inspection Team (QIT) is to ensure that inspection and quarantine services are consistently of high quality, are carried out with independence, impartiality and integrity, and satisfy international requirements.

Achieving standards of high quality will involve:

- In close liaison with the veterinary epidemiology and policy team determine if the requirements of exporters can be satisfied - in terms of the disease status of animals and areas of origin and through which animals are moved, etc.

- In close liaison with the veterinary laboratory service ensure that tests of clinical specimens (eg serum) and products are promptly carried out in accordance with international standards.

- In close liaison with the disease control team ensure that appropriate disease control measures are taken in defined livestock populations (for example export zones, and around quarantine stations) to satisfy the requirements of importing countries.

- Base standards on OIE guidelines and recommendations

- Improve standards of quarantine stations so that international requirements are met

- Establish inspection points at important border crossings and international airports.

5.5 Veterinary Laboratory Services

The key issues for the veterinary laboratory services are:

- Return the National Animal Health Research Centre (NAHRC) to the Ministry of Agriculture and Food and place under the direct control of the CVO, re-designate as the lead national veterinary laboratory, provide equipment and other resources, encourage development of expertise aimed at recognition as a regional / world reference laboratory

- Return the regional veterinary laboratories to the Ministry of Agriculture and Food and place under the direct control of the lead national laboratory. Encourage regional laboratories to specialise.

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- As part of the essential early warning/early response capability, undertake rapid investigation and diagnosis of the cause of outbreaks of (suspected) serious diseases.

- Undertake active field studies and surveys of disease as required by the VEPT in support of export certification and disease control

- Provide diagnostic support to veterinary clinicians in the public and private sectors

- Enable effective monitoring of patterns of occurrence of enzootic diseases by computerized management of laboratory data.

- Eventually participate with private practitioners in developing herd health and production programmes

- Undertake prioritized animal disease research.

- Provide the highest possible standards of accuracy and reliability

5.6 Privatisation

The privatisation team would guide and develop community-based animal health delivery systems, encourage and assist regional veterinary services to divest non-core functions to the private sector, encourage and assist regional veterinary services to subcontract contestable activities to the private sector.

The key issues for the privatisation team are:

- Formulating a clear exit strategy for the public sector.

- Creation of an enabling environment for private practitioners, including

    - Legislation to provide govern private practice and thereby give potential practitioners confidence
    - Implementation of a policy of ***full cost recovery*** by regional veterinary departments
    - Controls to assure the quality of veterinary drugs and vaccines
    - Promoting the financial viability of private practices by advising and assisting in form of standard methods for contracting implementation of public good services (such as vaccination, collection of blood samples for sero-epidemiological studies, inspection services, etc) to the private sector, including drawing up tender documents, selection of winning tenders, supervision and monitoring of contractors, certifying work of contractors, paying contractors, dealing with problems, defaulters etc

- Promoting availability of finance required to start up a new practice.

- In collaboration with the Ethiopian Veterinary Association (EVA), the regional veterinary departments and the Veterinary Council monitor the activities of the informal sector.

- In collaboration with the EVA and the regional veterinary departments monitor the progress of divestment and award of sanitary mandates to verify that national policy is being implemented. Resolve problems through consultation and involvement of important stakeholders.

- Coordinate CAHW activities and development of animal health delivery models in Ethiopia and acting as a documentation and resource centre

- Creating an enabling environment for development and testing of new animal health delivery systems.

- Ensuring transparency in subcontracting contestable activities.

- Monitoring of subcontracting, including proportion of identified activities that is contracted, the performance of contractors, default rate, etc.

- Using expertise as and when required, including legal expertise in drawing up model contracts and tendering procedures.

- Being available to advise and assist in resolving problems as they arise.

- Designating officers in regional veterinary departments who will be directly responsible for implementation at the regional and woreda levels.

CAPE has made it known to the Director, VD, that it will assist in establishment of the proposed Veterinary Privatisation Team by providing computer equipment and accessories, furniture and so on.

5.7 Other bodies important to restructuring of Veterinary Services

5.7.1 Policy advisory team

The formal establishment of a permanent advisory committee to advise and assist the CVO in policy formulation and similar matters is recommended. This committee would comprise the CVO, the 4 veterinary team leaders, the Head of the national lead veterinary laboratory, and any others as deemed necessary.

As required other members should be co-opted from time to time, including important stakeholders, heads of regional veterinary departments, etc.

5.7.2 Technical advisory team

The process of moving from the old decentralised and rather ineffective structure, to the proposed new structure that has central authority and a more focussed and demanding technical remit must be well planned and managed.

It will not drive itself and must be successful. The Veterinary Department, indeed the veterinary profession, will lose all credibility if, after having taken advantage of the unique and rare opportunity to re-design itself, it then fails to deliver expected benefits. This must not be allowed to happen.

The following points are relevant:

- The large restructuring task that has been proposed will take time, strong and confident leadership, technical competence, high levels of communication both within the system and with stakeholders, commitment, effective planning and drive.

- The process of implementing the restructured system would have two main components (a) the task of managing the proposed structural changes; and (b) that of technically strengthening, advising and guiding the restructuring g process at all levels.

- The current senior staff establishment of the Federal VD are relatively young and do not posses all of the skills that will be required.

Accordingly it is recommended that the donor community be requested to assist by fielding a team of highly experienced experts who can assist in the following fields:

- Change management – to work directly with the Director, VD and assist and advise in management, policy, personnel and communication issues.
- Information technology – to work with all teams, and in particular the Epidemiology and Policy Team
- Epidemiology, disease surveillance and monitoring, data analysis and evaluation – to work with the Epidemiology and Policy Team
- Privatisation – to work with the Veterinary Privatisation team
- Laboratory services – to work with the proposed lead national veterinary laboratory
- Export inspection and quarantine – to work with the Inspection and Quarantine team
- Veterinary legislation and regulation of veterinarians and para-veterinarians

The assistance would also fund priority fellowships and study tours for selected VD staff members.

5.7.3 An independent veterinary council

This is of crucial importance to expansion of exports of livestock and livestock products as it will regulate the veterinary profession, para-veterinarians and community-based animal health workers and thereby give the international community confidence:

- In the international certificates signed by Ethiopian veterinarians
- That para-veterinary workers and CAHWs are properly registered, trained and supervised, and accordingly required standards of disease surveillance, early warning and disease control can be achieved in pastoral and other areas

To be effective and to gain international recognition the veterinary council must be:

- Independent
- Legally empowered to:
    - Register veterinarians, para-veterinarians and CAHWs
    - Collect registration fees
    - Collect annual renewal fees
    - Establish academic standards for veterinarians, para-veterinarians and CAHWs and inspect and refer external examiners to training institutions to ensure that these standards are attained
    - Discipline veterinarians, para-veterinarians and CAHWs in case of unbecoming conduct or malpractice, including removal from the register.

It is strongly recommended that a veterinary council, adjusted to Ethiopian circumstances, be established as a priority.

5.7.4 Ethiopian Veterinary Association

The Ethiopian Veterinary Association, encompassing veterinarians, para-veterinarians and CAHWs is an extremely important stakeholder in delivery of animal health services.

Not only should it be consulted in policy and other matters but can also directly assist the restructuring process by participating together with the veterinary privatisation team and regional veterinary departments in monitoring the progress of divestment of veterinary clinical and artificial insemination services and of subcontracting contestable activities to the private sector..

6. Current status of proposals for re-structuring veterinary services

6.1 The contents of the proposal.

The restructuring proposal was submitted to senior decision makers on 22 June 2004; it was approved by them in mid-July after a series of relatively minor modifications.

It should be noted that all proposals prepared by the CVO and his senior staff for submission to senior decision makers were totally in the Amharic language. On 14th July the reporting officer was handed a copy of the approved document for translation into English. Translation was completed on 17th July.

A final version of the restructuring proposals was distributed to the regions in the week ending 16 July 2004. An English translation of this document is presented as Annex III.

The proposals included the following:

- The Federal Veterinary Service must be responsible for, and have required authority to prevent and control transboundary diseases (TADS) and to implement a nation-wide disease surveillance and monitoring programme. Legislation will be enacted making regional veterinary services accountable to the federal service for all control and surveillance activities for the TADS.
- Information generated by the national disease surveillance and monitoring system will inform disease control policy formulation and monitoring. Disease control policy shall include emergency preparedness, early warning and early reaction.
- Existing veterinary laboratories should be brought under the direct control of Federal Veterinary Service
- Targeted disease control and quarantine measures would enable control and eradication of selected diseases from defined zones
- Data for the animal health information system shall be transmitted using the most rapid means available, which may be by internet, telephone or radio.
- Strategies are included in the plans for many important diseases, including: PPR, CCPP, CBPP, sheep pox, RVF, FMD, ND, and LSD. Federal and regional veterinary services shall cooperate in measures to control trypanosomosis.
- The Federal Veterinary Service shall be responsible for supervision of export abattoirs and quarantine stations. Additional facilities will be constructed and professional staff capacity will be strengthened through 6-month in-service training
- Local quarantines and control of livestock movement will be improved. These measures will be implemented by regional veterinary services
- Meat safety and quality will be improved by controlling and inspecting markets and establishing and controlling many more local abattoirs

- Full cost recovery shall be implemented for veterinary clinical services provided by the public sector. Where possible, these services shall be privatised. Specific mention is made of CAHWs and the need to encourage, expand and ensure effective supervision of CAHW networks.
- Quality control laboratories shall be established for animal products and veterinary medical products.
- The federal veterinary service and Drug Administration and Control Authority shall cooperate to control the quality of veterinary medical products. Local production of veterinary medical products will be encouraged.
- Qualifications and training of CAHWs shall be standardised. CAHWs shall be supervised and shall participate in disease surveillance.
- Public awareness campaigns shall be carried out to improve cooperation of the public in prevention and control of animal diseases
- Legislation will be required to empower the veterinary and regional veterinary departments to implement the above measures.

Shortly before the workshop (for regional heads – see 6.2) the following items were added to the proposal:

- Where possible delivery of veterinary clinical service will be divested to the private sector[1].
- Clear descriptions of the roles and responsibilities of the various stakeholders in carrying out public sector core functions for: the Federal Veterinary Department, Regional Veterinary Departments, Woreda Veterinary Services and Animal Health Posts.

6.2 Progress made in furthering the proposed restructuring

On 19th July the CVO and his senior staff presented the proposals at a workshop chaired by the Minister of Agriculture and Deputy Prime Minister to the Presidents (or their representatives), Heads of Regional Agricultural Bureau, and Heads of Veterinary Departments of four important regions: Tigray, Amhara, Oromia and Southern P.N. Workshop participants gave agreement to the proposed re-structuring after raising the following issues:

- The relationship between the Federal and Regional Veterinary Department, and the need for legislation to empower the new structure, linkages and responsibilities

- The NAHIS will utilise the existing inter-regional communications system

- The research activities of the VLS must be reviewed and prioritised

[1] The important principle of privatisation is therefore included and will be further developed at a later stage

- The control / prevention of TADS will be a priority and the Federal VD will establish coordinated national policies and the regions will organise the required manpower.

- Quality control laboratories will be established

- A career structure must be developed for veterinarians[2]

- Control of trypanosomosis should become a normative function of national veterinary services and should not depend on donor-funded projects

The proposals will be amended by inclusion of the above issues. This final document will be submitted for approval by the Council of Ministers (scheduled for 22 July 2004) following which the required legislation will be prepared and enacted.

[2] the proposals already drawn up by the EVA would provide a good basis for this.

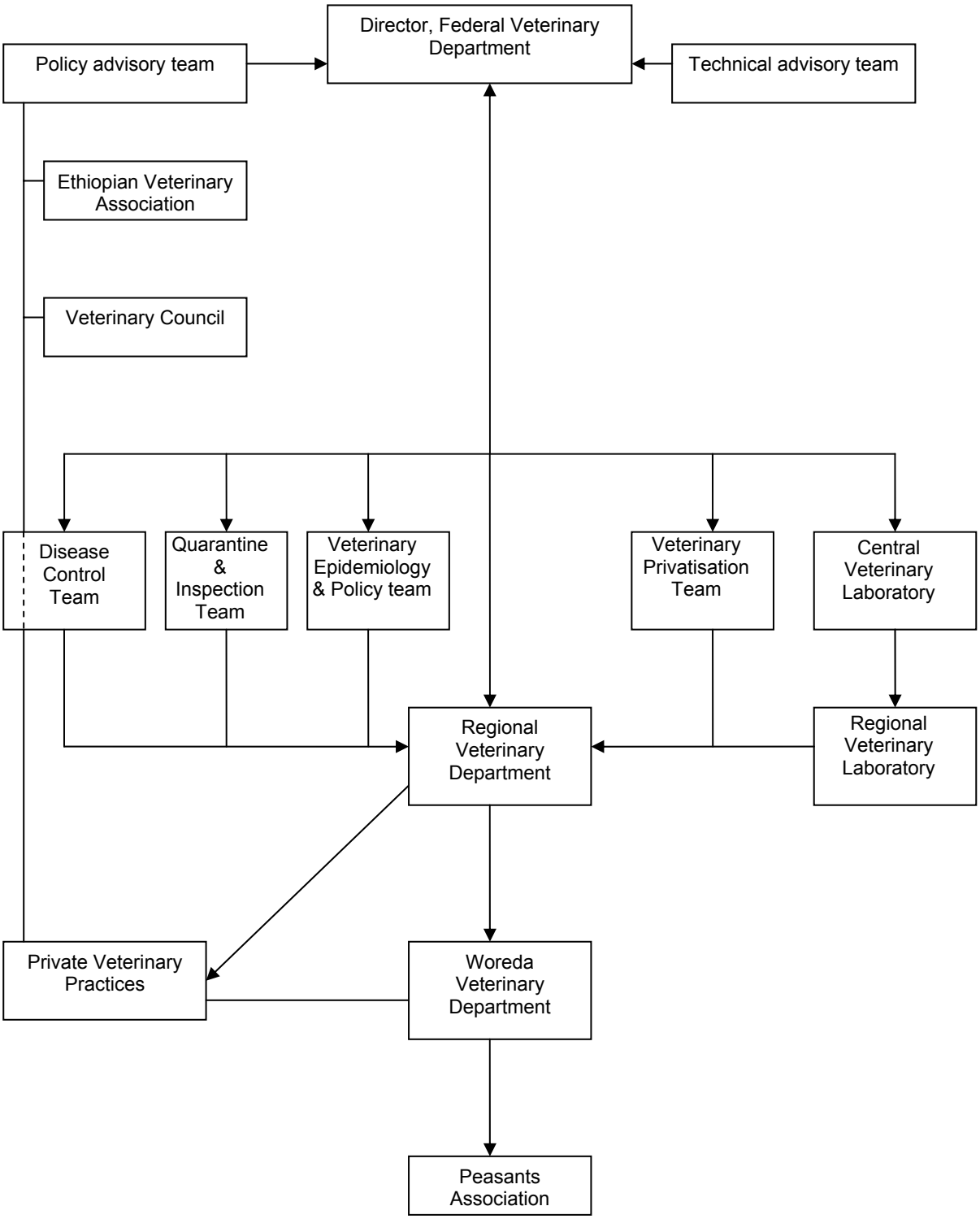
7. Acknowledgements

The reporting officer gratefully acknowledges the very willing cooperation and assistance provided by Dr Seleshe, Director, Federal Veterinary Department and his senior staff members.

The valuable assistance and guidance of Dr Berhanu Admassu, Veterinary Field Officer, AU/IBAR CAPE, Ethiopia was much appreciated.

Dr A Catley, Institutional and Policy Support Team, AU/IBAR, Nairobi provided excellent support and advice, including provision of much of the documentation used during this assignment. This greatly facilitated the work of the reporting officer and is gratefully acknowledged.

Figure 1: A summary of the proposed structure of veterinary services



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9th June to 20th July 2004

ANNEX I: TERMS OF REFERENCE

Annex One: Terms of Reference

Institutional and Policy Support Team (IPST)
African Union/Interafrican Bureau for Animal Resources (AU/IBAR)

Consultancy to Support Re-organisation of Government Veterinary Services in Ethiopia

1. Introduction

1.1 Restructuring of veterinary services

In recent a years a number of countries in the Horn of Africa and East Africa regions have experienced restructuring of veterinary services with a view to improve local, usually district-level, planning and accountability. In government veterinary services, decentralisation has been characterised by reduced central-level capacity to design or implement effective national disease control strategies. A common problem has been a break in the chain of command between central authorities and local government officers, which resulted in the weakening of the national disease surveillance systems and the control of major trans-boundary diseases. This situation reduces the potential for countries to engage in international livestock trade according to the OIE Code.

Enabling policies and legislation for veterinary privatisation are beginning to emerge and the general trend is towards increasing the role and capacity of government in executing its core functions and supporting private sector involvement in the provision of clinical services. Furthermore, the government should support veterinary privatisation by routinely contracting-out relevant public sector tasks where it is feasible. Similarly, at central level there is increasing need to enhance technical capacity with regards policy and legal reform to support privatisation.

1.2 Veterinary services in Ethiopia

Until recently, veterinary services in Ethiopia were organised according to the system of regional autonomy introduced in the early 1990s. At federal level, a Veterinary Services Team comprising eight technical personnel was located in the Ministry of Agriculture (MoA) and was responsible for developing national policies and country-wide disease control strategies. Unlike many other African countries, the Veterinary Service team did not have department status within the MoA. Within the 14 regions of Ethiopia, regional authorities established their own veterinary teams, and regional policies were developed within the general framework of the federal policies. The combination of a small federal-level veterinary team and its limited control over regional staff resulted in a deterioration of national disease surveillance capacity in Ethiopia.

In early 2004 the MoA was merged with the Ministry of Rural Development and the Livestock Marketing Authority to form a new Ministry of Agriculture and Rural Development (MoARD). Within this ministry, the Veterinary Services Team has been upgraded to department level and the new Veterinary Department has been requested to propose a new animal health system, to be finalised by end of July 2004. This presents an opportunity to review and define the core functions of government veterinary services in Ethiopia and develop a structure at federal, regional and district levels that better supports national-level epizootic disease control, international trade and privatised services. When considering how to structure veterinary services in Ethiopia, the following issues and trends are also relevant:

- In Ethiopia there is no veterinary board or council, and roles assigned to these agencies in other countries still fall under the MoARD. However, a recent proclamation[1] states that *'A veterinary council shall be established for the registration and licensing of animal health professionals'* and *'Conditions for the registration and establishment of the council shall be determined by regulations to be issued pursuant to this Proclamation'.* Consequently, the Ethiopian government is seeking to support the establishment of an independent professional body to license and regulate veterinarians and veterinary para-professionals. At the OIE General Assembly in May 2004, changes to the OIE Code to encompass veterinary para-professionals (including community-based animal health workers) were endorsed.

- Senior government officials in Ethiopia are becoming increasingly aware of the considerable potential for international livestock trade and the need for government to enable such trade through improved epizootic disease control and marketing procedures.

- There is also growing acceptance and understanding of veterinary privatisation, and the role of government at federal and regional levels to enable privatisation of clinical services. However, the concept of contracting-out public sector tasks (e.g. quarantine, meat inspection, surveillance, vaccination) requires further development, followed by strong government capacity to award and monitor contracts. Ethiopia already has a federal unit dedicated to promoting veterinary privatisation and community-based approaches; there is an opportunity to strengthen this unit and create similar units at regional level.

- In common with other countries in the Horn of Africa, Ethiopia experiences frequent droughts, floods and other calamities that prompt short-term, but often large-scale humanitarian relief interventions. The need for MoARD capacity to design and manage appropriate relief veterinary interventions should be considered, with a view to improving coherence between relief and development policies.

[1] Federal Democratic Republic of Ethiopia Proclamation No. 267/2002, 31st January 2002, Part Four.

- ‘Recentralisation’ of previously decentralised services and tasks has already taken place in some sectors of government. For example, quarantine and export abattoir meat inspection of the veterinary services, human health services enjoy strong federal control, and roads and infrastructure are also considered to require federal rather than regional-level management. Therefore, recentralisation and strengthening of other veterinary functions would not set a precedent in Ethiopia (although the justification for such changes would still be required).

2. Terms of Reference

This consultancy shall provide technical support to Federal Veterinary Services in Ethiopia to develop a new animal health system for veterinary services at federal, regional and sub-regional levels. By reference to experiences from other countries, the need for improved epizootic disease control and livestock trade, and trends in veterinary privatization and community-based approaches, the consultant will use core function analysis with senior MoARD staff to inform the design of the new system. The consultant will compile and use a series a core resource documents during this process (see Annex 1).

The consultant will work under the overall supervision of the Institutional and Policy Support Team (IPST) of AU/IBAR and in technical partnership with the MoARD. The consultant shall receive daily logistical and administrative support from the IPST Addis Ababa office. Given the short lead-in time for the consultancy, the consultant shall prepare and submit a detailed work plan to AU/IBAR within five days of starting the mission. During planning, it will be necessary to determine which tasks are conducted only with federal-level staff, and which tasks require wider consultation e.g. with regional-level staff or other stakeholders.

Specific TOR are as follows – but see amendments below:

1. Review the existing structure of veterinary services in Ethiopia, and determine the priorities and expectations of senior government officials regarding the roles of federal, regional and sub-regional veterinary services.

2. With MoARD staff lead a core function analysis of government veterinary services in Ethiopia to define the primary roles of government in relation to the private sector

3. With the MoARD, prepare a draft animal health system within the MoARD at federal, regional and sub-regional levels. The system should be task-orientated and should define the relevant operational units and personnel at all levels. The system should also explain the relationship between the MoARD and new Ethiopian Veterinary Council.

4. With the MoARD, organize and facilitate an expert consultation workshop with MoARD staff and experts from AU/IBAR and FAO. During the workshop, experts and MoARD staff shall refine the draft system and agree a final system for presentation to the government of Ethiopia including the EVA.

5. Following the expert consultation (point 4. above), work with the MoARD to add detail and finalise the new system for veterinary services in Ethiopia. This task should include a justification for each proposed change and where relevant, reference to key resource documents produced by international agencies and previous studies conducted in Ethiopia (see Annex 1). The proposed structure should also include draft Terms of Reference for all professional staff.

6. Work with the MoARD to organize and assist in the formal presentation of the proposed new systems to relevant government officials. This presentation may take the form of a brief workshop.

Duration of assignment: 42 days, including travel time
Duty Station: Addis Ababa, Ethiopia

Outputs

A consultancy report summarizing the results of TOR 1-4 above and fully detailing the final proposed structure with justification (TOR 5). The report should also propose future needs and activities required to support the restructuring process in Ethiopia.

Reporting

The consultants shall report to the Head of the IPST, AU/IBAR, Nairobi.

Qualifications of consultant

The consultants shall require a veterinary degree and extensive experience in animal health policies and veterinary service restructuring in developing countries. The consultant should have particular experience of epizootic disease control in relation to livestock trade and the OIE Code, and optimal public sector structures to support privatisation. Experience of Ethiopian veterinary services would be a considerable advantage. The consultant should have experience of working with central veterinary services and be able to communicate complex legal and institutional issues to a range of veterinary and other stakeholders.

Amended TOR

Under the overall supervision of the Institutional and Policy Support Team of AU/IBAR and in technical partnership with the MoARD, the consultant will:

1. Review the existing structure of veterinary services in Ethiopia, and determine the priorities and expectations of senior government officials regarding the roles of federal, regional and sub-regional veterinary services.

2. With MoARD staff lead a modified (shortened) core function analysis of government veterinary services in Ethiopia to define the primary roles of government in relation to the private sector.

3. With the MoARD, prepare a draft structure for veterinary services within the MoARD at federal, regional and sub-regional levels. The structure should be task-orientated and should define the relevant operational units and personnel at all levels. The structure should also explain the relationship between the MoARD and a new Ethiopian Veterinary Council – the VD shall submit this draft structure to the government of Ethiopia by the end of June 2004.

4. With the MoARD, organize and facilitate an expert consultation workshop with MoARD staff, Ethiopian Veterinary Association, and experts from AU/IBAR and FAO. During the workshop, experts and MoARD staff shall refine the draft system and these additions and improvements will be incorporated into the draft which will be resubmitted to government as part of the iterative process of developing a final system.

5. Following the expert consultation (point 4. above) and as part of the iterative process, work with the MoARD to add detail and finalise the new structure for veterinary services in Ethiopia. This task should include a justification for each proposed structural change and where relevant, reference to key resource documents produced by international agencies and previous studies conducted in Ethiopia (see Annex 1). The proposed structure should also include draft Terms of Reference for all professional staff.

6. Work with the MoARD to organize and assist in the formal presentation of the proposed new systems to relevant government officials. This presentation may take the form of a brief workshop.

Report of a Consultancy to Support Restructuring of Government Veterinary Services in Ethiopia
9th June to 20th July 2004

ANNEX II DOCUMENTS PREPARED

Contents

FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT

VETERINARY DEPARTMENT

PROPOSALS FOR RATIONALISATION AND IMPROVEMENT OF ANIMAL DISEASE CONTROL

July 2004

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PROPOSALS FOR RATIONALISATION AND IMPROVEMENT OF ANIMAL DISEASE CONTROL

1. Introduction

1.1 Background

State veterinary services (SVS) were originally established to control economically important diseases of livestock such as rinderpest and contagious bovine pleuropneumonia. This task continues and control of the important diseases of livestock and zoonoses remains a basic core function of the Veterinary Department of Ethiopia.

For the purposes of the proposed animal disease control system, animal diseases are divided into 4 groups:

i. The most serious diseases that have the potential for very serious and rapid spread, irrespective of national boundaries, which are of serious socio-economic or public health consequence and are of major importance in the international trade of animals and animal products: these are the OIE List A diseases. The FAO has refined this definition and categorised those diseases with the greatest potential to disrupt international and regional trade in livestock as the Transboundary diseases (TADs). The presence of these diseases seriously impacts on trade.

ii. Diseases that can spread from animals to man (the zoonoses) and which thus have direct socio-economic importance

iii. Other diseases of national importance, for example trypanosomosis, enzootic tick-borne diseases, and emerging diseases (for example the current ectoparasite problem of small ruminants in Amhara Region), and the real threat of introduction of East Coast fever.

iv. Diseases, the control of which is a private good, for example mastitis, trauma, dystocia, pneumonia, digestive problems, endoparasitosis etc etc. The control of these diseases is a matter for the private veterinary sector. However, given the current extreme shortage of private veterinary practices the public sector must assume responsibility for provision of veterinary clinical services and progressively divest these to the private sector as and when possible.

Several diseases in the first category, the OIE List A / TADs, occur in Ethiopia where they seriously reduce livestock production and definitely constrain and complicate the export of livestock and livestock products. Examples are shown in Table 1. These serious diseases are able to rapidly spread within and between livestock populations irregardless of national or internal administrative boundaries. This means that effective prevention / control requires national level programmes, and the

coordination of these national programmes at the regional level. Piecemeal implementation of control programmes cannot be effective.

Table 1: Reported occurrence of List A diseases in Ethiopia – 2000 to 2002

Disease	2000		2001		2002	
	O'breaks	Cases	O'breaks	Cases	O'breaks	Cases
FMD[1]	…..	12,729	88	10,572	33	4,540
PPR[2]	1	12	2	165	5	280
CBPP[3]	26	1,111	27	1,595	23	967
LSD[4]	39	10,298	145	7,954	110	8,179
Sheep goat pox	….	1,203	29	1,901	16	5,712
AHS[5]	14	101	63	1,427	28	364
Newcastle disease	8	507	34	15,094	67	2,265

[1] Foot and mouth disease [2] peste des petits ruminants [3] contagious bovine pleuropneumonia
[4] lumpy skin disease [5] African horse sickness [6] haemorrhagic septicaemia Source: OIE

A number of important zoonotic diseases occur in Ethiopian livestock, for example two fatal diseases, rabies and anthrax (summary details are presented in Table 2), and other diseases that cause severe morbidity, possibly death such as cysticercosis, hydatidosis, and tuberculosis. Not only do these diseases negatively affect livestock production and human health in Ethiopia but their presence is an additional disease constraint to export of livestock and livestock products.

Table 2: Reported occurrence of List B disease – 2000 to 2002

Disease	2000		2001		2002	
	O'breaks	Cases	O'breaks	Cases	O'breaks	Cases
Anthrax	?	?	456	6,787	384	6007
Rabies	?	?	17	221	20	61

1.2 Economic considerations

Category 1 diseases

Type of economic good

Prevention and control of the Category 1 diseases, OIE List A / TADs are definitely public goods as they exhibit low excludability (cannot exclude others from benefiting) and low rivalry (implementation of control measures by one owner does not reduce availability of these measures to other owners).

Funding

It is in the public interest that these diseases be prevented or at least effectively contained and eliminated when they do occur. To be successful, control / preventive measures must be applied at high rates in target populations (for example vaccination campaigns should achieve >80% coverage). This fact, combined with the public good nature of control of these diseases requires that all costs be borne by the public sector.

The beneficiaries

The immediate beneficiaries are:

> Livestock owners – reduced risk and uncertainly, reduced losses from these diseases, improved sales opportunities (to satisfy need for export stock) and thus increased sales revenue.
>
> Traders whose ability to export livestock and livestock products is enhanced.

The eventual beneficiaries are the peoples of Ethiopia as the national economy will be strengthened through increased export earning, and domestic prices should fall in response to increased supply of product.

Cost recovery

Not applicable

Contestability

When the private sector is well established and competitive tendering is possible then selected disease control activities, eg vaccination, should be contracted to private practitioners.

Category 2 diseases, the zoonoses

Type of economic good

Prevention and control of the zoonoses is definitely a public good as both excludability (cannot exclude others from benefiting) and rivalry (implementation of control measures by one owner does not reduce availability of these measures to other owners) are low.

Funding

It is in the public interest that these diseases be prevented or at least effectively contained and eliminated when they do occur. To be successful, control / preventive measures must be applied at high rates in target populations (for example vaccination campaigns should achieve >80%

coverage). This fact, combined with the public good nature of control of these diseases requires that all costs should generally be borne by the public sector.

The beneficiaries

The immediate beneficiaries are the consumers as the risk of infection with a zoonotic disease is reduced. Livestock owners and traders can also benefit from enhanced export opportunities.

Cost recovery

Could be applied to some activities – eg rabies vaccination of dogs and cats.

Contestability

When the private sector is well established and competitive tendering is possible then selected disease control activities, eg rabies vaccination, should be contracted to private practitioners.

Category 3 diseases 'others'

Type of economic good

Prevention and control of this group of diseases can, depending on the disease, be a public good or a private good depending on the scale of application of the control measure (if at the herd level it would be a private good, if at the area level then would be a public good) which would depend on government policy.

Funding

In general, costs would either be shared between government and consumers (to encourage wide coverage), or totally covered by the consumer.

The beneficiaries

The immediate beneficiaries are the livestock owners as the risk of infection with trypanosomosis or a tick-borne, or other, disease is reduced.

Cost recovery

Partial or full cost recovery would be applied.

Contestability

When the private sector is well established and competitive tendering is possible then selected disease control activities, eg management of tsetse traps should be contracted to private practitioners.

2. Overview

2.1 Current and proposed status

The prevention / control of the important diseases that have the potential for rapid spread through susceptible livestock populations require the coordinated implementation of appropriate measures at the national and supra-national levels. Accordingly the Federal Veterinary Department must be able to plan, implement and monitor disease control programmes at the national level which, in the context of Ethiopia, requires direct lines of authority and control from the (Federal) centre to the regions, thence to the woredas and woreda veterinary staff, and the peasants' associations (PAs).

2.1.1 Current status

Currently this essential direct line of authority is only in place as an ad hoc measure promoted by the Pan African Control of Epizootics project (PACE) for the prevention and control of rinderpest. As a result, strategies for early detection and rapid response to outbreaks of rinderpest are very successful. Prevention / control of other important diseases such as foot and mouth disease, peste des petits ruminants, contagious bovine pleuropneumonia, lumpy skin disease, sheep and goat pox etc. are greatly constrained by the disconnect between the Federal VD and the regional VS which means that is it not possible to implement nation-wide and coordinated disease control policies.

A further constraint to disease control is the lack of reliable epidemiological data to inform disease control policy formulation and enable monitoring of the progress of implemented disease control measures.

2.1.2 Proposed status

The proposed Disease Control Team (DCT) would basically serve as a project management team - with the 'projects' being disease control policies.

For the effective control / prevention of economically important disease the proposed new system will include the following:

- Formal and direct lines of authority from the federal level to the regions, woredas and PAs, that are embedded in law, so that national disease control policies can be implemented throughout Ethiopia.

- Mechanisms (mandatory national policy, exchange of information, decision making, dispute resolution) to enable coordinated use of federal-level and regional-level funds for implementing national disease control policy

- Forums at which national policy and plans for its implementation can be discussed between the regional veterinary departments and the VD

- Effective disease surveillance to enable informed policy formulation and monitoring, and the rapid detection of disease outbreaks (early warning)

- Full legislative support for necessary control measures – eg quarantine around outbreaks, slaughter of infected animals, compulsory vaccination, designation of notifiable diseases, powers of veterinary inspectors, etc. This would include the necessary rapid response to contain and eradicate outbreaks of TADs and other important diseases.

- Enhanced planning capability, particularly for emergency preparedness and formulation of a contingency plan for each target disease- these contingency plans would take into account disease epidemiology.

- Capacity building to enable the required levels of planning, policy formulation and regulation.

2.2 Prerequisites

An effective disease control system will require:

- Suitable **organization** to enable it to discharge its responsibilities, and including linkages, awareness creation, communications, and empowerment

- Clearly defined **functions** that will enable it to effectively and efficiently attain its objectives – for this purpose a mission statement and terms of reference will be required.

- Qualified and experienced **staff** to enable it to carry out its various functions.

- Adequate **resources**, in terms of: qualified and experienced field staff, equipment, consumables, cold chain equipment, transport and operating funds; office accommodation

- Effective national contingency planning and emergency preparedness so that a rapid, effective and pre-planned response can be mounted to all disease emergencies.

2.3 The Disease control team

2.3.1 Basic working principles

The basic working principles of the DCT would be:

- To implement the suite of priority disease control priorities identified by the Director, VD, DCT and the Veterinary Epidemiology and Policy Team (VEPT), which will involve the following:

- In close liaison with the veterinary epidemiology and policy team establish disease control priorities, and formulate practical action plans for implementation of the control strategy for each of the priority diseases

- Matching each annual work plan with the available resources – as resources are always limited this will often mean that not all priorities can be addressed. This process of redefining priorities would be undertaken in consultation with the Director, VD, and VEPT

- In close liaison with each regional veterinary department draw up plans for implementation of national disease control policies in that region, including transport, staff, equipment, consumables, vaccines, public awareness campaigning, and monitoring, utilizing both regional and federal funds.

The DCT would take a three pronged approach to disease control:

i. Efficient implementation of national disease control policy according to the annual work plan and budget

ii. As far as possible prepare for disease emergencies by:

- Liaising with the VEPT to identify disease risks to Ethiopian livestock populations and prepare by ensuring that a rapid response capability is ready for implementation

- Leading the process of establishing emergency preparedness procedures and contingency plans

iii. Monitoring the implementation of disease control policies, in terms of (a) attainment of targets in the annual work plan and budget (eg numbers of animals vaccinated or tested, and expenditure), and (b) the affects of a policy on the frequency of occurrence of the target disease.

In close collaboration with the Inspection and Quarantine team, the DCT would also be closely involved with planning and implementation / support of innovative export-oriented disease control concepts such as:

- Disease free zonation - currently impractical due to lack of a really effective national disease surveillance system, uncontrolled movement of unidentified livestock and problems in taking a national perspective to control of TADs

.

- A livestock and meat export marketing system, involving multistage bio-secure holding and quarantine stations, and

- The Excelex system, a rolling quarantine enabling examination and certification of livestock for export.

