RURAL AGRI-LIVELIHOODS GUIDE
YOUTH EMPOWERMENT PROGRAMME (YEP)
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ACKNOWLEDGEMENTS

Session content and background information have been developed with reference to the following websites, reports, papers, and planning guides:


- **Management of Crop Pests and Diseases Using Improved Farming Husbandry Practices.** The National Agricultural Research Organisation (NARO)


AGRI-LIVELIHOODS may be defined as:
A set of economic activities, involving self- or wage-employment, using one’s agricultural capital (human and material) to generate adequate resources (cash and/or produce/goods) that will meet the requirements of self and the household, usually carried out repeatedly and as such becomes a way of life.

Ideally:
A livelihood should keep a person meaningfully occupied, in a sustainable (i.e. capable of being maintained for ever without damaging the environment, or without depleting a resource) manner, with dignity.

Agri-livelihoods can go far beyond subsistence (i.e. having the basic means of surviving) food production into commercial food production, in which agro-enterprises (i.e. organisations created to provide products and/or services to customers) can be formed and income generated.

Presently, Uganda has 3 main categories of farmers: subsistence, semi-commercial, and commercial (i.e. having to do with trade or production dealing with the exchange of goods and services). The subsistence farmers who produce predominantly for household consumption are the majority. These subsistence farmers face many productivity related constraints:
- Lack of sufficient food
- Lack of land
- Soil infertility
- Lack of proximal water sources
- Lack of inputs
- Pests and diseases
- Lack of skills and knowledge
- Lack of capital and access to credit
- Market problems (low prices, lack of markets)
- Poor roads and transport networks
- Lack of storage and processing
- Insecurity/fear for property

This guide is designed for Restless Development’s Volunteer Peer Educators (VPEs) facilitating sessions with in-school youth (INSY) and out-of-school youth (OOSY) on agriculture as an option for livelihoods. It intends to provide these young people with the knowledge, attitude, and skills needed to sustainably produce food (at the present time), overcome limitations (some of which have been identified above), and to encourage the future creation and development of a successful agriculture enterprise.

This guide is also structured to follow the Restless Development’s Livelihood Pathway as outlined in Appendix 1. As this pathway outlines the steps required to establish a successful cooperative and agro-enterprise, it is important to either:
- Start from the beginning of the pathway if the club is just newly developed
- Identify (the first day the group meets – but before sessions begin), using the M&E Youth-Livelihoods Assessment tool, which step along the pathway an existing group is at and continue instruction from there

Ultimately, it is at the discretion of the VPE to decide where to begin, and to choose which activities are most relevant to a particular group. During the course of the sessions it is important to monitor learner enjoyment, commitment, and interest so that lessons can be modified accordingly (i.e. tailored to local situations, different
facilitation technique used, etc.). Also make note that activity times will vary and should only be used as a guide (for example, VPEs may need to split a session into several depending on time or learner comprehension). Regardless of whether changes were made to a session or not, please take the time to fill out the review form (found in your M&E pack) at the end of every session as this information is valuable to Restless Development in improving its Rural Agri-Livelihoods Guide.

**THE GUIDES FORMAT**

In Part 1 of this guide, the VPE has access to information regarding the environment (i.e. ecosystems, water, soil, and forests). It is simply intended to be a reference tool in the case that questions, or more detail, are required while in the field/placements.

Parts 2→4 are sample sessions that can be taught by the VPEs (*remember, they are only examples and VPEs are highly encouraged to develop their own session plans, specifically tailored to the group and the placement*). What is important to note is the progression of sessions since they follow The Livelihood Pathway, and as such, evolve from:

- Establishing realistic expectations (2.1), and conducting an agro-ecosystem analysis using the Farmer Field School techniques (2.2)
- To discussing food security (3.1) and the implementation of sustainable, good practice techniques for household food production (3.2→3.12)
- To forming groups (4.1→4.3) and partnerships (4.4)
- To commercial food production (4.5→4.8) – where marketing, resource mobilisation, and saving for an agro-enterprise are all considered

Please refer to your M&E pack to determine your specific targets (i.e. how many sessions need to be taught and to whom).

The overall aims of this Rural Agri-Livelihoods Guide are to:

- Increase awareness of environmental health, food security, and sustainable, organic food production techniques at the household and commercial levels
- Enable low-income farmers to shift from minor income-generation to profitable agro-enterprise development
- Contribute to the social and economic empowerment of populations in poverty

**TRACKING ATTENDANCE**

It is recommended that attendance be monitored throughout the duration of your placement and certificates be given to those individuals who attended 80% or more of the sessions. This should be announced from the start to promote commitment and clarify expectations.

**LIFE SKILLS**

Ideally, all learners will have prior knowledge of life skills, having already completed life skills training using Restless Development Uganda’s Life Skills Guide.

Before any farmer can embark on becoming a commercial producer they need to have well developed life skills, especially as they relate to decision making/critical thinking, interpersonal communication, and coping and self-management. This guide attempts to develop these skills in each session, and is accomplished by:

- Encouraging warmers/energisers to be related to a life skill (and that life skill in turn be related to the session)
• Holding a life skills debrief at the end of each session. In this debrief, the young people will identify all the life skills they used and explain their importance. Have a copy of the life skills form (Appendix 2) visible or distributed one to each learner.

NOTES FOR THE VPES
Another document of interest, which is available in the Restless Development library is the DIG (Development In Gardening) Reference Manual. It contains much information in terms of nutrition and sustainable organic farming techniques.

Important links to be a successful facilitator are found within the ASRH Curriculum. Of interest will be:
• Page 14 – Facilitation (Appendix 3 – Facilitation Guidance and Appendix 4 – Session Planning)
• Page 17 – Counselling and Referrals (Appendix 5 – Restless Developments Peer Advising Handbook 2008)
• Appendix 2 – Sample Warmers and Energisers

When working with OOSY you must be very sensitive to their capabilities and/or limitations. Of particular importance is their ability to read and write. A few of the sessions are developed with surveys and forms to complete, it is therefore up to you to decide if they need to be modified so as not to make the young people feel intimidated, inadequate, or shy. Suggestions for dealing with this situation include:
• Find out who is comfortable with writing and have them be the recorder
• Reading/prompting the young people with the questions, ensuring they fully understand what they are being asked, and when they give a response write it down for them
• Devise a new way of teaching the session, ensuring all objectives are met (use the NFE Guide for Peer Educators – a copy of which is available per placement – to assist you)
PART 1: ENVIRONMENTAL BACKGROUND (REFERENCE TOOL FOR FACILITATORS)

ENVIRONMENT AND ECOSYSTEMS

Environment: all of the biotic (living) and abiotic (non-living) factors that act on an organism, population, or ecological community to influence their survival and development. Biotic factors include the organisms themselves, their food, and their interactions. Abiotic factors include such items as sunlight, soil, air, water, climate, and pollution. Organisms respond to changes in their environment through evolutionary adaptations in form and behaviour.

Organism: a living thing – i.e. animal, bird, reptile, plant, bacteria, etc.

It is essential to be aware, and fully appreciate, the interdependency (when variables/components influence each other to some degree) of all elements of the environment. This understanding cements the importance of conserving the whole environment, and the potential consequences of not doing so.

Consequences of environmental degradation include:

- Deforestation
- Soil erosion/loss of soil fertility
- Desertification
- Population explosion
- Pollution
- Global warming
- Lack of waste management
- Natural resource degradation
- Extinction of natural resources and animal species
- Natural disasters

All of these have a direct impact on the future and wellbeing of human beings.

So how is the environmental situation in Uganda? Well, in Uganda, hydropower is the main source of energy, at least for the industrial sector, with thermal energy being increasingly used. The environmental effects of electricity are more indirect, and cyclical. NAPE admits its power shortage is because of environmental degradation – deforestation reduces rainfall and increases soil erosion, which causes siltation (deposits of fine soil) in rivers and wetlands. This reduces the amount of water that eventually reaches Lake Victoria, which reduces the amount of electricity able to be generated. Because of this energy shortage people turn to charcoal and wood burning instead – which further increases deforestation and creates a highly destructive cycle (see notes in section 1.4 on forestry for more information on this).

The most significant and realistic action that can be carried out in Uganda for environmental protection today is tree planting. It is easy to carry out and, most importantly, is immediately relevant to people from rural areas.

Geographical regions (i.e. global, national, or regional) are classified based on the type of environment in that particular area – known as an ecosystem.

Ecosystem: an ecological community (i.e. all organisms) together with its environment, functioning as a unit. In Uganda, examples of ecosystems are forests, mountains, ponds/streams, grasslands, and wetlands.
WATER

Water is the most important natural resource in the world. Without water nothing on this planet can survive. Thus, it is extremely important to not take water for granted and to conserve it at all costs.

To illustrate the above point consider a litre of water – this represents all the water on earth! How much do you think is available for drinking? The truth is, not very much. This is the breakdown:

- Most of the water in the world is located in the oceans. This water is not drinkable because of its salt content. To account for this you would have to remove 970mL from the litre of water.
- Of the drinkable freshwater (which has no salt in it), almost 80% is frozen in icecaps and glaciers at the earth’s poles where it is VERY cold! To account for this frozen, unavailable water you have to pour out another 24 mL.
- Another 4.5mL of water has to be removed to account for the freshwater that is just too difficult for humans to access. The reason being is that it is trapped deep underground and is thus difficult to extract.
- What is now remaining of the litre of water is 1.5 mL. Yet again this is not all available freshwater. Most of this water is unavailable because of pollution or contamination.
- The unpolluted, available freshwater for drinking in the world can be represented by a single drop in the palm of your hand (by dipping the end of a pencil into the 1.5mL). Not very much now is it? Do you now see the need for protecting it?

NOTE FOR THE FACILITATOR

Keep in mind that if you use this material in your sessions you may have learners who do not understand the concept of salt water or climates cold enough for ice to be permanently present. Begin with the basics of water and try to use teaching aids (i.e. diagrams, props) whenever possible.

BASICS OF WATER

The below diagram shows the structure of water and how the molecules (1 oxygen and 2 hydrogen) are spaced in different states. When water is frozen (solid state) the molecules are packed together and have no room for movement. As water temperature gets warmer and warmer the molecules get more excited and spread out (liquid state) until they eventually evaporate into the air (gas state).

![The states of water]

This next diagram shows the water process, i.e. how water goes from one state to the next. This process is completely based on temperature. For example, if you cool water it freezes to become ice. If you then heated up the ice it would melt and return to water. The same can be said of adding heat, although the processes and states are different, as shown below.
There will never be any more fresh water on the earth than we have right now. No new water is being made, the water we have is recycled again and again. It is important to emphasise this to ensure that one fully understands why water conservation is so important.

The water cycle is the simplest natural cycle on earth. Solar (sun) energy causes water from lakes, oceans, streams and rivers to evaporate. Millions of litres of water rise into the atmosphere as an invisible gas, this is water vapour. Once in the atmosphere the water vapour cools and turns into tiny water droplets, forming clouds. This is known as condensation. The droplets then fall to the earth as rain, this is known as precipitation.

This rain runs into streams and rivers, eventually flowing into lakes or oceans, and the cycle begins once more.
Animals drink water from lakes or rivers and pass it out in urine for which the water then evaporates. Plants take up water from deep in the soil and then release water vapour through their leaves back to the atmosphere. Deep rooted trees are therefore very important in encouraging rain which is why deforestation leads to decreased rainfall!

**WATER CONSERVATION**

Water is very important for movement of plant nutrients from the soil to the plant. It is also very important in the making of plant food. Soils must therefore have enough nutrients and water to make them productive. Excessive sun and dry spells dry up the soil so there is need to conserve or replenish lost water. Water can be conserved by mulching, good crop cover, growing of cover crops, agro-forestry, and by adding organic manures. Water can also be harvested to irrigate the land during the dry season.

- **ROOF TOPS**
  Rain water harvested from roof tops can be stored in plastic tanks, clay pots, drums, corrugated iron tanks, concrete/brick tanks (underground and above ground). This water is mainly put to domestic use but could be used for irrigating crops (home gardens).

- **TREE TRUNKS**
  Rain water is harvested from big tree trunks using banana fibre tied around the tree trunk and directed to a large clay pot. This water can be put to domestic use or for irrigating crops.

- **TRENCHES** (see the guide’s cover)
  Rain water is diverted using channels from various sources such run-off to earth dams or infiltration ditches. This water is mainly used for irrigation or for livestock.
SOIL

 Soil is a mixture of mineral particles (sand, silt and clay), organic matter, water, and air. Most soils are formed slowly over a long period of time from rocks and rotting plant and animal materials. Other soils are formed from particles brought down by rivers and lakes.

 Soil management is a way of maintaining or improving soil fertility for high yields. This is done so that present and future generations can maintain and improve soil fertility. The understanding of nutrient cycling and the importance of feeding the soil regularly are thus essential concepts in agriculture.

 The soil is a living system; as well as the particles that make up soil there are millions of living creatures, known as macro and microorganisms (big and small living things). They rely on plants to survive, and in return benefit the plants by recycling the nutrients (see below).

 NUTRIENT CYCLE DIAGRAM (black dots represent the ‘nutrients’)
 Notice how fewer nutrients remain in the soil once the plant has been harvested/eaten. Unless these nutrients are returned/added to the soil it will become degraded and later crop yields will be lower and of a poorer quality.

 TYPES OF SOIL
 There are many soil types in Uganda. Soil types will differ according to climate, parent rock, vegetation, land terrain, time, and the farmer’s management. The difference in soils depends on the colour, texture, water holding capacity, cultivation practices, depth, slope, and drainage. There are three main types of soils namely sand, clay, and loam soils. Certain crops grow well in some soils, while some crops may not grow well in certain types of soils.

 - **Loam Soils**: the most common soils in the country. They are easy to cultivate and usually offer the best yields.
   - Characteristics of loam soils: have medium soil particles, have a good soil structure, high water holding capacity, high in humus (decaying matter), usually black or brown
   - Loam soils are the best soils for most crops such as bananas, coffee, vegetables, cassava, potatoes, groundnuts, and maize.

 - **Clay Loams**: a mixture of clay and loam soil that has more clay particles. Clay loams are usually found towards the valleys or near water bodies. They have high water holding capacity and are thus also cultivated during the dry season. They may need draining during the wet season.
- Characteristics: very fertile, high water holding capacity, have fine particles, are sticky when wet, usually grey to brown in colour, more difficult to cultivate, difficult to drain
  - Clay loams are good for sugarcane, yams, and vegetables.
- **Sandy Loams**: a mixture of sand and loam soils that have more sand particles. Sandy loams are generally found around northern parts of the central region, eastern, and northern Uganda, or near water bodies.
  - Characteristics: have coarse particles, are easy to work, easily carried away by wind and water, have a low water holding capacity, are airy because of coarse particles, generally not very fertile because of leaching (washing down of nutrients)

### SOIL FERTILITY

Soil fertility is the ability of the soil to supply plant nutrients and water in adequate amounts to plants. Poor soils lack plant food and can be a limiting factor to crop production.

How is soil fertility lost? Plants need nutrients to grow. These nutrients are removed from the soils. When bananas, cereals, groundnuts, coffee, pastures and others are harvested, the soil becomes poorer in nutrients. This mining of the nutrients by plants is a major cause of soil infertility. Soil erosion, run-off, and leaching further lead to loss of nutrients.

Factors leading to soil fertility:
- Continuous cropping and plant removal
  - Farmers need to watch their soil as they grow crops from season to season because nutrients are removed and stored in the produce harvested. With continuous cropping, the soils become depleted of essential nutrients and become infertile.
- Soil erosion
  - Soil erosion is the carrying away of soils that contains plant food. This can be caused by water, wind, or animals. Erosion results in soil loss, reduction of plant food in the soil, yield reduction, and even abandonment of the land.

A few of the implications of soil erosion are listed below:
- **Volatilisation**
  - Soil fertility can be lost when nutrients are exposed on the surface of the soil. Nutrients are lost in gas form. Burning could also cause volatilisation.
• Leaching
  o Leaching is the washing down of nutrients from the upper to lower layers of the soil where they are inaccessible to plants.

• Burning
  o The practice of burning of bushes and grasslands leads to loss of organic matter. This practice also kills microorganisms in the soil and exposes the soils to erosion.

• Deforestation
  o Deforestation is the practice of cutting down trees. This practice exposes the soil to agents of erosion. This also reduces nutrient recycling from lower layers. Deforestation leads to land degradation (reducing the productivity of the soil). Land degradation in drier areas may also lead to desertification.

What Can Be Done?
Maintaining, restoring and improving soil fertility is an important step in ensuring sustainable agriculture. Declining soil fertility leads to lower yields, incomes, and food insecurity. There is, therefore, a need to put back food into the soil. Soil could be improved through addition of manures, soil improvements, using good crop husbandry practices and skills.

• Organic manure
  o Organic manures refer to sources of plant nutrients that are naturally occurring. Such plant and animal residues and green manure plants, minerals like rock phosphate that are mined from the earth and used without undergoing any chemical treatment.

• Chemical manure
  o Chemical fertilisers are sources of plant nutrients that are derived from a chemical manufacturing process. Some examples include NPK, CAN, DAP, SSP, and urea. Organic and chemical manures can be used singly or in combination depending on factors such as the farmer’s situation, availability, and costs of organic and chemical fertilisers, type of crop, and area involved.

• Good crop husbandry practices
  o Good crop husbandry practices are cropping patterns that reduce soil erosion and conserve water for increased crop yields.

There are 16 chemical elements known to be essential to a plant’s development and survival. These are divided into two main groups: mineral and non-mineral. The 13 mineral nutrients, which come from the soil, are dissolved in water and taken up by the roots. It is these nutrients we are putting back into the soil when we add compost. These are divided into macronutrients (nutrients the plant needs in large amounts) and micronutrients (nutrients needed in much smaller amounts). The macronutrients are then divided into primary and secondary. It is these primary macronutrients that most synthetic fertilisers contain, perhaps the most recognised being NPK. Constant use of this will keep those nutrient concentrations up in the soil but the micro-nutrients, and secondary macro-nutrients, will become severely depleted – causing nutrient mining. Farmers may be unaware of this and, noticing their crops suffering from nutrient deficiency, will continue to add NPK – wasting money and creating an even greater nutrient imbalance in the soil. The best way to ensure all nutrients are added to the soil is the use of organic compost, made from decomposed matter, which will contain all essential nutrients.
The uses of plant essential nutrients are given below. This information is provided in case specific questions are asked or desired.

The non-mineral nutrients are Carbon, Hydrogen and Oxygen, these are obtained from the air and water (CO₂ and H₂O) and used during photosynthesis (process by which plants make sugars in order to sustain themselves), therefore there is little farmers can do to control their use! It is useful to realise just how many different nutrients are required for countless different uses within a plant, this drives home the importance of using organic fertilisers which contain all of these nutrients, instead of synthetic ones which do not.

**Nitrogen (N)**
This is absorbed in the highest amounts of all nutrients by plants. Nitrogen is a part of all living cells and is a necessary part of all proteins, enzymes and metabolic processes involved in the synthesis and transfer of energy. It makes up part of chlorophyll, and helps plants with rapid growth, increasing seed and fruit production, and improving the quality of leaf and forage crops. It is commonly taken up by roots, but leguminous plants can access their Nitrogen directly from the air. Recovery from Nitrogen deficiency upon application of fertiliser is immediate (days) and dramatic - a very useful observational tool in teaching!

**Phosphorus (P)**
Like nitrogen, phosphorus is an essential part of the process of photosynthesis. It is involved in the formation of all oils, sugars, starches, etc and helps with the transformation of solar (sun) energy into chemical energy. Essential for proper plant maturation, withstanding stress, affects rapid growth, and encourages blooming and root growth.

**Potassium (K)**
Potassium is absorbed by plants in larger amounts than any other mineral element except nitrogen and, in some cases, calcium. It helps in the building of protein, photosynthesis, fruit quality and reduction of diseases.

**Calcium (Ca)**
Calcium, an essential part of plant cell wall structure, provides for normal transport and retention of other elements as well as strength in the plant. It is also thought to counteract the effect of alkali salts and organic acids within a plant.
**Magnesium (Mg)**  
Magnesium is part of the chlorophyll in all green plants and essential for photosynthesis. It also helps activate many plant enzymes needed for growth.

**Sulphur (S)**  
Sulphur is essential for production of protein. It promotes activity and development of enzymes and vitamins, helps in chlorophyll formation and improves root growth and seed production. It also helps with vigorous plant growth and resistance to cold. Sulphur may be supplied to the soil from rainwater.

**Micronutrients**  
These are needed for almost all processes, in small amounts; all metabolic pathways, aiding plants in using macronutrients efficiently, aiding production of sugars, reproductive growth, seed and fruit development.

**COMMON NUTRIENT DEFICIENCY SYMPTOMS:**
- Nitrates: Stunted growth and yellow older leaves (lower) with areas of necrosis (dead spots) starting on the tip and travelling along the midrib.
- Potassium: As Nitrogen except necrosis starts on the tip and travels along the leaf edges.
- Phosphates: Poor roots and purple younger leaves (higher).

