Synergies of Animal Welfare and Agroforestry (SAWA) field research manual

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1. Introduction to the Synergies of Animal Welfare and Agroforestry (SAWA) project

Purpose

The purpose of the Synergies of Animal Welfare and Agroforestry (SAWA) project is to evaluate and demonstrate the benefits of agroforestry-livestock systems in Ethiopia for three domains: animal welfare, livelihoods and the environment. The evidence gathered from the project will then be used to scale out these results through future research projects that will have further direct impacts on the communities it will work with, and by contributing knowledge in an area that is currently limited.

The results of this project will create impact through:

- the evidence generated, acting as a proof of concept for how agroforestry-livestock systems and animal welfare can contribute to sustainable agriculture and the Sustainable Development Goals (SDGs);

- creating positive change with the farmers we will work directly with, and

- generating opportunities for proposed outcomes in the results chain and scale out of these outputs.

Location

The SAWA project will conduct research in three districts in Ethiopia: Dugda (Oromia), Humbo (Southern Nations, Nationalities, and Peoples') and Menz Mama Midir (Amhara) as shown in Figure 1.

Figure 1. Map of study districts.
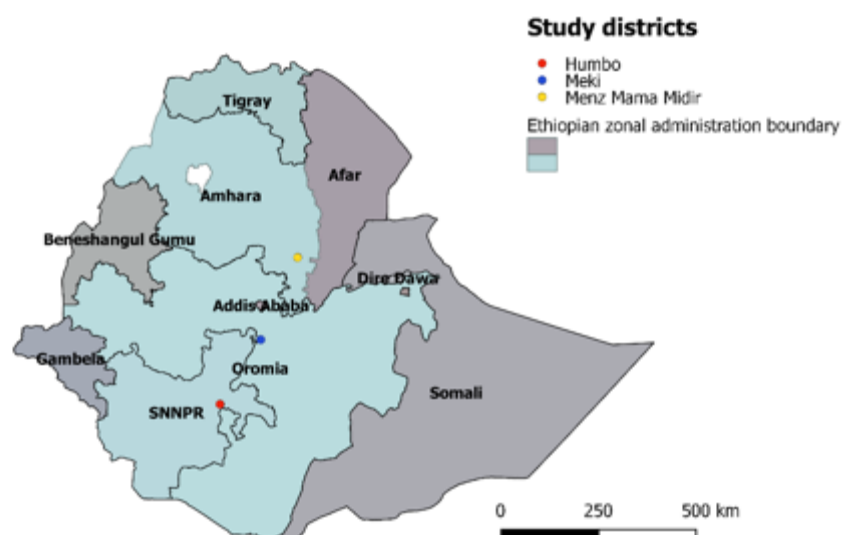
Duration

January 2020 – December 2021

Donor

This project is funded by the Biovision Foundation. It is implemented by the World Agroforestry Centre (ICRAF) and the International Livestock Research Institute (ILRI).

Outputs

- Comprehensive understanding of the role of agroforestry-livestock systems and animal welfare in delivering SGDs.

- Evidence on the benefits and trade-offs in these systems from the perspective of animal welfare, livelihoods and the environment.

- Education tools to promote animal welfare and sustainable livestock production in agroforestry-livestock systems.

2. Project description

The project focuses on two major components: animal welfare and agroforestry systems. It will evaluate and demonstrate the benefits of agroforestry-livestock systems. Agroforestry and animal welfare principles, will be referenced in the study during data collection, including those summarized below.

2.1. Agroforestry and its principles

Agroforestry is a land use management system in which trees or shrubs are grown around or among crops or pastureland (Herder et al. 2015) (Figure 2). Agroforestry tries to balance various needs: 1) to produce trees for timber, for food and fodder, and other commercial purposes; 2) to produce a diverse, adequate supply of nutritious foods both to meet global demand and to satisfy the needs of the producers themselves; and 3) to ensure the protection of the natural environment so that it continues to provide resources and environmental services to meet the needs of the present generations and those to come (Davis 2014; Montagnini and Nair 2004; Nyberg et al. 2020; Santiago-Freijanes et al. 2018). It involves a wide range of trees that are protected, regenerated, planted or managed in agricultural landscapes as they interact with annual crops, livestock, wildlife and humans (Beetz 2011; Nyberg et al. 2020). Silvopastoralism is a type of agroforestry that combines livestock and trees, offering alternative feed resources during periods of low forage availability, particularly in drought-prone regions, which can have beneficial effects on pasture growth and animal welfare (Jose and Dollinger 2019) (Figure 3). Agroforestry shares principles with intercropping but can also involve much more complex multistrata agroforests containing hundreds of species (Schroth et al. 2014).

Figure 2. An illustration of the complex nature of agroforestry and interaction of crops, forests and livestock.
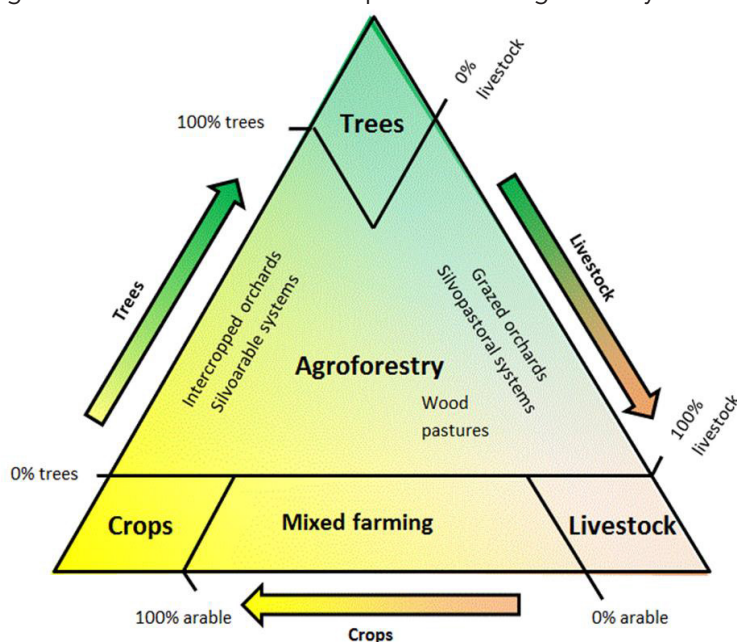
Source: Herder et al. (2015).

Figure 3. Agroforestry: Livestock grazing within the papaya farm in Meki District.

Photos: ILRI/Gezahegn Alemayehu

Why agroforestry? Why trees in agricultural landscapes?