3. Mission and terms of reference for the NVLS.

3.1 Mission

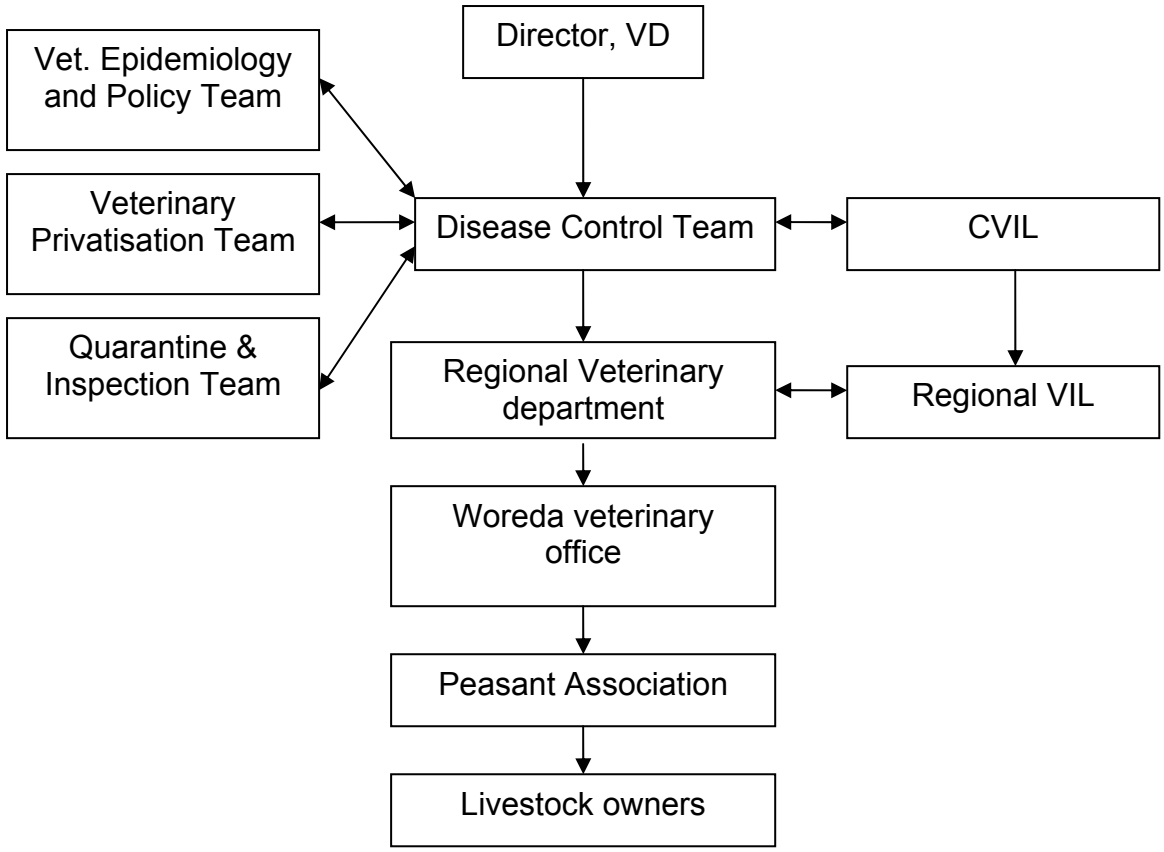
The disease control team requires a mission statement to guide and focus its work. The Veterinary Department (VD) and staff of the DCT should jointly develop an appropriate statement. The following will provide a basis for these discussions.

> The DCT shall work towards improving livestock productivity, protecting human health and promoting export of livestock and livestock by taking a proactive approach to control of TADs and by efficient and effective planning, implementation and monitoring of national disease control policies.

3.2 Organization and terms of reference

3.2.1 Organization

Figure 1: Proposed structure and lines of authority of DCT



3.2.2 Components of the disease control system

a. Federal DCT

This would be the national planning, coordination and monitoring unit, including finance, emergency preparedness and contingency planning

b. Regional Veterinary Departments

Ideally, there would be a dedicated disease control team in each regional veterinary department to ensure that national disease control policy is implemented at the regional level by planning, coordinating and monitoring activities of the woreda offices. This would influence the mode of implementation by promoting public-private partnership arrangements and the use of sanitary mandates (to subcontract implementation of vaccination campaigns etc. to the private sector).

c. Woreda veterinary offices

These offices are the grassroots level at which policies are actually implemented. Under direction of the Regional Veterinary Department the Woreda veterinary staff would ensure that field-based activities (such as vaccination, early detection and early reaction to outbreaks of disease, testing, movement control, and so on) are carried out according to plan either (a) through implementation by public sector staff where there are no private veterinary practices to which these activities could be sub-contracted, or (b) on contract by private veterinary practices – including veterinary-supervised community-based animal health delivery systems where present.

d. Veterinary Epidemiology and Policy Team (VEPT)

The VEPT, in consultation with the Director, VD and the DCT, would advise and assist (using results of economic analyses, current knowledge of disease patterns and threats etc) in establishing disease control priorities and in identifying and describing the optimal disease control policy for each selected priority disease. By making use of the NAHIS, the team would also assist in monitoring the implementation and affect of disease control policies.

e. Veterinary Privatization team (VPT)

The activities of this team will be important to the implementation of national disease control policies as they include:

- Coordination, supervision, standards etc of community-based animal health delivery systems which will be essential to implementation of vaccination campaigns in the pastoral areas.

- Subcontracting disease control / prevention activities such as vaccination to private veterinary practices

f. Inspection and Quarantine Team (IQT)

A major thrust of the Inspection and Quarantine Team (IQT) is to enable exports of livestock and livestock products. The disease-free status of defined populations is a vitally important element in international veterinary certification (a role of the inspection unit). The IQT is also responsible for quarantine of export livestock and quarantine stations require an enveloping disease free zone, and disease-free livestock populations in the area. Thus the disease control prevention / eradication activities of the DCT will significantly impact on the work of the IQT.

g. Veterinary private practices

It has been proposed that the eventual policy of the public sector should be to subcontract implementation of many public good activities (vaccination, mass testing etc) to the private sector – ie to private veterinary practices. These practices will thus become important players in disease control policy implementation.

h. Other players

Attaining high levels of (vaccination, testing etc) coverage of target populations will be greatly enhanced by transparency and communication with a wide range of players. These would include livestock owners, traders, exporters, processors, extension workers, administrators, etc.

Forums must therefore be established to enable the VD to publicize and explain its policies, and to respond to the concerns of the livestock sub sector.

i. Donor agencies

Donor agencies could, depending on their priorities, assist in providing resources, training opportunities, and technical support to disease control efforts.

3.3 The Federal Disease Control Team

3.3.1 Terms of reference

The following terms of reference for the DCT are proposed:

The DCT shall:

- In close collaboration with the VEPT identify disease control priorities and participate in selecting the best disease control policy for each priority disease.

- In close collaboration with regional veterinary departments identify available regional resources in terms of staff, transport, cold chain equipment, funds, etc. Use findings, together with available Federal resources, to determine total resources available.

- With knowledge of available resources, prepare regional annual work plans and budgets to cover implementation of prioritized national disease control policies.

- In close collaboration with the VEPT monitor the implementation and affects of disease control policies. Promptly correct any problems / deficiencies that are identified.

- Lead the process of preparing and updating of emergency preparedness and contingency planning.

- Ensure that advance plans (emergency preparedness and contingency plans) are promptly implemented as required.

3.3.2 Working principles

The work of the DCT would largely be formalizing national disease control policy, communicating this to, and discussing with regional veterinary departments, coordinating the use of resources to maximum affect, monitoring, and proactive planning for emergencies

The DCT, as proposed, would therefore be a project management facility, concentrating on planning, financial control, coordinating regional efforts and monitoring.

3.3.3 Emergency preparedness

The following summary comments were derived from the comprehensive descriptions of emergency preparedness and contingency planning to be found in the FAO AGA Manual on the Preparation of National Animal Disease Emergency Preparedness Plans.

A coordinated national approach is required for effective animal disease emergency preparedness. The Director, VD, should have overall technical responsibility for emergency preparedness and management of animal health emergencies.

Advance agreement should be reached with other Ministries, for example Ministry of Health for enzootic disease emergencies such as RVF

Of critical importance is the development of coordinated and efficient mechanisms for the rapid exchange of emergency disease reports and other key epidemiological information between the two agencies.

In order to have emergency preparedness planning recognized as an important core function of national veterinary services, and to have adequate funding and other resources allocated to these activities, the CVO must gain the support of all interested parties, including the CVO's own minister and senior ministry officials, other government departments and agencies including national economic development planning authorities, farming communities and organizations, livestock marketing authorities, livestock traders and exporters and livestock product processors. This will require making a strong case for allocation of necessary funds.

A National Animal Disease Emergency Planning Committee (NADEPC) should be appointed to facilitate and coordinate emergency planning, chaired by the CVO and hold regular meetings to carry out the following functions:

- commissioning of risk assessments on high-priority disease threats and subsequent identification of those diseases whose occurrence would constitute a national emergency;
- appointment of drafting teams for the preparation, monitoring and approval of contingency plans and other documents;
- liaison with, and involvement of, relevant persons and organizations outside the government animal health services who also have a role in animal health emergency preparedness planning
- enhancement of the capabilities of emergency field and laboratory veterinary services, especially for specific high-priority livestock disease emergencies;
- development of active disease surveillance and epidemiological analysis capabilities and of emergency reporting systems;
- staff training and farmer awareness programmes;
- assessment of resources needs and planning for their provision during animal health emergencies;
- drafting of legislation and development of financial plans;
- implementation of simulation exercises to test and modify animal health emergency plans and preparedness;
- overall monitoring of the national state of preparedness for animal health emergencies.

A National Animal Disease Emergency Planning Officer should be appointed. This officer should be a senior veterinary officer with training in epidemiology and wide field experience in the management of disease control programmes. If circumstances warrant it, a small unit of professionals should also be appointed.

The national animal disease preparedness should be a component of the national disaster plan that is aimed at specific natural disasters of an emergency nature such as droughts and floods. A strong case can be made for the official recognition of a disease emergency as a defined natural disaster situation which can be incorporated into the national disaster plan. An epidemic of a transboundary animal disease, for

example, has the same characteristics as other natural disasters: it is often a sudden and unexpected event, has the potential to cause major socio-economic consequences of national dimensions and even threaten food security, may endanger human life and requires a rapid national response.

Once approval has been given for the recognition of animal health emergencies within the national disaster plan, a set of standard operating procedures should be prepared and agreed with all cooperating agencies

Finally, they should establish the formal relationship between the various agencies and the chain of command. It should be emphasized that the Ministry of Agriculture (or equivalent ministry responsible for animal disease issues) is the lead combat authority during the emergency response.

It is clear that for these things to happen quickly and efficiently in an emergency, the veterinary services for a country must be placed in a command structure or line-management system at least for the duration of the emergency response.

3.3.4 Contingency planning

Good contingency planning will include:

- Well documented contingency action plans for specific and high priority diseases
- A series of generic plans for common activities, for example setting up local animal disease control centres.
- Resource plans
- Financial plans
- Legislative backing

Contingency plans must be considered in advance by all major stakeholders – State Veterinary Services, private practitioners, livestock owners' organizations etc.

a. Technical contingency plans

Technical contingency plans will include strategies to detect, contain and eliminate the disease using standard operating procedures, job descriptions for all involved personnel and manuals for enterprises that may be involved

Specific action plans would include information on disease aetiology, susceptible species, distribution, clinical signs and pathology, risk profile, likely methods of introduction and areas at high risk, disease reporting, diagnosis and world/regional reference laboratories, policy, zoning, control and eradication policy, etc.

Standard operating procedures should be drawn up to cover generic items such as organization of the national and local disease control centres, emergency disease reporting systems, field diagnosis and surveillance, cleaning and disinfection, planning vaccination programmes, valuation and compensation, extension and awareness campaigns,

Manuals should be prepared described actions that should be taken by other enterprises that may be involved – eg livestock markets, abattoirs, processing plants, dairy factories, animal quarantine stations, etc.

c. Financial plans

Experience has shown that delay in obtaining finances is one of the major constraints to the rapid response to emergency disease outbreaks. Forward financial planning is therefore an essential component of preparedness. Financial plans need to be developed which provide for the immediate provision of contingency funds to respond to disease emergencies.

d. Resource plans

The first step in preparing a resource plan is to make a resource inventory, listing all the resources that will be needed to respond to a moderate sized outbreak of each of the high-priority emergency diseases. This includes personnel, equipment and other physical resources.

e. Legislation

Preparedness planning should include legislation or government regulations that provide the legislative framework and powers to carry out all necessary disease control actions.

f. Simulation exercises

Simulation exercises are extremely useful for testing and refining contingency plans in advance of any disease emergency. They are also a valuable means of building teams for emergency disease responses and for training individual staff

g. Training

All staff should be thoroughly trained in their roles, duties and responsibilities in a disease emergency. Obviously more intensive training will need to be given to those who will be in key positions. It should also be borne in mind that any staff member, from the CVO downwards, may be absent or may need to be relieved during a disease emergency for one reason or another. Back-up staff should therefore be trained for each position.

3.3.3 Disease control data management

Timely and reliable information is essential for effective physical and financial planning and monitoring. It will be the role of the VEPT, through the NAHIS, to acquire and manage data and generate information, as required, for the DCT.

In addition, the DCT would be able access the NAHIS as required to view progress, check technical and financial performance against targets, etc.

3.4 Empowerment

Effective disease control requires strong legal support to enable uniform inclusion of all herds / flocks / areas, including compulsory activities such as:

- Vaccination
- Testing
- Slaughter
- Movement restrictions
- Quarantine
- Disinfection
- Vector control

3.5 Linkages and communication

Effective linkages and communication with all players described in 3.2.2 will be essential to efficient and cost-effective disease control. Resources required for this must be made available to the DCT, including:

- Formal linkages with the immediate players
- Capability to organize and conduct meetings and workshops
- Access to the mass media
- Inclusion in participatory exercises with livestock owners carried out at the Woreda and PA levels
- Production and dissemination of targeted newsletters

4. Staff and other resources

As proposed, the DCT unit will require:

Team leader
At least three veterinarians – to enable coordination with the 10 regional veterinary departments etc.
Access to a part time communications expert
Secretary

Physical recourses required will include:

Office accommodation
Telephone – to enable contact with other players
Access to internet – to enable contact with regions
Transport and transport operating costs – to enable visits to regions and woredas
Computers, printer, UPS, modem, consumables

7.1.2 Qualifications and terms of reference

a. Head, VEPT

Qualifications:

- Veterinary degree
- Post graduate qualification: major in veterinary epidemiology, or planning or project management or similar
- Experience in management of national disease control policies.

Terms of reference

The Head, VEPT, shall work to the Director, VD and:

- Prepare annual work plans and budgets for the team
- Prepare annual work plans and budgets for national disease control policies and reconcile with available regional resources.
- Be responsible for coordination with the VEPT and the regional veterinary departments
- Lead the process of emergency preparedness and contingency planning
- Participate in VEPT-led risk analyses to identify potential disease threats to Ethiopia's livestock populations.
- Liaise with Head, Veterinary Privatization Team so that full and effective use is made of community-based animal health delivery systems.

b. Disease control officers

Qualifications

- Veterinary degree
- Post graduate qualification: major in veterinary epidemiology, or planning or project management or similar would be an advantage
- Experience in control of TADs and other important diseases

Each disease control officer would, depending on particular experience and interest, would be given direct responsibility for control of one of following disease groups: TADS, zoonoses, other diseases. .

Terms of reference

The disease control officers shall work towards the Head, DCT and:

- Prepare annual work plans and budgets for the team
- Prepare annual work plans and budgets for national disease control policies and reconcile with available regional resources.

- Be responsible for coordination with the VEPT and the regional veterinary departments

c. Communications expert

The communications expert shall be make part-time contributions to the work of the DCT, possibly on loan from the Veterinary Privatization team.

Qualifications

- Formal qualification in sociology with specialization in communication with stakeholder groups and communities.
- Experience in communication with rural communities in Ethiopia

Terms of reference

The sociologist shall work towards the Head, DCT and assist and advise in means of communicating with important stakeholders. Specifically:

- Advising and assisting in identifying relevant stakeholders and stakeholder groups
- Advising and assisting in identifying appropriate means of communicating with each group
- Assist in planning and running workshops and other participatory forums.

5. The future

The following development activities for the NVLS are proposed:

4.1 Short term

The following short term priorities are proposed;

a. Support exports of livestock and livestock products by:

- Concentrating on the TADs - by formulating emergency preparedness and contingency plans, and implementing these when required.

- Supporting the I&Q team by assisting in control of important diseases to protect quarantine posts, stock routes (eg for Excelex), and 'compartments' (eg export zones).

b. Plan and establish communication forums with stakeholders

This will require identifying the important stakeholder groups for the purposes of obtaining and strengthening participation in disease control policies, and in collaboration with the communications specialist determining for each group the most appropriate means of communication. Organize and run selected communications methods.

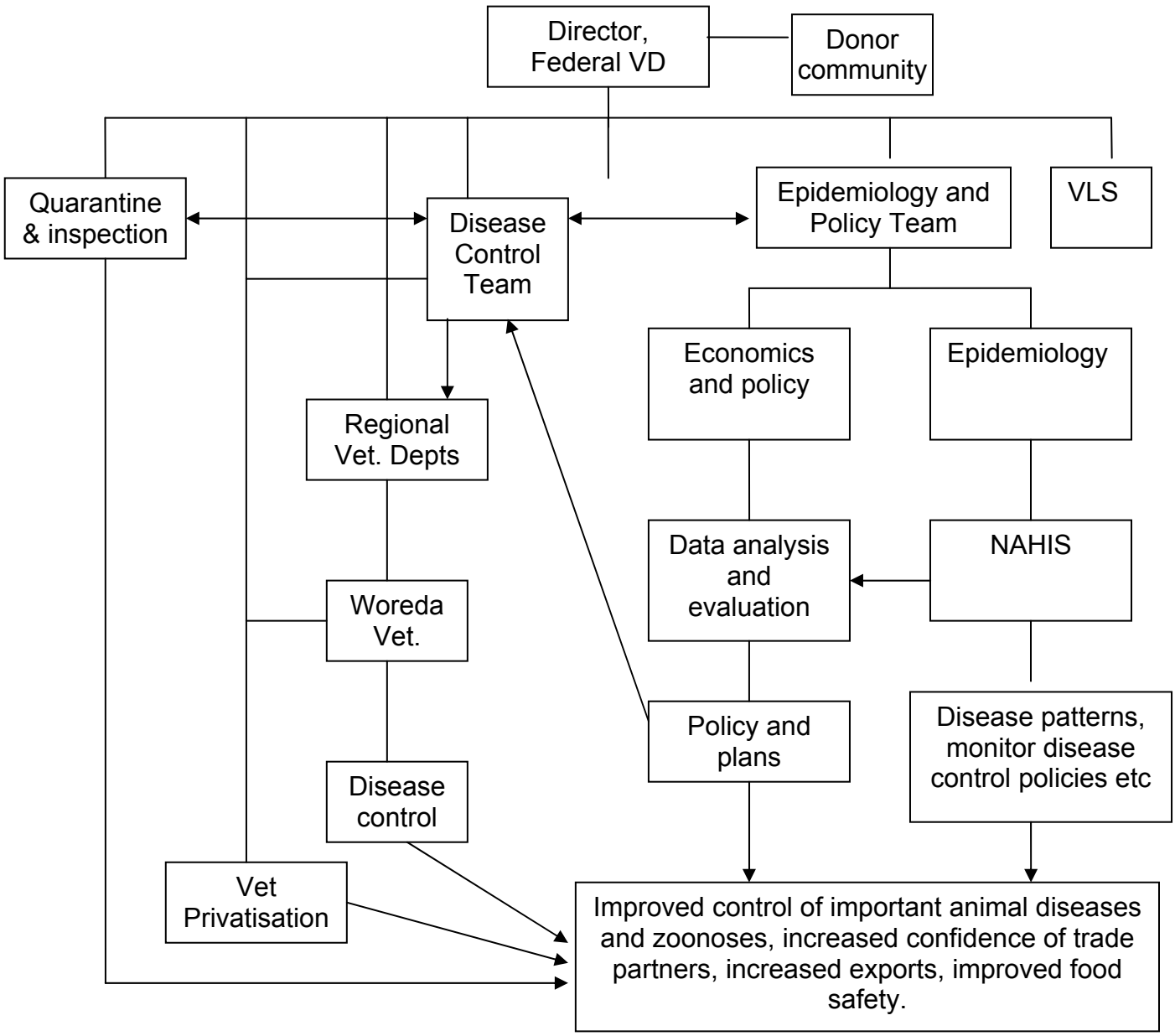
c. Develop project management expertise

- Identify appropriate project management training opportunities.
- Through interaction with government, the donor community, livestock-oriented projects, and major stakeholders (eg exporters) identify sources of funding
- Implement

4.2 Medium term

Medium term developments would depend priorities and disease patterns, but would surely include expanded control of zoonoses

Figure 2: Outline of Proposed Structure and Linkages of the Disease Control Team



FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT

VETERINARY DEPARTMENT

PROPOSALS FOR ESTABLISHMENT AND OPERATION OF A VETERINARY EPIDEMIOLOGY AND POLICY TEAM

June 2004

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6. Introduction

"Disease monitoring and surveillance are essential activities for official veterinary services. The Sanitary and Phytosanitary (SPS) agreement of the World Trade Organisation requires that animal health decisions be scientifically based and this has placed disease surveillance systems and veterinary epidemiology in general at the core of animal health related decisions. Today efficient disease surveillance and monitoring systems are the basis for trust in international trade in animals and animal products"[1]

A reliable surveillance system is the key to early warning of a change in the health status of any animal population. Such a system is also essential for providing evidence about the absence of a disease or in determining the extent of a disease that is known to be present.

Surveillance thus makes invaluable contributions to:

- early warning
- informing disease control policy formulation, including the transboundary animal diseases, zoonoses and other important enzootic diseases
- demonstrating the absence or extent of disease
- protecting and improving the well being of the human population through increased production of livestock and livestock products and reduced risk from zoonoses
- enhancing trade opportunities,
- planning and implementing disaster relief activities

.. and is undoubtedly a major core activity of a national veterinary service.

The proposed Veterinary Epidemiology and Policy Team would comprise a Veterinary Epidemiology Unit and an Economics and Policy Unit and be responsible for:

- Disease surveillance and monitoring, including operation of the National Animal Health Information System (NAHIS), and;

- Advising and assisting in disease control planning and policy formulation

The Veterinary Epidemiology Unit would be responsible for:

- Operation of the National Animal Health Information System (NAHIS), comprising data collection, validation, storage, retrieval, analysis evaluation

[1] Quality Assurance Systems applied to animal disease surveillance system – Veterinary Services: organisation, quality assurance and evaluation. OIE Scientific and technical review, Vol 22(2), 2003

and reporting, would planned and overseen by the veterinary epidemiology unit, through a network of regional VEUs working in very close collaboration with regional and woreda veterinary offices and the regional veterinary laboratories.

- Collection of data for the NAHIS (disease surveillance and monitoring) – the emphasis would be on important diseases, the OIE List A, specifically the transboundary diseases (TADs) and zoonoses.

The Economics and Policy Unit would be responsible for:

- Assisting and advising in identification of disease control priorities
- Identifying and ranking disease threats using risk analysis
- Carrying out socio-economic analyses of disease control options for target diseases and applying findings to disease control policy formulation.

Surveillance has low excludability (provider cannot prevent others from benefiting from its output) and rivalry (use of findings by one individual does not reduce availability to others) and is therefore a pure public good.

The immediate beneficiaries are policy makers and livestock traders. Eventual beneficiaries are all livestock owners (healthier livestock are more productive) and consumers (reduced risk of zoonoses, increased quantities of products in market place).

Cost recovery is not applicable. All costs should therefore be borne by government.

Certain surveillance activities, for example implementation of field studies and surveys, are contestable and could therefore be contracted to the private sector.

7. Overview

2.1 Current and proposed status

Surveillance is an important public good and a vital core activity of a national veterinary service as it feeds into effective disease control and enables exports of livestock and livestock products. Disease does not recognize administrative boundaries and it is essential that a ***national*** approach be taken to disease surveillance, with individual nations cooperating in exchange of information about the TADs at the regional level.

2.1.1 Current status

The current decentralized structure of Ethiopian national veterinary services is a definite constraint to implementation of national policies and programmes as the Federal VD does not have any means of controlling activities at the field level (at regional and woreda levels). In essence, the Federal VD is responsible for the health

of national livestock populations and can, and does, prepare national policies but has no formal means of ensuring that these policies are implemented at the field level. It has responsibility without authority. The only exceptions to this are rinderpest eradication (which is centralized through the 6 PACE field offices that have direct links to the federal Service) and quarantine and inspection services in support of livestock exports.

The national animal disease surveillance programme is currently based on a routine monthly disease reporting system, and for rinderpest, early warning and active searching using participatory disease search teams.

Implementation of the national animal disease surveillance programme depends on the voluntary cooperation of regional veterinary departments, which may or may not be forthcoming. The current overall performance of the monthly disease reporting system – reports are received from only 30% of woredas - indicates the scale of the problem of implementing a national surveillance system within the current decentralised system.

With 30% coverage for the routine disease reporting system and (with the exception of rinderpest) no active data collection, there is no way that the Federal VD can have a reliable and accurate overview of national disease patterns.

2.1.2 Proposed status

Authority to fulfill core functions

The first, and seminal proposal is that ***to enable it to discharge its core functions*** the Federal VD must be empowered and given direct authority to assure uniform and nation-wide implementation of all relevant activities at the field level.

For surveillance these activities would include early warning, routine data collection and reporting, implementation of active field studies and surveys, and use of the essential participatory techniques in the pastoral areas.

What is required is that for core functions, the Director, VD, has direct authority from the federal centre, through the regions to the woreda and sub-woreda levels. This is depicted in Figure 1.

Laboratory support

Secondly, a coordinated veterinary laboratory service is required to support surveillance by (a) carrying out systematic investigations of (suspected) outbreaks of important diseases and providing valuable epidemiological information and a definitive diagnosis, (b) carrying out statistically valid and prioritized field surveys and studies to provide required epidemiological data and information about important diseases, and eventually (c) building a database of routine diagnostic data - for specimens submitted by private practitioners, clinics etc – which could be used by epidemiologists to search for new and unusual disease events, and to develop and monitor indices of disease frequency.

A national veterinary reference laboratory (Central Disease Investigation Laboratory – CDIL, or similar title) is required to lead, support and guide the laboratory service. It is proposed that the National Animal Health Research Centre (NAHRC), Sebeta, be transferred from the EARO to the MoARD, placed under the direct authority of the Director, VD, and given the mandate of leading the Ethiopian veterinary laboratory service.

The regional veterinary laboratories, currently answerable to the Regional Agricultural Bureau, should be transferred to the Federal Service and placed under the direct authority of the CDIL.

The above changes would provide the structure of a national veterinary laboratory service (NVLS). Training, terms of reference, provision of required resources, etc. would then be required. These issues are covered in the Chapter on the VVLS.

A network of veterinary epidemiology units to operate the NAHIS

A network of regional veterinary epidemiology units, which would be under the direction and authority of the Federal Veterinary Epidemiology Unit should be established. The regional units would, in close collaboration with the regional veterinary laboratory, be responsible for implementation of all aspects of the NAHIS at the regional level.

Passive surveillance system

A well run passive surveillance system based on routine reporting from the veterinary field service, laboratory service, abattoirs etc. would be implemented. The proposed centralized system would enable high coverage rates to be achieved.

Active surveillance systems

A programme of active surveillance, including statistically valid field studies and surveys in defined populations, would be designed and implemented to provide information that is urgently required for: disease control planning; demonstrating absence of defined diseases; veterinary services of importing countries, etc.

Economics and planning

A unit would be established to undertake risk assessments, and economic evaluations and analyses to inform: disease control policy formulation, and; decision making on import permits for livestock and livestock products.

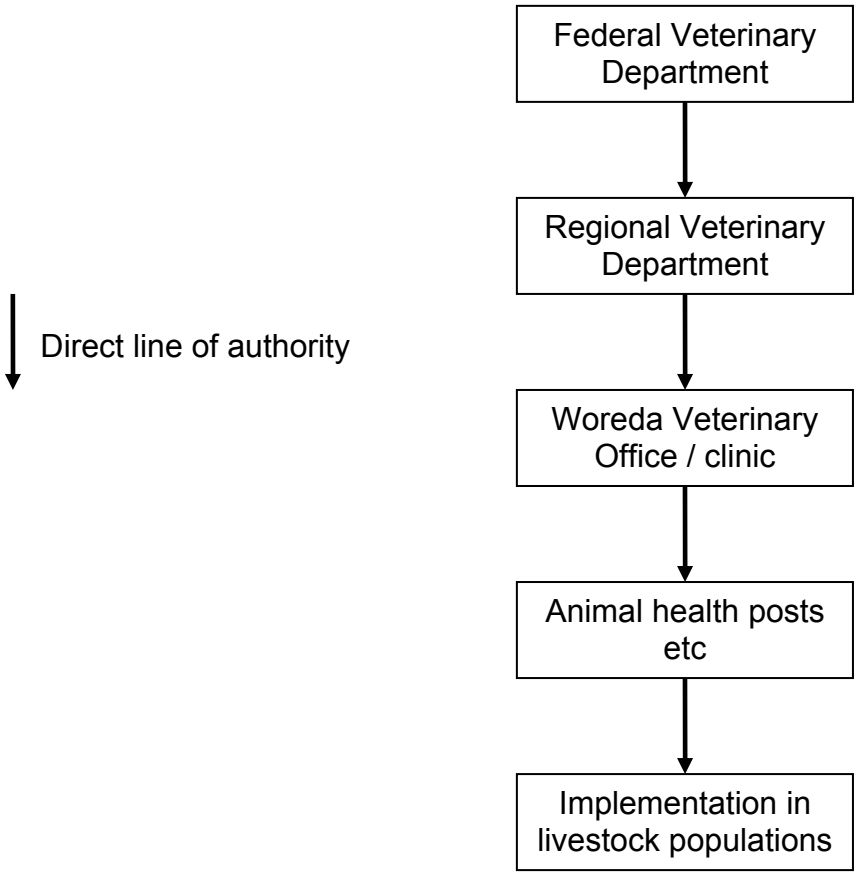
Data management

New database management systems would be established and the regional and federal veterinary epidemiology units would be electronically linked (through internet).

2.1.3 Speed at which the required surveillance system is developed

It is strongly recommended that the new system be developed in stages and commensurate with availability of trained manpower and resources.

Figure 1: Proposed direct command structure required for effective implementation of core activities of the Federal Veterinary Department



2.2 The Veterinary Epidemiology Unit

2.2.1 Objectives

The veterinary epidemiology unit (VEU) would be responsible for the national animal disease surveillance and monitoring, including the NAHIS

The objectives of animal disease surveillance and monitoring would be to:

- Enable rapid detection and reporting of outbreaks of serious diseases - the early warning component of the required approach to prevention / control of the TADs – by creating awareness (on part of veterinarians, AHAs, CAHWs, livestock owners, traders etc), participatory disease searching, and

implementing contingency plans (eg immediate investigation by a veterinary laboratory team, immediate imposition of containment measures etc);

- Monitor trends in enzootic disease, including zoonoses – is disease frequency changing (increasing, decreasing), is the type of animal at risk changing (species, breed, sex, age, husbandry system etc)?

- Enable disease control activities to be prioritized and then to inform the process of disease control policy formulation;

- Enable trade in livestock and livestock products, by:

    - Providing information required to support statements of freedom from disease, establishment of disease-free zones, etc;
    - Assisting to gain the confidence of veterinary services of importing countries - an effective national disease surveillance system is a key factor in gaining this confidence.

- enable evaluation of current disease control policies, for example:

    - Are planned targets being achieved - for example for numbers of animals vaccinated?
    - Is implementation of a policy having the desired effect, in terms of prevention of the disease, or reduced frequency of the disease?

Disease surveillance, establishment and operation of a NAHIS including the analysis and evaluation of data, and economic assessments require a dedicated unit staffed by suitably trained and qualified staff. In its broad sense, epidemiology covers the required expertise.

2.2.2 Basic working principles

The work of the unit would be based on:

- A programme of continual surveillance of the national livestock populations that will enable rapid detection of priority disease events (eg occurrence of a transboundary disease – TAD), incursions of disease from neighbouring countries, and new or unusual patterns of disease occurrence. Detection must be followed by rapid investigation, reporting, containment and implementation of appropriate disease control / eradication measures. This activity will require (a) motivated and informed livestock owners, veterinarians, AHAs, and CAHWs to enable early warning, (b) monitoring of regional and international disease patterns, (c) established systems for the epidemiological investigation of disease events, (d) established systems for reporting, transmission and dissemination of findings, (e) established systems for feedback of information, (f) established systems for informing field staff, livestock owners etc. of important developments in regional/international disease patterns.

- A continuing programme of surveillance of enzootic disease patterns, in order to monitor trends and the effectiveness of disease control programmes.

- The implementation of statistically valid active field studies designed to answer important questions about the epidemiology of priority diseases / syndromes.

- The use of the network of CAHWs as surveillance agents to enable early warning, and provide the major source of data for routine disease reports in pastoral areas.

- The use of participatory epidemiology in pastoral areas to investigate disease occurrence / associations / affects of disease (morbidity, production losses, mortality); to search for occurrence of an important disease (using participatory disease search teams); etc.

- Monitoring of global and regional disease patterns, largely through use of the internet and the world-wide web. Risks to Ethiopian livestock populations and import/export trade in livestock and livestock products must be continually assessed and findings used to guide policies regarding disease control, surveillance and monitoring, import regulations, and provision of information to export markets.

- Continued monitoring of the performance of the VEEU in terms of the timeliness, value and relevance of the information it produces.

2.3 The Economics and Policy Unit

2.3.1 Objectives

The objective of the economics and policy unit is to improve national disease control policy by compiling, carrying out economic analyses of, and evaluating the data and information generated by the NAHIS. Findings would be used to inform decision making.

2.3.2 Basic working principles

The work of the unit would be based on:

- Collaborating with the Epidemiology Unit to ensure that data required for economic analyses are collected by the NAHIS

- Conducting economic analyses of NAHIS-derived data, including, benefit:cost ratios, internal rate of return, and net present value, to inform decision making.

- Collaborating with the Director, VD, Disease Control team and Epidemiology Unit to establish disease control priorities.

- Carrying out risk analyses to inform disease control policy formulation, determine and quantify disease hazards that threaten Ethiopia's livestock populations, and inform policy for import of livestock and livestock products

2.4 Prerequisites

An effective veterinary epidemiology and policy team will require:

- Suitable **organization** to enable it to discharge its responsibilities, this would include linkages and communications, and empowerment

- Clearly defined **functions** that will enable it to effectively and efficiently attain its objectives – for this purpose a mission statement and terms of reference will be required.

- Qualified and experienced **staff** to enable it to carry out its functions – either employed in the team, or readily available to advise and assist (see below) - including the following disciplines: epidemiology, computerized information management, computer networks, statistics, animal health economics, and sociology,

- Adequate **resources**, in terms of: computers and related equipment, consumables, internet access, and software; transport and operating funds; office accommodation; library of reference books and other documents; access to external advisors (university, other government departments) such as statisticians and IT specialists; ready access to information sources (eg national statistics office, internet, regional and international organizations etc),

These issues are addressed in this document.

8. Mission and terms of reference for the Veterinary Epidemiology and Policy Team.

3.1 Mission

The Veterinary Epidemiology and Policy Team (VEPT) requires a mission statement to guide and focus its work. The Veterinary Department (VD) and staff of the Unit should jointly develop an appropriate statement. The following will provide a basis for these discussions.