Visually, nutrient deficiencies can be difficult to tell apart from the symptoms of many diseases and pest problems. Commonly, discoloration and stunted growth are good indicators of nutrient deficiencies. They can also be an indicator of a soil that drains poorly, or is compacted; the symptoms are similar because both of these factors limit a plant’s access to nutrients. Discolouration caused by deficiency tends to spread gradually up the leaf, from the tip or from the sides (imagine the movement of nutrients between the cells). Discolouration caused by disease or pest damage tends to be more sporadic, and in isolated areas on the leaves.

It can be useful to calculate the financial value of compost compared to synthetic fertilisers. The example below is a very rough calculation based on a hypothetical fertiliser, with cow dung as the compost. However, nutrient composition data can be obtained and an accurate estimate of the value of a specific compost pile can be calculated instead.

Example:
1 bag (50 kg) of Fertiliser costs $10  
Fertiliser contains 46% Nitrogen (so 100 kg urea contains 46 kg of Nitrogen)  
1 bag of Fertiliser contains 0.46 x 50 kg = 23 kg of Nitrogen  
So 23 kg of Nitrogen costs $10  
1 kg Nitrogen costs $0.43  
6 tonnes of cattle manure contains the equivalent of 36 kg of Nitrogen  
Compared to the Nitrogen in the fertiliser (1 kg N costs $0.43)  
36 kg of Nitrogen cost 36 x $0.43 = $15.5  
So 6 tonnes of cattle manure has a value of $15.5 (or equivalent to 78 kg or 1.5 bags of fertiliser)

**OTHER SOIL MANAGEMENT TECHNIQUES**

**Crop rotation:** growing a different crop on the same piece of land each year. The most common technique is to divide the farm/garden into blocks and crops are rotated, occupying a different block in following seasons. Light feeders should follow heavy feeders. Deep rooters can follow shallow rooters, and legumes should be rotated throughout to keep the soil Nitrogen content up.
Mulching: This is commonly dead plant material used to cover the soil’s surface. Dead plant material is dried then placed on the soil layer, covering the soil between crops (or used as a total cover when planting seeds and removed once they begin sprouting). Some examples of good mulching materials include:

- Straw and grass
- Crop litter (stems or leaves remaining after harvest)
- Leaves (from trees in compound)
- Banana leaves
- Maize stalks

Helpful hints:

- Mulch before each planting season
- Mulch material should be dry before putting on soil
- Do not use diseased plants in the mulch
- If using material from outside one’s garden make sure they know where it came from as it could contain weed seeds or pests
- Keep mulch 1 finger-length away from crops stems
- For best results put a thick layer of mulch on soil (about 4” thick)

You can use live plant material for mulching, if this is done make sure weeds and/or stem shooting plants are not used as they will sprout and grow in the garden and out compete the crops planted.

Row planting: Two or more crops could be grown together in alternating rows such as maize and beans. This improves soil fertility because the crops do not compete for food. The beans add more food (nitrogen) to the soil, which helps the maize to grow better.

Contour Farming
Contour farming is the practice and technology of creating barriers (grass, stones, hedgerows, strip cropping) along contours. This practice helps to slow the speed of water run-off down the slope. It also encourages seeping of water into the soil. Examples include:

- Terracing
  There are different types of terraces in Uganda. Terraces are aimed at availing cultivable land on steep slopes. They also control soil erosion.

- Fanya juu
  Fanya juu are barriers constructed along contours in the middle of the field to stop soil erosion within the field. A fanya juu is also constructed at the lowermost part of the field to stop loss of water and soil to the neighbouring fields.

- Fanya chini
  Fanya chini are barriers constructed at the uppermost boundary of the field to enable the farmer to harvest surface running water and soil carried from the upper areas and to protect his fields from that run-off.

Agro-forestry
Agro-forestry is the growing of trees on farms to improve the livelihood of the rural farmers and to protect the environment. Trees on farms provide farmers with high value products such as food, fruit, medicines, fodder, timber, fuel-wood, poles, and manures. Agro-forestry provides one way of improving soil fertility by capturing nutrients from deep layers of soil, making food (fixing nitrogen from the air), and putting it back into the soil. These trees also reduce soil erosion by holding nutrient rich soil in place and by reducing the rate of run-off.
FORESTS AND DESERTIFICATION

Trees are not only an important resource for humans (for energy, construction, etc.) but they keep our air clean – converting carbon dioxide into oxygen – and they return water from the soil to the air. Other benefits include:

- Provision of shade
- Habitat for birds and animals
- Provision of food (e.g. fruit)
- Clothing from bark
- Fallen leaves decompose to add nutrients to soil
- Glue and rubber from tree sap
- Control soil erosion
- Roots improve soil structure and allow water to seep into soil
- Some trees (legumes) improve soil by adding nitrogen to it
- Use in natural medicines
- Use in natural pesticides
- Use in repelling pests
- Windbreaks
- Paper
- Carvings
- Cash crops

Seeing as forests have so many benefits, it is crucial that they be protected from deforestation.

Deforestation: the cutting down and removal of all or most of the trees in a forested area. Deforestation can erode soils, contribute to desertification and the pollution of waterways, and decrease biodiversity through the destruction of habitat.

Long term effects of deforestation include:

- Disappearance of wild animals
- Decrease in rainfall (drought)
- CO₂ levels not controlled (greenhouse effect)
- Soil erosion
  - Lack of fertile land as top soil is washed away
  - Reduction of rain water penetration into ground
  - Flooding
  - Siltation of water sources
  - Formation of gullies
  - Poverty
- Desertification

Desertification: the transformation of land once suitable for agriculture into desert. Desertification can result from climate change or from human practices such as deforestation and overgrazing.

Grazing animals and firewood collection/charcoal burning damage the vegetation holding soils together. Soil compacted by hard-footed animals is less able to soak up rain when it does fall and is easily eroded by the water and wind. Cutting trees for firewood/charcoal leaves soil unshaded, leading to an increase in the temperature of the soil and in the rate of evaporation, which draws salts to the surface. Ultimately, arable land is destroyed.

Desertification is a vicious cycle. It is the ultimate effect of land degradation; taking agricultural land out of production, thus increasing the pressure on the remaining land. This in turn leads to
worse droughts and heightened degradation. It is estimated that around 73% of Africa’s agricultural dry lands are severely or moderately degraded.

Desertification is both a cause and a consequence of poverty. Poorer and marginalised people are forced to farm fragile land, and seeking to make a living from it may cause further degradation.

The best ways to prevent desertification are:

- Allowing trees to grow on the land
- Replanting areas which have been deforested
- Allowing cattle to graze in many areas (not overgrazing any one place)
- Providing assistance to rural, subsistence farmers
PART 2: INTRODUCTORY SESSIONS

REALISTIC EXPECTATIONS

LEARNING OBJECTIVES
By the end of this session, learners will be able to:

• Explore and clarify the expectations and contributions of the learners
• Ensure the training programme matches the needs of the learners
• Define the role of risk and incentives as factors found in all new pursuits

LIFE SKILLS OBJECTIVES
Values; stress and time management; self-awareness; self-esteem; options for livelihoods

TIME: 1-2 hours

MATERIALS: Flash cards (you will need 2 different colours and enough cards for each learner to have 2 of each colour); markers; flipcharts; masking tape; blindfolds; ‘incentives’ (i.e. sweets, coins, etc.)

BACKGROUND NOTES

Expectations: The act or state of looking forward to an event that is about to happen; however, in the case of uncertainty, expectation is what is considered the most likely outcome to happen.

Examples of expectations include a person’s expectations:

• Of themselves (i.e. attitude, behaviour, performance, etc.) and their hopes/dreams
• Of things (i.e. cars, phones, etc.)
• Of others
• Of work (i.e. invested or required time, money, set-backs or shocks, communication, group dynamics, external assistance, etc.).

When one’s expectations are not met, it is common for them to respond by being upset or frustrated. The key is to always define and share expectations (especially when others are involved), and hold others accountable to the expectations that have been communicated. Keep in mind that expectations by nature are not guaranteed to get fulfilled but are more likely a guideline for desired behaviour/performance.

Sustainable and profitable activities or agro-enterprises do not happen overnight. Having realistic (i.e. being aware of things as they ‘really’ are) expectations of oneself, others, and the situation ensure that project development occurs while individual/group drive and confidence are maintained. One reason why projects or agro-enterprises fail is that they have unrealistic expectations, especially of the time and money needed, as well as the risks/hazards to be faced.

Risk: the possibility of suffering harm or loss, or following a course involving uncertain danger

Risks are also known as hazards, set-backs, or shocks; examples include:

• Failure of the project/agro-enterprise due to lack of money, resources, or management
• Personal risk: illness, disability, death
- Property risk: fire, theft, damage, earthquake, wind or water damage
- Liability risk: being sued because of neglect, malpractice, or causing wilful injury

Risks specifically related to agriculture are pests, disease, soil erosion, lack of irrigation, weather, crop outcome, etc. A farmer never knows the outcome of his actions until harvest, since many of these factors cannot be controlled. Those factors which can be controlled must be monitored regularly for speedy correction; if not, then crop yields will be lower and money lost.

Reward: something that encourages action or effort and that may cause an increase in personal satisfaction (i.e. money, happiness, time, or something else wanted)

When an individual perceives that the rewards outweigh the risks, they are willing to move forward and act on their idea. Risks are one of the main rewards when trying to "make it big" in the business world.

INSTRUCTIONS

1. Lead a quick warmer (5-10 minutes).

An example, related to RISK, is: Cross the Circle. Ask learners to form a big circle, facing inward. Each learner identifies someone standing opposite him or her. When you say, “Go!,” each learner must close his or her eyes, walk across the circle and stand in the place of the person opposite him or her. All learners do this at the same time, and they must not peek! People get very confused but sort themselves out eventually. Afterwards, ask learners how they felt doing this with their eyes shut. How does the exercise relate to real life experiences?

EXPECTATIONS

2. Seeing as the learners are part of a agriculture or farmers group, explain that for any of their group projects to succeed, everyone involved needs to know the expectations of everyone else (i.e. “What would I like to learn?”; “What would I like to see achieved and how?”) and be able to identify possible contributions (i.e. “What can I share with others?”).

3. Ask learners to individually write down their expectations and contributions on the cards provided (2 of one colour for their expectations and 2 of another colour for their contributions). Explain that there are some basic rules for using the cards:
   - Write clearly in big letters
   - Only one idea per card (otherwise take a second card!)
   - Be clear and specific
   - Maximum three lines per card
   - Do not write your name

4. Show a few cards already prepared to demonstrate the instructions given above.

5. Give the learners time to write their expectations and contributions on the cards. Collect the cards as they become ready and tape them under the headings ‘expectations’ and ‘contributions’ on the flipcharts.

6. Discuss the cards briefly, asking for clarification if unclear or doubtful. Introduce the idea of realistic and unrealistic expectations. Have them identify which cards fit into each category. In the cases of expectations set too high, explain what the learners can more likely expect.

7. Identify expectations that an individual may have regarding their subsistence and/or commercial food production. Examples include time, money (i.e. even saving 100, 500, or 1,000 UGX per month can help build some capital over time), training, challenges, etc. Emphasise that setting realistic expectations is very important for reaching one’s goals, and although it may take longer, little steps do help to achieve this.

8. Run through the training session outline with the learners so that they know what will be covered, why it is covered that way, and how it relates to their expectations (this will help the VPE tailor the remaining
sessions to the groups needs). Should an important expectation not be met, try to incorporate it into the curriculum. Refer to the ‘Foreword’ for this information.

9. Emphasise that expectations can largely be met when the learners themselves become active and follow up on the lessons learned after their training has been completed.

RISKS

10. Write the quote “Big Wins Require Big Risks” from Bill Gates (creator of Microsoft) on a flipchart. Ask the learner what they believe this means.

11. Ask for several volunteers to come to the front. Place a blindfold on each. After they are blindfolded, give one or several individuals in the audience ‘incentives’.

12. Explain to the blindfolded individuals that they will have to go into the audience unassisted and disoriented and find those with the ‘incentives’. The rules are:
   - No running
   - When they come up to a person, they must ask, “Do you have the ‘incentive’?”, the one asked must respond with, “I do not have the ‘incentive’” or “Yes, and you may have the ‘incentive’”.

13. Ask the blindfolded volunteers:
   - Was it difficult to volunteer for something when you did not know the purpose or outcome?
   - Explain how you felt. [Possible feelings: fear of the unknown, intimidated, insecure, cautious, etc.]

14. Ask the audience:
   - When observing the various individuals wearing the blindfolds, how did they differ in how they moved to pursue the ‘incentives’? [Timid and very cautious; aggressive and didn't act intimidated by being unable to see where they were going.]

15. Ask the entire group:
   - What were the risks taken by the blindfolded individuals? [They risked injury or bodily harm, and embarrassment].
   - What happened to the blindfolded individuals when they were given an ‘incentive’? [They moved in pursuit of the reward, they had a reason to take a risk].
   - Did some individuals behave more aggressively than others pursuing the ‘incentives’? What was the result of this behaviour? [The more aggressive, the more rewards received.]

16. Refer to the Bill Gates quote yet again and ask the learners what is meant by the term ‘risk’? How did it relate to the above activity? More importantly, how does it relate to household and commercial agriculture? [If you are willing to be a leader and do something more than those around you, risking more embarrassment, money, time…and your idea works, the reward is greater than those who practice caution.]

17. Hold a plenary to discuss the following:
   - What would you expect to happen if a farmer perceived that the risks outweighed the incentives? If the incentives outweighed the risks?
   - What risks does a farmer face? What risks would be faced if the farm went commercial? List ways in which these risks can be dealt with.
   - What are other risks that a farmer may face (i.e. personal, property, and liability)?
   - How do expectations relate to risks? [By analysing the potential risks one can then have realistic expectation of how to plan for them.]
   - Do risks help determine if a project/agro-enterprise will be feasible?

18. Finish the session with questions and answers, as well as a life skills debrief.
AGRO-ECOSYSTEM ANALYSIS (AESA)

LEARNING OBJECTIVES
By the end of this session, learners will be able to:
• Understand what Farmer Field School teaching techniques are
• Conduct a agro-ecosystem analysis
• Discuss problems and look for answers themselves

LIFE SKILLS OBJECTIVES
Communication; critical thinking; listening and giving feedback; teamwork; self-esteem

TIME: 1 hour

MATERIALS: Flipcharts; markers; paper; pens; masking tape

BACKGROUND NOTES
An agro-ecosystem analysis is part of the non-formal teaching technique called Farmer Field School-FFS (see Appendix 3 for more information). Ultimately, the learners themselves are the experts, and most of the learning is done through their own experimentation and observation. This technique will be used throughout the sessions such that the learners will be able to make detailed observations on crop development and performance, the biology of pests and their natural enemies, and analyse crop production practices.

Essentially, an AESA involves the learners being put into small groups to observe all environmental factors in the field:

• **General crop data:** crop variety, number of days from sowing/planting, nutrient deficiencies
• **Environmental conditions at time of observation:** weather, sunshine, cloud cover, rainfall, temperature
• **Soil conditions:** wetness of soil, water-holding capacity
• **Incidence of pest, disease and weed damage to crop, and presence of natural enemies**: number of pests, nature and location of damage, number of plants showing disease symptoms, types of diseases, numbers and types of weeds, numbers and types of natural enemies seen
• **Crop growth:** growth stage, plant height, number and size of leaves, size of stems, number of flowers and their size
• **Cultural practises in place:** irrigation, fertiliser application, weeding, mulching, pesticide application, etc.

* Initially observation of all insects, their interactions, their appearance, and where they were found (on leaf, on ground, under leaf, inside stem, etc.) may be needed to replace this step to enable learners to distinguish between pests, natural enemies, and farmers’ friends.

When all information is gathered the groups come together to compare and discuss notes and present back any findings. The use of AESA should help learners recognise relationships between different factors observed, and come to a fully informed decision over crop management practises.

Example activity description:
• **Insects:** collecting samples of insects where possible, noting appearance, location on the crop, type of crop it was found on, careful observation of behaviour, numbers.
**Leaves:** type of plant it is observed from, colour, parts of leaf/plant with colour patterns, and general appearance. Samples of healthy and unhealthy leaves on the same plant/type of plant, looking for causes of unusual leaf colouring/health, looking at effects of different leaves on the plant (e.g. are plants with yellowed leaves weaker than those with greener leaves?), looking at differences in leaves from different areas.

**Soil:** colour, differences in colour, causes for colour differences, dryness, smell, texture, compaction, etc. Samples of different soils very important, and looking at why they are different from different places. They should dig a hole and observe any changes in colour at different layers.

**Human practises:** mulching, composting, trenches, intercropping, animal grazing. The effects of these practises on the soil and crops must be noted and compared to areas of land treated differently.

**Fruits:** size of fruits, health of fruits, causes for damage to fruits.

In their groups they must look at effects of weather and climate on their topic, listing what differences there would be in their observations at a different time of year. They must also say if they have noticed any changes in their topic over time (e.g. the soil in a particular area has changed appearance, a crop in a particular area produces less fruits than in previous years, etc.).

Ideally, AESA requires the group in question to have selected a demonstration plot where they can set up two single crop treatment plots, one for normal farmer practice and the other for newly taught practices, allowing for observational comparisons. The demonstration plot can also be used for building group ARTs (assuming this does not result in all group ARTs being built on one member’s land!).

AESA can be used as teaching technique in individual lessons, particularly useful in initial lessons to familiarise farmers with the concept of thinking about the entire agro-ecosystem when considering crop management, introducing them to new ideas (such as ‘good’ and ‘bad’ insects), as well as allowing facilitators to become acquainted with the area and its needs. More importantly AESA can be used consistently, preferably on the group’s demonstration plot, to observe the effects of new management practises/ARTs and the changes to the agro-ecosystem during the growth cycle. Notes made from each AESA should be kept so that comparisons can be made throughout the growing season. It is suggested you make time every 1-2 weeks to discuss AESA observations of all farmers, noting them to down to compare throughout the season.

**INSTRUCTIONS**

1. Lead a quick warmer (5-10 minutes).

Preferably, the warmer should relate to the life skill of **CRITICAL THINKING.** An example being: **Connect 9 Dots.** This exercise is very simple. On a flipchart, draw out 9 dots; have the learners do the same on a slip of paper. Explain that they must attempt to connect all 9 dots using 4 straight lines, *without lifting the pen from the paper or going back on themselves!*

**SOLUTION:**

![Connect 9 Dots Solution]

2. Determine whether the group has a plot of land which they already use (if not, you may have to ask permission to view someone else’s for this session).

3. Explain that to manage crops effectively you have to look at everything that affects it. Introduce the concept of the Farmer Field School and its techniques – experimentation and observation (more information provided in Appendix 3). Ensure that they understand the term observation [watch attentively
to detect, discover, or determine the existence, presence, or fact of something] and that they should think critically about what they observe – since a common problem during these observational activities is that people will look for the first, most obvious explanation for a problem.

4. Have the group brainstorm the definition of environment and have them list environmental factors which can affect a crop. Ensure that all the aspects of the AESA are included and understood (i.e. as many examples of what to look for are provided).

5. Split the learners into 5 groups. Provide each group with one of the AESA environmental factors from the example activity description above, a piece of paper, and a pen.

6. Explain that you want them to go on an exploratory walk of the field where they must make observations and gather material/evidence to make a presentation back to the rest of the group on their specific topic. They must compare different areas of the field and look for causes for any differences they note. Also have them note how changes in weather/climate throughout the year could affect their topic?

7. Move among the groups, observing with them, asking questions to improve their observations.

8. Give each group a flipchart and markers and have them write/draw/tape samples onto it that reveal their exploration. Have each group present back to the plenary. All learners must examine the samples produced, and make notes of what is said and any questions posed during presentations. Encourage learners from different groups to answer questions from their own observations.

9. It is very important in this session to work on the explanations for observations and to get the learners to bring all their different observations together to find answers. For example, the group observing leaves may have noted they were greener in one area of the field than the other and the soil group may have found that area had darker soil; by discussion they may discover links between these observations. The learners should be encouraged to find explanations for the observations in the discussion.

10. Ask the group why they should do AESAs regularly on their garden? What are the advantages of doing so?

11. Finish the session with questions and answers, as well as a life skills debrief.
PART 3: HOUSEHOLD FOOD PRODUCTION

FOOD SECURITY AND NUTRITION

LEARNING OBJECTIVES
By the end of this session, learners will be able to:

- Define food security
- List the 3 main food groups and identify foods from each
- Explain what each group does for the body and why they are important
- Identify difficulties with obtaining all these foods and how to overcome them

LIFE SKILLS OBJECTIVES
Problem solving; listening and giving feedback; healthy lifestyles; options for livelihoods

TIME: 60-90 minutes

MATERIALS: Flipcharts; markers; paper; pens; masking tape

BACKGROUND NOTES

FOOD SECURITY
A food “secure” situation is one in which all people at all times have access to safe, nutritious, culturally-appropriate food, produced in a sustainable manner and obtained through non-emergency food channels. To achieve national food security, a country must be able to produce or import the food it needs, and be able to store it, distribute it, and ensure fair access to it. For families to achieve food security, they must have the means to produce or purchase the food that they need, and they must have the time and knowledge to ensure that the nutritional needs of all family members are met.

The three pillars of food security are:

- Food must be **Available**, meaning that adequate amounts of good-quality, safe food must be produced or imported at the national and local levels
- Food must be **Accessible**, meaning that it must be distributed and available locally, and it must be affordable by all people
- Food must be **Used** in the best way possible for each person to be healthy and well nourished (sufficient in quantity, quality and variety for each individual’s needs)

Food security can be measured most effectively by considering affordability, accessibility, availability, appropriateness (culturally, morally, and nutritionally), safety, and sustainability.

