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“Improving and Integrating Animal Health Services in the Livestock Value Chain through Public Private Dialogue in Ethiopia”



Report

Short term expert in export certification of live animals & products of animal origin



October 7 – November 8, 2013



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African Breeders Total Cattle Management Ltd.

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Disclaimer

The views and opinions expressed in this report represent the views of the consultant; they **do not** necessarily represent the views of the European Union, the Government of Ethiopia or any other organisation. Neither the European Union nor the Government of Ethiopia is committed, either in whole or in part, by the report's conclusions and recommendations.

Abbreviations and Acronyms

AESA	Agriconsulting Europe SA
AHA	Animal Health Assistant
AHD	Animal Health Directorate
AI	Animal Identification
APHRD	Animal and Plant Health Regulatory Directorate
AU-IBAR	African Union – Inter-African Bureau for Animal resources
CSA	Central Statistical Agency
EC	European Commission
EDF	European Development Fund
EU	European Union
EVA	Ethiopian Veterinary Association
EVC	Ethiopian Veterinary Council
FAO	Food and Agriculture Organization
FMD	Foot and Mouth Disease
FSMS	Food Safety Management Practices
GMP	Good Management Practices
HACCP	Hazard Analysis on Critical Control Points
IA	Imprest Administrator
IAO	Imprest Accounting Officer
IGAD	Intergovernmental Authority on Development
ILRI	International Livestock Research Institute
JSC	Joint Steering Committee
LIMS	Laboratory Information Management System
LVC-PPD	Improving and integrating animal health services in the Livestock Value Chain through Public Private Dialogue in Ethiopia
MC	Movement Control (System)
MOA	Ministry of Agriculture
NADSS	National Animal Disease Surveillance System
NAHDIC	National Animal Health Diagnostic and Investigation Centre
MoFED	Ministry of Finance and Economic Development
NAO	National Authorising Office(r)
NRSAO	National Regional State Agriculture Office
OIE	World Animal Health Organization
PE	Programme Estimate
PoAO	Products of Animal Origin
PPR	Peste des Petits Ruminants
SPS	Sanitary and Phyto-Sanitary standards
T	Traceability (System)
TAT	Technical Assistance Team
TADs	Trans-boundary Animal Diseases
USAID	United States Agency for International Development
WHO	World Health Organization
WTO	World Trade Organization

1 EXECUTIVE SUMMARY

The Short Term expert for Export Certification of live animals & products of animal origin performed his mission over the period from October 7 until November 8, 2013. During this mission period STE conducted a field mission (October 11 – 20) together with STE for I&R and movement control in order to visit the final livestock markets, feedlots, and consult with animal traders and transportation companies. Visits were performed to 3 export abattoir (Modjo Modern abattoir, Organic Export abattoir and Hashim Nuru Export abattoir). Furthermore, the experts visited Borena Zonal Veterinary authority, Borena zonal veterinary laboratory and Borena regional Agency for markets. Observations are reported in Chapter 2 of this report.

A training of trainers (ToT) course for meat inspectors of export and municipal abattoirs was conducted at Adama for 24 participants (October, 22 – 27) with the support of the project Team Leader. The purpose of this training was to familiarise the staff of Export Abattoir Case Team and Export/municipal abattoir inspectors with general principles of international organisations', inspection and control methods, introduction of reporting forms for ante mortem and post mortem inspection, and bringing all reporting forms up to international standards. The training program comprised part of the capacity building programme of the project. Appropriate training of veterinary inspectors of abattoirs is a prerequisite for an efficient food control system. The objective of the ToT course was to facilitate the staff of the Export Abattoir Case Team and leading Export/municipal abattoir inspectors to perform inspections and controls which satisfy the food safety control requirements / standards of the OIE, WTO and Codex Alimentarius. The expected outcome of the Training of Trainers programme is the establishment of a core group of the AHD trainers that are trained in the organization and design of active training sessions, and understand communication, teaching and learning processes as well as the technical issues related to compliance with international standards.

Outcome from learning:

- 24 senior inspectors trained as trainers to train other abattoir inspectors
- Trainers trained to use Meat inspection / food processing plant inspection Manual
- Trainers trained to use Post mortem veterinary expertise documents
- Trainers trained to use ante- and post-mortem inspection reporting forms
- Contribution towards the development of revised/updated standard operating procedures (SOPs).
- Contribution towards revision and upgrading of the Abattoir Audit Tool

A detailed ToT course, program, training materials was prepared including assessment of the training course (Chapter 3). The STE planned target groups for proposed further training sessions including recommended main topics for all planned courses.

Certification procedures are described in Chapter 4 including certification processes for live animals and products of animal origin, responsibilities of importing and exporting countries, animal health surveillance, ante-mortem and post-mortem inspections and preparation of international veterinary certificates.

Closely related to certification there is import risk analysis (chapter 5) showing the hazard identification, principles of risk assessment, risk estimation as well as principles of risk management and risk communication.

The STE revised existing Guidelines on standard operating procedures (Chapter 6). The guidelines include minimum requirements for abattoir and abattoir facilities and practices for slaughter of

animals, inspection, storing, processing, packaging, loading and transporting of meat and meat products. STE recognized that Standard Operation Procedures were drafted taking into account international practice, principles of the GMP, GHP, HACCP and Food Safety Management System. Therefore SOP's can be recommended for implementation within export abattoirs. The STE suggested that for updating of prepared SOP's can be used by the submitted "Manual of inspection procedures at meat production and processing establishments" (Annex 4 CD-ROM).

The STE also revised the audit tool for export abattoir inspection which had been prepared by the project Team Leader and AHD, meat inspection case team members in order to ensure the safety and quality of products for export as well as for local consumption. The objective of such a study was to develop suitable assessment of gap analysis tool to be used for monitoring of export abattoir including infrastructure, slaughterhouse production, line inspection procedure and implementation of GHP, GMP and HACCP principles. During the field mission the STE jointly with accompanying meat inspection case team inspector made assessments of 3 abattoirs using audit tool. The main findings within abattoirs are described in Chapter 7 and Annex 2 (CD-ROM) of this report.

It is recommended that the "Manual of inspection procedures at meat production and processing establishments" prepared by the STE be used as an additional instrument to upgrade performance of inspection procedures. (Annex 4 – CD-ROM)

The Conclusions and Recommendations (Chapter 8) summarises and reflects upon the main findings and recommendations for further development of export certification of live animals and products of animal origin in the Ethiopia.

2 FIELD MISSION REPORT

The field mission of the Short Term Expert in export certification of live animals & products of animal origin took place from October 11 to October 20. Experts included in the field mission team were: Dr. Sloboden Chokrevski, short-term expert for Animal Identification and registration (I&R) and movement control; Dr. Getachew Jembere and Dr. Melaku Assefa. At the end of field mission experts completed the “Audit tool for export abattoir inspection” (Annex 2 – CD-ROM).

2.1 Mojdo Modern Abattoir

The Short Term Expert in export certification of live animals & products of animal origin performed this mission jointly with Short Term Expert in export certification of live animals and Public Veterinary Services I&R specialist, Dr. Getachew Jembere and Dr. Melaku Assefa from the Meat Inspection Case team. The team was received by the manager of the Modjo Modern Abattoir and appointed veterinary expert, Dr. Yoseph Tamirat.

The total number of employees is 160, including 2 vets employed by the government and 2 veterinary technicians employed by the abattoir management who perform meat inspection at the slaughter line. The capacity of daily slaughtering within the line is as follows: 1000 sheep/goats or 300 cattle per shift. On this particular day within abattoir were slaughtered goats and sheep using Halal method.

Visitors’ team used “ The Audit tool for export abattoir inspection” prepared by the LVC-PPD project Team Leader, Dr. J. Woodford and AHD Meat Inspection Case Team member, Dr. E. Waleign (abattoir site external infrastructures inspection check-list; production line inspection procedure – infrastructures, equipment, GMP, pre-requisite programs / HACCP inspection checklist; and other Good Management Practices / Pre-requisite Programme Actions & Controls, Personnel management, Training, Personal Health, OPRP & CCP Verification records inspection checklist) was used to evaluate progress at the visited abattoirs since the last audit. Following these 3 checklists visiting team performed visual inspection, and made inspection notes and findings. At the end of the inspection the STEs together with Public Veterinary Services specialists made reviewed findings according to prescribed audit guidelines.

The audit team held a meeting with abattoir management and discussed on the steps necessary for implementation of elements of traceability, establishing an I&R background, animal movement control and introduction of certification of animal origin products in line with international practise. The reporting systems used for of arriving animals, ante- and post-mortem inspection need to be improved.

2.2 Organic Export Abattoir P.L.C.

The Organic Export Abattoir is biggest animal slaughtering plant in Ethiopia and continues to grow in size. The total number of employees is 140. The company has exported meat to Yemen, Saudi Arabia and the United Arab Emirates. The abattoir operates slaughtering lines for cattle and small ruminants with a capacity of 300 cattle or 2000 small ruminants per shift. The abattoir has lairages with a capacity to hold 2000 small ruminants.

Discussions took place with the abattoir manager and senior veterinary inspector in relation to traceability, movement control of animals’ and documentation of all stages, processes and proceedings in abattoir. According to the manager the abattoir was improving staff personal hygiene, training of personnel, introduction of SOP’s programs, and increasing the number of laboratory checks of water and bacteriological contamination. Within the abattoir, daily records of findings of veterinary inspections of slaughtered animals, and ante and post mortem inspection are maintained. For exports the veterinary inspector issues official veterinary certificates for International Trade in Meat and products and products of animal origin. Furthermore, before

loading carcasses for export the abattoir veterinary inspector draws up a “Meat cold chain monitoring report” which accompanies the meat as it is transported.

2.3 Livestock trading enterprise at Yabello, Borena region

The team met with the manager the Livestock Trading Enterprise (LTE) which operates as an animal trader and transportation agent for live animals. Mr. Habtamu Kefyalew, the owner and manager of the LTE, Yabello expressed his opinion on importance of certified healthy animals as a benefit for the export of both live animals and meat from Ethiopia. The company’s trading agents operate in well-known areas. Animals come from different villages before these agents select animals for purchase. Traders offer an agreed price for animals. The animals’ movement chain is as follows: farmer, local broker, broker, livestock market, trader, feedlot, exporter, quarantine, export. Transport of animals is carried out by traders companies. Minimum data provided by animal owners are: sex, age, breed and locality. No veterinary inspectors are present at livestock markets. Livestock markets usually operate once a week. In Borena region there are 7 large (final) markets: Debulluk (on Friday); Bake (Sunday); Finchova (Tuesday); Elveia (Thursday); Boku (Monday); Millami ((Saturday); and Soda (Saturday). Debulluk, Bake and Elveia livestock markets are the biggest and most important. Livestock markets are government properties.

Animal traders want legal trade and consider that illegal animal movement in regions and through country borders should be stopped. They are willing to cooperate with the upcoming pilot project for establishment of I&R system for cattle and export certification of beef. They assumed the first steps of an I&R system for cattle would be: issuing local movement documents starting from livestock market, then feedlot, quarantine station and exportation of live animals. For meat export, animals should be accompanied by appropriate documentation as they move from feedlot to export abattoir, and then to approved importing country.

2.4 Borena Zonal Agriculture office

The team met with the director of the Oromyia Livestock Agency, Mr. Petros Wako, and Dr. Bula Mengesha. After introduction of the purpose of the visit, Mr. Petros Wako welcomed visitors and stated that the export of live animals and meat products are priorities of the Ethiopian Government. He understood that a complete chain involved the process from farm to export of live animals and meat. Within Borena region there are pastoral associations (smallest administrative units) where one responsible person (occasionally animal health assistant) is appointed. Animal health assistant monthly reported to the woreda (district) Animal Production Department. These reports are submitted to the Borena Zonal Agriculture office and Zonal laboratory. Within the woreda administration there are some Animal health assistants. The Borena Zonal Agriculture office employs only one veterinarian who compiles a monthly report to the regional office which includes disease control measures, vaccination records, animal treatments (any clinical reports, castration, deworming). The animal health program includes the following diseases: FMD, Lumpy skin disease, sheep pox, African horse sickness, Newcastle disease, Rabies, PPR, CBPP, anthrax, and blackleg. Vaccination programs at the present are for FMD and Rabies. In practice, vaccination is provided by NGOs in accordance with a signed agreement with the woreda administration. Private veterinarians are not involved in execution of animal health programs - generally they are involved with distribution and sale of veterinary drugs. According to the Borena Zonal Agriculture office official veterinarian an additional Zonal veterinarian will be required for field implementation of some elements of I&R system.

2.5 Borena regional Agency for market

A meeting took place with Mr. Shibru Ordofa, livestock expert, Borena Zone Pastoralist Office, Yabello.

This particular government agency is responsible for livestock markets. During discussions at the Agency the regional office chief stated the importance of animal health status. Within livestock

markets Agency employees maintain a register of arriving animals and animal grades. All actions are documented and submitted to the related woreda veterinary office. The Agency operates only within the secondary regional livestock markets where employees have properly equipped working facilities. It is possible to provide animal movement control and individual animal tagging at the markets. Problems could be only organization of local / central computerized database. The issue of disinfection of transport at the market places was also discussed.