The VEPT shall work towards improving the standards and efficiency of animal disease and zoonosis control and livestock trade in the Ethiopia by enabling optimal decision-making through provision of timely, appropriate and required information, including evaluations, analyses and advice to policy-makers

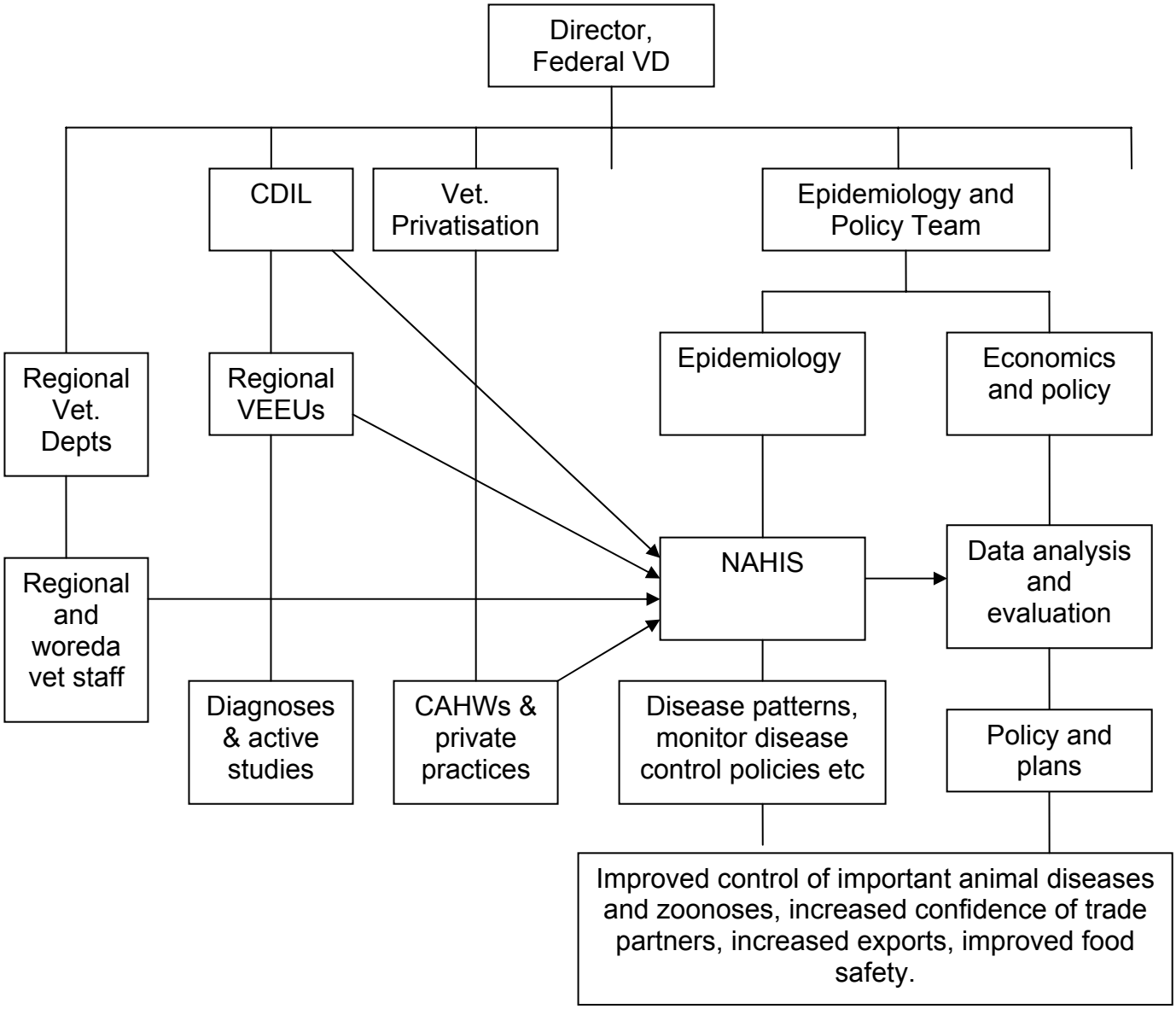
3.2 *Organisation and terms of reference*

3.2.1 Organisation

The Epidemiology and Policy Team shall work to the Director, VD and advise, plan, direct and oversee all animal health and production data collection, information generation and reporting activities utilising modern epidemiological and data management methods. It shall compile and analyse data, evaluate disease control policy options and make policy recommendations to senior decision makers.

The Epidemiology and Policy Team would be divided into two units: the veterinary epidemiology unit and the economics and policy unit.

Figure 2: Outline of Proposed Structure and Linkages of the Epidemiology and Policy Team



The Veterinary Epidemiology Unit would be responsible for a network of regional epidemiology teams, one in each region, ideally based in the regional veterinary laboratory, which would oversee NAHIS activities at the regional level.

The Policy Unit would utilize the NAHIS and provide policy recommendations and advice to the Director, VD and other senior decision makers.

3.2.2 Terms of reference

Terms of reference are presented for discussion and finalisation by staff of the VD for the more important components of the Epidemiology and Policy Team namely:

- The veterinary epidemiology unit
- The economics and policy unit
- The regional veterinary epidemiology units

The epidemiology unit shall:

a. Identify what animal health and production information is required by senior decision makers;
b. By creating awareness, recruiting private practices, AHAs and networks of CAHWs, and establishing robust reporting channels, develop an effective early warning system
c. Develop and implement a national animal health information system (NAHIS) that will store a wide variety of livestock- and disease-related data and produce the data/information required by the Economics and Policy unit, senior decision makers – including the Disease Control Division, Veterinary Quarantine and Inspection Division, and the Veterinary Laboratory Service.
d. Develop, establish and operate computerised database management systems to store, retrieve, compile, analyse and report disease occurrence and other data;
e. Assure data quality and timeliness – incoming data will be checked for obvious anomalies and completeness and the submitting officer asked to correct any errors detected and re-submit. Receipt of regular monthly reports would be monitored to identify missing reports: defaulting officers would then be contacted.
f. Utilize, promote and held design participatory epidemiological techniques.
g. Promptly compile and report emergency and monthly disease occurrence data in a format required by senior decision makers and for onward transmission to the OIE, FAO, WHO, EC, and other international and regional organizations as required;
h. Provide information (reports) to decision makers that describe livestock populations, disease patterns, economic losses, affects of implemented disease control policies, perceived risks of disease spread / incursion etc.
i. Design and implement statistically valid epidemiological field studies aimed at answering important questions, as required, about the epidemiology, financial / economic importance, etc. of target diseases;

j. Establish linkages with other players in the livestock sector, including producers' organizations, traders and exporters, abattoir owners, transporters, etc.
k. Utilise the internet and world wide web to monitor global and regional disease patterns with particular reference to changes in disease risk to Ethiopian livestock populations, and identify advances in diagnosis/control of disease, surveillance methodology and information technology.
l. As a motivational tool, assure feedback of information to data sources - for example, the Regional and District VS, veterinary inspectors in abattoirs, and the Veterinary Laboratory Service.
m. Provide additional information to senior decision makers as required.

The economics and policy unit shall:

a. In consultation with decision makers, identify policy issues that require resolution
b. Liaise with the Epidemiology Unit to ensure provision of data required to investigate and analyse outstanding policy issues
c. Conduct risk analyses to:
   - Identify and prioritise disease risks to Ethiopian livestock populations – for example the risk of introduction of rinderpest from SW Somalia, NE Kenya, or of East Coast fever from Kenya / Sudan, or Rift Valley fever, etc.
   - Inform disease control policy formulation
   - Inform policy for import of livestock and livestock products
d. Compile data, conduct economic analyses and evaluate results. Report findings to decision makers, including recommendations for policy and planning. In this way disease control policies can be based on, and benefit from the best information available.
e. Monitoring the effectiveness of current disease control strategies – in terms of changes in disease incidence, costs, benefits, cost effectiveness, achievement of targets, etc;

The regional epidemiology and economics units

One VEEU would be established in each region, ideally at the regional veterinary laboratory provided that this is sited at, or near to, the regional capital.

A regional VEEU would be responsible for operation of the NAHIS at the regional level. Specifically they would:

a. Be responsible for all elements of the NAHIS at the regional level, including passive surveillance (working towards timely submission of routine reports from woreda veterinary offices, abattoirs, laboratories etc), active surveillance (statistically valid surveys and studies conducted in close collaboration with regional veterinary laboratories) and participatory epidemiology (to enable early warning, and both passive and active surveillance in pastoral areas);
b. Operate the regional computerised database management system to store, retrieve, compile, analyse and report disease occurrence and other regional data;

c. Receive a copy of each disease emergency report and liaise with (a) the regional veterinary laboratory to ensure that laboratory staff conduct a very prompt investigation, (b) woreda field staff to ensure that follow up actions are taken as required – for example submission of weekly update reports, and (c) regional veterinary departments ensure that appropriate containment and eradication measures are promptly implemented according to the relevant contingency plan.
d. Receive routine monthly disease occurrence reports from Woredas, and after checking data (see e. below) will be manually entered into the regional database and submitted electronically, woreda by woreda, to the Federal Epidemiology Team where they will again be checked before being added to the database management system.
e. Assure data quality and timeliness – incoming reports will be checked for obvious anomalies and completeness and, as required, the submitting officer asked to correct and re-submit. Receipt of regular monthly reports would be monitored to identify missing reports: defaulting officers would then be contacted.
f. Promptly compile and report monthly disease occurrence data for the region in a format required by regional officers (eg in Regional Agricultural Bureau)
g. Provide information (reports) to regional decision makers that describe livestock populations, disease patterns, economic losses, affects of implemented disease control policies, perceived risks of disease spread / incursion etc.
h. Liaise with the Federal VEEU and Regional Veterinary Laboratory to ensure that the regional epidemiology field study programme is carried out as per annual work plan and budget. As possible regional VEEU staff would participate in these studies.
i. Establish linkages with other regional players in the livestock sector, including producers' organizations, traders and exporters, abattoir owners, transporters, etc.
j. As a motivational tool, and in close cooperation with the Federal VEPT assure feedback of information to data sources - for example, the Regional and District VS, veterinary inspectors in abattoirs, and the Veterinary Laboratory Service.
k. Provide additional information to regional decision makers as required.

9. Linkages and Communications

4.1 Linkages within the Federal Veterinary department

The VEEU should be a semi-autonomous unit within the VSD – it must have its own annual work plan and budget and be empowered to carry out field studies and investigations as required to achieve its objectives.

The VEEU must, through the Director, VD, develop strong linkages with the Regional and Wereda veterinary services as these are the essential grassroots link with livestock producers.

Through the Veterinary Privatisation Team and woreda veterinary offices the VEEU would utilize and promote the CAHW network as surveillance agents – for early

warning, routine reporting of disease events to the woreda office thus improving the quality and completeness of these reports. CAHWs would also assist in accessing communities for the purpose of conducting participatory epidemiological studies, furthermore CAHWs would contribute to participatory disease searching – eg in high risk areas – eg in advance of known patterns of disease spread, or as identified by risk assessment.

The VEEU would use electronic linkages (via the internet) with the regional VEEUs for emergency and routine reporting, and feedback of information.

Linkages with other divisions in the VD, including Disease Control, Inspection and Quarantine and the Laboratory Service (a) important sources of data and information, and (b) customers for the information output of the VEEU.

4.2 Linkages with the Veterinary Laboratory Service

A successful NAHIS must utilize major inputs form the veterinary laboratory service, including the following:

i. Laboratory confirmation of the cause of a disease outbreak – eg of a TAD (or other 'foreign' animal disease), to enable implementation of targeted and rapid containment and eradication strategies;

ii. Routine laboratory diagnoses (usually for specimens submitted by private practitioners) which can be a useful indicator of the occurrence of new or unusual disease events and of the patterns of enzootic diseases;

iii. Programmes of active epidemiological studies should be conducted by, or in close collaboration with, the veterinary investigation service.

The current veterinary laboratory service (VLS) of Ethiopia has a number of unhelpful characteristics relevant to this discussion and which must be promptly resolved, including:

- There is no national veterinary laboratory, a position once held by the National Animal Health Research Centre, NAHRC, which is within the EARO, and not the Ministry of Agriculture and Rural Development.

- The Regional Veterinary Laboratories are accountable to the Regional Agricultural Boards and not the Director, VD.

- The VLS lacks a centralized computer-based data management system to handle all laboratory data, improve management and serve as a valuable data resource that can be 'mined' by the VEU to help identify disease trends and identify new or unusual disease events.

4.3 Information technology strategy

The work of the VEPT would be based on computerized database management systems and it is highly desirable that these systems are compatible with other databases used in the MoARD in terms of:

- Compatibility of operating systems and programming languages used
- Uniform coding

It is proposed that the Director, VD, through the Head, VEPT leads a process of developing an IT strategy for the VD, and the MoARD.

4.4 Linkages with other players.

The VEEU must develop strong linkages with a number of bodies, including:

- Livestock producers associations
- Livestock traders and exporters
- Abattoir owners / owners' associations
- The National Statistics Office
- The EVA
- Veterinary pharmaceutical companies
- The national veterinary services/veterinary epidemiology units of neighbouring and regional states.
- International and regional organizations, including the EC, OIE, FAO, and WHO.

10. Communications

Good communication with the regional and woreda veterinary field services will be essential to effective surveillance and monitoring of the serious animal diseases in Ethiopia and for detection of new diseases or unusual disease events.

It is proposed that linkages between the VEU and regional VEEUs be via the internet. Similarly, an internet linkage between the CDIL and the VEU would enable speedy communication (eg results of laboratory investigations of disease outbreaks) and to access routine laboratory data once a laboratory database management system has been established.

11. Empowerment – role of legislation

6.1 Notifiable disease

It is essential that outbreaks of serious diseases are rapidly detected (early warning) so that they can be promptly contained and eradicated. Reporting of suspected occurrences of these diseases relies in large part on the cooperation of livestock owners and others who are in contact with livestock populations.

This cooperation can be greatly strengthened by including in the veterinary law a provision that makes reporting of suspected cases of an important disease a legal obligation, with penalties for non-compliance.

This requires (a) preparation of a list of important diseases, the occurrence of which must be immediately notified to veterinary authorities – the **notifiable diseases,** (b) regular updating of this list, (c) informing the public of this legal obligation, of the list of notifiable diseases, and of their clinical signs.

6.2 Powers of veterinary inspectors

Veterinary inspectors, meaning veterinarians who are so authorized by the VD, must have the power to enter premises (livestock holding, market, abattoir, etc) for the purpose of inspecting animals (for example to check for the occurrence of a notifiable disease), and enforcing control and other measures (including collection of clinical and postmortem specimens for laboratory examination, slaughter, disposal of carcasses, treatment, vaccination, movement controls etc as appropriate). To this extent inspection is an essential component of disease surveillance and monitoring and legal empowerment of inspectors must be included in veterinary law..

12. Staff and other resources

7.1 Veterinary Epidemiology and Policy Team

7.1.1 Staff required

Head, Veterinary Epidemiology and Policy team
Secretary

7.1.2 Qualifications and terms of reference

a. Head, VEPT

Qualifications:

- Veterinary degree
- Post graduate qualification: major in veterinary epidemiology with a minor in statistics, animal health economics, or serology or other useful discipline
- Experienced in management of a team of specialists

Terms of reference

The Head, VEPT, shall work to the Director, VD and:

- Prepare annual work plans and budgets for the team
- Identify annual targets for the team
- Liaise with regional veterinary departments to ensure efficient operation of the national disease surveillance system, including early warning

capability, and prompt reporting to the Director, VD, and international and regional organizations
- Assist and advise the Director, VD, in responding to requests for information from other national veterinary services
- Liaise with the veterinary laboratory system to ensure adequate levels of diagnostic and investigational support to the NAHIS
- Liaise with the Privatisation Team to ensure that full and efficient use is made of the network of CAHWs, private veterinary practices, and any new animal health service delivery system(s)
- Liaise with Faculties of Veterinary Medicine
- Ensure that the team satisfies the requirements of its clients (the Director, VD, the Head, Disease Control team,
- Assist and advise in operation of the NAHIS
- Assist and advise in policy issues

b. IT manager

Qualifications.

- Degree in information technology or similar
- Experience in working with livestock-related data.

Terms of reference

The IT manager shall work towards the Head, VEPT, and be responsible for the efficient operation of VEPT and regional VEEU computers, databases and internet communications with regional VEEUs. Specifically

- Ensure continued operation of all database management systems by providing assistance and advice in case of problem
- Develop appropriate data back-up systems and ensure that these are used by all staff
- Train staff in use of databases, other software and data back-up.
- Develop new database management systems as possible / required
- Improve and refine existing database management systems
- Advise and assist in procurement of computer equipment, consumables, and software.
- Ensure that all systems are protected by a firewall and virus detection and removal software.
- Participate in / initiate development of an information technology strategy for the MoARD
- As required, assist in accessing data from other databases

7.1.3 Equipment and other resources

Furnished office accommodation
2 Computers each with modem
UPS
Printer

Consumables
ISP membership
Telephone line

7.2 Veterinary Epidemiology Unit

7.2.1 Staff required

Head Epidemiologist
Statistician – access to a statistician, eg at a University or other government department
Assistant epidemiologist
Data clerk

7.2.2 Qualifications and terms of reference

c Head, veterinary epidemiology unit

This post could, if required, by undertaken by the Head, Epidemiology and Policy Unit.

Qualifications.

- Veterinary degree
- Post graduate qualification: major in veterinary epidemiology with a minor in statistics, animal health economics, or serology or other useful discipline
- Experience in working with the epidemiology of animal diseases in Ethiopia.

Terms of reference

The Head, VEU, shall work towards the Head, VEPT and assume overall responsibility for the day-to-day operation of the national animal disease surveillance system and NAHIS. Specifically

- Continually monitor and work towards improving the quality and timeliness of incoming data – from Regional and Woreda veterinary staff, the veterinary laboratory system, abattoirs, etc.
- Continually monitor and work towards improving the early warning system
- Design new data collection systems as required to meet the information requirements of the Economics and Policy Unit and decision makers
- In close collaboration with the Head, VEPT, and the veterinary laboratory service design and supervise implementation of targeted field studies and surveys.
- In close collaboration with the Veterinary Privatisation Team, develop appropriate data collection and reporting systems for CAHWs, private veterinary practices (veterinarians and AHAs), and any new animal health delivery systems that are introduced (eg veterinarians with networks of AHAs / CAHWs)

- Monitor follow-up reporting for disease outbreaks and ensure that the required reports and data are submitted, promptly processed and reported.

d. Epidemiologist

Qualifications.

- Veterinary degree
- Post graduate qualification: major in veterinary epidemiology with a minor in statistics, animal health economics, or serology or other useful discipline

Terms of reference

The Epidemiologist shall work towards the Head, VEU and assist in all aspects of the day-to-day operation of the national animal disease surveillance system and NAHIS. Specifically assist the Head to:

- Continually monitor and work towards improving the quality and timeliness of incoming data – from Regional and Woreda veterinary staff, the veterinary laboratory system, abattoirs, etc.
- Continually monitor and work towards improving the early warning system
- Design new data collection systems as required to meet the information requirements of the Economics and Policy Unit and decision makers
- In close collaboration with the Head, VEPT, and the veterinary laboratory service design and supervise implementation of targeted field studies and surveys.
- In close collaboration with the Veterinary Privatisation Team, develop appropriate data collection and reporting systems for CAHWs, private veterinary practices (veterinarians and AHAs), and any new animal health delivery systems that are introduced (eg veterinarians with networks of AHAs / CAHWs)
- Monitor follow-up reporting for disease outbreaks and ensure that the required reports and data are submitted, promptly processed and reported.

e. Statistician

The statistician would be required for consultation from time to time and would be employed in a university or other government department. Must be experienced in the practical application of statistics, particularly non-parametric statistics, and have knowledge and experience of studying disease in livestock populations. The statistician would advise and assist in:

- Design of field studies and surveys – sampling method, sample size, selection of sample units etc.
- Resolving any sampling problems that arise during implementation – eg non-availability / non-cooperation of some selected sampling units.
- Analysis and evaluation of study/survey data
- Carrying out risk assessments

f. Data clerk

Qualifications.

- Experience in data entry and simple tasks related to the use of database management systems.

Terms of reference

The data clerk shall work towards the Head, VEU and under advice from the IT manager shall:

- Be responsible for entry of data into databases
- Produce routine reports from databases
- Download incoming data – from Regional and Woreda veterinary staff, the

7.2.3 Equipment and other resources

- Furnished office accommodation
- Computers, with modems
- UPS
- Printers
- Data back-up system – external HDD? Internal HDD? CD/DVD? Flash memory device?
- Consumables
- Software – word processor, spreadsheet, database system, GIS, statistics package (eg Statistix, EpiInfo, Epistat), virus protection, access to internet, etc.
- ISP membership
- Telephone line

7.3 Policy and Economics

7.3.1 Staff required

Economist
Sociologist (part time)

7.3.2. Qualifications ad terms of reference

g. Economist

Qualifications

- Degree in economics or agricultural economics
- Experience in field of veterinary / animal health economics

Terms of reference

The economist shall work towards the Head, VEPT and be responsible for economic analyses and appraisals to inform disease control policy. Specifically:

- Estimate the direct and indirect economic losses due to target diseases using NAHIS data
- Use above results to identify disease control priorities
- Identify important data shortages / lack and report to Head, VEU
- In collaboration with the Head, Disease Control Team, identify options for the control of priority diseases
- Estimate the costs of each control option
- Conduct appropriate socio-economic analyses and discuss and report findings to Head, Epidemiology and Policy Team and Head, Disease Control team.
- Assist heads of VD trams to conduct risk assessments as required – eg to inform disease control policy formulation or import policy

h. Sociologist

The sociologist shall be make part-time contributions to the work of the Economics and Policy Unit, possibly on loan from the Veterinary Privatisation team.

Qualifications

- Degree in sociology / rural development or similar
- Experience in field of livestock development

Terms of reference

The sociologist shall work towards the Economist and assist and advise in socio-economic perspectives of the economics of disease / health of livestock production systems in Ethiopia. Specifically:

- Advise in quantifying socio-economic losses due to disease, including zoonoses
- Identify data shortages and needs to assist in quantifying socio-economic losses due to disease
- Advise in quantifying socio-economic benefits accruing from prevention or complete / partial control of target diseases, including the zoonoses
- Identify data shortages and needs to assist in quantifying socio-economic benefits of disease control
- Other duties as required within knowledge and expertise.

7.3.3 Equipment and other resources

- Furnished office accommodation
- Computer, with modems
- UPS

- Printers
- Data back-up system – external HDD? Internal HDD? CD/DVD? Flash memory device?
- Consumables
- Software – word processor, spreadsheet, database system, GIS, virus protection, access to internet, etc.

13. Short term activities

8.1. Introduction

Priority should be given to the formal establishment of the VEPT, defining the position and linkages of the team within the VD, ensuring that all required information systems are established and operational, and generating useful output as soon as possible.

8.1.1 Improve the efficiency and scope of the NAHIS, including:

- Early warning of (suspected) occurrence of important diseases

- Understanding the patterns and economic losses due to priority diseases

Actions proposed

- Training courses for veterinary field staff
- Increase awareness (livestock owners, veterinarians, AHAs, CAHWs) of the importance, signs and need to urgently report suspected occurrences of notifiable diseases – these would be identified in consultation with the Director, VD, Disease Control Team, and Veterinary Laboratory service on the basis of domestic and regional diseases patterns – rinderpest, Rift valley fever, etc.
- Prepare a field manual describing all aspects of the system, and including all veterinary legislation, animal health regulations, actions to be taken to respond to disease events, etc. This manual is an important document and should be prepared in close consultation with other VD staff.
- Closely monitor implementation of the reporting system, refer all incomplete and incorrect reports back for correction by reporting officer
- Monitor operation of the DBMS, arrange for correction of any faults detected.
- Prepare monthly bulletins describing national and regional disease patterns, progress made in implementation of the VEEU activities, epidemiological findings etc.

These proposals are discussed below.

8.1.2 Assemble all currently available data about important diseases

One important, but basic task of the new Federal VEU would be to conduct comprehensive desk studies of important animal diseases and zoonoses and assemble all available data (from disease files, the existing reporting database,

proceedings of the EVA, research reports of the Veterinary Faculty – including masters and doctorate theses – published papers etc) and for each disease produce a report of findings.

This exercise would provide the current knowledge and understanding of each disease and help in (a) avoiding collection of information that is already known, and (b) identifying important information gaps that should be addressed. All subsequent active and passive data collection activities would add to this fund of knowledge.

8.1.3 Preparation of an Epidemiological Manual for the Veterinary Field staff at regional, woreda and sub-woreda levels

Introduction

Training to prepare Veterinary Field staff for the roles that they must play in the NAHIS will be an important activity. The preparation and distribution of a technical manual would complement this training and provide a permanent, and updateable, reference guide.

In close collaboration with the Director, VD, the Animal Disease Control Team, the Veterinary Privatisation Team and the Quarantine and Inspection Team, the VEEU would take the lead in producing a manual that includes the following:

- All laws related to livestock health, production, marketing, identification, disease control, etc.
- Clear descriptions of all actions to be taken by veterinary field staff in response to occurrences of each notifiable disease
- Clear descriptions of the actions that must be taken by the Veterinary Field Service (regional and woreda levels) in support of the NAHIS
- A glossary of terms used in the NAHIS
- Examples of all reporting forms used in the NAHIS
- Model protocols for investigations of disease outbreaks
- Interpretation of laboratory results
- And others as required / identified.

Action

- In consultation with the Director, VSD, and the Head, Disease Control Teams, and other teams, draw up objectives and content of the Manual
- In consultation with these staff of the VSD, prepare manual
- Edit manual
- Print manual
- Distribute
- Update as necessary by issuing addenda

8.1.4 Refresher Workshops for Regional and Woreda Veterinary Staff

Introduction

Successful implementation of the NAHIS depends in very large part on the veterinary field staff fulfilling their role. As this is very different to their current surveillance and monitoring duties, specific training and orientation will be essential.

Action

- Draw up objectives for each workshop
- Contract local consultant to lead workshop
- Consultant prepares course notes and other material in close liaison with head, VEPT
- Schedule agreed
- Venue and accommodation arrangements finalised
- Course presented
- Course evaluation
- In consultation with Heads, Regional Veterinary Departments, conduct annual training workshops for woreda field staff. Regional and woreda staff would then hold further workshops practitioners, AHAs and CAHWs

8.1.5 Preparation of an Epidemiological Atlas

Introduction

The proposed database management system for the NAHIS includes a GIS facility that will be used to produce maps showing the major physical features and spatial distributions of disease in Ethiopia and the region. Additional data could be used to produce maps that depict:

- Distribution of livestock populations, by species
- Distribution of livestock production systems, by type
- Livestock movement patterns – trade and transhumant
- Distribution of disease control measures being undertaken
- Natural barriers to livestock movement and disease spread;
- Possible patterns of disease spread / introduction
- Veterinary inspectors at abattoirs;
- Veterinary field offices (regions, woredas, animal health clinics/posts);
- Livestock markets
- Abattoirs;
- Agro-ecological zones
- Soil types
- Climate zones
- Villages, towns, roads, rivers and other physical features

The GIS would enable different overlay combinations of these data, and thereby production of an epidemiological atlas for Ethiopia. This would have significant advantage for the planning process, for reporting disease occurrence, and for identifying / investigating factors that might influence disease frequency, etc.

Action

- Install DBMS
- Obtain required data
- Enter data into tables that can be accessed and utilized by the GIS system
- Prepare maps
- Produce atlas
- Distribute atlas
- Update atlas from time to time

8.1.6 Establishment of a serum bank

Introduction

Sero-monitoring programmes of the VD involve the collection, and disposal after testing, of many thousands of serum samples each year. These serum samples constitute a potentially very valuable resource that could be used to conduct retrospective sero-epidemiological studies at very little cost – examples of this would include preliminary demonstrations of absence of specified disease agents, demonstrating the spatial distribution of disease agents, etc.

This would require the selection of a random sample of sera and the documentation, division into aliquots, and storage of these in a serum bank.

8.2 Medium term objectives

Introduction

The following activities, recommended for consideration in the medium term are based on the current situation. Changes in disease patterns, in priorities of the MARD, or other factors will necessitate complementary changes to these medium term objectives, which could include the following.

8.2.1 Review objectives and usefulness of the VEPT

The role of the VEPT is to produce information. However information per se has no value: value is conferred only by the effective use of this information.

The above indicates that the mere generation of information is not enough: the VEPT must ensure that its output is used, which in turn demands that it is required and useful.

The VEPT should therefore periodically poll its clients, the senior decision makers and other users of its output, to determine the usefulness and timeliness of its information output and to confirm that use is made of this material.

8.2.2 Transparent setting of objectives

The annual work plan of the VEPT will respond to medium and short term objectives of the team. With increasing producer and consumer awareness of animal health issues it would be prudent, maybe essential, that the VEPT takes a proactive stance and invites 'outside' parties to participate in setting objectives for national disease surveillance and monitoring. In this context, outside parties could include producers groups, exporters, abattoir owners, livestock traders, and consumer groups.

8.2.3 ISO certification

Ethiopia is potentially a major trading nation in livestock and livestock products and must recognise and participate in the globalisation process. This will require a transparent, competent and effective system of national animal disease surveillance and monitoring that enjoys the trust of the state veterinary services of trading partners.

The most effective strategy for demonstrating competence would be to work towards ISO 7000 certification of the VEPT.

8.2.4 Continued capacity building

The effectiveness of any national disease surveillance and monitoring system depends on a flow of timely and needed data from farm to central level. This requires motivated and informed participants, including veterinary field staff, veterinary inspectors, private veterinarians, abattoir staff, traders, etc.

It will therefore be essential that the VEPT implements a continuing programme of capacity building for these participants.

8.2.5 Respond to changing disease patterns

Disease patterns, production systems, market demands, and other factors are dynamic and will certainly change in the medium term.

Possible changes might include increasing importance of commercial livestock production units, and the eventual eradication of a number of important diseases such as rinderpest.

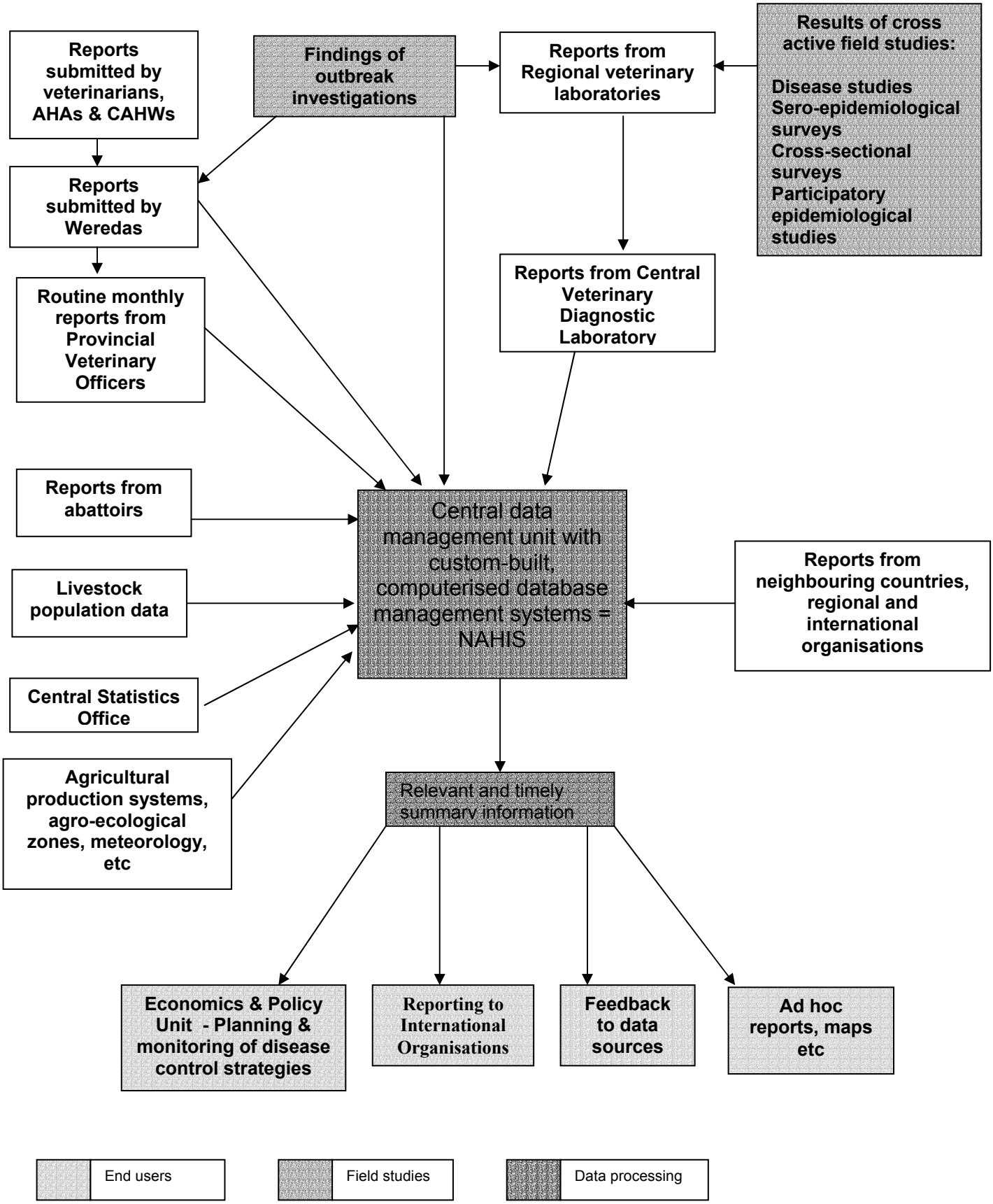
These changes would increase the relative importance of other diseases such as CBPP, foot and mouth disease and zoonoses. New data sources may be required, thus some redesign and emphasis of the NAHIS would be required.

The VEPT must be able to recognise these new developments and respond accordingly. This will require specialist knowledge and funds.

Specialist knowledge must be fostered by (a) promoting attendance of VEPT staff at selected regional and international conferences and symposia, (b) ensuring that full use is made of electronic information systems such as the internet, etc.

Funding must be secured from both public and private sources and mechanisms must be established to enable the active participation of the private sector in activities that are implemented by the public sector. All indications are that private-public partnerships of this type will become increasingly important.

Figure 3: Proposed Structure of a NAHIS for Ethiopia



FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT

VETERINARY DEPARTMENT

PROPOSALS FOR RATIONALISATION AND IMPROVEMENT OF QUARANTINE AND INSPECTION TEAM

July 2004

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PROPOSALS FOR RATIONALISATION AND IMPROVEMENT OF THE QUARANTINE AND INSPECTION TEAM

14. Introduction

1.1 Background

Inspection and certification is a core function of state veterinary services[2] and shall be carried out by a legally identifiable inspection service and have documentation that describes functions and define precise scope of services (OIE)

Important characteristics of an inspection service are:

- Independence
- Impartiality
- Integrity

Furthermore an effective inspection service will have:

- An acceptable quality system that includes, where appropriate Haazard Analysis Critical Control Point (HACCP)
- Documentation
- Sufficient number of qualified staff
- Complete facilities

Inspection is defined as:

> Examination of an animal, product, farm, factory, process or system and determination of their conformity with specific requirements or, on the basis of professional judgement, with general requirements. Inspection reports may be used to support certification[3]

Inspection is carried out to:

- Determine the conformity of imported animals and animal products – to protect domestic human and livestock populations from introduction of disease
- Determine the conformity of domestic animals and animal products for the purposes of assuring the safety of animal products and preventing the spread of disease within the country

[2] OIE Code, Article 1.3.4.3, clause 3
[3] Report of the meeting of the OIE International Animal health Code Commissions, Paris, January 1998 'General requirements to be met by a veterinary service before it can be internationally recognised as competent and reliable to inspect and certify animals and animal products'

- Determine the conformity of animal and animal products for export to comply with requirements of importing countries to safeguard the health of their human and livestock populations

Quarantine (isolation and observation of livestock for a defined period of time) serves 3 purposes:

i. To contain an outbreak of infectious diseases – a movement standstill (of livestock and products) would be imposed in a defined infected area within, say,10 km of the infected premises / holding / village etc.

ii. To protect domestic livestock populations by isolating imported animals in a quarantine area where they can be observed and possibly tested / vaccinated to ensure that they do not pose a risk of infection.

iii. To isolate export livestock in a quarantine area where they can be observed and possibly tested / vaccinated, to ensure that, at the time of shipment, they are free from specified infectious diseases. The purpose is to protect the livestock populations of the importing country.