Agroforestry provides multiple benefits in diversity at farm and landscape scales. They can be summarized as follows:

- Providing food and/or feed

- Providing shelter for animals

- Changing the microclimate

- Fixing nitrogen from the air

- Bringing up water from the depths

- Sequestering carbon from the atmosphere

- Providing a framework for biodiversity to flourish

- Adding oxygen to the biosphere

- Diversifying farming enterprises and household income sources

- Ensuring food and nutrition security

Customized agroforestry type/forms according to agroecology and farmers' interest

- Trees and shrubs on pastures

- Home gardens/multistorey tree gardens

- Parkland agroforestry/tree in croplands

- Cut and carry fodder production/protein bank

- Plantation crop combinations

- Boundary planting

- Hedgerow intercropping

- Agroforestry for soil and water conservation

- Agroforestry for fuel wood production

- Live fences of fodder trees and hedges

- Trees and shrubs on pastures

- Shelterbelts and windbreaks

Type of food/feed multipurpose trees to be considered during data collection

Ethiopia has divers agroecological conditions suitable for different exotic and indigenous multipurpose trees, vegetables and root crops/crops in its agroforestry systems. These tree and crop species also determine animal welfare directly or indirectly, thus it is important to gather information about site-specific and commonly available tree species, vegetables and crop types that potentially contribute for food and feed, as well as animal shelter.

Exotic multipurpose food trees in the country include papaya, mango (*Mangifera indica*), avocado (*Persea americana*), kazmir (*Casimiroa edulis*), banana (*Musa spp*), apple (*Pyrus malus*), zeytun (*Psidium guajava*) and enset (*Ensete ventricosum* etc.). Indigenous tree species important for animal shed and feed sources include wanza (*Cordia africana*), *bissana*, girar (*Acacia spp*), shola (*Ficus sycomorus*), tid (*Juniperus procera*), dokima (*Syzygium guineense*), bedeno (*Balanites aegyptica*) and kurkura (*Ziziphus spina-christi*). Important vegetables and root crops used as a food and feed are gomen (*Brassica spp*), timatim (*Solanum lycopersicum*), cassava (*Manihot esculenta*) and potato (*Solanum tuberosum*). Important pulses include bakela (*Phaseolus vulgaris*), shinbira (*Cicer arietinum*), akuri atter (*Vicia faba*), while cereals crops are teff (*Eragrostis tef [kuncho]*]), bekolo (*Zea mays*), sinde (*Triticum aestivum*), gebs (*Hordeum vulgare*) and boloke (*Phaseolus vulgaris*). Therefore, it would be great if the enumerator could ask farmers for, and list, at least the five most important exotic fruit trees, indigenous non-fruit trees, vegetables, crops (including root crops) and pulses that are multipurpose—primarily used for animal feed, shelter and human consumption.

2.2. Animal welfare and its principles

The World Organisation for Animal Health (OIE) (2019) defines animal welfare as the physical and mental state of an animal in relation to the conditions in which it lives and dies. Good animal welfare is demonstrated when animals are healthy, comfortable, well-nourished, safe, able to express innate behaviour, and do not suffering from unpleasant states such as pain, fear and distress (Table 1).

Animal welfare has clear benefits for both animals and people. Good animal welfare can be linked with different benefits such as improved animal production and productivity, food health and safety, worker safety, and livelihood of the farmers . Improved animal welfare also reduce the impact of livestock production on environmental. Establishing good animal welfare (Figure 4) is a human responsibility and needs holistic animal management approach, which includes good housing, management, nutrition, disease prevention and treatment, appropriate care and humane handling (Fraser et al. 2013; AVMA 2021).

Figure 4. The animal welfare umbrella.
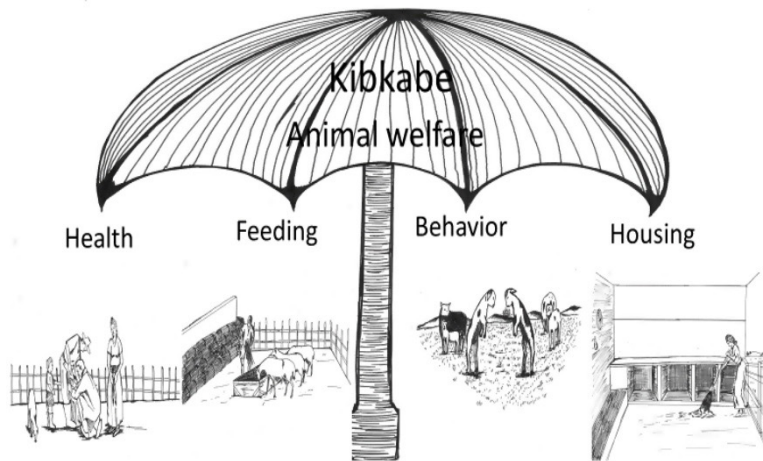
Source Doyle et al. (2019)

Table 1. Animal welfare principles and related opportunities in agroforestry			
Animal welfare principles	Welfare quality criteria	Hypothesized agroforestry opportunities	Indicators
Good feeding	Animals should have a sufficient and appropriate diet, should have a sufficient and accessible water	More diverse range of feed available and an increase of feeds available in traditionally dry/low feed times	Body condition, resource availability, growth, water access, feed access
Good housing	Animals should have comfort around resting, thermal comfort and enough space to move	Improved thermal comfort from increased tree coverage	Lying comfort, species-specific heat stress indicators
Good health	Animals should be Free of physical injuries and disease, with high standards of hygiene and care	Reduced risk of disease transfer because of altered grazing environments; improved feeding/housing; reduced lameness because of better ground/soil structure	Physical condition (lameness, lesions and other issues); syndromic assessment for disease signs; reproductive efficiency
Appropriate behaviours	Animals should be able to express normal social and other important species-specific behaviour; should be handled well in all situations; positive emotions (security, contentment) should be promoted	More natural grazing opportunities will be available to animals; improved farmer-animal relationship because of more natural grazing and social behaviours for livestock	Feeding behaviour and use patterns of area/space; behaviour towards handler

3. Tools

The selected tools, which will be used in each district, include household surveys, focus group discussions (FGD) and community conversations (CC). Relevant consent forms will be given whenever a tool is used.

3.1. Household survey:

Purpose: The purpose of the household (HH) survey is to collect important information on synergies of animal welfare and agroforestry systems that promote mixed livestock-agroforestry production.

Structure: This tool collects basic information on HH structure, livelihoods and animal welfare. The HH survey has two major sections: the HH interview and animal welfare assessment section.

Participants: Livestock producing male or female individuals will be surveyed by considering traditional or agroforestry systems. For HH surveys, 40 households (HHs) per district, representing 20 HHs with access to trees and 20 HHs with limited access to trees will be selected. For animal welfare assessment, 22 HHs per district; 11 households with tree access and 11 households without access to trees (these households will be selected from the above 40 survey households).

Data collection: HH interview and animal welfare assessment data will be collected with mobile tablet using Open Data Kit (ODK) software.