2.6 Borena Regional Veterinary laboratory

The visitors met the Director of Borena Regional Veterinary laboratory, Dr. Wubishet Eddie Wakene and the laboratory quality manager Dr. Gvyara Mayavsa. The laboratory covers 3 zones including Borena. The laboratory has serological, bacteriological, biochemical, parasitological departments and a necropsy unit. The laboratory has 11 trained professionals and undertakes ELISA tests for pre and post vaccination monitoring. As Borena is a border area the laboratory takes part in surveillance for diseases which affected neighboring countries.

Laboratory staff undergoes training at the National Veterinary Institute. Laboratory specialists participate in training activities for students of nearest university (in immunology).

The laboratory is seeking for ISO standard 17025 accreditation and therefore Dr. Gvyara Mayavsa has been appointed as laboratory quality manager under whose guidance is a working group consisting of 5 leading laboratory experts.

2.7 Eweya livestock market

Eweya livestock market is a state owned enterprise, newly builds and opened weekly on Thursdays. For livestock unloading there are 3 unloading ramps. Then animals enter into separate pens for cattle and small ruminants. For cattle the final price is agreed per head, but for small ruminants, by weight. If the price is agreed then the, secondary broker marks the bought animals that will later be transported to a feedlot. The daily capacity of the livestock market is around 2 – 3 thousand animals. The visitors held a meeting with Mr. Mohammed Dawi, livestock marketing head of zonal pastoral development office, Borena and the mayor of the local municipality Mr. Amsasew Tesfaye. The Agency employees register arriving animals and animal grades for. Both the mayor of the local municipality and Agency representative agreed for the first steps of I&R for cattle. According to their knowledge it is possible to check sex, breed, age, owner and area from which arriving animals originate. The Mayor of the municipality expressed the importance of information campaign and training of livestock market personnel. It was also stated that roads from villages to livestock market need to be built; the water installation within the compound is not finished; and arriving vehicles are not disinfected at Debulluk livestock market

Debulluk livestock market is the biggest state owned livestock market in Ethiopia, almost completed and operated on a weekly basis (on Wednesdays). The visitors met Mr. Dagne Mekonnen, Livestock trader, at Debulluk livestock market. For livestock unloading there are a number of unloading areas, separated by a short distance from the market itself. Witihn the market there are 3 separate pens, one each for camels, cattle and small ruminants. Within the pens there are shades and drinking places. The team accompanied the local livestock specialist from the woreda office and a local trader, who explained the current situation at Debulluk livestock market. They both agreed on the significance of collecting some basic data from animals' owners such as: farm, region, sex, breed, owners' location. The significance of an information campaign for stakeholders was also discussed too.

Close to the livestock market pens there is a private veterinary pharmacy and clinic which sells some products used by veterinary assistants (antibiotics, anti-parasitic, anti-inflammatory preparations). There is also a water tank (capacity around 20,000 liter) for watering of animals. There is no electricity connection within the compound, and means of disinfection of transport are not currently provided.

2.8 Hashim Nuru Export Abattoir

The visit team was received by the manager of the Hashim Nuru Export Abattoir Mr. Kedir and Dr. Kassahun, official veterinary expert, Debre Zeit.

The total number of employees within the abattoir is 90, including 2 vets and 4 veterinary technicians employed by the government. The capacity of daily slaughtering is 1500 – 2000 sheep/goats per shift. Animals arrive at the abattoir from local markets. On the visit day the abattoir was slaughtering goats and sheep for export to Dubai using Halal method. The Company has exported meat carcasses to Saudi Arabia and the United Arab Emirates. Also some offal's are exported (brain, testes, kidney, liver and intestines). There is a separate slaughter line for cattle but use of this line is limited. The slaughtering process looks adequate, employees follows prescribed SOP's. Some 3 critical control points for HACCP are defined at the slaughter line. For veterinary control within abattoir there are in place an ante and post-mortem inspection journal and a meat cold chain monitoring format. Veterinarians record the number of slaughter animals, species, and number of approved carcasses after inspection, number of rejected animals and the reason for rejection. The abattoir has quite a large animal reception area and lairages. Inside the lairages and animal pens there is access to water. Training programs are in place. Disinfection of trucks needs to be improved.

Official Veterinary Certificate for meat products stated following issues:

Part 1. Details of consignment:

Consignor name; Certificate number; Veterinary Authority; Consignee name; Country of origin; Zone or compartment of origin; Country of destination; dispatched Place of shipment; Date of departure; Means of transport; Expected border post; Description of commodity; Total quantity; Temperature of product; Type of packing; Identification of container/seal number; Total number of packages; Commodity intended to for use as; Identification of commodities (species, approved number of establishment; lot ID, net weight, production date, expiry date).

Part 2. Zoosanitary information.

The undersigned Official veterinarian certifies that the products of animal origin described above satisfy the following requirements - the entire consignment of meat:

1. Comes from a country/zone free RVF disease
2. Come from animals, which: were kept in the past 30 days prior to slaughter in an official quarantine station; serologically tested to for RVF an official laboratory and found negative for IGM antibodies; not vaccinated for RVF; have been subjected to ante and post mortem inspection with favourable results; slaughtered in approved abattoir according to Islamic rule; the carcass is free from any pathogenic material and parasitic agents; the meat is not mixed with any other animal product; the carcass is completely eviscerated and kept at temperature of above 2 degree centigrade; and the pH of the meat less than 6.0

2.9 Moges Assefa feedlot

Jointly, with the project Team Leader and beneficiary project coordinator Dr. Samuel Mulat, a visit to the Moges Assefa feed lot was made. The team accompanied the Quarantine / feedlot inspection veterinarian, Dr. Kimyia Muhamed. At the time of the visit there were reported to be 17,000 sheep and around 80 camels in the feedlot. Usually animal traders deliver sheep from the primary markets or collected them at cabalas. Animals arriving at the feedlot are not accompanied by any movement documents. The veterinarian registers arriving shipments, specifying the area of origin from the animals which are then unloaded and passed to pens. Animal pens are not numbered and are not isolated from each other, allowing different batches of animals to come into contact with one another. There are a number of separate pens for camels and small ruminants.

Within the pens there are shades, watering and feeding spaces. In case of animal health problems there is a separate pen for isolation of animals.

Requested vaccinations are started one week after animals' arrival. A private veterinarian provides vaccination against anthrax, pasteurellosis, PPR, and sheep and goat pox supplied through the Federal Quarantine office in Adama. The average period of stay in the feedlot for sheep is around 21 days with a maximum of 2 months. The feedlot functions as a "quarantine station", although separation of different batches of animals is not possible and since there is no official identification and recording of the different batches of animals entering the feedlot, there is room for animal substitution to take place. Usually sheep are exported via the Djibouti Quarantine. Each consignment to Djibouti is accompanied by official veterinary certificate issued by the feedlot veterinarian. Within one shipment there are 200 – 210 sheep. Export countries are Djibouti, Saudi Arabia, Qatar and Kuwait. Disinfection measures are not implemented at the feedlot.

2.10 Addis Ababa Bole International airport cargo

The STE together with Dr. Melaku Assefa visited Addis Ababa International airport cargo facility where they were acquainted with facilities, organization and procedure for export of animal origin products by air including all documentation necessary for accomplishing this duty following international standards and requirements.

The team was received by the Veterinary border inspection post employees Dr. Amsalu Urda and Dr. Gebeyanesh Ayanie who were on duty for an 8 hrs shift. At the Cargo facility the veterinarians used an office jointly with Plant Protection inspectors. In general, the Addis Ababa International airport cargo exports chilled meat and other products such as honey, cooked butter, and hides and skins. The veterinary cargo border post includes a new built laboratory and quarantine facilities for 20 – 30 live animals which are currently not in working condition).

The airport cargo area has rather large chilling facilities for storage of cargo containers loaded with meat. The chilling room is equipped with thermographs with temperature records and doors of chilling facilities are additionally closed by plastic curtains. During the expert's visit two vehicles with goat and sheep meat from the Organic Export Abattoir and Hashim Nuru Export Abattoir were unloaded at the ramps. The unloading time of one vehicle is around 30 minutes. Both veterinary experts carefully followed the unloading procedure and submitted papers, including: veterinary certificate (origin and copy of certificate) and cold chain report form; check if vehicle is sealed; after opening the truck, ensure internal temperature is correct according to the vehicle thermograph; loading date, time; then carcasses enclosed in stockinet are presented to veterinary inspectors for checking presence of stamp on carcasses; by sharp electronic thermometer inspectors made actual measurement of temperature deep inside muscles (it was 0.2°C); in meantime general custom officer checked carcasses with metal detector; after inspectors verification procedure carcasses forwarded into special cargo containers and dispatched to chilling facilities; cargo containers are marked; export of meat from these 2 vehicles will be loaded in the aircraft after 2 – 3 hrs for the flight to Dubai.

At the inspectors' office there are records consisting of: owner of meat, address, abattoir, date, temperature inside vehicle and temperature deep inside muscles, number of pieces, animal species, total weight, date of issued certificate, destination and remarks of inspector. Original copy of the veterinary certificate accompanies the cargo, and a copy of the original veterinary certificate is retained at the veterinary border control post.

3 TRAINING OF TRAINERS (TOT) COURSE

A Training of trainers (ToT) course was provided by the project team at Adama from October 22 until October 27, 2013 for export and municipal abattoir inspectors and Meat inspection Case team employees (total 24 inspectors). The Training Plan and an Evaluation of the training is given in Annex 2 (CD-ROM). The Training of trainers' course was conducted by the project Team Leader, Dr. J. Woodford and by the short-term expert in Export Certification of live animals & products of animal origin, Dr. J. Rimeicans. ToT course participants received printouts during training process and also all training materials they received as a CD-ROM version.

3.1 Introduction

Proper training of veterinary and food inspectors is a prerequisite for an efficient animal health and food control systems. As current veterinary and control systems are quite complex the food inspector must be trained in food science and technology to understand the industrial processes, identify potential safety and quality problems, and have the skill and experience to inspect the premises, collect food samples and carry out an overall evaluation. The inspector must have a good understanding of the relevant food laws and regulations, their powers under those laws, and the obligations such laws impose on the food sector. On the other hand veterinary inspectors must be trained in animal health issues as disease recognition, animal disease surveillance and eradication programs, sampling for laboratory tests, animal movement control, control of feedlots and quarantine stations. They both should also be conversant with writing inspection reports, collecting samples and sending them to a laboratory for analysis as well as implement export certification procedures for live animal export and export of animal origin products (meat) in line with OIE recommendations and international requirements. With gradual introduction of HACCP systems in the food industry, the inspector should be trained to handle HACCP audit responsibilities.

The general guidelines for identification and selection of personnel to undertake Train the Trainer course are as follows:

- At least ten years of experience in a relevant discipline / area of work
- Acknowledged by peers as being competent in the discipline / area, and would be a good trainer
- Have a personal desire and motivation to be a trainer
- Have a demonstrated track record as a person who has informally trained team member colleagues at work
- Be a good communicator
- Have knowledge of and experience in Power Point presentations
- Ability to prepare and organise relevant training material.

This programme of 'Train the Trainer' is designed to provide the nominated trainers with the skills and techniques to conduct meaningful and effective Animal health and Food Safety training. It will include:

- Setting learning objectives
- An introduction to lesson planning
- Structure
- Communication skills
- Implications for practical training performance
- Target group orientation
- Different methods and their advantages and disadvantages
- Optimizing teaching and learning processes
- Selection and use of media
- Preparation of presentation and training materials
- Do's and Don'ts of adult teaching
- Presentations by trainees on selected topics
- Individual feedback and

- Performance assessment

The expected outcome of the Train the Trainer programme is the establishment of a core group of the AHD trainers that are trained in the organization and design of active training sessions, and understand communication, teaching and learning processes. Prior to providing practical skills training all trainers should have participated in a ToT course to ensure they have the necessary knowledge and skills.

Expected outputs:

- Senior Abattoir inspectors trained as trainers to train other abattoir inspectors on GMP, HACCP, the use of SOPs to define slaughter production line actions
- Trainers trained to use Meat Inspection Manual (provided)
- Trainers trained to use standard reporting form for disease reporting; for disease surveillance from abattoir inspections
- Contribution towards the development of revised / updated SOPs for slaughter production line actions
- Contributions towards revision and upgrading of the Abattoir Audit Tool.
- Have the knowledge, skills and attitudes to deliver practical skills training.

3.2 Job descriptions

The job descriptions should be re-visited and up-dated annually (Annex 5 –CD-ROM).

3.3 Training Objectives

The objective of the training is to enable the staff of the AHD to perform inspections and controls which satisfies the animal health and food safety control requirements. The objective of the ToT course is to enable the staff of Export Abattoir Case Team and leading Export/municipal abattoir inspectors to perform inspections and controls which satisfy the food safety control requirements of the OIE, WTO and Codex Alimentarius.

