

MINIMUM STANDARDS AND GUIDELINES FOR TRAINING OF COMMUNITY-BASED ANIMAL HEALTH WORKERS IN KENYA

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ABBREVIATIONS

AI	-Artificial Insemination
AHT	- Animal Health Technician
ALRMP	-Arid Lands Resources Management Programme
ASAL	-Arid and Semi-Arid Lands
CBAHP	-Community-based Animal Health Programme
CAHW	-Community-based Animal Health Worker
CBPP	-Contagious Bovine Pleuropneumonia
CCPP	-Contagious Caprine Pleuropneumonia
DAH	-Decentralized Animal Health
DVO	-District Veterinary Officer
DVS	-Department of Veterinary Services/Director of Veterinary Services
GOK	-Government of Kenya
ITDG	-Intermediate Technology Development Group
KVA	-Kenya Veterinary Association
KVAPS	-Kenya Veterinary Association Privatization Scheme
KVB	-Kenya Veterinary Board
NGO	-Non Governmental Organization
OAU/IBAR	-Organization of African Unity / Inter-African Bureau for Animal Resources.
PARC-VAC	-Participatory Community-based Vaccination and Animal Health Project.
PRA	-Participatory Rapid Appraisal
PTT	-Participatory Training Techniques
SNV	-Netherlands Development Corporation
UNICEF/OLS	-United Nations Children's Education Fund/Operation Lifeline Sudan
VD	-Veterinary Department
VO	-Veterinary Officer

FOREWORD

Effective delivery of Veterinary services to Pastoral Livestock produces who own 80% of the livestock in the country, is considered a key factor influencing the productive and profitability of the livestock sector. While privatization of veterinary services in the highlands has been promulgated as a way of improving the availability and quality of animal health inputs and services to the livestock sector, the situation in the ASAL is still far from satisfactory.

An analysis of the economic properties of veterinary services in the ASAL suggests that, due to the "public good" nature of certain crucial services, unequal access to market information and the economies of scale required to provide cost effective services in the ASALS, responsibility of providing (or facilitating the provision of) many veterinary services are likely to remain under public jurisdiction. New approaches, beyond the market dependant privatisation, are therefore needed to update the quality of service delivery in these areas. One such approach is the training of a lower cadre of service provider the Community Animal Health Worker (CAHW) who will live and work with specific communities all year round. There are various CAHW training manuals currently in use countrywide especially in the ASALS, which make some of the courses suspect. Many of these are deficient and do not address issues in the areas the CAHWs are expected to operate. To address this problem the Kenya Veterinary Board and the Director of Veterinary Services have adopted this manual as the basic training manual for CAHWs in Kenya.

"This manual is a basic curriculum, to be used by KVB accredited CAHW trainers countrywide. It is expected that the curriculum shall be enriched by the trainers with emphasis on what they consider as "very important conditions and diseases" occurring in the CAHW area of service provision.

This manual opens up with a brief background on the delivery of veterinary services in Kenya and the objectives of producing the guide. The manual dwells on the steps necessary to develop a community animal health programme, the roles to be played by the CAHWs and training contents. The curriculum contains basic principles and practices of herd health the Livestock production, drug handling and use of equipment, disease surveillance, extension and entrepreneurship. The CAHWs are in addition introduced to disease reporting and pricing of livestock.

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ACKNOWLEDGEMENTS

The Kenya Veterinary Board and the Director of Veterinary Services wish to thank the CLIP/ITDG and the Community-based Animal Health and Participatory Epidemiology (CAPE) Unit of OAU/IBAR for supporting the development of minimum standards and guidelines for training community based animal health workers (CAHWs). The training guidelines are a synthesis of issues, recommendations and suggestions from stakeholders who attended the 8th DAH Workshop in Meru, the livestock service provides in Garissa, the curriculum development workshop in Meru and the CAHW workshop in North Eastern and Eastern Kenya in Wajir. The KVB especially recognized the use of the UNICEF/OLS (now FAO/OLS) southern Sudan CAHW training manual.

ANIMAL HEALTH DELIVERY SERVICES IN THE ARID AND SEMI-ARID LANDS

The arid and semi-arid lands (ASALs) comprise of over 70% of the area of Kenya and are home to nearly 80% of the national livestock population (Department of Livestock Production annual reports 1994-1998). The delivery of animal health services has in the past been the mandate of the Government of Kenya (GOK) through the Veterinary Department (VD). In the past two decades, the delivery of the services has been on the decline and in many pastoral areas, the ASAL in Africa, professional veterinary services have virtually been non-existent (de Haan and Nissen, 1985; de Haan and Bekure, 1991). The lack of professional veterinary services in ASALs has not only had a negative impact on livestock production and productivity, but has also led to the emergence of a highly unethical trade in veterinary drug supply and use. The latter has enormous potential for drug misuse and abuse.

The provision of veterinary services by GOK has been negatively affected by reduced growth in the economy, the implementation of structural adjustment programmes and, by the need for the Government to confine its role to services that promote public good. In the new policy scenario, the delivery of animal health services is seen as a private good; the GOK only provides supportive, advisory, regulatory and supervisory services to the players in the livestock industry. The provision of animal health services to the ASALs has also been hampered by several factors including the vast area to be covered and the poor infrastructure that leads to high delivery costs, the transhumant/nomadic nature of pastoralists, high levels of insecurity, illegal movement of animals, poor social amenities, inadequate technical personnel willing to work in the generally hostile pastoral environment, a lack of support structures including credit and markets and a non-supportive legal framework that prohibits veterinarians to trade in drugs and AHTs from practicing veterinary surgery (Pharmacy and Poisons Act Cap 244 and Veterinary Surgeons Act Cap 366). These factors make it exceptionally expensive for traditional vehicle dependent veterinarians, whether in the government employment or in private practice, to provide adequate animal health services to the ASALs. To fill this vacuum, petty traders and “duka” have stepped in. This is unacceptable from a legal and ethical perspective and alternative systems that are veterinary supervised must be developed.