3.2. Focus group discussion

Purpose: The purpose of this FGD-interview is to collect important information on community knowledge, attitude and practices (KAP) on animal welfare and assess benefits and risks of rearing livestock in agroforestry areas.

Structure: The focus group discussion targets to collect information on household composition, agroforestry system, animal welfare practices and animal husbandry in the community, discussion on welfare KAP and perceptions of animal and tree interactions.

Participants: Each FGDs will have 8-10 is livestock holder participants. Invited are selected individual households who are willing to participate in the FGD meeting. If possible, from selected households, husband and wife should participate. Three FGD groups will be set up per site, which are FGD 1: kebele officials/ community leaders/cooperatives/religious leaders, FGD 2: men and FGD 3: women.

Data collection: The data will be collected based on the FGD manual. Checklists, flip charts, notebooks, audio recordings and photos will be used to collect the required data from the discussions

3.3. Community conversations

Purpose: The purpose of the community conversation (CC) is to collect important information on community KAP on animal welfare and assess the benefits and risks of rearing livestock in agroforestry areas. It targets indigenous knowledge, experiences and perspectives of the community by including both genders and community officials and inviting them to share their insights on agroforestry management and animal welfare practices.

Structure: The community conversation will have three sessions. Each session can last 2–4 hours. There will be different activities to be performed such as storytelling, role plays, team reflections and poster presentations.

Participants: Each community conversation will be composed of up to 50 different participants. From selected households, both husband and wife should participate in the community conversation. Male and female participants will be involved based on the selection criteria.

Data collection: All discussion points will be captured through audio and tape recordings, checklists, flip charts, notes, video and photographs. The facilitators and note-takers will take a leading role to record all information.

3.4. Consent forms

Consent forms assure responses of participants will remain confidential and their information kept in an appropriate way. The participation in the household survey is voluntary and should never be influenced by anybody external. Participants also have the right to stop the interview at any time.

The consent form will be read or translated to the participants. It gives them opportunity to ask questions about the research work and any question is answered to their satisfaction. When enrolling the study participants make sure that they understand what they are asked to take part in; that they will be asked questions about their livelihoods, livestock production and agroforestry practices in their area, and their rights to withdraw from the study at any time.

The consent form also explains the benefits of participating in the activity, the nature of the study and gives contacts of the research team for further follow up.

There are three consent forms for this project, which are found in Annex 1, 2, 3 and 4. The HH survey consent form (Annex 1 and 2) is used for individual interviews and welfare assessment, respectively. Both consent letters have been uploaded on the ODK form and will be obtained before the interview starts. In the ODK software, the participants consent will be collected using 'yes' or 'no' tick boxes, and a cover letter (information sheet - Annex 5) with the research coordinator's contact details will be left with the participant. The third document (Annex 3) is applied for FGD. Also, a consent form is available for the community conversations (Annex 4). Written consent will be sought for HH surveys while verbal consent will be sought for FGD and community conversations.

3.5. Open Data Kit (ODK)

The HH survey, including the individual interview and animal welfare assessment activities, uses ODK software to collect data electronically using tablets. It is more effective than using hard copy and makes data management and analysis easier, but the format needs to be well understood and exercised before conducting data collection. The data collectors are responsible to keep the tablet charged and functional, and report to the field lead if there is additional information from a research activity that is not recorded electronically. The usage of ODK is described in Annex 6.

3.6. Enumerator's guidelines

These are some common guidelines that help in carrying out HH surveys, FGD and CC.

- Read and carefully rehearse the information in the documents, discussion guide and other support materials.

- Every field activity will obey and respect cultural procedures in the community (e.g. before starting the survey, start by greeting the participants, appreciate what they are doing and briefly describe the purpose of the survey).

- Be welcoming and polite to encourage trust and be truthful about research activities.

- Record all the required information as best as possible. If the form does not allow you to enter something that you think is important, record it in your field notebook and tell your field lead at the end of the day. Never forget to record data.

- Only the required or representative number of people for the study should participate. There are clear guidelines about how the study participants are selected. Follow a daily reporting system to share any problems with the field coordinator. Wisely monitor the security situation in the area as well as closely look out for and report challenges with data collection and other research activities.

- Additional guidelines for community conversation facilitators are available (Berhe et al. 2021).

4. Study tools description

4.1. Tool 1: Household survey

Household survey: individual interview

The HH survey is a major tool of the project and helps to collect data on synergies of animal welfare in agroforestry systems. Participants in this study will provide valuable information, which can inform the development of activities and interventions that farmers may benefit from. This individual survey aims to collect data on household composition and demographics, income sources, Food Insecurity Experience Scale (FIES), agroforestry resources and practices, animal production and husbandry, and knowledge, attitude and practices questions about animal welfare.

The agroforestry resource section has food tree-related questions, and the responses may include the lists of exotic fruit trees, indigenous trees, and vegetables and roots crops important for human and animal feed as well as shelter (e.g. papaya, mango, avocado, banana, neem, moringa, enset and others).

Data collection format

The household survey is designed for electronic administration by tablet (refer to the ODK manual in Annex 6). The data collector will engage male or female individuals at a time in the household survey. During the interview time, other household members may contribute to answering questions that relate to their common day-to-day life experiences.

Study participants

The purposive sampling method will be used to select participants that have herds with tree access and herds with limited tree access. Based on the availability of agroforestry access, up to three kebeles will be selected from each study district. Then, 40 households will be selected per study district, making a total of 120 households interviewed across the three districts. In each district interviews will be held in 20 households that have tree access and 20 households limited tree access. A qualified adult male or female member of the household will be enrolled in the study by giving consent and the participants should be livestock producers. The household can be male- or female-headed and the respondents can be male or female household members, but they should be adults.

Duration

The individual interview component of the HH survey takes an average of two hours to complete.

HH survey: animal welfare assessment

The aim of the welfare assessment is to collect complete data about animal welfare in the agroforestry system. This observational study focuses on animal-based welfare indicators on four species (cattle, sheep, goats and donkeys) and resource-based indicators. Only livestock-producing participants will participate in the study and the selected species will be assessed in 11 households with agroforestry access and 11 households from non-agroforestry areas. These 11 households will be selected based on the number of animals they have available, aiming to meet the targets of 5 adult animals in at least one of these species: cattle, sheep or goats. If 11 farms do not meet these criteria, then choose farms based on the total number of animals available for assessment.

Study animals

From the selected herd, a maximum of 5 adult animals each of cattle, sheep or goats/household, and a maximum of 2 donkeys per household will be selected for the welfare assessment. Therefore, in each district a maximum of 110 cattle, 110 sheep and 110 goats and a maximum of 44 donkeys will be observed totalling 374 animals. It estimated that totally, 1,122 animals will be selected for the welfare assessment from the three study districts. When visiting households with more than this number of animals, individual animals should be randomly selected for assessment.