3.4 Training Approach

The principle of trainings will be “learning”. That needs an introduction to set the scene and to provide tools. That knowledge will be implemented by tasks given to the trainees to work on the spot. Finally, inspections in the real world would be preferred. Execution depends on the possibilities of the counterparts.

Presentation skills:

- Clear and concise presentations
- Each presentation has a message
- Presentations not longer than 20 minutes

Training skills in coaching tasks on the job inspections:

- Restrain in providing answers and solutions;
- Developing by asking questions: What, Where, When, Who, How?
- Coaching capabilities;
- Director capabilities in role-playing

The courses for Train the trainers are:

- Assumed is the knowledge needed
- Practical training and presentations
- Skills be trained on:

□ PPT presentations

- Organisation of courses
- Developing tasks
- Coaching capabilities
- Directing discussions
- Directing role-plays

3.5 Training programme

The training programme should be revised every six months, as the project develops to meet new identified training needs of all stakeholders and changing circumstances. To ensure the training plan is effective any training given must be followed up by periodic inspections to ensure that working practices covered by training given are being put into practice. The Training Plan should be continuously monitored and evaluated, and changes made which reflect the changing requirements of the AHD officers.

The AHD has responsibility for implementing the Training Plan and to ensure the training is appropriate, cost effective and training received is transferred back to the workplace. The following recommendations have been made: AHD should, as soon as possible, appoint an officer as Training Programme Co-ordinator to ensure effective implementation of the agreed training programme and ensure coordination with other projects.

The following issues are included within the ToT program for export and municipal abattoir inspectors: (See Annex 3)

- International organizations (WHO, OIE, IPPC; Codex Alimentarius; FAO, WTO)
- Introduction and objectives
- Train the trainers course
- Legislation
- Risk Analysis: risk assessment, risk management and risk communication
- Traceability of animal origin products
- Inspector ethics
- Residue control program
- Sampling for the purposes of official food control
- Job description
- The abattoir design
- Ante and post mortem inspection
- Post mortem veterinary expertise
- Abattoir reports
- Manual of inspection procedures at meat production and processing establishments
- Guidelines and Standard Operation Procedures
- Product description (Chilled carcass goat & Mutton)
- GMP / Food Safety Management Systems
- Course overview and introduction to the HACCP
- Sanitation
- Prerequisite program

3.6 Evaluation of the ToT course

The trainees are invited to present their need for information on specific subjects. These will be addressed immediately or may be incorporated in future trainings. Each training course needs to be evaluated by means of a questionnaire filled in by participants (Annex 3b- CD-ROM). At the end of the course, attendees were asked to complete an evaluation form, commenting on the course, its relevance, delivery, etc. The Results of the Evaluation form are provided at Annex 3c. An initial

study of the Evaluation returns showed overwhelmingly that individual delegates found the course to be very relevant and useful to their work. The Evaluation revealed the following additional training needs to be addressed by future training sessions:

3.7 Trainees' proposals: (derived from Evaluation responses)

- Training session for other target groups are welcomed
- To include more practical topics of meat inspection
- To implement training module "learning and doing"
- To insert within training group also veterinarians from meat processing establishments
- To include more topics for ante and post mortem inspection
- Highly desirable lecture about infection and parasitic diseases during meat inspection which should be extended
- Inviting guest trainers from neighbouring countries to provide their practices
- Importance of international trade (with video application)
- Highly desirable longer training session
- To incorporate more PPP slides for pathology
- To present lecture on decision making process in abattoir
- AHD meat inspectors have to participate within training sessions
- All handouts have to be printed before training session.

At the end of the training course a Certificate of Attendance was issued to each of the active participants.

3.8 Developing a further training programs

A further training approach principle will be "learning by doing". That needs an introduction to set the scene and to provide tools. That knowledge will be implemented by tasks given to the trainees to work on the spot. The curriculum comprises the training part of capacity building. The training course is focused on inspections and controls, it addresses in particular:

- Basic OIE, WTO and Codex documents
- Export certification for live animals and animal origin products
- Inspections and controls
- Performing audits, general principles and HACCP orientated
- Principles of risk analysis and its meaning for inspections and controls
- Animal health requirements
- Meat inspection
- Record flow and record keeping
- Sampling
- Use of internet to retrieve information.

3.9 Target groups of training (mentioned also by "HRD" STE Report):

- Quarantine and Feedlot Case Teams
- Regional State Bureau officers responsible for detection and reporting of animal diseases
- Feedlot owners and managers
- Export Abattoirs Meat Inspection & Certification Case Team
- Export Abattoir managers and workers

Quarantine inspectors require training in Quarantine legislation and regulations for the export and import of livestock and livestock products, so that they can enforce the regulations, prior to issuing export certificates that conform to international standards.

Secondly they require training in bio-security and feed lot design to enable them to carry out professional, competent inspections of feedlots. The training in bio-security should be based on the SOPs used during inspection of a feedlot/quarantine station. The present record keeping at

feedlots and by quarantine inspectors need improving. Records should show traceability of all animals, their health status and information on vehicles and visitors entering and leaving feedlots. The quarantine inspectors need training in the types of records that should be kept by both themselves and the feedlots. In both cases up to date records should be available for inspection at all times. The records kept at the Branch Quarantine Office should be computerized and therefore training in computerized record keeping will be needed by the Branch Quarantine Case Team Leader.

The feedlot owners and managers need to understand the quarantine regulations that they are expected to comply with and also the SOPs for bio-security that they are expected to operate and are inspected on. This also includes maintenance of up to date records that are available at all times for inspection. Therefore the feedlot owners require training in Quarantine Regulations, bio-security, record keeping and feedlot design.

The feedlot managers are responsible for the daily operation of the feedlots and therefore need to attend the same training as the owners for Quarantine Regulations and Bio-security and record keeping. As they are responsible for the management of the workers and should provide on the job training to the workers they require training in Animal Handling and Animal Health and Supervisory skills. Also they should be responsible for keeping of many of the required quarantine records for and therefore need training in computerized record keeping. The training of the feedlot owners and managers should be paid for by the feedlot owners themselves, as they are operating private businesses and if the cost of the training comes from their businesses there is an incentive to implement the training received and to insist on quality, appropriate training. The feedlot owners need to understand the quarantine regulations that they are expected to comply with and also the SOPs for bio-security that they are expected to operate and are inspected on. This also includes maintenance of up to date records that are available at all times for inspection. Therefore the feedlot owners require training in Quarantine Regulations, bio-security, record keeping and feedlot design. They would also benefit in training in business enterprise development to improve their profitability and allow them to make business decisions based on reliable data.

The feedlot managers are responsible for the daily operation of the feedlots and therefore need to attend the same training as the owners for Quarantine Regulations and Bio-security and record keeping. As they are responsible for the management of the workers and should provide on the job training to the workers they require training in Animal Handling, Animal Health and Supervisory skills in feedlots. Also they should be responsible for keeping of many of the required quarantine records for and therefore need training in computerized record keeping. The training of the feedlot owners and managers should be paid for by the feedlot owners themselves, as they are operating private businesses and if the cost of the training comes from their businesses there is an incentive to implement the training received and to insist on quality, appropriate training.

Regional and Zonal Veterinarians and Animal Health Assistants

The number of veterinarians and AHAs requiring training at regional and zonal levels is beyond the scope of the LVC/PPD project budget. Their training needs have been identified for disease surveillance, disease prevention and control and organizational management. It would appear that **the woreda staff** have not received any training for many years and require refresher training in disease recognition, reporting, sample collection, handling, documentation and transportation/submission of samples, as part of the implementation of an active disease surveillance system. They will also require training in laboratory skills for diagnosis of anthrax, faecal examination and skin sampling for mites.

The meat and abattoir inspectors have just received ToT course on general requirements of inspection, legislation, international organizations, risk analysis, traceability, reporting system and SOP's procedures of slaughtering process. They also require training in HACCP and Pre-requisite planning in General Hygiene Practices (GHP) for HACCP. Training is also needed in record keeping to ensure up to date records are available at all times and the meat inspector service team

leader should have access to a computer and will need training in computerized record keeping. Also the meat inspectors need training on their responsibilities for ensuring Public Health regulations are enforced.

The abattoir managers and staff require the same training as the meat inspectors in GHP, HACCP and record keeping for HACCP. They also need training in abattoir management and record keeping. The abattoir managers should be supervising their workers and providing on the job skills training to ensure competence of the workforce and may therefore need training in supervisory skills.

3.10 Training topics for food (meat) inspection

(Export Abattoirs Meat Inspection & Certification Case Team):

- International organizations (WHO, OIE, IPPC; Codex Alimentarius; FAO, WTO)
- International and national legislation in food sector
- Food Control Strategy and elements of food control
- Role of Competent Authority and business operators within food chain
- Planning of national food control
- Certification of animal origin products for international trade
- Model veterinary certificate for international trade of products of animal origin
- Risk Analysis: risk assessment, risk management and risk communication
- Sampling for the purposes of official food control
- Regulations regarding crisis management for emergency situations
- Bio security measures
- Guidelines and Standard Operation Procedures
- GMP / Food Safety Management Systems
- Overview of good hygiene and sanitation procedures
- Course overview and introduction to the HACCP
- Residue control program
- Traceability of animal origin products
- General import and export procedures for food products
- Inspector ethics
- Comprehensive communication strategy in the food control sector
- Ensuring effective laboratory control. International accreditation of laboratories

3.11 Training topics for animal health inspectors

(Quarantine and Feedlot Case Teams Regional State Bureau officers responsible for detection and reporting of animal diseases):

- International organizations (WHO, OIE, IPPC; Codex Alimentarius; FAO, WTO)
- International and national legislation in animal health sector
- General Animal Health requirements
- OIE Animal Health Code
- Planning of national animal health control program
- Disease notification and reporting system
- Quarantine stations of live animals
- Vaccination programs
- Certification of live animals for international trade
- Model of veterinary certificate for international trade of live animals
- Bio-security measures
- Animal I&R and movement control
- Risk Analysis: risk assessment, risk management and risk communication
- Comprehensive communication strategy in animal health sector
- Ensuring effective laboratory control. International accreditation of laboratories
- Sampling for the purposes of official animal health control

3.12 Training topics for Feedlot and quarantine stations owners and managers

- Current legislation
- Animal health requirements
- Vaccination programs
- Quarantine Regulations
- Control procedures
- Export certification
- Bio-security measures
- Record keeping
- Feedlot design
- Job training to the workers
- Animal Handling and Animal Health and Supervisory skills
- Traceability
- I&R and movement control

3.13 The abattoir managers and staff training topics

- Current legislation
- Animal health requirements
- GHP, GMP and HACCP principles
- Personnel hygiene
- Abattoir management
- Export certification
- Bio-security measures
- Control procedures
- Record keeping
- Animal Handling and Animal Health and Supervisory skills
- Traceability
- I&R and movement control
- Principles of training of personnel working in the production chain

4 CERTIFICATION PROCEDURES

4.1 Protection of the professional integrity of the certifying veterinarian

Certification should be based on the highest possible ethical standards, the most important of which is that the professional integrity of the certifying veterinarian should be respected and safeguarded.

It is essential to include in any requirements only those specific statements that can be accurately and honestly signed by a certifying veterinarian. For example, these requirements should not include certification of an area as being free from diseases based on purely clinical freedom and herd history is of limited value. This is also true of diseases other than notifiable diseases, or the occurrence of which the signing veterinarian is not necessarily informed about. It is unacceptable to ask for certification for events which will take place after the document is signed when these events are not under the direct control and supervision of the signing veterinarian.

Certification of freedom from diseases based on purely clinical freedom and herd history is of limited value. This is also true of diseases for which there is no specific diagnostic test, or the value of the test as a diagnostic aid is limited. The note of guidance referred to in Terrestrial Code of the OIE is not only to inform the signing veterinarian but also to safeguard professional integrity.

4.2 Authorisation of Certifying veterinarians

Certifying veterinarian should:

- be authorised by the Veterinary Authority of the exporting country to sign international veterinary certificates;
- only certify matters that are within their own knowledge at the time of signing the certificate, or that have been separately attested by another competent party;
- sign only at the appropriate time certificates that have been completed fully and correctly; where a certificate is signed on the basis of supporting documentation, the certifying veterinarian should have verified or be in possession of that documentation before signing;
- have no conflict of interest in the commercial aspects of the animals or animal products being certified and be independent from the commercial parties

4.3 Preparation of international veterinary certificates

Certificates should be drawn up in accordance with the following principles:

- Certificates should be designed so as to minimize the potential for fraud including use of a unique identification number, or other appropriate means to ensure security. Paper certificates should bear the signature of the certifying veterinarian and the official identifier (stamp) of the issuing Veterinary Authority. Each page of a multiple page certificate should bear the unique certificate number and a number indicating the number of the page out of the total number of pages. Electronic certification procedures should include equivalent safeguards.
- Certificates should be written using terms that are simple, unambiguous and as easy to understand as possible, without losing their legal meaning.
- If so required, certificates should be written in the language of the importing country. In such circumstances, they should also be written in a language understood by the certifying veterinarian.
- Certificates should require appropriate identification of animals and animal products except where this is impractical.
- Certificates should not require a veterinarian to certify matters that are outside his/her knowledge or which he/she cannot ascertain and verify.
- Where appropriate, when presented to the certifying veterinarian, certificates should be accompanied by notes of guidance indicating the extent of enquiries, tests or examinations expected to be carried out before the certificate is signed.