Recognising the gaps in animal health delivery, the Veterinary Department has put in place a new policy that aims at creating partnerships between the Government as a regulator and the private sector as a provider of a sustainable animal health service to the beneficiaries, the livestock owners. New strategies that address the unique conditions of the pastoralists’ way of life need to be devised and implemented in the ASALs where conventional animal health delivery is lacking or inadequate. One option is the use of veterinary supervised community-based animal health workers (CAHWs) to provide animal health services within a given area. However, for this to work, a change in the policy and legal framework to allow the integration of CAHWs in animal health delivery systems and allow veterinarians to trade in drugs is needed. It is hoped that this change will create an enabling environment that will permit veterinarians to once again be responsible for, and profit from, animal health services to the ASALs. It is also hoped the proposed system of animal health care delivery will provide veterinary supervised services that are affordable and cost effective, and have the potential to make significant improvements in animal health and pastoral livelihoods.

Numerous non-governmental organisations (NGOs) have initiated community-based animal health projects (CBAHPs) in the ASALs without proper monitoring and evaluating programmes. A limited number of studies have shown that these projects are cost-effective and contribute to improved animal health and improved household income. However, each NGO

has taken different approaches in training of CAHWs and evaluating the impact of the CBAHPs. To date there are no standards on the CAHW training course in terms of contents and duration, which means that the CAHWs have very divergent levels of skills. This state of affairs has caused great concern in the Kenya Veterinary Board (KVB) and the Kenya Veterinary Association (KVA). Several stakeholders workshops including the Decentralised Animal Health (DAH) workshop held in Meru (DAH, May 1999) and the Livestock Service Providers workshop in Garissa (December 1999) have recommended that the curricular for training CAHWs be standardised. Use of a standard curriculum is an important step for CBAHP to gain recognition by the KVB and other stakeholders. The role of CAHWs in the delivery of animal health in defined areas of the ASAL was duly recognised by the KVA by passing a unanimous resolution to support implementation of a veterinary supervised community-based animal health services (KVA, Annual General Meeting, Mombasa, April 2000). The recommendations and concerns of stakeholders participating in the Meru, Garissa, Nairobi and Wajir workshops have been synthesised to compile this standardised guide for training of Community-based Animal Health Workers in the ASALs.

OBJECTIVES OF THIS GUIDE

To provide a guideline for standardised training of selected livestock owners as Community-based Animal Health Workers to provide animal health services in designated ASALs under the supervision of a veterinarian or a n Animal Health Technician.

Features of a community-based animal health programme

- 1.1 ASALs that need CBAHP are identified.
- 1.2 A community dialogue and baseline survey that includes analysis of indigenous knowledge and gender roles in livestock production is undertaken.
- 1.3 In collaboration with the supervising veterinarian, the community selects candidates for training as CAHWs.
- 1.4 A trained KVB accredited trainer uses the guidelines and curriculum approved by the Kenya Veterinary Board (KVB) to train CAHWs.
- 1.5 The trained CAHWs are evaluated by the trainer accredited by the KVB.
- 1.6 The CAHWs operate within their communities under the supervision of a veterinarian.
- 1.7 The CAHWs undergo refresher courses and continuous follow-up to improve on their skills.

ASALs designated for Community-based Animal Health Programme

The CBAHP shall be confined to ASALs where conventional animal health delivery strategies are inadequate or absent.

THE FIRST STEPS IN DEVELOPING A CBAHP

a) The baseline survey

[Minimum requirement]

The purpose of a baseline survey is to get acquainted with the new working area, identify existing animal health service providers, gather information concerning existing conventional and indigenous veterinary knowledge and the nature and extent of animal health problems. It is important to obtain a good understanding of the livestock owning community for example their way of life, their tactics of survival, their opinion leaders and their decision-making and conflict resolution processes. All the players involved in livestock production including women and the youth, should participate in the discussions, preferably using interactive Participatory Rapid Appraisal (PRA) methods (Mariner, J.C., 1999). The diseases that are common in the area should be identified and ranked by the community members. The information sought should include: the most common diseases and the species affected; a disease calendar for the area; livestock numbers and the mortality rates; the current methods of treatment, their successes and failures; the types of medicines kept and used by the livestock owners; and the grazing calendar for the area. Such information provides an insight into the perceived state of animal health problems and will assist the trainer in determining where to place more emphasis during the training. During the training, there will be a need to take a wider view of the disease and non-disease problems due to possibility of epizootic disease affecting the area.

Gender issues

[Minimum requirement]

During the baseline survey, it is important to discuss the gender roles in livestock production within the community. In particular, it is important to discuss the roles that women play in the pastoral society, as they are the ones who look after the young stock, milking herd and nurse the sick animals. They are therefore likely to detect mastitis and problems of the young stock including diarrhoea and pneumonia. Women in all cultures play important productive as well as domestic roles. There is enormous variety in patterns of household organisation from country to country, and from culture to culture. The division of roles, rights, and responsibility between men and women is very varied, and will need to be identified for each community. Household income, resources, conventional and indigenous knowledge and responsibilities are rarely pooled and shared out in an equitable way. There are large (and increasing) numbers of female-headed households in all cultures and societies. The trainer should make sure that the views this cadre of women and youth and their priorities are taken into account and catered when planning the training. The Recruitment and involvement of Women CAHWs would be valuable sources of veterinary drugs and services especially when men travel with the adult livestock herds.

b) Community dialogue and CAHW selection

[Minimum requirement]

The community dialogue must be interactive if any CBAHP is to succeed. The purpose of any possible CBAHP, the concept of cost recovery and the roles of the livestock owners, CAHW, animal health technicians (AHTs), and veterinarians should be explained very clearly. This process may need to be repeated several times with various sections of the community before the whole community can agree on the nature of a proposed CBAHP. The community needs to be brought to the level whereby they can make more informed contributions to the planning of the CBAHP. If the CBAHP does follow this route, the prospective CAHW candidates should be selected very carefully by the community using criteria agreed in advance and in public. The

selection should be done in consultation with a veterinarian or AHT who will be responsible for supervising and selling drugs to those CAHWs. Successful candidates should be trained so that at the end of the training, and with the necessary supervision they can effectively alleviate some of the common livestock health problems affecting that community.

An example of selection criteria is outlined below. The candidate should:

- Own livestock.
- Livelihood should be based on livestock.
- Be member of the community and be well known to them.
- Be keen to be selected and be willing to learn.
- Be hard working and self-motivated.
- Be physically fit to handle livestock.
- Be willing to travel to where the livestock are grazing.
- Be well behaved and trusted.
- Have good communication abilities.
- Be knowledgeable in local traditions.
- Be knowledgeable about traditional livestock management.
- Be willing to devote his/her time to delivery of animal health to the community members.
- Be willing to be supervised by the community and a registered veterinarian or AHT and his/her delegated agent.
- Some basic academic knowledge will be an advantage.

