

**TRAINING GUIDE IN ANIMAL HUSBANDRY**

**COMPILED BY PENHA FOR FAO.**

## **ACKNOWLEDGEMENT**

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Special thanks go to FAO for funding this project which we hope will go along way to enable farmers' access knowledge from the training guide / manual that will increase the productivity of the animal enterprises.

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## **Background**

The Food and Agriculture Organization of the United Nations (FAO) is giving comprehensive support to various projects geared at improving Food Security, Productive Agricultural Livelihoods and Income Security of the displaced and returning communities in Northern Uganda.

Some farmers in some districts (under the farmer field schools) have already benefited from the re-stocking exercise where they have been given some goats for meat and bulls for ploughing. In addition, the Government of Uganda is also implementing re-stocking programmes for the same target group, the displaced and returning communities in Northern Uganda.

A need however, has been expressed by the farmers who are being given animals for re-stocking that they require some training on how to manage the animals in a more productive, profitable and sustainable way.

In light of this, FAO through Pastoral and Environmental Network in the Horn of Africa, (PENHA) decided to compile a simple training guide that can be used by Farmer Field School Coordinators / Facilitators and Community Resource Persons to pass on knowledge and information to farmers.

## **Training Objectives**

Overall objective of the training:

- To equip farmers with knowledge and skills to enable them make animal husbandry a profitable enterprise.

## **Specific Objectives**

- To sensitise farmers on livestock production as a business and what it takes to establish one.
- To create a pool of community based resource persons (sustainable structures) that can act as first line treatment.
- To raise awareness on how to access animal husbandry services available under government support.

Note should be taken that each session has its specific objectives that feed into the above objectives.

## **Trainers / Facilitators**

The tips in this section are to help the trainer understand the objectives of the training sessions and achieve the objectives of the discussions and exercises. The trainer is tasked with monitoring and steering each session's learning process. Unlike a traditional teacher, he/she is not responsible for leading the group to any specific conclusions. Rather, his/her responsibility is to create a space for participants in which they can learn from the ideas and experiences of others, disagree within a safe environment, and work together to come to a consensus. The trainer will create that space through careful pre-planning and by engaging facilitation tactics that promote mutual respect, thoughtful discussion and an atmosphere of collaboration.

Skills required of the trainer for this training guide include:

- ability to organize;
- sensitivity to the needs of participants;
- ability to create participatory, active and cooperative learning opportunities;
- ability to grasp, discuss and link issues;
- in-depth knowledge and familiarity with animal issues in the respective region;
- ability to complement styles, skills and knowledge of the other trainer(s);
- credibility and relevance;
- Adult training skills.

## INTRODUCTION AND SETTING CONTEXT OF THE TRAINING

### SESSION 1: INTRODUCTIONS

**Timing:** 90 minutes

**Methodology:** Group discussion

**Materials:** Flip charts and markers

**Objective:** To enable participants get familiar with one another and start feeling comfortable speaking out.

### PROCESS:

#### Step 1:

The organizer of the training will briefly welcome participants to the training and present an overview of the training programme including the objectives of the training.

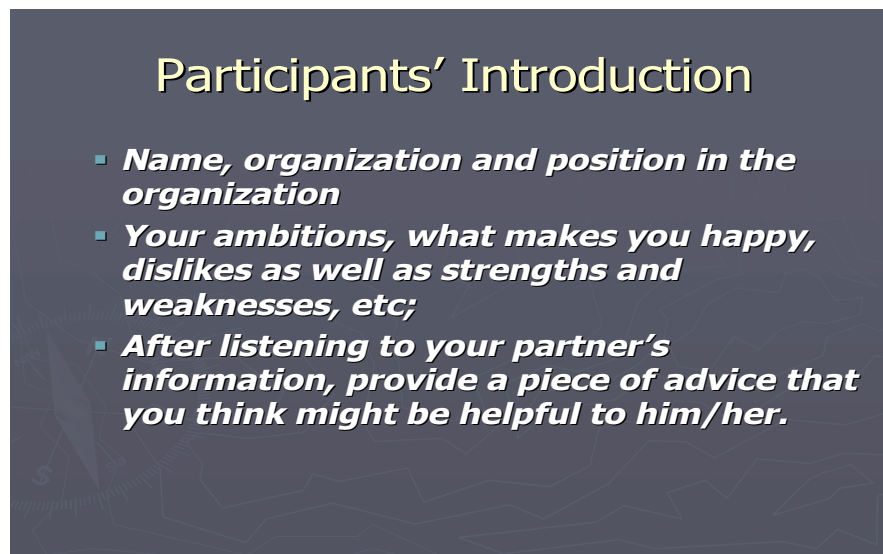
#### Step 2:

Using an interactive approach, ask participants to introduce themselves using either guideline **A** or guideline **B** below:

#### Guideline A

Ask each participant to find a partner. For fifteen (15) minutes the partners in pairs speak to one another and exchange information as per *Slide 1* below:

#### Slide 1



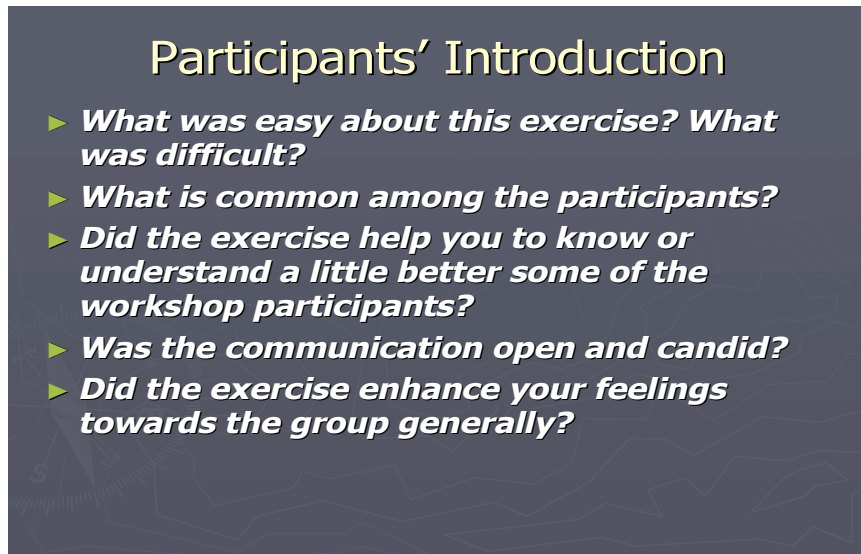
**Participants' Introduction**

- *Name, organization and position in the organization*
- *Your ambitions, what makes you happy, dislikes as well as strengths and weaknesses, etc;*
- *After listening to your partner's information, provide a piece of advice that you think might be helpful to him/her.*

The participants reconvene and take turns to introduce their partners with the information they exchanged during the conversation.

- Thereafter pose the following questions on *Slide 2* below:

**Slide 2**



## Participants' Introduction

- ▶ *What was easy about this exercise? What was difficult?*
- ▶ *What is common among the participants?*
- ▶ *Did the exercise help you to know or understand a little better some of the workshop participants?*
- ▶ *Was the communication open and candid?*
- ▶ *Did the exercise enhance your feelings towards the group generally?*

**Step 3: Wrap the session**

You may summarize and stress the characteristics that the participants have in common. You may also appreciate the different services they are offering to their organizations and communities.

You may also add that the session was meant to ensure that participants start the training with a little more information about one another than just the names and organizations.

**Guideline B**

Ask each participant to introduce him/herself by the following headings:

- 1) Name
- 2) Sub-county and District
- 3) Which of the categories of animals (cows, goats, sheep, pigs or poultry) does the participant mainly rear?
- 4) One biggest challenge that has been encountered while rearing the selected group of animal.
- 5) One thing in life that the participant likes most
- 6) One thing that he/she dislikes most

Wrap up this session by listing the common categories of animals that the participants are rearing. This would guide in deciding which categories of animals to emphasize during the training.

In addition the challenges listed will also form part of the discussions as the training progresses.

The likes and dislikes should be summarized to form part of the ground rules (workshop norms).

**SESSION 2: EXPECTATIONS AND FEARS**

**Timing:** 30 minutes

**Methodology:** Brainstorming and Presentation

**Materials:** PowerPoint projector, screen and slides/ flip charts, manila cards and markers.

**Objective:** The session is meant to identify the participants' expectations and fears so that the expectations of the participants are reconciled with those of the training and also to ally some of the fears.

**PROCESS:**

**Step 1:**

Using a brainstorming approach, ask participants to share their expectations and fears for the training. Encourage each participant to state at least one expectation or a fear. Record all the responses on a flipchart paper or Power Point Slide.

Alternatively, participants can be encouraged to write the expectations and fears themselves on manila cards and hang them on the wall.

Ask two of the participants (volunteers) to read out the expectations and fears to the rest of the group.

Try to reconcile their expectations with the objectives of the training. Array fears and be open on some of the fears and expectations that cannot be addressed.

**SESSION 3: WORKING NORMS / GROUND RULES**

**Timing:** 30 minutes

**Methodology:** Presentation and Brainstorming

**Materials:** Flip charts and markers

**Objective:** The session is meant to agree on minimum standards or code of conduct that will guide participants during the training.

**PROCESS:**

**Step 1:**

The facilitator reads out the summary of participants' likes and dislikes that were identified during the session of introduction. S/he asks participants whether they think

and feel that those are adequate or if they want to make some amendments. Whatever is agreed upon, is recorded on a flip chart and hung on the walls of the training hall for the entire period of the training. In case of deviation, the facilitator and the participants should remind each other of the agreed upon norms.

### **Step 2: Group Leaders**

In order to increase the involvement of participants and make them take charge of some of the issues that may arise, the facilitator asks the participants if they think it is a good idea to have group leaders. If they agree, the leaders can be got either through self nominations (volunteering) or through simple elections of hand raising. In case of self-nominations, the facilitator should check with the group whether they feel comfortable and agree to be led by those that have volunteered themselves.