- The text of a certificate should not be amended except by deletions which should be signed and stamped by the certifying veterinarian.
- 8) The signature and stamp should be in a colour different from that of the printing of the certificate. The stamp may be embossed instead of being a different colour.
- 9) Replacement certificates may be issued by a Veterinary Authority to replace certificates that have been, for example, lost, damaged, contains errors, or where the original information is no longer correct. These replacements should be provided by the issuing authority and be clearly marked to indicate that they are replacing the original certificate. A replacement certificate should reference the number and the issue date of the certificate that it supersedes. The superseded certificate should be cancelled and, where possible, returned to the issuing authority.
- Only original certificates are acceptable

4.4 Electronic certification

- Certification may be provided by electronic documentation sent directly from the Veterinary Authority of the exporting country to the Veterinary Authority of the importing country. Such systems also normally provide an interface with the commercial organisation marketing the commodity for provision of information to the certifying authority. The certifying veterinarian should have access to all information such as laboratory results and animal identification data.
- Electronic certificates may be in a different format but should carry the same information as conventional paper certificates.
- The Veterinary Authority should have in place systems for the security of electronic certificates against access by unauthorised persons or organisations.
- The certifying veterinarian should be officially responsible for the secure use of his/her electronic signature

4.5 General obligations related to certification

Safety of international trade in animals and animal products depends on a combination of factors which should be taken into account to ensure unimpeded trade, without incurring unacceptable risks to human and animal health.

Because of differences between countries in their animal health situations, various options are offered by Terrestrial Code of the OIE. The animal health situation in the exporting country, in the transit country or countries and in the importing country should be considered before determining the requirements for trade. To maximise harmonisation of the sanitary aspects of international trade, Veterinary Authorities of Member Countries should base their import requirements on the standards of the OIE.

Certification requirements should be exact and concise, and should clearly convey the wishes of the importing country.

For this purpose, prior consultation between Veterinary Authorities of importing and exporting countries may be necessary. It enables the setting out of the exact requirements so that the signing veterinarian can, if necessary, be given a note of guidance explaining the understanding between the Veterinary Authorities involved.

4.6 Responsibilities of the importing country

- The import requirements included in the international veterinary certificate should assure that commodities introduced into the importing country comply with the standards of the OIE. Importing countries should restrict their requirements to those necessary to achieve the national appropriate level of protection. If these are stricter than the standards of the OIE, they should be based on an import risk analysis.

- The international veterinary certificate should not include requirements for the exclusion of pathogens or animal diseases which are present in the importing country and are not subject to any official control programme. The measures imposed on imports to manage the risks posed by a specific pathogen or disease should not require a higher level of protection than that provided by measures applied as part of the official control programme operating within the importing country.
- The international veterinary certificate should not include measures against pathogens or diseases which are not OIE listed, unless the importing country has demonstrated through import risk analysis, that the pathogen or disease poses a significant risk to the importing country.
- The transmission by the Veterinary Authority of certificates or the communication of import requirements to persons other than the Veterinary Authority of another country necessitates that copies of these documents are also sent to the Veterinary Authority. This important procedure avoids delays and difficulties which may arise between traders and Veterinary Authorities when the authenticity of the certificates or permits is not established. This information is the responsibility of Veterinary Authorities. However, it can be issued by private sector veterinarians at the place of origin of the commodities when this practice is the subject of appropriate approval and authentication by the Veterinary Authority.
- Situations may arise which result in changes to the consignee, identification of the means of transportation, or border post after a certificate is issued. Because these do not change the animal or public health status of the consignment, they should not prevent the acceptance of the certificate.

4.7 Responsibilities of the exporting country

- An exporting country should, on request, supply the following to importing countries:
 - information on the animal health situation and national animal health information systems to determine whether that country is free or has zones or compartments free from listed diseases, including the regulations and procedures in force to maintain its free status;
 - regular and prompt information on the occurrence of OIE listed notifiable diseases;
 - details of the country's ability to apply measures to control and prevent the relevant listed diseases;
 - information on the structure of the Veterinary Services;
 - technical information, particularly on biological tests and vaccines applied in all or part of the national territory.
- Veterinary Authorities of exporting countries should:
 - have official procedures for authorisation of certifying veterinarians, defining their functions and duties as well as conditions of oversight and accountability, including possible suspension and termination of the authorisation;
 - ensure that the relevant instructions and training are provided to certifying veterinarians;
 - monitor the activities of the certifying veterinarians to verify their integrity and impartiality;
 - The Veterinary Authority, designated as the Competent Authority of the exporting country is ultimately accountable for veterinary certification used in international trade.

4.8 Responsibilities in case of an incident related to importation

- International trade involves a continuing ethical responsibility. Therefore, if within the recognised incubation periods of the various diseases subsequent to an export taking place, the Veterinary Authority becomes aware of the appearance or reappearance of a disease which has been specifically included in the international veterinary certificate, there is an obligation for this Authority to notify the importing country, so that the imported commodities may be inspected or tested and appropriate action be taken to limit the spread of the disease should it have been inadvertently introduced.
- If a disease condition appears in imported commodities within a time period after importation consistent with the recognised incubation period of the disease, the Veterinary Authority of the exporting country should be informed so as to enable an investigation to be made, since this may be the first available information on the occurrence of the disease in a previously free herd. The Veterinary Authority of the importing country should be informed of the result of the investigation since the source of infection may not be in the exporting country.
- In case of suspicion, on reasonable grounds, that an official certificate may be fraudulent, the Veterinary Authority of the importing country and exporting country should conduct an investigation. Consideration should also be given to notifying any third country that may have been implicated. All associated consignments should be kept under official control, pending the outcome of the investigation. The Veterinary Authorities of all countries involved should fully cooperate with the investigation. If the certificate is found to be fraudulent, every effort should be made to identify those responsible so that appropriate action can be taken according to the relevant legislation.

4.9 To achieve animal traceability

The recommendations are based on the general principles presented by the OIE. The recommendations outline the basic elements that need to be taken into account in the design and implementation of an animal identification system to achieve animal traceability. Whatever animal identification system the country adopts, it should comply with relevant OIE standards, for animals and animal products intended for export. Each country should design a programme in accordance with the scope and relevant performance criteria to ensure that the desired animal traceability outcomes can be achieved.

4.9.1 Model veterinary certificate for international trade in live animals, products of animal origin

Notes for guidance on the veterinary certificates for international trade in live animals and products of animal origin

Part I. Details of dispatched consignment

- Name of the country that issues the certificate.
- Name and full address of the natural or legal person dispatching the consignment. Information on telephone and fax numbers or e-mail address is recommended.
- The certificate reference number is the number used by the Veterinary Authority of the country to identify the certificate.
- Name of the Veterinary Authority.
- Name and full address of the natural or legal person to whom the consignment is destined at the time the certificate is issued.
- Name of the country from which the animals being exported. For products, name the country(ies) where the finished products were produced, manufactured or packed.
- Name of the zone or compartment of origin, if relevant, in part II of the certificate.
- Name of the country of destination.
- Name of the zone or compartment of destination

- Name and full address of the place(s) from which the animals or products are being exported; and official approval or registration number when required.
- For products of animal origin: the premises from which the products are to be dispatched.
- Name of the place from which the animals or products are being shipped (this will be a land, sea or airport).
- Date of departure. For animals include the expected time of departure.
- Details of the means of transport.
- Identification of the means of transport at the time the certificate is issued: for air transport, the flight number; for maritime transport, the name of the vessel; for rail transport, the number of the train and the wagon and for road transport, the registration number of the road vehicle and the number of the trailer where used.
- Name of expected border post and, if available
- CITES permit number(s) if the commodity concerns species listed in the Convention on International Trade in Endangered Species of Wild Fauna and Flora.
- Describe the commodity or use the titles as they appear in the Harmonised System of the World Customs Organization.
- Heading or HS Code of the Harmonized System set up by the World Customs Organization.
- Total quantity of the commodity.
- Temperature of products for transport and storage.
- Total number of boxes, cages or stalls in which the animals are being transported.
- Identify the containers/seal numbers where required.
- Identify the type of packaging of products.
- Intended use of the imported animals or products.
- Slaughter: applies to animal for slaughter.
- Pet: applies to animals kept for companionship or enjoyment. This excludes livestock species.
- Exhibition/education: applies to animals exhibited in zoos, circuses or sporting activities or for educational purposes.
- Human consumption: applies to products intended for human consumption.

Part II. Zoosanitary information - Official veterinarian

Name, address, official position, date of signature and official stamp of the Veterinary Services

Certification of animal products for international trade

Another important role of the Veterinary Services is to ensure that health certification for international trade complies with animal health and food safety standards. Certification in relation to animal diseases, including zoonosis, and meat hygiene should be the responsibility of the Veterinary Authority. Certification may be provided by other professions (a sanitary certificate) in connection with food processing and hygiene (e.g. pasteurisation of dairy products) and conformance with product quality standards.

4.10 Border posts and quarantine stations in the importing country

Countries and their Veterinary Authorities should, wherever possible, take the necessary action to ensure that the border posts and quarantine stations in their territory should be provided with an adequate organisation and sufficient equipment for the application of the measures recommended in the Terrestrial Code of the OIE.

Each border post and quarantine station should be provided with facilities for the feeding and watering of animals.

When justified by the amount of international trade and by the epidemiological situation, border posts and quarantine stations should be provided with a Veterinary Service comprising personnel, equipment and premises as the case may be and, in particular, means for:

- making clinical examinations and obtaining specimens of material for diagnostic purposes from live animals or carcasses of animals or other animal products affected or suspected of being affected by an epizootic disease, and obtaining specimens of animal products suspected of contamination;
- detecting and isolating animals affected by or suspected of being affected by an epizootic disease;
- carrying out disinfection and possibly disinfestations of vehicles used to transport animals and animal products.

In addition to this, each port and international airport should ideally be provided with equipment for the sterilisation or incineration of swill or any other material dangerous to animal health. The presence of disease or infection in imported animals in a quarantine station does not affect the animal health status of the country or zone.

4.11 Animal health surveillance

4.11.1 Introduction and objectives

In general, surveillance is aimed at demonstrating the absence of disease or infection, determining the presence or distribution of disease or infection or detecting as early as possible exotic or emerging diseases. The type of surveillance applied depends on the outputs needed to support decision-making. The following recommendations may be applied to all diseases or infections and all susceptible species (including wildlife). Animal health surveillance is also a tool to monitor disease trends, to facilitate the control of disease or infection, to provide data for use in risk analysis, for animal or public health purposes, and to substantiate the rationale for sanitary measures. Both domestic animals and wildlife are susceptible to certain diseases or infections. However, the presence of a disease or infection in wildlife does not mean it is necessarily present in domestic animals in the same country or zone or vice versa. Wildlife may be included in a surveillance system because they can serve as reservoirs of infection and as indicators of disease risk to humans and domestic animals. Surveillance in wildlife presents challenges that may differ significantly from those in surveillance in domestic animals.

4.11.2 Data collection and management

The success of a surveillance system is dependent on a reliable process for data collection and management. The process may be based on paper records or computerised. Even where data are collected for non-survey purposes (e.g. during disease control interventions, inspections for movement control or during disease eradication schemes), the consistency and quality of data collection and event reporting in a format that facilitates analysis is critical. Factors influencing the quality of collected data include:

- the distribution of, and communication between, those involved in generating and transferring data from the field to a centralised location; this requires effective collaboration among all stakeholders, such as governmental or non-governmental organisations, and others, particularly for data involving wildlife;
- the ability of the data processing system to detect missing, inconsistent or inaccurate data, and to address these problems;
- maintenance of disaggregated data rather than the compilation of summary data;
- minimisation of transcription errors during data processing and communication

4.11.3 Survey design

The population of epidemiological units should first be clearly defined; hereafter appropriate sampling units should be defined for each stage, depending on the design of the survey.

The design of the survey will depend on the size, structure and degree of understanding of the population being studied, the epidemiology of the infection and the resources available.

4.11.4 Sampling

The objective of sampling from animal population is to select a subset of units that is representative of the population of interest with respect to the objective of the study. Sampling should provide the best likelihood that the sample will be representative of the population, within the practical constraints imposed by different environments and production systems.

4.11.5 Sampling methods

When selecting epidemiological units from within a population, probability sampling, such as simple random selection, should be used. When this is not possible, sampling should provide the best practical chance of generating a sample that is representative of the target population. In any case, the sampling method used at all stages should be fully documented.