1.2 Economic considerations

Type of economic good

Inspection and certification aim to give consumers confidence in a product and overcome moral hazard (a state in which consumers do not have sufficient information to determine for themselves whether a product is effective or safe). To this extent inspection is a public good.

Quarantine is a definite public good due the externalities involved – the process aims to protect national human and livestock populations.

The beneficiaries

The immediate beneficiaries are the traders whose animals and animal products are accepted as fit for import / export / or domestic consumption. The ultimate beneficiaries are the consumers (due to certified safe products) and livestock owners (due to reduced risk of disease).

Cost recovery

The owner of the product that has been inspected and certified as of acceptable quality gains considerable benefit as this increases the value of the product and / or means that it can be sold. Thus 100% cost recovery should be applied: this would be passed on to the eventual consumers: thus eventually consumers pay for the certification of safety.

Contestability

When the private sector is well established and competitive tendering is possible then selected quarantine and inspection activities, eg management of quarantine stations, meat inspection, market inspections, drug inspections etc. should be contracted to private practitioners.

The problems of moral hazard etc. are take care of as the public sector sets the level and controls the quality of these services.

15. Overview

2.1 Current and proposed status

2.1.1 Current status

Currently quarantine and inspection activities that support export of livestock and livestock products are centralized and therefore under the direct authority and control of the Quarantine and Inspection Team.

However there is little or no quarantine and inspection of imported animal products and there are no formal facilities for this purpose at entry points such as border crossings and airport.

There are quarantine stations established for the purposes of enabling livestock exports. These are however not to international standards.

2.1.2 Proposed status

The service is already centralised. This is good as it means that the Director, VD, can assure that acceptable standards are applied throughout the country.

Inspection and quarantine facilities would be established at important border crossing points and international airports to prevent illegal entry of potentially unsafe animal products.

Sufficient numbers of export quarantine stations of internationally acceptable standard must be established to assure the integrity of disease controls for exported livestock. These would include:

- A quarantine station must be located at sufficient distance and be separated from holdings or other places where animals are kept which are likely to be infected by infectious animal diseases
- A quarantine station must be equipped with:
  - equipment for the safe unloading and loading of animals
  - cleaning and disinfection equipment and supplies.
- A quarantine station must have a facility for the primary checking of the health condition of animals upon arrival
- The primary checking facility must

    - be easy to clean and disinfect
    - be equipped with adequate ventilation and lighting in accordance with the number of animals simultaneously examined
    - be of sufficient size to ensure possibilities for rest, feeding and watering of the examined animals, as well as possibilities to perform the required procedures
    - have adequate dressing rooms together with a shower room and toilet for the veterinary supervision staff
    - have adequate facilities for sampling and processing of samples
  - The facility where animals are placed after primary checking must be
    - in the immediate vicinity of the primary checking facility
    - equipped with the fixtures required for proper rearing, feeding and watering as well as treatment of the animals
  - The possibility of diagnostic and emergency slaughter in accordance with the requirements must be ensured in a quarantine station.

2.2 Prerequisites

An effective and internationally acceptable inspection and quarantine service will require:

- Suitable **organization** to enable it to discharge its responsibilities, and including linkages, awareness creation, communications, and empowerment

- Clearly defined **functions** that will enable it to effectively and efficiently attain its objectives – for this purpose a mission statement and terms of reference will be required.

- Qualified and experienced **staff** to enable it to carry out its various functions.

- Adequate **resources**, in terms of: qualified and experienced field staff, equipment, consumables, cold chain equipment, transport and operating funds; office accommodation

- Quality assurance for staff through the existence of a Veterinary Council that can help assure the professional integrity of inspectors who sign international health certificates.

2.3 The Quarantine and Inspection team

2.3.1 Basic working principles

The basic working principles of the QIT would be:

- To ensure that inspection and quarantine services are consistently of high quality, are carried out with independence, impartiality and integrity, and satisfy international requirements. This will involve the following:

- In close liaison with the veterinary epidemiology and policy team determine that the requirements of exporters, in terms of the disease status (free of specified diseases for a specified period of time) of animals and areas of origin and through which animals are moved.

- In close liaison with the veterinary laboratory service ensure that tests of clinical specimens (eg serum) and products is promptly carried out in accordance with international standards.

- In close liaison with the disease control team ensure that appropriate disease control measures are taken in defined livestock populations (for example export zones, and around quarantine stations) to satisfy the requirements of importing countries.

- Base standards on OIE guidelines and recommendations

16. Mission and terms of reference for the QIT.

3.1 Mission

The quarantine and inspection team requires a mission statement to guide and focus its work. The Veterinary Department (VD) and staff of the QIT should jointly develop an appropriate statement. The following will provide a basis for these discussions.

The QIT shall work towards improving the livestock health, protecting human health and promoting export of livestock and livestock by ensuring that standards of inspection and quarantine satisfy international requirements and that all certificates issued can be implicitly trusted.

3.2 Organization and terms of reference

3.2.1 Organization

The current organization of the Quarantine and Inspection Service is centralized and most satisfactory for its purpose.

3.2.2 Components of the quarantine and inspection service

The Quarantine and Inspection Service (QIS) would be directed and controlled by the Federal Quarantine and Inspection Team (QIT).

The various components of the QIS would be:

b. Regional Veterinary Departments

There would be a network of Regional Quarantine and Inspection teams (RQIT) responsible ensuring implementation of national policy at regional and woreda levels

c. Quarantine stations

These would be responsible for quarantining livestock that are imported into Ethiopia, and animals destined for export. In the interests of efficiency and to ensure that stations of required number and quality are available it is possible that some may be owned by private entrepreneurs with standards controlled by the public sector.

d. Veterinary Epidemiology and Policy Team (VEPT)

The VEPT, in consultation with the Director, VD and the DCT, would advise and assist (using NAHIS) in identifying the disease status of defined geographical areas for the purposes of international veterinary certification.

The VEPT would also participate in planning and disease occurrence data management for innovatory livestock marketing systems such as Excelex and Export Zonation.

e. Veterinary Privatization team (VPT)

The activities of this team will be important to development of stock export routes and systems as it is possible that public-private partnerships may by required to assure (a) funding for establishment of required facilities (private sector), and (b) ensuring inspection and quarantine standards that meet international standards (public sector).

Additionally, and at a later stage, the implementation of certain quarantine and inspection functions may be subcontracted to private veterinary practices, with the public sector setting and monitoring standards.

f. Disease control team

This would play a major role in implementing export-oriented disease control / eradication measures, the planning and implementation of which would be coordinated with the QIT

g. Veterinary private practices

It has been proposed that the eventual policy of the public sector should be to subcontract implementation of many public good activities (inspection, meat inspection, operation of quarantine stations etc) to the private sector – ie to private veterinary practices. These practices will thus become important players in quarantine and inspection activities.

h. Entrepreneurs and exporters.

It is likely that public resources will not be sufficient to establish the required numbers and disposition of quarantine stations thus it is possible that the private sector, in close collaboration with state veterinary services, would establish such facilities. As referenced above, the public sector would be responsible for controlling standards to ensure that international requirements are satisfied.

i. Donor agencies

Donor agencies could, depending on their priorities, assist in providing resources, training opportunities, and technical support to enabling, facilitating and promoting high standards of inspection, and exports of livestock and livestock products. Donors could also continue the process of developing and testing innovatory export marketing systems.

3.3 The Quarantine and Inspection team

3.3.1 Terms of reference

The following terms of reference for the QIT are proposed:

The QIT shall:

n. Liaise and coordinate inspection, quarantine and certification activities with the VEPT, the VLS and the DCT;
o. Ensure that inspection standards for the export trade satisfy international requirements and are consistently applied;
p. Ensure that inspection standards at domestic abattoirs satisfy national standards and are consistently applied
q. In collaboration with traders and exporters identify means to establish new quarantine stations that meet international requirements. This could involve public-private partnership arrangements or similar.
r. Work towards improving inspection of livestock and livestock products at border entry points.

3.3.3 QIT documentation and data management

Timely and reliable information is essential for effective physical and financial planning and monitoring. It will be the role of the VEPT, through the NAHIS, to acquire and manage data and generate information, as required, for the QIT.

In addition, the DCT would be able access the NAHIS as required to view progress, check technical and financial performance against targets, etc.

3.4 Empowerment

Effective quarantine and inspection services must have legal underpinning to enable it to carry out its statutory obligations, including:

- Inspection and retention (for further inspcection and / testing) or destruction of imported animals and animal products;
- Inspection and certification of animals or animal products destined for export;
- Inspection and approval / treatment / condemnation of animals and carcasses at abattoirs;
- Inspection of markets and livestock in markets
- Inspection of livestock that are being moved to ensure that required documentation, identification etc are in order
- Entry to and Inspection of animals in any premises where occurrence of disease is suspected.

3.5 Linkages and communication

Effective linkages and communication with all players described in 3.2.2 will be essential to efficient and effective quarantine and inspection activities.

- Formal linkages with the immediate players
- Capability to organize and conduct meetings and workshops with stakeholders
- Access to the mass media to create awareness of responsibilities of lthe various stakeholders, including livestock owners;

17. Staff and other resources

As proposed, the DCT unit will require:

Team leader
At least three veterinarians – to enable coordination with the 10 regional veterinary departments etc.
Secretary

Physical recourses required will include:

Office accommodation
Telephone – to enable contact with other players
Access to internet – to enable contact with regions
Transport and transport operating costs – to enable visits to regions and woredas
Computers, printer, UPS, modem, consumables

4.1.1 Qualifications and terms of reference

a. Head, VEPT

Qualifications:

- Veterinary degree
- Qualification in planning or project management would be useful
- Experience in management of national inspection and quarantine programmes.

Terms of reference

The Head, VEPT, shall work to the Director, VD and:

- Prepare annual work plans and budgets for the team
- In collaboration regional veterinary departments prepare annual work plans and budgets for regional inspection and quarantine activities
- In collaboration with the Director, VD, conduct annual policy reviews and amend policy as required
- Be responsible for coordination with the VEPT, DCT and VLS
- Liaise closely with livestock traders and exporters in order to understand and respond to their needs
- Liaise with Head, Veterinary Privatization Team in pursuit of novel approaches to provision of infrastructure (eg quarantine stations) through public-private partnerships etc.
- Liaise with Ministry of Health and establish information exchange, including data related to zoonoses
- Keep up to date with new developments in inspection and quarantine, and as appropriate introduce these into the Ethiopian system
- Liaise with donors to identify and assist in implementing innovative systems to facilitate export of livestock – for example compartmentalisg.

b. Inspection and quarantine officers

Qualifications

- Veterinary degree
- At least 5 years experience as a veterinary inspector

Terms of reference

Inspection and quarantine officers would work towards the Head, QIT and:

- Collaborate with regional veterinary departments, border inspection posts, abattoirs, and facilities for export of livestock and livestock products and

ensure that national policies are being effectively and consistently implemented.
- As required provide technical and other assistance and advice to veterinary inspectors
- Identify training needs of veterinary inspectors
- Monitor implementation of annual work plans and use of funds in order to rapidly identify and resolve problems

18. The future

The following development activities for the QIT are proposed:

4.1 Short term

The following short term priorities are proposed;

a. Support exports of livestock and livestock products by:

- Working towards improving quarantine stations, maintaining internationally acceptable standards of inspection in export abattoirs, and cooperating with the private sector and donor community.

b. Improve quality and safety of meat products by:

- Training of meat inspectors
- Reduce the numbers of informal slaughterings by increasing the numbers of inspectors and inspected slaughter slabs and local abattoirs.

c. Ensure full cost recovery by:

- Establishing a formal, legally backed cost recovery policy
- Determine the real cost of providing each service
- Consistently apply the policy of full cost recovery throughout the system

4.2 Medium term

- Establish a network of border inspection points
- Work towards enabling the QIT to retain revenues collected through the cost recovery policy and use these funds to expand and improve the QIS
- Through initiatives such as public-private partnerships expand and increase facilities for export of livestock and livestock products

FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

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VETERINARY DEPARTMENT

PROPOSALS FOR RATIONALISATION AND IMPROVEMENT OF VETERINARY LABORATORY SERVICES

July 2004

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PROPOSALS FOR RATIONALISATION AND IMPROVEMENT OF VETERINARY LABORATORY SERVICES

19. Introduction

"Laboratory means a properly equipped institution staffed by technically competent personnel under the control of a specialist in veterinary diagnostic methods, who is responsible for the validity of results. The veterinary administration approves and monitors such laboratories with regard to the diagnostic tests required for international trade"[4]

"As the above OIE definition indicates, a laboratory's key task is to carry out diagnostic tests, but in the past decade the laboratory's role has diversified further strengthening its position as an active partner of the veterinary services. Below are a few examples[5]

- The laboratory as a generator of test results. These results provide an understanding of disease patterns for example, the confirmation of the presence of a disease by identification of the causal agent

- The laboratory as a key partner in animal disease and zoonosis surveillance. By providing essential diagnostic support (eg identification of new agents, confirmation of the cause of a disease outbreak, testing sera in serological surveys etc) a national veterinary laboratory service (NVLS) plays a vital and leading role in a national disease surveillance and monitoring system.

- The laboratory as a partner in managing emergencies and setting up response plans. The major contribution of the NVLS is to provide rapid and accurate identification of exotic disease agents and thereby enable a rapid and targeted response.

- The laboratory as a support structure for export of livestock and livestock products. Laboratories can analyze random samples as part of the process for certifying animals and animal products for export. The quality of laboratory findings exerts a major influence determines on the quality of veterinary services and hence the level of confidence of veterinary services of importing countries in the certificates issued."

The diagnostic output of a NVLS could be considered as a public good due to the consumption externalities involved as the diagnosis of a given disease can inform all livestock owners in the area of the presence of the disease and thereby prompt them

[4] International Animal Health Code, mammals, birds and bees 2002. General definitions and notification of animal diseases.
[5] Proceedings of the OIE seminar "Organisation of Veterinary Services and Food Safety". Analytical laboratories: active veterinary service partners. September 2002, Tunis, Tunisia

to take preventive measures. In other instances (for example diagnosis of a non-infectious disease for an individual owner) the NVLS is providing a pure private good and all costs should therefore be borne by the animal owner.

There are no private laboratories in Ethiopia and livestock owners are generally unable to pay fees for laboratory analyses hence all costs of providing diagnostic support for the veterinary clinical service should be borne by government in order to encourage use of the service.

The NVLS diagnostic capability is an essential input to national disease surveillance and monitoring, and therefore to control of important animal diseases and zoonoses. This support is a definite public good due to externalities and low excludability.

By testing specimens as required to meet requirements of importing countries (eg serological testing for brucellosis) the NVLS supports exports of livestock and livestock products. These are essential private good services and immediate beneficiaries (traders) should pay all costs.

In summary:

- Many NVLS services are public goods and almost all costs of a NVLS should be provided by the public sector, with some cost recovery for specified services.

- Each country must have at least one national reference laboratory with the expertise to carry out a number of analyses.[6]

- The NVLS should concentrate on priority activities, including (a) supporting the national disease surveillance and monitoring system operated by the Veterinary Epidemiology and Policy team (facilitating early warning and rapid and reliable diagnoses of the transboundary animal diseases - TADS), and (b) supporting exports of livestock and livestock products by conducting laboratory tests required for certification purposes.

20. Overview

2.1 Current and proposed status

Currently the NVLS is decentralized and lacks a national lead laboratory. This greatly reduces its effectiveness and compromises its role in improving and protecting human and animal health, and in supporting exports. A centralized system under the direct control of the Director, VD, is essential, particularly to promote exports of livestock and livestock products.

[6] Proceedings of the OIE seminar “Organisation of Veterinary Services and Food Safety”. Analytical laboratories: active veterinary service partners. September 2002, Tunis, Tunisia

2.1.1 Current status

The current decentralized structure of the NVLS in Ethiopia definitely reduces the potential contribution to: disease surveillance; improving animal health; improving veterinary public health, and; promoting exports of livestock and livestock products. Regional authorities set the agendas and budgets for the regional laboratories: there is no coordinated national policy for veterinary laboratories, nor any policy to enable individual laboratories to specialize in certain analytical / test methods, or diseases.

There is no national lead veterinary laboratory in Ethiopia: the Central Disease Investigation Laboratory (CDIL), Sebeta, that was originally constructed for this purpose in the early 1990s was promptly transferred to the Ethiopian Agricultural Research Organization (EARO), designated as the National Animal Health Research Centre (NAHRC), and now carries out a minimal amount of diagnostic work.

The National Veterinary Institute (NVI), Debre Zeit, that provided much diagnostic support in the past, now concentrates solely on vaccine production and related research

2.1.2 Proposed status

A coordinated and focused NVLS under the control of the Director, Federal Veterinary Department (VD) is required, comprising a central lead laboratory supported by a network of regional laboratories.

It is proposed that the:

- The NAHRC be transferred from the EARO to the MoARD, placed under the direct authority of the Director, VD, and re-designated as the national veterinary investigation laboratory (NVIL or similar title) with the mandate to serve as the national reference veterinary laboratory and to lead the national veterinary laboratory services.

- Regional laboratories be transferred from regional to federal control and placed under the direct authority of the NVIL

The NVLS, certainly in the early stages of its development must concentrate on two related and priority tasks: rapid and reliable diagnosis of TADS, and providing laboratory diagnostic / assay support for export certification.

2.1.3 Speed at which the required surveillance system is developed

It is strongly recommended that the new NVLS be developed in stages and commensurate with availability of trained manpower and resources.

2.2 Prerequisites

An effective NVLS will require:

- Suitable **organization** to enable it to discharge its responsibilities, this would include linkages and communications, and empowerment

- Clearly defined **functions** that will enable it to effectively and efficiently attain its objectives – for this purpose a mission statement and terms of reference will be required.

- Qualified and experienced **staff** to enable it to carry out its various functions.

- Adequate **resources**, in terms of: equipment, reagents, consumables, reliable electricity supply, computers and related equipment and software, transport and operating funds; office and laboratory accommodation; and library of reference books and other documents. Very importantly for diagnosis of TADs and export certification purposes, the NVLS must have ready access to adequate amounts of hard currency required for purchase of (a) test kits – for example for Rift Valley fever antibody assay, foot and mouth disease virus and antibody detection, and (b) reagents for other tests and assays, including for rinderpest surveillance

21. Mission and terms of reference for the NVLS.

3.1 Mission

The NVLS requires a mission statement to guide and focus its work. The Veterinary Department (VD) and staff of the NVLS should jointly develop an appropriate statement. The following will provide a basis for these discussions.

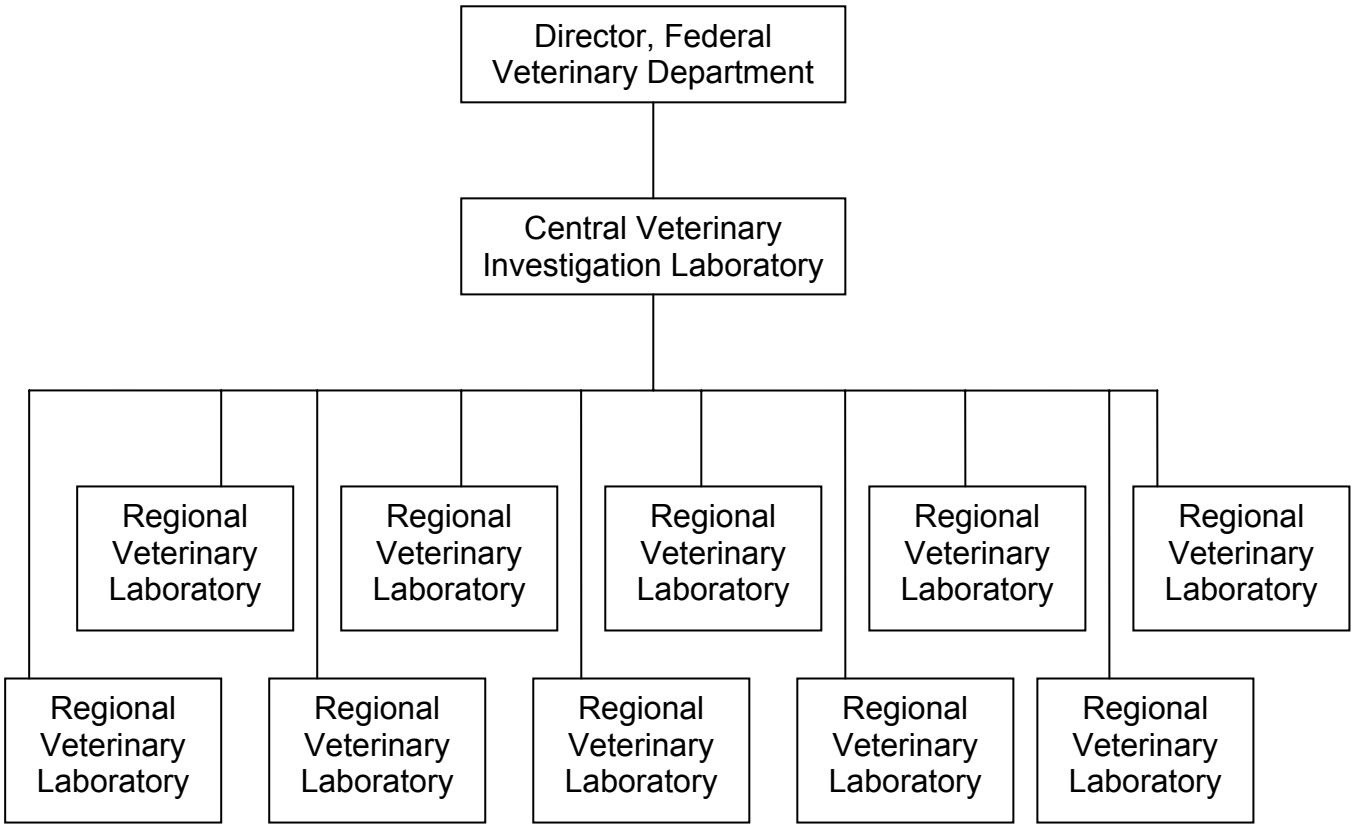
The NVLS shall work towards improving the standards and efficiency of animal disease and zoonosis control and enabling livestock export trade in Ethiopia by providing a reliable, quality-assured and accurate laboratory diagnostic and assay service to support national disease surveillance and monitoring, quarantine and inspection, certification, disease control, and veterinary clinical services.

3.2 Organization and terms of reference

3.2.1 Organization

As shown in Figure 1, the regional veterinary laboratories would be under the authority and control of the CVIL. In turn the CVIL shall work towards the Director, VD. This organization would enable (a) coordination and control of the system and (b) implementation of national policies in all regions.

Figure 1: Proposed structure and lines of authority of NVLS



3.3 The National Veterinary Laboratory Service

3.3.1 Terms of reference

The following terms of reference for the NVLS are proposed:

- As part of the essential early warning/early response capability, undertake rapid investigation and diagnosis of the cause of outbreaks of (suspected) serious diseases.

- Undertake active field studies and surveys of disease as required by the VEPT in support of export certification and disease control (eg to estimate disease prevalence or incidence, define populations at risk (species, location, size etc, estimate production losses, etc), and trade in livestock and livestock products (eg serological surveys to support contentions of disease free status), serological testing during quarantine to demonstrate freedom from specified disease(s) eg brucellosis).

- Provide diagnostic support to veterinary clinicians in the public and private sectors

- Enable effective monitoring of patterns of occurrence of enzootic diseases by computerized management of laboratory data.

- Eventually participate with private practitioners in developing herd health and production programmes

- Undertake prioritized animal disease research.

- Provide the highest possible standards of accuracy and reliability

3.3.2 Working principles

a. Orientation

It is proposed that the NVLS would, as far as possible, be proactive and field-oriented and, in close collaboration with the Veterinary Epidemiology Unit and the Inspection and Quarantine team, conducts active disease investigations / studies / surveys / research. This would lead to a more effective NVLS that understands field conditions and gets away from the more traditional sedentary approach of a laboratory service where, with the exception of disease outbreak investigations, staff remain in the laboratory and wait for specimens to be submitted by third parties for testing. This approach would benefit understanding and control of TADs and other important diseases, and add the required quality to export certification.

b. Quality assurance

"The quality of veterinary laboratories underpins the whole control and certification process of zoosanitary / sanitary status of exported animals and animal products and therefore these laboratories should be subject to rigid quality assurance procedures and should use quality assurance programmes, where available, for standardizing test methodologies and test proficiency - for example use of international standardized sera for standardizing reagents"[7]

The accuracy and reliability of the findings of the NVLS must therefore be assured and for this purpose the CVIL would design and implement a quality assurance programme (defined as "the administration and management of integrated quality control (QC) practices that will result in a high probability that the data produced is representative of the sample submitted for analysis). The components of a possible programme are presented below.

1. The programme would utilize internationally recognized principles and methods and be designed, implemented and controlled by the CVIL. It would be mandatory that all laboratories within the NVLS participate in the programme.

[7] OIE International Animal health Code, Chapter 1.3.4: Guidelines for Evaluation of Veterinary Services, page 39

2. Quality assurance will include the hiring and training of laboratory staff with the required qualifications and skills or having the potential to develop the necessary skills.
3. The laboratory methods used for diagnosis of all OIE List A and List B diseases, and for any procedures required for export or other certification, would be as detailed in the OIE Manual
4. Standard operating procedures (SOP) would be established by the CVIL and applied throughout the NVLS.
5. The CVIL would establish a blind samples system of checking the standards throughout the NVLS. The CVIL would exchange specimens with one or more selected world reference laboratories to provide a check on its own procedures and work. The CVIL would exchange blind samples with the regional laboratories to check their performance, and in addition make regular visits to check on adherence to SOP, etc.
6. In addition to the above, quality assurance would also include control of the following tasks: calibration and standardization, preventive and remedial maintenance of equipment, proper instrument selection and use, quality laboratory water, clean laboratory environment, holding facilities for samples, and evaluation of data and recording and maintaining a QC database.
7. All incoming specimens would be logged in and given a laboratory number, and assigned to the appropriate laboratory department for testing.

3.3.4 The Central Veterinary Investigation Laboratory

The CVIL would be the lead veterinary laboratory in Ethiopia and serve as the national reference laboratory, specifically to:

- Serving as the national reference laboratory by providing technical support to the regional veterinary laboratories (RVL) - eg confirming diagnoses made by these laboratories, and carrying out tests and assays that are beyond the competence of the RVL

- Plan and conduct training programmes for RVL staff;

- Liaise and cooperate with regional and world reference laboratories to acquire expertise, participate in quality assurance programmes (eg by participating in blind specimen testing), and submit to them specimens for examination / confirmation of diagnosis / etc.

- Liaise with donor organizations, livestock-related projects to obtain inputs and equipment, expand capability and

- Administer the national quality assurance programme;

- Maintain a national database of all diagnostic and investigative work carried out by the NVLS.

- Develop and strengthen particular expertise and experience in the diagnosis and characterization of causal agents of selected diseases with

the eventual aim of being recognized as a centre of excellence and being certified as a regional, or world reference laboratory for these diseases.

In addition, the NVIL would carry out normative laboratory activities in its geographical area of work, including to:

- Undertake rapid investigation and diagnosis of the cause of outbreaks of (suspected) serious diseases.

- Undertake active field studies and surveys of disease in the region as required by the VEPT in support of disease control (eg to estimate disease prevalence or incidence, define populations at risk (species, location, size etc, estimate production losses, etc), and trade in livestock and livestock products (eg serological surveys to support contentions of disease free status), serological testing during quarantine to demonstrate freedom from specified disease(s) eg brucellosis).

- Provide diagnostic support to veterinary clinicians in public and private sectors in the region

- Enable monitoring of patterns of occurrence of enzootic diseases by maintaining computerized data systems that manage laboratory data. Regularly submit these data to the CVIL.

- Undertake prioritized animal disease research.

- Operate, improve, and monitor the NVLS database management system, including maintenance of the national laboratory database.

- Provide regular monthly reports of findings etc to the Director, VD, and the Veterinary Epidemiology and Policy Team (VEPT).

As the national reference laboratory, the CVIL should provide a comprehensive range of diagnostic techniques, which would require the following specialist divisions:

- Pathology
- Bacteriology
- Virology
- Serology
- Mycology
- Parasitology
- Toxicology

It is strongly recommended that the original scope of work, objectives, equipment, staffing and structure as envisaged by the Fourth Livestock Development Project be revisited and used as the guide for detailed planning of the CVIL.

The CVIL should aim to adopt up-to-date diagnostic techniques such as a range of new and advanced ELISA methods for detecting antigens and antibodies, and the

polymerase chain reaction (PCR) methods for identification of antigens/causal agents, particularly to support export certifications.

3.3.5 The regional veterinary laboratories

The regional veterinary laboratories would be responsible for provision of laboratory diagnostic and other services at the regional level and would, as far as possible and in line with national policy, be proactive by carrying out active disease investigations / studies / surveys / research.

The RNVLS would provide a more basic range of services (but see specialization below), probably including:

- Pathology
- Bacteriology
- Parasitology
- Serology

The roles of the regional laboratories would be to:

- Carry out systematic investigations of (suspected) outbreaks of important diseases and provide required epidemiological information and a definitive diagnosis
- Carry out statistically valid and prioritized field surveys and studies to provide required epidemiological data and information about important diseases and to support export of livestock and livestock products
- Providing routine diagnostic support to veterinary clinicians
- Supporting veterinary certification by conducting required serological tests, or tests on products on 100% cost recovery
- Building a database of routine diagnostic data - for specimens submitted by private practitioners, clinics etc – which could be used by epidemiologists to search for new and unusual disease events, and to develop and monitor indices of disease frequency.
- Carrying out a prioritized programme of field research in support of disease control, human health, and trade in livestock and livestock products
- Submit regular monthly reports of findings etc to the Director, CVIL, VEPT, and Regional Agricultural Bureau.

Specialization would be encouraged at the regional laboratory level. Depending on the commoner and more important diseases in the region a RVL could specialize in tick-borne diseases, or ectoparasites, or streptothricosis, or endoparasitosis, etc,

3.3.6 Laboratory Data Management

It is proposed that all data management for the NVLS be computerized in order to:

- Serve as a valuable management tool, to:
    - Monitor the activity of the various laboratories
    - Enable improved planning of procurement of inputs and supplies
    - Facilitate information sharing and exchange between laboratories (eg between the NVIL and the RVL, and between the individual section within a laboratory – for example between pathology and bacteriology)
- Provide a valuable pool of disease data that could be 'mined' by epidemiologists to:
    - Help identify new diseases or syndromes
    - Develop and monitor indices of frequency of occurrence of enzootic diseases and thereby detect any trends in disease frequency
    - Monitor changes in geographical distribution of enzootic diseases
- Facilitate preparation of monthly reports of findings etc. and electronic submission of these to recipients.
- Facilitate data management for disease surveys, studies and research projects.

This would require a dedicated database management system (DBMS), for example InterLab, produced by the Veterinary Epidemiology and Economics Research Unit, University of Reading, UK. Each incoming specimen would be allocated a unique accession number at reception, source data on the specimen submission form would be entered into the database. The pathologist would determine to which division(s) a specimen should be sent for testing: each of these laboratory divisions would update the specimen's computerized record as appropriate (date, tests/assays carried out, result of tests/assays). When all testing has been completed a final diagnosis would be made by the pathology division and entered into the database. Any charges would be calculated by the DBMS which would automatically produce a report of findings form and if applicable an invoice.

All records would be retained in the CVIL or regional DBMS. Regional laboratories would regularly send data to the national database at the CVIL. The veterinary epidemiologists would utilize this national data resource to monitor and identify disease patterns, monitor trends in enzootic disease patterns, detect any new or unusual diseases, etc.

It is important that the NVIL DBMS is totally compatible with that of the Veterinary Epidemiology and Policy Team.

An essential prerequisite for a NVLS, particularly one with computerized data management, is a standardized specimen submission form that must accompany all specimens submitted to the NVLS.

3.4 Empowerment

For the purposes of enabling international certification (eg of immune status of an individual animal, supporting statements of freedom from a specified disease(s), etc) the NVLS, or at least the CVIL must be accredited for this purpose by the Director, VD. In turn it is necessary that the Director is legally empowered to accredit one or more laboratories based on international quality standards based on OIE recommendations.

22. The future

The following development activities for the NVLS are proposed:

4.1 Short term

- Transfer NAHRC from EARO to the MoARD, place under direct authority of the Director, VD, re-designate as the CVIL, draw up TOR, determine what equipment and resources are available and what are required for TOR and derive list of immediate requirements, secure funds needed for immediate development and operation.

- In a phased manner transfer (say 3 per year) RVL from Regions to the MoARD, place under direct authority of the CVIL, draw up TOR, for each laboratory determine what equipment and resources are available and what are required for TOR and derive list of immediate requirements, secure funds for immediate development and operation.

- Conduct a training needs assessment of the CVIL and regional laboratories and use findings to formulate a plan for training of laboratory staff. In consultation with government, donor community and other funding sources work towards implementation of this plan

- Conduct an inventory of capability, resources and equipment and use findings to formulate prioritized lists of required inputs. In consultation with government, donor community and other funding sources work towards implementation of this plan

- As a priority build and develop capacity required for rapid and accurate diagnoses of TADs, and for conducting OIE-standard tests for the purposes of export certification.

- Assure funds which to enable and purchase inputs required for certification of export livestock and livestock products – for example to demonstrate (specific) disease-free status of (a) defined / individually identified groups of animals and/or (b) defined geographical areas. Required would be: equipment

and consumables; internationally accepted test kits and reagents; sampling equipment; transport and operating expenses; staff field allowances; etc.

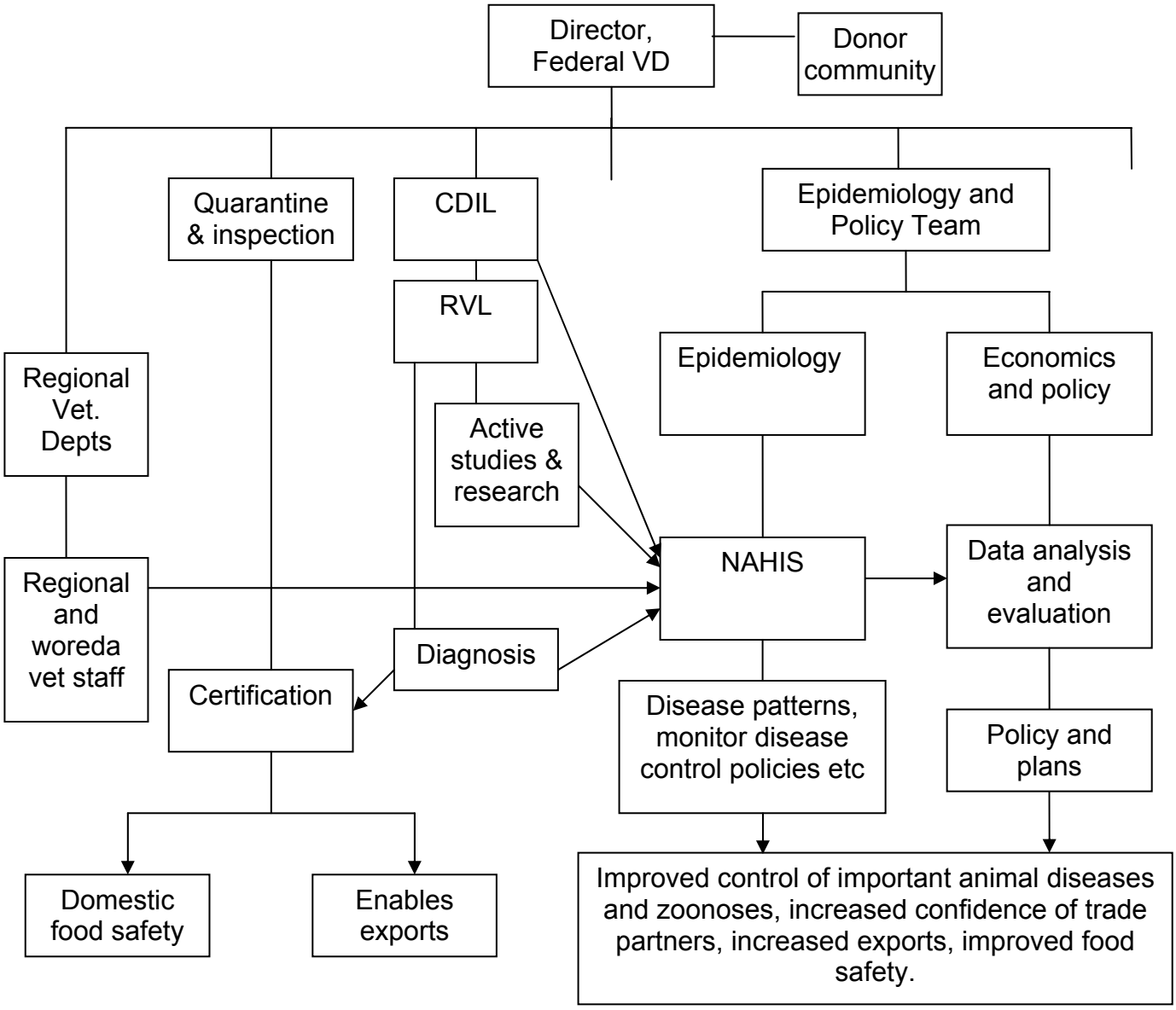
4.2 Medium term

- Taking existing relative advantages of staff resources, equipment, and disease patterns in Ethiopia select one or more diseases in which the CVIL would develop specialist knowledge and expertise. Using the established links with regional and world reference laboratories expand knowledge and expertise, as possible arrange fellowship training in appropriate techniques for selected staff members. Continue to build capacity, provide required equipment, and work towards accreditation as a regional or world reference laboratory.