The number of leaders should not be above three (3) because too many may have role clashes. If possible, the organizers should not make any leader to be in charge of (food) dinning issues because if this is done, the participant gets disrupted during sessions as s/he keeps moving in and out to check if the food is ready.

### **Step 3: Eyes and Ears**

As part of the daily evaluation, the facilitator introduces the concept of **eyes and ears** to the participants. Here, two volunteers are selected per day. The role of these people is to observe and listen to the voices that are not brought out loudly during sessions. Naturally, in groups there are some people who don't want to make their thinking publicly known to all members but who freely talk outside the sessions. Their comments are also valuable and need to be brought to light.

These volunteers will be reporting after the main re-cap on the next day. Then another set of volunteers should be selected.

The other daily evaluation that will be used is the Mood Meter and this will be introduced later in the subsequent sessions.

## **SESSION 4: JUSTIFICATION FOR PROMOTING ANIMAL FARMING**

**Timing:** 50 minutes

**Methodology:** Group work, Presentation and Plenary Discussion.

**Materials:** Flip charts and makers

**Objective:** The session is meant to help participants recall the advantages of animal rearing in order to increase their interest in animal husbandry.

### **PROCESS:**

Participants are put in 4 groups. Each of the group is assigned a task of identifying the advantages and disadvantages of rearing one of the following categories of animals:

Cows, Goats, Pigs and Chickens. Let the groups record their responses on a flipchart paper.

After 15 minutes, the groups report back in a plenary session. After the plenary, the facilitator wraps up the session putting emphasis on the following points as some of the advantages of rearing animals generally:

- 1) It is a business
- 2) It does not discriminate education and age
- 3) It is practical
- 4) You can start with little money
- 5) The techniques are easy to learn
- 6) There is market for the products
- 7) No body will terminate your business
- 8) It is a family business which can continue even if you die

## **SESSION 5:**

## **HOUSING**

### **Timing:**

60 minutes

### **Methodology:**

Presentation, brain storming, group work and discussions.

### **Materials:**

PowerPoint projector, screen and slides/ flip charts, markers

### **Objective:**

To make participants appreciate the importance of housing their livestock.

## **PROCESS:**

The facilitator introduces the topic of housing by asking participants to join their groups (earlier allocated) and discuss the methods they use to keep their livestock and the reasons why they use the identified methods.

Participants report back in plenary and the facilitator leads the process of discussing the merits and demerits of the different approaches presented by the participants above.

After the discussion, the facilitator poses a question of whether housing is important and why. This is followed presentation of Qualities of a good livestock house.

Here the facilitator presents the different designs of houses using slides on power point projector while putting emphasis on the need to use locally available building materials.

An example of a goat house is displayed.

The facilitator may wrap up the session by mentioning some of the points below:

### **Why Livestock should be housed:**

- 1) To control movement so that:

- they don't get lost
- they are protected from predators
- they don't graze with sick animals
- we can control breeding.

2) To be able to keep many animals in a small area.

## **Parts of a poultry house**

### **The floor**

This should be dry all the time. Ideally it should be made of concrete. In absence of resources, remove the top black soil and harden the ground by pounding. The problem of not using concrete is that birds may always be attacked by worms. This however could be controlled by regular de-worming.

Select good Quality litter material and spread it on the floor. Materials for litter include: coffee husks, saw dust, wood shavings.

Litter must always be kept dry in order to encourage micro-organisms to break down the chicken droppings.

Litter should be 12 cm deep.

### **Walls**

Materials used for walls will depend on the availability in the locality. The walls could be made of mud and reeds, off cuts or timber. Walls must be as smooth as possible to reduce incidences of ecto-parasites.

The walls should be approximately  $\frac{3}{4}$  built and  $\frac{1}{4}$  left for ventilation.

### **Roof**

The roof should not leak. Materials used for roofing depends on resources.

### **Spacing**

#### **Stocking density (birds per square meter)**

Layers	4-6
Growers	6-7
Broilers	11-15

One meter long feed trough is enough to feed 20 chickens.

## **SESSION 6:**

## **THE MOOD METER**

**Timing:** 10 minutes




**Methodology:** Pictorial Presentation

**Materials:** Flip charts and markers

**Objective:** The session is meant to gauge the feelings and moods of the participants as these affect the way they learn.

**PROCESS:**

The facilitator asks the participants if some of them are conversant with the mood meter. If the answer is YES, ask one of them to volunteer and explain to the group how it works. If the answer is NO, the facilitator should explain the mood meter to the participants as follows:

Issue	Happy Face 	Flat/ Fairly Happy Face 	Angry Face 
Content			
Facilitation			
Welfare			
Time Management			
Participation			

Each participant is expected to express his/her mood on each of the five issues by ticking once on each of the issues. The person explaining should emphasize that all the five issues must be considered and each participant should be free to tick in the box that best matches his/her mood.

Hang the flip charts on the wall and encourage participants to fill it in the evening at the end of the day. This should be discussed the next day after the re-cap and participants should give reasons to justify their scores. If the scores are low, the organizers and facilitators should try to rectify the negative things that have been identified in order to make things better.

This should be done on a daily basis.

**SESSION 7: BREEDS**

**Timing:** 60 minutes

- Methodology:** Presentation
- Materials:** PowerPoint projector, screen and slides/ flip charts, markers
- Objective:** To make participants aware of the different breeds and their performance characteristics.

**PROCESS:**

Using the brainstorming approach, participants are asked to mention the breeds they know per category of animal and their characteristics. Thereafter, the facilitator presents the various breeds – mentioning; origin, distinguishing physical characteristics like skin colour, production potential and comparative advantage.

The following notes should be summarized by the facilitator.

**Breeds of Cattle:**

**Major Breeds of Cattle**

- 1) The Dairy Breeds
- 2) The Beef Breeds
- 3) Some times the Dual Purposes

**Characteristics of Good Dairy Breeds**

A good dairy cow should be able to do the following:

- Give at least 10 litres of milk per day
- It should produce one calf every 12 months
- It should be able to milk for ten months
- It should be dry for only 2 months every 12 months
- It should be able to conceive (become pregnant again) 3 months after delivery.
- It should be able to milk for 7 months when pregnant
- It should be able to breed at the age of 18 months.

**Dairy Breeds of Cattle**

**Friesian**

- a) It is the biggest dairy breed
- b) It produces the highest amount of milk.
- c) The milk has the lowest butter content
- d) It is the most delicate
- e) It is black and white with a white patch in the face and a white end at the tail

**The Jersey**

- a) It is the smallest dairy breed
- b) It can be brown in colour or with stripes of black

- c) The characteristic sign of a Jersey is a dished (ditched) face and very prominent eyes like of a frog and the horns point in front.
- d) It gives the least amount of milk among the dairy cows.
- e) It produces milk with the highest butter content
- f) It eats the least amount of feeds (grass)

#### **The Ganze (Guanzey)**

- a) It is brown white patches (markings). It is almost the same size as the Friesian.
- b) It is a big animal like a Friesian but eats less than a Friesian and it's milk is not as dilute as the one of the Friesian but not as concentrated as that of the jersey.

#### **Beef Breeds**

The difference between a beef breed and a dairy breed is that there is a lot of meat on the highs of the beef cows but the dairy cows are a bit bonny.

#### **The Boran**

- a) It is a very big breed
- b) Grey in colour
- c) Very hostile
- d) They grow very fast (can be 300 kgs at the age of 18 months)
- e) They are very delicate cannot be kept where there are ticks. They mainly die of tick borne diseases.

#### **Breeds of Pigs**

**Land race** - Is white in colour, long body, large ears that are dropping (falling forward) and a straight face.

Hence the only differentiating factors between the large white and the landrace is to do with the ears and the shape of the face.

**Hampshire** - This is black with a white strap behind the head and along the fore legs. This breed is not preferred because it produces fewer piglets compared to the large white and the land race.

**Duroc** - This is not common because it has extreme motherly characteristics. It is protective of the piglets and becomes very aggressive if the owner wants to separate the piglets from the mother. Hence it is not a preferred breed.

The following goat breeds can be discussed

The facilitator should use visual aids for demonstration purposes. This will enable participants to understand better.

The following picture can illustrate some of the goat breeds.

The session on breeds should also be recapped during the field tour where participants have an opportunity to see the breeds in reality.

**SESSION 8: MATING AND PREGNANCY MANAGEMENT**

**Timing:** 60 minutes

**Methodology:** Presentation

**Materials:** PowerPoint projector, screen and slides/ flip charts, markers

**Objective:** To enable participants acquire knowledge of how to control animal breeding and improve productivity

**PROCESS:**

Participants are put in their respective groups as earlier assigned. They are requested to discuss what happens to animals from the time they go on heat till the time they deliver and wean off their offspring. After group discussions, they reconvene for plenary session. During this session, the facilitator also discusses ways of caring for a pregnant animal, what needs to be done during delivery, caring for offspring when they are weaned and thereafter are discussed.

In addition, the parameters or characteristics of good breeding animals are discussed.

In respect of poultry, the facilitator should spend some time discussing how farmers can hatch many eggs using programmed hatching (see hand-out 1 below) because this is not yet common with farmers.

**HAND OUT 1: PROGRAMMED HATCHING OF CHICKS**

Programmed hatching is an innovation where farmers can hatch day old chicks on one particular day of the week.

This approach has been successful in Rakai District Poultry Project, East and Central Uganda Integrated Farmers Association (ECUIFA).

**Advantages of the Approach**

- Many chicks are hatched at one time.
- It is easier to vaccinate and manage chicks.
- Farmers may decide when to hatch chicks hence when to market their chickens.
- Chickens may hatch up to 7 times a year compared to 2 or 3 times as the case is with un-programmed hatching.
- No artificial incubator is required hence innovation is cheaper and convenient to rural areas.

- Group formation is easier since it becomes easier for farmers to mobilize resources to buy vaccines, feeds and for marketing purposes.