Food security is affected by a number of factors including, primarily, the food supply, access to jobs, and such basic services as education, health facilities, sanitation, clean water, and safe housing. Poverty, social inequality, and lack of education are primary causes of hunger and malnutrition and are major obstacles to obtaining food security.

In order to achieve household food security the above factors must be evaluated and corrected. Examples of actions to take are: (**availability**) increasing productivity through crop selection, fertiliser and other sustainable...
agricultural techniques; more home gardens; small animal, livestock and fish production; drying and other storage; and increasing the ease of getting foods into and out of the area; (accessibility) improved earning power of all people, as well as improved government services (roads, transportation systems) and international trade agreements; (use) knowledge can be passed on from parents and grandparents, teachers, government workers, and health care workers.

NUTRITION
The three main food types are Go, Grow and Glow foods.

Go foods are carbohydrates. The body breaks these foods down to make energy. Some examples of these ‘energy giving foods’ are: rice, Irish potatoes, sweet potatoes, posho, chapati, macaroni (pasta), yams, matoke, etc.

Grow foods are proteins. Proteins make up most of the structure of cells in the body (e.g. they are essential for muscles, bones, skin, blood, hair, etc.). They are very important whilst the body is growing, but are needed throughout life because a person’s body is always repairing itself, growing, renewing, and changing. Some examples of proteins are meat (chicken, goat, fish, beef, pork, etc.), eggs, milk, beans, g-nuts, cowpeas, etc. An easy way to remember is: any animal product, or any food from a legume (i.e. nuts, seeds, beans).

Glow foods are vitamins and minerals. The body needs many different vitamins and minerals for many different processes. Even if a person ate plenty of grow and go foods the body would not be able to use them properly without the right vitamins and minerals. Vitamins and minerals are important for keeping the body strong against disease. Deficiency in many different vitamins and minerals can result in specific illnesses (malnutrition). Vitamins and minerals are found in fruit and vegetables, and a person should try to eat some every day. Some examples of these very good vitamins and minerals are: dodo (amaranthus), tomatoes, green peppers, eggplant, cabbage, pumpkin, green peas, carrots, etc.

NOTE FOR THE FACILITATOR
It may be difficult to teach under these names of the groups. It is common for people to mix up L and R sounds, and so the use of Glow and Grow can make it quite challenging to teach verbally. Also, it can be difficult to translate these terms directly. Depending on your learning group it may be easier to use terms like: energy giving foods, foods for growing, foods for health.

Babies and children are constantly growing. During this growth there are certain stages where a child must get the right foods. If a child does not get the right foods at these stages they will not develop as best they could – this can affect muscle growth and brain development. These implications cannot be changed or reversed in later life. In more serious cases, it can result in long lasting malnutrition and illness. It is therefore very important that young children, pregnant women, and lactating mothers have balanced diets.

It is also very important that people living with HIV/AIDS, or any other illness, have a balanced diet, with lots of vitamins and minerals, which will help to keep the body strong.

Vitamin C: this is found in all fruits and vegetables, especially citrus fruits like oranges and lemons. It helps to keep the immune system strong and increase resistance to colds and flu. A lack of vitamin C results in scurvy – swollen gums (leading to teeth falling out), sunken eyes, bleeding from mucus membranes (e.g. lining of mouth, nose, etc.), opening of wounds, and increased susceptibility to other diseases.
Iron: this is found in red meats (e.g. beef, goat, pork) and in dark green leafy vegetables (e.g. dodo). It is needed in blood to carry oxygen. A lack of iron results in anaemia which makes a person feel weak and tired.

Calcium: this is found in milk, eggs, green vegetables, and meat. This is used in the structure of all bones. It is needed throughout a person’s life but is especially important for growing children so that they can grow strong bones. A lack of calcium results in weak bones that can break easily.

Protein: this is needed for all body growth and repair. A lack of protein results in kwashiorkor – swollen belly, grey/blonde hair, inability to make antibodies after a vaccination, weakness, and in severe cases, limited mental development.

These are just some examples of conditions arising from malnutrition, there are many more. In order to live healthily and be more resistant to disease it is important that all food groups are eaten throughout life.

**TIPS**
Roughly, a good ‘portion’ size for fruits or vegetables should fit into the palm of a hand.
The different colours of fruit and vegetables indicate the different vitamins and minerals contained in it, therefore in a day a person should aim to eat ‘a rainbow of colours’, although it is sometimes more relevant to focus on people eating greens as these are generally the most accessible and easily grown.

**INSTRUCTIONS**

1. Lead a quick warmer (5-10 minutes).

   Preferably, the warmer should relate to the life skill of **assertiveness**. An example being: An example being: **Hand Push**. Ask learners to form two lines, facing each other. Each learner touches palms with the learner facing him or her in the other line. Call one line “Line One” and the other “Line Two.” Ask all the learners in Line One to start pushing against the person in Line Two, using only their palms. People in Line Two can respond in any way they like. After 30 seconds or so, ask everyone to stop and to change roles. This time Line Two members should push against Line One members, and Line One members can respond as they choose. After another 30 seconds or so, ask everyone to sit down in a big circle. Ask people how they felt doing this exercise. Did they respond by pushing back or by giving in, or what? How does this relate to their real life experiences of conflict?

**NUTRITION**

2. Split learners into small groups and distribute the papers amongst them.

3. Ask each person to draw a picture of a food; it can be anything, the more pictures the better. Ensure that foods from all groups are drawn.

4. Tell the group that there are three different food groups, and in order to live a healthy life they must eat from all of them on a daily basis. Ask if they can name, or describe these groups.

5. Write the names of the food groups on 3 separate flipcharts and stick them up in different areas.

6. Ask learners to take a piece of masking tape to stick their picture to the group they think it belongs to. Encourage them to ask questions if they need to, and explain it doesn’t matter if they get it wrong.

7. Bring the completed flipcharts to the front, invite the group to look at them and ask them to point out any they think should be moved, or aren’t sure about. Help learners decide by asking questions about the foods.

8. Lead a discussion on the following topics

   - What happens if a person doesn’t get to eat all the right foods?
   - Which people are most at risk from malnutrition?
- What difficulties/issues are there which may stop someone from eating a balanced diet?

9. Label three different areas of the compound Go, Grow, and Glow

10. Explain to the group that they are going to play a game, when you shout out a food they have to decide which group it belongs to and run to it.

11. Gather everyone in the middle (make sure the food group flipcharts from before are hidden from view!)

12. Shout out names of different foods. Once all learners have run to the label they think a food should go to, you should briefly explain why the food belongs there (or select a learner at the correct label to explain). Try not to focus on people at the wrong label (it is important for everyone to feel comfortable with running to their choice instead of just following everyone else).

13. Gather learners together and lead a brainstorm on how they can make sure they get a balanced diet, and how they can teach others about it. Outcomes from this discussion for following activities could be:
   - Making posters to display around school, home, or community centres explaining the importance of all 3 food groups.
   - Growing vegetables at school for balanced school meals.
   - Producing a drama/song/dance teaching about the food groups.

FOOD SECURITY

14. Explain the concept of food security and its 3 pillars. Have the group brainstorm the causes of food insecurity.

15. Divide the learners into 3 groups and assign each a different pillar of food security. For the next 5 minutes let them list (on a flipchart) all the actions that would improve household food security related to that pillar.

16. Have the groups present back to the plenary and then openly discuss the findings. Add any suggestions that may have been missed. Close by remarking that the rest of the sessions related to agri-livelihoods aim to, and provide the knowledge and skills, to improve household food security.

17. Finish the session with questions and answers, as well as a life skills debrief.
SUSTAINABLE ORGANIC FARMING TECHNIQUES (SOFT)

LEARNING OBJECTIVES
By the end of this session, learners will be able to:

- Define sustainable and organic
- Identify the 3 pillars of sustainability
- Know the farming practices that meet sustainable and/or organic standards

LIFE SKILLS OBJECTIVES
Values; listening and giving feedback; healthy lifestyles; options for livelihoods

TIME: 1 hour

MATERIALS: Flipcharts; markers; paper; pens; masking tape

BACKGROUND NOTES

Sustainable agriculture ("farming with nature") is one that produces abundant food without depleting the earth’s resources or polluting its environment. It is agriculture that follows the principles of nature to develop systems for raising crops and livestock that are, like nature, self-sustaining. Sustainable agriculture is unlike the industrial [of or relating to commercial enterprise] approach in that it does not degrade soil and water, reduce the biodiversity [the diversity of plant and animal life in a particular habitat] that is a key element to food security, increase dependence on imported oil, and drive more and more acres into the hands of fewer and fewer ‘farmers’, thus crippling rural communities, all in order to achieve higher production.

However, no agriculture is sustainable if it’s not also profitable, able to provide a healthy family income, and a good quality of life. The principles of sustainability are based on 3 objectives as represented by the stool below.

- The family savings or net worth is consistently going up
- The family debt is consistently going down
- The farm enterprises are consistently profitable from year to year
- Purchase of off-farm feed and fertiliser is decreasing
• Reliance on government payments is decreasing

SOCIAL SUSTAINABILITY
• The farm supports other enterprises and families in the community
• Shillings circulate within the local economy
• The number of rural families is going up or holding steady
• Young people take over their parents’ farms and continue farming
• College graduates return to the community after graduation

ENVIRONMENTAL SUSTAINABILITY
• There is no bare ground
• Clean water flows in the farm’s ditches and streams
• Wildlife is abundant
• Fish are prolific in streams that flow through the farm
• The farm landscape is diverse in vegetation

These three objectives overlap constantly to integrate into a production system that is appropriate for the environment, the people, and the economic conditions where the farm is located. Farming techniques used to achieve sustainability include:
• Environmental
  o Keeping the soil covered at all times with dead plant material in order to moderate temperature extremes, increase water penetration and storage, and enhance soil aeration
  o Using conservation tillage (see session on crop yields)
  o Diversifying crops/livestock on the farm
  o Rotating the crops
  o Using cover crops and mulches, manures, and compost to build up soil nutrients
  o Limiting use of chemical fertilisers and pesticides
  o Using soil conservation practices that reduce the potential for water runoff and erosion
• Economic
  o Emphasising direct marketing and premium specialty markets
  o Considering forming a cooperative with other farmers
  o Adding value through on-farm processing

Organic agriculture is a form of agriculture that relies on crop rotation, green manure (acts as a cover crop), compost, biological pest control, and mechanical cultivation to maintain soil productivity and control pests, excluding or strictly limiting the use of synthetic fertilisers and synthetic pesticides, plant growth regulators, livestock feed additives, and genetically modified organisms (GMOs).

The general principles of organic production include the following:
• Protect the environment, minimise soil degradation and erosion, decrease pollution, optimise biological productivity, and promote a sound state of health
• Maintain long-term soil fertility by optimising conditions for biological activity within the soil
• Maintain biological diversity within the system
• Recycle materials and resources to the greatest extent possible within the enterprise
• Prepare organic products, emphasizing careful processing, and handling methods in order to maintain the organic integrity and vital qualities of the products at all stages of production
• Rely on renewable resources in locally organised agricultural systems
Many organic farmers believe that a successful organic system begins with the soil – a healthy soil produces healthy plants and, in turn, healthy livestock and people. They regard soil as a living organism of interdependent processes and life forms.

Differences between sustainable and organic farming:
‘Note: The ‘Food Alliance’ heading is for ‘Sustainable’

<table>
<thead>
<tr>
<th>Standard/Criteria</th>
<th>Food Alliance</th>
<th>Organic</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conserving Soil Resources</td>
<td>Required.</td>
<td>Required.</td>
<td></td>
</tr>
<tr>
<td>Conserving Water Resources</td>
<td>Required.</td>
<td>Required.</td>
<td></td>
</tr>
<tr>
<td>Nutrient Management</td>
<td>Required.</td>
<td>Chemical use is restricted to “natural”, approved products.</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Organic Certification requires that no unapproved products are applied to the land for 3 years prior to harvest of the certified crop.</td>
</tr>
<tr>
<td>Pesticide Use</td>
<td>Integrated Pest Management (IPM) required. Decision-making process and appropriate use of pesticides is reviewed, in addition to specific chemical standards.</td>
<td>Chemical use is restricted to “natural”, approved products.</td>
<td>Organic Certification requires that no unapproved products are applied to the land for 3 years prior to harvest of the certified crop.</td>
</tr>
<tr>
<td>Wildlife Conservation</td>
<td>Required.</td>
<td>Not specifically addressed, but included in definition of “natural resources of an operation”.</td>
<td></td>
</tr>
<tr>
<td>Continuous Improvement</td>
<td>Required.</td>
<td>Not required/addressed.</td>
<td></td>
</tr>
<tr>
<td>Genetically Modified Organisms (GMO)</td>
<td>Not accepted.</td>
<td>Not accepted.</td>
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</table>
INSTRUCTIONS

1. Lead a quick warmer (5-10 minutes).

   Preferably, the warmer should relate to the life skill of **FEEDBACK**. An example being: **Constructive Feedback**. Ask for a volunteer to come to the front. Position the volunteer facing the audience and place an empty box behind them, but not directly behind them. Have 30 pieces of crumpled paper within arm’s reach of the volunteer. It is the group’s responsibility to give the volunteer hints on how to get the wads of paper into the box without turning around. Example “a little bit more to the right”. When that person has gotten 3 pieces into the box successfully, then find another volunteer and continue.

2. Reintroduce the topic of food security and indicate that sustainable, organic agriculture is one method of achieving it. Have the learners define the term sustainable.

3. Reveal the 3 pillars of sustainability as depicted by the stool diagram. Explain that they are measures of a farm’s sustainability – provide examples.

4. Discuss the following:
   - What are sustainable farming techniques? List them.
   - Have any of you seen or used any of these methods before? If so, which and how did it work?
   - What is meant by organic? Is it the same as sustainable farming? If not, what is the difference?
   - What are some of the principles behind organic agriculture?

5. Conclude by telling the group that in the following sessions they will be learning and applying practical, sustainable organic farming techniques.

6. Finish the session with questions and answers, as well as a life skills debrief.
COMPOST PILE

LEARNING OBJECTIVES
By the end of this session, learners will be able to:

- Build a compost pile

LIFE SKILLS OBJECTIVES
Problem solving; self-esteem; healthy lifestyles; options for livelihoods

TIME: 90 minutes

MATERIALS: Hoes; sticks/twigs/stalks; dry plant material; green plant material – these should be soft and easy to rot (i.e. not shiny), also avoid using stems (stems from some plants, like Blackjack, can grow shoots and would grow very well in such fertile material!); animal manure; ash; water; top soil; leaves/grass for cover

BACKGROUND NOTES

The recommended minimum and maximum sizes of the compost pile are to ensure effective decomposition. Too small and there will not be enough heat generated, decomposition will take too long, and the final product will be very small. Too big and there will be too much heat generated. The pile will also be very difficult to manage and unlikely to fully decompose throughout, despite regular turning. The heat is concentrated in the lower part of the pile; this part will decompose the fastest. It is important to turn the pile so that all material will be subjected to this heat, and the pile will decompose throughout at an even rate.

This compost does not require the pit to be deep; the pit’s purpose is simply to act as a base for the compost pile to hold material together. If the pit were deep it would prove very difficult to turn.

It is important that the temperate stick goes through all layers of the compost pile. It must be checked regularly. To get water to the lower areas of the compost pile, sticks can be used to drive a hole from top to bottom and water then poured into it. Fire Fungus is the indicator of too little water – it only grows in hot, dry conditions, and if found on the temperature stick it shows that areas of the pile are lacking in sufficient water. The Fire Fungus appears as white patches on the stick.

It is important the green material used will not grow! Avoid using green material from any plants known to grow easily, and avoid the use of stems as some plants can grow shoots from them and take over the compost pile (e.g. Blackjack is very good at this!). It is also important that the green material used is soft, and will rot easily (no shiny leaves).

The turning of the pile must occur regularly – recommended every 2-3 weeks. The aim of mixing is to ensure that all material originally at the top of the pile is moved to the bottom of the pile, and vice versa. The easiest method is to move it systematically into fours heaps, one at each side of the original pile. Then place all material back into the centre in reverse order, mixing as you go.

There are alternative methods of compost management, and compost materials. To encourage constant compost preparation, make use of multiple pits arranged in a line. The first pile is turned into its adjacent pit; a new pile can then be built in the original, now empty, pit. This is repeated, with each pile being turned into its adjacent next pit, allowing a new pile to be constructed in the newly vacated pit. When the first compost is ready for application there will be more available for use soon after, and throughout the season, so farmers do not have to always wait for the entire decomposition process to occur before they can apply compost.
Compost is made by adding layers of different organic material in a heap so it rots – there are many different ways of doing this, the method described here is just one way. A common alternative to this compost is the use of kitchen waste food and water in pit composting, with regular turning into adjacent pits. If experimenting different ways of creating compost it is important to ensure sufficient water and air is present. The presence of air is particularly important in the decomposition of animal waste to avoid anaerobic conditions; resulting in potentially harmful by-products, and bad smells. The addition of dry plant material to the pile creates air spaces, and the turning ensures aeration throughout the pile.

**INSTRUCTIONS**

*See Appendix 8 for a handout (has diagrams and Luganda translation) of the below exercise – give copy to each learner if possible so they can replicate technique at home.*

1. Lead a quick warmer (5-10 minutes).
2. Select an area protected from sun and rain. Mark out and dig a shallow pit (min. 1m x 1m, max. 1m x 3m).
3. Line the pit with twigs, sticks, or stalks as a base.
4. Make the layers as follows:
   1. Dry plant material – 3 inches (7.5 centimetres)
   2. Manure – 1 inch (2.5 centimetres)
   3. Top soil – 1 inch (2.5 centimetres)
   4. Green plant material - 3 inches (7.5 centimetres)
   5. Ash – sprinkle
   * Water should be added after every stage except after ash
5. Repeat these layers 2 or 3 more times. Depending on dryness of contents, and weather conditions, water can be added at every layer if required (except on top of ash). Height of compost pile is determined by volume of material available – waist height is recommended.

6. Cover the heap to protect from rain and sun.
7. Insert temperature stick diagonally through middle of pile.
8. Explain to learners about Fire Fungus only growing on wood in hot dry conditions, and ask how this could be used to ensure the compost pile has had water added where and as needed.
9. Discuss the need for turning of the pile and stress importance of water to the decomposition process.
10. Finish the session with questions and answers, as well as a life skills debrief.
DOUBLE DUG BED

LEARNING OBJECTIVES
By the end of this session, learners will be able to:
• Understand how to make a double dug bed
• Know uses and benefits of a double dug bed

LIFE SKILLS OBJECTIVES
Problem solving; self-esteem; healthy lifestyles; options for livelihoods

TIME: 90 minutes

MATERIALS: Hoes; forks; wheelbarrow; compost

BACKGROUND NOTES
The purpose of double digging is to break up the hardpan about 20cm below the surface of the soil, which makes roots grow sideways instead of downwards. It also builds up a layer of deep, well composted topsoil which allows closer spacing of plants than normal, and continuous growing of crops where watering and or irrigation is possible. Several double dug beds close to the homestead can provide a family with fresh vegetables throughout the year. It is better to have a number of double dug beds in order to plan your rotation of crops well.

Essential requirements for a vegetable garden are shading, mulching, and compost. A double dug bed should be planted with plants closer together than normal because the roots spread downwards much more easily. Plants that are closely spaced also keep down the growth of weeds. The plant leaves also protect the soil from the sun, wind, and rain.

Once dug every effort should be made to avoid stepping on the loose soil, which would compact it again. Leave a space of 0.3 m to 0.5 m as a path between two beds. Always weed and harvest the produce whilst standing on this path.

INSTRUCTIONS
*See Appendix 8 for a handout (has diagrams and Luganda translation) of the below exercise – give copy to each learner if possible so they can replicate technique at home.

1. Lead a quick warmer (5-10 minutes).
2. Select the site; it is best near the homestead or water source.
3. Measure and mark out a bed approximately 5 ft wide and 23 ft long (1.5m x 7m)
4. Spread a thick cover of compost on the bed
5. Then, starting at one end, measure out a strip approx 2 ft wide (60cm).
6. Lightly dig this strip, mixing the compost into the topsoil.
7. Remove this soil you have just dug and move it to the end of the bed, outside the bed on the far side. Make sure you have removed all the topsoil (you will be able to tell this when you tool hits a harder layer at the bottom, or when the soil changes colour).
8. Now dig this hard, compact subsoil deeply, striking it hard with a heavy fork or similar tool. (You can dig in compost here as well).
9. Now measure out another 2 ft wide strip. Dig the topsoil, mixing it with the compost.
10. Remove all this topsoil and place it on top of the subsoil of the previous strip.
11. Repeat this process until you get to the final strip, this time place the topsoil and compost mix you first placed outside the bed onto that strip of dug subsoil.