Data collection format

During the welfare assessment, a herd will be observed in that individual households for individual animals and for some welfare assessment questions the herder should participate by supporting the households in exploring their experience. These assessments will be handled using ODK software in tablets.

Duration

The welfare assessment takes approximately 10–15 minutes per animal.

Survey materials

- Tablets programmed with digital survey ODK software

- Household survey consent form

- Welfare assessment consent form

- Household survey information sheet

- Notebooks and pens for data collectors to note additional information about households and welfare assessment

Data collectors

Two data collectors, an agroforestry expert and a veterinarian/livestock expert, from each district will be engaged in study for the household survey. Each data collector will conduct interviews in a minimum of two households per day. For animal welfare assessment, the veterinarian can be involved to provide additional expertise. If the data collector speaks the local language, they can collect survey data without a translator, otherwise one is required. In case the participant wants to pause an interviewer, it may resume later.

Survey data collection steps

Introducing before data collection

The following statement can be used to introduce the household survey among participants.

'Good morning/afternoon. This project comes from the International Livestock Research Institute (ILRI) and the World Agroforestry Centre (ICRAF). We are conducting a study on synergies of animal welfare and agroforestry. The aim of this study is to evaluate relationships between animal welfare and agroforestry systems and identify how to promote mixed livestock-agroforestry production using best practices in the future. You are kindly invited to take part in the study because your views and experiences are very valuable. This is an individual household interview and there are some questions for you which relate to your household, livelihood and farm/agricultural activities.'

Household survey procedures

- Introduce yourself and other team members.

- Invite participants to introduce themselves.

- Introduce the SAWA project.

- Obtain verbal or signed consent from the study participants.

- Check whether the herd or herd belonging to the household is present.

- Identify whether the household has a man and a woman involved with livestock production and whether it is in an agroforestry access or non-agroforestry access area. This will help the data collector to decide whether to interview the man or woman in the household. Keep track of the number of access and non-access households, keeping in mind the target number of both groups.

- Start the interview with all participants present. The data collectors should complete the first section (individual survey part) on their tablets. This contains household composition and demographics, income sources, FIES, agroforestry resources and practices, animal production and husbandry and animal welfare components.

At the end of the interview thank the participants for their time and move to the next selected household.

Household survey: animal welfare assessment

On arrival at the household to conduct the individual interview, first check whether the herd or herd belonging to the household is present. If the herd is available, then decide whether it is best to examine the herd before or after the interview, depending on whether the herd will go for grazing or watering and not be available later. The welfare assessment and the household survey are separate forms in ODK but are linked by a common code for the household. This means the HH survey and welfare assessment can be completed in any order depending on the availability of the household and their animals. Data collectors should have a clear understanding of all aspects of the questionnaires and welfare indicators before starting to complete any form.

If the herd is not present at all during the time of the interview, you can complete the tool later when the animals return from grazing or watering, but you will note within the ODK form and notebook that the animals were not examined. If possible, record the telephone number of the HH head and take an appointment to complete the welfare assessment next morning. Keep track of the number of welfare assessments conducted at households with access and no access to trees, keeping in mind the target number of both groups.

Welfare assessment steps

Animal welfare assessment will be conducted separately for four species (cattle, sheep, goats and donkeys). The animal-based welfare indicators are somewhat different based on the species and the same assessment will be done for resources-based indictors at the individual level of households. The following steps should be taken into consideration during the assessment.

1. Please carefully read the scoring options on each animal welfare assessment indicator (refer to Annex 9).

2. Select study animals randomly from the herd: 5 adult cattle, sheep and goats; and 2 adult donkeys per household; recording the age, sex and lactation status of each animal.

3. Engage the owner or family members to support the welfare assessment at every step.

4. Use ear tag (if present), household name and coat colour of animals to record their identity. Taking photographs in ODK can also help with later identification.

5. Initially observe the animals for their behaviours without touching or disturbing their activities.

6. Ask the owner about the ages of the animals.

7. When conducting a visual assessment always be at a safe distance away from the animal. Most indicators can be collected without having to touch the animal.

8. For parameters that need you to be close to or touch the animals, ask the owners to hold them and show what is needed for the assessment to judge aggressiveness or avoidance of new faces.

9. For hair loss/lesions measurement, use ten-cents coins that resemble average of 4 sq cm.

10. If you find very essential points that are not found in the ODK, please take a note and report to the coordinators.

4.2. Tool 2: Focus group discussion

The purpose of the FGD is to collect important information on animal welfare and the benefits and trade-offs of rearing livestock in agroforestry areas. It targets indigenous knowledge, attitude, and practices (KAP) of the community through including both male and female as well as community leaders. They will be invited to share their insights on animal management and animal welfare practices in the agroforestry system.

Methods and participant selection

In each project district, three FGDs will be conducted. Each FGD will be composed of 8–10 participants. Livestock owning adults will be invited to participate in the FGD meeting. If possible, from selected households, husband and wife should participate. FGD 1: kebele officials/ community leaders/cooperatives/religious leaders; FGD 2: men; and FGD3: women. Audio and tape recordings, notes and photographs will be used to collect data to ensure the key points of the discussions are captured. The participants from traditional and agroforestry systems will be in discussion together.

Facilitators

Facilitators are responsible for managing interactions between participants and making sure the views of all are heard, creating a comfortable and free environment as well as checking whether all questions are addressed as outlined. One facilitator and one note taker should be present for each FGD, and their roles are indicated in the FGD manual. The facilitator leads the group in facilitating all activities of the discussion such as asking questions, guiding the participants not to deviate from topics, creating a participatory discussion environment among other roles. The note taker is responsible

for taking notes during discussions and capturing all important points raised by the participants. The facilitators' guide for the FGD is attached in Annex 7: Guidelines for focus group discussion. It is very important for the facilitator to read and internalize these guidelines.

Format

For the focus group discussion, use a hard copy document with the questions and response sheet. The data collectors should be advised to take all notes related to the FGDs in their notebooks. Note takers have a big responsibility to ensure all information raised during the discussion is recorded. There will be audio recording and photo taking in these sessions so that no information is missed; the written notes will be the primary source of information. Recordings alone should not be relied upon.

Consent form

Before conducting the FGD discussion, the consent of participants (see form in Annex 3) will be taken orally. The privacy of all group members will be respected by not disclosing any content discussed during the interviews. All responses will remain confidential, and no names will be included in any reports.

Duration

A session should take a maximum of two hours.

Study materials

- Focus group discussion on synergies of animal welfare and agroforestry: A guide to facilitators (Annex 7).