### **How to Programme Chickens**

1. Let's assume that a farmer has 14 indigenous chickens and 2 indigenous cocks.
2. When chickens start to lay eggs, each chicken is given its own nest. These can be made by putting ash in the nest and clean grass on top of the ash.
3. Boil one egg from each chicken and put in its nest to be used as a landmark so that chickens locate the nests easily. Mark all the boiled eggs.
4. Remove all the eggs that are laid on the very day they are laid. Write dates on them using a pencil and store them on trays with the broad end facing up. (Only the boiled eggs should be left in their respective nests.)

### **Precautions for Storing Eggs**

- Do not store eggs in the sitting room because on seeing them, visitors may ask you for some or where children may mishandle/shake them. (Remember that this is a business!!!).
- Do not store eggs in the kitchen where it is usually hot. Heat from the kitchen may particularly incubate the eggs thus killing the embryos in them.
- Do not store them on top of cupboards where heat from the iron sheets of the roof may incubate them especially during dry seasons.
- Do not handle eggs with greasy hands.
- Keep eggs in a cool secure place with broad ends facing up.

### **Starting the Process of Incubating Eggs by the Mother Hen / Chicken**

1. Usually one chicken starts incubating by staying overnight on the boiled egg.
  - ✓ Don't give this chicken fertile eggs, but leave it on the infertile one for 10 days as it waits for other chickens.
  - ✓ Chickens do not count days when incubating. They have no sense of doing this. It is the eggs which take 21 days and 6 hours to hatch but the chickens do not determine this.
2. After 10 days from when the first chicken started sitting on the egg, you may give all the chickens that would have started incubating (within the 10 days) 15 eggs each (starting from those which were laid last). Remember the boiled eggs!!!!

### **Precautions**

- Leave those chickens that refuse to incubate alone.
  - If at all you want to eat or sell eggs, eat/sell those which were laid first (old ones)
  - Avoid giving these eggs to chickens
    - Very small eggs.
    - Round eggs.
    - Very dirty eggs
    - Extremely pointed eggs.
    - Very old eggs.
    - Very big eggs.
  - When done this way, all chickens will hatch on the same day.
3. Indigenous chickens in Uganda should hatch on Thursdays i.e. one particular day of the week. The reason is that most commercial hatcheries also hatch on Thursdays and vaccines are usually distributed on Thursdays. Hence the need to fit the innovation in the existing system (s).

### **Programming Chickens to Hatch on Thursdays.**

For the chickens to hatch on Thursdays, they have to be given eggs on Wednesday at 7:00 pm in the evening. This is because an egg takes 21 days and 6 hours to hatch. So, at 12:00 mid night of the 21<sup>st</sup> day chicks will hatch so that by Thursday morning they are dry and ready to brood.

But the day when the first chicken first sat on the eggs will not always coincide with Wednesdays. Therefore, find out the Wednesday nearer to this 10<sup>th</sup> day, from the infertile egg. This Wednesday may be a few days before or after the 10<sup>th</sup> day from when the first chicken incubated.

### **Output**

Out of 14 chickens, 11 are usually programmable (78%). These are given 15 selected eggs each ( $15 * 11 = 165$  eggs)

Hatchability is usually 13 chicks out of the 15 eggs i.e. 86% giving rise ( $11 * 13 = 143$  day old chicks).

These chicks are brooded artificially and the mother chicken will take 14 days to start laying again.

Mortality rate during brooding is 5%.

### **Hints for Purchasing Chicken Stocks for Breeding**

- Always avoid buying chickens from market places because it is usually the poor performers that are sold in the market.
- Avoid buying chicken in dry seasons because diseases especially Newcastle is more rampant in the dry seasons than in wet seasons.
- Avoid buying chickens when there is a disease outbreak.
- Buy chickens of almost the same age (do not exceed 2 to 3 months old).

### **Treating Chickens**

Treat all chickens against external and internal parasites and diseases. Vaccination is also very important.

## **HAND OUT 2: BROODING CHICKS**

Brooding chicks means looking after young chicks during the early period of growth when they cannot maintain their body temperature without the aid of supplementary heat.

### **Locating a Brooder**

The brooder room should be as far a way from old chickens as possible.

### **Requirements of Chicks in the Brooder**

- Space: This should be relatively small and should be increased as the chicks grow.
- Temperature: Should be adequate. If chicks crowd around the heat source, it is an indication that the brooder temperature is low. If they go far away from the heat source, it means that the heat from the heat source is too high. The optimum temperature is when all chicks are evenly distributed in the brooder.
- Ventilation: In order to achieve optimum ventilation and at the same time conserve adequate heat, the wire mesh part of the building, should be sealed off

with sacks or papyrus mats. Polythene should never be used for this purpose because polythene does not permit air to pass through.

- Light: This is very essential in the brooder because it enables the chicks to clearly see feeds and water. Light that is sufficient in the brooder should be intense enough to enable some one to read newspapers with it.
- Sanitation and Hygiene: This is a **must** in the brooder. All equipment should be disinfected before use, litter removed, water and feeds troughs be cleaned daily. It is not proper to allow visitors in the brooder.
- Feed and water troughs should be given enough space to allow all the chicks to feed and drink at ago.
- Somebody should be selected to look after the brooder. Without a responsible person, all other requirements will not be achieved.

### **Placing the Heat and Light Sources**

Litter should be at least 10-15 cm deep. It must be covered with papers or papyrus mats because day old chicks tend to eat everything they come across.

If litter material is eaten, it may be lodged in the chicks' throats and the chicks may die.

Polythene papers should never be used for covering litter because polythene does not absorb moisture.

The litter should remain covered for seven days.

### **Getting the Brooder Heated**

The brooder should be given a thorough check to detect places from where cold air may come from. The brooder room should be heated 12 to 24 hours before chicks are introduced.

### **Putting Chicks in the Brooder**

Chicks should be counted before they are put in the brooder and their number must be recorded.

Each chick should be handled one by one (during counting) and should have their beaks dipped in water so as to teach them how to drink.

As soon as they arrive, they should be given water for the first one hour.

Chicks should only be fed 3 to 4 hours after their arrival in the brooder. The water given may contain glucose and vitamin-antibiotic mixture.

### **Turning off Heat during Brooding**

Heat should never be turned off suddenly in the brooder unit. It should be turned off gradually so that by the time chicks are transferred to the rearing unit, they are already acclimatized to the new temperature.

### **Summary of Problems During Brooding and Possible Causes**

<b>Problem</b>	<b>Causes</b>
Early Mortality	<ul style="list-style-type: none"> <li>▪ Chilling or overheating of chicks during transportation of boxes.</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Chilling or over heating of chicks in the brooder.</li> <li>▪ Delay in putting chicks in the brooder.</li> <li>▪ Inadequate feeds, water and space.</li> <li>▪ Over crowding in the brooder.</li> <li>▪ Chick size variation.</li> <li>▪ Infection.</li> </ul>
Uneven Growth	<ul style="list-style-type: none"> <li>▪ Over crowding.</li> <li>▪ Inadequate feeds and water.</li> <li>▪ Parasites.</li> <li>▪ Unbalanced feed rations.</li> <li>▪ Diseases.</li> </ul>
Wet litter	<ul style="list-style-type: none"> <li>▪ Ventilation problems.</li> <li>▪ Leaking water troughs.</li> <li>▪ Over drinking due to feed restriction.</li> <li>▪ Diseases causing diarrhoea.</li> </ul>
Foul air	<ul style="list-style-type: none"> <li>▪ Poor ventilation.</li> <li>▪ Wet litter.</li> <li>▪ Over crowding.</li> <li>▪ Inadequate litter material.</li> </ul>
Abnormal chick behavior (Vices)	<ul style="list-style-type: none"> <li>▪ Excess heat or cold.</li> <li>▪ Drought.</li> <li>▪ Lack of water or feeds.</li> <li>▪ Bad water or feeds.</li> <li>▪ Loud or excessive human activity.</li> </ul>
Poor appetite or low feed consumption	<ul style="list-style-type: none"> <li>▪ Poor quality feeds (moldy)</li> <li>▪ Wrong feed mixture.</li> <li>▪ Unpalatable feeds.</li> <li>▪ Prolonged hot weather.</li> <li>▪ Inadequate water supply.</li> <li>▪ Foul air.</li> <li>▪ Stress.</li> <li>▪ Disease.</li> </ul>
Disease out breaks	<ul style="list-style-type: none"> <li>▪ Failure to disinfect the premises before introducing new stock.</li> <li>▪ Failure to take veterinary advice.</li> <li>▪ Neglect of isolation practices.</li> <li>▪ Mixing different age groups together.</li> <li>▪ Unclean conditions.</li> <li>▪ Vectors, carriers, parasites and rodents.</li> <li>▪ Unbalanced ration.</li> <li>▪ Contaminated water, feed and litter.</li> <li>▪ Damp litter.</li> <li>▪ Visitors and workers.</li> </ul>

**SESSION 9:**

**RECORDS**

**Timing:**

45 minutes

**Methodology:**

Presentation

**Materials:** PowerPoint projector, screen and slides/ flip charts, markers

**Objective:** This session is meant to make participants appreciate and understand the importance of keeping records.

**PROCESS:**

The facilitator asks participants whether they keep records, what types of records they keep and how they keep them. After the presentation, the facilitator and participants select the most appropriate records for livestock enterprises. The following templates are presented and discussed.

NB: (This session should have come towards the end but because there is a session on Action Planning towards the end, the facilitator should handle this session at the time he/she deems appropriate.)

**HAND OUT 3: TEMPLATES FOR VARIOUS ANIMAL RECORDS**

**Individual Records**

Identification / Tag No.	Sex	Breed	Colour	Date of Arrival	Age at arrival	Date of Birth	Date sold	Comments

**Breeding Record**

Animal No	Date of Service	Male	Anticipated month of Delivery	Date of Birth	No. of Offspring's	Comments

**Health Records**

Identification No.	Date	Clinical signs & Treatment	Remarks	Clinician's name & contact

## Income and Expenditure

Date	Description	Expenditure	Income	Comments

## SESSION 10: LIVESTOCK MANAGEMENT SYSTEMS AND FEEDING

**Timing:** 180 minutes

**Methodology:** Group Work, Presentation, Question and Answer

**Materials:** Flip charts and markers.

**Objective:** The session is meant to make participants appreciate the different management systems and realize the ease of feeding animals with the available resources.