12. Double dug beds do not need to be dug again for three or four planting seasons.

13. Finish the session with questions and answers, as well as a life skills debrief.
KITCHEN GARDEN

LEARNING OBJECTIVES
By the end of this session, learners will be able to:
- Build a kitchen garden
- Understand the value of their kitchen waste

LIFE SKILLS OBJECTIVES
Problem solving; self-esteem; healthy lifestyles; options for livelihoods

TIME: 90 minutes

MATERIALS: Hoes; pangas; topsoil; manure/compost; sticks; banana fibre; bricks/large stones/banana pseudo stems

BACKGROUND NOTES
An alternative to the kitchen garden is the mandella garden. This is built to collect rainwater, instead of kitchen waste.

This is a horse shoe shaped garden, built at the end of a gulley or similar area where water runs down when it rains. It is a double dug bed with a pit in the middle where rain water runs into it and is collected. The crops are planted around this pit in the double dug bed. The boundaries of the garden are marked out for neatness and to prevent loss of soil. (Described in Appendix 8)

INSTRUCTIONS
*See Appendix 8 for a handout (has diagrams and Luganda translation) of the below exercise – give copy to each learner if possible so they can replicate technique at home.

1. Lead a quick warmer (5-10 minutes).
2. Mark out a circle about 2 ft across, put pegs in the ground around the circle to make the compost basket. These can be tied together with banana fibre for extra strength.
3. Using the bricks, or banana stems, mark out the boundaries of the kitchen garden with a y-shaped entrance. Ensure the distance between the edge and the basket allows for someone to reach the basket.
4. Mix top soil with compost and heap onto the garden, around the basket for support and inside it, making it form a hill in the middle and sloping down at the sides. (It is important the basket allows for the waste material to sit at the top to allow for nutrient runoff. It must not be dug down).
5. Neaten up the boundary markings. Leave the garden to settle for a week before planting.
6. Finish the session with questions and answers, as well as a life skills debrief.
SACK MOUND

LEARNING OBJECTIVES
By the end of this session, learners will be able to:
• Build a sack mound
• Explain the benefits of a sack mound for easy vegetable growing

LIFE SKILLS OBJECTIVES
Problem solving; self-esteem; healthy lifestyles; options for livelihoods

TIME: 60 minutes

MATERIALS: Charcoal sack; 2 or 3 long poles; compost; topsoil; hard stones (i.e. will not dissolve in water); tin or similar material to make into tube; pangas; hoes; seedlings for planting

BACKGROUND NOTES
The sack mound should be placed somewhere where it can get sun from all sides – this maximizes the amount of growing that can be done on it. It should be placed near the home for easy access. Waste water can be used to water it and must be poured onto the stones so it will be able to soak throughout the entire sack mound. Plants can be grown all around the sack and on the top.

INSTRUCTIONS
*See Appendix 8 for a handout (has diagrams and Luganda translation) of the below exercise – give copy to each learner if possible so they can replicate technique at home.

1. Lead a quick warmer (5-10 minutes).
2. Choose an area close to the house that receives sunlight from all sides.
3. Line the bottom of the sack with a small layer of soil.
4. Using the tin, or similar material, create a tube. Fill with small stones.
5. Fill around the tin with the soil and compost mix. Move the tin upwards and refill.
6. Repeat this process until the sack is filled with soil and has a channel of small stones throughout its middle.
7. Drive the pegs into the ground around the sack mound, to hold it in place.
8. Make small cuts around the sack for seeds/seedlings to be planted in.
9. Finish the session with questions and answers, as well as life skills debrief.
LIQUID MANURE

LEARNING OBJECTIVES
By the end of this session, learners will be able to:
• Make liquid manure
• Know how to apply liquid manure

LIFE SKILLS OBJECTIVES
Problem solving; self-esteem; healthy lifestyles; options for livelihoods

TIME: 30 minutes

MATERIALS: Animal dung; charcoal sack; old container (e.g. cut jerry can); stick; water; cover; stones; strong string/banana fibre

BACKGROUND NOTES
For the activity:
The dung used can be fresh, but it is very important to dilute the liquid manure, so as not to burn the plants. If you are working with maize the dilution can be less, i.e. 1:1.

The space in the bucket is very important as it allows the dung to move into the water from all sides.

INSTRUCTIONS
*See Appendix 8 for a handout (has diagrams and Luganda translation) of the below exercise – give copy to each learner if possible so they can replicate technique at home.

1. Lead a quick warmer (5-10 minutes).
2. Put a few stones in the bottom of the sack and half fill with manure.
3. Tie the top of the bag with string, attach the stick to this.
4. Lower the sack into the cut jerry can, balancing the stick on top. It is important the sides do not touch, there must be space. If the sack is too big it may need to have some manure removed, and/or the corners tied to make it smaller.
5. When the sack sits correctly in the container, fill can with water and cover.
6. Leave for 1 week. Every day remove the cover and shake the sack.
7. This is strong – it must be diluted when applied. It should be diluted 1:2 with water – i.e. 1 tampeco of liquid manure mixed with 2 tampecos of water.
8. It is suggested each plant be given 1 tampeco of diluted liquid manure every 2 weeks during the growing season.
9. Finish the session with questions and answers, as well as a life skills debrief.
PLANT TEA

LEARNING OBJECTIVES
By the end of this session, learners will be able to:

• Make plant tea
• Understand its applications and uses

LIFE SKILLS OBJECTIVES
Problem solving; self-esteem; healthy lifestyles; options for livelihoods

TIME: 30 minutes

MATERIALS: Soft leaves e.g. - Tithonia, Wandering Jew (Bukaala), Cassava (Muwogo); hairy leaves e.g. - Pumpkin (Ebisuudhu), Elephant Grass (Ebigadha), Lab Lab; leguminous leaves e.g. - Acacia (Gasiya), Albesia, Moringa (Molinga); ash; water; cut jerry can; cover; stick; panga

BACKGROUND NOTES
For the activity:
When working with maize, the dilution can be less (i.e. 1:1) since it has a higher nutrient requirement.
When working in the rainy season dilutions can be less, as the rain will dilute the tea further (i.e. 1:1).

INSTRUCTIONS
*See Appendix 8 for a handout (has diagrams and Luganda translation) of the below exercise – give copy to each learner if possible so they can replicate technique at home.

1. Lead a quick warmer (5-10 minutes).
2. Gather all the leaves; they must be soft green leaves that will rot (i.e. not shiny, hard leaves).
3. Cut up the leaves and fill the jerry can with them.
4. Add water to the jerry can.
5. Cover and leave in a shaded place for 1 week. Stir the tea every morning with a stick.
6. This is strong so you must dilute the tea (1:2) with water – i.e. 1 tampeco of plant tea with 2 tampeco of water.
7. Apply 1 tampeco of diluted tea to each plant every 2 weeks during the growing season.
8. Finish with questions and answers, as well as life skills debrief.
INTEGRATED PEST MANAGEMENT (IPM)

LEARNING OBJECTIVES
By the end of this session, learners will be able to:

- Explain what integrated pest management is and its benefits
- Understand the uses of mulching and crop rotation/intercropping as an IPM and soil management strategy

LIFE SKILLS OBJECTIVES
Communication; creative thinking; listening and giving feedback; teamwork

TIME: 90 minutes

MATERIALS: 4 trays/cut jerry cans; water; 2 small water containers; soil; dry grass

BACKGROUND NOTES

What are crop pests and diseases?
These are insects, worms, weeds, vertebrates (having a backbone), and other organisms that cause direct damage to crops through their feeding and other actions, or may compete with crops for light, space, and food thus indirectly affecting the yield and quality of crops. Organisms such as fungi, bacteria, viruses, and mycoplasms are the causes of diseases of plants and may also be classified as pests.

Effects of crop pests and diseases:
Pests and diseases are of tremendous importance in farming because they:
- Reduce crop yields
- Reduce quality
- Reduce income
- Cause food insecurity
- Cause socio-economic problems like domestic quarrels and theft as a consequence of reduced food security and income

Knowledge of the effects of pests and diseases is useful for:
- Assessing crop losses
- Planning and priority setting
- Developing control methods
- Developing policies

INTEGRATED PEST MANAGEMENT (IPM)
IPM is a pest control strategy that uses an array of complementary methods: natural predators, pest-resistant crop varieties, cultural practices, biological controls, various physical techniques, and the strategic use of pesticides. It is an ecological approach that can significantly reduce or eliminate the use of pesticides.

An IPM regime can be quite simple or sophisticated. Its main focus is usually insect pests, but encompasses diseases, weeds, and any other naturally occurring biological crop threat. An IPM system is designed around six basic components:
Acceptable pest levels: The emphasis is on control, not eradication. IPM holds that wiping out an entire pest population is often impossible, and the attempt can be more costly, environmentally unsafe, and all-round counterproductive than it is worth. It is better to decide what makes acceptable pest levels, and apply controls if those levels are exceeded.

Preventive cultural practices: Selecting varieties best for local growing conditions, and maintaining healthy crops, is the first line of defence.

Monitoring: Regular observation is the cornerstone (basis) of IPM. Visual inspection, insect traps, and other measurement methods are used to monitor pest levels. Record-keeping is essential, as is a thorough knowledge of the behaviour and reproductive cycles of target pests.

Mechanical controls: Should a pest reach an unacceptable level, mechanical methods are the first options to consider. They include simple hand-picking, erecting insect barriers, using traps, and tillage (digging soil up) to disrupt breeding.

Biological controls: Natural biological processes and materials can provide control, with minimal environmental impact, and often at low cost. The main focus here is on promoting beneficial insects that eat target pests.

Chemical controls: Synthetic pesticides are only to be used as a last resort, often only at specific times in a pest’s life cycle. Organic pesticides, derived from plants also fit in this category. If used, recommended amounts and frequencies should always be adhered to.

MANAGEMENT PRACTICES

a) Improved Husbandry Practices

- Planting crops early, preferably at the onset of the rains (provides optimal growth conditions and is synchronized with pest life cycles so that the young and vulnerable plants are not growing when pest populations are high)
- Correct/recommended spacing

Table 1. Recommended spacing for selected crops

<table>
<thead>
<tr>
<th>Crop</th>
<th>Recommended spacing in feet</th>
<th>Recommended spacing in metres</th>
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</thead>
<tbody>
<tr>
<td>Cassava</td>
<td>3 feet by 3 feet</td>
<td>1m x 1m</td>
</tr>
<tr>
<td>Banana</td>
<td>10 feet by 10 feet</td>
<td>3m x 3m</td>
</tr>
<tr>
<td>Coffee</td>
<td>10 feet by 10 feet</td>
<td>3m x 3m</td>
</tr>
<tr>
<td>Sweet potato</td>
<td>3 feet by 1 foot</td>
<td>1m x 0.3m</td>
</tr>
</tbody>
</table>

- Adequate pruning of plants. In coffee for example, inadequate pruning may lead to high incidence of the coffee berry borer and coffee leaf rusts. Similarly, lack of de-suckering of banana stools to may lead to high infestation by the banana weevil.
- Prompt removal of diseased and infested plants or plant parts
- Always use disease and pest free seeds and other planting materials (i.e. clean, uncontaminated, and sterilised) to prevent pest/disease introduction
- Having diversified agro-systems:
  - Variety mixtures: different varieties of the same crop grown together reduce the spread of pests and diseases since different crop varieties differ in their susceptibility (i.e. the resistant variety will limit the spread to the susceptible one)
o **Intercropping**: the growing of two or more crop species on the same piece of land at the same time (it slows or interrupts the spread of pests/diseases from one plant to another of the same species)

o **Agro-forestry**: form of intercropping that includes trees – slows the spread of pests/diseases through the modification of the microenvironment (disrupting free dispersal), also some trees are poisonous to insects (i.e. Neem [Azadiractin indicus])

- Staking: improves free movement of air within the crop; reduces crop contact with the ground; exposes more leaves to sunlight – these conditions do not encourage pests and disease build up

b) **Maintain Good Soil Fertility**

- Makes plants stronger so they are more likely to resist pests and disease
- Fertilisers and manure enrich soil nutrients giving plants the ability to withstand attacks and therefore prevent damage

  o **Note**: excessive application of fertilisers and manure can have negative environmental effects and can also increase a plants susceptibility to pests and diseases (i.e. in cassava, excessive application of nitrogen greatly increases susceptibility to cassava mosaic virus disease)

c) **Mulching**: using plant material (live or dry) to cover the soil’s surface. Dead plant material is dried and then placed on the soil layer, covering the soil between crops (or used as a total cover when planting seeds and removed once they begin sprouting). Some examples of good mulching materials include:

- Straw
- Grass
- Crop litter (stems or leaves remaining after harvest)
- Leaves (from trees in compound)
- Banana leaves
- Maize stalks

Helpful hints:

- Mulch before each planting season
- Mulch material should be dry before putting on soil
- Do not use diseased plants in the mulch
- If using material from outside the garden, make sure it is known where it came from as it could contain weed seeds or pests
- Keep mulch 1 finger-length away from crop stems
- For best results put a thick layer of mulch on the soil (about 4” thick)

Live plant material can be used for mulching, if this is done make sure weeds and/or stem shooting plants are not used as they will sprout and grow in the garden, out-competing the crops.

- Conserves soil moisture, suppresses weeds, improves soil structure, and supplies nutrients when the plants decay ultimately producing stronger crops that are more likely to resist pests and disease
- Provides shelter/shade for young plants (so they can grow stronger and be more likely to resist to pests and disease)
- Limits erosion of fertile topsoil so plants have access to more nutrients
- Reduces runoff that otherwise would facilitate the spread of pests and diseases known to be spread by water

d) **Crop Rotation**: the growing of different or unrelated crops – have different rooting patterns i.e. shallow or deep, and which have different nutritional requirements i.e. light or heavy – on the same piece of land each new year. The most common technique is to divide a plot into blocks and rotate the crops such that they
occupy a different block in the following season. Legumes should be rotated throughout to keep the soil Nitrogen content up.

- Stops crop specific diseases from living in the soil over a long period of time
- Prevents crop specific pests from easily targeting a crop year after year
- Improves soil fertility so plants grow stronger and are more likely to resist pests and diseases

e) Timely Weeding
- Physically removing weeds to reduce competition for resources (results in healthier plants)
- Reduces the risk of pest/disease transfer from the weed (host) to the plant
- Should involve a regular AESA throughout the seasons to observe changes and ensure that necessary control steps/farming practices are carried out

f) Correct Watering
- A concentrated stream of water will disturb the soil but light, broken spraying does not (limits soil erosion so plants can grow stronger)
- Can prevent the spread of bacterial disease by runoff water

Recommended drying methods minimise the incidence of storage pests and diseases. These include drying on raised ground, mat, and pavement. Farmers are advised not to dry on bare ground as this exposes the crop product to contamination with the soil, hence increasing the chances of pest and disease attack.

Proper storage facilities reduce post harvest losses due to pests and diseases. They also ensure high quality crop product. Such facilities include well ventilated and clean improved granaries and stores.

**INSTRUCTIONS**

1. Lead a quick warmer (5-10 minutes).

Preferably, the warmer should relate to the life skill of **COMMUNICATION.** An example being: **One Minute Please.** Divide the learners into pairs. The aim of the game is to have each talk for one minute on a given subject. The VPE announces the topic and the first of the pair just starts talking. Choose subjects to stimulate the imagination and which may be amusing. Put a stopwatch on each pair to see how long they last before drying up! Then choose a different subject and have the second of the pair repeat the activity. Subjects might include: my earliest memories, my favourite computer game, why beans are good for you, 10 things you can do with potatoes, etc.
MULCHING GAME

2. Explain to the learners that you are going to do an experiment to demonstrate how mulching can prevent soil erosion.
3. Fill two of the trays with soil and explain that they represent 2 fields, each on a gentle slope.
4. On one of the trays apply the dry grass on top as mulching.
5. Place the ‘fields’ inside the empty trays, hold them at a gentle sloping angle so that water will flow into the tray at the bottom.
6. Measure out 2 equal amounts of water (approx. 250-500ml). Explain that you will be pouring the water onto these trays and collecting runoff at the bottom, ask learners what they expect will be the difference between the two trays, and by how much.
7. Slowly pour the water at the top of the sloping, soil filled trays until the containers are empty.
8. Put both the soil filled trays down flat again.
9. Invite learners to come up and look at the difference between the two soil filled trays and the runoff water collected from them.
10. Ask them what this demonstration shows, covering the following points:
   - Amount of water held in the soil filled trays
   - Colour of water that was collected
   - Appearance of soil left in tray, how much remaining
   - What does the soil that was washed away contain
   - What effect will this have on a plant’s nutrient uptake
   - What effect will this have on the land over time
   - Compaction – it is important to discuss this as something mulching can prevent as this experiment does not demonstrate it
11. Briefly introduce the term Integrated Pest Management (and its 6 components) and explain that everything you have learnt so far (including mulching) should be used together in order to effectively manage pest populations and disease outbreaks.
12. Ask the group to identify what they know about crop pests and diseases. Have them also identify the effects pests/diseases have on farming.
13. Lead a group brainstorm on the management strategies used to control pests/diseases.
14. Split learners into working groups and explain that each group will need to discuss a specific farming technique that makes up a part of an IPM strategy. They should cover the direct and indirect benefits of that, and best ways of implementation. Time permitting, the groups should be encouraged to look in the fields for evidence.
15. Groups have 15 minutes to discuss and prepare a brief presentation.
16. Groups present and receive feedback from the plenary.
17. Finish the session with questions and answers, as well as a life skills debrief.
ORGANIC PESTICIDES

LEARNING OBJECTIVES
By the end of this session, learners will be able to:
- Know how to make an organic pesticide
- Understand how to experiment with different ingredients to solve different problems

LIFE SKILLS OBJECTIVES
Problem solving; creative thinking; self-esteem; healthy lifestyles; options for livelihoods

TIME: 60-90 minutes

MATERIALS: Neem leaves
- Onion bulbs
- Garlic bulbs
- Pilli Pilli (chilli)
- African/Mexican Marigold
- Tephrosia
- Phytolaca
- Soap; container pangas (for cutting up leaves)

(Not all these ingredients are required) Select ingredients depending on availability and specific pest problem

BACKGROUND NOTES
There are many different types of organic pesticide one can make from the various ingredients listed above. Experimenting with various different ingredients is the best method for working out which pesticides work best for different crops and individual pest problems.

It is important that pesticides are diluted before application to ensure that it is not too strong. The soap is important because it helps the pesticide to stick to the plant, instead of sliding off and never coming into contact with any pests. Bathing soap should be used as it is less acidic than laundry soap; however, brown soap is the most neutral soap available and therefore the most preferable soap to be used during pesticide application.

Natural enemies characteristically have harder outer bodies which prevent these pesticides from harming them, therefore only your pest population will be affected.

It is recommended that young women not be involved in the process of making pesticides because of the possible effect of some of these plants on unborn children – most people already know which plants are dangerous and young women would avoid them anyway.

USES OF SPECIFIC PLANTS IN ORGANIC PESTICIDES
African and Mexican Marigold
- Kills nematodes, cutworms, and caterpillars
Onions and Garlic (bulbs need to be pounded)
- Kills caterpillars and armyworms, also acts as a repellent
Neem
- Kills caterpillars, aphids, weevils, and cutworms
Tephrosia
- Kills all crop attacking pests

Phytolaca
- Kills all fungal diseases and all tomato pests

REPELLENTS
Many plants can also be used as repellents, to physically prevent a pest problem from starting:
- Onions and garlic can be planted amongst other crops to repel insect pests
- 1kg of Tephrosia (dried and pounded) can be mixed with 100kg of grains being stored (e.g. beans) to repel and kill weevils. **Tephrosia is poisonous** – therefore this should ONLY be done with grains that are to be used for planting, not consumption.
- Tephrosia roots are poisonous to mole rats. Mole rats are blind and likely to bite into the roots of the tephrosia plant as they burrow – planting these in amongst crops affected by mole rats will mean they are more likely to bite into the roots and be killed.
- African or Mexican Marigold planted in crops or around the home is a repellent for snakes and other pests
- Coriander is a repellent for monkeys so it is good to plant as a boundary around crops
- Garlic, African and Mexican Marigold, mint, rosemary, tobacco, and coriander all act as general repellents and are useful to the house

PHYSICAL CONTROL
Wood ash
- Fresh, but not hot, ash is spread around the base of plants, or poured into a trench 2”x4” around the plants. Insects have difficulty walking through it so it should be kept fresh and not wet.

Salt
- By putting it around the base of the plant, or around the edge of the seedbed, it can control snails.

INSTRUCTIONS
1. Lead a quick icebreaker (5-10 minutes)
2. Introduce the concept and objectives for the session.
3. Have the students recall crop pests from the previous session. As they mention a pest, reveal the ways (i.e. organic pesticide, repellent, or physical removal) in which it is can be dealt with.
4. Explain (demonstrate if possible) how to make an organic pesticide
   - Cut or pound up the ingredients and put them into the container
   - Add the water and cover. You can leave this mixture for 3 days, or boil it for 20 minutes.
   - Dilute the pesticide 1:1 with soapy water. Preferably brown soap should be used, if not available then white bathing soap is the best alternative.
   - Apply where there are pests – on the leaves, around the stem and base of plant.
5. Examine the results using AESA to see if results were had. If not, return to the ingredients and modify them (just experiment).
6. Finish the session with questions and answers, as well as a life skills debrief.
**CROP YIELDS**

**LEARNING OBJECTIVES**

By the end of this session, learners will be able to:

- List ways in which crop yields can be increased
- Avoid low yields in maize and beans

**LIFE SKILLS OBJECTIVES**

Problem solving; self-esteem; healthy lifestyles; options for livelihoods

**TIME**: 90 minutes

**MATERIALS**: Hoes; wheelbarrow; seeds (maize plus beans/peas/soya for intercropping); compost

**BACKGROUND NOTES**

When discussing the yield of field crops it is typically meant the amount produced per unit of land. However, one could also measure production against units of labor, fossil fuel, money spent, or other input factors.