- Taking existing relative advantages of staff resources, equipment, and regional disease patterns in Ethiopia a given regional laboratory would select one or more diseases in which it would develop specialist knowledge and expertise and eventually become a national specialist national laboratory in the selected diseases. In this process care would be taken to avoid any duplication of effort and resources.

- Under direction from the Director, VD, carry out animal health research projects as required.

Figure 2: Outline of Proposed Structure and Linkages of the NVLS



FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT

VETERINARY DEPARTMENT

PROPOSALS FOR ESTABLISHMENT AND OPERATION OF A VETERINARY PRIVATISATION TEAM

June 2004

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PROPOSALS FOR ESTABLISHMENT OF A VETERINARY PRIVATISATION TEAM.

1. Introduction

The overall objective of restructuring of veterinary services should be to increase the efficiency and effectiveness of animal health care delivery and, consequently, livestock productivity; safeguard public health; and contribute to national development. The end result should be (i) a public veterinary service better able to carry out its redefined responsibilities; (ii) a functioning private sector; and (iii) the necessary supporting personnel and infrastructure able to contribute to the overall objective.[8]

It is widely accepted that the private sector should deliver a number of services which are pure, or near-pure private goods.

For example[1]

- Clinical diagnosis and treatment
- Artificial insemination
- Production and distribution of remedies and vaccines
- Herd health and production programmes
- Marketing of livestock and livestock products

For example[9]

- Clinical interventions are a public good with externalities (positive - successful treatment of a case of infectious disease will reduce the risk of transmission to other animals in other herds, - negative if treatment of an infectious disease does not effect a complete cure and leaves the treated animal as a carrier that can expose animals in other herds to risk of disease).
- However, delivery of clinical services by the private sector is economically justified.

The current proposal deals with the issue of privatization and assumes that national policy for public veterinary services shall be:

- To concentrate on a limited range of public good core functions – primarily regulation, policy making, inspection and quarantine, disease surveillance and monitoring, and some research and extension.
- To eventually divest all private good functions to the private sector

[8] Principles of rational delivery of public and private veterinary services with reference to Africa, FAO, 1997)
[9] Animal health services: Finding the balance between public and private delivery, World Bank Research Observer, Vol 9 No 1 71-96

- To subcontract implementation of many public good activities to the private sector

The establishment of a Veterinary Privatization team is proposed to enable the Veterinary Department to undertake the privatization policy outlined above.

Specifically the VPT shall:

- Drive the process of divestment of veterinary clinical services from public to private sector
- Assist and advise in development of appropriate and innovatory animal health delivery systems for the various production systems in Ethiopia.
- Advise and assist in preparation of sanitary mandates under which private veterinary practices would undertake public good activities on contract to VD – for example vaccination, sero-monitoring, meat inspection, and other inspections
- Promote, regulate and advise in assimilation of paraveterinarians, particularly CAHWs, into the national animal health delivery system.

Veterinary clinical services are classed as a pure private good when supplied by farm visits (high excludability and high rivalry) and as a toll good when supplied through fixed clinics to which sick animals are brought (here excludability is high but rivalry is low).

New animal health delivery systems are required, certainly for the pastoral areas, and possibly also many parts of the highlands as the classical veterinary practice based on one or more veterinarians assisted by closely supervised para-veterinarians is not economically viable in these areas.

Sub-contracting implementation of public good activities has several important advantages

- The private sector could implement many of the contestable activities in a more cost-effective way due to its greater flexibility compared with the public sector;

- It would improve the financial viability of private veterinary practices and thereby contribute to creation of an enabling environment for privatization.

The immediate beneficiaries of the work of the Privatization Team (PT) would be private veterinarians, animal health assistants (AHA), animal health technicians (AHT) and community-based animal health assistants (CAHW). The ultimate beneficiaries are the livestock owners who would have wider access to veterinary clinical services and as a result losses from private good diseases would be reduced.

The VPT would be divided into two units: the Veterinary Privatisation and Contracting Unit, and the Community Based Systems Support Unit

2. Overview

2.1 Divestment of veterinary clinical services

2.1.1 Objectives

The objectives of this activity are to ensure that national policy to privatize delivery of all veterinary clinical services is completed as soon as possible – namely at the rate at which the private sector can absorb this work.

2.1.2 Basic working principles

To be successful, divestment must be soundly based on the following:

- A clear exit strategy for the public sector so that as soon as a private animal health delivery system has been established in an area (to be defined) then the public sector should immediately cease provision of all official and unofficial clinical services and have a transparent policy of selling or leasing any public sector veterinary clinics / posts in that area.

- Creation of an enabling environment for private practitioners, including

  - Legislation to provide govern private practice and thereby give potential practitioners confidence
  - Implementation of a policy of ***full cost recovery*** by regional veterinary departments
  - Controls to assure the quality of veterinary drugs and vaccines
  - Promoting the financial viability of private practices by advising and assisting in form of standard methods for contracting implementation of public good services (such as vaccination, collection of blood samples for sero-epidemiological studies, inspection services, etc) to the private sector, including drawing up tender documents, selection of winning tenders, supervision and monitoring of contractors, certifying work of contractors, paying contractors, dealing with problems, defaulters etc

- Promoting availability of finance required to start up a new practice. This would include exploring and encouraging possible sources including commercial banks and donor projects. A potential problem here is the means of guaranteeing a loan through a guarantor, collateral (eg land or property) or similar.

The work of the unit would be based on:

- A programme of continual monitoring of provision of clinical services by public and private sectors carried out in close collaboration with the Ethiopian Veterinary Association (to represent private practitioners), regional veterinary departments (representing the public sector) and other stakeholders as possible. The purpose of this monitoring process would be to ensure that agreed national policy of divestment of veterinary clinical services is being

implemented as, when and where possible – this would depend on presence of suitable combinations of veterinarians, AHAs and CAHWs that wish to establish a private practice which in turn will be a function of the annual output of veterinarians by the veterinary faculties, of AHAs by the XXX Institute, and of CAHWs by government, NGOs and projects etc..

- Assisting potential practitioners to identify suitable practice locations – based on livestock species, livestock density, communications, production system etc. For this purpose the VPT would establish and maintain a database that would, in part, be dependent of the NAHIS.
- Assisting a new practitioner to establish a practice in an area that he / she has identified. This would include ensuring that the agreed national exit strategy for the public sector is promptly implemented so that unfair competition is not offered by the public sector or its employees
- In collaboration with the EVA, the regional veterinary departments and the Veterinary Council monitor the activities of the informal sector.

2.2 New animal health delivery systems

2.2.1 Justification and Objectives

In effect this unit is the National Community-based Animal Health Support Unit proposed for Ethiopia by CAPE. Reference to this proposal is recommended.

The standard 'western' veterinary practice model in which one or more registered veterinarians assisted by a number of carefully supervised paraveterinary staff provide a veterinary clinical service based on a blend of a mobile service through farm and house visits and one or more fixed point clinics Is applicable only to a very limited extent (urban pets, peri-urban dairy operations, and areas with a critical mass of commercial livestock units) in Ethiopia and most other developing countries.

This is particularly true of the pastoral areas where communications are poor, livestock are moved from area to area depending on availability of feed etc, and the density of livestock is low.

It is also true in the central highlands of Ethiopia where farm incomes and small mean herd size (treatment costs per animal tend to reduce with herd size due to economies of scale) would render the standard model non-viable.

New animal health delivery systems that are cheaper, reliable, readily accessible and competent are required. Community based animal health systems meet these criteria but must be coordinated, supervised and guided to achieve and guarantee sustainability.

Thus the VPT would, working in close collaboration with the regional veterinary departments, EVA, Veterinary Council, NGOs, and donor-funded projects such as CAPE, promote the development, testing and establishment of new animal health delivery systems that:

- Make use of paraveterinarians, including AHAs, AHTs and CAHWs

- Are adequately supervised to ensure that high standards of surveillance and disease control are maintained: This is an essential requirement if Ethiopia is to gain the confidence of foreign veterinary services and expand the export of livestock and livestock products.

- Are financially viable, accessible and provide animal health services that meet the needs of the target communities.

2.2.2 Basic working principles

The work of the team would be based on:

- Interactions with groups interested in delivery of animal health services, including the donor community, regional and international organizations, EVA, veterinary council, regional veterinary departments, livestock producers groups etc.

- Coordinating CAHW activities and development of animal health delivery models in Ethiopia and acting as a documentation and resource centre

- Creating an enabling environment for creation and testing of new delivery systems

- Liaise with the Veterinary Council, EVA, VD, and other stakeholders to ensure that AU/IBAR policy guidelines for CAHWs are rigorously applied in Ethiopia.

It is proposed that the AU/IBAR Policy on community-based animal health workers (which is based on the International Animal Health Code of the Office International des Epizooties - OIE) be used as the guide to use of CAHWs. The major points of this policy are summarized below:

- CAHW activities should be regulated by the (proposed) Veterinary Council including definition of roles, levels of supervision and reporting relationships

- Named officers of the Veterinary Council should be responsible for ensuring the quality of CAHWs, and that assuring the quality of CAHWs at the field level should be delegated to government veterinary officers (veterinary inspectors).

- The definition, roles, regulation and supervision of CAHWs should be defined in (secondary) veterinary legislation

- Veterinary services need to develop objective and transparent systems for accreditation, monitoring and supervision of CAHWs

- Training of CAHWs should follow standard curricula endorsed by the Veterinary Council, the Council should define the qualifications required for

trainers of CAHWs, training courses should be assessed by veterinary inspectors, and examinations for CAHWs should be based on standardized texts endorsed by the Veterinary Council.

- CAHWs should be licensed by the Veterinary Council and a register should be maintained that includes the location and name the veterinarian responsible for the activities of the CAHW. Licenses should be renewed annually according to annual assessment of CAHW knowledge and skills by veterinary inspectors

- The veterinary Council should define systems for the supervision and responsibility of CAHWs.

It is most important that these above policy be fully and consistently implemented in Ethiopia so that the (very necessary) use of CAHWs is not seen to dilute or compromise the effectiveness of national veterinary services which critical to gaining the confidence of veterinary services of importing countries and consequently to promoting the export of Ethiopian livestock and livestock products.

2.3 Contestable activities

2.3.1 Justification and objectives

Contestable activities are public good activities which could be implemented (under close monitoring and supervision) by the private sector or public sector: the eventual implementer would be determined from time-to-time through a tender process. For the purposes of this proposal it is assumed that tendering would be restricted to the private sector bids.

By subcontracting defined public good activities to the private sector, the Veterinary department will:

- Reduce its work load enabling it to reduce staff levels and concentrate on core activities
- Have field programmes implemented in a more cost effective manner due to the greater flexibility and motivation of the private sector
- Strengthen the public-private partnership and, by improving the financial viability of private practices, enhance the quality and coverage of veterinary services.

The objectives of the subcontracting unit are:

- In consultation with the Director, VD, and Team Leaders to identify activities that are contestable

- To draw up model procedures for tendering, selecting the winning bid, contracting, monitoring and certifying the work of contractors.

- To ensure that the national policy of subcontracting defined activities is implemented at the field level.

2.3.2 Basic working principles

The basic working principles of the unit would be:

- Transparency will be very important to subcontracting as public funds are being expended. The unit will disseminate and publicize lists of activities that are to be contested, the results of tenders, the rules of tendering (eligibility, selection criteria, quality expected, disqualification/rejection of defaulting bids etc),

- Monitoring of subcontracting, including proportion of identified activities that is contracted, the performance of contractors, default rate, etc.

- Using expertise as and when required, including legal expertise in drawing up model contracts and tendering procedures.

- Being available to advise and assist in resolving problems as they arise.

- Designating officers in regional veterinary departments who will be directly responsible for implementation at the regional and woreda levels.

2.4 Basic requirements of the VPT

An effective veterinary privatization team will require:

- Suitable **organization** to enable it to discharge its responsibilities, this would include linkages and communications, and empowerment

- Clearly defined **functions** that will enable it to effectively and efficiently attain its objectives – for this purpose a mission statement and terms of reference will be required.

- Qualified and experienced **staff** to enable it to carry out its functions – either employed in the team, or readily available to advise and assist (see below) - including the following disciplines: law, participatory techniques, monitoring,, sociology, etc

- Adequate **resources**, in terms of: computers and related equipment, consumables, access to transport and operating funds; office accommodation; library of reference books and other documents; access to external advisors (university, other government departments) such as lawyers, sociologists, etc. ready access to information sources (eg from internet, regional and international organizations etc),

These issues are addressed in this document.

2.5 Veterinary Council

An independent veterinary council is an essential body required to regulate practitioners and protect the interests of the public. Appropriate legislation will be required to establish and empower the council. The council should:

- Determine educational qualifications required by the various categories of practitioners (veterinarians, animal health assistants, CAHWs)
- Establish procedures for registration
- Maintain registers
- Collect registration and annual fees
- Establish and enforce a code of professional conduct. This is an essential requirement to protect the interest of the public.
- Establish rules for supervision of animal health assistants and CAHWs as members of a professional association to assure the quality of veterinary services as required by the OIE.
- Advise on rules and regulations governing veterinary practitioners
- Establish disciplinary procedures for taking action against practitioners in cases of negligence or serious misconduct.

The Veterinary Council would regulate veterinarians, AHAs and CAHWs and thereby guarantee high quality standards are maintained across the spectrum of service providers.

3. Mission and terms of reference for the Veterinary Epidemiology and Policy Team.

3.1 Mission

The Veterinary Privatization Team (VPT) requires a mission statement to guide and focus its work. The Veterinary Department (VD) and staff of the Unit should jointly develop an appropriate statement. The following will provide a basis for these discussions.

The VEPT shall work towards improving the standards and efficiency of animal disease and zoonosis control and livestock trade in the Ethiopia by promoting the public-private partnership to ensure that full use is made of the relative advantages of each sector in delivery of veterinary services.

3.2 Organization and terms of reference

3.2.1 Organization

The VPT shall work to the Director, VD and advise, monitor and promote all privatization activities including developing new delivery models, subcontracting and enablement.

The Veterinary Privatization Team would be divided into two units, responsible respectively for (1) privatizing the delivery of veterinary clinical services (diagnosis and treatment, artificial insemination, drug sales) and subcontracting, and (2) monitoring and enabling CAHWs including development of new / innovative delivery models.

The VPT would be responsible for a network of associates - designated officers at regional level who would be responsible for:

- Monitoring process of privatization of veterinary clinical services in the region and reporting progress, problems and plans to the VPT
- Supervising the process of tendering public good activities to private veterinary practices in accordance with national policy
- Naming and overseeing veterinary inspectors who would supervise CAHWs in the region.

3.2.2 Terms of reference

Terms of reference are presented for discussion and finalization by staff of the VD for the more important components of the Veterinary Privatization Team namely:

- Privatization of private good veterinary services and contracting selected public good activities to the private sector
- Developing and fostering community-based delivery systems

The privatization and contracting unit shall:

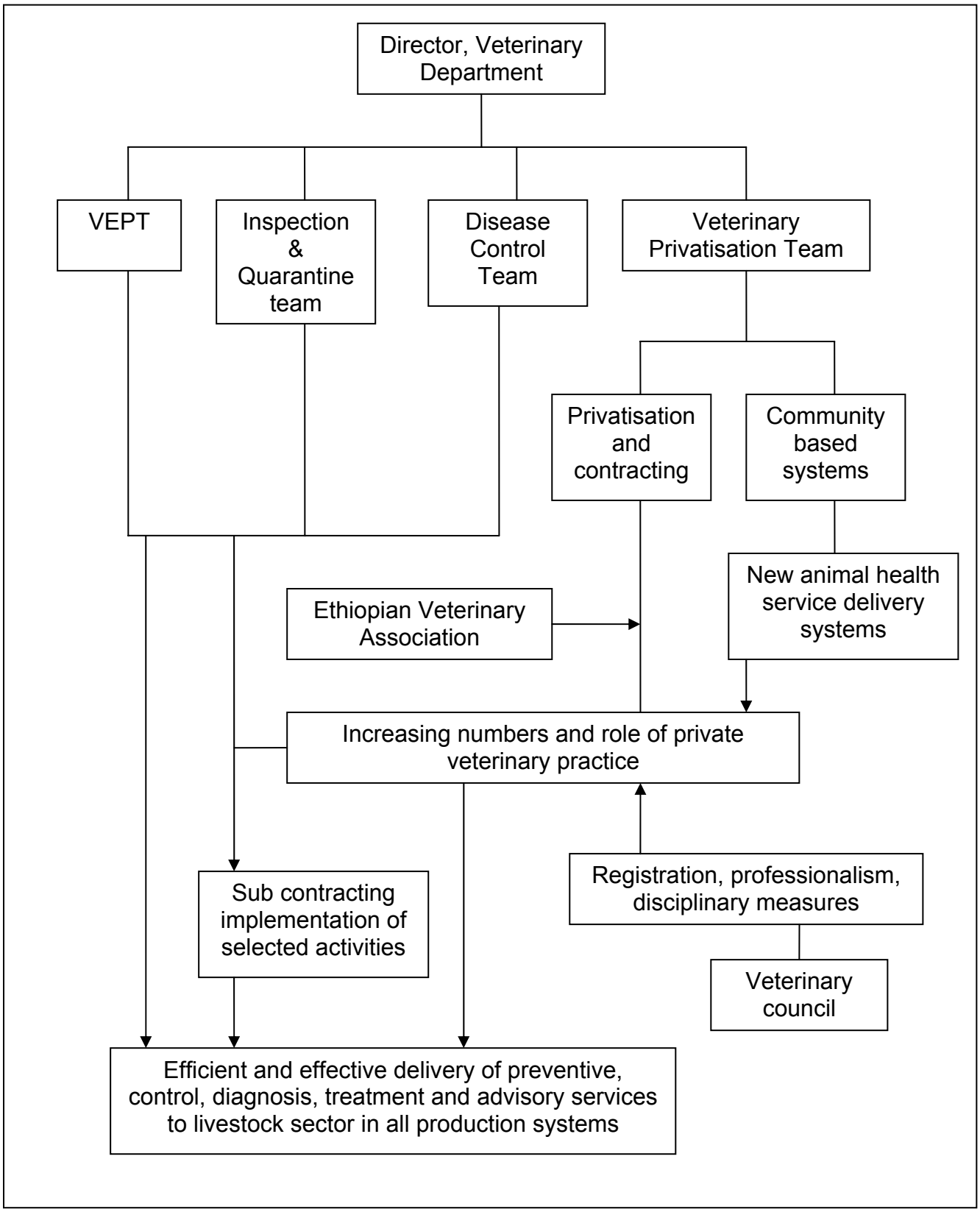
1. Ensure a coordinated approach is taken to privatization by information sharing and consultation with the Ethiopian Veterinary Association, the regional veterinary departments, the Veterinary Council, livestock producers' organizations, community organizations, and development projects involved in delivery of animal health services.

2. Complement the above coordination activities by monitoring the process of privatization to ensure that the pace at which it takes place is commensurate with the ability of the private sector to assume responsibility for delivery of animal health services so that:

    - The public sector does not prematurely withdraw from provision of clinical services thereby depriving livestock owners of access to these services in a given area

    - The public sector does not delay in withdrawing from provision of clinical services thereby frustrating and compromising the establishment of a potential private practice in a given area.

Figure 1: Outline of Proposed Structure and Linkages of the Veterinary Privatization Team



3. In consultation with the Director, VD and other stakeholders, agree on a list of public good activities which should be subcontracted to the private sector. Ensure that these activities are subcontracted in areas that are served by private practices - as time passes, the proportion of livestock populations that is serviced by private practices will increase.

4. Monitor policies and attitudes of regional veterinary departments towards creating an enabling environment for privatization, including:

    - Implementation of a policy of ***full cost recovery*** by regional veterinary departments
    - Formulation and implementation of exit strategies to govern the process of how the public sector would withdraw from provision of veterinary clinical and related services. Such strategies would include re-assignment of staff, sale or rental of (surplus) clinics and animal health posts to the private sector, disposal of clinical equipment, drug stocks etc.

5. Draw up model tender documents and procedures for the process of tendering implementation of contestable activities. Monitor compliance by the regional authorities.

6. Draw up model contracts to govern the process of contracting implementation of contestable activities. Monitor compliance by the regional authorities.

7. Advise and assist the Director, VD, to establish a privatization coordination committee comprised of the Director, VD, staff of the VPT, representative from each regional veterinary service, EVA and other stakeholders. This coordination committee would act as a forum for resolving problems (eg non-cooperation / compliance by regions), identifying opportunities (eg

The community-based systems support unit shall[10]:

6. Ensure coordination of all governmental, non-governmental and private sector agencies involved in community animal health service delivery in pastoral areas/districts by:
    - Preparing and maintaining a detailed inventory of all relevant projects and activities.
    - Maintain coordination with relevant stakeholders in animal health service delivery in pastoral areas.

7. Promote the development and application of DVS national best practice guidelines for the design, implementation and sustainability of community animal health service delivery in pastoral districts including the finalization of the standardized training curriculum and CAHW training manual.

[10] See CAPE document 'Proposed establishment and operation of national community-based animal health support unit within Directorate of Veterinary Services Ethiopia', June 2004.

8. With the DVS, Ethiopian Veterinary Council, Faculty of Veterinary Medicines and other stakeholders develop regulatory procedures to ensure the quality and supervision of community-based animal health workers according to the principles of the OIE Code, including appropriate legal recognition and clear supervisory roles for District Veterinary Officers.

9. Support privatization of veterinary services in pastoral areas/districts of Ethiopia by ensuring that:

    - Central level policy makers are aware of experiences in these areas and the opinions of livestock keepers.
    - Agencies involved in community-based animal health services are aware of the necessity to work closely with the private sector during project design and implementation, and, that these agencies facilitate private sector supply and field-level supervision of CAHWs.

10. Develop, test and apply appropriate CAHW disease surveillance reporting systems in collaboration with relevant stakeholders. (Improving on existing systems, collaboration with PACE Ethiopia or AU-IBAR/ CAPE unit)

11. Formalize the procedures and activities outlined in 1 to 5 by formulating a standardized Memorandum of Understanding between the MOA&RD, DVS and agencies involved in community-based animal health service delivery.

12. Within the DVS, maintain a collection of literature and reports relevant to community-based animal health services in Ethiopia (CAPE can provide) to act as a resource for relevant agencies and stakeholders.

The regional officers

One or more veterinarians in each regional veterinary department should be designated to monitor and regularly report progress, problems, etc with privatization and contracting activities.

The designated regional officer(s) must also ensure that all each CAHW in the region is supervised by a named inspector (public sector veterinarian) in accordance with AU/IBAR policy. Regular reports must be submitted to the Director, VD, detailing all CAHW-related events such as training, supervision, problems etc.

Specifically, the regional privatization officer(s) will:

1. In close collaboration with the Head, VPT, ensure that a coordinated approach is taken to privatization and CAHW systems in the region by information sharing and consultations with livestock producers' organizations, community organizations, and development projects involved in delivery of animal health services etc.

2. Monitor and prepare regular reports for submission to the Director, VD, on the process of privatization and development of CAHW systems as appropriate to ensure that national policy is being implemented in the region.

3. Monitor and prepare regular reports for submission to the Director, VD, on the process of contracting implementation of selected public good activities to ensure that national policy is being implemented in the region.

4. Monitor and prepare regular reports for submission to the Director, VD, on progress made in the region on creating an enabling environment for privatization, including:

    - Implementation of a policy of ***full cost recovery*** by regional veterinary departments
    - Formulation and implementation of exit strategies to govern the process of how the public sector would withdraw from provision of veterinary clinical and related services. Such strategies would include re-assignment of staff, sale or rental of (surplus) clinics and animal health posts to the private sector, disposal of clinical equipment, drug stocks etc.

5. Participate in meetings of the federal privatization coordination committee.

6. Ensure coordination of all governmental, non-governmental and private sector agencies involved in community animal health service delivery in pastoral areas/districts by:
    a. Preparing and maintaining a detailed inventory of all relevant projects and activities.
    b. Maintain coordination with relevant stakeholders in animal health service delivery in pastoral areas.

7. Ensure compliance with the national best practice guidelines for the design, implementation and sustainability of community animal health service delivery in pastoral districts in the region.

8. Support privatization of veterinary services in pastoral areas/districts of Ethiopia by ensuring that:

    a. Central level policy makers are aware of experiences in these areas and the opinions of livestock keepers.
    b. Agencies involved in community-based animal health services are aware of the necessity to work closely with the private sector during project design and implementation, and, that these agencies facilitate private sector supply and field-level supervision of CAHWs.

9. Assist in developing, testing and applying appropriate CAHW disease surveillance reporting systems in collaboration with relevant stakeholders.

10. Within the regional VD, maintain a collection of literature and reports relevant to community-based animal health services in Ethiopia to act as a local resource for relevant agencies and stakeholders.

4. Linkages and Communications

4.1 Linkages within the Federal Veterinary department

The VPT must develop strong links with the

- Veterinary Epidemiology and Policy team in order to ensure that full and appropriate use of private practices and CAHW systems in the national disease reporting, early warning and general disease surveillance activities, including reporting links between the private sector (practices and CAHWs) and public sector woreda and regional veterinary officers.

- Disease Control team in order that full and appropriate use is made of the private sector, by subcontracting to them implementation of disease control measures such as vaccination.

- Quarantine and Inspection team in order that full and appropriate use is made of the private sector, by subcontracting to them implementation of certain inspection duties such as meat inspection, inspection of drugs and vaccine sales outlets, inspection of markets, etc.

4.2 Linkages with the Veterinary Council

Veterinary regulatory bodies – eg Veterinary Council – are essential for quality and consumer protection: " ….. organizations must be urgently created to supervise the profession (veterinary college or council) which must be independent from central Government but vested with official regulatory and disciplinary power"[11]

The Veterinary Council through enforcement of qualifications required for registration, the code of professional conduct, its disciplinary procedures and its legal standing will be the independent guarantor of the quality of veterinarians and para-veterinarians in Ethiopia.

This is critically important to the success of the privatization process as it will ensure technical quality and professionalism in delivery of animal health services and importantly protect the public from malpractice, fraud and incompetence.

A formal and independent regulatory body, the Veterinary Council, also assures the quality of veterinary health certificates - as most serious disciplinary action should be taken against veterinarians who issue false or misleading certificates.

The VPT should communicate and liaise with the Veterinary Council in matters of privatization policy, the role of para-veterinarians, and defining the respective roles of the public and private veterinary sectors.

[11] OIE Proceedings of the seminar 'Organisation of veterinary services and food safety' September 2002. Tunis, Tunisia,

4.3 Linkages with the regions

As referenced earlier these will be critical as it is the regional offices that will implement, monitor, and report on national policy for privatization, CAHW delivery systems and subcontracting to the private sector.

4.4 Linkages with other players.

In order to be able to respond to the changing needs of important players, and monitor the effectiveness of private good animal health services the VPT should develop strong linkages with a number of stakeholders, including:

- Livestock producers associations
- Livestock traders and exporters
- Abattoir owners / owners' associations
- The Veterinary Council
- The Ethiopian Veterinary Association
- International and regional organizations, including the EC, OIE, FAO, and WHO to keep up to date with developments in animal health delivery systems.

5. Empowerment – role of legislation

5.1 The Veterinary Council

The Veterinary Council must be legally empowered to regulate and discipline the profession and paraveterinarians, specifically:

- Regulate veterinary practice
- Maintain registers of veterinarians and paraveterinarians
- Prepare and apply rules of professional conduct
- Collect registration and annual renewal fees

5.2 Enabling subcontracting by the VD to the private sector

The Veterinary Department must be legally empowered to subcontract private practices to implement defined contestable activities using a transparent tendering system to select subcontractors.

6. Staff and other resources

6.1 Veterinary Privatization and Contracting Unit

6.1.1 Staff required

Head, Veterinary Privatization
Legal expert – part time
Secretary

6.1.2 Qualifications and terms of reference

b. Head, VPT and Veterinary Privatization and Contracting Unit

Qualifications:

- Veterinary degree
- Post graduate qualification in project management, or similar would be an advantage.

Terms of reference

The Head, VEPT, shall work to the Director, VD and:

- Prepare annual work plans and budgets for the team
- Identify annual targets for the team
- Liaise with regional veterinary departments to ensure efficient implementation of the national policy for privatization, developing new animal health delivery systems, subcontracting contestable activities and promoting community based systems
- Liaise and communicate with stakeholders, including the donor community, EVA, traders, livestock owners associations etc. to assist in monitoring the effectiveness and relevance of national policy
- Ensure adequate legal and other support to regional veterinary departments and woreda veterinary offices for tendering and subcontracting work to the private sector.
- Advise the Director, VD, in clearly defining the roles of the public and private sectors in delivery of veterinary services.

c. Legal expert

The legal expert shall be part time and employed by government in another ministry / department

Qualifications.

- Degree in law
- Experience in subcontracting public good services to the private sector

Terms of reference

The legal expert shall work towards the Head, VPT, and be responsible for the all legal aspects of tendering, selection of winning bids, contracting and dispute resolution of the VD's programme of subcontracting contestable activities to private practices. Specifically:

- Draw up, and update as necessary model tender procedures
- Draw up, and update as necessary model and transparent procedures to select the winning bid in a tender

- Draw up, and update as necessary contracts to govern the performance of subcontractors
- Draw up, and update as necessary model procedures to deal with problems in performance of contracts.

6.1.3 Equipment and other resources

Furnished office accommodation
1 Computers each with modem
UPS
Printer
Consumables
ISP membership
Telephone line

6.2 The community-based systems support unit:

6.2.1 Staff required

Veterinarian
Sociologist (part time)

6.2.2. Qualifications ad terms of reference

d. Veterinarian

Qualifications

- Degree in veterinary medicine
- At least 3 years practical experience in community-based animal health delivery systems
- Post graduate degree would be an advantage

Terms of reference

The Head, Community-based systems unit shall work towards the Head, VPT and be responsible for development of appropriate, perhaps innovatory, animal health delivery systems, and for successful operation of the CAHW programme. Specifically:

- Organize consultative and integration meetings with regional and woreda veterinary services in pastoral areas
- Participate with other stakeholders in revising and enriching of CAHW training materials and curricula
- Training selected veterinarians from private and public sector and accredit them as CAHW trainers
- In consultation with Regional and Woreda veterinary services ensure that all trained CAHWs are registered by the Veterinary Council and

that each is supervised by a named and effective public sector veterinarian.

- Develop a standard memorandum of understanding between the VD and NGOs/CBOs and others involved in developing / assisting CAHW-based animal health delivery systems
- Assist the Head, VPT, to define roles of the public and private veterinary sectors.
- Promote development and application of best practice guidelines for the design, implementation and sustainability of community-based systems.
- Organize and assist in running stakeholders consultative and planning workshops
- Assist and advise in conducting impact assessments
- Liaise with the Director, VD and the Veterinary Council to ensure appropriate legal support and registration procedures are present.
- In close collaboration with the Head, VEPT, develop, test and apply appropriate disease surveillance and reporting systems
- Advise and assist regional officers to ensure satisfactory operation of community-based animal health delivery systems, including supplies and accounting for inputs, dealing with bad debts, refresher training etc.
- Establish a library (physical and electronic) of published and other materials on community-based animal health delivery systems, serve as the national resource centre for these systems

e. Sociologist

The sociologist shall be make part-time contributions to the work of the Community-based systems Unit

Qualifications

- Degree in sociology / rural development or similar
- Experience in field of livestock development

Terms of reference

The sociologist shall work towards the Head, Community-based Systems unit and assist and advise in the sociological aspects of community-based activities and in promoting sustainable livelihoods, disaster preparedness etc. Specifically:

- Advise and take part in participatory work with communities
- Assist in organizing and running stakeholders consultative and planning workshops
- Advise and assist in formulating enabling legislation
- Assist and advise in conducting impact assessments
- Other duties as required within knowledge and expertise.

6.3.3 Equipment and other resources

- Furnished office accommodation
- Computer, with modems
- UPS
- Printers
- Software – word processor, spreadsheet, database system, virus protection, access to internet, etc.
- Access to transport and transport operating costs

7. Future activities

7.1. Short term

Priority should be given to the formal establishment of the VPT, defining the position and linkages of the team within the VD, ensuring that all required linkages and legislative support are in place as soon as possible.

Several immediate priorities to support the privatization policy can be identified, including:

- Together with the Director, VD, and other stakeholders, including the EVA, regional veterinary departments, livestock owners associations, traders, exporters, clearly define the respective roles of the public and private veterinary sectors, including public-private partnerships and subcontracting of contestable activities.

- Together with the Director, VD, and other stakeholders, including the EVA, regional veterinary departments, livestock owners associations, traders, exporters, define a clear national policy for privatization of veterinary services.

- To coordinate and supervise community-based animal health delivery systems to ensure that quality is established and maintained and that the requirements of OIE (which is currently reviewing the contribution of CAHWs and other paraveterinary workers to delivery of veterinary services) are met and the policy of AU-IBAR is implemented.

- Together with the Director, VD, work towards introduction of legislation for, and establishment of an independent Veterinary Council

- Together with the Director, VD, and other stakeholders including the EVA and regional veterinary departments work towards formulation and acceptance of a national policy of 100% cost recovery (including a service fee to cover staff costs) for veterinary clinical services provided by the public sector.

- Ensure that required legislation is enacted to fully support all above functions

7.2 Medium term

The availability of veterinarians will, as referenced several times in this proposal, determine the rate at which veterinary clinical and other services can be privatized.

As indicated in Table 1 there is currently a relative shortage of veterinarians in Ethiopia – the establishment of 5 new veterinary faculties, each capable of producing some 50 veterinarians per year commencing in 2008, will radically correct this shortage. In the meantime the annual output from the Debre Zeit veterinary faculty has been increased to some 80 per year. It is proposed that Debre Zeit faculty will eventually be converted into a dedicated post. The expected numbers, attrition, and supply of veterinarians are summarized by year in Table 1.

Table 1: Estimated numbers of livestock, veterinary livestock units[12], veterinary staff and VLUs/veterinary staff member.

Species	Estimated total number	Equivalent numbers of Veterinary Livestock Units
Cattle	34,000,000	34,000,000
Sheep and goats	40,000,000	4,000,000
Equines	6,800,000	3,400,000
Camels	900,000	900,000
Totals	81,000,000	42,300,000
Category	**Number**	**TLUs per staff member**
Veterinarians	425	99.530
Animal Health Assistants	824	51,335
Animal Health Technicians	2,129	19,868
Totals	3,378	12,522

The recommended ratio of veterinarians to VLU is 1:20,000[1] indicating a need for a total of some 2,100 veterinarians.