### PROCESS:

#### Step 1:

The facilitator should put participants in four groups and pose the following questions:

- i) What are the management systems or methods used in your area to raise the following animals: Cows, goats, pigs and poultry.
- ii) Give some of the advantages and disadvantages of each of the systems.
- iii) What feed resources do you use to feed the animals and how do the animals access them.

Assign each group a specific category of animal. You may decide to change the groups so that one group does not handle one category of animals for the entire training period. This assignment should take 40 minutes out of the 180 minutes allocated for the entire session. Ask each group to present their work in plenary.

Alternatively, use a brainstorming approach and ask participants to discuss the importance of feeding animals appropriately and the types of feeds they know. Record all the responses on a flipchart paper or Power Point Slide.

Get into discussion remembering to highlight the following as in the hand outs below:

## HAND OUT 4: MANAGEMENT SYSTEMS

### Introduction

Economic and profitable feeding of animals for meat, milk and eggs production can be achieved through controlling available feed resources. All animals obtain the following nutrients from feeds:

- Proteins; for growth, maintenance and energy
- Carbohydrates and fats; for energy
- Vitamins; for building the defensive mechanism against diseases
- Minerals; for vital metabolic processes in body / skeleton
- Roughage;
- Water; for cooling body and functions of cells

Animals require the above nutrients for fast growth, lactation (high milk production), in case of eggs, high percentage of lay of large sized eggs, fighting diseases (immunity), gestation, maintenance and fattening.

Management systems are determined by culture / traditions, land size and number of animals among others.

### **1. Tethering**

#### **Advantages**

- Reduced straying
- Animals can be tied to any place feed

#### **Disadvantages**

- Feeding limited animals
- Animals are underfed
- Animals are rarely watered
- Animals / (goats and sheep) often fall prey to wild animals

### **2. Extensive system**

During day, animals graze / feed in unenclosed area but at night they are kept in houses or night bomas.

#### **Advantages**

- Animals can make choice from plenty
- They are protected from predators, since they are herded.

#### **Disadvantages**

- Controlled breeding may be difficult
- Exposes animals to diseases / parasites
- Not easy to identify and treat the sick
- Losses to theft if not herded

### **3. Semi- intensive**

#### **4. Zero grazing/ intensive system**

Animals are permanently housed and feeds provided

#### **Advantages**

- Animals are protected from harsh environment, thieves and predators
- Farmer can engage in other forms of activities at home since the animals are housed
- Controlled breeding can be achieved
- Good disease control

### Disadvantages

- Except for poultry and pigs, it is not appropriate for large flocks / herds
- Carrying feeds and water is labour intensive
- Animals are limited to eating only what is provided, no room for selection.

### HAND OUT 5: COMMON FEEDS

GRASSES	LEGUMES	FOODER TREES	CARBOHYDRATE SOURCE	PROTEIN SOURCE	MISCELLANEOUS
Cynodon dactylon	Centrosina pubescans	Leucaena spp	Cereal and cereal products – (maize, maizebran, rice and bran, sorghum, millet)	Animal ( Blood, fish, meat and bome meal, milk and milk by-products)	Vitamins (fruits & greens)
Chloris gayana	Siratro	Cajanus cajan			Minerals
Bracharia species	Stylosanthes	Gliricidia			Additives (antibiotics, copper)
Panicum Maximum	Lablab	Calliandra	Root crops – (cassava, potato, yam)	Plant (Cotton seed cake, Sunflower cke, beans, peas, simsim, groundnut & Soya bean)	
Elephant grass	Desmodium (silver, green leaf)	Sesbnia			
Setaria anceps		Acacia Nilotea	Miscelleneous (Cane molasses)		
		Moringa			

### HAND OUT 6: SUPPLEMENTARY FEEDING

Additional feeds should be given to the following categories of animals:

- Ruminants during periods of pasture shortages/ dry seasons
- Sick animals
- Pregnant animals in the last; 6 weeks of pregnancy for goats and 2 months for cattle.
- Mothers after delivery
- Young ones before weaning and few weeks after weaning
- Animals being prepared for market

Supplementary feeds can be home made or commercially obtained from feed dealers. Post harvest crop residues and kitchen residues can also be used as supplementary feeds.

These include: potato vines, bean stalks, banana leaves / stems, rice bran, maize bran, dried brewers' grain, potato / banana peelings, sunflower cake.

If home mixing is to be done, then the following proportions should be followed:

- 70% cereals (carbohydrates)
- 15% plant protein
- 15% animal protein
- 2% minerals/ vitamins

As many feeds as are locally available should be incorporated in the ration. Mineral mixture, green feeds and adequate supply of fresh clean water should always be available.

#### **HAND OUT 7: TIPS ON FEEDING**

- Animals require a mixed diet
- Animals prefer clean fresh well conserved forage
- Give just sufficient feeds at a time to avoid wastage (feed several times)
- Goats are browsers, therefore plant shrubs around their grazing areas
- Concentrates are feeds with high nutrient content and highly digestible. The amount of protein to be included in the ration will depend on the season, physiological status of animals (dry season more protein, younger animals and pregnant / lactating animals need more protein than otherwise).
- Example of rations for goats
  - Kids 8- 16 week - 29% protein out of the total ration
  - Weaners 3-4 months - 19%
  - Pregnant goats (Does) - 25 %
  - Breeding males (Bucks) - 16%
  - Feeding mothers - 29%

#### **HAND OUT 8: BEST FEEDING PRACTICES**

- Give the right type and quantity of feed to the particular class of animal.
- Minerals and vitamins (as green feed) should always be given to animals.
- Supply of clean water should always be available
- Include grit in the feed of housed birds since this is essential for proper working of birds' digestive system.
- Avoid overfeeding of males for mating
- Grains should be coarsely ground / cracked as this improves the food value
- Certain feeds need to be boiled in order to destroy / kill germs / toxic substances that may cause diseases to animals (applicable, soils for pigs, soya, blood)
- Advisable to conserve fodder (grass and legumes) during the season of plenty for use during the season of scarcity. This can be done by making silage or hay.
- As many feeds as are locally available, should be incorporated in the ration. Pastures should be a mixture of grass and legumes
- Remove weeds from pastures and as much as possible avoid bush burning because even the dry grass can be very useful as long as there is sufficient water to the animals.

#### **HAND OUT 9A: GENERAL GUIDELINES FOR PIG RATIIONS**

Type of Feed	Sow / Rearing (25-60 kg)	Finishing Pigs (60-90 kgs)
Cereals	50-80%	50-80%
Other energy foods	10-30	10-30
Animal protein	5-15	0-10
Vegetable protein	5-15	3-10
Minerals / Vitamins	3	3

**HAND OUT 9B: SAMPLE OF HOME MIXED RATIONS, FEEDING SCHEDULE AND GENERAL GUIDELINES FOR PIG RATIONS (Source: MAAIF, 1995)**

INGREDIENTS	RATION 1 All available	RATION 2 No cassava or blood meal available	RATION 3 No maize available	RATION 4 No sorghum or blood meal available
Maize	35	40	-	30
Cassava	20	-	40	40
Sorghum	10	25	25	-
Soya cake	3	3	3	3
Cotton cake	4	4	4	4
Fish meal	3	3	3	4
Blood meal	3	-	2	-
Lime	1.50	1.50	1.50	1.50
Salt	0.35	0.35	0.35	0.35
Multi-vitamins	0.15	0.15	0.15	0.15
Maize bran	20	20	20	17
	100	100	100	100

**HAND OUT 9C: FEEDING SCHEDULE (DAILY ALLOWANCE)**

Category	Quantity
Boers	3kg sow and weaner meal
Dry sows	2.5 kg
Farrowed sow	2.5 kg + 0.25 kg for each piglet
Pig age (weeks)	
8	1 kg
10	1.25 kg
12	1.5 kg
14	1.75 kg
16	2 kg pig finish meal (change gradually)
18	2.5 kg
20	2.5 kg
22	2.75 kg
24	2.75 kg
24-28	3 kg

**HAND OUT 10: MIXTURES FOR GOATS / COWS**

<b>Mixture 1</b>	
<b>Description</b>	<b>Percentage</b>
Carbohydrate	69 %
Dry protein (plants)	30%
Salt	1%
<b>Example</b>	
Maize bran	6.9 kg
Leucaena leaf meal	3.0 kg
Kitchen salt	0.1 kg
<b>Total</b>	<b>10.0 kg</b>
<b>Approximate cost</b>	<b>8,210 /=</b>

<b>Mixture 2</b>	
<b>Description</b>	<b>Percentage</b>
Carbohydrate	75 %
Dry protein (plants)	20%
Salt	3%
Minerals	2%
<b>Example</b>	
Maize bran	7.5 kg
Soya meal	1.5 kg
Cotton seed cake	5.0 kg
Salt	3.0 kg
Shells	2.0 kg
<b>Total</b>	<b>19.0 kg</b>
<b>Approximate cost</b>	<b>4,750 /=</b>

<b>Mixture 3</b>	
<b>Description</b>	<b>Percentage</b>
Greener matter	70%
Hay (roughage)	20%
Concentrates / cereals	10%
<b>Example</b>	
Potato vine / Napier	4 kg
Hay	1 kg
Maize bran	0.5 kg
<b>Total</b>	<b>5.5 kg</b>
<b>Approximate cost</b>	<b>3,550 /=</b>

<b>Mixture 4</b>	
<b>Description</b>	<b>Percentage</b>
Carbohydrate	70 %
Protein (plants)	15%
Protein (animals)	15
<b>Example</b>	

Maize bran	7.0 kg
Bone meal	1.5 kg
Sunflower seed cake	1.5 kg
<b>Total</b>	<b>10.0 kg</b>
<b>Approximate cost</b>	<b>1,900 /=</b>