Although higher yields can be achieved through the use of chemical fertilisers and pesticides, genetically modified organisms (GMOs), hormones, antibiotics, etc., they are not sustainable methods. Many people thus assume that sustainable agriculture produces low yields. Some sustainable practices may reduce yields, at least temporarily, but others have little impact on yields, or can result in yield increases over time. Below are three examples of sustainable practices to see how they might affect yields.

**Conservation tillage** [land which has been worked over by plowing, ripping, or turning] is a practice designed to reduce soil erosion, build soil organic matter, and improve structure and **tilth** [finely worked top layer of soil made ready for seeding]. There are different types of conservation tillage, ranging from mulch tillage (light tillage right before planting) to full no-till (where the soil is never disturbed by tillage). In the first year, conservation tillage often produces a decline in yields, in part because the decomposition of surface crop residues can tie up available nitrogen sources. Over time, however, conservation tillage can result in yield increases due to improvements in soil quality.

**Organic agriculture** is a set of practices, including a requirement that no synthetic fertilisers or pesticides be used. During the 3-year transition period from conventional to organic production farmers often see significant reductions in crop yields. However, long-term organic farmers note that after the initial transition, yields generally recover. In some cases, organic yields remain lower because different crop varieties are used. For example, organic growers often plant food-grade soybeans, which typically have lower yields than feed-grade beans. The growers choose these varieties because they can get significantly higher prices.

**Crop rotation** produces yield increases so consistently that this phenomenon is called the “rotation effect.”

Another factor to consider when trying to achieve higher yields is the management of pests and diseases. Below are examples which explain how this can be done in both maize and bean crops, thus avoiding low yields.

**EXAMPLE – Maize**

Common pests and diseases of maize:

- **Pests**: maize stalk borers, termites, cut worms, army worms
Control methods:
- Enforcement of at least 2 months after the last maize crops
- Chemical (sevin) application each season at 2 weeks after crop emergence
- Planting of improved maize varieties
- Destruction of infested stalks after harvest
- Use proper recommended chemicals

• **Diseases**: Maize Streak Disease, Smut, Northern Leaf Blight, Rusts, Grey leaf spot

Control methods:
- Use resistant varieties
- Timely planting roughing plants
- Harvest severely damaged maize early before it lodges
- Rotate damaged fields (crop rotation)
- Clear the diseased maize residues from the field after harvesting. Do not mulch maize field.
- Burying and burning infested plants

**EXAMPLE** – Beans

Important pests and diseases of beans:
- **Insect pests**: stem maggots (bean fly), bean aphids, forage beetle; storage pests (Bruchids)
  Control methods: see session on Integrated Pest Management

- **Diseases**
  - **Bacterial diseases**: common bacterial blight
INSTRUCTIONS

1. Explain that this session is about improving crop yields, both for household use and to encourage farmers to go commercial.
2. Have the group identify ways in which crop yields can be increased.
3. Look at conservation tillage – have the group define and explain its benefits.
4. Look at crop rotation – have the group define and explain its benefits.
5. Look at pest and disease management – have the group define and explain its benefits.
6. Using either maize or beans as a case study, identify the most common pests/diseases which affect the plant, as well as solutions to overcome them.

NINE SEED MAIZE

7. Go out to the garden and mark out a patch. Dig it to a depth of 2 ft. Place the first foot of topsoil ‘above’ the patch, and the second foot ‘below’ the patch.
8. Put the compost into the hole and mix with the topsoil piled ‘above’ the hole (1:1 ratio of compost to topsoil).
9. Insert nine holes, approximately 1.5ft apart and 3 inches deep.
10. Into each of these holes plant two maize seeds. Refill the holes and level the area.
11. When the maize seeds germinate remove the weaker of the two seedlings.
12. Between the squares of maize, where the second foot of topsoil was piled, mix in some compost and use this area to plant beans, peas, or soya.
13. Next planting season the patches should be alternated.
14. Finish the session with questions and answers, as well as a life skills debrief.
BANANA PLANTATION MANAGEMENT

LEARNING OBJECTIVES
By the end of this session, learners will be able to:
• Know and understand the best methods of propagating bananas
• Know and understand the steps to be taken to properly manage a banana plantation to avoid pests and disease
• Market bananas

LIFE SKILLS OBJECTIVES
Problem solving; creative thinking; self-esteem; healthy lifestyles; options for livelihoods

TIME: 90 minutes

MATERIALS: Flipcharts; markers

BACKGROUND NOTES
Banana plantations need careful management in order to achieve the most from the crop. However, the most important factor is preventing the spread of disease, specifically the Banana Bacterial Wilt disease (BBW). BBW is the most significant threat to banana farmers in Uganda today, it is irreversible and produces useless fruits; control of it is vital.

BANANA BACTERIAL WILT DISEASE (BBW)
This is a fairly new disease, first found in Mukono and Kayunga Districts in 2001. Since then it has spread rapidly throughout the country, with yield losses of 90% reported in some cases. The bacteria are found in the juices of the plant and are therefore easily spread through infected banana planting material, infected tools, insects, and browsing animals.

The symptoms of BBW are not always known and recognised, meaning infected plants are commonly transplanted into previously unaffected areas. The proper removal and destruction of infected plants is a significant step in controlling the spread of the disease, but the inability to recognise symptoms, and lack of knowledge of correct treatment practises, again increases the spread of the disease.

The 4 main symptoms that indicate a plant is infected are:
• Yellow wilting leaves
• Premature and irregular ripening of the fruit
• Male bud wilts and rots
• Yellow pus comes from cut stems
The fruit produced shows unique yellowish blotches, and dark brown stains inside. It is inedible to both humans and animals. Eventually the whole plant dies.

The main ways to prevent spread of this disease are:
• Avoid using sick suckers
  o Simply do not use suckers from sick gardens. Many people will transfer a sucker from a sick garden if it looks healthy. It is important that people are aware of the possible long term consequences of this.
• Cut and destroy sick plants
All sick plants must be cut and destroyed. It is recommended they be buried under heaped earth. All parts of infected plants must be destroyed. It is common for people to destroy the plant but use leaves and the flower for household tasks, or even worse for mulching – this would continue to spread the disease rapidly.

- **Clean tools**
  - Since the bacteria lives in the juices of the plant it can be spread by tools such as hoes and pangas that have cut through an infected plant and now carry the bacteria on them. They must be cleaned/sterilised in fire or with Jik when using between plants.

- **Remove the male bud**
  - Insects visiting the male bud of an infected plant can transfer the disease to all other plants they visit. To prevent this, the male bud should be removed as early as possible. This should be done with a forked stick, so as to avoid contaminating tools by cutting the plant.

**GENERAL PLANTATION MANAGEMENT, LAYOUT, AND PLANTING**

### Planting

- All suckers used must come from a healthy plant. Even if the sucker looks healthy but came from a sick garden it should not be used
- If possible, farmers should plant improved breeds of banana plants
- Plant either at the beginning or end of the rainy season because banana plants absorb a lot of water and will need even more when they have just been planted
- The suckers should be 3ft→5ft high with narrow leaves (when young, broad leaves are a sign of nematodes). The tree should be free of all roots and leaves
- Dig a hole of diameter 3ft and depth 2ft (pile the first foot of top soil ‘above’ the hole and the second ‘below’)
- A wheelbarrow of compost manure is put in the hole and mixed with the topsoil pile ‘above’ the hole
- Make sure 3 inches of space is left from the top to trap water
- Dig 1 foot into the middle and plant banana sucker
- The pile of topsoil ‘below’ the hole can be mixed with more compost and used for planting cover crops between the bananas
- Where bad spacing is in place, this should be gradually altered with time. Banana offspring should be grown in a circle

### Cover Crops and Boundaries

- Cover crops should be planted several weeks before harvest to act as a stabilizer, and then introduced to the soil as green manure after harvest and before replanting. (Note: *Sesbania grandiflora* must not be intercropped with bananas as it will attract nematodes).
- Planting trees as boundaries and in between plants at a distance of 40ft will serve as windbreakers whilst also providing fodder [food for animals] (these should be deep rooted trees like *Grevillea*).

### Day to Day Management

- Always weed plantations regularly
- Prune to remove dry leaves and dead sections
- Prune down once a month (i.e. cut dead sections of leaves at a slant)
- Prune up once a week (i.e. cut up where a dead leaf meets a stem)
- When mulching, a circle of 3 ft diameter around the plant must remain bare
- At the beginning of the rainy season the soil should be loosened to allow air to circulate
- Keep the soil fertilised and protected from erosion
- Control water by mulching and irrigation
**Thinning**
- Allow only 3 banana plants at different growing stages at any one time – i.e. one with a fruit, another of medium age, and a younger one (a mother, daughter and granddaughter). This reduces on competition for water, nutrients, and light and results in production of larger banana bunches at regular intervals.

**Pruning**
- The plant should be left with as many leaves as possible because they manufacture the food that fills the fingers on the bunch.
- The unwanted leaves will normally collapse and hang downwards on their own, even when they are still green, such leaves should be cut off immediately and used as mulch.
- The plant should not accumulate any dry leaves or dry fibres. These obstruct the stem from light and consequently reduce the area of the plant which manufactures food. They also increase the surface area and make the plant vulnerable to wind damage.
- Do not remove sheaths before they are dry as this will weaken the banana plant.

**MARKETING OF BANANAS**
Matoke (cooking bananas) is the main staple food crop in the central region (Buganda). It is grown mainly by smallholder farmers for food and the surplus is sold for some income. Being perennial, harvesting of bananas is all year round, with peak in production occurring in June and July (dry season) where farmers incur big losses through ripening.

Main constraints to marketing bananas:
- **Poor transportation:** Due to the poor nature of rural roads where most of the crop is produced, the use of the bicycle dominates transportation to urban markets. Not only does the bicycle ferry a small load (max. 5 bunches) leaving a lot to rot but also causes physical damage to the product during transportation rendering it less attractive to potential buyers.
- **Short post-harvest shelf-life of the crop:** The high water content in bananas makes it highly perishable. Normally it takes 7-10 days for a mature bunch to start ripening and rotting after harvesting, unlike other crops such as dry cereals which can be kept for longer periods to fetch better market/prices.
- **Poor and inferior local cultivars [varietals]:** Most of the local cultivars are highly susceptible to pests and diseases resulting in poor yields. This is mainly manifested in small sized fingers/bunches that are less or hardly marketable.

Suggested solutions:
- **Improve on means of transportation:** Farmers should have a collective responsibility of maintaining feeder roads for easy accessibility (by trucks etc.).
- **Organised marketing:** Selling of the crop in organised groups helps to raise a large quantity that can attract big traders and avoid the losses caused by bicycle transportation. Also, organised marketing could help in controlling prices compared to when traders approach farmers individually and buy at give away prices.
- **Processing:** Adds value to increase shelf-life, ease problem of transporting a lot of bulk in wastes, and to fetch better prices. Bananas can be solar dried and milled into flour for multiple uses (i.e. making cakes, bread, porridge, etc.).
- **Diversity:** By growing other types of bananas including the multi-purpose, improved cultivars such as FHIA-17 will reduce the problem of high yield losses due to rotting. If not consumed boiled, FHIA-17 in the ripe form can be taken as a dessert or processed to get juice (beverage), or this juice can be further processed by fermentation to brew beer. Some selected local cultivars (Kisansa, Mpologoma, Mbwazirime, etc.) and other improved ones are available. These help to overcome the problem of poor yields that result from pest and disease attack. Also good crop management helps to solve the same problem.

**INSTRUCTIONS**

*Note: Hold the session in a plantation to use the surroundings for examples.*

*See Appendix 8 for a handout (has diagrams and Luganda translation) of the below exercise – give copy to each learner if possible so they can replicate technique at home.*

1. Lead a quick warmer (5-10 minutes).
2. Lead a session teaching banana plantation management (see background notes for detailed information), try to keep it participatory by using question and answer as much as possible.
3. When the group returns to the meeting venue, explain that bananas can be marketed. From what they have learnt in their previous sessions, have them brainstorm the ways in which bananas can be sold or processed for the market.
4. Provide the group with the task of identifying constraints to marketing bananas; write these on a flipchart. On a separate flipchart, identify solutions to those problems.
5. Finish the session with questions and answers, as well as a life skills debrief.
PART 4: COMMERCIAL FOOD PRODUCTION

Most farmers in Uganda are subsistence farmers and through various government and NGO support, are steadily moving to commercial farming.

Farming as an enterprise is now the focus rather than subsistence agriculture, as can be seen in the government’s Plan for Modernisation of Agriculture (PMA). This in essence means that farmers are now given the right training to enable them to produce for specific markets. The starting point of which is with enterprise selection.

Decision-making is considered a very important practice in agro-enterprise. The right decision should be made on what to produce, how to produce, how much to produce, and where to buy and sell. Making the right decision is difficult but can make the difference between a poor farmer and successful one.

What is involved?

Farming is an enterprise and therefore farmers must be profit orientated. To maximize profits the farmer wants the highest income and lowest expenditure possible (while also considering natural resource sustainability for the future).

- This involves specialisation in a particular agro-enterprise in which the farmer has comparative advantage [the ability to produce a good at a lower cost, relative to other goods] and which will give maximum profits. This comparative advantage may be in the form of experience, knowledge and skills, required inputs or agro–ecological factors (e.g. a favourable climate or soil type)
- Farmers need to identify the markets and the specific market requirements before they make the decision on what to produce. This is referred to as undertaking market-oriented agricultural production.

This does not mean that food security is not considered. Rather, food security is attained by purchasing food from the market using money raised from the sale of farm produce. The size of the farming operation may not necessarily be large. Even smallholder farmers can produce for the market.

Why is there a need to choose wisely between agro-enterprises?

- Factors of production are scarce. Farmers need to decide on an agro-enterprise that make best use of the available production factors and resources.
  - Land
  - Capital
  - Labour
  - Entrepreneurship
- Competition in the private sector is stiff. Ever since the liberalisation of markets, anybody is free to engage in marketing.
- Existing barriers. Some agro-enterprises require highly specialised skills (e.g. vanilla growing, honey production, flowers and silk worm farming).
- Invested costs. It can be very costly to drop unprofitable agro-enterprises. Some farmers have lost all they had because of wrong agro-enterprise choice.

What is required of the farmers?

- Farmers must form groups and work together to be able to get easier access to inputs, markets and market information, technical advisory services, and other services collectively.
- Farmers must also identify and prioritise agro-enterprises for which they have a comparative advantage.
• They participate in enterprise selection, development, and promotion activities – very important components of ‘farming as an enterprise’. Particularly important is the selection of agro-enterprises for profitable agricultural production.

This portion of the curriculum relates to the above – converting a subsistence farmer to a commercial farmer. Topics to be discussed include group formation and management, partnership development, resource mobilisation, market research, and savings. The M&E Knowledge Assessment tool will help to identify the stage of the group (according to The Livelihoods Pathway) and which topics need to be covered.
GROUP FORMATION AND MANAGEMENT

LEARNING OBJECTIVES
By the end of this session, learners will be able to:
• Understand group formation and registration
• Identify the personalities and roles of different members in the group
• Develop ideas on how to manage groups for sustainability

LIFE SKILLS OBJECTIVES
Conflict management and problem solving; creative thinking; listening and giving feedback; teamwork

TIME: 60-90 minutes

MATERIALS: Flipcharts; markers; flash cards (see below)

PRIOR PREPARATION
• Cut out pieces of paper and write down one point per piece – these will be your flash cards.

Personalities of Group Members
• I tend to be very quiet in group discussions, but I will speak if I have something important to contribute.
• I hate confrontation, so I will often try to smooth things over or attempt to find a compromise position.
• I feel comfortable in a leadership position.
• I don't want to lead anything, but will happily contribute to the completion of tasks.
• I like to make sure that things get done, and hate it when it takes forever to make a decision.
• I like to make sure things are done carefully, and that the group gets it right the first time.
• I am not concerned with picky details. I like to be creative.

Roles of Group Members
• I like discussions that have structure.
• I like to make sure everyone's opinion is heard.
• I have lots of good ideas.
• When things get tense, I like to promote harmony.
• I get annoyed when there is too much talk and too little action.
• I like to get my point across. Sometimes this means interrupting people.
• I like to try for a group consensus.
• I think the majority vote should win.
• I like to make sure that I have lots of information before I make a decision.
• I find it very stressful to work in groups.
• I often like to take a leadership position.
• I like to make sure that all the rules are followed.
• I think a little humour is useful in group work.

Negative Behaviours
• Always has to win the argument.
• Talks too much and too long.
• Is disruptive and does not pay attention.
• Is sarcastic and makes critical comments.
• Is too defensive.
• Believes he/she knows everything.
• Is too aggressive.
• Is very negative.
• Takes on too much and accomplishes little.

BACKGROUND NOTES

A well functioning group does not just happen out of the blue. Group formation takes time and is characterised by four developmental stages. Understanding these stages helps in successfully managing a group’s efficiency and cohesion.

1. Forming: when a group comes together and members begin to develop relationships. Team building, defining acceptable behaviours, and time and task delegation also occur.

2. Storming: in this stage, interpersonal conflicts arise due to:
   • Lack of clear objectives
   • Conflict over objectives or purpose
   • Personal differences among members
   • Lack of standards for behaviour
   • Unwillingness or inability to contribute
   • Poor leadership
   
   Should discussions and negotiations fail to resolve the problem, the group may simply collapse at this point.

3. Norming: following conflict resolution, the group can establish patterns of how to get its work done. All members now understand how the group as a whole operates – all expectations, procedures, and questions have been clearly addressed.

4. Performing: during this final stage, the group is focused on its task, working intentionally and effectively to accomplish its goals. The group will find that it can celebrate its accomplishments and that members will be learning new skills and sharing roles.

A group will never remain permanently in the performing stage. When new members join, people leave, or external events lead to conflict, the process of forming, storming, norming, and performing will begin anew (in a continuous loop).

Perhaps the most important thing to understand about groups though, is why they exist. Essentially, groups exist only to satisfy the needs and interests of their members. Therefore, group members should clearly see what the end goals will be and how these will meet their objectives.

REASONS WHY PEOPLE JOIN AGRO-ENTREPRENEURIAL GROUPS
• Groups generally have easier access to goods and services than individuals.
• Group members pull together scarce resources, own and manage themselves in order to fight against poverty, food shortage, powerlessness of an individual person against market forces, unemployment, and low self esteem.
• Groups are excellent environments for learning and exchanging information.
• Groups can receive resources from Government and NGO development agencies.
• Groups allow small entrepreneurs to be reached (as it reduces the cost of lending and default through collective risk taking by microcredit groups).
DIFFERENT TYPES OF GROUP MEMBERS

People do not realise how individual behaviours can affect the way a group functions (see negative behaviours below). Some people, if given the opportunity will dominate the group, while others will work quietly in the background. Every group has a different mix of people; yet groups seldom think about the personalities of the group members until a problem or conflict arises.

Group members need to clearly understand what each person contributes to the group. A successful group will have a mixture of different personalities and roles. A collective understanding of group strengths and weaknesses also helps to reduce the incidence of conflict. The different types of roles individuals can play in groups include the following:

- Information seeker or giver
- Opinion giver or seeker
- Listener
- Harmoniser
- Compromiser
- Organiser
- Analyser
- Standard setter

EXECUTIVE ROLES

Although all members of a group need to have a clear understanding of their roles and responsibilities, the selection of an executive committee is important for group management (as its members guide the group in reaching their goals). Every executive position has certain responsibilities which are common to any group; however, every group needs to refine these responsibilities to meet its particular objectives and needs.

- Chairperson: group representative, sets agendas, supervises activities, delegates responsibilities, provides support
- Vice chairperson: the assistant and understudy to the chairperson
- Secretary: record keeper, takes the minutes in meetings, keeps group members ‘in the know’
- Treasurer: monitors all financial activities

GROUP MANAGEMENT & REGISTRATION

- Identify common goals and aims
- Develop a constitution
- Develop and agree on management/leadership structure
  - Chairperson, vice chairperson, treasurer, secretary
  - Development of sub-committees (i.e. finance committee, technical committee, marketing committee, etc.)
- Agreement on
  - Aims and objectives
  - Area of operation
  - Scope of activities
  - Membership, registration of members, and leadership
- Registration
  - Registration at village and sub-county level
  - Payment of registration fees (20,000/= per year at sub-county level)
  - Automatically registered at district

With these measures in place, group cohesion and efficiency are achievable. As is group sustainability, whereby, the group:

- Agrees on procedures for conflict management so that all members are aware of them
• Agrees on how to share profit/proceeds from the group agro-enterprise
• Agrees on how to ensure sufficient money is retained within the agro-enterprise for its development and growth
• Develops a constitution that all members are familiar with and to which they adhere
• Ensures legal compliance (i.e. with tax laws, environmental regulations etc)

INSTRUCTIONS

1. Lead a quick warmer (5-10 minutes).

Preferably, the warmer should relate to the life skill of TEAMWORK. An example being: The Longest Line.
Take learners outside where they can have a large area to work. Split them into two teams (or more if the group is large). Explain that they are to create a long line on the ground or floor, using whatever they currently have on their bodies. They are not permitted to get additional things, but whatever they have – tissue, watches, clothing, shoes – can be used to make the line longer and longer. Their goal is to have a longer line than the other teams. (If people are really creative, they will use everything possible and then lie down on the ground themselves to make the line longer!) The team with the longest line is the winner.