4.11.6 Sample size

In general, surveys are conducted either to demonstrate the presence or absence of a factor (e.g. infection) or to estimate a parameter (e.g. the prevalence of infection). The method used to calculate sample size for surveys depends on the purpose of the survey, the expected prevalence, the level of confidence desired of the survey results and the performance of the tests used.

4.11.7 Disease reporting or notification systems

Data derived from disease reporting systems can be used in combination with other data sources to substantiate claims of animal health status, to generate data for risk analysis, or for early detection. Effective laboratory support is an important component of any reporting system. Reporting systems relying on laboratory confirmation of suspect clinical cases should use tests that have a high specificity. Reports should be released by the laboratory in a timely manner, with the amount of time from disease detection to report generation minimized. Whenever the responsibility for disease notification falls outside the scope of the Veterinary Authority, for example in some countries for diseases in wildlife, effective communication and data sharing should be established with the relevant authorities to ensure comprehensive and timely disease reporting.

4.11.8 Control programmes and health schemes

Animal disease control programmes or health schemes, while focusing on the control or eradication of specific diseases, should be planned and structured in such a manner as to generate data that are scientifically verifiable and contribute to structured surveillance.

4.11.9 Ante-mortem and post-mortem inspections

Inspections of animals at slaughterhouses may provide valuable surveillance data. The sensitivity and specificity of slaughterhouse inspection for detecting the presence of specified diseases should be pre-determined for the inspection system in place. The accuracy of the inspection system will be influenced by:

- the training, experience and number of the inspection staff;
- the involvement of the Competent Authority in the supervision of ante-mortem and post-mortem inspections;
- the quality of construction of the slaughterhouse, speed of the slaughter chain, lighting quality, etc.; and
- staff morale and motivation for efficient performance.

Slaughterhouse inspections are likely to provide good coverage for particular age groups and geographical areas only. Slaughterhouse surveillance data are subject to biases in relation to target populations. Such biases need to be recognised when analysing surveillance data. For trace

back and analysis of spatial and herd-level coverage, there should be, if possible, an effective identification system that relates animals in the slaughterhouse to their locality of origin.

4.11.10 Laboratory investigation records

Analysis of laboratory investigation records may provide useful surveillance information. The coverage of the system will be increased if analysis is able to incorporate records from national, accredited, university and private sector laboratories. Valid analysis of data from different laboratories depends on the existence of standardised diagnostic procedures and standardised methods for interpretation and data recording. As with abattoir inspections, there needs to be a mechanism to relate specimens to the farm of origin.

4.11.11 Field observations

Clinical observations of animals in the field are an important source of surveillance data. The sensitivity and specificity of field observations may be relatively low, but these can be more easily determined and controlled if a clear standardised case definition is applied. Education of potential field observers in application of the case definition and reporting is important. Ideally, both the number of positive observations and the total number of observations should be recorded.

4.11.12 Farm production records

Systematic analysis of farm production records may be used as an indicator of the presence or absence of disease or infection at the herd or flock level. In general, the sensitivity of this approach may be quite high (depending on the disease), but the specificity is often quite low.

A surveillance system to demonstrate freedom from infection should meet the following requirements in addition to the general requirements. Freedom from infection implies the absence of the pathogenic agent in the country, zone or compartment. Scientific methods cannot provide absolute certainty of the absence of infection. Therefore, demonstrating freedom from infection involves providing sufficient evidence to demonstrate to a level of confidence acceptable to Member Countries of the OIE.

4.12 Animal health measures applicable before and at departure

4.12.1 Animals for breeding, rearing or slaughter:

- Countries should only authorise the exportation from their territory of animals for breeding or rearing or animals for slaughter which are correctly identified and which meet the requirements of the importing country.
- Biological tests and/or vaccinations required by the importing country should be carried out in accordance with the recommendations of the OIE, as well as disinfection and disinfestation procedures.
- Observation of the animals before leaving the country may be carried out either in the establishment where they were reared, or in a quarantine station. The animals should be transported to the place of shipment in specially constructed vehicles, previously cleansed and, if required, disinfected. This must be done without delay and without the animals coming into contact with other susceptible animals, unless these animals have animal health guarantees similar to those of the transported animals. An international veterinary certificate should attest that the animals have been found to be clinically healthy and of the health status agreed by the importing country and exporting country.
- The transportation of the animals for breeding or rearing of animals for slaughter from the establishment of origin to the point of departure from the exporting country should be carried out in conformity with the conditions agreed between the importing country and exporting country.

4.12.2 Notification

Countries exporting animals should inform the country of destination and where necessary the transit countries if, after exportation, when an OIE listed disease occurs within the incubation period of that particular disease, in the establishment of origin, or in an animal which was in an establishment or in a market, at the same time as the exported animals.

4.12.3 Certificate

Before the departure of animals an Official Veterinarian should, within the 24 hours prior to shipment, provide an international veterinary certificate conforming to the models approved by the OIE and worded in the languages agreed upon between the exporting country and the importing country, and, where necessary, with the transit countries.

4.12.4 Live animals

- Before the departure of an animal or a consignment of animals on an international journey, the Veterinary Authority of the port, airport or district in which the border post is situated may, if it is considered necessary, carry out a clinical examination of the animal or consignment. The time and place of the examination should be arranged taking into account customs and other formalities and in such a way as not to impede or delay departure.
- The Veterinary Authority should take necessary measures to prevent the shipment of animals affected or suspected of being affected with any OIE listed disease or with any other infectious disease as agreed by the importing country and the exporting country; avoid entry into the vehicle of possible vectors or causal agents of infection.

4.12.5 Products of animal origin

- Countries should only authorise the export from their territory of meat and products of animal origin intended for human consumption, which are fit for human consumption.
- They must be accompanied by an international veterinary certificate conforming with the models approved by the OIE. These must be worded in the languages agreed upon between the exporting country and the importing country, and, where necessary, with the transit countries.
- Products of animal origin intended for use in animal feeding, or for pharmaceutical or surgical or agricultural or industrial use, should be accompanied by an international veterinary certificate conforming to the models approved by the OIE.

5 IMPORT RISK ANALYSIS

5.1 Introduction

The importation of animals and animal products involves a degree of disease risk to the importing country. This risk may be represented by one or several diseases or infections.

The principal aim of import risk analysis is to provide importing countries with an objective and defensible method of assessing the disease risks associated with the importation of animals, animal products, animal genetic material, feedstuffs, biological products and pathological material. The analysis should be transparent. This is necessary so that the exporting country is provided with clear reasons for the imposition of import conditions or refusal to import. Transparency is also essential because data are often uncertain or incomplete and, without full documentation, the distinction between facts and the analyst's value judgements may blur. This chapter alludes to the role of the OIE with respect to the Agreement on the Application of Sanitary and Phytosanitary Measures (the so-called SPS Agreement) of the World Trade Organization (WTO), provides definitions and describes the OIE informal procedure for dispute mediation.

Import risk analysis provides recommendations and principles for conducting transparent, objective and defensible risk analyses for international trade. The components of risk analysis described are hazard identification, risk assessment, risk management and risk communication.

The risk assessment is the component of the analysis which estimates the risks associated with a hazard. Risk assessments may be qualitative or quantitative. For many diseases, particularly for those diseases listed in this Terrestrial Code of the OIE where there are well developed internationally agreed standards, there is broad agreement concerning the likely risks. In such cases it is more likely that a qualitative assessment is all that is required. Qualitative assessment does not require mathematical modelling skills to carry out and so is often the type of assessment used for routine decision making. No single method of import risk assessment has proven applicable in all situations, and different methods may be appropriate in different circumstances.

5.2 Import risk analysis

The process of import risk analysis usually needs to take into consideration the results of an evaluation of Veterinary Services, zoning, compartmentalisation and surveillance systems in place for monitoring of animal health in the exporting country.

5.2.1 Hazard identification

The hazard identification involves identifying the pathogenic agents which could potentially produce adverse consequences associated with the importation of a commodity.

The potential hazards identified would be those appropriate to the species being imported, or from which the commodity is derived, and which may be present in the exporting country. It is then necessary to identify whether each potential hazard is already present in the importing country, and whether it is a notifiable disease or is subject to control or eradication in that country and to ensure that import measures are not more trade restrictive than those applied within the country. Hazard identification is a categorisation step, identifying biological agents dichotomously as potential hazards or not. The risk assessment may be concluded if hazard identification fails to identify potential hazards associated with the importation.

The evaluation of the Veterinary Services, surveillance and control programmes and zoning and compartmentalisation systems are important inputs for assessing the likelihood of hazards being present in the animal population of the exporting country.

An importing country may decide to permit the importation using the appropriate sanitary standards recommended in the Terrestrial Code, thus eliminating the need for a risk assessment.

5.2.2 Principles of risk assessment

- Risk assessment should be flexible to deal with the complexity of real life situations. No single method is applicable in all cases. Risk assessment should be able to accommodate the variety of animal commodities, the multiple hazards that may be identified with an importation and the specificity of each disease, detection and surveillance systems, exposure scenarios and types and amounts of data and information.
- Both qualitative risk assessment and quantitative risk assessment methods are valid.
- The risk assessment should be based on the best available information that is in accord with current scientific thinking. The assessment should be well-documented and supported with references to the scientific literature and other sources, including expert opinion.
- Consistency in risk assessment methods should be encouraged and transparency is essential in order to ensure fairness and rationality, consistency in decision making and ease of understanding by all the interested parties.
- Risk assessments should document the uncertainties, the assumptions made, and the effect of these on the final risk estimate.
- Risk increases with increasing volume of commodity imported.
- The risk assessment should be amenable to updating when additional information becomes available.

5.2.3 Risk assessment steps

Entry assessment consists of describing the biological pathway(s) necessary for an importation activity to introduce pathogenic agents into a particular environment, and estimating the probability of that complete process occurring, either qualitatively (in words) or quantitatively (as a numerical estimate). The entry assessment describes the probability of the 'entry' of each of the potential hazards (the pathogenic agents) under each specified set of import risk analysis conditions with respect to amounts and timing, and how these might change as a result of various actions, events or measures. Examples of the kind of inputs that may be required in the entry assessment are:

- Biological factors:
 - species, age and breed of animals
 - agent predilection sites
 - vaccination, testing, treatment and quarantine.
- Country factors:
 - incidence or prevalence
 - evaluation of Veterinary Services, surveillance and control programmes and zoning and compartmentalisation systems of the exporting country.
- Commodity factors:
 - quantity of commodity to be imported
 - ease of contamination
 - effect of processing
 - effect of storage and transport.

If the entry assessment demonstrates no significant risk, the risk assessment does not need to continue.

5.2.4 Exposure assessment

Exposure assessment consists of describing the biological pathway(s) necessary for exposure of animals and humans in the importing country to the hazards (in this case the pathogenic agents) from a given risk source, and estimating the probability of the exposure(s) occurring, either qualitatively (in words) or quantitatively (as a numerical estimate).

The probability of exposure to the identified hazards is estimated for specified exposure conditions with respect to amounts, timing, frequency, duration of exposure, routes of exposure, such as ingestion, inhalation or insect bite, and the number, species and other characteristics of the animal and human populations exposed.

If the exposure assessment demonstrates no significant risk, the risk assessment may conclude at this step.

5.2.5 Consequence assessment

Consequence assessment consists of describing the relationship between specified exposures to a biological agent and the consequences of those exposures. A causal process should exist by which exposures produce adverse health or environmental consequences, which may in turn lead to socio-economic consequences. The consequence assessment describes the potential consequences of a given exposure and estimates the probability of them occurring. This estimate may be either qualitative (in words) or quantitative (a numerical estimate).

5.2.6 Risk estimation

Risk estimation consists of integrating the results from the entry assessment, exposure assessment, and consequence assessment to produce overall measures of risks associated with the hazards identified at the outset. Thus risk estimation takes into account the whole of the risk pathway from hazard identified to unwanted outcome.

5.2.7 Principles of risk management

- Risk management is the process of deciding upon and implementing measures to achieve the Member Country's appropriate level of protection, whilst at the same time ensuring that negative effects on trade are minimized. The objective is to manage risk appropriately to ensure that a balance is achieved between a country's desire to minimize the likelihood or frequency of disease incursions and their consequences and its desire to import commodities and fulfil its obligations under international trade agreements.
- The international standards of the OIE are the preferred choice of sanitary measures for risk management. The application of these sanitary measures should be in accordance with the intentions in the standards.

5.2.8 Risk management components

- Risk evaluation - the process of comparing the risk estimated in the risk assessment with the Member Country's appropriate level of protection.
- Option evaluation - the process of identifying, evaluating the efficacy and feasibility of, and selecting measures to reduce the risk associated with an importation in order to bring it into line with the Member Countries appropriate level of protection. The efficacy is the degree to which an option reduces the likelihood or magnitude of adverse health and economic consequences. Evaluating the efficacy of the options selected is an iterative process that involves their incorporation into the risk assessment and then comparing the resulting level of risk with that considered acceptable. The evaluation for feasibility normally focuses on

technical, operational and economic factors affecting the implementation of the risk management options.