NB: Illiteracy should not disqualify candidates who are otherwise suitable to being trained.

The number of CAHWs to operate within a defined area will depend on the modality of the programme. When the programme is designed as a form of business for CAHWs, it is important that the number selected and trained does not far exceed the targeted business volume. The optimal number of candidates to be trained in a single session is 10. It is recommended that the training be done in small groups so that there is enough level of interaction with each trainee.

c) CAHW Training

[Suggested requirement]

The training should be organised in such a way that emphasis is placed on training CAHWs for their primary roles. The training module for CAHW primary roles should be compulsory for all, regardless of the region where the CBAHP/Private veterinary practice is to be started. Because of their frequent interactions with livestock owners, the CAHWs can easily have secondary roles e.g. extension of important messages that are necessary for promoting community welfare. The training for secondary roles can be regional or even community specific, as such roles do not constitute fundamental skills for delivery of animal health services.

THE PRIMARY ROLES OF CAHWS IN KENYA

[Minimum requirement]

- Treat the sick animals, record such treatments (the type and dosage of drug used) and make the necessary follow up of the case.
- Refer difficult clinical or surgical cases to the supervising veterinarian or AHT.
- Advise livestock owners on marketing of livestock and livestock products.
- Promote animal welfare.
- Promote ethnoveterinary usage and conservation of biological sources of ethnoveterinary products.
- Report occurrence of livestock diseases, including notifiable diseases, to the Department of Veterinary Services or the supervising veterinarian AHT (surveillance).

- Prevent disease occurrence through vaccination.
- Promote good livestock management practices.
- Monitor herd health and production.
- Collect samples from sick animals and submit them to the supervising veterinarian (when necessary).

THE SECONDARY ROLES OF CAHWS IN KENYA

[Suggested requirement]

- Provide extension messages on disease control and prevention.
- Provide advice on breed improvement.
- Advise communities on public health issues including meat and milk hygiene to avoid zoonotic diseases.
- Promote sharing and conservation of natural resources and the environment.
- Sensitise communities on policy and legislative issues relating to the livestock sector with particular emphasis on handling of veterinary drugs, quarantines and livestock movement and their relevance to disease control.
- Recognise the most common diseases that occur in the region.
- Identify and diagnose sick animals.
- Personal hygiene and AIDS awareness

THE TRAINER

[Minimum requirement]

It is recommended that the training be conducted by a registered veterinarian who is accredited as a trainer by the KVB regardless of who is supporting the CBAHP. It is further recommended that the trainer must be trained as a trainer and that his or her training includes participatory training techniques (PTT) for training adult learners. It is suggested that at least two technical assistants be used to assist in each CAHW training. As some of the candidates for training may be illiterate or partly literate, translators are needed for the entire duration of the course. It is important to have translators who, among other languages, understand the local language and can be faithful translators who do not introduce their own perspectives into the communication.

Training methodologies

[Minimum requirement]

Participatory training techniques (PTT) are recommended as important tools for training adult learners. The methodology should take into account that adults learn best when they are taken in a participatory manner. Experience has shown that when an adult trainee is **told** through instruction she/he only remembers 10% of the instruction; if the trainee is **told and shown** he/she remembers 30% of the instruction. On the other hand, when the trainee is **told, shown and given time to practice** what they have been told, she/he will remember over 80% of the instructions because many adults learn by doing. Thus, the training approach should limit the number of trainees and **incorporate a great deal of practical work**. As the trainees are already educated in their own way of life and have their own approaches to diagnosis, treatment and prevention of livestock diseases, their knowledge should form an important foundation for the training. The training techniques should help to build upon the existing knowledge and fill in any gaps in information and/or approach. The trainees should be encouraged to share their experiences in handling animal health issues. It is recommended that the facilitators use a combination of the following training methods.

- Question and answers to assess existing knowledge.
- Focused-group discussions and presentations.

- Visual aids or pictorials and animals.
- Role-plays.
- Practical lessons – demonstrations, field visits and field days, attending to clinical cases, practising what they have been taught.
- Story telling.
- Buzzing and humming.
- Brainstorming.
- Case studies.

The practical instruction consists of 4 parts.

- Introduction to the topic
- Demonstration
- Practice
- Summary

At the beginning of each day of training, the participants should have a session for reviewing the previous day's work to address any shortfalls. The purpose of such a daily review session is to:

- Check the level of understanding.
- Gauge and correct the trainee's retention of course content.
- Give the trainer an opportunity to include any relevant information that may have been forgotten.
- Give the trainees an opportunity to ask questions in areas they may not have understood well.

When to train

[Minimum requirement]

For the training to be attractive and effective, it is important to take recognition of the grazing calendar and the habits of the local community. It is important to plan the training so that it does not overlap with other important activities that the communities are involved in. Since the CAHW training is mostly practical, it is important that the training is held at that time of the year when livestock is not grazing too far away from the training venue.

Venue for training

[Minimum requirement]

The training venue will be at the discretion of the community, the trainees, the trainer and the agency funding the training.

TRAINING CONTENTS AND TIME ALLOCATION

[Minimum requirement]

It is recommended that the CAHW training course be comprised of the topics shown in Table 2. The objectives and outcomes of the training are outlined in **Table 1**.