GROUP FORMATION

2. Introduce the topic of group formation. Key points:
   • Small agro-enterprise ventures succeed, as well as fail, based on a group’s ability to work together and reduce conflict.
   • Each member in a group has a role to play and certain responsibilities to take. These are determined by: the size of the group, the group purpose, and one’s personal experience/personality.
   • Group development is a cyclical event involving 4 stages: forming, storming, norming, and performing.

3. Briefly discuss the personalities that are commonly found in groups using the “Personalities of Group Members” flash cards (tape each to a flipchart or blackboard).

4. Have the learners answer the following questions (having them consider the flash cards as an actual group):
   • What strengths does the group have?
   • What types of conflicts are likely to occur?
   • What types of personalities are missing? What impact will this have on the group?

5. Briefly discuss group roles using the “Roles of Group Members” flash cards (tape each to a flipchart or blackboard).

6. Have the group answer the following questions (having them consider the flash cards as an actual group):
   • What strengths does the group have?
   • What types of conflicts are likely to occur?
   • What types of roles are missing? What impact will this have on the group?

7. Quickly recap the previous two exercises – ensure that the learners understand that groups are made up of many personalities and that those personalities must be matched to a group member’s role in order to reduce group conflict.

8. Briefly discuss group conflict and its causes (lack of clear objectives, conflict over objectives or purpose, personal differences among members, lack of standards for behaviour, unwillingness or inability to contribute, poor leadership).

9. Divide the learners into groups and randomly hand out a “Negative Behaviours” flash card to each.

10. Each group should role play their card to the rest of the class and answer the following:
    • How would this type of behaviour impact the group?
    • What would need to be done to prevent this behaviour from causing a real problem in the group?
GROUP MANAGEMENT

11. Brainstorm ways in which a group can be managed so it can work effectively, conflict free, and sustainably.

12. Introduce the topic of establishing an executive committee and run through the roles of each position.

13. Finish the session with questions and answers, as well as a life skills debrief.
CONFLICT RESOLUTION FOR GROUPS
Adapted from the Conflict Resolution Network, PO Box 1016, Chatswood, New South Wales 2057, Australia 
(02) 9419-8500. Email crn@crnhq.org Website: www.crhq.org

LEARNING OBJECTIVES
By the end of this session, learners will be able to:
- Manage conflict situations within a group setting

LIFE SKILLS OBJECTIVES
Conflict management and problem solving; negotiation; listening and giving feedback; interpersonal communication

TIME: 60 minutes

MATERIALS: Flipcharts; markers

BACKGROUND NOTES
Conflict is a struggle between people with opposing needs, ideas, beliefs, values, or goals. In conflict situations, people behave in certain ways out of either:
- Habit (kneejerk reaction)
- Learnt patterns
- Variations in mood, setting, relationship, or significance of conflict
- Belief system – for me to win, someone else must lose

BEHAVIOURAL REACTIONS TO CONFLICT

<table>
<thead>
<tr>
<th>FIGHT</th>
<th>FLIGHT</th>
<th>FLOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggressive</td>
<td>Passive</td>
<td>Assertive</td>
</tr>
<tr>
<td>I win, you lose</td>
<td>You win, I lose</td>
<td>I win, you win</td>
</tr>
<tr>
<td>Examples: screaming, physical violence, refusing to listen, manipulation, sulking</td>
<td>Examples: sulking, crying, avoiding, pretending it hasn’t happened, giving in</td>
<td>Examples: discussing the situation, listening to others, taking time-out, explaining own perspective and needs, compromising</td>
</tr>
<tr>
<td>Control, demand</td>
<td>Submit to another’s power</td>
<td>Share power or work towards it</td>
</tr>
<tr>
<td>Punish, reward</td>
<td>Resign to the situation</td>
<td>Unfold the opportunity</td>
</tr>
<tr>
<td>Bulldoze to punish</td>
<td>Withdraw to avoid</td>
<td>Withdraw to consider needs and concerns of self and others; Return to address the issue as appropriate</td>
</tr>
<tr>
<td>Refusal to deal with the others needs and concerns</td>
<td>Refusal to deal with own needs and concerns</td>
<td>Contain discomfort carefully</td>
</tr>
<tr>
<td>Place responsibility on other person</td>
<td>Suppress the distress felt, at least to the other person</td>
<td>Seek agreement which is fair to all involved</td>
</tr>
<tr>
<td>Manipulate while appearing to compromise</td>
<td>Surrender own needs in hasty compromise</td>
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CONFLICT RESOLUTION

Some conflicts start because people misunderstand each other. Communication (talking things out and providing explanations) is the first step in attempting to take care of the issue.

Negotiation/compromise: the act of finding agreement through communication, through a mutual acceptance of terms – often involving variations from an original goal or desire; settling differences

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<tr>
<th>ADVANTAGES OF NEGOTIATION</th>
<th>DISADVANTAGES OF NEGOTIATION</th>
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<tbody>
<tr>
<td>• It may seem the simplest, easiest and fairest thing to do</td>
<td>• It often requires one party to give more and then they will be less committed to the solution</td>
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<tr>
<td>• It means that when we can’t make a bigger pie, at least everyone is sharing what is available</td>
<td>• It has been described as an acceptable form of lose-lose (both people lose an equal amount)</td>
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<tr>
<td>• It results in both parties having some of their needs met</td>
<td>• It may mean the potential of all options hasn’t been fully explored</td>
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The best compromise is not compromising at all. A win-win approach allows both or all parties to have their needs/desires met. It focuses on identifying needs first, and then solutions later. Basic principles include:

1. **Concentrate on the approach not the outcome**
   - Maintain an attitude of respect for all parties
   - Be willing to fix the problem
   - Recognise that a win-win approach is not always possible, but it should be the goal

2. **Focus on the issue**
   - Be hard on the issue and soft on the people involved
   - What are the needs?
   - What are the concerns?

3. **Take a broader perspective**
   - What are the long-term and short-term consequences of win/lose?
   - What are the advantages of win-win?
   - Identify many options and develop the ones that give everyone more of what they needed
   - Redefine what constitutes a win – remind each other that for someone to win, it is not necessary for someone else to lose
   - What can be done to balance a loss?

4. **Make it easy to say yes**
   - Offer options that are of high value and easy for you to give
   - Listen to and acknowledge needs and concerns

5. **Support what is legitimate and fair**
   - Resist greed and injustice
   - Avoid infringing your own and others’ rights

6. **Be persistent**
   - Take a long-term view
   - Maintain dialogue or its possibility

Advantages include: increasing productivity, increasing capacity for decision-making, encouraging creativity, resulting in good quality solutions, eliciting commitment from people and focusing people’s energy on solving problems rather than fighting with each other.
At times, however, when negotiation fails, a third party may need to be brought in. If this third party facilitates the settlement of the conflict by advising and suggesting possible solutions, then the conflict is resolved through mediation. In the worst of conflict situations, arbitration may be required. This is when a third party actually decides the outcome after hearing both sides of the story.

**INSTRUCTIONS**

1. Lead a quick warmer (5-10 minutes).

Preferably, the warmer should relate to the life skill of NEGOTIATION. An example being: **Backward Clumps**. Divide the group into pairs. Ask each pair to sit on the floor with their partner, backs together, feet out in front and arms linked. Their task is to stand up together. Once everyone has done this, two pairs join together and the group of four try to repeat the task. After they succeed, add another two and try again. Keep adding people until your whole group is trying to stand together. A sight to behold!

**CONFLICT BEHAVIOURS**

2. Identify the ways in which people can react to conflict: fight (aggressive), flight (passive), or flow (assertive).

3. Read the below statements and have the learners identify which behaviour they describe.

   1. Avoid the person. [passive]
   2. Change the subject. [passive]
   3. Admit that you are wrong, even if you are not. [passive]
   4. Give in. [passive]
   5. Pretend you agree. [passive]
   6. Whine or complain until you get your way. [passive]
   7. Play the martyr. Give in, but let the other person know how much you are suffering. [passive]
   8. Try to reach a compromise. [assertive]
   9. Try to understand the other person's point of view. [assertive]
   10. Try to find a new solution both of you will find acceptable. [assertive]
   11. Be persistent. Wear down the opposition. [aggressive]
   12. Use your authority. Order the other person to obey you. [aggressive]
   13. Use sarcasm or ridicule. [aggressive]
   14. Defend your position. [assertive]
   15. Use your power to win your position. [aggressive]
   16. Acknowledge the conflict and work for consensus. [assertive]
   17. Try to eliminate to gain the advantage. [aggressive]

4. Ensure the learners understand that they should work towards being assertive as it is the most productive and efficient way of preventing and resolving conflict (see background notes in the life skill manual).

**TYPES OF CONFLICT RESOLUTION**

5. Introduce the 4 ways in which conflicts can be resolved: communication, negotiation, mediation, arbitration.

6. Read the following situations to the group and have them identify the type of conflict resolution being used.
A. Allan and Sarah were arguing over who would get to use the box of markers. They realised that arguing was getting them nowhere, so they figured out several ways they could both use the markers. Then they chose the way they liked best. (NEGOTIATE)

B. Mark, Tony, and Richard are supposed to put up a bulletin board display together, but they can't agree on what the theme should be. They finally went to their teacher Mr. Nunez and asked him to choose the bulletin board theme. (ARBITRATE)

C. Prossy was upset because her best friend Betty walked by her this morning without saying a word. She didn't speak to Betty all day. Finally Betty got Prossy to say what was wrong. "I didn't even see you," Betty cried. "I would never walk by without saying something to you." It was all a misunderstanding. (COMMUNICATE)

D. Hassan and Diana were playing on the same football team, but they both wanted to play goal. They were shouting at each other. Finally Henry came up and helped them work out a solution to the problem. (MEDIATE)

7. Conclude this activity by having a class discussion using the following questions:
   - Has anyone ever used one of these conflict resolution approaches? If so, describe the situation.
   - Can you think of some other ways of resolving conflicts? (compromise, problem solving, competing, using chance)
   - Which of the resolution types results in the best outcome for both parties?

THE WIN-WIN APPROACH TO CONFLICT RESOLUTION

8. Introduce the principle of the win-win approach by telling the story below (or a similar one that would be relevant in your village).

A Story of Two Sisters

There are two sisters in a kitchen and only one orange. Both of them want the orange. What could they do? (When someone says “negotiate” or “cut it in half”, continue the story.) That’s what they did. One sister took her half and squeezed it to make juice, but because it was only half, it wasn’t enough to satisfy. The other sister, with some difficulty, began to peel her half of the orange to add to biscuits. She then threw out the juicy pulp. They both had only half the orange, when in effect they could have each had the whole orange. Ask the plenary, what could the sisters have done for both of them to have the whole orange? Talked, listened, and found out what each other wanted to do with the orange.

9. Negotiation is an approach for achieving a win-win result. Ask the plenary what negotiation is. Why do we negotiate? What are its outcomes? What are its advantages? What are its disadvantages?

10. Role-play the following situation with another volunteer. Freeze the action where the argument is heating up.

A. Claire is in high school, has a big test coming up, and has just settled down to study. Amy, her younger sister, comes home from school, turns on the stereo, and starts dancing. Claire gets up and orders Amy to turn off the stereo. Amy protests, saying she never gets to have fun, and turns the stereo up.

B. Ask the class to describe what's going on. What does Claire need? What does Amy need? If Claire won, what would she get? How would she feel? If Amy won, what would she get? How would she feel?

C. Show students the following diagram of ways the conflict could come out.
D. Ask for ideas about how this conflict might come out. Have two volunteers role-play one of the endings suggested above.
E. Discuss where the ending is located on the chart. Does Amy get what she wants? Does Claire? Then what kind of an ending is that?
F. Continue with other endings. Role-play at least one ending for each category.
G. When the students have arrived at a win-win ending to role-play, spend some time drawing out as many win-win solutions as they can come up with. Go for quantity. Point out that most conflicts have many win-win solutions depending on what is acceptable to both parties.

11. Ask learners what they think are the basic principles of a win-win approach, list them on a flipchart.
12. Finish the session with questions and answers, as well as a life skills debrief.
FORMING A CONSTITUTION

LEARNING OBJECTIVES
By the end of this session, learners will be able to:
• Explain the value of having a constitution
• Write a constitution

LIFE SKILLS OBJECTIVES
Conflict management and problem solving; creative thinking; listening and giving feedback; teamwork

TIME: 60 minutes

MATERIALS: Appendix 4: Constitution Format; pens/pencils

BACKGROUND NOTES
Constitution: a written document that establishes the rules and principles for governing an agro-enterprise, organisation, partnership, or other such group

PROCESS OF FORMING/WRITING A CONSTITUTION
This process should be participatory, whereby all members decide how they want to be governed. It establishes the structure and purposes of the organisation, the methods of selecting members and leaders, and the powers and responsibilities of each. All affiliations/partnerships as well as investments (i.e. human, social, financial and ecological capital) to be made should also be described.

Below is a guide for organising a constitution, it does not have to follow the format exactly but should cover all the necessary points. A group’s constitution may be more elaborate or simple depending on the type of organisation. Ultimately, it needs to reflect the reality of the organisation, but should not encompass every possible occurrence that can be imagined.

1. Introduction
   • Name of the group
   • Location
   • Reason why the group is together
   • Number of members
2. General purpose/goal and objectives of the group
3. Membership
   • Who is eligible to be a member of your organisation?
   • How are the members selected? (i.e. open to all, application, ballot, etc.)
   • Qualifications and responsibilities of the members
4. Leadership
   • Composition of the leadership – chairperson, vice chairperson, treasurer, secretary, sub-committee members, etc.
   • Who is eligible for each position?
   • Roles and responsibilities of each of the members on the committee
   • What is the process for selecting the leaders? (i.e. election, application, appointment, etc?)
• How are the officers removed from office if necessary?
• How are vacant positions filled if necessary?

5. **Meetings** (can be divided into both executive committee and general assembly meetings)
   • How often will meetings be held?
   • How will organisational decisions be made?
   • Who is eligible to vote at meetings?
   • What constitutes a quorum at meetings? (a quorum is the absolute number/percentage of voting members required to be in attendance or to vote in order to conduct business)

6. **Elections**
   • How often are leaders changed?
   • Who can be nominated?
   • Condition for those who should stand, e.g. should have paid membership fee?
   • How to elect leaders? (i.e. democracy, secret ballot, rational, etc.)
   • What should be done if a leader is not replaced?

7. **Amendments** (changes in the constitution)
   • When should it be changed?
   • Who decides on changes to be made?
   • What quorum is necessary for it to be changed?

8. **Finances**
   • Are membership fees due, if so, how much, how often and to whom are they paid?
   • Who is responsible for the collection and disbursement of funds?
   • Who may authorise expenditures?

9. **Misconduct**
   • What actions constitute misconduct?
   • What is done in the case of misconduct by a member?

10. **Affiliations/Partnerships**
    • What is the affiliation, if any, with local, state, national or international organisations and what is the relationship of the organisation to the affiliate?
    • What is the process for continued affiliation?

11. **Conclusion**
    • Date it was signed
    • Persons to sign or witness

Constitutions "lock in" a group’s commitment to the future and in supporting their ongoing work. It is recognised that these rules were established through a process and at a time when the group was functioning constructively as a competent, rational, mutually respectful unit. As such, these rules are always available as a frame of reference for preventing and resolving future group/agro-enterprise issues.

**INSTRUCTIONS**

1. Lead a quick warmer (5-10 minutes).

Preferably, the warmer should relate to the life skill of **LEADERSHIP**. An example being: **Spider Web**. Learners stand close to each other in small circles – about five or six people. The learners take the hands of the people in the circle. They cannot take the hand of the person next to them, and they must be sure to have the hands of two different people. They then try to untangle themselves – to return to a continuous circle again without letting go of anyone’s hands. After all groups have successfully untangled, process the exercise. Did any leaders direct the rest of the group? What was the process? Did anyone give up? Why? What made the group finally succeed?
2. Lead learners to a definition and understanding of a constitution.
3. Ask learners to identify when a constitution should be used, and the advantages of forming one.
4. Explain to the groups that they should assume they are all members of a particular agro-enterprise (have the learners choose one).
5. Then divide learners into groups and give each a copy of the constitution format; split the constitution format into the same number of parts as there are groups, allocate one part to each group.
6. Have the groups write down what they would include in a final constitution for their enterprise. Each group should complete all the questions, even others they think up, for the part they were given.
7. Ask the groups to report back (following the order of the constitution).
8. After the presentations, ask the plenary:
   - Is there anything missing from this constitution? What? How would you add it?
   - Do you think that any major changes would be needed in the constitution for a different enterprise (e.g. for bakery, for poultry, for textiles, etc.)?
   - How would writing a constitution help develop partnerships with other enterprises or organisations?
   - Will you write a constitution for your enterprise?
9. Finish session with questions and answers, as well as a life skills debrief.
UNDERSTANDING PARTNERSHIP

LEARNING OBJECTIVES
By the end of this session, learners will be able to:

• Define partnership and describe different types of partnership
• Describe advantages and disadvantages/challenges of partnership and identify solutions to challenges

LIFE SKILLS OBJECTIVES
Conflict management and problem solving; listening and giving feedback; teamwork; negotiation; respect and tolerance; options for livelihoods

TIME: 60 minutes

MATERIALS: Flipcharts; markers

BACKGROUND NOTES
Partnership: a group of people who come together to achieve a common goal. Partnerships range from partnerships between individuals, to partnerships involving small, medium, or large business groups.

TYPES OF AGRO-ENTERPRISE PARTNERSHIPS
(A) Sole Proprietorship
A sole proprietor performs all the functions required for the successful operation of an agro-enterprise. The proprietor secures the capital, establishes and operates the agro-enterprise, assumes all risks, accepts all profits and losses, and pays all taxes. The proprietor is said to be self-employed.

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<tr>
<th>ADVANTAGES</th>
<th>DISADVANTAGES</th>
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<tbody>
<tr>
<td>• Low start-up costs</td>
<td>• Unlimited liability*</td>
</tr>
<tr>
<td>• Greatest freedom from regulation</td>
<td>• Lack of continuity in business organisation in absence of owner</td>
</tr>
<tr>
<td>• Owner in direct control of decision making</td>
<td>• Difficulty in raising capital</td>
</tr>
<tr>
<td>• Minimal working capital required</td>
<td></td>
</tr>
<tr>
<td>• Tax advantages to owner</td>
<td></td>
</tr>
<tr>
<td>• All profits to owner</td>
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* LIABILITY: the responsibility for a company’s debt or other obligations. Some forms of agro-enterprise organisations, such as a sole proprietorship, have unlimited liability, meaning that the owner is personally responsible for the debts and obligations of the agro-enterprise, and lenders or courts may look to the owner’s personal assets for payment of these obligations. Limited liability organisations, such as corporations, allow lenders and courts to only seize the assets of the agro-enterprise rather than the assets of the owners.

(B) Partnership
A partnership is an agreement in which two or more persons combine their resources in an agro-enterprise with a view of making a profit. In order to establish the terms of the partnership, and to protect partners in the event of a disagreement or break-up, a partnership agreement should be drawn up – it is wise to have a solicitor prepare this contract to clearly and officially state the rights and duties of each partner.
### ADVANTAGES
- Ease of formation
- Low start-up costs
- Additional sources of investment capital
- Possible tax advantages
- Limited regulation
- Broader management base

### DISADVANTAGES
- Unlimited liability
- Divided authority
- Difficulty in raising additional capital
- Hard to find suitable partners
- Possible development of conflict between partners
- Partners can legally bind each other without prior approval
- Lack of continuity

(C) **Cooperatives**
A cooperative is organised by people with similar needs to provide themselves with goods or services, or to make joint use of their available resources to improve their income.

### ADVANTAGES
- Owned and controlled by members
- Democratic control: one member, one vote
- Limited liability
- Profit distribution (surplus earnings) to members is in proportion to use of service; surplus may be allocated in shares or cash possibility due to the development of conflict between members

### DISADVANTAGES
- Longer decision making process
- Requires members to participate for success
- Extensive record keeping necessary
- Less incentive to invest additional capital

(D) **Incorporating (Limited Company)**
A corporation is a legal entity which is separate and distinct from its members (shareholders). Each shareholder has limited liability (they cannot be held personally responsible for the debts, obligations, or acts of the corporation beyond the amount of share capital the member has invested). A corporation also has perpetual succession, whereby its existence does not depend on the continued membership of any of its members.

### ADVANTAGES
- Limited liability
- Possible tax advantage (if you qualify for a small agro-enterprise tax rate)
- Specialized management
- Ownership is transferable
- Continuous existence
- Separate legal entity
- Easier to raise capital

### DISADVANTAGES
- Closely regulated
- Most expensive form to organise
- Charter restrictions
- Extensive record keeping necessary
- Double taxation of dividends
- Shareholders may be held legally responsible in certain circumstances
- Personal guarantees undermine limited liability advantage

It is best to make the decision concerning whether to have a partner by preparing a ‘for’ and ‘against’ list. The most common reasons **FOR** joining with another person to start an agro-enterprise are:
- There is safety in numbers. In other words, there are two heads instead of one to discuss and make decisions. In the words of Solomon: “Two can accomplish more than twice as much as one. If one fails, the other pulls him up; but if a man falls when he is alone, he’s in trouble. And one standing alone
can be attacked and defeated, but two can stand back-to-back and conquer. Three is even better, for a triple-braided cord is not easily broken."