- Training materials and facilitators guide for focus group discussion

- FGD consent form

- Notebooks and pens

- Audio recorder

- Flip chart paper

- Coloured marker pens

- Community meeting record form

- Pictures of animal and agroforestry resource

4.3. Tool 3: Community conversations

The purpose of this community conversation is to collect important information on community knowledge, attitude, and practices (KAP) on animal welfare and assess the benefits and risks of rearing livestock in agroforestry areas. The CC is a participatory and interactive learning method that targets to capture the indigenous knowledge, experiences and perspectives of the community. It facilitates collaborative learning and sharing among community groups leading to community actions on knowledge, attitude and practices gaps in animal welfare and agroforestry practices. This learning method is delivered by including both men and women participants and persons of influence in the community and inviting all participants to share their insights on agroforestry management and welfare practices of animals.

Format for community conversation sessions

Depending on local contexts, CC sessions can take different forms. In this guide, the following format for facilitating CC sessions is recommended. CC facilitators are advised to adapt the format to suit local realities (number and type of participants and meeting venue).

Four persons will facilitate per each CC session, with one acting as lead facilitator and the others as small group facilitators and note takers. Recommended sites for CC sessions are community centres such as schools and farmer training centres, which have adequate space for breakout sessions if necessary.

Participants

- The CC participants to be selected are male household heads, female household heads, couples, leaders of women's groups and religious leaders, based on the criteria that they are livestock keepers.

- CCs will be delivered to livestock keepers that have agroforestry access and those without access separately. The community conversation will have three sessions for livestock owners with and without agroforestry access and will follow the animal welfare and agroforestry community conversation guide.

- A maximum of 50 participants per CC session

- 10–15 participants per small group discussions

Facilitators

Facilitators are responsible for assisting the conversations by helping the group members to stay on topic and keep to the time schedule for the conversation. A note taker will record all information discussed by community conversation members. The facilitator will work with the note taker to transcribe the large flip chart pages into the conversation notebook.

Consent form

Before conducting the discussion, consent from participants (see form in Annex 4) will be taken in orally. The privacy of all community conversation members will be respected by not disclosing any content discussed during the conversation or the names of participants.

Duration

Each CC session will take 2–4 hours to complete.

Materials

- Community conversation on synergies of animal welfare and agroforestry: A guide to facilitators and community conversation on animal welfare

- Training materials and facilitation guide for community conversation

- CC consent form

- Audio recorder

- Video recorder

- Flip chart paper

- Coloured marker pens

- Community meeting record form

- Pictures

5.   Annexes

Annex 1. Consent form for household interview

Household survey consent form for study participants

- It has been read or translated to me. I have had the opportunity to ask questions about it and any questions that I have asked have been answered to my satisfaction.

- understand I have been asked to take part in questions on farm or agricultural activities in my area.

- Iunderstand that participation in this study is voluntary, and that I can withdraw from the study at any time.

I consent voluntarily to participate in this study.

Name…………………………………………………………. Signature or thumbprint………………………………
ID ……………………………..............Kebele name…………………….....................District…………………………...............
Zone...................Region …………………………….Telephone number (if available) …………………………………………

I, …………………………………………………………….., confirm that I have explained the nature of the study to……………………………………………………………. as set out in the study protocols, that s/he understood what I said, had an opportunity to ask questions and freely gave his/her consent for him/her to join the study.

Name of person obtaining consent………………………………………Signature……………………….…...

Name of interviewer ……………………………………………........................Signature……………………………

Date |__|__|/|__|__|/|__|__|__|__|

Contact

Name of research coordinator:

Institution:

Telephone:

Email address:

Annex 2. Animal welfare assessment consent

Welfare assessment consent form for study participants

• It has been read or translated to me. I have had the opportunity to ask questions about it and any questions that I have asked have been answered to my satisfaction.

• understand I have been asked that my animals and their resources be assessed.

• I understand that participation in this study is voluntary, and that I can stop assessment of my animals and their resources and withdraw from the study at any time.

I consent voluntarily to participate in this study.

Name…………………………………………………… Signature or thumbprint………………………………………….
ID …………………………Kebele name………………………………District……………………………………………………
Zone …………………………… Region …………………Telephone number (if available) ……………………………

I, …………………………………………………………., confirm that I have explained the nature of the study to……………………………………………………………. as set out in the study protocols, that s/he understood what I said, had an opportunity to ask questions and freely gave his/her consent for him/her to join the study.

Name of person obtaining consent……………………………………………….Signature……………………….……..

Name of interviewer ………………………………………...............................Signature……………………………

Date |__|__|/|__|__|/|__|__|__|__|

Contact

Name of research coordinator:

Institution:

Telephone:

Email address

Annex 3. Consent form for focus group discussion

Focus group discussion consent form for study participants

Respect the privacy of all group members by not disclosing any content discussed during the interview. Your responses will remain confidential and no names will be included in any reports. After data collection is completed, all FGD interviews need to be securely kept and managed with care. You can choose not to participate in the interview, and you may stop the interview at any time.

Thank you very much for your participation. Contact any of the team members if you have any question.

* It has been read or translated to me. I have had the opportunity to ask questions about it and any questions that I have asked have been answered to my satisfaction.

* understand I have been asked to take part in focus group discussions on farm or agricultural activities in my area.

* understand that participation in this study is voluntary, and that I can withdraw from the study at any time.

I consent voluntarily to participate in this study.

Name……………………………………………………… Oral consent …………………………………………….
Kebele name…………………………District………………………………… Zone ……………………...............
Region ……………………….. Telephone number (if available) ……………………..................

I, …………………………………………………., confirm that I have explained the nature of the study to…………………………………………………. as set out in the study protocols, that s/he understood what I said, had an opportunity to ask questions and freely gave his/her consent for him/her to join the study.

Name of person obtaining oral consent…………………………………………...….Signature…………………….….

Date |__|__|/|__|__|/|__|__|__|__|

Contact

Name of research coordinator:

Institution:

Telephone:

Email address:

Annex 4. Consent form for community conversation

Community conversation consent form for study participants

- I have willingly participated in this community conversation to discuss the synergies of animal welfare and agroforestry.

- I understand the purpose of this conversation is to share my knowledge and perception on the benefits and risks of rearing livestock in agroforestry systems.

- I understand that participation in this study is voluntary, and that I can withdraw from the study at any time.

- It has been read or translated to me. I have had the opportunity to ask questions about it and any questions that I have asked have been answered to my satisfaction.

- understand that participation in this study is voluntary, and that I can withdraw from the study at any time.

I consent voluntarily to participate in this study.

Name……………………………………………………. Oral consent ……………………………………….
Kebele name………………………District………………………… Zone …………………….......……………
Region ………………………………….Telephone number (if available) ………………………………

I, …………………………………………………….., confirm that I have explained the nature of the study
to……………………………………………………………. as set out in the study protocols, that s/he understood what I said, had an opportunity to ask questions and freely gave his/her consent for him/her to join the study.