Course content and time allocation for the training are outlined in Table 1 while the objectives and outcomes of the training are outlined in Table 2

Table 1**COURSE CONTENTS AND TIME ALLOCATION**

Course outline	Duration
1. General introduction, expectations, goals, rules, familiarisation and getting started.	6 h [Minimum standard]
2. Herd health and livestock diseases, treatments, prevention and control.	40 hrs [Minimum standard]
3. Drug handling, treatments and equipment use.	7 hrs [Minimum standard]
4. castration,dehoving and management of wounds and prolapses	7 hrs [Minimum standard]
5. Surveillance, monitoring, record keeping.	5 hrs [Minimum standard]
6. Cost recovery and business management	8 hrs [Minimum standard]
7. Extension messages/services.	3 hrs [Suggested requirement]
8. Field day, practicals and discussions.	11 hrs [Minimum standard]
9. Reviews and problem solving	5 hrs [Minimum standard]
10. Trainee assessment and certification	8 hrs [Minimum standard]
Total	100 hrs

COURSE DURATION**[Minimum requirement]**

It is recommended that the training be a minimum of 100 hrs spread out within three weeks. The course contents should be covered in three weeks (staggering of the period will depend on the situation on the ground). A baseline survey incorporating community dialogue should be undertaken. Gender analysis should be done to show the effects the training, selection of candidates, and the training materials will have on both women and men, respectively (during and after the training). Where the training is staggered, it is recommended that the subsequent sessions be held within three months from commencement of the first session of training. As the time allocation is only a guideline, the trainer can decide to train for a longer period than the three weeks suggested. The timing of the training should be discussed with the trainees and it should be when it is convenient to the majority. The trainer should avoid conflicting with other social and religious responsibilities practised by the community.

INTRODUCTION TO THE TRAINING PROGRAMME**[Minimum requirement]**

The objectives of the CBAHP and the roles of CAHWs should be explained to and discussed with the trainees. The trainees should be given an opportunity to get to know each other, share their experiences, express their expectations and fears and contribute to the training process. The trainer and the trainees should set rules and code of conduct for the training course.

COURSE OUTLINE

1. HERD HEALTH AND LIVESTOCK PRODUCTION [Minimum requirement]

Disease can be defined as a deviation of body functions and performance from normal expected levels and can be caused by biotic and abiotic influences or factors. The trainees should have basic knowledge of normal body functions and the various ways in which such functions are altered by disease. The overall aim is to enable the trainee to make informed diagnosis and treatment or management of the disease problem and to assist in disease control and prevention. The following topics should be covered.

(i) Healthy animal and unhealthy animal [Minimum requirement]

The objective is to reinforce existing knowledge on signs of good health and of illness, and to enable the trainees to differentiate between the two states in different species of livestock. The trainees should be able to list the features of a healthy animal and those of an unhealthy animal.

(ii) Body organs and functions [Minimum requirement]

The objective is to reinforce existing knowledge on body organs, their functions and interactions, and their size and appearance in normal animals and in animals affected by different diseases. This knowledge can be given to the trainees through post-mortem practicals.

(iii) Post-mortem examination [Minimum requirement]

The objective is to demonstrate the locations, size and appearance of various body organs and systems to enable the trainees to perform basic post-mortem for disease diagnosis.

(iv) Diseases of livestock [Minimum requirement]

The objective is to assess and reinforce the trainee's existing knowledge of diseases in different livestock species, their clinical signs, and occurrence within a given year. The range of diseases to be taught about should reflect the level of priority the livestock owners give to the diseases affecting their stock and the practicality of actually treating or preventing the disease. The trainee should be able to describe the clinical signs of most important diseases. The trainee should be able to distinguish between notifiable diseases and non-notifiable diseases.

(v) Notifiable diseases and reporting [Minimum requirement]

The trainees should obtain basic knowledge on how to identify or suspect the notifiable diseases relevant to the area they work in, and as required of all livestock owners by the Animal Diseases Act (Cap 364), report such outbreaks or suspect cases to the Veterinary Departments or the nearest veterinarian/AHT.

(vi) Important local disease problems [Minimum requirement]

The objective is to reinforce the ability of the trainees to rapidly identify local disease problems and conditions, make assessment of the case and either intervene directly, or seek help from a veterinarian/AHT. As the prevalence of diseases varies from place to place, and since different communities may stock different livestock species, this part of the training should vary from place to place, such that all the local problems that can be practically addressed are emphasised and taught.

(vii) Causes and transmission of diseases

[Minimum requirement]

The objective is to make the trainees aware of the different causes of disease (physical injuries, environmental predisposing factors, biological agents and transmitting vectors if any); the methods of transmission and how the diseases that can be treated, prevented and controlled based on their aetiology and their mode of transmission. Emphasis should be on the most common diseases including helminthiosis, bacterial, viral, protozoan and their vectors if any, and fungal. Common causes of reproductive diseases such as poor breeding and abortions should be mentioned if the livestock owners perceive these to be a problem in their area. When teaching about causes of disease it is important to relate the medical understanding of the causes of the disease to the local understanding of the causes of the disease and to discuss the differences. It is also important to describe microscopic pathogens in simple terms; the term 'microbe' or 'germ' (of the local translation of such terms) may be sufficient to cover all of them.

(viii) Clinical examination and diagnosis

[Minimum requirement]

The objective is to enable the trainees to make diagnosis by obtaining available information on the history of the case, examining the sick animal and its environment from a distance to obtain any unusual events, and to restrain and closely examine the animal for any abnormalities.

(ix) Restraining animals

[Minimum requirement]

The objective is to enable the trainees to restrain different species of livestock in a humane manner that allows treatment and other operations to proceed without injury to the attendant or the animal. The trainer should have the trainees demonstrate the traditional methods of restraining animals, and the trainer checks whether the methods are appropriate.

(x) Treatments

[Minimum requirement]

The objective is to identify and assess traditional treatments, and appropriately reinforce the existing knowledge with options for modern treatments. The trainee should know a specific number of different types of modern medicines, their uses, doses, limitations and the withholding periods of animal products for human consumption.

(xi) Record keeping

[Minimum requirement]

The objective is to enable the trainee to correctly record, either directly, or indirectly, important information on disease outbreak, treatments and drug usage.

(xii) Sample collection

[Minimum requirement]

The objective is to enable the trainee to collect and submit appropriate samples from sick animals, provide all the necessary information (type of sample, animal species, age, owner, location, and status of disease in the herd or flock). The samples should be submitted to the investigating authority through the supervising veterinarian or AHT. To minimise operational costs of sampling, the samples should be collected from animals that are affected with the disease in question (outbreak) or upon the request of an investigating authority.

(xiii) Vaccinations

[Minimum requirement]

The objective is for the trainee to obtain information on importance of vaccination, the different types of vaccines and vaccination site, the need to take good care of vaccines, the reconstitution and usage of vaccines. Focus should be given to vaccinations that are commonly given to livestock in the area.