The data in Table 2 are very crude estimates and presented for the purposes of illustration. However it is believed that these data do represent probable trends in the numbers of veterinarians available for the private sector which indicate that privatization of delivery of veterinary clinical services cannot begin in earnest until 2007 and in the meantime the public sector must continue to provide these services. This does not of course include continued development of CAHW networks which would be supervised by public sector veterinary inspectors – however, the development of innovative animal health delivery systems based on a lead

[12] Umali, Feder and de Haan. Animal Health Services: Finding the balance between public and private delivery. World Bank Research Observer, Vol 9, No 1 January 1994

veterinarian employing a number of satellite para-veterinarians (eg CAHWs) must be delayed until 2007 or beyond.

Table 2: Estimates of net numbers of available veterinarians by year

Year	No. at beginning of year	Attrition – at 4% per year*	Output of new graduates**	No. at end of year	Required by public sector***	Available for private sector
2004	450	18	50	482		
2005	482	19	80	543	600	-57
2006	543	21	80	602	610	-8
2007	602	24	80	658	620	38
2008	658	26	250	882	630	252
2009	882	35	250	1097	600	497
2010	1097	43	250	1304	600	704
2011	1304	52	250	1502	600	902
2012	1502	60	250	1692	600	1092
2013	1692	67	250	1875	600	1275
2014	1875	75	250	2050	600	1450
2015	2050	82	250	2218	600	1618

Notes:

* assumes a mean working life of 25 years

** assumes 5 new veterinary faculties, each producing 50 graduates per year, with Debre Zeit Faculty becoming a post graduate training facility in 2008

*** Guesstimates

Assistance to Restructuring of National Veterinary Services in Ethiopia

1. Background

In mid 2004 the Peoples Democratic Republic of Ethiopia (PDRE) signed a 10 year agreement to supply livestock and livestock products to a major consuming nation. Realising that the full potential of this significant export opportunity could not be realised with the current veterinary infrastructure and fragmented delivery systems, senior politicians instructed the Director, Veterinary Department, to formulate a plan for re-structuring of veterinary services aimed at enhancing the capability of veterinary services, improving animal health delivery systems and the health status of livestock populations, and thereby facilitating trade.

This opportunity to propose radical changes to the veterinary service structure and delivery systems presented the Director, Veterinary Department, with a unique opportunity: this was grasped with both hands. It is relevant to note that this opportunity closely follows the upgrading of the former veterinary unit (situated within the main department of animal production and health) to the status of a fully fledged department.

A wide variety of information sources was used to guide the process of restructuring and redesigning the national veterinary services. Sources included various documents of the OIE (including 'Guidelines for the Evaluation of Veterinary Services' and 'Veterinary Services: organisation, quality assurance, evaluation'), the World Bank ('Animal health services: finding the balance between public and private delivery'), FAO guides ('Manual on preparation of national animal disease emergency preparedness plans'), IBAR (Policy on community-based animal health workers), and other publications.

Through CAPE, DfID assisted the process by funding a 6 week input by an international veterinary consultant.

A detailed proposal was prepared in June/July 2004 with the aims of rectifying current organisational constraints, encouraging the development of innovative delivery systems, upgrading and expanding services, promoting privatisation and medium term capacity building of the Departments technical staff.

This proposal was accepted almost in toto by senior decision makers and the Director, VD, now faces the large and complex task of implementation, namely:

- Forging direct linkage and lines of authority from the Federal Veterinary Headquarters, through regional veterinary departments, to the grassroots woreda level veterinary offices.

- Forming a national veterinary laboratory service by re-designation of the National Animal Health Research Centre as the national lead veterinary diagnostic laboratory answerable to the Director, VD, and bringing the regional veterinary laboratories under its direct control.

- Utilising the above direct linkages to ensure coordinated implementation of national policy for disease control, laboratory services, disease surveillance and monitoring, quarantine and inspection services,

- Expanding the scope and technical competence of the laboratory service – this would include introducing new diagnostic and assay techniques, training staff, encouraging

regional laboratories to specialise, and developing the lead veterinary laboratory into a centre of scientific excellence.

- Establishing an effective national disease surveillance and monitoring system based on a central epidemiology unit supported by 10 regional units, the veterinary laboratory services, the veterinary field service, private practitioners, and others. The system would emphasise quality, timeliness and relevance of passively acquired data, and a strong programme of prioritised active data collection. Computerised data management, electronic transmission of data and expertise in data evaluation and analysis would be developed.

- Creating capacity to utilise the output of the surveillance and monitoring system, and other sources, to inform policy making.

- Improving standards of control of important animal diseases and zoonoses through informed disease control policy making, continuous monitoring of disease control programmes, and utilising innovative delivery systems.

- Developing and strengthening public-private partnerships. These would include (a) use of community-based animal health delivery systems for early warning, disease surveillance, implementation of disease control measures in pastoral and other areas, (b) subcontracting to the private sector of defined contestable activities such as vaccination, mass testing, meat inspection, and (c) joint participation in programmes to strengthen the marketing chain for export livestock (for example the Excelex programme, the proposed 'export zones' and other initiatives)

- Strengthening the quarantine and inspection service

- Establishing an independent Veterinary Council to regulate veterinarians and para-veterinarians and thereby protect consumers and

It is recognised that this very large restructuring task will take time, strong and confident leadership, technical competence, high levels of communication both within the system and with stakeholders, commitment, effective planning and drive.

The process of implementing the restructured system would have two main components (a) the task of managing the proposed structural changes; and (b) that of technically strengthening, advising and guiding the restructuring g process at all levels..

It is unfortunate that the current senior staff establishment of the Federal VD tends to be relatively young, inexperienced and lacking in specialist technical skills. This lack of experience and expertise represents the greatest potential impediment to the proposed restructuring.

2. Proposed assistance

2.1 Summary

The primary purpose of the proposed assistance would be to enable implementation of the planned reconstruction and upgrading of Ethiopian veterinary services by addressing the technical weaknesses and lack of experience referenced above.

It is proposed that a donor fund a team of consultants who would work alongside the Director, VD, and his senior staff members and provide practical experience, expertise and advice. The following areas that would benefit from this assistance have been identified:

- Change management – to work directly with the Director, VD – 6 months over 2 inputs to get the process off to a good start
- Epidemiology, disease surveillance and monitoring, data analysis and evaluation – to work with the Epidemiology and Policy Team – 24 months
- Information technology – to work with all teams, and in particular the Epidemiology and Policy Team – 18 months over 2 inputs
- Privatisation – to work with the Veterinary Privatisation team – 12 months over 2 inputs
- Laboratory services – to work with the proposed lead national veterinary laboratory 12 months over 3 inputs
- Export inspection and quarantine – to work with the Inspection and Quarantine team – 6 months in two inputs
- Veterinary legislation and regulation of veterinarians and para-veterinarians – 3 months in one input

The assistance would also fund priority fellowships and study tours for selected VD staff members

The assistance would complement ongoing technical assistance projects including PACE, CAPE, FAO TCP 'Livestock and Meat Export Marketing System for Ethiopia', and the AfDB-assisted Livestock Development Project, and build on the results of previous projects such as PARC and FLDP.

2.2 Expected results of the assistance

- Successful restructuring of national veterinary services leading to internationally credible and acceptable Ethiopian Veterinary Services that would engender the confidence of national veterinary services of OIE member states
- Increased technical capacity of VD and VLS staff
- Established, functioning and independent Veterinary Council
- Definite proposals for strengthening veterinary legislation
- Competent animal disease surveillance and monitoring
- Improved inspection and certification
- Strengthened veterinary laboratory service
- Improved capacity for informed decision making

2.3 Immediate Objectives of assistance

- Enhanced opportunities for access to export markets in livestock and livestock products
- Development of public-private partnerships in delivery of animal health services
- Improved control of important animal diseases, including zoonoses

2.4 Overall objectives of assistance

- Improved and more secure livelihoods of livestock producers in highlands and pastoral areas
- Improved health and well being of all peoples of Ethiopia

FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT

VETERINARY DEPARTMENT

NOTES ON ESTABLISHMENT OF VETERINARY QUALITY CONTROL LABORATORIES IN ETHIOPIA

June 2004

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NOTES ON ESTABLISHMENT OF A QUALITY CONTROL LABORATORY FOR VETERINARY DRUGS AND VACCINES AND ANIMAL PRODUCTS IN ETHIOPIA

1. Background

This document has been prepared to assist in planning the establishment of a laboratory to support testing and controlling of the quality of veterinary drugs and vaccines, and of animal products such as meat and milk.

Quality control requirements differ for drugs on the one hand and drugs and vaccines on the other. For this reason it is recommended that two separate facilities: one for drugs and vaccines, and the other for foods of animal origin be established.

1.1 Quality control of veterinary drugs and vaccines.

There is currently one laboratory that is involved with quality checks on vaccines: the PANVAC facility at the national veterinary Institute, Debre Zeit which concentrates on testing rinderpest vaccines for the Pan African Control of Epizootics (PACE) Project.

The proposed laboratory (which could be developed from PANVAC) would test drugs and vaccines for potency and safety.

Potency refers to the efficacy of the product in terms of beneficial affects on the disease process (drugs) or the specific stimulation of the immune system leading to development of acceptable levels of active immunity (vaccines).

Safety refers to the absence of microbial contaminants, toxins, allergens etc.

1.2 Quality control of foods of animal origin.

There is currently no formal committee in Ethiopia to ensure cooperation and coordination between the various parties interested in food safety – including the Veterinary Department, Public health laboratories, Ministry of Health, etc. The current public health laboratories can test for microbial contamination and chemicals, but do not have capability to undertake assays for biotoxins, mycotoxins, pesticide residues, or heavy metals.

Food quality control utilises laboratory and organoleptic tests to check that a product is wholesome, unadulterated, uncontaminated (or at least has acceptable levels of contaminants), is free of extraneous materials and safe to consume.

Possible contaminants include:

- Microbial agents

- Antibiotic residues
- Growth promoter residues
- Pesticide residues
- Heavy metals

1.3 Economic considerations

The major purpose of food, vaccine and drug quality control laboratories is to provide independent assurance of quality and safety of products for consumers. In so doing these laboratories address the moral hazard of consumers not having sufficient information on their own to assess quality, safety, and for vaccines and drugs efficacy.

It is the role of the public sector to provide measure to correct for moral hazard[13] and quality control laboratories play an important role in this process. Accordingly, food and drug and vaccine quality control laboratory services should:

a Be provided by the public sector, or if provided by the private sector then controlled by the public sector

b Be accredited by the Director, Veterinary Department

Ensuring provision of reliable and quality-assured laboratories to test food and drugs and vaccines must be a public sector responsibility.

The immediate beneficiaries are producers, traders, exporters etc. as satisfactory findings of laboratory analyses / assays will enable the commodity to be legally traded. The immediate beneficiaries should pay all costs of laboratory testing such that quality control laboratories are self-supporting. Indeed, in many countries funds generated by these laboratories are sufficient to enable training of staff, payment of attractive salaries, and for purchase of new equipment, reagents, consumables etc. However, an important pre-condition for this is that the laboratory has the status of an enterprise, and is thus able to retain all revenues and use these to meet running and capital costs and for developing and expanding services.

The ultimate beneficiaries are all consumers who have the benefit of safe and pure (unadulterated) products.

2. Quality assurance

It is essential that consumers, producers, importers, exporters and other stakeholders have confidence in the results of assays carried out at a quality control laboratory.

[13] Umali, Feder and de Haan. Animal Health Services: Finding the balance between public and private delivery. World Bank Research Observer, Volume 9, No 1, (January 1994) pp 71 – 96.

This requires an effective and transparent quality assurance programme including all, or some of the following components:

2.1 Laboratory practices

Each assay carried out should have an associated bench sheet or method-specific notebook to record all steps in the assay in such detail that the assay could be reconstructed, thus details recorded would include: ID number of specimen tested, weight, analytical tests carried out, reagents and solutions used, date and name of person carrying out each analysis, data and time specimen received, instruments used, etc.

2.2 Labelling

All solutions and reagents must be accurately labelled, showing contents, dilution, etc.

All specimens must be labelled showing sample ID number

2.3 Standard operating procedures

There should be a manual of standard operating procedures (SOP) or standard analytical methods (SAM) which must be used as a reference document when conducting analyses. This will ensure consistency in test protocols.

2.4 Standards consistent with laboratory quality control programme

Each test carried out should be documented in sufficient details that (a) adherence to quality control procedures is demonstrated, and (b) it could be replicated.

The precision (repeatability) and accuracy (how close the laboratory result is to the true condition of the sample) of each test and assay carried out should be known to help in evaluating findings.

2.5 Keeping up to date with new methods and technologies

Staff should have means to keep abreast of developments in their field – including new or modified assay and analysis techniques.

2.6 Reagents and solutions

The quality of assays and analyses is critically dependent on the quality of all materials used, thus reagents and solutions that meet international quality standards should be used

2.7 Performance evaluation

Ideally the laboratory should be certified as using good laboratory practices and evaluate performance, interchange blind samples with other laboratories of international repute, and document the standardised reference materials used.

2.8 Training

The laboratories should have a regular in-service training programme to ensure that all staff are familiar with existing methods, and made aware of any new methods.

2.9 Quality assurance unit

An independent quality assurance unit is required that would regularly audit the quality standards of the laboratories.

2.10 Good laboratory practice compliance.

This would include:

- Documenting employee training
- Adequacy of resources
- An established independent quality assurance unit
- Documented receipt and storage of control and reference substances
- Calibration, maintenance, design and capacity of equipment
- Use and revision of SOPs and SAMs
- Sample accountability
- Proper labelling (of samples and reagents)

3. The Food Quality Control Laboratory

The primary role of the food quality laboratory would be to support the quarantine and inspection service by providing reliable and fast scientific appraisals of animal products for the purposes of approving imports, products for domestic consumption, and satisfying the requirements of importers.

3.1. Activities

A list of possible activities that could / should be undertaken by the food (of animal origin) laboratory is presented below together with possible test and assay techniques that could be used.

The range of tests and assays that the laboratory would provide in practice would depend on the services to be provided to the inspection service:

- To support inspection and decision making for imported foods of animal origin, including fresh, chilled and frozen meats, processed meats and canned meat products

- To support domestic meat inspection activities, by testing for food-borne pathogens, parasites, residues (antibiotics, pesticides, heavy metals etc), confirming species of origin etc.

- To support inspections of abattoirs, meat processors, transporters, retailers etc by testing for food-borne pathogens, adulteration, etc.

- To support examination inspection and certification activities for the export products – test carried out would be as specified by the national veterinary services of the importing country, and could include testing for residues and pathogens.

Expert advice would be required to select the suite of diagnostic instruments and equipment required

3.1.1 Contaminants & Confirmatory Chemistry

The laboratory must be able to detect, identify and quantify a range of chemical contaminants in food using internationally accepted methods.

These could include:

Toxic metals using techniques such as Atomic Absorption Spectrophotometry and Inductively Coupled Plasma-Mass Spectrometry

Polychlorinated biphenyls (PCBs) using gas chromatography
Test results could be confirmed GC-MS and LC-MS.

Pesticide residues – fungicides, insecticides, herbicides and growth regulators. Pesticides would include organochlorine and organophosphorus pesticides, pyrethroids, carbamates and chlorophenoxy acetic acids. High performance liquid chromatography (HPLC) or similar techniques would be required.

3.1.2 Microbiology

Food-borne pathogens to be detected could include:

- Escherichia coli 157:H7
- Salmonella spp
- Shigella spp
- Campylobacter spp
- Aeromonas spp
- Listeria monocytogenes
- Yersinia enterocolitica
- Bacillus cereus
- Clostridium perfringens
- Clostridium botulinum

The detection, identification and enumeration of food-borne pathogens and microbiological hygiene indicators could be carried out a variety of tests, including commercial rapid test kits, selective media, immunoassays and gene technology.

3.1.3 Antimicrobial residues

These would include a wide range of antimicrobials including sulphonamide preparations and antibiotics. Commercially available fast antimicrobial screening tests (FAST) could be used to determine the presence of an antimicrobial agent, but would be more expensive and require hard currency.

The microbial inhibition assay would be used to detect antibiotics, and would involve culturing a sensitive microorganism such as Bacillus stearothermophilus or Bacillus subtilis. Commercially available

Specific antibiotic, and other residues could be detected using a variety of techniques including Gel Permeation Chromatography, High Performance Liquid Chromatography (for nitrofurans, coccidiostats, sulhonamides, and other antibiotics), Gas Liquid Chromatography, Gas Chromatography-Mass Spectrometry (GCMS – for beta-agonists), Liquid Chromatography - Mass Spectrometry (LCMS – for beta agonists), ELISA (for beta-agonists, antibiotics, sulphonamides, and growth promoters) and bioassay.

3.1.4 Toxins

These would include bacterial toxins produced by Staphylococcus areus, Bacillus cereus, and Clostridium botulinum using techniques such as the Enzyme-linked Immunosorbent Assay (ELISA), Thin Layer Chromatography, Ion Exchange Chromatography, High Performance Liquid Chromatography and Mouse Bioassay.

3.1.5 Food-borne parasites

The laboratory may be required to conduct examinations for parasite infestation in fresh produce to support the import control and export health certification programmes. The range of organisms covers protozoan parasites as well as nematodes, cestodes, and trematodes.

3.1.6 Physical quality of foodstuffs

Tests of physical quality could include inspection of canned food to determine the integrity of the can seams and to identify defective products to complement inspection of locally produced and imported products.

Tests for the presence of extraneous materials such as glass fragments may also be required.

3.1.7 Determining the species of origin of meat and meat products

Identification of species of origin of raw meat or processed meat products would be carried out using techniques such as isoelectric-focussing electrophoresis and gene PCR analysis methods.

3.1.8 Food and nutrition chemistry

It is possible that the work of the food quality laboratory may be extended to measuring the content of nutritional components such as fat, protein, sugars, starch, ash, moisture, gross energy, salt and total meat content. Additional requirements could be for amino acids, fatty acids, cholesterol, vitamins and essential minerals.

Tests for additives and preservatives could be required, including: nitrates and nitrites, added colours, polyphosphates.

Widely accepted test protocols, including commercial test kits would be used for these assays.

3.2 Complementary activities

The food quality control laboratory will carry out tests and assays to determine the wholesomeness and safety of a product. The results of these tests will determine whether or not a product is (a) permitted to enter Ethiopia, (b) permitted to be exported from Ethiopia, or (c) licensed for sale and consumption in Ethiopia.

Thus a formal system for inspecting meat and meat products would be in place, including ante- and post-mortem inspections in abattoirs, and inspection posts at border crossing points, international airports etc. These inspections would, as required be supported by the food quality control laboratory.

A system of market / retail shop inspections should be a further complementary activity to check for adulterated / contaminated and un-inspected products. The food quality control laboratory may be required to test samples collected by inspectors during these inspections.

4. The Drug and Vaccine Quality Control Laboratory

4.1 Introduction

The primary role of the drug and vaccine quality control laboratory would be to support the quarantine and inspection service by providing fast and reliable scientific appraisals of veterinary drugs and vaccines for the purposes of approving imports, and confirming the quality of products for domestic consumption.

An additional task would be certifying the quality (potency and safety) of products destined for export. Currently this role would be limited to vaccines produced by the National Veterinary Institute (NVI), Debre Zeit. However, the NVI does have its own quality control laboratory, and also hosts PanVac (currently supported by AU-IBAR) which controls the quality of rinderpest vaccine produced and exported by the NVI. The future of testing and certifying NVI-produced vaccines for export, and domestic use, should be discussed and agreed between the Director, Veterinary Department, and Director, NVI. Possibly the vaccine quality control facilities at the NVI could be expanded to enable it to test all vaccines: domestic, export and imports in order to avoid duplication of resources and skills – this is a further topic that could be discussed and agreed between the concerned Directors. The outcomes of these discussions would determine the need for a separate vaccine quality control facility.

However, issues of accreditation and independence (of testing from production) would need to be addressed to the satisfaction of consumers and exporters.

4.2 Vaccine and drug quality considerations

It has been recognised for some time that the quality of a vaccine can only be assured through implementation of:

- The use of adequately characterised homogeneous starting materials of defined origin and acceptable quality (including cells and production seeds of virus or bacteria)
- Adequate validation of the production process to document that the conditions are reproducible for different production lots
- Demonstration of consistency of production to the satisfaction of the national regulatory authority
- Independent lot release by the National regulatory authority as a check on the manufacturer's performance

- Pre- and post-marketing surveillance of the behaviour of the product in the target population to demonstrate safety and efficacy[14]

Given the above it is clear that the first important step in assuring vaccine quality is to source from an accredited and reputable manufacturer that is accredited, implements good manufacturing practice (GMP), including adherence to the standards and recommendations of the OIE, and which has independent quality auditing.

The same comments can be made about drug quality: that the reputation and working practices of the manufacturer is all important.

Laboratory testing of drugs and vaccines products would therefore be carried out to supplement and confirm the known quality attributes of the manufacturer, and check that the product has not deteriorated during storage and transport.

4.3 Activities

A list of possible activities that could / should be undertaken by the drug and vaccine quality control laboratory is presented below.

4.3.1 Use of laboratory animals

Animal experiments still play a key role in the development and quality control of bacterial vaccines, especially for potency testing of inactivated vaccines. For example, the regulatory requirements laid down in the European Pharmacopoeia for veterinary vaccines so far require extensive animal testing in laboratory and target animal species.

However there are significant advances to reduce use of laboratory animals[15] in line with the demands of society. One widely publicised approach is the 3R's – replacement, reduction and refinement. It is recommended that the Ethiopian Drug and Vaccine Quality Control Laboratory should proactively work towards adopting the 3Rs approach.

4.3.2 Potency of vaccines and drugs

As referenced above techniques for potency testing of inactivated vaccines are based on the use of laboratory animals (vaccination followed by challenging dose of the target agent)

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[14] Dellepiane, Griffiths and Milstein. 'New challenges in assuring vaccine quality' in Vaccines and Biologicals, WHO, Geneva, Switzerland

[15] Fabio, Jaramilla and Arungiega. 'Adoption of the 3Rs alternatives in regulatory testing of vaccines in the developing worlds: possibilities and barriers'. Division of vaccines and immunization. PanAmerican Health Organisation. Proceedings: Advancing science and eliminating use of laboratory animals in development and control of vaccines and hormones.

ELISA techniques have been developed for potency testing of erysipelas and clostridial vaccines.

The quantity of specific antigen in a given vaccine can be determined serologically (eg refinements of the ELISA) and by use of high power liquid chromatography (HPLC). Similarly the HPLC is used to detect and measure concentrations of antibiotics and other pharmaceuticals in commercial preparations.

The efficacy of veterinary vaccines should be demonstrated by statistically valid vaccination-challenge studies in the host animal, using the youngest animals for which the product is to be recommended. Data should support the efficacy of the vaccine in each animal species by each vaccination regimen that is described in the product label recommendation, including studies on the duration of immunity. The tests should be performed under controlled conditions starting, wherever possible, with seronegative animals. Where validated potency tests are available, target species vaccination-challenge studies may not be required if predictive serological test results are available. The application of procedures to replace, reduce, and refine animal tests (the 'three Rs rule') should be encouraged whenever possible.

Efficacy studies should be conducted with final product vaccine. The Outline of Production or other documentation of the manufacturing process for a vaccine specifies the minimum amount of antigen per dose that must be in the final product throughout the entire authorised shelf-life. The antigen level per dose in the vaccine tested for efficacy must be at or below this minimum amount. The precise challenge method and the criteria for determining protection vary with the immunising agent and should be standardised whenever possible.

Field efficacy studies may be used to establish efficacy when meaningful vaccination-challenge studies are not feasible. However, it is generally more difficult to obtain statistically significant data to demonstrate efficacy under field conditions. Protocols for field studies are more complex, and care must be given to establish proper controls to ensure the validity of the data. Even when properly designed, field efficacy studies may be inconclusive because of uncontrollable outside influences. Some problems include: a highly variable level of challenge; a low incidence of disease in non-vaccinated controls; and exposure to other organisms causing a similar disease. Therefore, efficacy data from both laboratory and field studies may be required to establish the efficacy of some products.

4.3.3 Safety

The intrinsic safety of a vaccine should be demonstrated early in the development stage, using the master seed virus (MSV). These studies should include the safety of a single dose, of an overdose and of repeated single doses. Safety tests for release of a batch are described the OIE Manual and elsewhere. Standard procedures are given for mouse, guinea-pig, cat, dog, horse, pig, and sheep safety tests. Products may require more than one type of safety test. The required safety test for a poultry

product is described in the specific Standard Requirement or the Outline of Production for that product. As a general rule, overdose studies are required for all vaccines: x10 for live and x2 for inactivated vaccines (if this is not practical, an indication of safety may be obtained from the results of the potency tests).

For inactivated virus products, where host animals are used for potency testing, safety may be determined by daily observation of the vaccinates during the prechallenge period of the potency tests. Further evidence concerning the safety of products is derived from reversion to virulence studies on modified live products (discussed above) and from field safety trials (discussed below), but these tests are not required for each batch.

The documentation submitted by the manufacturer for registration of a vaccine or drug should clearly describe the tests undertaken to assure the safety of the vaccine. If this is not considered satisfactory then the drug and vaccine quality control laboratory must carry internationally accepted tests with satisfactory results before a product can be considered as safe.

4.4 Complementary activities

The veterinary drug and vaccine quality control laboratory will carry out tests and assays to determine the safety and efficacy of a product. The results of these tests, together with documentation supplied by the manufacturer, will inform the drug / vaccine registration process.

Thus a formal system for registering veterinary drugs and vaccines would be in place, and consisting of submission of completed proformas and detailed information relating to the manufacturing process, quality assurance measures in force, the types of assays and tests conducted and the results of these test.

A system of market / retail shop inspections should be a further complementary activity to check for fake / unauthorised / adulterated / date expired preparations. The drug and vaccine quality control laboratory may be required to test samples collected by inspectors during these inspections.

5. Equipment and other resources required.

The equipment, staff, facilities etc. required by the above quality control laboratories will depend on their scope of work / terms of reference which will in turn depend on legal empowerment and policy of government.

Depending on agreed scopes of work the laboratories may require the following sections:

- Bacteriology, including laminar flow cabinets, facilities for media preparation, facilities for culturing microorganisms (incubators etc),

international standard reagents and antisera, consumables, sterilization facilities.

- Serology, including ELISA kits, readers, international standard reagents, antigens, antibodies, incubators, computer with ELISA software, printer etc.

- Chemistry and toxins section, including Atomic Absorption Spectrophotometer and Inductively Coupled Plasma-Mass Spectrometer, gas chromatograph, high performance liquid chromatograph, etc.

- Residue section including Gel Permeation Chromatograph, High Performance Liquid Chromatograph, Gas Liquid Chromatograph, Gas Chromatograph-Mass Spectrometer, Liquid Chromatograph - Mass Spectrometer, ELISA, and access to laboratory animals for bioassay.

- Parasitology section, including means to check for and identify trichinosis, hydatidosis, cysticercosis, etc.

- Equipment washing and sterilization section

- Incinerator.

- Data management section – all laboratory data should be computerized and a suitable database management system used to analyse and report activities, search for trends, prepare invoices, assist in stock control, etc.

- Administration section, including personnel, accounts, procurement, stores, transport, etc.

6. Planning and coordination

6.1 Food quality control laboratory

Early in planning of this laboratory there must be detailed discussions aimed at establishing a national food safety coordination committee and comprising the Veterinary Department, Ministry of Health, Food Agency (as and when established), consumers groups, producers, processors and other stakeholders.

This coordinating body would serve as a forum for interchange of information to increase awareness of actual or potential problems, avoid duplication of effort, communicate with the media in order to raise public awareness and generally work towards improving food safety.

6.2 Drug and vaccine quality control laboratory

There are two important issues that must be resolved during initial planning of this laboratory:

- The role and responsibilities of the Veterinary Department (VD) regarding the quality control and licensing of veterinary drugs, vaccines and other medicinal products. Currently the Drug Administration and Control Authority, which is dominated by the Ministry of Health, has legal responsibility for all drugs, vaccines etc, including those for animal use. This is most undesirable. The VD should be fully responsible for quality control and licensing / registration of veterinary drugs and vaccines: until this authority is obtained there is no point in the VD establishing a quality control laboratory.

- The future role of PANVAC *vis a vis* any drug and vaccine control laboratory established by the VD. Can the scope of work of PANVAC be expanded to include all veterinary vaccines, and possibly also drugs? If so, then it would make more efficient use of expertise and resources to base the proposed laboratory on an expanded PANVAC. If not, then a new facility will be required.

7. Empowerment

Inspection and testing of meat and meat products, including source animals, premises, markets, abattoirs, transporters, wholesalers, retailers etc. must be enshrined in law and be the responsibility of the Veterinary Department.

Powers of inspectors, penalties for infringements, etc. must be specified.

Similarly, legislation is required to empower the VD to inspect, analyse, license and register approved veterinary medical preparations including vaccines. Powers of inspectors, penalties for infringements, etc. must be specified.

The Director, VD, must be legally authorized to accredit quality control laboratories for the purposes of meeting international obligations.

NOTES ON CENTRALISATION

A VERY IMPORTANT MATTER OF ORGANISATION OF VETERINARY SERVICES

The way in which the proposed new animal health service is organised will determine whether it succeeds or fails. Critical to this are the linkages between the Federal VD (VD), the Regional Veterinary Services (RVS) and the Woreda Veterinary Services (WVS) and thence to actual delivery at the level of the Peasants Associations (PA).

With the exception of (a) the rinderpest eradication programme which is implemented through the network of centralised PACE offices, and (b) the centralised quarantine stations and export abattoirs the VD currently has to implement its national policies through the RVS over which it has no authority. RVS may or may not implement these important national programmes – experience suggests that compliance will be poor – for example the poor rate of submission of monthly disease reports from woreda (30%).

The nation-wide and uniform implementation of an effective animal disease surveillance system and effective control of the important diseases (contagious bovine pleuropneumonia, peste des petitis ruminants, foot and mouth disease, sheep and goat pox, anthrax, rabies etc) require that the VD's authority reaches down to the woreda level – ie recentralisation.

Failing this the high standards of surveillance and disease control required to satisfy international requirements cannot be achieved, meaning that it will be very difficult if not impossible to:

- Obtain official OIE recognition of disease-free zones in Ethiopia – this will reduce opportunities for exports of livestock and livestock products
- Gain the trust of the veterinary services of potential importers of livestock and livestock products from Ethiopia – this will further reduce opportunities for exports of livestock and livestock products
- Significantly reduce the incidence, and adverse effects, of the important diseases, as a result the livelihoods of livestock owners, health of consumers, and food security will be compromised.

The benefits of centralising veterinary services are too important to ignore. The VD has been granted a unique opportunity to specify the system it requires to be effective. This chance should not be wasted and it is strongly recommended that the submission to the Minister clearly states that a centralised system is essential, and gives strong justification for this.

If this request is granted then an excellent system can be developed. If the request is not granted then at least the VD's need for a centralised system has been expressed, and the point can be made that any compromise in this will definitely and markedly reduce the performance and impact of veterinary services.

If a compromise proposal is included in the first proposals of the VD then the blame for the eventual failure to deliver the required high standards of veterinary services will be laid at the door of the VD.

PROPOSALS.

Regional VS and Woreda VS would be centralised and brought under the authority of the Director, FVS. This would involve re-chanelling salaries etc, from the regions to the FVS. The FVS would require its own personnel and finance division to handle the additional work involved.

The RVS staff would cooperate and liaise with the RAB. Although the priority of the RVS would be to implement FVS policy, it would attend RAB meetings, assist in developing the livestock sector, participate in regional programmes to improve food security, improve livelihoods, and combat disasters.

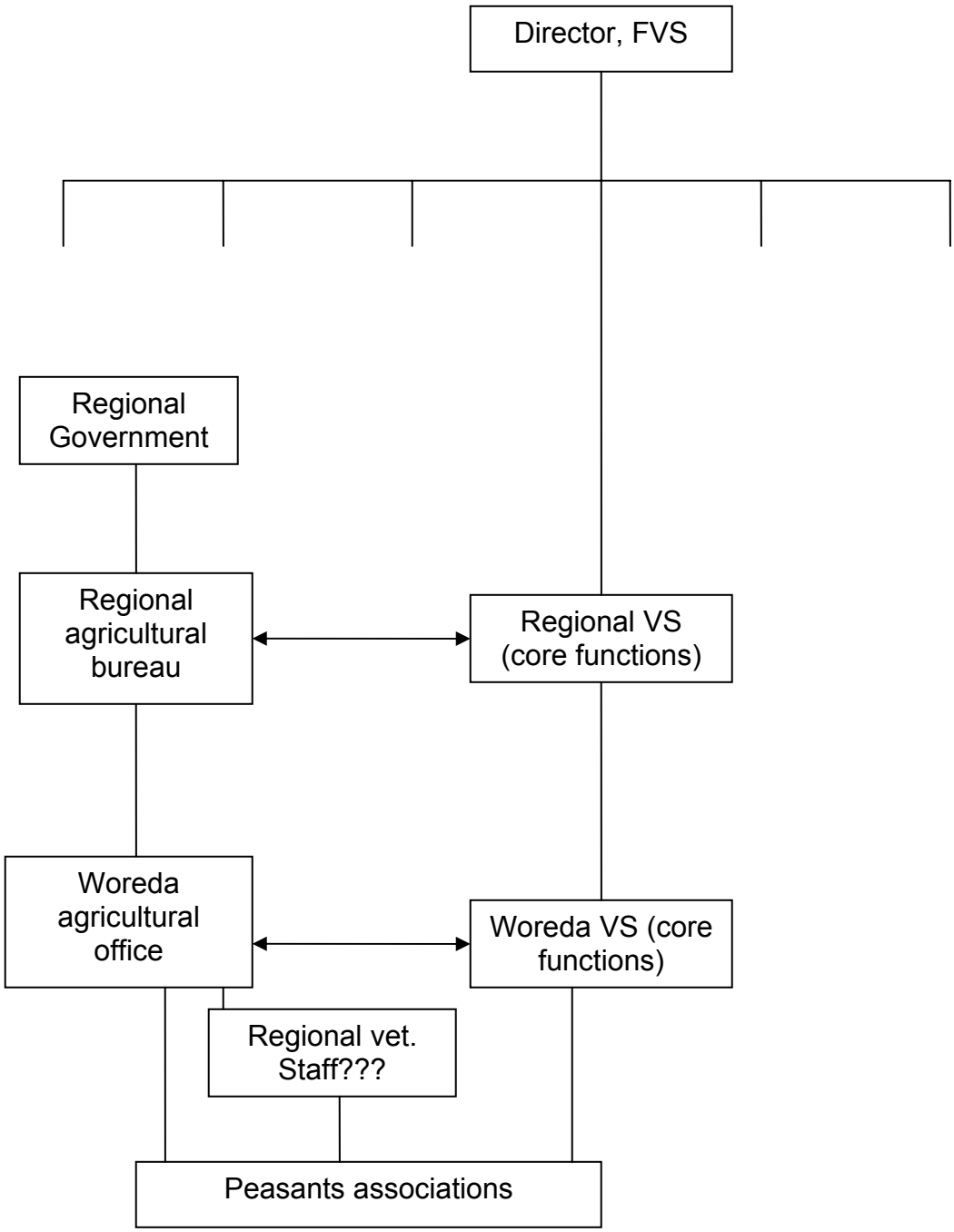
The WVS staff would similarly cooperate and liaise with Woreda administrations. Although the priority of the WVS would be to implement FVS policy under the direction of the RVS, it would attend Woreda meetings, assist in developing the livestock sector, participate in woreda programmes to improve food security, improve livelihoods, and combat disasters.

The important core functions of veterinary services (including privatisation) would be implemented by RVS and WVS under the policy, authority and guidance of the FVS. The FVS would establish annual targets for each region – eg for numbers of animals vaccinated, proportion of woredas regularly submitting monthly disease occurrence reports, response times for disease outbreak investigations, etc.