- A person does not need to be at the agro-enterprise at all times. Others will be there to share the load and permit one to take a vacation and have sick time.
- A highly motivated co-worker, not just someone who is earning a paycheck.
- Partners can also be advantageous when they have complementary skills.
- It may be necessary to have a partner to contribute capital and share the risk when things do not proceed as planned.

Some of the arguments AGAINST having a partner:

- Having to share the rewards and recognition if the agro-enterprise is successful.
- Loss of total control over the agro-enterprise, particularly if the partners have difficulty in making decisions.
- A partner can be a disaster if his or her judgment is not good.
- Risk of a falling out and perhaps the necessity of one partner buying the other out or shutting down the agro-enterprise.

Some of the things to consider in deciding whether a particular person will make a good partner are:

- Do they have similar work habits?
- Similar objectives concerning how to run the agro-enterprise
- Are both partners' strong points similar or complementary?
- Should there be a buy-sell agreement in the event of a disagreement? How will it be paid for?

**STRATEGIES FOR OVERCOMING THE DISADVANTAGES/CHALLENGES OF PARTNERSHIPS**

- Clearly define the roles and responsibilities of each member in a group (including leadership roles) and draft a constitution – in a consultative manner.
- Entrepreneur, management, and technical skills should be attained by members.
- All members should have realistic expectations, with the understanding that change will not happen overnight but will take time and perseverance.
- Ability to create and participate in value based networks and partnerships
- Access finances
- Sound governance and regulatory environment (good governance, legal and regulatory frameworks, infrastructure and fair competition)

**INSTRUCTIONS**

1. Lead a quick warmer (5-10 minutes).

   Preferably, the warmer should relate to the life skill of **RESPECT AND TOLERANCE**. An example being: **Desert Island.** Announce, “You’ve been exiled to a deserted island for a year. In addition to the essentials, you may take one piece of music, one book (which is not the Bible), and one luxury item you can carry with you (i.e. not a boat to leave the island)! What would you take and why?”

   Allow a few minutes for the young people to draw up their list of three items, before sharing their choices with the rest of the group. As with most icebreakers and relationship building activities, it’s good for the group leaders to join in too!

2. Introduce the topic of partnership and have learners brainstorm its meaning.
3. Explain, and name, the four different types of agro-enterprise partnerships. Ask learners if they have had experience in any of them by a show of hands. Have several people briefly describe their experience.

4. First, divide the learners in half and then into smaller groups. Have one half of the groups discuss partnerships (type B above) and the other half, cooperatives (type C above).
   - How and why are they formed?
   - What considerations should be made in deciding who to partner with?
   - What are the advantages and disadvantages?
   - List agro-enterprises which commonly form partnerships.
   - What are the implications of not having a partnership agreement?

5. Have each group present back their thoughts. Hold a plenary to discuss their responses. Ensure that learners fully understand the advantages/disadvantages and any challenging terminology.

For example, you may have to provide a scenario to illustrate unlimited liability:

An agro-enterprise, having unlimited liability, has just gone bankrupt and cannot repay the bank the money it owes on its loans. The total amount to be paid back is 2 million shillings – for which all partners are responsible. The bank will initially take possession of all the agro-enterprises assets. The remainder of the debt will have to be paid back through the partner’s personal assets (i.e. possessions, cars, home, etc.).

6. Summarise the disadvantages/challenges of forming partnerships and ask the plenary for possible solutions for each one.

7. Finish session with questions and answers, as well as a life skills debrief.
MARKETS AND MARKETING

LEARNING OBJECTIVES
By the end of this session, learners will be able to:
• Understand and identify markets
• Define and explain the importance of marketing
• Describe the marketing mix
• Identify key marketing channels

LIFE SKILLS OBJECTIVES
Problem solving; teamwork; career planning; options for livelihoods

TIME: 1-2 hours

MATERIALS: Flipcharts; markers

BACKGROUND NOTES

MARKET: where a farmer’s produce is delivered and where willing buyers purchase them at an agreed price.

Market requirements:
• Good quality produce/commodities
• Sufficient quantity of produce
• Continuous supply of produce at all times

Law of Supply and Demand
The law states that, “when commodities are plentiful prices are low, and when commodities are scarce or few prices are high”. This means that farmers should try to produce in time and sell when prices are good. To do this they need to get better markets. Possible markets at a farmer’s disposal are:
• Boarding Schools
• Institutions
• Colleges
• Hotels
• Local markets
• Factories

For rural farmers; however, it is not always an easy task to access these markets. Causes of inadequate access are:
• Lack of market information to both farmers and buyers.
• Poor feeder roads which are at times not accessible, especially during rainy seasons.
• Lack of transportation and very long distances between farmers and buyers.
• Production in small quantities which does not attract buyers’ attention.
• Failure of farmers to organise themselves into farmers associations and cooperatives.
• Over dependency on local traders who at times cannot buy all the produce, especially during the booming season.
• Poor quality produce which cannot attract good buyers.
• Untimely planting which results in poor yields.
Lack of storage facilities at farm, communal, and national levels.

Suggested solutions:

- Avail to farmers and traders marketing information.
- Local government should and ensure good feeder roads.
- Use of cheap means of transportation.
- Specialisation and use of high yielding varieties to produce adequate quantities for the market.
- Farmers should organise themselves in marketing and transport cooperative societies to easily access markets.
- Farmers should explore market opportunities beyond their localities.
- Ensure good quantity and quality of produce through use of improved varieties, good husbandry and postharvest practices.
- Both government and farmers should invest in good storage facilities at farm, community, and national levels to ease the problem of low prices in boom season.

MARKETING: the set of activities that direct the flow of agricultural products (i.e. crops, livestock, fish, forestry products, and other processed products) from the farm to the final consumers (households) through a market channel.

The Marketing Strategy (5 Ps)
This is a basket of marketing tools that – when combined – result in a product that is appealing to the target market selected. It consists of:

- **Product** refers to the goods (commodity) and or service that the individual/group is producing for sale to earn income.
- **Place** is the point of exchange between buyers and sellers (i.e. the market). It is in the market where transactions take place and goods change hands.
- **Price** is the cost at which the buyers are willing to pay for a commodity.
- **Promotion** is a deliberate effort by the seller to make known to potential customers the existence of his/her product.
- **People** refer to the agro-entrepreneurs, their skills, friendliness, and reputation within the community.

Marketing Channels
The key marketing channels include:

- **Middlemen** or **itinerant traders**, who buy in small quantities and sell to the wholesalers or processors. This is the main group of traders that rural farmers deal with. They tend to exploit (take advantage of) the farmers by buying cheaply at farm gate prices and selling at premium prices to wholesalers in urban and distant markets.
- **Wholesalers**, who buy in larger quantities mainly from middlemen, store and sell to retailers or processors. This category rarely ventures to rural areas, preferring to deal directly with itinerant traders.
- **Processors**, those who add value to a product or process it to another product before selling to retailers or wholesalers.
- **Retailers** deal mainly in small quantities, selling direct to the final consumer.

INSTRUCTIONS

Make note: This session involves field work. Schedule this session when a food market (as some are only weekly) is occurring in the village.

1. Introduce the session, indicating that it will be about markets and marketing.
2. In a brainstorming session, have learners define what a market is. Have them provide examples of potential markets for agricultural goods.
3. Discuss the causes of why farmers have inadequate access to markets. Are there solutions to these problems?
4. Present the idea of marketing and the marketing mix. Also briefly discuss marketing channels.
5. Inform learners that they are now going to visit a local market to observe and record what actually takes place there.
6. Divide the learners into 3 working groups.
   - The first working group looks at the location of the market and tries to find out from the local leaders and traders, why this site was chosen for the market. They also list all the items being sold in the market.
   - The second working group identifies the main sellers and buyers (i.e. producers, middlemen, wholesalers, agents, consumers etc). They also find out at what prices commodities are sold and how prices are negotiated (i.e. who determines the prices: buyers or sellers).
   - The third working group looks at how the sellers advertise or promote their products. This could be in terms of brokers, adverts, packaging, etc. They try to establish the main sources of market information. They should also try to identify what attracts buyers to one seller as opposed to other sellers of the same product.
7. On returning to the training venue, learners compile their findings and write them on a flipchart.
8. Each group presents its findings in a plenary session for discussion. The facilitator guides the discussions on observations made and lessons learnt, particularly focusing on key marketing components (product, place, price, promotion, and people), key marketing channels (retailers, wholesalers, etc.), and sources of market information.
9. Wrap up the session by highlighting the importance of identifying and understanding the market, importance of a farmer’s access to markets, and market information in the commercialisation of agriculture.
10. Finish the session with questions and answers, as well as a life skills debrief.
MARKET RESEARCH

LEARNING OBJECTIVES
By the end of this session, learners will be able to:
• Define market research and learn of its purpose
• Conduct an interactive market assessment

LIFE SKILLS OBJECTIVES
Problem solving; career planning; options for livelihoods

TIME: 1-2 hours

MATERIALS: Flipcharts; markers; Appendix 5: Interactive Market Assessment; pens/pencils

BACKGROUND NOTES
Market research is the first step in the marketing process (see the previous session) in which the farmer determines what the customer wants.

MARKET RESEARCH: the gathering of information that ties a farmer to its customers. It provides the information that is necessary for a farmer or cooperative to correctly position their product in the marketplace and offer the best combination of product, price, place/distribution, promotion, and person (the 5Ps of marketing).

Well-designed market research gives a person an edge on their competition, reduces their risk, and improves the effectiveness of their activities. Quality market research is the key to success! If a person does not understand their customer and their needs they will likely fail in their venture.

Why Conduct Market Research?
1. To develop product, price, promotion, place/distribution, and people plans
2. To identify problems in their marketplace and discover new opportunities
3. To learn about their competitors and how they are marketing their products
4. To find out what consumers think about their product category
5. To gauge the performance of their existing products
Market research involves the organised, objective collection and analysis of the above data. It is often conducted as the first step in identifying the feasibility of an idea. It always incorporates some form of data collection – either secondary research (often referred to as desk research) or primary research (direct from an individual).

How to do Market Research

1. **Talk to potential customers**
   - What products or services do they want to buy?
   - What do they buy?
   - Where do they buy from?
   - Why do they buy from that place?
   - When do they buy?
   - How much do they buy?
   - Which price do they pay?
   - What are their preferences?
   - Do they get any extras/incentives?
   - What do they think about competitors?

2. **Study competitors.** Find out:
   - Their products or services, for example quality and design.
   - What prices they charge?
   - What exactly do they sell?
   - In what does this product differ from yours?
   - Where do they get their inputs?
   - Where do they sell?
   - How do they promote their product/service?
   - Do they have any special way of customer care?
   - How can you compete?

   **Important note:** Be very careful to do research in a friendly, sensitive way; ask questions but also observe – be aware: nobody likes to get some more competition!

3. **Ask suppliers and friends**
   - Which goods sell in their agro-enterprise?
   - What do they think about your agro-enterprise idea?
   - What do they think about your competitor’s product?

Ultimately, market research should be conducted throughout the development of an agro-enterprise anytime a problem arises.

1. Identify agro-enterprise problem(s). For example, poor sales, customers complaining about quality, customers demanding much lower prices than seem reasonable, an inability to have products distributed in stores, etc.
2. Determine information needs (i.e. pose questions that might help understand why the problem identified in the first stage is happening).
3. Identify a process to collect information.
4. Interpreting the answers gathered.
5. Using the information gathered to make changes to the agro-enterprise.
INSTRUCTIONS

Make note: This session involves field work. Depending on the proximity to an agro-enterprise centre the VPE may have to skip steps 1 → 4 (covering them in the field, upon return, or in the next session).

1. Brainstorm with the learners examples of agro-enterprises (see Appendix 6).
2. Explain that the first step in setting up an agro-enterprise is to do market research. Review the 5Ps of marketing and ask learners what is meant by market research. Clarify the definition.
3. Brainstorm with the group the purpose of conducting market research in the context of setting up an agro-enterprise. Briefly explain that it can also be useful throughout the development of an agro-enterprise, especially when problems arise.
4. As a group, come up with a quick list of questions that could be asked when conducting market research – to customers, to competitors, and to suppliers alike.
5. Hand out a copy of the chart and a pen to each individual.
6. Take the learners to a previously chosen agro-enterprise centre. Say to them, “We will be walking around the central business district for [desired time] minutes. We will look at how people use particular products or provide services. Each of you has a chart now that will help you keep track of everything we see.”
7. Continue with, “First, let’s all fill in column 1 together with agro-enterprise options we have already discussed (try to cover products and services). Draw an image or write the name of an agro-enterprise in each box in column 1. While we walk around our area observing what people are doing, make a mark in column 2 for each shop or stall you see for that agro-enterprise. In column 3, make a mark for each person you see working in that agro-enterprise. Make a mark in column 4 for each person you see purchasing a product or service related to each of the agro-enterprises on our list.”
8. As a group, explore the market or town for the desired amount of time to assess the local supply and demand – filling out the chart as they go.
9. Returning from the field work, have the learners add up the marks they made and answer the 3 questions at the bottom. Briefly review the findings.
10. Conclude the session by discussing the following questions:
   • How did it go? Was it easy or difficult, exciting, or boring?
   • What were the main lessons you learned?
   • What are the main points to consider for a future market study?
   • Is it useful to do a market study? What for? Why is it important?
   • Is this type of rapid appraisal useful? Does it give you ideas? What are the limiting factors?
   • Is it important to plan a market study? Why?
11. Finish session with questions and answers, as well as a life skills debrief.
UNDERSTANDING RESOURCE MOBILISATION

LEARNING OBJECTIVES
By the end of this session, learners will be able to:
• Understand what types of resources are needed to start-up an agro-enterprise
• Know how to identify resource providers
• Write a project proposal

LIFE SKILLS OBJECTIVES
Decision making; career planning

TIME: 2 hours

MATERIALS: Flipcharts; markers

BACKGROUND NOTES
To mobilise resources effectively, consideration must be given to three elements which together are referred to as the ‘resource mobilisation framework’.

1. Resources – Money is one of the key resources that all projects need to function, and that all agro-entrepreneurs need to carry out their work. However, other useful resources include skills training, staff, inputs (e.g. product/good, land, labour, etc.).

2. Resource mechanisms – Resource mobilisation mechanisms are the actual processes of requesting or getting resources from providers – for example, by writing grant proposals, holding fundraising events, selling services, and face-to-face meetings.

3. Resource providers – Resource providers are the sources of funds such as banks, micro-credit agencies, government agencies, and charitable organisations, etc. All providers, and their advantages/disadvantages, are listed below.

<table>
<thead>
<tr>
<th>ADVANTAGES</th>
<th>DISADVANTAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Own resources (equity)</td>
<td>• Own decision</td>
</tr>
<tr>
<td></td>
<td>• Own planning &amp; timing</td>
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<tr>
<td></td>
<td>• Full control and benefits</td>
</tr>
<tr>
<td></td>
<td>• No extra costs (interest)</td>
</tr>
<tr>
<td></td>
<td>• Capacity of individuals limited</td>
</tr>
<tr>
<td></td>
<td>• Danger of relaxation in management</td>
</tr>
<tr>
<td></td>
<td>• No sharing of risks</td>
</tr>
</tbody>
</table>
### Gifts, offers

- Self-reliance, motivating
- Free
- No extra costs involved
- Not reliable
- Not timely
- May be tied to other person’s agenda or wishes

### Loans

- Extra resources
- Enforces discipline
- Induces external control
- Interest charges
- Not timely
- Tight repayment regime
- External control of one’s agro-enterprise
- Risk of loss of one’s other assets in case of failure

### Credit (esp. from supplier)

- Sure way of obtaining supplies
- No interest charges
- Reduction in operating expenses
- High prices
- Inferior supplies
- Inflexibility in planning supplies
- Dependency on supplier

### Grants (public or private)

- Free
- Higher amount
- Consider specific levels (local, regional, national, international), sectors (e.g. health, agriculture, politics) and target groups (e.g. youth, orphans, women)
- Strict rules for application and accountability
- High competition

A new agro-entrepreneur should investigate as many sources of funding as possible in order to secure the best terms and conditions of repayment. The most important types of start up funding are:

1. **An Owner’s Equity**
   
   This is the private money one puts into the agro-enterprise. It can sometimes be called risk capital because once the agro-enterprise fails the owner loses the money. Investing one’s own money in an agro-enterprise is risky; however it puts less pressure on the agro-enterprise than borrowing does. Investing one’s own capital may be risky but it shows a person’s faith in their agro-enterprise idea. This can encourage others to invest in them.

2. **Loans**
   
   Having a loan as start-up capital means borrowing from someone and having to pay them back at some point, with interest added. The loan may be paid back in full or in small, frequent payments (instalments) depending on the agreement. With a loan there is a lot of pressure on the agro-enterprise as it has to pay back more money (interest) on top of the owner’s equity. The more a person borrows, the more they pay interest and instalments.
   
   Money may be borrowed for:
   - Land and buildings
   - Equipment
   - Working capital

### LOANS

When is it useful to get a loan?

- When there is a justified financing gap in an agro-enterprises’ funding plans.
- When other options, such as saving and group-financing, are not possible.
- When there is the need to take an urgent opportunity that could lead to quick profit.

From where can loans be obtained?

- Banks and financial institutions
Types of loans:
• Group loans – loans with formal banking institutions (i.e. SAACOS)
• Individual loans – loans with informal savings groups and associations

Before borrowing money, these considerations should seriously be made:
• Develop a solid agro-enterprise plan including total funding requirements and running costs for the first few months
• Develop a financing plan including identifying funding sources
• Identify and approach financial institutions in your area
• Obtain the terms and conditions for the loan to be received
• Compare loans with those of other financial institutions
• Check your agro-enterprise plan to establish the implications of such a loan (i.e. how monthly repayment and interest rates will affect income/profits), and if the agro-enterprise could cope with those implications
• Initiate further discussions with the financial institution, association

Here are some of the possible requirements when applying for a loan:
• A thorough agro-enterprise plan with an agro-enterprise idea in which the lending institution believes.
• Some kind of collateral may be required. Collateral means security that the lending institution has for the repayment of your loan. This may be the agro-enterprise itself, a home, machinery, or any other equipment.
• Being an account holder or member of a bank, credit institution, or association and having operated an account successfully for some time.
• Having a certain percentage (part) of the total loan as security one’s account.
• Information about oneself and one’s ability to repay the loan.
• Having a minimum age (mostly 18 or above).
• Referees, guarantors (honest people with a good reputation) to act as references.

GRANTS
A grant is an allowance that a government or organisation gives to support small agro-enterprise creations in the country. Government and non-governmental organisations sometimes grant money to potential agro-entrepreneurs to start their agro-enterprise. Further information on accessing funding through grants is covered in the following session.

WRITING PROJECT PROPOSALS
A project proposal is a description of a not-for-profit activity typically providing social, environmental, or humanitarian support within a given geographic area. Its aims are to approve and reserve funding for its project/activity from a resource provider. The proposal should be tailored according to the situation, or to the requirements made by a resource provider. Below is simply an outline of how to write a proper project proposal.
Section A: Organisational Information and Proposal Summary

- What is the name and address of the organisation? Who is the main contact person and what are their contact details – name, job, title, telephone number?
- What is the name of the project?
- In which region(s)/district(s) will the work take place?
- Briefly, what is the purpose of the project, the expected outputs, and main activities?
- How much will the project cost: including the total budget, the amount of contribution requested, and any other resource providers?
- How long will the project take, including the time frame for the work, and the anticipated start and end dates?

Section B: Rationale for the Proposed Work

- What problem does the proposed work expect to solve?
- How does the purpose of the work relate to this problem?
- What experiences do you and your partners have on these issues or in this area?
- What lessons have you drawn on from the past experience informing this work?

Section C: Project Design

- What are the goals, purpose, outputs, and activities of the project?
- Who are the direct and indirect beneficiaries that will be affected or involved in the work?
- What is the coverage of the project (i.e. area, number of people, etc.)?
- How sustainable is this work in the long term beyond the requested resources?

Section D: Management and Implementation

- How will the work be implemented and managed, and by whom? What human resources and material resources/inputs are available?
- What other agencies are working in this area of work and how will you work with these organisations?
- What is the overall timeframe of this work?

Section E: Monitoring, Learning, and Dissemination of the Findings

- How do you intend to monitor and review the implementation of the work and assess the impact? What monitoring and evaluation arrangements have been made?
- How and when do you intend reporting on the progress of the work?
- How will you share the outputs and lessons drawn from your work?

Section F: Risk Factors to be Considered

- What are the main risks that could affect the works’ success?
- How likely are these to happen and how serious would the consequences be to the work?
- What measures have been/will be taken to minimise potential risks?

Section G: Budgetary Information and Explanation

- How long will the proposed work take to complete?
- What will it cost?
- How do the costs break down?
- What other sources of funds and resources are there for this work?
- Have you approached any other resource providers for all, or part, of this work?