2. HANDLING AND USE OF DRUGS AND EQUIPMENT**(i) Use and handling of drugs.**

[Minimum requirement]

The objectives of the course unit will be:

- To make the trainee know the different types of "modern" medicines, their uses, "differences in concentration", and "duration of activity", packaging, storage, application (routes) and limitations.
- To enable the trainee to identify the main types of medicines, "their names" and the animal species for which they are intended for.
- To enable the trainee to use the correct drugs at the "doses appropriate" for the animal age, size and species.
- Identify suspect drugs and report their use to supervising veterinarians or AHTs.
- Know sources of high quality drugs and the recommended retail prices.
- Appreciate the need of adhering to a code of ethics/conduct
- Price services reasonably so as to discourage livestock owners from stocking and using drugs indiscriminately.

NB: CAHWs should be advised to avoid overcharging for drugs and services otherwise the livestock owners will get the drugs from other cheaper sources without regard to quality and efficacy.

The trainer should ensure that the trainees become familiar with the different types of drugs (antibiotics, antiprotozoal, anthelmintics, flukicides, antiseptics and acaricides), are able to identify the drugs, and know the appearance (colour), viscosity, packaging, storage, dosage levels, withdrawal periods for milk and meat, and the expiry dates. Emphasis should be placed on aseptic withdrawal of drugs from bottles, the need to clean and sterilise needles and syringes using boiling water, and the correct route of administration of the medicine. Practicals on dosage estimation for different species should be included in the training. The trainer should explain the policy and regulatory framework for handling different types of drugs.

(ii) Care of veterinary drugs

[Minimum requirement]

For medicine to be effective it must be used properly. The CAHW should be aware of the following rules concerning medicines:

- Are dangerous when misused.
- Should always be kept away from children including people with no knowledge on medicines.
- Livestock medicine should not be used for treatment of human ailments.
- Store in a cool, dark and dry place away from direct sunlight and heat.
- Should not be used once they are expired or contaminated.
- Always use clean (boiled) water for diluting or reconstituting medicines.

NB: Drugs to be used by the CAHWs on graduation should be displayed at the venue of training through out the period of training and they should be encouraged to handle them.

(iii) Limitations of medicines

[Minimum requirement]

The trainer should emphasise that medicines are not a panacea to all livestock production constraints. It should be stressed that modern medicines do not always cure the animals due to several reasons as exemplified below:

- Wrong medicine used (inaccurate diagnosis and species specificity).
- Overdosing (poor estimation of dosage rate).
- Under dosing (poor estimation of dosage rate).
- Use of poorly stored medicine.
- Use of expired medicines.
- Wrong route of drug administration.
- Drug resistance.
- Use of inferior quality drugs (low efficacy, fake drugs).
- Some diseases, particularly viral diseases, have no cure and only supportive therapy and good care can be given.
- The disease has progressed in the animal for a long period before treatment.
- Analysis are stressed.

(iv) Recording information on drug use

[Minimum requirement]

The trainee should be able to record the following information relating to drug use. The information will allow the supervising veterinarian to assess the performance of the CAHW and identify any areas of weaknesses within the service delivery system.

- Type and quantity of drugs.
- Source of the drug (to facilitate follow up should a problem arise).
- Species of animal treated.
- Size, age and dosage used (volume).
- Number of animals treated.
- Disease treated and signs shown.
- Outcome of the treatment (when known).

(v) Vaccinations and vaccine handling

[Minimum requirement]

For certain diseases, vaccinations given properly and at the desired frequency, provide sufficient protection against disease. The correct age to vaccinate young animals should be well explained (age is important because of maternal derived antibodies interference with the efficiency of the vaccine). The trainees should learn how to fill animal vaccination data sheet (to be developed in a way to capture important epidemiological information necessary for the Department of Veterinary Services). Examples of such diseases include but are not limited to:

- Rinderpest
- Foot-and-mouth disease
- Contagious caprine pleuropneumonia (CCPP)
- Contagious bovine pleuropneumonia (CBPP)
- Black quarter and anthrax
- Enterotoximea

Vaccines that require refrigeration through out should be discouraged unless the participants have access to a cold chain.

Emphasis should be given to vaccines that are in common use in the area of operation. However, all trainees should know the proper handling and storage of vaccines. All the

vaccines should be kept in a cool place and should not be exposed to direct sunlight. The vaccines should be administered safely and without too much time wastage to avoid inactivation (within 2 hours after dilution or reconstitution). Special conditions associated with vaccination such as ear notching of animals vaccinated against Rinderpest should also be taught.

3. SURGICAL PROCEDURES AND EQUIPMENT

[Minimum requirement]

The objectives of the basic surgical course

- To obtain knowledge on how to perform basic surgical operations.
- To provide first aid while awaiting technical support from a veterinarian or AHT.

The trainees should learn how to practice acceptable aseptic techniques in doing the operations indicated below. The trainees should familiarise themselves with the different surgical equipment and how to take good care of it.

(i) Types of basic surgical operations

- Proper restraining of animals
- De-horning
- Ear notching
- Closed (bloodless) castration
- Wound treatment and dressing
- Hoof trimming
- Lancing of abscesses
- Management of simple fractures and dislocation
- Stop bleeding (handling)

(ii) Handling and use of equipment

[Minimum requirement]

The trainees will be expected to know how to handle specified items of veterinary equipment and use them appropriately. All equipment should be cleaned after use. Aseptic techniques and appropriate form of sterilisation should be emphasised. The trainee should be able to run regular check ups on equipment and perform repair as necessary. Some of the desired veterinary equipment is listed below:

- Syringes and needles for injection
- Drenching Syringes
- Vaccination syringe and needles
- Surgical blades
- Clinical thermometer
- Dehorning wire
- Hoof knife
- Hoof trimmer
- Burddizzo
- Spray pumps
- Thumb forceps
- Weigh bands

4. DISEASE SURVEILLANCE AND MONITORING

[Minimum requirement]

The objectives of the disease surveillance and monitoring course are:

- To recognise clinical signs of livestock diseases common in the region
- To make provisional diagnosis of both notifiable and other diseases
- To obtain information on disease outbreaks (including rumours)
- To understand the importance of reporting certain disease outbreaks
- To fill standard report forms for all disease outbreaks and communicate to the supervising veterinarian. (The report forms should be developed for both literate and illiterate users)
- To obtain specified types samples from sick animals, handle them appropriately and submit them to the supervising veterinarian
- To monitor herd health and production

Monitoring of indicators of good herd health and production. A well-defined reporting system that integrates the CAHWs activities into the national disease control and surveillance network of the Department of Veterinary Services should be established and the necessary report forms developed. The CAHWs should be trained on how to fill the forms and dispatch them to the supervising veterinarian. The trainee should be given training geared towards enabling him/her to accomplish the functions. The CAHWs can participate in active or passive disease surveillance.