Broad policies for other functions - such as delivery of veterinary clinical services - would be determined by the FVS in consultation with stakeholders. Implementation of these policies would be left to the RVS. Progress would be monitored through annual reports submitted. It should be noted that national policy for veterinary clinical services should be (a) provision of these services by the public sector only in areas not served by a private practitioner, (b) divestment to the private sector as and when possible including implementation of a clear and transparent exit strategy by the public sector, (c) encouraging the development of innovative clinical service delivery systems, including use of CAHWs.

Possibly, some veterinary staff would be retained by the RAB to undertake veterinary clinical work.

These proposals would enable effective delivery of core functions whilst retaining local control of non-core functions.


Director, FVS
Regional Government
Regional agricultural bureau
Regional VS (core functions)
Woreda agricultural office
Woreda VS (core functions)
Regional vet. Staff???
Peasants associations

Report of a Consultancy to Support Restructuring of Government Veterinary Services in Ethiopia
9th June to 20th July 2004

ANNEX III

ENGLISH VERSION OF PROPOSALS APPROVED BY SENIOR DECISION MAKERS

THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA
MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT

LIVESTOCK HEALTH CARE SYSTEM (FIRST DRAFT)

JUNE, 2004
ADDIS ABABA

Table of Contents

Executive Summary

The marketing of livestock and livestock products is increasing worldwide. This has created a favourable ground for the spread of trans-boundary livestock diseases during the movement of animals and animals products. The diseases in turn are affecting the people, economy and trade activities of a given country.

This condition has forced countries, which import livestock and livestock products, to tighten their livestock health standards. Therefore, it has become essential to take corrective measures and implement up-to-the-standard veterinary systems so that Ethiopia can benefit from exports of livestock and livestock products.. Accordingly, the existing veterinary services has been evaluated in line with the modern international standards and this restructured veterinary services has been prepared for implementation.

The existing livestock health care system of our country

- There are several livestock diseases in our country that affect the trade of livestock and livestock products as well as the nation's economy and public health.
- There is no strong flow of information, laboratory support and uniform working system to prevent and control trans-boundary diseases. According to available information, only 35% of the Woredas all over the country send disease incident reports to the Federal Animal Heath Service.
- Although efforts were exerted to contain trypanosomosis, it has not been possible to reduce the spread and damage due to this disease.
- There are no efficient export quarantine stations in our country that are not capable of ensuring the health of exported livestock or preventing the spread of foreign diseases. The service is being provided at quarantine stations in Diredawa, Nazareth and Afar, which have not fulfilled the required standard.
- There are no strong veterinary services to reduce the spread of animal diseases. The movement of livestock is being carried out haphazardly.
- Although there are 124 livestock market places in the country, these markets do not have shelters or adequate provision of water and fodder. There is a fertile ground for the spread of animal diseases at market places, as there is no professional health care control mechanism therein.
- There are over 90 local and nine export abattoirs in our country. Five of the nine export abattoirs export meat at present.
- There are over 1587 veterinary clinics and health stations all over the country.
- Currently, there are 10 zonal laboratories, one national veterinary health research centre as well as one tsetse fly and traypanomiasis study and control centre. Preparations are also under way to construct one livestock products quality control laboratory.
- The Federal Veterinary Service does not work in collaboration with the Drugs Administration and Control Authority to supervise the use of veterinary drugs in

our country. Thus, public health workers with no basic knowledge on veterinary science are selling veterinary drugs outside their professional jurisdiction.

- The Ethiopian National Veterinary Institute produces some 15 kinds of vaccines. However, the institute does not manufacture adequate quantities of foot-and-mouth disease vaccine or caprine pleuropneumonia. Some vaccines are of poor quality. In addition, rabies and rift valley fever vaccines are not manufactured locally.
- Although a proclamation was issued to control livestock diseases, it has not yet been put into force, as the regulations for the implementation of the proclamation are only at the level of draft documents.
- The existing proclamation on inspection of livestock products deals only with meat. Other proclamations that help control livestock products quality and safety have not yet been promulgated.
- There are 483 veterinarians, 800 assistant veterinarians, 3000 animal health technicians and 312 support staff in the country. These numbers are not sufficient in light of the demand for veterinary health services. In addition, there are farmers (CAHW), who are selected from the community and given training on veterinary medical services. However, no follow up and support were provided to help them discharge their duties efficiently.

When we examine the condition of veterinary services in our country, it is clear that radical changes are required. Thus, the following recommendations are given to determine the future direction of the sector.

The areas of major concern for future veterinary services are as follows:

- The Federal Animal Health Service be responsible for preventing and controlling trans-boundary diseases. To this effect, animal health professionals at every level need to actively participate in information exchange and disease control activities. Further, they should have strong legal support so that they could immediately report any livestock disease incident to the Federal Animal Health Service.
- In order to make more effective the prevention and control of trans-boundary diseases, the 10 existing laboratories and the integrated zonal laboratories to be established in the future as well as the Sebeta National Health Research Centre should be structured under the auspices of the Federal Animal Health Service. These laboratories should serve as disease prevention and control as well as information centres.
- Given the large size and geographical features of the country and the movement of animals therein, it is difficult to free all parts of the country from all kinds of livestock diseases. However, it would be possible to free some parts of the country from a few diseases by strengthening disease prevention and quarantine systems.
- In order to consolidate animal health information exchange, telephone, Internet and radio communication lines shall be installed at livestock health service sections from the federal down to the Woreda level.

- Strategies have already been prepared to control peste des petits ruminants (PPR), contagious caprine pleuropneumonia (CCPP) and contagious bovine pleuropneumonia (CBPP). These strategies shall be implemented soon. Control measures for other livestock diseases that affect the economy and trade activities of the country will be planned and implemented.
- The federal and regional livestock health services will join hands to prevent and control trypanosomosis.
- The Federal Animal Health Service shall supervise export abattoirs and quarantine stations. To this effect, 11 quarantine stations, 16 sheds and 24 entrance and exit gates will be established.
- It is vital to bolster local quarantines and supervise the movement of animals in the country to reduce the spread of livestock diseases. Thus, it is necessary to amend the previous proclamation on cattle stock routes and identify additional routes. It is also essential to establish new animal shelters and animal movement control stations along these routes.
- Regional animal health services will be charged with the task of supervising the movement of animals in the country and inspecting livestock market places.
- The 124 livestock markets in the country shall be properly organized. Health inspection of animals will be carried out at market places.
- With a view to supplying safe and healthy meat to the general public, 23 regional and big towns; 50 zonal and town as well as 570 Woreda abattoirs; totally 643 local abattoirs shall be established across the country. Regional animal health services shall be given the mandate to inspect meat meant for local consumption.
- A total of 5630 animal health institutions including 630 Woreda clinics and 5,000 animal health stations will be established to provide efficient animal medical and other health services to the public. Regional health institutions shall be mandated to supervise the activities undertaken in the clinics.
- The existing 10 laboratories and the 4 laboratories under construction as well as the National Animal Health Research Centre would be equipped and furnished with the necessary facilities and manpower. In addition, one zonal laboratory will be built.
- In addition to the central animal products quality control laboratory, which is being constructed, each of the zonal laboratories shall be organized in such a way that they could inspect the quality of livestock products in their respective localities.
- The central quality control laboratory will provide services to Debrezeit, Mojo and Methara export abattoirs. In addition, the Diredawa, Bahirdar and Kombolcha zonal laboratories will be restructured in such a way that they would give livestock products quality control services.
- The Federal Animal Health Service as well as the Drug Administration and Control Authority shall work in concert to control the quality of animal medicinal drugs. In addition, animal drugs shall be prescribed only by veterinary physicians.

- Appropriate support shall be given to enable local pharmaceutical companies to produce quality vaccines in ample quantity. The livestock products quality and control laboratory shall be strengthened to enable it to control the quality and safety of vaccines.
- Regulations and directives will be approved in order to put into effect proclamations issued to prevent and control animal diseases. Efforts will also be exerted to promote and effectively implement the proclamation. In addition, proclamations shall be issued to control the quality and safety of livestock products outside meat.

In addition to the existing veterinary health professionals, the following number of veterinary practitioners shall be trained.

- 1620 Veterinary doctors
-5320 Assistant veterinary physicians
- 179 Senior laboratory technicians
- 194 Laboratory technicians
- 734 Senior meat examiners
- 679 Assistant meat examiners
- 3000 Veterinary health technicians
- 630 Insemination technicians

- Professionals deployed at quarantine stations and abattoirs shall be provided with 6-month training on meat examination and other fields of study at the Alage Agricultural, Technical and Vocational Training Centre and other training institutions.
- Community animal health workers among in pastoral and agricultural areas shall also be provided with a standard skill upgrading training.
- A series of sensitisation programs will be conducted by professionals in development stations and through the media to raise public awareness on the prevention and control of animal diseases and help the society play their role in this regard.
- In addition to preventing and controlling animal diseases that hinder foreign trade, efforts will be made to feed livestock natural fodder and obtain organic animal products and a better foreign market.

CHAPTER ONE

1. Introduction

It is mandatory and timely to install a transparent system, which proves to the rest of the world that our country has created a strong information network to circumvent and control animal diseases and that the nation produces and supplies healthy livestock and quality livestock products to the international market. Thus, the system was designed by a task force established by Animal Health Protection Department.

To formulate the system the task force has:

- Assessed previous systems and procedures;
- Evaluated concerned institutions and gathered relevant information;
- Evaluated and considered the requirements set by international animal health organizations and
- Assessed the existing animal health care services

Apart from the executive summary, this document contains four major chapters. The conclusion part singles out the current status of animal health protection and the issues to be given due attention by the future system.

In chapter one, an attempt has been made to introduce the preconditions needed to meet animal health service demands, assess international stipulations and standards as well as to indicate the vision, mission and objective of animal health care.

Chapter two tries to assess the current condition of animal health care endeavours in our country. This chapter has seven sub-sections that deal with disease prevention, information flow, quarantine and inspection service, clinical service, provision of input and other relevant issues.

Chapter three of the document entertains in detail the future animal health protection system in the same sequence stated under chapter two. More over, it assesses general issues such as proclamations, regulations and directives; manpower demand, training and evaluation system as well as good opportunities and threats.

2. International animal health provisions and standards

In order for a country's livestock and livestock products get the right place in the international market, the country's animal health service should meet the proper quality parameters and win the trust of buyer countries.

To win this trust, the animal health service should meet all the necessary requirements in structural organization, technical efficiency and ethics.

Especially, the service needs to display special efficiency in:

- Epidemiological disease surveillance
- Disease control
- Import controls
- Disease reporting system
- Training
- Inspection and certification and
- Laboratory

In addition to the aforementioned requirements:

- Each exporting country should provide fast and continuous information on the animal diseases prevailing in the country. Especially, each country needs to report the incidence of A and B diseases indicted in OIE list of diseases.
- Due attention should be given to prevent the usage and distribution of hazardous animal products for food consumption.
- The hygienic standard of enterprises that process animal products for human food consumption should meet international parameters. Furthermore, there should be residue monitoring program on livestock and livestock products.
- The disease control system of the exporting country should be registered. The outcome of the disease control system need to be explicitly stated. In addition, there should be animal movement controlling and animal identification mechanism.

3. Vision, Mission and Objective of Livestock Health Care

3.1 Vision

To undertake consolidated animal disease prevention and control activities; change the attitude of the farmer/pastoral community; ensure food security by producing quality animal products in great number and to address the threat of animal diseases on foreign trade.

3.2 Mission

To strengthen animal diseases prevention and control mechanisms; undertake disease surveillance, study and research; bolster livestock and livestock products inspection and quarantine; create a system to control inputs for animal health services; encourage the government and the private sector to actively involve in animal health service; raise the awareness of the farmer; take care of animal health; boost animal production and productivity; extend contribution to the efforts being exerted to attain food security; enable the country to generate the maximum benefit from the sector; create reliable and sustainable animal products foreign trade and prevent the transmission of animal diseases to human beings.

3.3 Objective

The major objectives of animal health services are to reduce the impact of animal diseases and:

- Raise the productivity and quality of animals;
- Reduce the mortality of animals and increase their number;
- Meet international animal health standards and expand livestock and livestock products foreign trade;
- Prevent the spread of new animal diseases in the country;
- Ensure the health of the public by preventing the transmission of animal diseases to human beings.

3.4 Duties of animal health care centers

The following are the main activities of animal health care service:

- Preparing the country's animal health policy, strategy, proclamation, regulation and guidance.
- Prevention and control of animal to animal and animal to man transmittable disease.
- Research, inspection and control of animal diseases.
- Controlling the welfare and health of animals and their products.
- Examining meat and other animal products, controlling and issuing license for enterp0rises that are engaged in the preparing of the above.
- Controlling and ensuring the efficiency of vaccines, biological and reagents.
- In coordination with the medicine administration and control authority, control the manufacturing of medicines and their selling.
- Research on animal health.
- Issuing license to animal health professionals and controlling their activities.
- Controlling the animal health activities of private professionals, trained farmers, municipals, cooperatives...
- Clinical, laboratory and hybrid services
- Ensuring animal welfare
- Representing the country in global animal health care forums
- Offering training for animal health agents and giving orientation for the community.

4. Relevance of system amendment

The country can be active participation of the global animal and animal products trade in there is a strong national animal health care service which fulfils international criteria. Furthermore, establishing a strong and capable animal health care service system ensures food security in the country and has a greater role in protecting the safety of the community.

The animal health care in the country is neither harmonized nor consistent, particularly the information flow regarding spreading diseases and their control. The animal health program is not well developed in all the regions and is not assisted by efficient professionals, laboratories and other infrastructure.

Consequently, the health care service could not contribute well to the supply of healthy and quality products to export trade.

With a view to fulfill new criteria of the global animal products trade, and so as to ensure the permanent continuity of the, trade the animal health care service in the country should:

- At any time and immediately be informed of disease outbreaks.
- Based on the information, take immediate action to control the disease and follow up the implementation.
- Possess the labour, laboratory and technical capacity to be able to operate with efficiency.
- Be backed by legal grounds.

Hence, improving the animal health care service is a priority concern.

CHAPTER TWO

5. Actual status of the animal health care

In order to improve the animal health care system and reduce the effect of diseases, and to increase productivity and quality for the betterment of the export trade, we have tried to divided the service into present status, problems faced and future steps.

5.1 Animal diseases in the country

One of the main challenges hindering the country from benefiting from its animal resource is animal health problem.

Among the 15 registered list “a”* diseases 7 are found in the country. Among the 72 list “b”** disease 20 are found in the country. And more than ten list “c” *** disease are found in the country.

The above is the result of laboratory diagnostic of the disease causing parasites, and there can be other animal diseases which are not identified in the country.

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* List “a” diseases are those very dangerous and rapidly spreading diseases which cause serious social, economic and public health problems and highly influence the global animal and animal product trade.
** List “b” diseases are those transmittable diseases that cause social, economic and public health problems and influence the global animal and animal product trade.
*** List “C” diseases are those that cause economic and public health problems.

Table 1 List of animal diseases in the country

List “a”	List “b”	List “c”
FMD	Anthrax	Black leg
CBPP	B. Brocellosis	Botulism
PPR	B.TB	Toxoplasmisis
LSD	B. Cysticercosis	Coccidiosis
S.POX	Haemorrhagic septiceamia	Distomatosis ort liver fluke
AHS	Trypanosomiasis	Foot-rot
	CCPP	Sheep manage
	Caprine and ovine brucellosis	Filariosis
	Dermatophillosis	Warble infestation
	Salmonellossis	Helment parasites
	Dourine	
	Epizootic Lymphangistis	
	Surra	
	Fowl Cholera	
	Fowl pox	
	Fowl Typhoid	
	Pullorum disease	
	Heart water	
	Paratubercullosis	
	Mareks disease	

The diseases are affecting the animal rearer and the damage, they cause is reflected on the economy of the country. The diseases affect productivity by reducing the milk, meat and hides quality; affect the economy by the death of animals the cause; block foreign capital by making others lose confidence in the product of the country and demand millions each year for the prevention and control operations.

The damage caused by the diseases during the past six year can be shown as follows.

Table 2 Outbreak of diseases and the damage

Year	Outbreak	Sick	No. of deaths	Vaccinated
1998	3,954	91,320	27,654	4,413,857
1999	3,318	122,228	17,791	2,914,201
2000	1,855	55,529	7,987	2,393,311
2001	1,719	69,254	19,779	1,674,765
2002	6,560	75,224	14,917	1,658,444
2003	1,478	46,330	8,972	1,979,624

The above is obtained from the list "a" and list "b" diseases report in less than 50% of the woredas. The figure would have been by far more if other parasites were included. List "s" and list "b" diseases are almost found in every region.

5.2 Prevention and control of diseases

Prevention means prohibiting the outbreak of diseases by using different methods, while control refers the reduction of sickness and death.

Prevention is preferred to control as it blocks the damage the disease could cause. Control is used to reduce the spread of diseases and its consequences. List "a" diseases deserve primary attention. The federal animal health care service should prevent and control list "a" diseases as they spread rapidly to cover every region within a short period of time.

Vaccination

Excepting the FMD, the Federal Agriculture and Rural Development Ministry buys preventive vaccines for list "a" diseases like CBPP, PPR, LSD, S. Pox, AHS, and NCD from the National Animal Health Care Institute and distributes them for free to the farmer.

Regional agriculture offices cover the cost of transporting the vaccine and other costs during the vaccination.

FMD vaccines are not produces sufficiently and hence are given to animals in breeding stations under special care.

Vaccination is given against list "a" diseases during its outbreak, thereby vaccinating animals free from the disease thus ensuring the halting of the spread of the disease.

Preventive vaccination against list "a" diseases is mainly given in urban areas.

Treatment

Antibiotic, Acaricide, Antihelmentics and other medicines are used to treat sick animals and sometimes to prevent diseases. Veterinary clinics found in various places of the country and health stations spend their time by giving health treatment.

Vector control
Tick and tick caused diseases control

Vector controlling activities are being carried our in the country on Anaplasmisis, Babeswesis, Heart water and other vectors.

In order to control tick, health stations use anti parasite spray while the animal rearer buys the spray and use it over the animals.

Tsetse fly and Trypanosomiasis control

Trypanosomiasis is a disease which affect domestic animals and is transmitted by tsetse flies and other similar flies. Excepting the Trypanosomiasis, the disease transmitted only by tsetse flies covers more than 150,000 sq. km.

With the view to controlling this disease a national tsetse flies and Trypanosomiasis inspection and control center is established at Bedele. Despite the active involvement of the regional governments through projects like the farming in tsetse control areas and sterile male insect technique in Oromiya, Gambella, Benishangul, Amhara and South Ethiopia Peoples and Nations, the spread of the disease and the tsetse flied is increasing from tome to time.

The fact that there is no vaccination against Trypanosomiasis and that the vector is adapting to the medicine remains a problem.

Owing to the importance of law in the process of preventing and controlling animal disease, the 2002 proclamation was declared and 4 draft regulations were prepared for its implementation. One of the regulations was designed to regulate the circulation of animals, which would relate to the prevention and control. Study has begun to establish an area free from diseases.

5.3 Challenges facing disease prevention and control

- Lack of disease control system in Federal and local veterinary stations.
- Failure to prepare priority list according to the information on disease control and the damage the diseases cause.
- Failure to prepare disease control strategy based on the priority list, and failure to implement the strategy.
- Failure to prepare emergency preparedness plan for list “A” diseases and strange diseases, and failure to implement the plan.

- Failure to prepare early warning and early reaction plan for list "A" diseases and strange diseases, and failure to implement the plan.
- Failure to, based on the available information, prepare. Vaccination strategy, and failure to implement the strategy.
- Failure to produce enough vaccine against goat diseases.
- Failure to produce vaccine against rabies and rift valley fever.

5.4 Veterinary Information System

Veterinary information system is a means, which through continuous information gathering, analysis and supply for disease control, helps to identify the emergency of diseases.

Main source of the information system include:

a. Information collected from surveillance, veterinary laboratories, abattoir and quarantine stations.
b. Scientific publications
c. Global and local animal health information networks.
d. Information obtained from neighboring countries
e. Information obtained from research centers.

The importance of animal health information system can be explained as follows. Information is essential for every economic sub-sector, and is this regard timely and accurate information on animal health plays a decisive role in preventing and controlling animal disease, and hence is highly important for the growth of our animal resources. The main advantages of this system are:

a. Helps identify animal diseases in the country, their types, amount and distribution. This in turn helps prepare priority list and control strategy.
b. Helps check whether the control programs are effective. In other words, helps to identify how effective the program is as compared to the situation before the control, and thus helps to take the necessary measure.
c. Helps increase the animal market and their product outside the country. If we could show our customers that we have a strengthened animal health information system, it would be easy to have their will to buy our products.
d. Helps prepare a research agenda for animal health problems that need research based on the information obtained.
e. Helps implement the agreements the country has signed with regard to animal health with global and regional organization. The country should report to the OIE, as being member, about animal diseases from time to time.

Main information sources:

- Monthly report from woredas on the emergence of diseases.
- Report on unexpected diseases

- Individual researches on diseases.

The monthly report from the woredas, however, does not show accurately the damage and distribution of diseases in the country, as it covers only a small portion of the whole country. Fir instance, reports on the first half of the year 2004 were made only by 35% of the total. Whereas the minimum amount required for a strengthened information system in 80% and it should reach the federal animal health as late as the end of the following month. What is more, the reports are made only based on field symptoms without laboratory check up. This decreases the quality and credibility of the report.

One of the criteria for a strengthened information system is making report within 48 hours of the emergence of a new or consolidated disease. But the information system in the country in this respect is so low.

Another source of information is the organized research on individual diseases under different projects.

Generally speaking, the present information system is so low. There are many reasons for this, among which are:

a. Lack of structure that obliges regional and woreda animal health stations report diseases to the federal animal health office.
b. Lack of seriousness by some woreda officers towards the report.
c. Lack of capacity to fill and send the report.
d. Lack of enough communication services in most of the woredas.
e. Failure of the Federal animal health office to timely send response to the reports.
f. Failure of the federal animal health office to set system of evaluation.
g. Failure of animal health laboratories to back field activities, and lack of structure that obliges them report their research to the federal animal health office.
h. Lack of central referral and diagnostic laboratory that gives technical assistance to and organizes regional animal health laboratories.

5.5 Quarantine and Inspection Services

Quarantine blocks harmful animal diseases from transmitting, through animals and animal products, outside the country; from outside to the country; and also helps block diseases from transmitting to other areas within the country. Inspection is made in abattoirs and food processing enterprises to check the hygiene and quality.

5.5.1 Export Quarantine

Quarantaine stations

Export quarantine station is a place where animals stay until they are vaccinated against internal and external parasites, and get quarantine.

However, enough quarantine stations are not established with respect to the surfce area of the country, its animal resources and dissemination of diseases. The quarantine service is being given, even though they do not meet the criteria, in Dire Dawa, Nazareth, and afar Stations.

The export quarantine service has recently been organized under the Federal Agriculture and Rural Development Ministry and 3 quarantine stations are being constructed (Nazareth, Afar, Detchateh and Dire Dawa) under the national animal resources development project.

Stations for staying animals

Stations for staying animals are places where the animals stay and are examined before entering quarantine stations, such stations are privately owned and do not meet the required criteria.

Entry and Exit stations

It is essential to build control station in entry and exit port in order to block the spread of animal diseases. In this regard, preparation has been made to build 3 control stations (Bale, Moyale and Teferi ber) under the national animal resources development project. International airports shall act on the control of the diseases.

5.5.2 Local quarantine

We should block the spread of diseases caused by animal circulation. The actual situation in the country shows, however, that special roads particularly for animals are lacking, and those existing do not have control stations.

In order to control animals' circulation, draft regulation is prepared but is not yet implemented. This shows that the quarantine service in the country is at a low stage.

5.5.3 Animal markets

There are many animal market areas in the country. Research shows that there are 124 market areas; but as the markets are not well organized to provide food, water and shelter for the animals, the animal lose weight and are vulnerable to diseases.

What is more, lack of control in market areas allow the selling of sick animals this accelerating the spread of diseases.

5.5.4 Abattoirs

There are more than 90 abattoirs owned by the government and 2 privately owned abattoirs (Burayo and Karalo). Nine export quarantines are built where other 5 are under construction.

In addition to issuing license for export abattoir construction, the federal animal health office assigns professionals to check the meat. With regard to meat provided for local market, additional standard abattoirs must be established while the existing ones should be standardized.

The quarantine and inspection activities in export abattoirs are being highly improved as the effort made by the government towards this has resulted in the growth of export market.

5.6. Animal health clinic

5.6.1 Importance and benefit

In the effort to maintain animal health and control the diseases, clinics have a greater role. Various activities are done in clinics, which includes: treatment of animals, delivery service, vaccination, sterilization and guidance and counseling services about animal diseases to the society.

The main beneficiaries of the clinics are those who are animal rearers, and clinics are built owing to the density of the people and the animals. As the role of clinics is immense to the society and the animal resources in different ways, the construction of clinics, equipping them with the necessary material, and staff is crucial.

Except some rural cities, the animal health clinic service was given, until 1991 in small renting houses. The clinics were found far away from resident areas. As a result of government's efforts, now things are in relatively better conditions. Accordingly, there are 1587 clinics in the country.

Though attention has been given to building animal health clinics and equipping them with the necessary materials and staff, a lot remains to be done. Despite the number of clinics established, the areas covered by the service are minimal.

5.6.2 Reasons for the inadequacy of the animal health clinic service.

- Despite the construction of various clinics, lack of trained manpower hampers the service.

- Clinics are not well equipped, and in those which are well equipped lack of proper utilization of the equipments is a big problem.
- Lack of abundant and different types of medicines.

5.7 Animal health laboratory

This is an institution where sufficient animal disease inspection and research are made by trained staff and necessary equipments.

5.7.1 Importance and benefits

The relevance of laboratories in the research, prevention and control of diseases is so high. Benefits of laboratories include:

- By making timely disease research, to take the necessary early warning and early reaction measures.
- Through the inspection of quality and safety of animal products, to create conducive atmosphere for export market.
- The provision of information on the prevalence and economic importance of animal diseases essential for the prevention and control of the diseases.
- When field diseases occur, study the cause and report it to the relevant body to control the spread.
- Identifying the cause by diagnostic and giving the appropriate medicine, to check the dry resistance disease.
- Most of the laboratories are mainly engaged in inspection and research activities while at a certain extent diagnostic is made. Whenever woredas indicate the appearance of diseases and ask for help, the laboratories and in Sebeta animal health research center. In addition, some research activities are carried out in the national animal health institute.

Regarding tsetse fly and Trypanosomiasis, a control center is established to conduct inspection, research and control activities. Furthermore, an SIT laboratory is organized under science and Technology Commission and is operating in the southern region. A laboratory offering animal health research and inspection can be explained as follows.

5.7.2 National Animal Health Research Center

National Animal Health Research Center is established to assist animal health services all over the country and is accountable to the Agricultural research organization. Since it focused mainly on research activities, it could not provide information on information based research and diagnostics as required.

Moreover, there was no communication line and information flow that would enable the implementation of research results. When a new disease, emerges, request will be made by animal health care unit following the procedure and structure whereby

assistance would be given. As the responsibility of the laboratory is limited to research, it can not assist well the animal heath care unit in diagnostic and surveillance activities. The center is fully equipped: 25 veterinarians, 6 assistant veterinarians, 15 senior laboratory technicians, 9 laboratory technicians and 1 statistician.

5.7.3 Animal products quality control laboratory.

It is imperative to establish quality control laboratories at the country level on animal products which are provided for export and which give huge benefit for the economy of the country. Accordingly, preparation is being made to establish animal products quality control laboratory under the national animal resource development project.

5.7.4 Tsetse fly and Trypanosomiasis control center

Tsetse fly and Trypanosomiasis control center is established in the tsetse belt Bedele, and it is well staffed. The center indicates the spread and coverage of tsetse fly and Trypanosomiasis diseases in various areas in the country; prepares control strategies and gives practical training on tsetse fly and Trypanosomiasis diseases.

The center has 9 veterinarians, 12 tsetse fly experts, and 10 laboratory technicians.

5.7.5 Regional Laboratories

Regional laboratories are found in six regions and two administrations. The Dire Dawa laboratory also given service to the Somali Region. They are accountable to the regional agriculture offices. Their staff number varies from 2 up to 12 veterinarians, 3-12 assistant veterinarians and 1-30 technicians.

Table 3 Staff of Regional Laboratories

No.	Name of the Laboratory	Region	Staff		
			Veterinarian	Assistant Veterinarian	Assistant technician
1.	Bedele	Oromia	5		6
2.	Assela	Oromia	2	3	3
3.	Hirna	Oromia	3		3
4.	Kombolcha	Amhara	10	12	6
5.	Bahir Dar	Amahara	12		
6.	Sodo	South P.N.	5	11	30
7.	Mizan	South P.N	3		4
8.	Mekele	Tigray	4	5	2
9.	Dire Dawa	Dire Dawa	6	11	
10.	Addis Ababa	Addis Ababa	2	4	1
	Total		**52**	**47**	**55**

5.7.6 Problems facing animal health care laboratories

- Lack of research and inspection equipments
- Duplication of effort and wastage of resource
- Weaker relationship among laboratories and lack of organization
- Failure to get timely and quality research results
- Lack of specialists and lack of training
- Those specialists do not get the job they specialize on, or quit or are transferred.
- Un timeliness and law quality purchasing of laboratory equipments.
- Failure to purchase chemicals and reagents at a lower price
- Inability to make use of the equipments and lack of timely maintenance
- Weaker relationship between the laboratories and the federal animal health care service.
- Lack of consistent information flow system
- Lack of proper plan and spontaneous activities.
- Lack of permanent working guideline
- Under utilization of human and material resources. Following is the 2003 yearly activities of the laboratories.

Table 4 Sample laboratory examinations by region lab. 2003

No.	Name of the laboratory	Bacteriological	Parasitological	Others
1	Hirna	2500	2500	
2.	Assella	10,000	10,000	
3.	Bedele	8,500	8800	
4.	Dire Dawa	6584	485	
5.	Bahir Dar	5000	5000	
6.	Kombolcha	36000	12888	839
7.	Sodo	3752	9780	209 RVF
8.	Mizan Teferi	No regents	644	750 RP, CBPP samples
9.	Mekele	500	1200-3000	

The above is by far lower than branch laboratories of other countries.

As the world market requires the assurance of safety and quality of animal products, preparation is underway for the establishment of a quality control laboratory.

5.8 Animal health input supply

Animal health inputs include:

- Medicines for animals
- Vaccines, biological and reagents
- Laboratory and medical equipments

Animal health inputs are essential in the process of prevention and control of animal diseases. With a view to secure animal health and promote exports, the animal health service of a country should have the necessary procedure to control the quality and utilization of local and imported medicines, vaccines, biological and reagents, and medical equipments.

5.8.1 Medicines for animals

Except for the only anthelmintics manufacturing enterprise in the country, the majority of medicines are imported.

One observes that some medicines for animals provided in the World market are not effective, or even harmful, or are not standardized.

In this connection, some medicines like toxafaine and carbon tetrachloride were banned from being imported due to the harmful content or nature of the medicine.

Owing to the susceptible nature of medicines, efforts, though not satisfactory, have been made to ban the selling of medicines in unselected and unsafe market areas.

The majority of the farmers in this country buy medicines by telling the sellers the sick animal (eg. sheep, goat...) and the general symptoms of the disease (eg. cough, diarrhea...) and asking them to give medicine according to the crude explanation they made. But this requires medical knowledge in the part of the sellers.

On the other hand, unethical activities are done some professionals who are trained in animal health care by reducing the amount of the medicine and by selling false medicines to farmers.

5.8.2 Vaccination

Vaccines are prepared by weakening or killing the germs that cause the diseases. Unless proper care is taken during the fabrication process, vaccines may result in other health problems or diseases, or, may not cure the diseases at all.

Particularly, as attenuated vaccines may stay inside the body of the animal (eg. FMD, EVF) and cause the disease, the vaccines should fulfill the criteria of international animal health care.

There is a sole vaccine manufacturing institute (National animal health care institute) in the country, producing 15 types of vaccines.

- Rinderpest
- Black leg
- Anthrax
- Sheep and goat pox
- Ovine pasterellosis
- Bovine pasterellosis
- CBPP
- Lumpy skin disease
- New castle disease
- African horse sickness
- Fowl thypoid
- FMD
- CCPP
- PPR
- Fowl pox

Some of the vaccines above are not produced at the desired amount (FMD & CPPP). Even though the problem can not be wholly attributed to lack of quality, the fact that vaccines against lumpy skin disease and ovine pasterellosis could not provide effective, and that the vaccine against CBPP caused disease and death of animals show that serious afternoon should be given to the quality of vaccines.

Vaccines manufactured by the NAHCI like vaccine against FMD, CCPP and Rinderpest are imported by different enterprise. On the other hand, important vaccines against RVF and Rabies are not manufactured in the country.

5.8.3 Field, Clinic and Laboratory animal health equipment

There are different field, clinic and laboratory animal health equipment.

The general situation of the laboratory and medical equipment in the country.

- Lack of quality control on imported equipments, and the existence of many equipments which are out of use after serving for a short period, or without serving at all.
- Equipment which are out of use due to lack of proper utilization and maintenance.
- Lack of field and clinic equipments in most of the clinics.

5.9 Proclamation, regulations and guidelines

Backing up the animal health service of a country by legal framework is one prerequisite for the betterment of animal resources and development, hence contributing to the growth of a country's economy.

The animal health service in the country got the backing of proclamations and regulations since 1961. The list shall be as follows:

1. Proclamation no. 171/1961 on the prevention of animal diseases on 1961.
2. Regulation no. 298/1964 on the animal rearing and meat board service on 1964
3. Proclamation no. 274/1970 on meat examination on 1970.
4. Regulation no. 428/1973 on meat examination on 1973
5. Proclamation no. 81/1976 on amended meat examination.
6. Regulation no. 50/1976 on animal market and herd roads on 1976.

The above listed proclamation and regulations, though not strictly implemented, had their own role in fulfilling the criteria of international trade. However, viewed in terms of the ever changing types of diseases and new international health criteria, they lack.

In this regard, making amendments to previous proclamations and regulations has become so essential so as to cape up with the time.

Accordingly, the 1961 animal disease prevention proclamation no. 171/1961 has been amended as animal disease prevention and control, by proclamation no. 267/2002. Based on this proclamation the following draft regulations have been prepared.

- Animals and animal products' circulation
- Heath service for privately owned animals
- Prevention and control of animal diseases.
- Registration and issuance of license to health professionals

CHAPTER THREE

6. Future strategies in animal health care service

6.1 Prevention and control of diseases

- Based on follow up information and the disease's economic importance, preparing priority list.
- Based on the priority list, preparing control strategy and implementing it step by step.
- Preparing and implementing emergency preparedness plan for list "A" and strange diseases.
- Preparing and implementing early warning and early reaction for lost "A" and strange diseases.
- Based on following information, preparing and implementing vaccination strategy.

- In order to help implement the proclamation on disease prevention and control approving and implementing draft regulations.

6.1.1 Establishing disease-free region.

Even though, owing to the surface area and the topography of the country, it is difficult to make the whole country disease-free, disease-free regions can be established thereby controlling diseases and strengthening the quarantine system.

6.1.2 Sheep and Goat diseases

a. PPR and CCPP

After research has been made on these diseases and the area they cover, by national animal health project, the necessary budget request to control the disease through vaccination has been sent to the African Development Bank.

As the National Animal Health Care Institute can not manufacture the vaccines to the desired extent by its own, effort is being made to have technology transfer.

b. Sheep pox and Brucellosis

Sheep pox control is being made by vaccination campaigns. The vaccine is manufactured at Debre Zeit Animal Health Care Institute.

Strategic country-wide control should be done, especially on regions producing goats and sheep for export.

Goats and Sheep should be free from brucellosis, and control strategies will be prepared to control the disease.

C. Rift valley river

Capacity building activity has been made to the RVF research in which:

- Research has been made about the disease's emergence and the area it covers
- Research capacity is strengthened to make inspection

The vaccine production capacity of the Debre Zeit Animal Health Care Institute shall be built in order to be able to control the disease.