## POULTRY RATIONS

### HAND OUT 11A: FOR LAYERS

Raw Materials	1-2 Months	3-4 Months	5 Months
Maize bran	100 kg	110 kg	100 kg
Fish meal	14 kg	12 kg	14 kg
Cotton seed cake	14 kg	12 kg	20 kg
Sun flower	14 kg	12 kg	8 kg
Bone meal	4 kg	4 kg	-
Shells	4 kg	4 kg	12 kg
Salts (red)	1 kg	1 kg	2 kg
Magic protein	2 kg	2 kg	2 kg
Lysine	150 gm	150 gm	150 gm
Premix GP	$\frac{3}{4}$ kg	$\frac{3}{4}$ kg	-
Premix layer	-	-	500gm
Calcium	150 gm	150 gm	150 gm
Methonine	150 gm	150 gm	150 gm

### HAND OUT 11B: FOR BROILERS

Raw Materials	1 <sup>st</sup> Month	2 <sup>nd</sup> Month
Maize bran	100 kg	100 kg
Fish meal	30 kg	30 kg
Cotton seed cake	30 kg	30 kg
Sun flower	-	30 kg
Bone meal	12 kg	12 kg
Salt (red)	2 kg	2 kg
Magic protein	2 kg	2 kg
Calcium	150 gm	150 gm
Premix	$\frac{3}{4}$ kg	$\frac{3}{4}$ kg
Methonine	150 gm	150 gm

**NB:** Continue using magic protein in the whole of the growing period until you attain 70% production, then you can change to lysine. DO NOT use both at the same time.

### HAND OUT 11C: FEEDING REGIME

Age in Weeks	Consumption per Bird per Day	Type of Feed
1	6.5 gm	Chic
2	23 gm	Chic
3	33 gm	Chic

4	50 gm	Chic
5	50 gm	Chic
6	50 gm	Chic
7	50 gm	Chic
8	50 gm	Chic
9	80 gm	Growers
10	80 gm	Growers
11	80 gm	Growers
12	80 gm	Growers
13	80 gm	Growers
14	97 gm	Growers
15	97 gm	Growers
16	97 gm	Growers
17	97 gm	Growers
18	107 gm	Growers
19	107 gm	Growers
20	107 gm	Growers
21	107 gm	Layers
22	120 gm	Layers

#### DAY 4

Prayer and recap of the previous day's discussions including discussion of the mood meter should be done.

If possible, this session should begin earlier than usual possibly at 8.00 am. This will give enough time to go to the field and find the animals before they set off for grazing. This is particularly so for animals which go for free range. In case the farm to be visited has animals housed the field tour can take place after 3.00 P.M.

Alternatively, as a way of saving time, each of the vehicles taking the participants to the field should have a facilitator. This can facilitate a recap, while moving.

#### SESSION 11: FIELD VISIT

**Timing:** 180 minutes

**Methodology:** Presentation and practical demonstrations

**Materials:** Equipment for castration and hoof trimming, varieties of feeds & presentation.

**Objective:** To enable participants have hands on experience and learn by seeing.

**PROCESS:**

The field visit should be arranged prior to the training in liaison with the district veterinary officer of the district where the training will be taking place.

While discussing with the DVO, the facilitators should make it clear that they are not interested in very highly modernized farms which ordinary farmers cannot relate with. The farm(s) to be visited should be just above average or even average (within the means of most farmers) where farmers can appreciate that they can also manage to do things using locally available resources.

The DVO should agree with the farm owner so that s/he is on site to talk to the participants or to delegate some one who knows how things are done at the farm.

In addition, let him / her identify the animals to be castrated and or have their hooves cut. This will be done when the participants are on the farm. With the guidance of the veterinary doctor, some of the participants should take part in these exercises.

This field visit should also enable participants to see some of the legumes and fodder trees that were talked about in class (during the session on feeds) which participants could not easily recall because of the scientific names that were used during class sessions. This is particularly so with those plants and trees which participants would not have been able to translate in their own languages.

Allow the farm owner / manager to give a brief presentation of what they do and give time for a question and answer session.

Remember to give a vote of thanks to the farm owner before departing.

After the field visit, give some few minutes (20) for reflection and recap of what the participants have noted while in the field. Record the responses on a flip chart.

**SESSION 12: COMMON DISEASES OF ANIMALS**

<b>Timing:</b>	120 minutes
<b>Methodology:</b>	Brainstorming and Presentation or Group work and Presentation
<b>Materials:</b>	Flip charts and Markers
<b>Objective:</b>	The session is meant to equip participants with knowledge of how to detect animal diseases accurately based on the clinical symptoms.

**PROCESS:****Step 1:**

Using a brainstorming approach, ask participants to discuss the common diseases of the various categories of animals and their corresponding symptoms. The discussion should focus on one category of animal at a time. The facilitator should emphasize that the animal categories under discussion are:

1. Cows
2. Goats
3. Pigs

#### 4. Chickens

Alternatively if time allows, participants can be put in four groups and each of them assigned one category of animals to handle.

The guiding questions for the assignment could be:

1. Identify the common diseases of the category of animals that has been assigned to your group.
2. For each disease, list the symptoms.

All responses should be recorded on flipchart papers and discussions take place during the plenary.

After the plenary, the facilitator makes a wrap up of the diseases putting emphasis on the cardinal signs of the common diseases in the respective region.

### HAND OUT 12A: COMMON COW DISEASES/ CONDITIONS

Disease / General Problem	Signs	Treatment	Prevention & Control
East Cost Fever (caused by ticks)	Loss of appetite, High body temperature, Lowering of head, Swelling of the lymph nodes <sup>1</sup> especially those below the ear (parotid & prescapular) Petechial hemorrhages, Tearing, Standing hair, General body weakness, not active, difficult breathing and sometimes coughing.	Use Oxytetracycline, Butalex & Parvexion	Regular use of acaricides to kill ticks. Buy the acaricide from reputable drug shops. Spray regularly every week or every two weeks depending on the type of acaricide used. Follow the instructions on how to mix carefully. In using the mixture, start with hidden areas where ticks like to hide (ears, under the limbs, the areas around the udder and testicles. Then spray the other parts like the back and stomach. Ensure that the entire cow is wet and dripping. Never call this a waste.
Heart water (caused by ticks)	Animal starts by moving the opposite direction from the rest, then in circles, rotates with a head, looks mad, The neck bends as if broken. Post-mortem shows a heavy heart and fluid around the heart.	Sulfadimidine	
Anaplasmosis <sup>2</sup> (caused by ticks)	Loss of appetite, High body temperature, Constipation, Cow dung is like goat droppings, Swelling of the lymph nodes, fever	Oxytetracycline	The above applies to all tick borne diseases.
Babesiosis (caused by ticks)	Loss of appetite, High body temperature, Bloody urine.	Berenil / Veriben	
Nagana (caused by Tsetse flies)	Loss of weight but with good appetite (cows keeps eating till the last hour), weakness	Berenil / Veriben, Novidium, Ethidium, Veridium, Samorin,	Regular spraying using acaricides

<sup>1</sup> Sometimes, a cow can have ECF without swelling of the lymph nodes.

<sup>2</sup> This is a serious problem because it needs a special drug which is very expensive.

		Diminasan.	
Skin disease, Anthrax,			
Foot and mouth disease ( a viral disease)	Loss of appetite, Salivation, High body temperature, Vesicle wounds in the mouth, tongue, throat and hooves, Poor gait, Limping	There is NO DRUG for this disease.  Just nurse the wounds with salty water or spirit, Treat with antibiotics (penstrep, hitet)	Vaccination, Control movement of livestock and livestock products.
Worms	Temperature remains normal, Diarrhoea, May be able to see worms, or eggs or segment of worm in feaces, pot belly.	Albendazole, Levafas, Trimazole, Wormita	De-worm every 2 weeks in the wet season and once a month in the dry season.
Masitis	Swollen painful udder, High body temperature, Bloody spots in the milk, Sometimes pus may come out of the teats		Clean milking utensils, Wash hands before milking, Wash the udder before milking, You may treat using Intra-mammary infusion and injectable antibiotics used in several infections.  Apply warm fomentations e.g. warm cloth to improve blood circulation.
Contagious Bovine Pleural Pneumonia (CBPP)	Chronic disease with cough, loss of weight.	Tylosine	CBPP Vaccine
Brucellosis (Abortion) (An STD)	Aborted foetus, Retained placenta	Hitet, Penstrep, Pessaries.	
Lumpy Skin Disease (LSD) (Caused by a virus)	Small swellings on the skin, Can be severe or mild, , can cause abortion, can cause foot rot	Hitet, Penstrep	LSD Vaccine

## HAND OUT 12B: COMMON GOAT DISEASES/ CONDITIONS

General Problem	Possible Causes & Signs	Prevention and Control
Kid deaths	Death before weaning, is mainly associated with hypoglacemia or diarrhea. Happens to kids which are too weak to suckle and are not assisted. Predisposing factors: Failure to feed on colostrums, poor nutrition of the mother leading to low milk production, dry animal	Weak kids must be assisted to suckle. It is important that kid goats get colostrums in the first 48 days after birth. Where need arises, kids can be fed by another mother or bottle fed.