5. BUSINESS MANAGEMENT AND COST RECOVERY

[Minimum requirement]

To ensure sustainability, and to motivate the CAHW, a veterinary supervised community-based animal health programme should be based on sound business management that includes charging the livestock owners for the services rendered by the CAHWs. The fees charged on treatments should be costed in a way that the livestock owners will see an obvious benefit and refrain from purchasing drugs from the unregistered traders (who may be sources of drugs of doubtful quality). The trainer should aim to give the trainees the basic skills for running a sound business that is affordable to the community. Although the CAHWs will be operating in a liberalised market, it is prudent that they adhere to the guidelines or recommended retail prices laid down by KVB for costing their drugs and services based on procurement costs and technical services.

6. OPTIONAL COURSE OUTLINE

Additionally, the trainee may be trained on how to collect and handle samples for analysis in a diagnostic laboratory. Such samples may include faecal samples, blood on filter papers; post-mortem samples in buffered formal saline, skin scrapings, and blood smears. The samples should be adequately labelled and accompanied by herd information (owner, area, number in herd, proportion affected, age affected, clinical signs)

(A) EXTENSION MESSAGES/SERVICES

[Suggested requirement]

This module contains some aspects of the training that only add value to the CAHWs' services. The module constitutes activities that improve the performance of secondary roles of CAHWs.

The objective of the extension module is to enable the CAHW to provide advice on the following:

- Proper disease control and prevention.
- Care of neonates.
- Proper housing of young stock.
- Care and management of young stock.
- Isolation of sick animals.
- Fake veterinary drugs in the market.
- Breeding and breed improvement.
- Information on policy and legislative guidelines for livestock industry including animal welfare.
- Veterinary public health (withholding periods for livestock products from treated animals).
- Marketing of livestock and livestock products.

It is recognised that CAHWs interact with the community members on a regular basis and may be the only source of information on wide range of issues relating to animal health, livestock production, public policy and legislation and public health. This level of interaction presents an opportunity for CAHWs to pass on important messages to the community. It is therefore desirable for the community that the trainee is given sufficient information that can be extended to the livestock owners. Additionally, the trainee should be given skills to effectively communicate with the community members. The trainer should also emphasise on a number of issues that he/she deems appropriate for enhancing delivery of animal health in the target area or region.

a) Animal production

[Suggested requirement]

This is a wide field and only some basic information relating to the following should be given. Emphasis should be on aspects that can aid in disease prevention through proper management of different ages and species of livestock.

- Breeding and breed improvement.
- Management plans including proper housing of young animals.
- Care and management of young stock.
- Strategic and tactful use of efficacious anthelmintics.

b) Veterinary Public health

[Suggested requirement]

Information on the following topics are useful to the CAHWs and should be taught if time permits.

- Personal Hygiene
- Meat hygiene – basic knowledge on the need for meat inspection.
- Clean milk hygiene –clean milk production.
- Drug residues in milk and meat.
- Zoonotic diseases and infections associated with milk, skins and meat.

c) Policy and legislation

[Minimum requirement]

The community can also extend messages on relevant policy and legislation. With proper integration with the supervising veterinarian/AHT and the Department of Veterinary Services, important information relating to issues outlined below can be extended to the community (Figure1).

- Drug handling – see above,
- Prevention of cruelty to animals Act –(Cap. 360).
- Animal diseases Act (Cap.364).
- Veterinary surgeons Act (Cap. 366)
- Pharmacy and poisons Act (Cap 246)

d) Ethnoveterinary knowledge

[Minimum requirement]

During his/her interaction with members of the community, particularly the aged, the CAHW could serve as a medium for obtaining ethnoveterinary knowledge and practices for extension to the rest of the livestock owners. The trained CAHW could also help to explain ethnoveterinary perceptions that can hinder delivery of animal health and rapid restoration of health using modern medicines. It is important that some of the ethnoveterinary treatments are verified in conventional field trials to evaluate their efficacy before encouraging their use. The CAHW can contribute greatly to the conservation of natural resources that are sources of some ethnoveterinary products. In so doing, the CAHW is in good position to also create awareness for the care and conservation of natural resources for pastoral livestock production.

e) Marketing of livestock and livestock products .

[Minimum requirement]

The CAHW may be equipped to provide information on:

- Marketing strategy and pricing systems for livestock and livestock products.
- Appropriate branding of livestock to maintain high quality of hides and skins (vs. cultural branding).

f) Disease control and prevention

[Mandatory requirement]

The CAHW may be equipped to provide information on:

- Mobilisation of livestock owners during vaccination campaigns and field days
- Control of vectors of disease pathogens
- Creating awareness on the need to adhere to quarantine regulations
- Reporting of disease outbreaks

(C) Assessment and Certification of CAHWs

[Mandatory requirement]

During the training the trainer should conduct continuous assessment of each candidate and address any identified problems or gaps. At the end of the training, a final assessment of each candidate should be undertaken. Each candidate should be evaluated on their level of skills in discharging the various roles including disease diagnosis, choice of medicine and administration, storage of drugs, handling of equipment, filling of disease record forms, and community relations. Upon successful completion of the training each CAHW shall be awarded a certificate of attendance duly signed by the trainer and a KVB representative at the district. Where possible, the certified CAHWs can be given photo identification card (which can be withdrawn if performance is not satisfactory). The KVB and the DVS should be informed of the intended training prior to its commencement. The KVB representative shall ascertain that the trainees are trained as per the guidelines approved by the KVB and affix

his/her signature implying that s/he has commissioned the training and certified the training to be satisfactory on behalf of KVB.

(D) MONITORING AND FOLLOW-UP IN THE FIELD [Mandatory requirement]

The performance and the effectiveness of the CAHWs should be regularly monitored and any existing weaknesses identified and addressed during refresher courses by the supervising veterinarian, KVB agent or DVS representative. As the principal beneficiaries, the community should continuously monitor the performance of the CAHWs. Important indicators for monitoring include morbidity and mortality in different age groups of livestock.