6.1.3 Bovine pasterellosis

a. FMD

Control strategy shall be prepared. As the vaccine is expensive and does not include all the types of virus causing the disease, the supply should be improved by solving the technological problems of the Debre Zeit Animal Health Care Institution.

b. CBPP, LSD and Bovine tuberculosis.

Research has been made on the CBPP to prepare its control strategy. Based on the research made the control strategy has been prepared and is ready for implementation. The vaccine has got quality problems that should be corrected.

The vaccine against LSD is being fabricated at Debre Zeit, and regions are campaigning to control the disease.

Research shall be made to find ways of prevention for Bovine TB where the control strategy shall be implemented.

c. Rinderpest

Huge effort has been made to control the disease. As a result, the country is free from the disease. However, it is confirmed that in neighboring countries Kenya and Somalia the disease exists, which explains the risk of its dissemination to the country. Therefore, in order to prevent the disease, the following should be made:

- Surveillance of the disease shall be made
- Security examination shall be constantly made
- Capacity of emergency preparedness shall be strengthened.

D. East Coast Fever

Even though this disease does not exist in our country, it is found causing an alarming damage in the neighboring countries of Kenya and Sudan. Since a favorable weather condition exists in our country that will enable for the tick to multiply if the tick is brought into our country the disease can amplify itself in our country. Therefore, not to be imported into our country as a result of livestock transfer, a reconnaissance work will be carried out around the border areas. In addition enforcing the Proclamation for Controlling Livestock Diseases, the transportation of Livestock from one place to another will be managed properly.

6.1.4 Chicken Disease

a. N CD

This disease if found at first grade causing a great damage on the chicken wealth of our country. Therefore, in order to make chicken extension successful, the vaccine to be used against this disease being produced in enough supply the program will be implemented.

6.1.5 Tse-Tse Fly and Trypanosomiasis

Since the Trypanosomiasis is causing a heavy damage on the chicken wealth of our country, the Livestock Health Services of the Federal and Regional governments should work with joint responsibility to implement its controlling mechanisms.

Based on this, the Federal Livestock Health Service is expected to let appropriate alternative technologies be imported into the country that will enable to control the disease and it is also expected in collaboration with the Medicines Administration and Control Authority to make practical the usage of the preventive medicines for the Disease.

With regard to the controlling of the disease and Tse Tse fly, it will be made to participate directly in the coordinating development of workers and assistant veterinarians found in each Kebele and to teach the public, how to trap the fly, and treating the livestock timely.

6.2 Prerequisites required for the Success of Controlling Programs

- Vaccines whose viability is ascertained in the field will be made to be produced in enough quantity
- Vaccines such as After, and those for communicable lung diseases of goats and pack animals, which have a problem of clarity, their clarity will be improved and will be made to be produced in enough quantity. Technologies that will help to realize this will be made to be imported in to the country.
- The information system for livestock health will be strengthened
- The Proclamation for the prevention and control of diseases will be made practicable

6.3 Cattle Health Information

In order to establish a strong and successful National Livestock Health Information System, the Federal Livestock Health Service will have to exchange livestock health information by establishing a direct link with regional and Wereda livestock health services. In addition, the National Livestock Health Information System will be required to have well equipped inspection and research laboratories.

Also since epidemic livestock diseases require a consolidated structure it will be required to lay down a structure (system) that can be linked from the Federal up to the lower livestock health protection site (station).

Therefore the following prerequisites must be fulfilled.

- The Sebeta National Livestock Health Research Center being accountable for the Federal Livestock Health Service will be organized to serve as the Central Testing and Research Laboratory.
- Currently Livestock Health Laboratories found in Regions and those to be constructed in the future their accountability being for the Federal Livestock Health Service and since they are serving as the Federal Livestock's' Health Protection and Inspection of Epidemic Diseases and Livestock Health Information Centers after this they will be called (named) Zone Laboratories.
- A professional has to be appointed that will consolidate information at the Woreda level and who will be transmitting same to Federal and Regional Livestock Health Services as well as who will be coordinating the controlling of diseases. And this professional has to be a veterinary who is a member of the Woreda Livestock Health Service.

- **Systems Management for Information Collection, Consolidation and Analysis**

To implement activities by which the system for the Livestock Health Information and Controlling of Diseases shall be maintained part of the systems which shall be structured within the management structure will under take the following activities:-

To make the Livestock Health Information and Controlling of Diseases at the level of Regions, Zone Laboratories will undertake the following activities:-

- It will work closely with Woreda and Region Livestock Health Services in the collection and dissemination of information
- They will implement jointly disease exploration and study planned at the Federal level.
- They will make available timely the information on the livestock health conditions to the Federal Livestock Health Service
- They will make practicable by coordinating the controlling activities of diseases for which controlling program is prepared at the Federal level
- They will develop the disease inspection capacities of Woreda Livestock Health Clinics
- They will timely dispatch samples that should be sent to the Central Diagnostic Laboratory
- They will dispatch pre-alarming and analyzed disease movement information to Woredas.

The information and disease controlling professional to be appointed at Woreda level will undertake the following:

Creating contact with stakeholders available at Woreda level (Private and government Livestock Health professionals present from Wereda to Kebele level, with abattoirs, cattle raisers and merchants) will gather information.

- Will undertake training and other awareness creation activities pertinent to main livestock diseases in the Woreda.
- Will teach and sensitizes the need for immediate reporting of newly developed diseases

- Studying of reported diseases as soon as possible. By reporting the cause for the surfacing of the disease to the concerned Zone Laboratory he/she will make the cause to be studied.
- Will report to Zone Livestock Health Laboratories, to Regional and Federal Livestock Health Services information obtained from sources and by filling out a form organized at national level.
- Will implement at Woreda level controlling programs for which a mechanism is outlined to be implemented at Federal level.

- **Information Exchanging Mechanisms**

- The Worda Livestock Health Information Professional, meeting in person and through letters will exchange information with the cattle raiser, abattoir's (meat inspectors), with community animal health workers, with animal health and development station employees of Kebeles, and private animal health workers.
- While the Information Professional at Woreda level will exchange information through telephone, communication radio, postal service with Zone animal health laboratories, Regional Agricultural Bureaus and the Federal Cattle Health Service, in the future when internet services shall be expanded will start its contact through e-mail.
- The Epideomology and Economics Unit present at the Zone Laboratories will exchange information by telephone and e-mail with the Federal Livestock Health Service and the National Livestock Health Diagnostic Center.
- The Federal Livestock Health Service too will exchange information with other sources of information by e-mail.

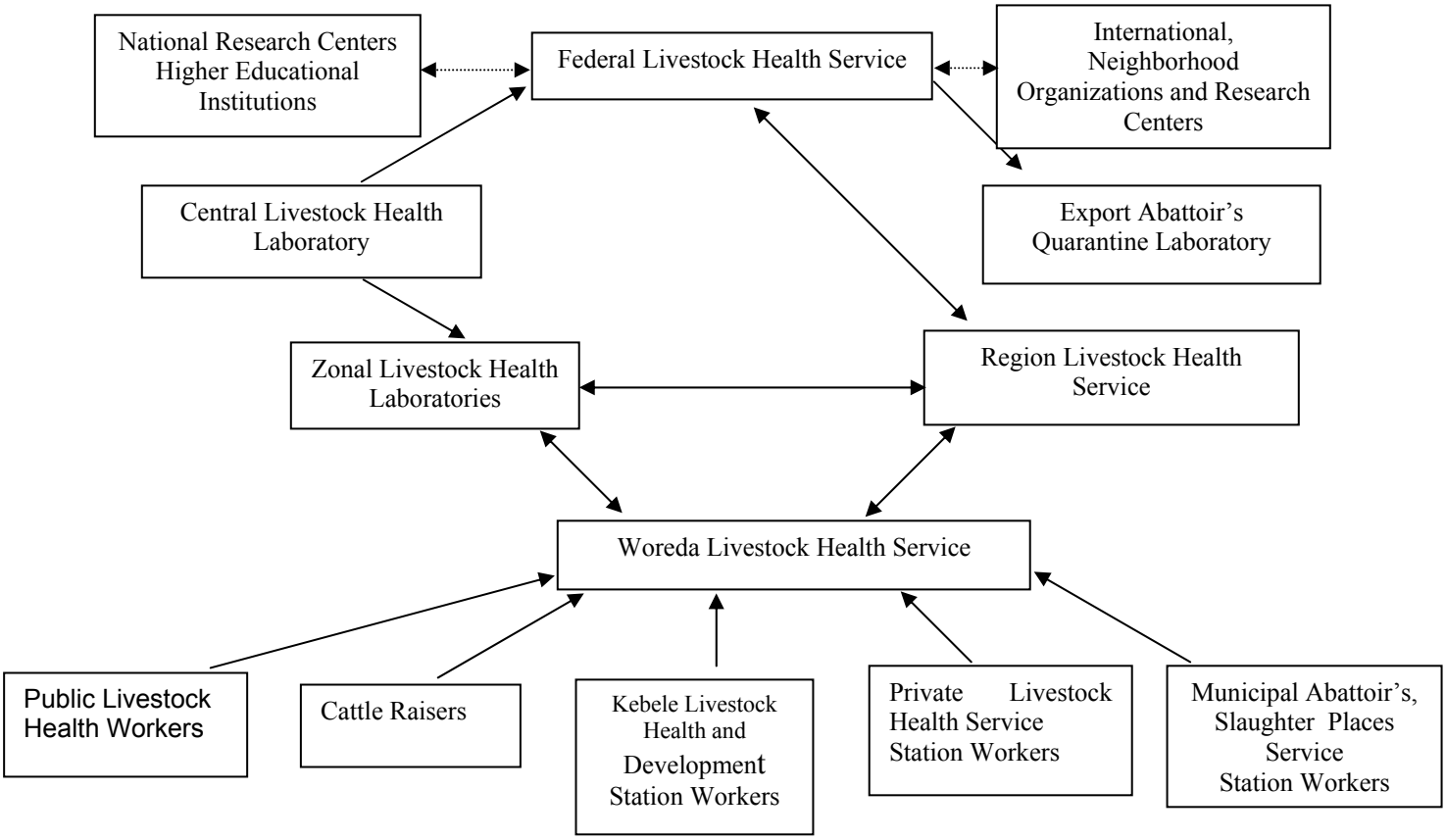
In order to make this practicable efficiently, it is expected to strengthen the livestock health services and laboratory sections located at fields. For this:

- Woredas and Regions which have telephone line facilities will be made to benefit from telephone and e-mail services.

- In Wordas where there is no telephone service Radio communications equipment will be procured and will be distributed

- **Information Flow System**

A consolidated cattle health information system need to have the following Information flow system.



6.4 Quarantine and Inspection Service

In order to undertake international trade of livestock, livestock products and poultry, since the quarantine inspection service that a country has will be evaluated for its strength and reliability it should be given special consideration.

Therefore, in the part of the government to fulfill international standards the quarantine stations and export abattoir's are organized under the Ministry of Agricultural and Rural Development and the required manpower has been fulfilled. One of the things required to undertake a reliable Cattle diseases controlling work is its being essential to control the unregulated movement of cattle within a region and from region to region and to be reinforced by law. In addition to this it is appropriate to establish checkpoints at convenient spots on the routes that the cattle are transported.

Therefore, in order to further strengthen the export trade of livestock and Livestock products which is currently being improved in our country:-

- 11 quarantine stations
- 16 livestock reservation spots
- 24 exit check points will be established.

In the future as may be required, additional entry and exit check points will be established.

- In addition renovating of 124 existing livestock trading posts, it will be necessary to strengthen through basic infrastructures and livestock health protection professionals from the areas where the markets are found enabling the inspection to be carried out in the market places. Being supported with a study to be conducted in the future, the establishment of in-country checking posts will be facilitated.

The movement of animals particularly in the Somali National Regional Government is observed taking place in a consolidated way resulting in the exiting of livestock and livestock products to different Arab countries through such ports as Djibouti, Berbera, Besaso.

In order to straighten the livestock movement being observed within these areas and to prevent cattle diseases, it will be necessary to establish quarantine stations and boarder exit and entry controlling stations based on studies to be conducted.

Chart 5 Existing and Required Manpower for one Export Abattoir

S. No.	Manpower	Manpower in service	Manpower required in the future
1.	Veterinarians	2	-
2.	Assistant Veterinary/ Meat Inspector	2	2
3.	Assistant Meat Inspector	2	-
4.	Laboratory Technician	1	-

6.4.1 Abattoir Service Requirement

On the basis of the country's population, a total of 23 regional and big-city abattoirs with similar high standards will be established. Also, on a medium range, taking into consideration Zonal cities, there will be 50 abattoirs. Within Woredas there will be 570 abattoirs to be established at lower level.

Chart 6 Manpower Required in Regional Cities, in Zone Cities and Woreda Abattoirs

Location	Veterinary	Assistant veterinary	Senior Laboratory Technician	Assistant Laboratory Technician	Assistant cattle Meat inspector
Woreda Abattoir		1			1
Zone Town Abattoir		2			1
Region Town Abattoir	1	2			1
A.A Abattoir	2	10	2	1	6
Burayu Abattoir	1	2			
Kara Abattoir	1	2			

6.4.2 In-Country Quarantine

To strengthen the in-country quarantine service, the following mechanisms will be accomplished.

- The herding routes within the country will be defined. Movements of cattle that will be made to distant Woreda and Regions for marketing and similar trading activities will be made with these routes
- On the livestock herding routes and at different places cattle health check posts and cattle reservation places will be made available.
- Movement of cattle to be carried out beyond the three Kebeles found within the working boundaries of an Assistant Veterinarian will be required to possess a health certificate to be issued by a professional

6.5 Animal Health Clinical Service

To control the expansion of diseases and to minimize the impact from diseases and to provide the necessary clinical service to the cattle raising public, building of additional clinics within the areas of the farmer and the pastorali and consolidating their internal organization and also strengthening them with skilled manpower is essential.

Based on this:

- Since it will be required to establish in Woreda cities one clinic totally in all the Wordas of the country 630 clinics will be required. It will be required to have one cattle health pose at the level of 3 Kebele Farmers Associations,, a total of 5000 health posts will be organized including the currently available 1587 clinics and posts. A total of 5630 clinics and service providing health post institutions shall be made available. These clinics and institutions should be equipped with equipment for medication and vaccination services.

- Manpower shortage in the livestock health service is evidenced to be high. The problem is hoped to be solved in a very short time as the government is at a higher pace expanding higher learning institutions technical educational training colleges. If our undertaking continues with this pace, the standard which FAO has set i.e. for medication – one Veterinary for 5000 Livestock Unit (VLU) (1:5000), for prevention one Veterinary for 3000 Veterinary Live Stock Unit (VLU) is expected to be met shortly.

- Therefore, for the future the manpower to be required in one Woreda cattle health clinic will be as follows:- It constitutes 2 Veterinarians, 2 Assistant Veterinarians, 3 Health Technicians, 1 Breeding Technician and with regard to distribution of the work being responsible one of the Cattle Veterinarians will lead the work. He will also take part in the diagnosing of chattels to be undertaken in the clinic.

- The second veterinarian will follow-up the field disease control activities and will dispatch reports to the Regional and Federal Cattle Health Services. Since Assistant Veterinarians as well will undertake the work dividing them by clinics and the field among the three health technicians one in the pharmacy, the second in the clinic and the third being posted in the field will be made to undertake the work.

- Since the artificial insemination service is related with livestock health care and particularly since breeding and raising is related with heath service, it will be provided by one breeding technician to be posted at one Woreda. Likewise, in the cattle health posts that will be available at each Kebele level in each of them one Assistant Veterinarian being assigned will undertake treatment, vaccination and awareness activities.

Based on this, the number of Veterinarians that will provide clinical treatment in the country will be 1260 and the number of Assistant Veterinarians is expected to reach 6260, the number of cattle technicians 3000 and the number of breeding technicians 630.

The Region Livestock Health Conservation will have the following professionals

- Head of Livestock Health Service of the Region
- A person who will follow-up cattle medicines, medical equipment and in-puts supply and distribution.
- A person that follows-up disease surveillance, control and laboratory works.
- A persons that follows-up quarantine inspection and Veterinary Public Health.
- A physician that follow-up community, traditional and individually owned cattle treatment. Totally, 5 Veterinarians being assigned at the level of Regional Agricultural Bureaus will be required to provide services

Activities Development Station Centers Undertake with Regard to Livestock Health.

- Will coordinate the public for disease protection activity
- Will report while a disease breaks out
- Will gather and keeps information about the livestock wealth available in the station
- Will provide a service of education to the public on disease prevention and control

The activities an Assistant Veterinarian will perform posted at 3 Kebele Farmers' Associations

- Will coordinate the activities of the development station workers that will be posted at the farmers' associations
- Designing programs for disease prevention will implement same in each Kebele Farmers' Association
- Will provide treatment for sick livestock
- Will dispatch report on accomplished activities to Worda Agricultural Bureaus
- Will inform the Woreda Agricultural Bureau when a disease out breaks
- Will issue permit for the movement of cattle within its post and within the Woreda

6.5.1 Community Livestock Health Service

Since the Pastoralist living in the desert areas of the country moves from place to place looking for grass and water for his cattle, he cannot get assistance 9service) from a specified clinic. Therefore, except recruiting persons from his own community and providing them with training so that he shall be provided with the service is a matter that has no other alternative.

Therefore, it will be required to continue the service in a strengthened way using Pastoralists that will be selected from amongst the Pastoralist community and to provide them with basic cattle health treatment skill.

Even though it is not possible to know the exact number of community livestock health workers, it is anticipated to be a huge figure.

The Community Livestock Health Service Workers are providing mostly treatment for external and internal parasitic injury and it also includes antibiotics given with injections and vaccination for the prevention of different diseases.

Cattle Health Service expanding the community livestock health service in order to make the public to obtain the necessary service it has to accomplish the following activities.

- It will prepare a standard training education
- It will determine the placed where community cattle health services shall be provided
- It will facilitate the provision of medicines and vaccines to be used by community cattle health service workers on a sustainable basis

- It will make the necessary and continuous follow-up with cattle health professionals so that the community cattle health service workers shall discharge their responsibilities properly
- It will make the community cattle health service workers to report to near by clinics with regard to their activities and when a disease out breaks
- It will make the community cattle health service workers to participate ins disease surveillance activities.

6.5.2 Cost Coverage to be effected for the Service to be Provided at livestock Health Clinics

The government is seen engaged in providing livestock health clinical services with huge investment by constructing basic infrastructure, hiring professionals, and procuring livestock medicines and equipment. Except selling the medicine to the consuming public with the money it has purchased the medicines there is no payment it charges for any of the clinical services it is providing. In another development the medicines of cattle, various treatment chemicals testing reagents and medical and vaccination equipment price is seen escalating from time to time. While considered from this view it is not justifiable for the government to cover alone the cost for this service it incurs.

Therefore since the consuming community at a certain level needs to share the cost and since government also needs at least to cover its expenses step by stem implementing this it will be required to acquaint the consumer with this. Therefore, with regard to medicines, in addition to their prices the cost incurred by the government until they rich the consumer shall have to be added on their prices. A condition has to be arranged for a price to be allotted determining the service to be provided and with the scope of its utilization which considers the objective reality of the area while supplying reagents and other service providers.

6.6 Laboratory Service

Identifying disease causing bacteria and ascertaining the existence of a disease and also identifying possible remedies for the disease surveillance and control being the primary functions of a Laboratory it will be organized at Federal Level. For this 15 Laboratories accountable to the Federal Cattle Health Services will be made available. And these laboratories will include 11 existing ones and 4 to be constructed newly.

In Addition. Referral Diagnostic Laboratory to be established at Federal level and to be accountable to the Federal Livestock Health Conservation will be made available.

Currently, the Sebeta Livestock Health Conservation Laboratory undertaking the bulk of the diagnostic and disease surveillance being its primary tasks it will be organized to undertake necessary research activities and to direct the Zonal Laboratories by coordinating them.

We are expected to undertake quality control through laboratory tests in addition to the physical tests carried out on cattle currently being exported. While treating livestock, fattening them and to develop their breeding medicines and chemicals used in this respect and the residue of which is found in the animal product will cause a problem on the consumer public. And above all in the part of importing countries the non-existence of such residues is taken as a requirement. Based on this, importing countries require for the exporting countries to have residue monitoring plan and a body that undertakes this plan and a laboratory.

The Livestock Products Quality Control Laboratory functioning in Addis Ababa will be made to provide quality control service for export abattoirs of Debre Zeit, Mojo and Metahar. In addition providing animal products quality control for Zone laboratories it will have the capacity to undertake the following tests.

- Microbiological analysis of food and water
- Checking pesticides residue
- Checking veterinary drugs, i.e. acaricide, anti-helementics residue
- Heavy metals
- Antibiotics

As indicated above the laboratory to be established in Addis Ababa will under take the controlling of animal products. In addition the Zone laboratories found in Dire Dawa, Bahir Dar and Combolcha close to where cattle products are prepared for export will be organized so that they will be made to undertake product control. Other Zone laboratories when export abattoirs are established in their vicinities being organized they be made to provide control services

Chart 7 Manpower Required by Livestock Products Quality Control Laboratory

S No	Department	Physician	Lab Technician
1.	Microbiology and Food Hygiene (hed1)	1	
	- Fist product	1	2
	- Animal products	1	2
2.	Residue monitoring (hed)	1	
	- Pesticide	1	2
	- Heavy metal	1	2
3.	Vaccine quality Regulation(h)	1	
	- Viral	1	2
	- Bacterial	1	2
	- Mycoplasma	1	2
	Total	**10**	**14**

Conditions that Laboratories should fulfill in the Future

- The activities that Regional laboratories undertake to be standardized and that they can communicate their accountability will be for the Federal Livestock Health Conservation
- The Laboratory results of our country to be accepted by importing other /buyer/ countries it will be made to meet the standard in its internal organization and human resources
- It will be essential from time to time to develop a system that motivates for work, to responsible and accountable on the job. For this the laboratory activities have to be evaluated quarterly.
- A mechanism will be devised by which the result of one laboratory will be compared with the other and verified to enable laboratories so that they shall implement standard testing and the result of their tests will be authentic, acceptable and certified.
- The laboratories will work jointly with other countries' laboratories so that they shall obtain international accreditation
- They will work in a manner that gives priority to considering the objective realities at each place and on matters that have more economic significance
- The maintenance section to be established at the Sebeta National Livestock Health Conservation Laboratory will be made to follow up and take appropriate action on goods and equipment bought at expensive prices by different laboratories.
- Based on the economic benefit they will under take research and testing activities on livestock health problems prevalent at national level. For this they will be directed with a standard program with a national content.
- The Zone Laboratories will be strengthened by manpower and material so that they shall operate in areas so far not given due attention by the cattle health service such as chicken, bee and fish productions in a more consolidated manner at places where the wealth is existent.
- With regards to technical activities the Sebeta National Livestock Conservation Laboratory will undertake coordination activity.

Chart 8 Zone Laboratories Existing in the County

S. No.	Region Name	Additional required	Existing	Total	Remark
1.	Afar	1	-	1	Started NLDP
2.	Tigray	-	1	1	
3.	Amhara	-	2	2	
4.	Oromia	-	3	3	
5.	Somalia	2	-	2	Started NLDP
6.	SNNP	-	2	2	

7.	Gambella	1	-	1	Planned NLDP
8.	Benshangul	1	-	1	NLDP Planned
9.	Dire Dawa and Harar	-	1	1	
10.	Addis Ababa	-	1	1	
	Total	5	10	15	

As put in the chart above while 5 additional laboratories are reuired, amongst these 4 laboratories in Afar, Somali, Benishangul and Gambella Regional are under construction by the National Cattle Wealth Development Project. One laboratory will be constructed in the future in the Gode Zone of the Somali Region.

Chart 9 Manpower Required in one Zone Laboratory

S.N	Department	Physical	Laboratory technician		
			Existing lab. Technician	Lab. Technician	Others
1.	Parasitology • Protozology • Helmintology • Entomology	 1 1 1	 - 1 1	 - 2 2	 - - -
2.	Microbiology and Food Hygiene • Serology • Bacteriology • Food hygiene	 1 1 1 1	 - 2 2 1	 - 1 1 1	-
3.	Pathology, pham and toxicology	2	2	2	
4.	Epidemiology and Quiese control coordination • Epidemiology data enter	 1 2			
	Total	**13**	**10**	**11**	**1**

Totally in one Zone Laboratory 13 physicians, 10 senior laboratory technicians,, 11 laboratory technicians one data entry specialist will be required. Therefore for the 15 laboratories 195 specialists trained in various skills, 150 senior laboratory technicians, 165 laboratory technicians also 15 data entry specialists will be required

6.7 Livestock Health In-Put Supply

6.7.1 Cattle Medicines

- By undertaking sufficient laboratory examination and field follow-up necessary controlling will be made so that a problem shall not be created by allowing the importation of medicines that can cause problem to cattle and which have no remedial capacity.
- Like any commodity controlling medicines handled inappropriately and whose healing capacity has deteriorated so that it shall be possible to protect the farmer from being harmed the controlling mechanism currently being undertaken will be strengthened on a sustainable basis.
- The mechanism which is currently being practiced where in persons with no medical knowledge are possessing and selling livestock medicines mixing them with human medicines is observed at different places and this should be rectified. Livestock medicines should be administered only by persons having the knowledge about livestock education. Since this will help the farmer and Pastoralist to obtain the medicine, it required it must be put in practice.
- Region and Woreda Livestock professional by working with the Medicine Administration and Control Authority should prevent medical practitioners having the permit but who does not have the medical ethics from selling Livestock medicines. In addition, Livestock medical services units found at Federal and Regional levels in cooperation with the Medicine Administration and Control Authority should undertake the following:-
- Prepare jointly work directives.
- Deciding the types of medicines to be used in the country. Controlling of growth promoting hormones and feed additives that will be added in animal feeds
- Controlling medicines before and after they are imported into the country
- Endeavor to improve work ethics of professionals and handle permit issuance activities
- Organize necessary short term training for professionals
- Implement the exchange of information activities on a sustainable basis

To accomplish its implementation, the Federal and Regional Livestock Health Services will be required to assign professionals that will follow-up the work. For this fit will be necessary to assign one Veterinarian. At Woreda level one technician will be made to keep Livestock medicine.

6.7.2 Vaccine

The organization manufacturing the vaccine being a producer is responsible for controlling the quality of the medicines it produces. The Federal Livestock Health Service is also responsible for controlling the quality and is responsible for taking action when problems occur with regard to vaccines be utilized in the country.

For this, controlling the quality of the products, determining the quality and quantity of the vaccines to be produces for diseases prevalent in the country, it has to design a strategy to be implemented by the producer.

It will be appropriate to encourage and provide the necessary support so that vaccines that could not be produced by the National Livestock Conservation Institute shall be produced by other private manufacturers.

Since vaccines procured from outside and imported into the country they shall cause problems on the Livestock and public health. Before they are imported entry permit should be given by the Federal Livestock Health Service. Their authenticity should also be approved by the quality controlling laboratory which is under establishment. The quality Control Laboratory provided with the responsibility of controlling vaccines produced locally it should be made to be organized sufficiently. Likewise, appropriate controlling should be bade so that vaccines for not-identified diseases shall be imported into the country.

6.7.3 Biological Reagents

Biological reagents means biological and chemical compounds that shall be used in different laboratories for testing and research activities.

These compounds which shall be used on disease testing and research, if they are not made to contain the standard quality they will make the testing and the research work complicated. Up to now there was no effort made to make these biological and reagents to maintain their standard.

Therefore, the Quality Control Laboratory to be established from the point of view stated above as regards with the solution for controlling the quality of vaccines should be made to follow up the quality standards of these compounds and biological reagents to be imported or produced locally.

6.7.4 Field Clinical and Laboratory Equipment prepared for Livestock

- It will be required to undertake the necessary quality control so that equipment to be imported into the country or to be produced in the future locally can meet the outlined objectives sufficiently and for a long time. In order to undertake this quality control, The Federal Livestock Health Service should look at and coordinate its activities with the Medicines Administration and Control Authority and should have a professional, like treatment medicines, who shall undertake this task.
- In order to prepare for unitizing the equipment that have come out of service due to various handling problems and found at different places and also for protecting such problems not to be faced in the future, coordinating such organizations like the Science and Technology Commission, the Federal Livestock Services should

organize professionals found at Region and Woreda levels and a team of professionals that shall handle the maintenance of medical equipment on mobile basis.

To combat the shortage of basic equipment observed at different clinics and laboratories,, a standard list should be prepared and the supply should be made in consideration with this and should be utilized at the level of each medical provision clinic, check post clinic, regional and referral clinic, by artificial insemination technicians and by meat inspectors.

PART FOUR

7. Proclamations, Regulation and Directives

In order to solve problems related with proclamations,, regulations and directives, the following have to be implemented.

- To prepare them immediately and distribute them to all concerned so that the directives shall be approved by a higher body which will enable the implementation of the Livestock Disease Controlling Proclamation.

- To undertake awareness creation activities on the regulations and directives for concerned bodies and professionals at different levels so that the problem that has been existing in our country with regard of not having enough understanding about directives and regulations under usage
- Proclamations, Regulations and Directives will be prepared that will enable to undertake sufficiently the implementing of testing of chicken, poultry, fish, honey and other livestock products, livestock movement and protection of their well-being and permit provision activities for firms engaged in the organization of meat and other livestock products which are not currently in practice in our country.
- Also with regard to the prevention of cross-boundary and epidemic diseases, control and information exchange undertaken by the Federal Livestock Services, livestock health professionals found in Regions should plan this as their regular activities and to make them practicable. A Federal law being issued should be put in practice, which shall identify the existence of direct working communications, and which makes them accountable to the Federal Livestock Services.

8. Human Resources Requirement

It is evident that skilled human resource being a necessity to provide the livestock health services with clarity and efficiency. The number of manpower available in the different livestock health services is only 483 veterinarians, 800 Assistant Veterinarians, 3000 Livestock Health Technicians, 312 other workers. It is possible to note this being not sufficient as compared with the scope of the service. Therefore, it is required to fulfill, for the institution, the number of professionals indicated below and

in the course of time. Based on this, when the construction of the Livestock Health Conservation Institution is completed, and when the internal facilities are organized a total of 1620 Veterinarians, 6320 Assistant Veterinarian, 179 Senior Laboratory Technicians, 194 Laboratory Technicians, 734 Senior Meat Inspector, 679 Assistant Meat Inspectors, 630 Breeding Technicians will be made available.

Even though the Zone Laboratories structured under Regional Agricultural Bureaus and currently providing services are not up-to-date, it is known that they have support providing workers under their employment. When laboratories were merged with the Ministry of Agriculture and Rural Development, the support staff along with the livestock health professionals should been merged with the Federal Administration.

9. Training

For those assigned and working in Zone laboratories on livestock products quality control, and for Doctors working in the national livestock diagnostic research laboratories, a post graduate study at the Addis Ababa University, and also for assistant doctors, health technicians the provision of six months training, and for quarantine professionals and meat inspectors assigned and working at quarantine stations, export abattoirs, in Woreda municipality abattoirs, the provision of six moths training on meat testing, and also for livestock professionals engaged in other livestock health areas to provide them with skill up grading training at different times is a requirement. The expansion of the health station found in Alage will enable to provide these training's on permanent basis. Or it will be essential to designate some among the available agricultural technical and skill training institutes for this purpose. Posts requiring special skill, it is essential to provide higher training to professionals to acquire the required knowledge for the positions. The doctors currently required for the laboratories are 195. From amongst those who have specialized are 20, the rest 1775 doctors will be trained at the Addis Ababa University Livestock Medical Faculty.

Training will be given for community livestock employees providing basic livestock medication services by living amongst the Pastoralists. Those who have been trained by different bodies will be made to undertake their work with skill up grading training provided for them from time to time.

In order for the public to contribute its share, having sufficient understanding in the activities related with livestock diseases prevention and control, teaching of the public at every step starting from development stations by professionals and the mass media will be conducted on a continuous basis.

Chart 10 A chart showing the number of professionals required for call the Health Service

S.N	Name of institution professional required for	Cattle physician	Type of professional required						
			Asst. cattle physician	Senior Laboratory Technician	Lab. Tec.	Senior Meat Inspector	Asst. M.I	Cattle Heath	Breeding Technician
1.	Federal Cattle Health service	21	-	-	-	-	-	-	-
2.	Sebetta Referral Laboratory	25	6	15	9	-	-	-	-
3.	Quality Control laboratory	10	-	14	-	-	-	-	-
4.	Tsetse fly and triapanomiasis disease control	11	11	-	-	-	-	10	-
5.	Zone laboratories	195	-	15-	165	-	-	-	-
6.	Region Agricultural bureaus	55	-	-	-	-	-	-	-
7.	Woreda clinics	1260	6260	-	-	-	-	16890	630
8.	Export abattoirs	9	-	-	9	18	36	-	-
9.	Municipal abattoirs	23	-	-	-	716	643	-	-
10.	Quarantion posts	11	11	-	11	-	-	11	-
11.	Contolling stations	-	16	-	-	-	-	16	-
12.	Exit and entry control posts	-	16	-	-	-	-	32	-
	Total	**1620**	**6320**	**179**	**194**	**734**	**679**	**16959**	**630**

11. Reporting

Livestock health laboratories suggested to be structured under the Federal Ministry of Agriculture and Rural Development, export abattoirs, quarantine providing institutes earlier made to become accountable to the Agricultural Rural Development using all possible communication methods should send their monthly, quarterly, bi-annual and annual reports immediately. In addition, with out waiting for a time limit and base on the OIE response requirements, should they should report when a disease outbreaks.

Even though the provision of clinical services has no has no direct accountability to the Ministry of Agriculture and Rural Development since its duty is part of disease prevention and control reports for which services are provided should be sent to the ministry at the end of every quarter, six months and at the end of the year.

12. Evaluation

Livestock health services evaluation is done as required at different times. It will be undertaken by giving attention to the areas where controlling activities are carried out by comparing planned and accomplished activities in relations with the overall goal set.

As planned what is accomplished and what result is obtained? What weakness is observed and what strength is recorded? What has the service provision achieved in terms of fulfilling its objectives and benefiting the public and what has it contributed with regards to the import and reward for the country? Questioning these and considering them deeply an evaluation will be conducted at different levels.

An annual meeting will be held to evaluate the results of accumulated reports comprising all concerned from Zone, Woreda, Region and Federal level.

At the time different problems to be sited will be made to be resolved by those concerned.

13. Good Opportunities and Doubts within the Improved System

a. Good Opportunities

- Government to have given considerable attention to the work
- Its being a system transfer being carried out at the time when the Civil Service Reform Program has been consolidated to increase the working efficiency and productivity and to bring accountability and motivate the worker for a better result

- It is being a period when a considerable number of manpower shall be produced in the sector since many livestock health institutions are established
- It is being that with a big investment many Livestock health institutions were constructed and are under construction.
- The change of the system to have enabled the building of the morale and increasing the motivation for work of professionals.
- Since training in the sector is developed its implementation capacity also having been equal raised
- The flow of information being direct and strong
- The communication with Regions being strengthened
- The communication with stakeholders and cooperators being direct
- A budget increase being possible
- The relation with the farmer and pastoralist becoming closer and being strengthened
- Structural change being possible to exist
- Favorable condition being available to put in use new Livestock health packages
- the creation of numerous training opportunities being possible
- The communication chain being shortened that exists between Livestock health research, extension and the farmer
- Beyond preventing and controlling livestock diseases which are problems for export trade feeding our livestock natural feed since we produce organic livestock it is possible to get a better income form export trade
- Numerous proclamations, regulations and directives being prepared and enabling the increment of capacity are the main ones.

B. Doubts

- The scaling up of livestock medicine prices
- The changing and strengthening of international Livestock health decrees which are not possible to meet
- The capacity of the farmer and the pastoralist being weak to acquire technologies medicines
- Natural phenomenon like draught creating problem on the health of the livestock
- The changing of the desires from time to time and their requirements being increasing of livestock and livestock product importers
- The difficulty not to alleviate the farmer and the pastoralist in a short time from practicing harmful livestock treatment methods.