Name of person obtaining oral consent…………………………………………...…Signature…………………….…

Date |__|__|/|__|__|/|__|__|__|__|

Contact

Name of research coordinator:

Institution:

Telephone:

Email address:

Annex 5. Household survey information sheet

Information sheet to be explained to study participants

The International Livestock Research Institute (ILRI) and the World Agroforestry Centre (ICRAF) are conducting a study on synergies of animal welfare and agroforestry. The aim of this study is to evaluate and demonstrate synergies of animal welfare and agroforestry systems that promote mixed livestock-agroforestry production using best practices. You are kindly invited to take part in the study because your views and experiences are important. This is an individual household interview and there are some questions for you which relate to your household and farm/agricultural activities. We assure you that your responses will remain confidential, and all information kept in a way that it cannot be traced back to you.

You have the right to stop the interview at any time. Your participation in the household survey is voluntary and you should feel no pressure to participate.

Do you have any questions about the study?

Do you agree to join the study? If you agree, please sign below or express your consent orally.

Contact

Name of research coordinator:

Institution:

Telephone:

Email address:

Annex 6. Viewing tools within ODK

How to view the SAWA household survey materials electronically within Open Data Kit (ODK)

The best way to view the digital SAWA household survey materials is to view the electronic version programmed into ODK. To do this, you need to download and install the ODK Collect application on your tablet or phone. Once you have ODK Collect, connect to the ILRI server using a password and download the tools. You can use an Android phone or tablet. If you use a computer, you also need to download a program known as BlueStacks. The instructions below are for using a computer.

Getting ODK and connecting to the server for the first time

1.   Download ODK Collect onto a tablet or mobile phone. If you are using a computer, you will need to download BlueStacks first, then search for ODK Collect within the Google Play Store.

2.   Open ODK Collect. If you are using a laptop, it will open within BlueStacks.

3.   Click on the Action button (three stacked dots) and select General Settings.
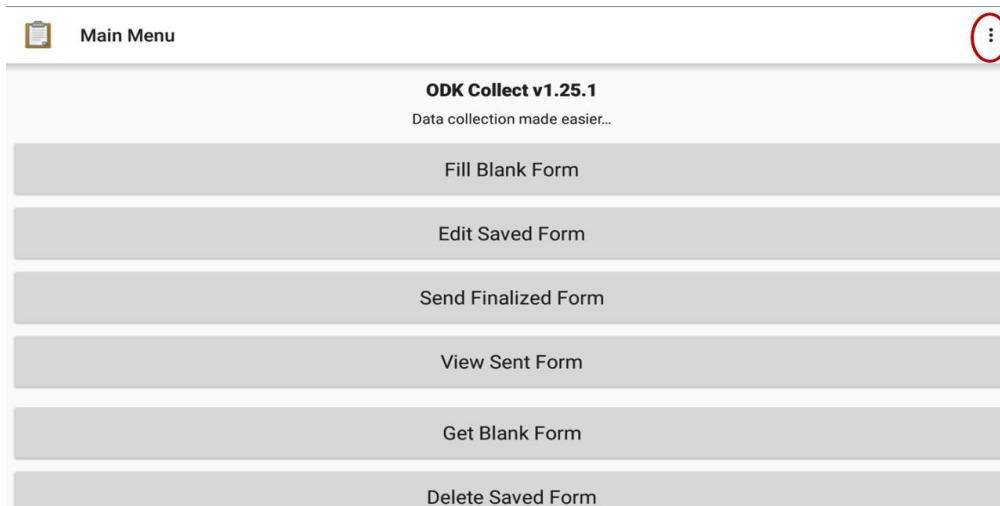
4.   Select Server
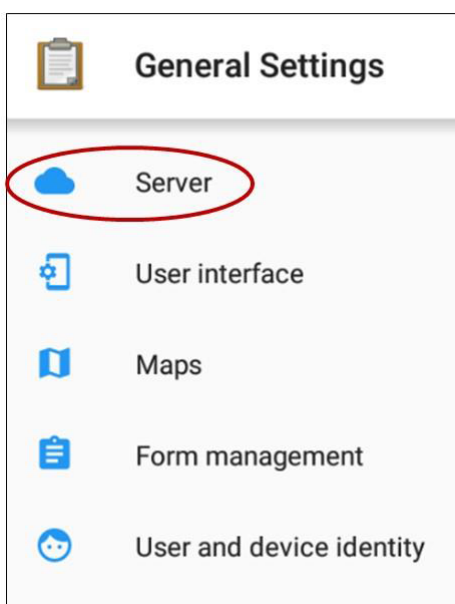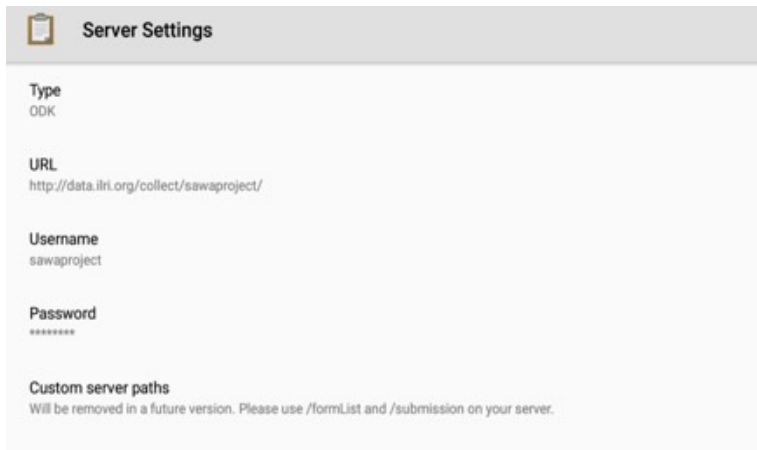
5.	Enter the settings below as instructed by the field lead:

URL: http://data.ilri.org/collect/sawaproject/

Username: sawaproject

Password: SAWAProject

Getting blank forms

Follow these instructions to download the tools for the first time OR after any updates.
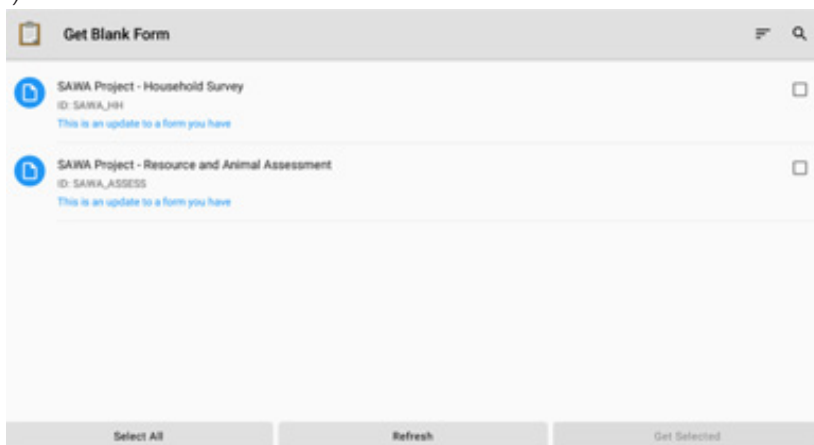
1)	Open main menu and select 'Get blank form'