Information on the level of performance of the CAHWs can be obtained by holding a post-training community dialogue. **The hallmark of a CBAHP requires the supervising veterinarian or AHT to be involved in continuous follow-up, monitoring, evaluation and re-training of CAHWs (Figure 1)**

(E) REFRESHER COURSES AND FEEDBACK WORKSHOPS [Mandatory requirement]

Feedback workshops for trainees should be held after a period of practice of 3 months and should serve the purpose of finding out the following:

- How best the CAHWs have fitted in the animal health delivery system
- The problems they have encountered in the field
- To what extent they have achieved their roles within the community
- Areas of training deficit and action plan to correct the same (plan contents of refresher courses)

The CAHWs should have a refresher course at least once in a year until when the supervising veterinarian feels all the areas of training deficit have been well covered.

(F) INTEGRATION OF CAHWS WITHIN THE NATIONAL ANIMAL HEALTH SYSTEM [Mandatory requirement]

The animal health provision system should provide for supervision of the CAHWs on a sustainable basis. It is recommended that the CAHWs be linked to AHAs and private and public veterinary practices (Figure 1). The AHT or veterinarian shall be responsible of the activities of CAHWs. The linkages should involve reporting, referrals, service provision, surveillance and supervision for health delivery. In a veterinary supervised private animal health service delivery system, the roles of veterinarian and the AHA include: -

(a) Suggested roles of the supervising veterinarian [Mandatory requirement]

- Provide veterinary drugs to AHTs and CAHWs
- Provide clinical services to livestock owners
- Attend to referral cases from CAHWs and AHTs
- Practice management
- Provision of AI and disease control services
- Train the CAHW
- Compile monthly reports and send them to area DVOs office
- Supervise the activities of AHTs and CAHWs
- Tender for and carry out vaccination and disease surveillance contracts on behalf of the Department of Veterinary Services.

(b) Suggested roles of the animal health technicians.(Mandatory requirement]

- Supply the CAHWs with quality drugs
- Provide clinical services
- Attend referral cases or refer them to a veterinarian
- Practice management
- Prompt reporting of outbreaks to VO/private veterinarians
- Write monthly reports and submit to the private vet. or GoK Vet officer.
- Supervise the CAHWs and provide them with refresher courses / follow up training by identifying their areas of deficit
- Provide extension service by training livestock owners on achieving best production.
- Vaccination and disease surveillance roles

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Table 2
Summary of training objectives, time allocation and CAHWs roles enhanced.