- Implementation - the process of following through with the risk management decision and ensuring that the risk management measures are in place.
- Monitoring and review - the ongoing process by which the risk management measures are continuously audited to ensure that they are achieving the results intended.

5.2.9 Principles of risk communication

- Risk communication is the process by which information and opinions regarding hazards and risks are gathered from potentially affected and interested parties during a risk analysis, and by which the results of the risk assessment and proposed risk management measures are communicated to the decision-makers and interested parties in the importing and exporting countries. It is a multidimensional and iterative process and should ideally begin at the start of the risk analysis process and continue throughout.
- A risk communication strategy should be put in place at the start of each risk analysis.
- The communication of the risk should be an open, interactive, iterative and transparent exchange of information that may continue after the decision on importation.
- The principal participants in risk communication include the authorities in the exporting country and other stakeholders such as domestic and foreign industry groups, domestic livestock producers and consumer groups.
- The assumptions and uncertainty in the model, model inputs and the risk estimates of the risk assessment should be communicated.
- Peer review is a component of risk communication in order to obtain scientific critique and to ensure that the data, information, methods and assumptions are the best available.

6 GUIDELINES ON STANDARD OPERATION PROCEDURES

6.1 Existing Standard Operating Procedures

Guidelines, or Standard Operation Procedures have been prepared by the Animal and Plant Health Regulatory Directorate Ministry of Agriculture in collaboration with the Ethiopian Sanitary and Phytosanitary and Livestock and Meat Marketing (SPS-LMM) Program. The main goal of the SPS-LMM program is to increase exports of meat and livestock to benefit Ethiopian livestock producers and exporters, and to promote national economic development.

Following Standard Operation Procedures (SOP) guidelines are prepared:

- Animal handling guideline
- Ante mortem inspection guidelines
- Meat Handlers Personal Hygiene Guideline
- Meat Inspectors and Inspector Veterinarians Guideline
- Meat cold chain guideline
- Meat Transport and Storage Guideline
- Pre-purchase Inspection Guideline (for export cattle, sheep, goat and camel)
- Bio-security Guideline
- Export Abattoirs Operational Procedures
- Hygiene, Dressing and Carcass Handling Guideline
- Construction Guideline (for export abattoirs).

The guidelines are intended to assist government inspectors and inspector veterinarians for ensuring hygiene and sanitation in export abattoir facilities and safety of meat and meat products so that Ethiopian meat and meat products remain increasingly competitive in the international markets.

The guidelines include minimum requirements for abattoir and abattoir facilities and practices for slaughter of animals, inspection, storing, processing, packaging, loading and transporting of meat and meat products.

Below are the main topics reflected within SOP's guidelines.

6.1.1 Animal handling

- Animal welfare is an issue of growing importance in the international trade for livestock and livestock products
- The guideline applies to cattle, sheep, goats and camels
- The first principle of animal handling is to avoid getting the animal excited
- Animal handling facilities should be well-built and functional and designed to ensure ease of handling and prevention of injury of animals
- The following principles should be introduced when provide trekking, loading, transporting, unloading, holding of animals to ensure safe handling at all times
- Trekking: the journey should be planned, paying attention to the distance to be traveled, opportunities for grazing, watering and overnight rest
- Animals should be walked during the cooler times of the day and they should be rested and watered from 12-24 hours before loading

- Livestock should be transported in a manner that avoids injury and minimizes stress throughout the journey
- Livestock trucks
- Planning the journey
- Documentation accompanying animals
- Pre-journey period
- Loading
- Travel
- Unloading and post-journey handling
- Lairage design and care of animals in export abattoirs
- Pre-slaughter penning
- Stunning; Bleeding

6.1.2 Ante mortem inspection guidelines

- Ante-mortem inspection is a screening process to remove obviously diseased animals from the food supply prior to slaughter and to identify animals that require a more extensive postmortem examination
- The purpose of ante-mortem inspection is to accept and allow for slaughter only those animals that are healthy and capable of being converted into wholesome product for the consumer
- Veterinary Inspectors are responsible for verifying that the establishment has met the regulatory requirements for maintaining the facilities where ante-mortem inspection is to be conducted
- Ante-mortem inspection of livestock should take place in pens and each animal must be observed and its status recorded
- Ante-mortem inspection methodology (inspection within 24 hrs; observation of animals at rest and in motion)
- Ante-mortem disposition: Passed for Slaughter; Suspect; Condemned
- Abnormal body movement
- Abnormal body condition
- Abnormal signs on the body's surface
- Ante-mortem inspection format
- The ante-mortem inspection format contains the following sections:
 - Establishment
 - Condemned or suspect tag

- Tagged for (i.e. broken leg)
- Temperature
- Weight
- Remarks

6.1.3 Meat Handlers Personal Hygiene Guideline

- This guideline and SOP is intended to assist abattoir and airport cargo terminal workers to take all precautionary measures for guaranteeing hygiene and safety while handling meat. This document includes requirements for ensuring and maintaining personal health, appropriate clothing and cleanliness for meat handlers
- People working in meat handling areas are an important potential source of microbiological and physical hazards
- Personal health for meat handlers
- Clothing for meat handlers
- Cleanliness for meat handlers
- Hand washing

6.1.4 Meat Inspectors and Inspector Veterinarians Guideline

- The objective of the guideline is to ensure hygiene and sanitation in export abattoirs and address the requirements of importing countries
- The guideline is intended to assist government inspectors for ensuring hygiene and sanitation in export abattoir facilities and safety of meat and meat products so that Ethiopian meat and meat products remain increasingly competitive in the international markets
- The guideline includes minimum requirements for abattoir and abattoir facilities and practices for slaughter of animals, inspection, storing, processing, packaging, loading and transporting of meat and meat products
- Abattoir organization
- Abattoir sanitation
- Personnel hygiene
- Stock reception and handling
- Ante-mortem examination
- Moving livestock to the slaughter hall
- Stunning
- Slaughter/bleeding

- Oesophagus tying
- Head removal
- Feet removal
- Pizzle (penis) removal
- Bung (rectum)dropping
- Skinning and hide removal
- Evisceration
- Dressing operations
- Carcass splitting
- Carcass trimming
- Meat inspection
- Carcass washing
- Carcass dripping
- Chilling
- Freezing
- Boning and carcass processing
- Packaging/finished product storage and transport/dispatch

6.1.5 Meat cold chain guideline

- This guideline sets out minimum standards for controlling and maintaining the cold chain of meat during dressing of carcasses, processing, packaging, handling, storage and transportation. The guideline applies to meat and meat products derived from cattle, sheep, goats and camels
- There are three areas of primary focus in cold chain management. These are temperature, process flow and contamination control
- Chilling: Normal chilling (within 5 hrs); Very Fast Chilling (within 5 hrs)
- Measuring pH of meat
- Freezing
- Thawing
- Cutting and de-boning
- Vacuum packing
- Pack off area
- Packing material storage

- Boxed meat blast freezing (-28)
- Boxed meat storage (-18)
- Loading
- Meat transportation (land, air, sea)
- Personal hygiene; Personal cleanliness; Personal health status
- Setting and organization of cold chains

6.1.6 Meat Transport and Storage Guideline

- This guideline is designed to aid meat truck drivers and airport cargo terminal workers in ensuring meat hygiene and safety during transportation and storage. It provides a list of precautionary measures that can be taken to prevent meat contamination
- Meat transport vehicles
- Vehicle compliance requirements
- Vehicles used for the transport of meat and edible products must be used exclusively for this purpose and must be clean at the point of loading
- Sanitation and maintenance of vehicles
- Examine vehicles before loading
- Loading meat
- Transporting meat
- Unloading meat
- Cold chain requirements at airport
- Dispatching meat for freight
- Calibration of thermometers

6.1.7 Pre-purchase Inspection Guideline (for export cattle, sheep, goat and camel)

- Food safety is getting increasing importance worldwide and importing countries are setting stringent animal health requirements on the import of livestock and livestock products
- The main objectives of the pre-purchase inspection are:
 - To identify and reject animals showing clear evidence of being affected with a disease or condition that could render the animal risky for other animals
 - To identify and reject animals which are suspected of being affected with a disease or condition that might render the animal unfit for human consumption
 - To identify and reject animals which could pose a threat to the health of personnel handling the animals (zoonosis)

- To identify and reject animals which are suspected of having an emerging or reemerging diseases of trade importance
- To prevent injured animals from being purchased and transported to SPS certification facilities
- Pre-purchase inspection will be carried out by a veterinarian or an animal health assistant representing the private sector
- Facilities required for pre-purchase inspection
- Procedures and methods for pre-purchase inspection
- General signs of diseases and conditions:
 - Abnormal body movement
 - Abnormal body condition

Trade sensitive livestock diseases

- Rinderpest (cattle plague)
- Foot and mouth disease (FMD)
- Rift Valley fever (RVF)
- Lumpy skin disease (LSD)
- Contagious bovine pleuropneumonia (CBPP)
- Peste des petits ruminants (PPR)
- Contagious caprine pleuropneumonia (CCPP)
- Sheep and goat pox
- Brucellosis
- Contagious ecthyma

6.1.8 Bio-security Guideline

- The guideline includes potential risk factors for the incursion of animal diseases into livestock facilities and methods for their managements
- How to design a Bio-security program
- Development and implementation of a bio-security plan
- What are the potential risk factors for the incursion of a disease in a livestock facility?
 - Many infectious disease agents can be introduced to the herd by new additions
 - Feeds and water
 - Animal Contacts
 - Wildlife contacts and vectors

- Fomites include objects that mechanically transfer infectious organisms from one individual to another
- Visitors Vehicles and equipment
- Resident animals
- Employees
- Isolating animals
- Hygiene
- Health management practices
- Disposal and cleaning of manure
- Considerations in the establishment of livestock facilities
- Decontamination and disposal of infective material
- Disinfection in livestock facility
- Checklist for a bio-security plan in a livestock facility

6.1.9 Construction Guideline for Export Abattoirs

- The guideline is intended to provide inspectors and management of licensed export abattoir with broad principles and minimum standards for plant design, layout, construction and facilities which facilitate the production of safe and wholesome meat for international markets.
- The guideline includes criteria for site selection, layout and design, general and specific requirements for establishing export abattoirs in the country.
- Site Selection
- Layout and design
- Blueprints (plans and specifications)

General requirements

- Suitability of construction materials
- Water supply
- Hand lavatories, hand dips, drinking fountains, sanitizers and hose connections
- Equipment
- Drains
- Sewage disposal
- Disposal of paunch and intestinal contents
- Catch basins
- Lighting
- Ventilation

- Walls
- Ceiling
- Floors
- Doorways and doors
- Stairs
- Paint
- Screens and insect control
- Rodent proofing and control
- Roadways
- Separation
- Interior woodwork
- Outside premises

Specific requirements

- Premise
- Reception
- Livestock pens (lairages)
- Isolation pen
- Pre-slaughter holding pens
- Stunning, hoisting and bleeding areas
- Slaughter and dressing hall
- Meat inspection points
- Detained rooms
- Condemned and inedible rooms
- Hide, skin and feet rooms
- Carcass coolers
- Offal coolers
- Freezers
- Head preparation rooms
- Offal preparation rooms
- Cutting and de-boning rooms
- Vacuum packaging area
- Weighing, labeling and pack off rooms

- Dispatch

Other facilities

- Employee welfare rooms
- Inspectors' office
- Washrooms toilets and urinals
- Dressing rooms
- Equipment store
- Dry storage rooms
- Laboratory
- Clothes washing & ironing room
- First aid
- Accommodation
- Fire protection equipment
- Incinerator
- Waste disposal system
- Energy production unit
- Boiler room
- Sterilization room
- Emergency slaughter house
- Post-mortem inspection area
- Maintenance workshop
- Feed store
- List of equipments for slaughtering operations
- List of equipments for cutting and boning operations
- Requirements for licensing a new or existing export abattoir
- Verification

6.1.10 Export Abattoirs Operational Procedures

Sanitation:

- Employees training program
- Health status of employees
- Sanitary work habits (behaviour)

- Working clothing
- Visitors, vehicles and animals
- Building and equipment maintenance
- Sanitation program
- Pre-operational inspection program
- Cleaning
- Equipment and clothing storage
- Vermin (pest) control

Pre and post slaughter operations

- Lairage operations
- Slaughter Hall (Kill floor) Operations
- Casing and cleaning room operations
- Head room operations
- Offal preparation room operations
- Deboning and cutting room operations
- Weighing

Packaging and labeling room operations

Cold room operations

Dispatching and meat transport

Hides and skins room operations

Condemned and poisonous room operations

Emergency situations

- Measures to be taken when Anthrax is suspected
- Pens and area of possible contamination
- Personnel decontamination

Identification systems

- Tags
- Dyes and chemicals
- Specific products placed in designated containers or locations
- Labelling
- Marking and branding

Security of official marks of inspection

List of equipment commonly used for ruminants slaughter and dressing

Guidelines for Halal slaughter

Water used in the export abattoir

Cleaning and disinfection

Possible uses of slaughter by-products in an export abattoir

The STE examined the SOP's guidelines and recognized that they were drafted taking into account the international practice, principles of the GMP, GHP, HACCP and Food Safety Management System. Therefore SOP's can be recommended for the implementation within export abattoirs. An open question is how fast implementation process of SOP's measures will be taken in the field. SOP's need to be available and adjusted within each abattoir; training of personnel is extremely important stage for real carrying out introduction of the SOP's. No less important a factor how it fits with current Ethiopian legislation.