2)	Select the form

3)　　　　　Click on 'Get selected'

4)　　　　　When you return to the main menu, choose 'Fill blank form' to choose the tool you want to use.
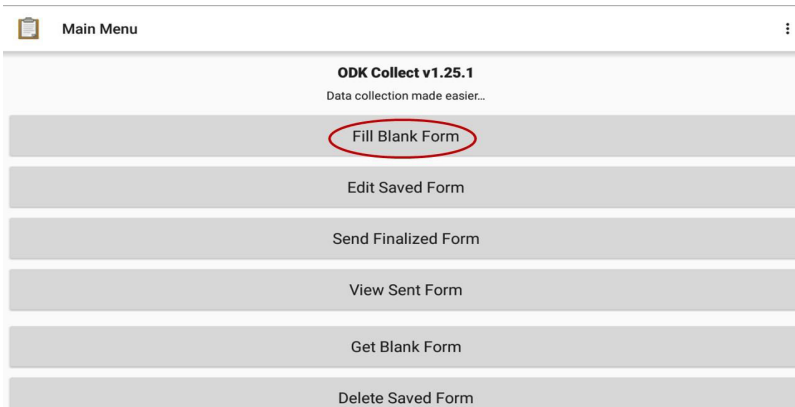
5)　　　　　And you will get the following page when you click on 'Fill blank form.' Click on it.
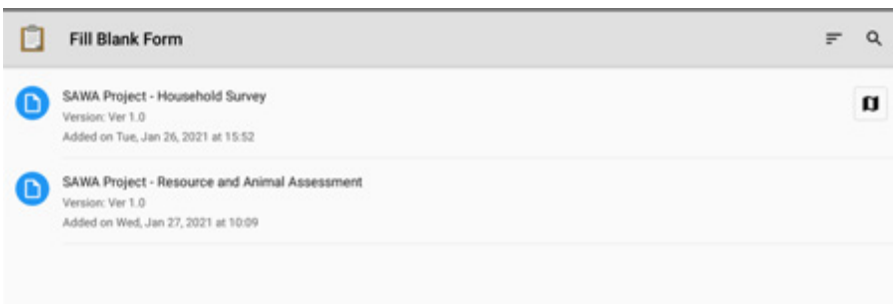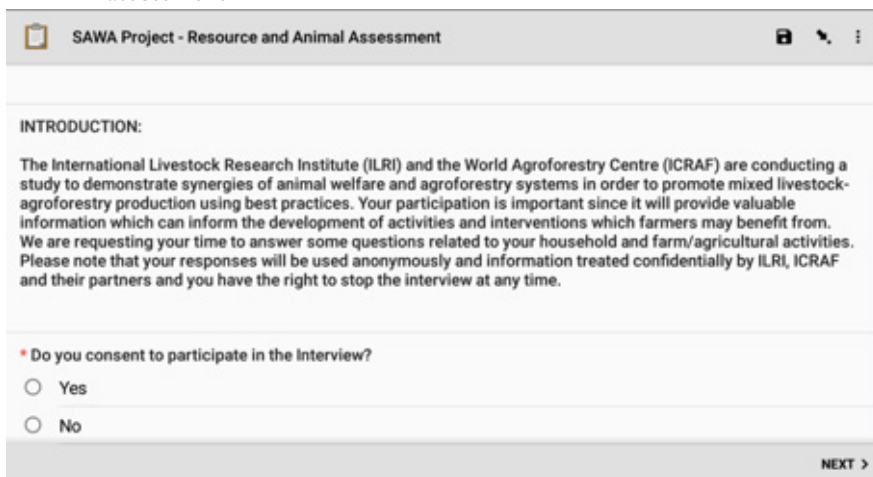
6)   And when you click SAWA Project–Household survey you will get the following form to start the survey

7)   And when click SAWA Project–Resource and Animal assessment you will get the following form to start the assessment

Annex 7. Guidelines for focus group discussion

Focus group discussion (FGDs) guide for facilitators

Introduction

The International Livestock Research Institute (ILRI) works on the development of the sheep/goat value chain in your area with the purpose of improving the well-being of smallholder households through improved income and nutrition. Animal welfare is one of the main constraints to sheep and goat production and marketing. Currently ILRI is also conducting a study on synergies of animal welfare and agroforestry. In this study, we will use participatory approaches to ensure communities are part of the process right from the start. The objectives of the FGD outlined here are to gather information on community understanding of animal welfare, generate a perceived benefits and risks of having livestock in agroforestry areas and promote the indigenous experiences of the community through inclusive approaches for better productivity and animal welfare.

Purpose

The purpose of this FGD interview is to collect important information on community knowledge, attitude, and practices (KAP) on animal welfare and assess the benefits and risks of rearing livestock in agroforestry areas. It targets indigenous knowledge, experiences and perspectives of the community through including both genders and community officials and inviting them to share their insights on management and welfare practices of animals.

Methods

In each project site, FGDs will be conducted. Each FGDs will have 8–10 participants who are livestock holders. Invited participants are selected individual households who are willing to participate in the FGD meeting. If possible, from selected households, husband and wife should participate. Per site, three FGD groups will be set up, which are FGD 1: kebele officials/ community leaders/cooperatives/religious leaders, FGD 2: men and FGD 3: women. A session should take maximum two hours. Audio and tape recordings, notes and some photographs are used to ensure the key points of the discussions are captured.

Confidentiality

Respect the privacy of all group members by not disclosing any content discussed during the interview. All responses will remain confidential, and no names will be included in any reports. After data collection is completed, all FGD interviews need to be securely kept and managed with utmost care. It is important to explain to participants that they can stop the interview at any time.

Facilitators' guide to read before the interview

Thank you for taking the time to help the SAWA Project with the FGDs and facilitate our discussion about animal welfare and agroforestry. You have been invited because of the nature of your work and experiences and commitment to the given task. It is important to acknowledge that every individual in the community has their own views, knowledge and experience and we all can learn a lot from it. FGDs should allow the discussion to flow freely with no right or wrong opinions. As facilitator, your major responsibilities are managing interactions between participants and making sure the views of all are heard, creating a comfortable and free environment as well as checking whether all questions are addressed as outlined in the questionnaire below. Equally important is the recording. The goal of an FGD is not to get numbers or lists of such things, but to understand the reasoning. So as much details as possible need to be noted/ recorded.

Some tips before proceeding to the interview:

1.   Read and rehearse carefully on the FGD documents, discussion guide and other support materials.

2.   Make sure the meeting place is convenient and available. Check whether the participants are sure about the meeting place and time.