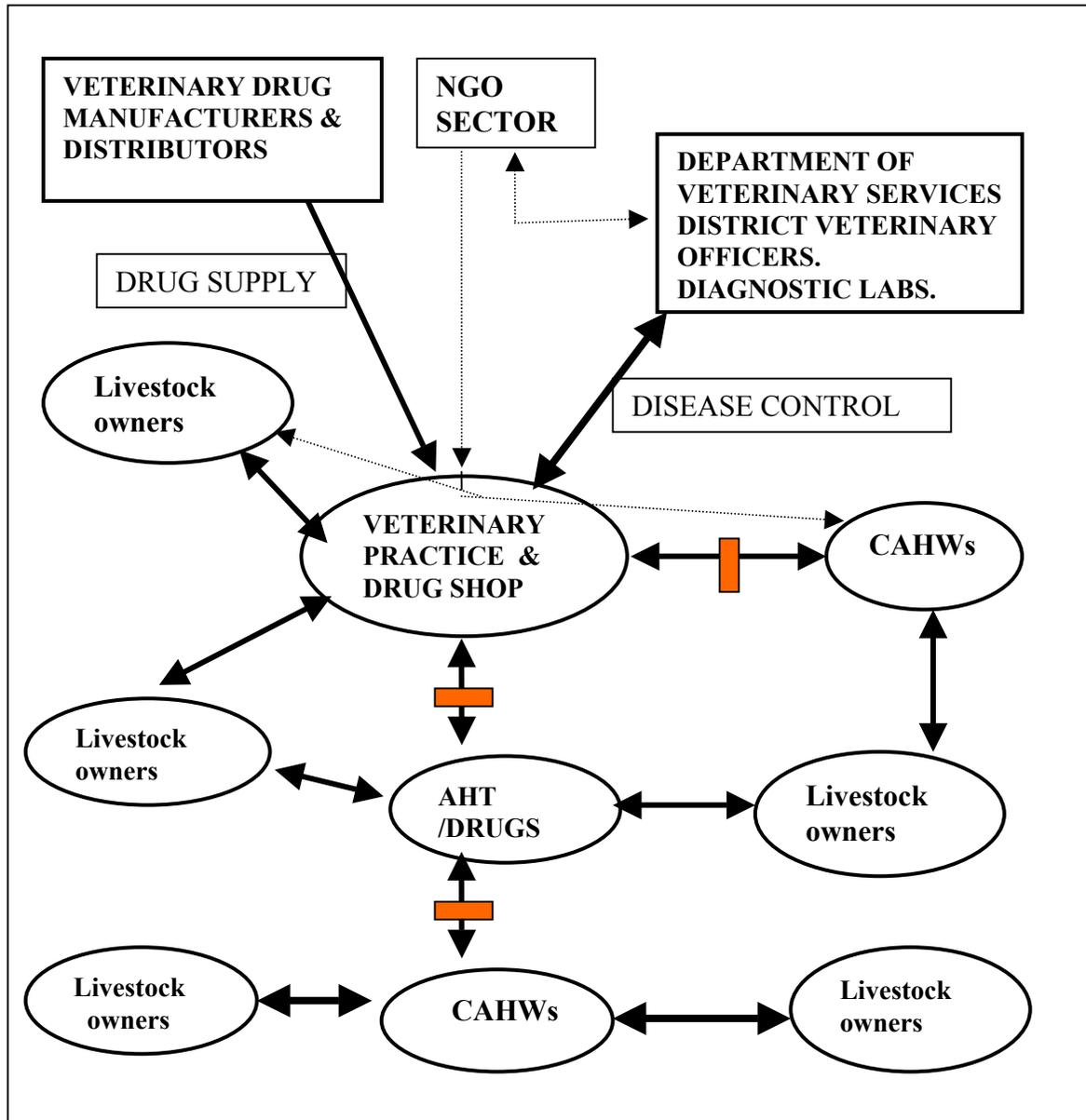
	LESSON /ACTIVITY	OBJECTIVE	TIME	OUTCOME / ROLE
1	Introduction to CBAHP and roles of CAHWs in animal health delivery.	<ol style="list-style-type: none"> 1. Trainees to share their existing veterinary knowledge. 2. Trainer to assess the strengths and weaknesses of the trainees. 3. Establish teamwork and rules. 4. Define roles of CAHWs in animal health delivery. 	<p>2.0</p> <p>2.0</p> <p>1.0</p> <p>1.0</p>	<ol style="list-style-type: none"> 1. Knowledge on livestock diseases identified and enriched. 2. Gaps in existing veterinary knowledge identified. 3. Teamwork established. 4. Roles of CAHWs in animal health delivery explained.
2	Herd health and livestock diseases.	<ol style="list-style-type: none"> 1. Know the signs of normal animal and sick animal. 2. List the livestock diseases common in the area and list associated clinical signs of those diseases. 3. Reinforce information on notifiable diseases relevant to the area. 4. Acquire basic knowledge on causes of diseases, transmission of disease causing agents, and disease prevention. 5. Obtain knowledge on clinical examination and disease diagnosis. 6. Obtain knowledge and practical skills in restraining of livestock and use of drugs in treatment. 7. Reinforce knowledge on body organs, location, appearance, size and function. 8. Obtain practical knowledge in herd health management. 9. Reinforce use of traditional medicine to complement modern medicines. 10. Obtain practical knowledge on collection and recording of disease information. 11. Practicals and demonstrations 	<p>2.0</p> <p>4.0</p> <p>3.0</p> <p>2.0</p> <p>2.0</p> <p>6.0</p> <p>2.0</p> <p>3.0</p> <p>2.0</p> <p>14.0</p>	<ol style="list-style-type: none"> 1. Identify sick animals within a herd. 2. Identify common livestock diseases and list common clinical signs. 3. "Recognise" notifiable diseases and report to the veterinary authority. 4. Awareness on causes of diseases created. 5. Able to make a "diagnosis". 6. Able to properly restrain and treat animals. 7. Able to perform "basic post-mortem". 8. Promotion of good herd health management enhanced. 9. Integrate ethnoveterinary medicine in the current animal health delivery services.
3	Drugs handling and usage.	<ol style="list-style-type: none"> 1. Trainee to obtain information on different types of modern medicine, their storage, uses and limitations. 2. To enable the trainee to determine correct dosages for various treatments, animal species and different body sizes. 3. To demonstrate the different routes of administration of drugs. 	<p>3.0</p> <p>3.0</p> <p>2.0</p>	<ol style="list-style-type: none"> 1. Trainee can "correctly" identify medicines and assess their appropriateness (i.e., expiry dates). 2. Trainee can "estimate" dosages and route of administration correctly. 3. Trainees can handle and administer animal vaccines.
4	Basic Surgical procedures	<ol style="list-style-type: none"> 1. To obtain practical knowledge on how to perform basic surgical procedures. 2. To obtain practical knowledge on how to take good care of surgical equipment. 	<p>6.0</p> <p>2.0</p>	<ol style="list-style-type: none"> 1. Able to provide basic surgical treatments on selected conditions and refer difficult cases to a supervising veterinarian. 2. Able to perform aseptic treatments.
5	Disease Surveillance, monitoring and record keeping.	<ol style="list-style-type: none"> 1. To have sufficient knowledge of livestock diseases that are common in the area. 2. To have information on common notifiable diseases in the area. 3. To obtain and record information on 	<p>1.0</p> <p>1.0</p> <p>1.0</p>	<ol style="list-style-type: none"> 1. Knowledge on livestock diseases improved. 2. Information on notifiable diseases obtained. 3. Can record and report

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		disease outbreaks and report to a veterinarian. 4. To monitor herd health and production.	5.0	information on disease outbreaks. 4. Practical skills in herd health improved.
6	Cost recovery and business management.	1. To obtain information on basic management of an animal health delivery business. 2. To manage animal health inputs.	3.0 2.0	Trainees obtain knowledge for running an animal health business.
7	Livestock extension	1. To obtain information on animal production including care and management of young stock. 2. To obtain information on basic veterinary public health. 3. To obtain information on relevant policy and legislation related to the livestock industry. 4. To reinforce information on EVK. 5. To obtain information on livestock disease control and prevention. 6. To obtain information on marketing of livestock and livestock products.	3.0 Optional and as relevant to each area of operation.	1. Trainees obtain necessary information that helps to improve their work and provide extension messages to the livestock owners. 2. Trainees can promote EVK and integrate modern medicines in the treatment of livestock diseases.
8	Field days, practicals and demonstrations, Reviews and problem solving.	1 To acquire practical skills and knowledge on disease diagnosis, restraining of animals, treatments, and basic surgical operations encountered in the field. [The best way to do practical training is to take the trainees out each morning of the course before the livestock go out for grazing.]	16.0	Trainees obtain hands on experience in disease diagnosis, treatments and basic surgical operations.
9	Trainee assessment and certification.	1. Continuous assessment by the trainer. 2. Oral examination 3. Certification.	8.0	1. CAHWs given certificate of attendance upon completion of the training course.
10	Supervision, monitoring and evaluation.	1. Supervising veterinarian to provide continuous technical support to CAHWs under his/her practice.	Long-term and continuous process.	1. CAHWs get necessary technical support from veterinarians and AHTs.
11	Refresher course and feedback workshop	1. Provide information and practicals that address any identified weaknesses in the performance of CAHWs. 2. Upgrade the skills of CAHWs by giving more information on diseases and drugs.	Long-term process and at regular intervals	1. Enhance the performance of CAHWs in disease control and animal health management.

Figure 1
Proposed modality for delivery of a private veterinary supervised animal health service for the ASALs.

The suggested modality of veterinary practice in the ASALs involves trade in veterinary drugs, clinical services, supervisory and advisory services. Supportive policy and legal framework has to be in place for the new approach to work.



Key

Interaction channels ↔

Supervision ↔|↔

NGOs channel ↔...