	houses, dirty water, accidents being hit by other adult goats, or suffocation and predation by wild animals. Some of the infectious causes are coccidiosis, collibacillosis & enterotoxaemia.	Ensure clean kid house and care by separating young ones and ensuring that they have good ventilation, warmth and feed adequately.  Identify and treat the primary cause.
Respiratory Problems	The skin diseases are associated with production losses if untreated.  Predisposing factors: poor ventilation, large numbers in inadequate space, introduction of infected goats in the flock.  Possible causes: Anthrax, CCPP, Lungworm, Mellodosis, PPR, Pneumonia and Goat Pox.	Usually, respiratory diseases are highly infectious if not due to Helminthosis. Infected goats should be isolated and placed in a warm, dry, well ventilated place.  Ensure that newly introduced goats are screened for such diseases.  Identify and treat the primary cause.
Skin Disease and Swellings	These are associated with chronic production losses. Skin diseases can kill if untreated. Predisposing factors: Close proximity with infected goats, new introduction into flock, poor nutrition and failure to vaccinate against diseases like pox in susceptible areas.  Diseases include: Goat pox, Mange, Orf, Ringworm, Warts, Stretothricosis, Caseous, lymphadentis & abscesses.	Good management including adequate space, proper feeding/nutrition & screening of new entries.  Vaccinate where need arises.  Identify and treat primary cause
Anaemia (lack of iron in the blood)	Cause: Insufficient iron. Predisposing factors: Nutrition, vector ticks, dirty houses, inadequate anti-helminthic use.  Signs include: Restlessness, weakness, lack of appetite, pallor of the gums and around the eyes (mainly caused by worm infestation).	Add Iron to the diet. Investigate the presence of worm infestation and treat.  Address the predisposing factors.
Abortion	Young ones are born dead and / or come out before 5 months. Ears and hooves look underdeveloped caused by infectious organisms and bad management.  These include: Brucellosis, Q fever, Chymydiosis, very hot and arid conditions.	Farmer <b>must</b> seek veterinary help immediately.  Farmer <b>must</b> report incidences of abortion to the DVO.
Navel ill	Hot firm swelling around the umbilical	Clean swollen navel with iodine or

	<p>cord. Animal may show lameness with swelling of the joints.</p> <p>It often occurs in new born due to infections.</p>	<p>disinfectant for 3 days. Keep the kid house clean. If it is hernia, gently push the swelling in the abdomen, it will disappear Treat the secondary infection with antibiotics.</p>
Pneumonia	<p>Nasal discharges, short, rapid and difficult breathing, raspy sounds from the lungs. Mainly affects young ones but may affect all ages.</p>	<p>Establish the cause (is it CCPP or other cause) Separate young ones from adults and avoid overcrowding.</p> <p>If other causes, improve ventilation and / or improve warmth. If CCPP call the veterinary or report to MAAIF.</p>
Mastitis	<p>Udder is hot and painful. Milk is watery and contains clots. Strains in goats are similar to those in cows and sheep.</p>	<p>Udder must be milked out twice daily.</p> <p>Intra-mammary infusion and injectable antibiotics used in several infections.</p> <p>Apply warm fomentations e.g. warm cloth to improve blood circulation.</p> <p>Check udder of highly yielding goats post weaning.</p> <p>Females with repeated problems should be culled and not used for breeding.</p>
Diarrhoea	<p>Blood or white diarrhea, which may be persistent.</p> <p>Animals becomes unthrifty, dull and losses weight.</p> <p>Death easily occurs in the young ones.</p>	<p>Give re-hydration fluids</p> <p>Treat with sulfur preparations or any other appropriate drug.</p> <p>Identify and address predisposing factors.</p>
Internal parasites	<p>Unthriftiness, potbelly, weight loss, diarrhea, signs of anemia, e.g. pale gums and weakness.</p> <p>It occurs in all ages as a result of worm / parasite infested pasture. Liverfluke infestations associated with grazing near the swamps.</p>	<p>De-worm goats with appropriate drugs.</p> <p>Offer good nutrition and sanitation and possibly stall feeding off the ground.</p> <p>Practice rotational grazing-use clean pastures.</p>

		For liverflukes, avoid swamp pastures or treat with right drug.
Mange	It is caused by mites which borrow under the skin. Alopecia, skin irritation leading to dermatitis of mainly head, neck and back due to rubbing.  Areas become thick and scaly.	Apply red oil mixed with cresyl (chemical available at drug stores / shops)  Wash animals with appropriate chemicals like acaricides until skin looks normal.  Treat with available injectable drugs.
Lice	Hair coat looks dull, rough and open.  Skin irritation is visible and animal may lick coat.	Powders and sprays are available for application on the animals.  Clean the animal house with appropriate chemicals to remove the lice from the cracks.
Orf	Scabs form around the mouth and nostrils of the animals. Young ones may fail to suckle or eat.  Pox lesions will also be found on feet, genitals and on the teats of the mothers.	Apply iodine on the scabs, may use antibiotic spray and give antibiotic cover as well.  When kids fail to suckle, milk the mother and feed it through the bottle.
Tick Borne Diseases	Goat has serious laboured breathing, muscle tremours and nervous twitching in cowdriosis.  Constipation may be reported in anaplasmosis and in all cases, temperature is elevated.  Ticks may be seen on the animal.	Keep sick animal in the shade and give some clean water.  Treat animal according to diagnosis.  Check the acaricide you are using reference to dosage, mechanism of application, frequency of spraying or dipping and if you dip, you need to check for concentration.
Brucellosis	Commonest sign is abortion in females and signs of infertility in the herd.  The male may not have enlarged testicles.	See description under abortions.  Identify source and if it is male, remove it from the herd.  It is advisable to carry our herd testing.
Blot	This is a digestive disorder caused by accumulation of gas in the rumen. Belching discharges gas.  Bloat can occur rapidly within 15 minutes.	Reduce animal access to new or rapidly growing pastures.  Do not allow animals to graze wet pastures.

	<p>It occurs when animals are turned out onto new pastures.</p> <p>Hungry animals over eat and tend to bloat. After drought when there is rapid plant growth.</p>	<p>Identify and remove goats.</p> <p>Give 1 cup of mineral oil if available.</p> <p>Commercial anti-bloat preparations.</p> <p>Relieve gas bloat with needle and / or cannula.</p>
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### HAND OUT 12C: COMMON PIG DISEASES/ CONDITIONS

General Problem	Possible Causes & Signs	Prevention and Control
African Swine Fever	<p>Caused by a virus. Transmitted by soft ticks, wild pigs and contact with diseased pigs or contaminated materials.</p> <p>High body temperatures, Loss of appetite, General body weakness, Diarrhoea, Running eyes, Difficulty breathing, Pigs gather in one corner.</p> <p>Pigs dying in large numbers in a short period of time (4-&amp;7) after the on set of signs.</p>	<p>Restrict movement of pigs by housing them.</p> <p>Avoid feeding swill to your pigs (if you are to feed, boil it again)</p> <p>Slaughter all the affected pigs, Disinfect all pens.</p>
Swine Dysentery	<p>Caused by a bacteria.</p> <p>Loss of weight, Foul smelling diarrhea, General body Weakness, Loss of appetite.</p>	<p>Clean the pens regularly, Keep pigs of different ages in different pens, Treat the affected pigs with antibiotics.</p>
Piglet Diarrhoea	<p>This disease affects piglets kept in dirty environment. The piglets will have diarrhea, loss of appetite and may die in big numbers.</p>	<p>Clean the pens regularly, Treat the affected pigs with Fuzol.</p>
Mastitis	<p>The pig refuses its piglet to suckle because teats are painful.</p> <p>Less milk production and milk contains pus and blood stains. High body temperature.</p>	<p>Keep the pens clean, Wash the pigs before farrowing, Feed the pregnant pig well, Treat the affected pigs with antibiotics</p>
Worms	<p>Poor body condition, Vomiting, stunted growth, Coughing, worms in the dung, Pot belly</p>	<p>Clean the pens regularly, De-worm pigs every three months, after weaning and before delivery.</p>
Mange / Lice / Jiggers	<p>Scratching against the walls, Loss of hair around the ears, neck and along the back, Seeing the parasites on the body of the pig, Loss of appetite, Wounds on the body</p>	<p>Clean and disinfect the pig pens regularly, Regular spraying, Treat the infected pigs with</p>

		Ivermectin
Piglet anemia	This is caused by lack of iron in the piglets. This normally happens because the placenta of the pig does not allow iron to pass through to the piglets.  Symptoms; Piglets dying in big numbers, Loss of appetite, General weakness, Loss of body condition	Put red soil (soil from ant hills) in piglet food (The soil should first be roasted to kill worms).  Give iron injection to piglets

### General Disease Prevention Guidelines

- Good housing and ventilation to allow easy cleaning and air circulation
- Proper manure disposal (disease causing agents may be contained in the dung, urine, nasal and mouth discharge)
- Rotation on pasture to disrupt the cycles of disease causing agents
- Provide clean water and feeds
- Clean waterers and feeders regularly
- Isolate new animals and always buy from healthy herds
- Disposal off dead animals by burying them
- Use disinfectants
- Keep a close touch with your veterinarian

For proper diagnosis, it is essential that a veterinary scout or veterinary surgeon be consulted, in addition to first aid.

**PLEASE NOTE:** Treatment of diseases is very expensive. All animal farmers should strive to prevent and control diseases rather than wait to treat the animals after they have contracted the diseases. **For all animals, proper housing is paramount.**

### HAND OUT 12D: COMMON POULTRY DISEASES/ CONDITIONS

Disease	Signs	Prevention	Drugs
Fowl typhoid	Loss of appetite Greenish diarrhea	Dry litter	Vaccination
Pullorum disease/salmonellosis	White diarrhea 20-80% mortality Affects mainly at 3-4 weeks of age	Dry litter Hygiene	Furazolidine Oxyveto
Infectious bronchitis	Nasal discharge Coughing Sneezing	Hygiene Proper housing	Erythromycin 20% Alpha trim Super med Ox tetracycline
External parasites	Seeing the parasites Loss of feathers Ruffled feathers	Smooth walls Hygiene Disinfection	Seven dust

New castle disease	Sudden death Difficult breathing Nasal discharge	Vaccine	-
Fowl pox	Loss of appetite Wounds on eye Oral white discharge	Vaccine	-
Gomboro	Loss of appetite Death in large numbers Ceases to lay Shaking and crowding	Vaccine	-
Coccidiosis	Loss of appetite Ruffled feathers Diarrhea	Dry litter Hygiene	Amprolium, coccid, amprosul,
Worms	Loss of appetite Reduced egg production Loss of weight	Dry litter Hygiene	Ascarix Piperazine

### Poultry Vaccination Programme;

Disease	Age of vaccination in weeks	How to administer
Mareks	At hatchery	Neck
New castle	1 <sup>st</sup> week	Eye drop
Gomboro	2 <sup>nd</sup> week	Eye drop
New castle	2 <sup>nd</sup> week	Eye drop
Gomboro	3 <sup>rd</sup> week	Eye drop
Infectious bursitis	4 <sup>th</sup> week	Ocular nasal
Fowl pox	6 <sup>th</sup> week	Feather follicle/wing web
New castle	8 <sup>th</sup> week	Eye drop
Fowl typhoid	12 <sup>th</sup> week	Breast/thigh

- De-worming starts at 2 months and is done monthly
- Newcastle is repeated every 3 months
- De-beaking is done at 4 months
- Fowl typhoid is repeated every six months

### General Disease Prevention Guidelines;

- Most poultry diseases are very difficult to treat once they occur. Therefore, control is very paramount.