3.   Closely follow FGD rules. On each FGD, we will have one core facilitator to guide the discussion, one note taker and one audiovisual operator and one timekeeper. In each study site, we will have three FGDs and the discussion will be conducted on consecutive days for the selected groups.

4.   Depending on the facilitator and note takers, there are tasks to ask questions, listen, take notes and summarize the discussion.

5.   Ensure to be on site before the time of the meeting and arrange required documents before the meeting starts. Allow time for individual introduction of all team members and participants.

6.   Clarify the purpose of the FGD and provide the necessary background information about FGD. Mention the purpose of the interview like this: The main purpose of study is to collect important information on community KAP on animal welfare and assess the benefits and risks of rearing livestock in agroforestry areas.

7.   Explain that an FGD is a free discussion space allowing different opinions and explain the data collection procedures. Then open the initial conversation on the general points of the discussion such as livestock and agroforestry system and general agricultural production system in their location. Once farmers start to discuss the different questions they likely will try to reach agreement. In the discussion, if an agreement cannot be reached, note it and move to the next point. There is no need to reach an agreement.

8.   As written in the document below, start with an open-ended question for initial discussion following with probing questions if needed. Strictly follow each step and check if all points are fully addressed. Ensure the discussion environment is respectful.
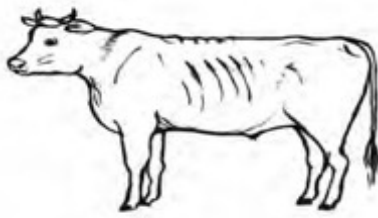
Facilitator name:_____ Signature:_____

Annex 8. Animal welfare assessment index

Cattle body condition scoring
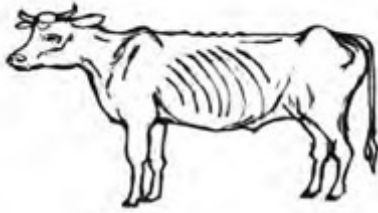
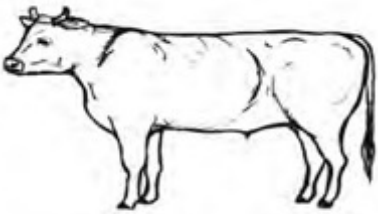|	
	Condition score 1 Very thin
	Condition score 2 Thin
	Condition score 3 Medium
	Condition score 4 Fat
	Condition score 5 Very fat

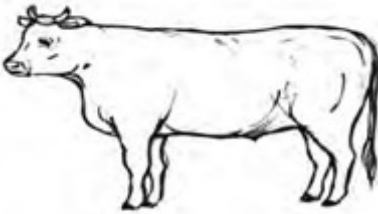*Donkey body condition scoring*
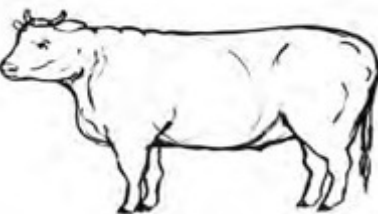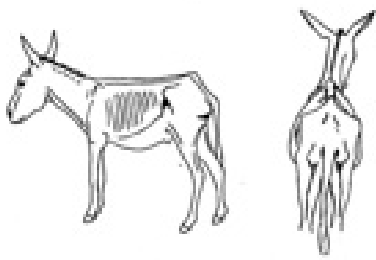

Condition score 1
Very thin

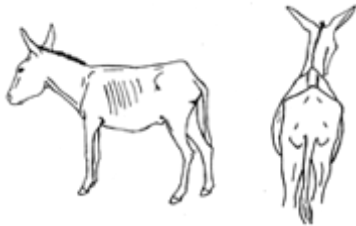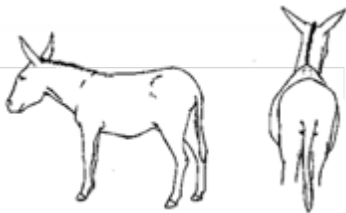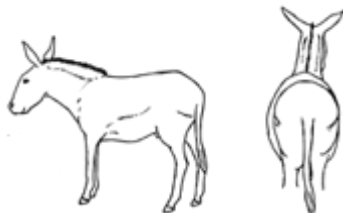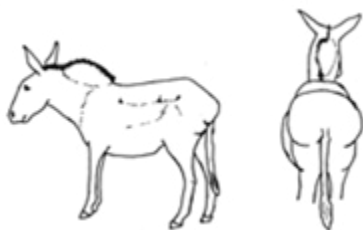Condition score 2
Thin

Condition score 3
Medium

Condition score 4
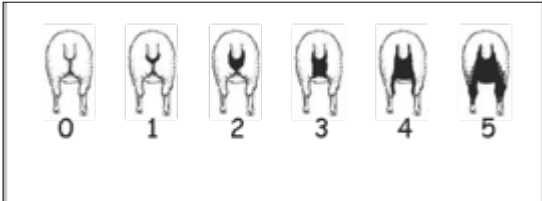Fat

Condition score 5
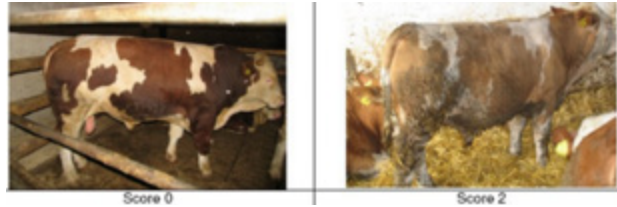Very fat

Goat body condition scoring

Source: Louw (2021).

① Very thin   **②** Thin   **③** Medium   **④** Fat   **⑤** Very fat

Dag score indicators for sheep ang goats. Coat cleanness indicator for cattle

Degree of fecal soiling and/ or diarrhea present on the rear end of a goat or sheep

Dirty coat condition of cattle

Eye abnormality   Normal eye

Hair loss, lesions and swellings indicators
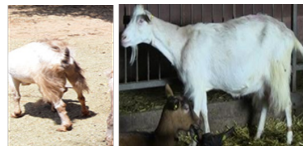
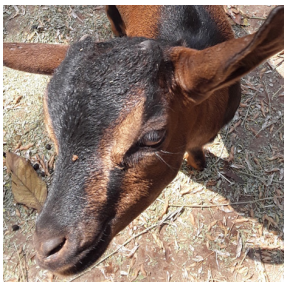Lesion ≥2cm diameter

Swelling ≥ 5 cm in diameter

Photos: ILRI/Gezahegn Alemayehu

Normal hair coat

Poor hair coat

No evidence of nasal discharge in goat

No evidence of nasal discharge in cattle

Evidence of nasal discharge in cattle

Evidence of nasal discharge in goat

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