The STE suggested that for updating of prepared SOP's the "Manual of inspection procedures at meat production and processing establishments" could be used (See Annex 4 CD-ROM).

7 AUDIT TOOL FOR EXPORT ABATTOIR INSPECTION

7.1 The existing Audit Tool

The development of the Audit tool for export abattoir inspection prepared by the project TL Dr. J. Woodford and Dr. E. Wagelign (AHD, Meat inspection case team) in order to ensure the safety and quality of products for export and local consumption is seen as an essential component of the inspectorate system. The objective of such study was to develop a suitable assessment tool for Gap Analysis to be used for monitoring of export abattoirs including infrastructure, slaughterhouse production line inspection procedures and implementation of GHP, GMP and HACCP principles.

In general abattoir inspection criteria according to prepared Abattoir tools were separated into 3 groups:

- Abattoir site external infrastructures
 - Abattoir infrastructures
 - Equipment
 - Management practices
- Abattoir production line inspection procedure-GMP/PRPs/HACCP findings
 - Staff entrance
 - Chilling rooms
 - Production line process
 - Organic acid spray
 - Dispatch
- Export Abattoir other GMPs/PRPs findings
 - Maintenance schedules
 - SOP's
 - Training Programme
 - Personnel records
 - Records

Inspection procedure process flow charts described below in 3 tables, which actually shows necessary steps in production line and other good manufacturing practises. Such Inspection procedure process flow charts project experts' team recognised within all three visited export abattoir.

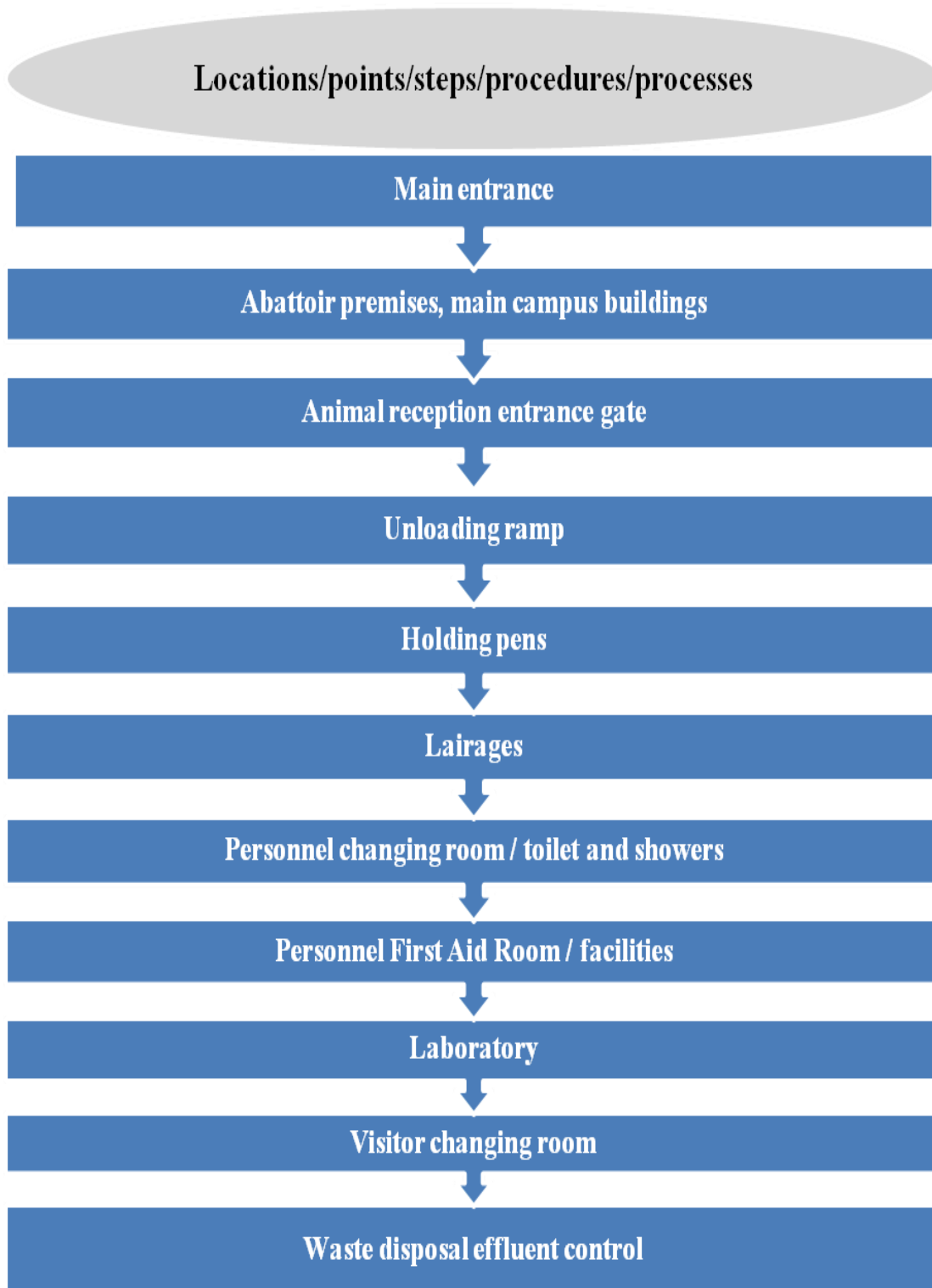
During the field mission STE visits to 3 export abattoirs, critical gaps were identified and subsequent to discussions with the AHD, Meat inspection case team inspectors as well as with export abattoir management it was fixed main gaps within establishments (Annex 1) and identified next steps in the development of enterprises evaluating and improve the quality of inspections using Audit tool for export abattoir inspection.

7.2 Main findings within abattoirs:

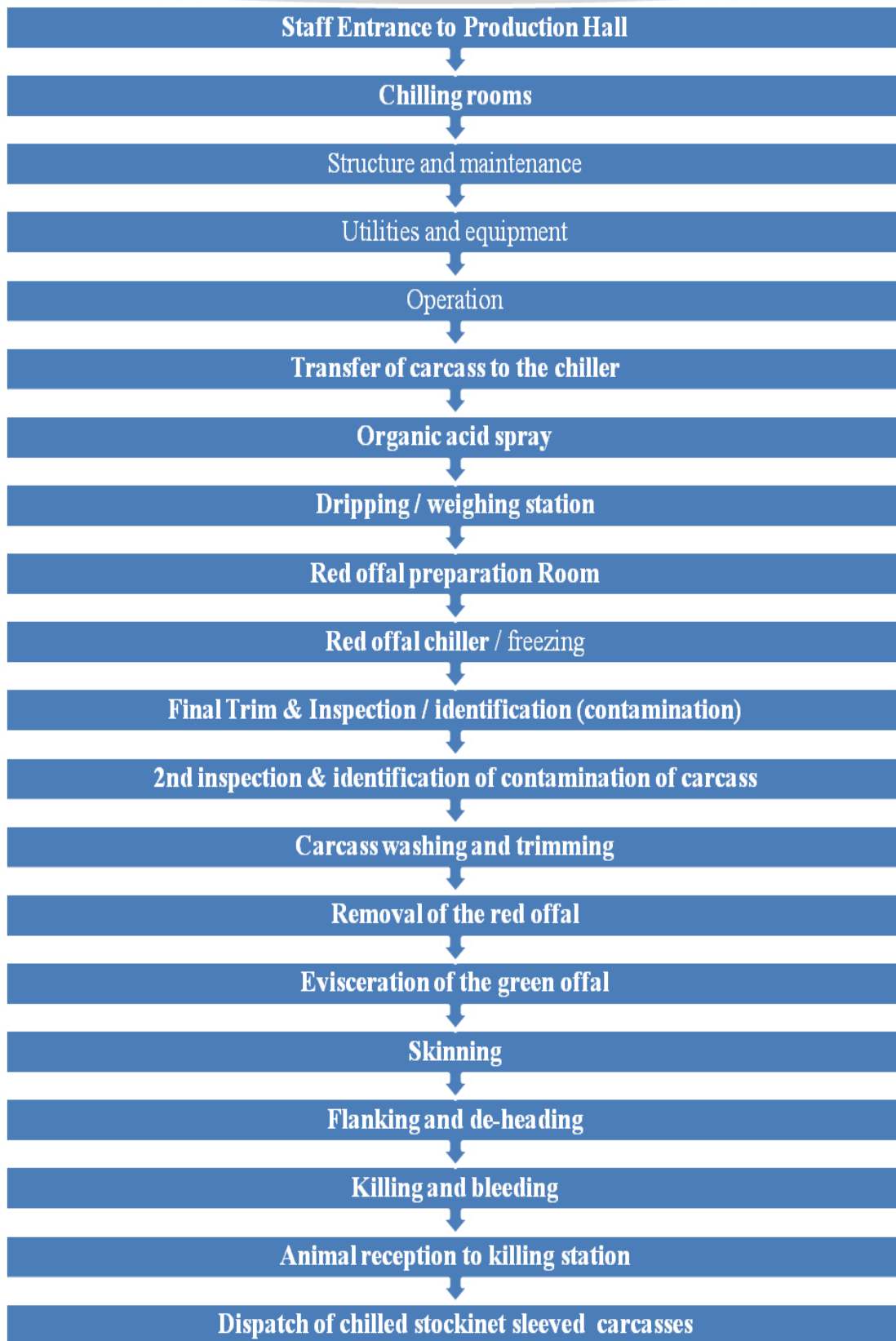
- Rather poor abattoir layout design.