- To avoid disease out breaks, the following should be done;
- Keep high level of hygiene.
- Always have a foot bath with a disinfectant at the door
- Do not allow visitors to enter your chicken house
- Ensure proper ventilation to remove heat, dust and other gases
- Do not introduce birds from outside into your chicken house
- De-worm every month after 2 months of age
- Keep litter dry
- Always have clean fresh water
- Avoid stress (heat, crowding, little feed, lack of exercise) that can result in feather pecking, egg eating and cannibalism.
- Keep one age of birds per house (avoid mixing birds of different t ages
- Dead birds should be removed immediately and disposed off in a pit or burnt
- Vaccinate birds in time
- Be in close contact with your area veterinarian

### **SESSION 13: ACTION PLANNING**

**Timing:** 120 minutes

**Methodology:** Presentation and individual assignment

**Materials:** Flip charts, markers, ruled paper, pencils and pens

**Objective:** The session is meant to enable each participant decide the next steps to be taken as a result of the training.

#### **PROCESS:**

##### **Step 1:**

The facilitator displays the template for the action plan. (See template below). S/he explains what each of the heading means putting emphasis on how the proposed activities should be bale to feed into the objectives. S/he further explains that the action plan that will be made will be for the individuals present but when they go back home, they should encourage the group members to develop a group action plan.

Each participant is then given time to work on his/ her action plan as the facilitators move around to give more guidance. After one and a half hours, a plenary is convened and about six of the participants are asked to volunteer and share their action plans. These are critiqued by all participants and the corrections are made. These plans are the ones that will be monitored in future. Hence, the facilitator should photocopy them and go with a copy to be submitted to FAO.

Please note that this is a demanding exercise and if possible, it should be introduced on the second day so that participants can sleep over the assignment and polish it the last day.

### **HAND OUT 13: SIMPLE TEMPLATE FOR ACTION PLANNING**

### Example

In order to bring the discussion home, the following worked example was discussed:

#### Goal: To Enhance the Profitability of my Local Poultry Farm

Objective	Activities	Inputs / Resources	Indicators	Time Frame	By Who
To have at least 6 big potential egg buyers	<p>Conduct a market survey</p> <p>Select the most reliable buyers</p> <p>Negotiate contracts</p> <p>Conclude/ draw agreements with the buyers</p>	<p>Transport money / bicycle</p> <p>Records of the egg buyers</p> <p>Paper, pen &amp; LC official</p>	At least 6 signed agreements in place.		
To increase the number of eggs produced per week from 120 to 600	<p>Identify at least 3 sources of good layers</p> <p>Construct an extension of the chicken house</p> <p>Furnish the house with feed troughs drinkers and warmers.</p> <p>Purchase 1-day old chicks</p> <p>Purchase feeds Vaccinate the Chicks</p> <p>Brood the chicks</p> <p>Brood the Chicks</p>				
To maintain a constant supply of eggs to my customers.					

The facilitator should clearly explain that whatever activity is to be carried out, it should be geared towards achieving the set objectives. In addition, the importance of having objectives that are SMARTER should be emphasized.

- S = Specific
- M = Measurable
- A = Attainable
- R = Realistic
- T = Time bound
- E = Environmental friendly
- R = Rewarding

To help participants reflect on the action plan, a number of questions may be asked. These may include:

- How many layers do I have now? How many eggs do they produce per week? How many layers would I need to produce 650 all in good or even 700 eggs because I need to have 600 eggs without any damage.
- How can I increase the number of my layers? Will I do programmed hatching for the ones I have currently or should I buy 1-day old chicks? Do I have enough expertise to do programmed hatching? Doesn't take a lot of time and labour?
- If I'm to buy 1-day old chicks, which companies supply good quality? Are there some farmers whom the companies I'm thinking of have ever supplied so that I talk with those farmers to hear their story?

Such questions, can help the person making an action plan to decide what to do. As one is answering these questions s/he is generating answers for some of the activities to be undertaken. S/he may also be able to identify some risks which need to be addressed.

Below is some more information that can help a farmer while planning for different animal projects.

**HAND OUT 14: BUDGET FOR CONSTRUCTION AND MAINTENANCE OF 1 SOW UNIT**

EXPENDITURE	START UP PERRIOD – 1 YEAR			Year 2	Year 3	Year 4
	Qty	Unit Cost	Value	Value	Value	Value
<b>Building</b>						
• Poles (big)	51	76,500/=				
• Poles (small)	96	96,000/=				
• Nails	12kg	24,000/=				
• Polythene	24	28,800/=				
• Papyrus	meters	40,000/=				
• Cement	20 pcs	320,000/=				
• Sand	16 bags	60,000/=				
• Water	2 trips	6,000/=				
• Stones	60	80,000/=				
• Labour	2 trips	150,000/=				

<b>Sub Total</b>		<b>881,300/=</b>		<b>400,000/=</b>		
Foundation stock						
o Gilts	5	60,000/=	300,000/=			
o Boars	1	60,000/=	60,000/=			
<b>Sub Total</b>			<b>360,000/=</b>			
Feeding 6 pigs for a year	4,800kg	250	1,200,000/=			
			20,000/=			
<b>Sub Total</b>			<b>1,220,000/=</b>	<b>1,220,000/=</b>	<b>1,220,000/=</b>	<b>1,220,000/=</b>
<b>Veterinary costs</b>						
o Dewormer		100 mls	30,000/=			
o Iron supply		100 mls	10,000/=			
o Antibiotics		100 mls	16,000/=			
o Disinfectant		5ltrs	25,000/=			
o Transport			20,000/=			
<b>Sub Total</b>			<b>111,000</b>	<b>111,000</b>	<b>111,000</b>	<b>111,000</b>

	Start up period year 1			Year 2	Year 3	Year 4
<b>INCOMES</b>	<b>QTY</b>	<b>UNIT COST</b>	<b>VALUE</b>	<b>VALUE</b>	<b>VALUE</b>	<b>VALUE</b>
Piglets	80	30,000/=	2,400,000/=	2,400,000/=	2,400,000/=	2,400,000/=
Manure			120,000/=	120,000/=	120,000/=	120,000/=
Culling						
- sows	5	100,000/=				500,000/=
- boars	1	100,000/=				100,000/=
<b>Total Income</b>		<b>2,520,000/=</b>	<b>2,520,000/=</b>	<b>2,520,000/=</b>	<b>2,520,000/=</b>	<b>3,120,000/=</b>
<b>Expected Income</b>			<b>521,300</b>	<b>720,000/=</b>	<b>320,000/=</b>	<b>1,320,000/=</b>
<b>Expected Profit(when labour is given zero value)</b>			<b>41,300/=</b>	<b>1,200,000/=</b>	<b>800,000/=</b>	<b>1,800,000/=</b>

**Note:** A farmer is advised to make savings by reducing cost of feeding. Produce own feed e.g. maize, sweet potatoes etc.

	Start up period year 1			Year 2	Year 3	Year 4
<b>Expenditure</b>	<b>Qty</b>	<b>Unit cost</b>	<b>Value</b>	<b>Value</b>	<b>Value</b>	<b>Value</b>
<b>Building</b>						
• Poles (big)	17	1500	25,500/=			
• Poles (small)	4kg	2000	8,000/=			
• Nails	32	1000	32,000/=			
• Polythene	8m	1200	9,600=			
• Papyrus	4	2000	8,000/=			
• Cement	4	20,000	80,000/=			
• Sand	1 trip	30,000	30,000/=			
• Water	20 j	100	2,000/=			
• Stones	1 trip	40,000	40,000/=			
• Labour		50,000	50,000/=			
<b>Sub Total</b>		<b>285,100/=</b>		<b>150,000/=</b>		

Foundation stock						
o Gilts	1	60,000/=	60,000/=			
o Boars	1	60,000/=	60,000/=			
<b>Sub Total</b>			<b>120,000/=</b>			
<b>Feeding 1 pig for a year</b>						
-Mixed feeds	800kg	250	200,000/=			
<b>Feeding 2 pigs for a year)</b>						
-Mixed feeds	1600kg	250	400,000/=	400,000/=	400,000/=	400,000/=
<b>Sub Total</b>			<b>600,000/=</b>	<b>400,000/=</b>	<b>400,000/=</b>	<b>400,000/=</b>
<b>Veterinary costs</b>						
o Dewormer	100 mls	30,000/=				
o Iron supply	100 mls	10,000/=				
o Antibiotics	100 mls	16,000/=				
o Disinfectant	5ltrs	25,000/=				
o Transport		20,000/=				
<b>Sub Total</b>		<b>101,000=</b>				
	<b>Start up period year 1</b>			<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>
<b>Expenditure</b>						
	<b>Qty</b>	<b>Unit cost</b>	<b>Value</b>	<b>Value</b>	<b>Value</b>	<b>Value</b>
Labour for husbandry	1 man	12,000	144,000	144,000	144,000	144,000
<b>Total expense</b>			<b>1,250,100</b>	<b>554,000</b>	<b>694,000</b>	<b>544,000</b>
<b>INCOME</b>	<b>Qty</b>	<b>Unit Cost</b>	<b>Value</b>	<b>Value</b>	<b>Value</b>	<b>Value</b>
Piglets	8	25,000	200,000			
	16	25,000		400,000	400,000	400,000
Manure		40,000	40,000	40,000	40,000	40,000
Culling						
- sows		100,000				100,000
- boars		120,000				120,000
<b>Total Income</b>			<b>440,000</b>	<b>440,000</b>	<b>440,000</b>	<b>660,000</b>
<b>Expected Profit</b>			<b>(810,000)</b>	<b>(104,400)</b>	<b>(254,000)</b>	<b>116,000</b>
<b>Profit when labour is given zero value</b>			<b>(666,100)</b>	<b>40,000</b>	<b>(110,000)</b>	<b>260,000</b>

**Note:** A farmer is advised to make savings by reducing cost of feeding produce own feed.

#### HAND OUT 15: EXAMPLE OF A BUDGET FOR 100 LAYERS

EXPENDITURE	START UP PERIOD – 1 <sup>st</sup> Cycle			2 <sup>nd</sup> Cycle	3 <sup>rd</sup> Cycle
	Qty	Unit Cost	Value	Value	Value
<b>Building</b>					
• Poles (big)	10	1500	15,000		
• Poles (small)	30	1000	30,000		
• Polythene	16 m	1200	19,200		

• Papyrus	12	2000	24,000		
• Net	1	15,000	15,000		
• Reeds	3 bundles	5000	15,000		
• Door	1	20,000	20,000		
• Mansion		100,000	100,000		
<b>Sub Total</b>		<b>238,200</b>			
<b>Foundation stock</b>					
○ Old day chicks	100	2000	200,000		
○ Transport		20,000	20,000		
<b>Sub Total</b>			<b>220,000</b>	<b>220,000</b>	<b>220,000</b>
<b>Feedings</b>					
Chicken mash	216 kg	340	73,440		
Growers mash	555kg	340	188,700		
Layers mash	4,380kg	340	1,489,200		
<b>Sub Total</b>			<b>1,751,340=</b>	<b>1,751,340=</b>	<b>1,751,340=</b>
Veterinary costs	100	900	90,000		
<b>Sub Total</b>			<b>90,000</b>	<b>90,000</b>	<b>90,000</b>
Brooding Costs			40,000		
<b>Sub Total</b>				<b>40,000</b>	<b>40,000</b>
Labour	18	10,800	194,400	194,400	194,400
<b>Sub Total</b>			<b>194,400</b>	<b>194,400</b>	<b>194,400</b>
Mortality loss	10	6,000	6,000		
Transport			170,000		
<b>Sub Total</b>			<b>230,000</b>	<b>230,000</b>	<b>230,000</b>
<b>Total expenses</b>			<b>2,763,940</b>	<b>2,525,740</b>	<b>2,525,740</b>

	Start up period 1 <sup>st</sup> cycle			1 <sup>st</sup> cycle	1 <sup>st</sup> cycle
<b>INCOMES</b>	<b>Qty</b>	<b>Unit Cost</b>	<b>Value</b>	<b>Value</b>	<b>Value</b>
-Egg trays	852	3,000/=	2,556,000/=		
-Off layers	90	4,000/=	360,000/=		
<b>Total Income</b>			<b>2,916,000/=</b>	<b>2,916,000/=</b>	<b>2,916,000/=</b>
<b>Expected Income</b>			<b>521,300</b>	<b>720,000/=</b>	<b>320,000/=</b>
<b>Expected Profit</b>			<b>152,060/=</b>	<b>390,260/=</b>	<b>390,260/=</b>

## SESSION 14: RECOMMENDATIONS

**Timing:** 15 minutes

**Methodology:** Brainstorming

**Materials:** Flip charts and markers

**Objective:** The session is meant to generate information on the way forward after the training has ended.

**PROCESS:**

Using a brainstorming approach, the facilitator asks participants to discuss the way forward.

**Please Note:** Participants usually want to make recommendations for the outside parties like the organizers of the training and the funders. Remind participants that they also need to make recommendations to be effected by the participants themselves. List all the ideas ensuring that there is consensus among the participants, while at the same time, avoiding having a very long list that is not realistic.

The recommendations need to be taken serious by all the parties concerned. Some of the recommendations can be used to develop / strengthen other projects.

**SESSION 15: EVALUATION**

**Timing:** 30 minutes

**Methodology:** Presentation and individual assignment

**Materials:** Evaluation forms and pens

**Objective:** The session is meant to generate information on how the training went in order to facilitate improvement for future trainings.

**PROCESS:**

The facilitator gives a copy of the evaluation form to each participant (see attached evaluation form Annex 1). S/he explains the objective of the exercise and encourages participants to feel free to express themselves.

S/he goes through the questions to ensure that participants have the same understanding and interpretation of the questions.

After the forms are filled, they are collected and the information therein is analysed after the training.

## SESSION 16: CLOSING

The closing session will depend on the people who have been invited to close. If there are some officials from the district or central government, the facilitator should ensure that protocol is observed.

If there are no guests, the course leader and the facilitator should close the training by thanking the participants, the district officials who have attended, the hotel management and once more acknowledge the financial support from FAO.

### EVALUATION FORM: ANNEX 1

#### Assessment Form for Evaluating the Animal Husbandry / Livestock training workshop 2009 by PENHA with Financial Support from FAO.

The purpose of this evaluation is to get feedback from all the participants in the training to enable us improve in future trainings.

On a scale of 1-10, with 1 representing "poor" and 10 representing 'excellent', please mark your rating with an X

#### 1. What animals do you own?

Cows	Goats	Sheep	Pigs	Chickens	Turkey	Rabbits	Other (specify)

#### 2. How many years have you been keeping animals?

0-1 years	1-3 years	3-5 years	More than 5 years

#### 3. How useful was the training for you personally?

Not useful (1,2,3)	Fairly useful (4,5)	Useful (6,7)	Very useful (8,9)	Excellent (10)

#### 4. How did the facilitator explain things?

Poorly (1,2,3)	Fairly well/ acceptable (4,5)	Well (6,7)	Very well (8,9)	Excellent (10)

#### 5a. How likely is it that you personally will use the information got from the training?

Unlikely (1,2,3)	Fair chance (4,5)	Good chance (6,7)	Very good chance (8,9)	Definitely (10)

**5b. If unlikely, what are the reasons for not using the information?**

- i).....
- ii).....
- iii).....

**6. How helpful do you think this training will be when you are back home with your animals?**

Unlikely (1,2,3)	Fairly helpful (4,5)	Helpful (6,7)	Very helpful (8,9)	Extremely helpful (10)

**7. How interested would you be in learning more about the subject?**

Not interested (1,2,3)	Fairly interested (4,5)	Interested (6,7)	Very interested (8,9)	extremely interested (10)

**8. Strengths**

Please list what you consider to be three strengths of the workshop:

- i).....
- ii).....
- iii).....

**9. Weaknesses**

Please list what you consider to be three weaknesses of the workshop:

- i).....
- ii).....
- iii).....

**10a. What part of the training did you find most useful?**

.....  
.....  
.....

**10b. What additional topics / subjects would you have liked included in this training?**

**10c. What topics should not have been included in this training?**

**10d. What topics were poorly/inadequately covered?**

**11. What did you think about the mix of learning methods (lectures, discussions, papers, visual aids etc.)?**

**a) Lectures**

Did not like them (1,2,3)	Acceptable (4,5)	Liked them (8,9)	Thought they were very good and informative (10)

**b) Discussions**

Did not like them (1,2,3)	Acceptable (4,5)	Liked them (8,9)	Thought they were very good and informative (10)

**c) Papers/Handouts**

Did not like them	Acceptable	Liked them	Thought they were very good and

(1,2,3)	(4,5)	(8,9)	informative (10)

**d) Use of visual aids**

Poor (1,2,3)	Acceptable (4,5)	Very good (8,9)	Excellent (10)

**e) Quantity of visual aids**

Inadequate (1,2,3)	Adequate (4,5)	Too much (6,7)

**f) Field visit**

Time consuming and not useful (1,2,3)	Useful (4,5)	Informative and relevant (10)

**12. Trainers/Facilitators**

**Trainers presentation skills**

**a) Trainer 1**

S/He was not good (1,2,3)	Acceptable (4,5)	Very good (8,9)	Excellent (10)

**Give reasons for your score**

**b) Trainer 2**

S/He was not good (1,2,3)	Acceptable (4,5)	Very good (8,9)	Excellent (10)

**Give reasons for your score**

**c) Trainer 3**

She / he was not good (1,2,3)	Acceptable (4,5)	Very good (8,9)	Excellent (10)

**Give reasons for your score**

**d) Trainer 4**

S/ he was not good (1,2,3)	Acceptable (4,5)	Very good (8,9)	Excellent (10)

**Give reasons for your score**

**13. Did the training meet your expectations? (Explain)**

.....

.....

.....

**14. What could have been better (describe )**

.....

.....

.....

**15. Your participation**

**a) How effectively were you interacting and participating?**

Badly	Fairly well	Very well	100 % at all time
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(1,2,3)	(4,5)	(8,9)	(10)

**b) How punctual, interested, committed and willing were you to participate**

Poor (1,2,3)	Acceptable (4,5)	Very well (8,9)	Excellent (10)

**16. Practical matters**

**a) Accommodation**

Poor (1,2,3)	Acceptable (4,5)	Very good (8,9)	Excellent (10)

**b) Meals**

Poor (1,2,3)	Acceptable (4,5)	Very good (8,9)	Excellent (10)

**c) Communication prior to the training**

Poor (1,2,3)	Acceptable (4,5)	Very good (8,9)	Excellent (10)

**16. Overall, I would rate the workshop**

Poor (1,2,3)	Acceptable (4,5)	Very good (8,9)	Excellent (10)

**17. Please use the space below to write down any additional comments or suggestions you might have.**

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