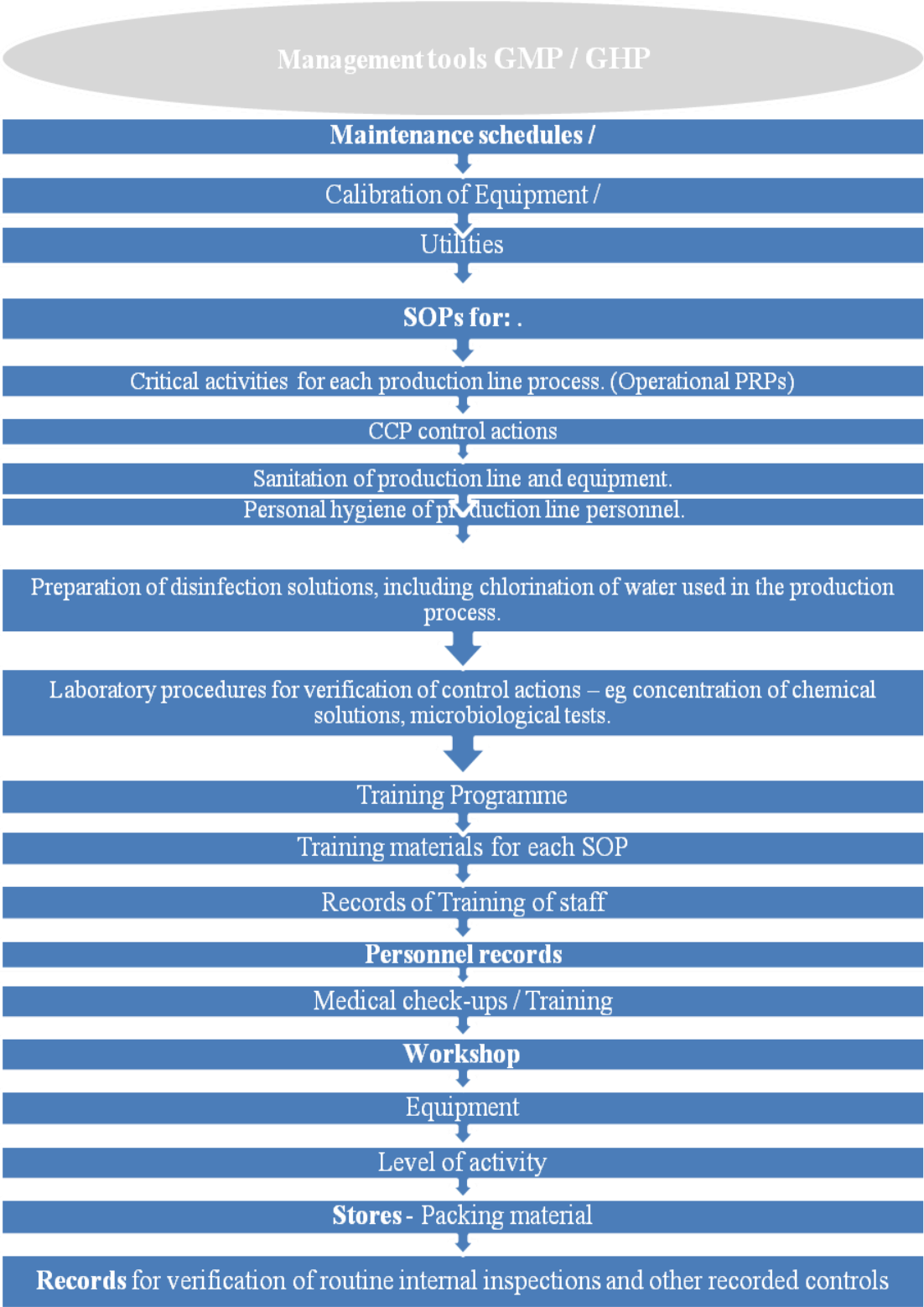
- Main entrance and animal reception entrance gate: to extend and deepen water bath, need to be repaired; water and chemicals presence within water bath; no records of vehicles entering and records of their disinfection.
- Holding pens, lairage: in generally need to get better maintenance and improvement of water supply; fencing is not in good condition; no isolation pen; animal's pens are not isolated as one pen from another pen; not in place vehicles disinfection, no reports of entering and unloading vehicles; reporting system of arriving animals, ante and post mortem inspection need to be improved.
- Introduction of animal reception recording system and report keeping which to allow to recognized location of source of animals for traceability purposes.
- Development and implementation of a bio-security plan (isolation, traffic control and sanitation).
- Personnel hygiene: control of personnel health and hygiene standards; separation clean/dirty areas; lack a sufficient hand washing and disinfection facilities at the entrance and along the slaughtering line.
- Chilling rooms: no thermographs; manual handling of carcasses; no registration book of temperature regime.
- Organic spray: poor application technique.
- Carcass operation procedures: no change of knives and steriliser close to work station; no pest control and insect killing lamps; working equipment and tools routine maintenance; improvement of floors and walls conditions and maintenance.
- Standard operation procedures: abattoir has not all recommended SOP's are available and it is essential to follow prescribed each SOP procedure; SOP's need to upgraded according prescribed procedures of "Manual of inspection procedures at meat production and processing establishments".
- Introduction of HACCP system: only a few CCP are indicated; no record of CCP in place; no sampling taking plan and records of laboratory checks (microbiological contamination, chlorination, water examination); no corrective action plan for CCP control; HACCP control actions (pre-requisite program is not implemented satisfactory and not documented).
- Ante and post mortem veterinary expertise need to be improved and documented according prescribed inspection procedure.
- An important issue is training of veterinary inspectors, abattoir managers and staff. Training of abattoir managers and personnel is insufficient; training programs need to be upgraded periodically and approved by the APHRD, Meat inspection case team inspectors; training of abattoir meat inspectors needs to be improved too.
- It is advised further to follow prepared training topics of abattoir meat inspectors, abattoir managers and staff. After training is completed, abattoir professionals and employees will be able to best carry out their professional duties in order to increase hygiene standards of establishment, improvement on operation of Food safety management systems, and introduction of the SOP's. All these activities need to be recorded and documented.
- STE expert during ToT course introduced trainees with a few samples of Ante and post mortem inspection reports, Post mortem veterinary expertise forms which could help to improve the abattoir documentation, regular circulation of reports and will create a transparent system of reports (attached as CD Annex 10).
- It is recommended further to use STE submitted "Manual of inspection procedures at meat production and processing establishments" as additional upgraded instrument for improvement of inspection procedure.

7.3 Process Flow Charts



Locations/points/steps/procedures/processes





8 CONCLUSIONS AND RECOMMENDATIONS

1. To improve and introduce strict, transparent and comprehensive certification system both for live animal and animal origin (meat) products taking into account OIE recommendations and international practise.
2. To set up basic traceability principles starting from final livestock markets, feed lots, quarantine stations and export abattoir; and to introduce documented reporting scheme with record keeping.
3. To update and improve animal health report system in accordance with the OIE recommended format.
4. To develop an appropriate sampling system for animal health surveillance and food control at meat establishments for laboratory examinations.
5. To introduce as pilot project for basic elements of I&R and animal movement control system for cattle (tagging of cattle at final markets and feed lots; establishing computerised data base; introduction of animal movement documents including essential data: owner, locality, number of animals, species of animal, sex, breed). This particular subject will be developed by the project I&R and animal movement control expert.
6. Introduction of regularly functioning document's circulation system for animal movement and for animal transportation which will accompany means of animal transport starting in operation from final livestock markets, feed lots, quarantine stations and export abattoir. Travel documents should be issued by nominated public veterinarians or veterinary assistants. Basic data of animals should be included within these accompanying documents (animal owner; locality; number of animals; species of animal; sex; breed; animal health status; vaccination, if provided).
7. To establish prescribed procedure for reporting and keeping of animal movement documents.
8. Introduction of compulsory disinfection procedure of loaded and unloaded vehicles, preparation of disinfection records and record keeping practice.
9. Introduction of bio-security measures at final livestock markets, feed lots, quarantine stations and export abattoir. Bio-security has three major components: isolation, traffic control and sanitation.
10. In order to avoid contacts of animals and possible spread of infection diseases within final livestock markets, feed lots, quarantine stations and within export abattoir lairage and pens it is recommended to build additional partitions between pens. These conditions especially need to apply for animal pens of quarantine facilities.
11. Improvement of animal arrival documentation at abattoir; upgrading of ante mortem and post mortem inspection; detailed ante and post mortem inspection regular reporting system; improvement on control of slaughter process; development of Food safety management, GMP and HACCP systems; introduction of transparent reports circulation procedure and implement of record keeping scheme.
12. In order to improve strict veterinary certification, control of animal health status, animal transportation and movement control it is essential to calculate:
 - necessity of additional required veterinarians at the federal, regional and woreda level;
 - presence of veterinarians and veterinary assistants at final markets, feed lots and quarantine stations;
 - set up procedure for circulation of reports and report keeping;
 - financial provisions for execution of supplementary tasks
13. Training of personnel (target groups):
 - ToT course for Export Abattoirs Meat Inspection & Certification Case Team inspectors
 - ToT course for Quarantine and Feedlot Case Team Regional State Bureau officers responsible for recognition and reporting of animal diseases
 - Final livestock market, Quarantine stations and Feedlot Case Team
 - Regional State Bureau officers responsible for detection and reporting of animal diseases

- Final markets, Feedlot and Quarantine stations owners and managers
- Export Abattoirs Meat Inspection & Certification Case Team inspectors
- Export Abattoir managers and workers.

It is important for regular updating of likely target groups and revision of training materials.

14. Importance on regular updating of abattoir SOP's guidelines and using of inspection Audit tool for export abattoir which will fulfil and increase higher compliance level of establishments in line with international export requirements and will improve quality of inspection.
15. Increasing of public awareness campaign for live animals and meat products export from the Ethiopia.

Annex 1

Terms of reference for short term expert in export certification of live animals & products of animal origin

Background

Ethiopia has significant livestock resources comprising in excess of 50 million cattle, 50 million small ruminants, 8 million equids, 2 million camels and 40 million poultry. Despite decades of development efforts aimed at the sub-sector, livestock productivity remains poor. The current project (see below) will apply innovative approaches to improving delivery of animal health services with the purpose of adding value to livestock commodity chains and contributing to alleviated poverty in livestock rearing communities.

The EC-funded project 'Improving and integrating animal health services in the livestock value chain through public private dialogue in Ethiopia' (LVC-PPD) is large, involves many activities and players and includes, as a 2-year sub-project, the provision of a small technical assistance team (TAT). Under the overall area of activity "To support development of commodity standards and certification procedures and adoption of international standards", the Agriconsulting consortium has been requested to recruit a short-term expert in Export Certification of Live Animals and Products of Animal Origin (PoAO).

The principles of certification in relation to SPS and international trade in livestock and livestock products are well known in Ethiopia. The problems arise with certain characteristics that complicate the certification process, these include:

- Lack of movement control within Ethiopia livestock populations;

- Pastoral and agro-pastoral production systems which are characterized by poor communications and remoteness;

- The very large populations of livestock in low input/low output management systems where costs of introducing traceability, testing, identification etc are relatively high;

- The relative dearth of accredited regional veterinary laboratories that can undertake OIE-compliant serological and other tests;

- Relatively poor animal disease surveillance and monitoring systems that do not yield timely and accurate knowledge of disease patterns;

- Absence of a consolidated control system on animal feeding stuffs and veterinary medicinal products;

- Lack of application of Good Management Practices (GMP), Hazard Analysis & Critical Control Point (HACCP) systems and Food Safety Management Systems at most export abattoirs.

Export Certification is based upon knowledge of an animal's origin, subsequent movements, disease status of each area where animal stayed / moved through, and results of laboratory diagnostic tests. It is dependent therefore on animal identification, movement control and traceability and disease status certification based upon official laboratory testing procedures. In the case of Animal products, export certification relies also on the adoption and application of Good Management Practices (GMP), Hazard Analysis and Critical Control Point (HACCP) systems and Food Safety Management Systems (FSMS).

Increasing knowledge of quality assurance procedures amongst the staff involved in certification will promote safety and quality of Ethiopian livestock and livestock products and hence improve potential for exports.

General scope of the assignment

The Expert shall facilitate and inform the process of developing commodity standards for Ethiopian livestock and livestock product exports in the spirit of the SPS Agreement with the aim of increasing export opportunities.

On the basis of the findings and recommendations made during the execution of the Specific duties listed below, the Expert shall contribute to the process of developing a Training programme to be undertaken by local experts under the terms of the Programme Estimate 1 for the LVC-PPD project.

Training will be targeted to groups in the livestock value chain concerned with certification procedures. The purpose of the training, will be to:

🌐 Raise awareness of the importance of quality assurance and accuracy in certification procedures, including good agricultural practice, good hygiene practice, good management practice and HACCP.

🌐 Review the principles of these practices and their roles in the certification chain, commencing at producer level, markets, feedlots and quarantine facilities, veterinary laboratories, export abattoirs, transporters through to the port of destination.

Organisational relationships

The Export Certification consultant will be answerable to the Team Leader of the TAT and the majority of tasks will be undertaken in collaboration with AHD Animal Quarantine Stations Case Team and the Export Abattoirs Meat Inspection & Certification Case Team staff to enable a learning process and inclusive decision making and to maximise transparency and accountability.

Operating responsibilities and tasks

- 1 In collaboration with stakeholders, review the standards required by the state veterinary services of importing countries and:
 - a) check the validity of these standards (must be justified on scientific evidence and risk analysis) and advise on negotiations which may be required to have certain standards amended, and
 - b) summarise the findings of the above review to establish the standards required for export of live animals and animal products to a given country or groups of countries.
- 2 In collaboration with stakeholders review the current export certification process for export of live animals and animal products and the quantity and quality of data (supporting documentation) used at each stage with the purpose of identifying gaps.
- 3 Hold a consultation meeting between important livestock stakeholders and the Quality and Standards Authority of Ethiopia (QASAE) at which the expert shall mediate and advise the meeting participants with the aim of reaching agreement on the current status of export certification and agree on future actions required.
- 4 Assist with the preparation of new and improvement of existing Standard Operating Procedures (SOPs) for the export certification of live animals and PoAO;
- 5 Review hygiene practices and observance of HACCP, GMP / FSMS at export abattoirs and assist the APHRD to develop a Hygiene Monitoring programme to ensure observance of SOPs;

- 6 Review the training plan developed by the HRD STE and revise as necessary.
- 7 The expert will prepare a report of findings and recommendations and, through meetings and further discussions, assist the APHRD and TAT to facilitate the adoption and implementation of the recommended standards.

Working arrangements and time schedule

The duty station will be Addis Ababa, Ethiopia, and some field travel to the regional states will be required.

A total of 30 man-days (6 weeks) for this mission commencing in February or March of 2013.

Reporting requirements

An Inception Report to be submitted at the end of week 1 of the assignment.

At the end of the assignment, a succinct end of assignment report comprising an executive summary, introduction, brief description of approach and methodology, recommendations and acknowledgements. Detailed material to be presented in a series of Annexes. This report shall be submitted at least 3 working days before the end of the assignment to allow comments from the TAT team and counterparts to be incorporated before departure of the STE.

Qualifications and experience required

- University degree in Veterinary Medicine.
- Post-graduate studies and/or specific training in development and implementation of Live animal / PoAO Export certification systems / Food Safety of animal products and the application of SPS standards would be considered an advantage;

General professional experience

- Minimum of 10 years of professional experience in developing and implementing Animal Disease Control programmes and / or Veterinary Regulatory services of which 5 years spent in developing countries;
- Demonstrated ability to work in multi-cultural and multi-disciplinary team of experts;
- Good knowledge of the English language;
- High level of skill in preparation of reports