Tip: Draw up a REALISTIC budget with your community members. Emphasise in the budget what the community will be contributing.

A project proposal is different from an enterprise proposal in that:
• The activity is designed to be not-for-profit (i.e. any excess funds are returned to the donor or reinvested into the project with the donor’s permission)
• The activity meets the needs of a defined target population (rather than the more general demand for an agro-enterprise)

INSTRUCTIONS

1. Lead a quick warmer (5-10 minutes).

   Preferably, the warmer should relate to the life skill of DECISION MAKING. An example being: **Well Is It The Truth?** Divide the learners into groups of 4 or 5. Read out the below questions and ask the groups to determine, together, whether they believe the statement to be TRUE or FALSE.
   1. Our nose, eyes and ears never stop growing until the day we die. **[False]**
   2. You can only see a rainbow with your back to the sun. **[False]**
   3. There are only 25 countries world-wide in which people drive on the left-hand side of the road. **[False – there are over 50]**
   4. If a month starts on a Sunday it will contain Friday the 13th. **[True]**
   5. In written English, one out of every eight letters is an ‘e’. **[True]**

   After a minute of discussion, have each group reveal their answer. Give the real solution and then move onto the next question. How did the groups determine if the statement was true or false? Was there any conflict?

2. Introduce the aim of the session to learners and the elements of the resource mobilisation framework, guiding the plenary to develop definitions of each element of the framework.

3. Taking each element at a time, brainstorm examples of each and write them on flipcharts. Add any which were not mentioned.

4. Focusing on resource providers, divide the learners into groups and assign each a different one. Ask each group to list the advantages and disadvantages of that resource provider.

5. Have each group then present back to the plenary.

6. Ask the plenary to share any experiences they have of particularly innovative resource mobilisation mechanisms and/or challenges they have experienced whilst mobilizing resources.

7. Ask the plenary what prospective agro-entrepreneurs would need to consider before trying any new resource mobilisation mechanisms.

8. Introduce the concept of project proposals. Guide a discussion using the following:
   • What is a proposal?
   • When do you start thinking about a proposal?
   • What comes to your mind when you think about a proposal?
   • How do you begin? What do you do before you start writing a proposal?

9. Reveal the components of a project proposal (write them on a flipchart) and describe each so that the learners understand how one is written (i.e. the format and content).

10. Close the activity by summarising the key points that learners should remember.

10. Finish the session with questions and answers, as well as a life skills debrief.
PRINCIPLES AND PRACTICE OF SAVING

LEARNING OBJECTIVES
By the end of this session, learners will be able to:

- Understand how to start saving
- Describe different structures that support savings

LIFE SKILLS OBJECTIVES
Problem solving; self-awareness; stress management; career planning; options for livelihoods

TIME: 1 hour

MATERIALS: Slips of paper and pens/pencils for everyone; flipcharts; markers

BACKGROUND NOTES

SAVING: the act of putting money aside (i.e. not spending it) for future use

People save money to get things they can’t afford to buy right away. Saving for the future requires patience but it can be worth it when we get what we want the most. Successful savings depends on three elements known as the ABCs of saving.

A is for Aim: setting a goal
B is for Bank: creating a place to put savings
C is for Coins and currency: making saving money a habit

Aim
The first step to saving is deciding on a goal to save for. It might be for a phone, a gift for a friend, money to spend on a trip, or for starting up an enterprise. Depending on the cost, the goal may be achieved in a short or a long period of time. Goals for saving include:

- To provide for specific needs in the future
- To have access to monetary or other assets when needed
- To have means independent of other people
- To make own resources inaccessible for others unless one agrees
- To store surplus funds/cash safely
- To acquire skills for proper money management and self-discipline
- To qualify for certain types of loans

Who should save?
- Everyone interested in growing and expanding in life
- Everyone who wants to be prepared for future needs
- Poor – to accumulate resources and break out of a vicious poverty cycle
- Rich – to expand their riches
- The organised – to ensure controlled usage of funds

Bank – Strategies for Saving
1. Formal Saving
Types of accounts: Individual accounts, Group accounts, Institutional accounts
Requirements for formal saving at Bank, MFI (Microfinance Institution) or SAACO (Savings and Credit Cooperative):

- Minimum amount to open a SACCO account in a is usually 5,000-10,000UGX (can be 10,000 at other MFI and 50,000-500,000 at banks)
- Fees for opening account – varies from organisation to organisation but can be as little as 5,000UGX
- Letter of introduction from LC1 or your employer
- Passport, ID, graduated tax tickets etc. (not needed everywhere)
- 3 passport pictures
- For savings account – there is generally no minimum age; however, when under 18 the bank account is opened and operated in co-operation with parents/guardians
- Group accounts can also be opened in these institutions and follow the same guidelines

What else?

- Any amount can then be deposited, even as low as 1,000UGX
- Money can be taken out (almost to the amount deposited)
  - **Bank** – can withdraw whenever money is needed with no advance notice
  - **MFI** – Mainly do credit but some of them also offer savings accounts (caution: sometimes difficult to access savings)
  - **SACCO** – can withdraw whenever money is needed, but for large withdrawals advanced notice must be given
  - **Post Bank Uganda** – Within every post office in Uganda, there is a branch of Post Bank Uganda. This bank is purposely targeting people with small savings. Their conditions are very good and for all those who have not opened a bank account before, they offer ideal services. For more details, find out from your local post office.
- Money can be transferred from one place to another without carrying huge amounts of cash around (i.e. for school fees)
- May be able to access credit facilities at a later stage
- May earn interest (a tiny amount of money that the bank adds to an account – i.e. they add 1% of what a person has in their account for being allowed to safeguard their funds)

2. Traditional Saving/Investment

Traditionally, assets such as livestock, forest, and land were considered valuable goods that could serve as a kind of safety net in times of need. Still in existence, and in cases appropriate, these forms of saving have lost their significance in the modern world. Reasons are:

- Money has to be accessed quickly and on demand
- People want to be able to withdraw any amount they want
- People want to be able to accumulate their savings, whenever they can spare some funds
- People want full control over their savings, and not have to rely on good fortune
- People want to make sure that what they save is theirs and nobody else can take it

3. Informal Saving

Informal saving systems are well known all over Africa, often practiced by groups of women. They provide a means to safeguard funds even if there is no bank close by. As well as saving, these associations often offer small loans to their members.

Many such organisations exist and depending on the rules that the founding members set for themselves, they operate differently. This is one example of how it could look like.

**EXAMPLE:** 20 young people form an informal savings group

- As an initial membership fee, each member has to contribute 10,000UGX
All monetary transactions are written in a group savings book and the money deposited at a local bank on a group savings account.

The group meets every week, and for each meeting, each young person has to bring an amount of 2,000UGX.

This means, within the time of two months, the group has accumulated an amount of:
- 200,000UGX (i.e. starting capital)
- 8 weeks x (20 x 2,000UGX) (weekly contribution) = 320,000UGX

Now the group can start an enterprise without having to approach a bank for credit (or if they apply for credit now, will be much more likely to get it as they have shown that they are capable of saving).

Alternatively, the group can start giving out loans to their members (at the same time, the normal weekly meetings continue, meaning the capital is further increased).

Conditions for loans could be:
- Everyone has to agree to a loan being given to any one person
- Two other group members stand in as referees/safety (that means if the person fails to repay, they have to do it)
- The loans have to go round (i.e. a person won’t get a second loan before all others have received one)
- The loans have to be paid back within one month
- The loans start initially with a small amount (to see if the person can be trusted)
- The loans cannot exceed 100,000UGX
- No more than two loans can be given each month
- No new loans are given as long as people have not paid back

As the loans have to be paid back, and the monthly contributions of 40,000UGX proceed, the group will accumulate more capital for starting enterprises or for giving out more loans.

In time, the conditions can be changed (i.e. the amounts for loans can be increased or a small interest rate can be taken).

**Coins and Currency**

Make savings a habit. Every time money is received (i.e. from wages or as a gift, etc.) put it in the bank. The trick is to save as much as possible whenever you can. Sooner than later there will be enough money saved to purchase or invest in one’s desires.

**INSTRUCTIONS**

1. Lead a quick warmer (5-10 minutes).

Preferably, the warmer should relate to the life skill of **SELF-AWARENESS**. An example being: **Adjectives**.

Hand out a slip of paper and pen to each learner. Define an adjective and give a few examples (i.e. an adjective describes a person, place, or thing such as ....) Read the following questions one at a time and encourage learners to write what first comes to mind – only spend a few seconds on each question. Once you have completed asking the questions review as a group – ask for volunteers to share their responses and read the answers listed below.

**QUESTIONS:**

1. List two adjectives that describe your favourite animal.
   - **Answer:** This is how the learners see themselves.

2. List two adjectives that describe your second most favourite animal.
   - **Answer:** This is how others see the learners.

3. List two adjectives to describe a lake.
   - **Answer:** This is how the learners view life.
4. List two adjectives to describe the sky.
   Answer: This is how the learners view death.

2. Read the below story to the learners.

   **THE ANT AND THE GRASSHOPPER**
   In a field one summer's day a Grasshopper was hopping about, chirping and singing to its heart's content. An Ant passed by, bearing along with great toil an ear of corn he was taking to the nest.
   "Why not come and chat with me," said the Grasshopper, "instead of toiling and moiling in that way?"
   "I am helping to lay up food for the winter," said the Ant, "and recommend you to do the same." "Why bother about winter?" said the Grasshopper; we have got plenty of food at present." But the Ant went on its way and continued its toil. When the winter came the Grasshopper had no food and found itself dying of hunger, while it saw the ants distributing every day corn and grain from the stores they had collected in the summer. Then the Grasshopper knew:
   It is best to prepare for the days of necessity.

3. Discuss and reflect upon the following:
   - What were the ants saving for? [Food for the winter]
   - What did the ants give up? [Time playing or relaxing]
   - What was the grasshopper's opportunity cost? [Food for winter]
   - What have you had to give up to in order to get something else?

4. Introduce the concept of saving as a means of planning for one's future and for managing stress/risks. Ask the learners the following:
   - What is saving?
   - Why do people save?
   - Why is it important to establish goals? [Remove temptation to spend money today and stay focused on what is really wanted.]
   - How do people get the money they want to save for their goal? [Most people work to earn money. They might get money as a gift. Some lucky people even win money.]
   - Do you save your money regularly? How? [In a jar, closet, under the bed, bank, etc.] If you don't, how could you get started?
   If the group is already a cooperative, also ask:
   - Do they save as a group?
   - If each cooperative member saves, how does the group agro-enterprise benefit from this?
   - How do the members use this joint saving?

5. Hold a discussion about the different types of savings and their requirements.

6. Finish the session with questions and answers, as well as a life skills debrief.
APPENDICES

APPENDIX 1: THE LIVELIHOOD PATHWAY

1. Group Formation
   Groups at this stage are developing:
   - A shared goal/objectives
   - Fair systems for selecting leaders & members
   - Rules about how often meetings are held & how decisions are made
   - A written constitution to explain these systems.

2. Group Development
   Groups at this stage are working in line with their constitution and are developing:
   - Systems for keeping records of meetings & finances
   - Conflict resolution strategies to solve group problems.

3(a). Business Identification
   Groups at this stage are:
   - Identifying potential business ideas
   - Conducting a SWOT analysis of these ideas
   - Being trained on & are conducting market research for business ideas.

3(b). Saving
   Groups at this stage are:
   - Receiving training on the principles of saving
   - Identifying ways of starting to save
   - Beginning to save & access other available financial resources.

4. Risk Analysis
   Groups at this stage are:
   - Considering & reducing the risks associated with their business idea
   - Developing an enterprise plan
   - Receiving training on costing & pricing
   - Deciding on the costing & pricing of their product.

5. Production for local markets
   Groups at this stage are engaged in successful group production & have a market for their product. They are:
   - Developing & agreeing a group production plan.
   - Looking for ways to add value to their current product or business.
## APPENDIX 2: THE CORE LIFE SKILL COMPETENCIES AND ASSOCIATED SUB-SKILLS

<table>
<thead>
<tr>
<th>LIFE SKILLS</th>
<th>DECISION MAKING / CRITICAL THINKING</th>
<th>INTERPERSONAL COMMUNICATION</th>
<th>COPING AND SELF-MANAGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Protecting Your Rights</td>
<td>1. Listening and Giving Feedback</td>
<td>1. Self-Awareness</td>
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<td></td>
<td>5. Leadership</td>
<td>5. Assertiveness</td>
<td>5. Stress Management</td>
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<td>6. Respect and Tolerance</td>
<td>6. Time Management</td>
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<td>7. Emotions</td>
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<td>HEALTHY LIFESTYLES</td>
<td>1. Personal Hygiene</td>
<td>MOTIVATION/LEADERSHIP SKILLS FOR LIVELIHOODS</td>
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<td></td>
<td>2. Sanitation</td>
<td>1. Setting Goals/Options for Life</td>
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<td>4. Substance Abuse</td>
<td>3. Options for Livelihoods</td>
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<td>5. Access to Medical Services</td>
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APPENDIX 3: FARMER FIELD SCHOOL

During the early 1990s, traditional approaches to agricultural extension were increasingly observed to be ineffective, particularly when it came to local adoption of new approaches which challenged orthodox opinion. One example was the case where research findings showed that in some situations use of pesticide, far from solving them, could actually make pest problems worse. However farmers were initially reluctant to try Integrated Pest Management (IPM) approaches reducing or eliminating the use of pesticides, and allowing field ecological processes more scope to react to pest outbreaks. One solution to gain farmer confidence was to conduct local field experiments under the umbrella of a Farmer Field School, engaging farmers in a process of experiential or active learning (learning by doing). The approach was tried originally with rice and cotton in South East Asia but has since been extended [in East Africa] to water and soil management (SE Asia, E Africa) - efficient use of water resources, Conservation Agriculture in East Africa, Junior Farmer Field and Life Skills (Orphans and vulnerable children, 7 countries in S and SE Africa).¹

The Farmer Field School is a form of education which uses experiential learning methods to build farmers’ expertise. In sessions at weekly intervals during a crop cycle, a group of 15–30 neighbouring farmers meet in an open-air situation to take observations of the agro-ecosystem. Several sub-groups of farmers sample the populations and characteristics of harmful and beneficial organisms, plants, soil and environmental conditions. These observations are analysed and presented on newsprint for group discussion, which provides an opportunity for speculation leading to decision-making on experimental action to be evaluated in the following week.³ The most significant benefit of this approach is the confidence it puts into the Farmers and the benefits of them working together as a group. Farmer Field School is commonly used over a long term period to cover in depth information in Integrated Pest Management. It is also recommended that it should be linked to the cycle of the subject matter (e.g. seed to seed, so it is in parallel with what is happening in the FFS member’s field).

Whilst our placement structure puts certain time and resource constraints upon us we can still adopt many of the FFS principles in our teaching. The FAO states, ‘The Farmer Field schools approach may be applicable wherever a subject is open to a process of active learning in the field, either using demonstration techniques or real experimentation to uncover new local knowledge.’³

In addition to this there has been a global move toward ‘Junior Farmer Field and Life Schools’, or simply ‘Field Schools’, where the FFS teaching techniques and principles are applied to many more issues, including livelihood, life skills, HIV/AIDS, SRH. When taught and linked together these are incredibly affective, the main focus being empowerment (see reference 5 for case study).

The main principles of Farmer Field School are listed below (see Reference 2):

- **Farmers as Experts** - Learning by doing is the training approach used. Farmers learn by carrying out for themselves the various activities related to the particular farming practice they want to study and learn about. The key thing is that farmers conduct their own field studies. Their training is based on comparison studies (of different treatments) and field studies that they, not the facilitator, conduct. In so doing they become experts on the particular practice they are investigating.

- **The Field is the Primary Learning Material** - All learning is based in the field. The field is where the farmers learn. Working in small sub-groups they collect data in the field, analyse the data, make action decisions based on their analyses of the data, and present their decisions to the other farmers in the field school for further discussion, questioning, and refinement.

- **Extension Workers as Facilitators Not Teachers** - The role of the extension worker is very much that of a facilitator rather than a conventional teacher. Once the farmers know what it is they have to do, and what it is that they can observe in the field, the extension worker takes a back seat role, only offering help and guidance when asked to do so. Presentations during meetings are the work of the farmers, not the
extension worker, with the members of each working group assuming responsibility for presenting their findings in turn to their fellow farmers. The extension worker may take part in the subsequent discussion sessions but as a contributor, rather than leader, in arriving at an agreed consensus on what action needs to be taken at that time.

- **Learning Materials are Learner Generated** - Farmers generate their own learning materials, from drawings of what they observe, to the field trials themselves. These materials are always consistent with local conditions, are less expensive to develop, are controlled by the learners and thus can be discussed by the learners with others. Learners know the meaning of the materials because they have created the materials.

- **Group Dynamics/Team Building** - Training includes communication skill building, problem solving, leadership, and discussion methods. Farmers require these skills. Successful activities at the community level require that farmers can apply effective leadership skills and have the ability to communicate their findings to others.

Although Farmer Field Schools were designed to promote IPM, empowerment has an essential feature from the beginning. The guide of the FFS was built on the assumption that farmers could only implement IPM once they had acquired the ability to carry out their own analysis, make their own decisions and organise their own activities. The empowerment process, rather than the adoption of specific IPM techniques, is what produces many of the developmental benefits of the FFS. This is why the teaching techniques you implement are so important, and demonstrates the very real benefits of Non-Formal Education used both in and out of school; empowering the people you reach out to and improving sustainability after you have left.

**REFERENCES**


APPENDIX 4: CONSTITUTION FORMAT

1. Introduction
   • Name of the group
   • Location
   • Reason why the group is together
   • Number of members

2. General purpose/goal and objectives of the group

3. Membership
   • Who is eligible to be a member of your organisation?
   • How are the members selected? (i.e. open to all, application, ballot, etc.)
   • Qualifications and responsibilities of the members

4. Leadership
   • Composition of the leadership – chairman, vice chairman, treasurer, secretary, sub-committee members, etc.
   • Who is eligible for each position?
   • Roles and responsibilities of each of the members on the committee
   • What is the process for selecting the leaders? (i.e. election, application, appointment, etc?)
   • How are the officers removed from office if necessary?
   • How are vacant positions filled if necessary?

5. Meetings (can be divided into both executive committee and general assembly meetings)
   • How often will meetings be held?
   • How will organisational decisions be made?
   • Who is eligible to vote at meetings?
   • What constitutes a quorum at meetings? (a quorum is the absolute number/percentage of voting members required to be in attendance or to vote in order to conduct enterprise)

6. Elections
   • How often are leaders changed?
   • Who can be nominated?
   • Condition for those who should stand, e.g. should have paid membership fee?
   • How to elect leaders? (i.e. democracy, secret ballot, rational, etc.)
   • What should be done if a leader is not replaced?

7. Amendments (changes in the constitution)
   • When should it be changed?
   • Who decides on changes to be made?
   • What quorum is necessary for it to be changed?

8. Finances
   • Are membership fees due, if so, how much, how often and to whom are they paid?
   • Who is responsible for the collection and disbursement of funds?
   • Who may authorize expenditures?

9. Misconduct
   • What actions constitute misconduct?
   • What is done in the case of misconduct by a member?
10. Affiliations/Partnerships
   • What is the affiliation, if any, with local, state, national or international organisations and what is the relationship of the organisation to the affiliate?
   • What is the process for continued affiliation?

11. Conclusion
   • Date it was signed
   • Persons to sign or witness
**APPENDIX 5: INTERACTIVE MARKET ASSESSMENT**

**Instructions:** Determine, with the VPE, 5 → 7 different enterprises within the town’s enterprise centre (preferable choices which are of interest to the group). Draw a picture or write the name of each enterprise in the left column. As you walk around the centre, make a mark in column 2 for each shop or stall you see in this sector for the enterprise you listed. Make a mark in column 3 for each person you see working in this sector. Make a mark in column 4 for each person you see purchasing a product or service from this sector.

<table>
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<tr>
<th>1. ENTERPRISE LIST OR DRAW A PICTURE FOR EACH.</th>
<th>2. MAKE A MARK FOR EACH SHOP OR STALL YOU SEE IN THIS SECTOR.</th>
<th>3. MAKE A MARK FOR EACH PERSON YOU SEE WORKING IN EACH SECTOR.</th>
<th>4. MAKE A MARK FOR EACH PERSON YOU SEE PURCHASING A PRODUCT OR SERVICE FROM SOMEONE IN EACH SECTOR</th>
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</table>
1. Which sectors have the most shops or stalls?

2. Which sectors have the most people working in them?

3. Which sectors seemed to have the most customers?

Other remarks or observations:
APPENDIX 6: EXAMPLES OF AGRO-ENTERPRISE VENTURES

Uganda is mainly an agricultural country endowed with good climate and fertile soils in most of the arable areas. Uganda’s major agricultural products are both for export/trade and local consumption.

Major fruits and vegetable products under cultivation are:

**Pineapples**

Given that the Uganda pineapple is sweet and less acidic, it is best suited for ready to eat pre-prepared fruit salads either alone or mixed with other tropical fruits.

Pineapple production has increased over the years with a market deficit market during the peak harvest season. Pineapples are locally consumed, not only by producing areas but also local urban market centres of Kampala.

**Potential market:** Demand for pre-prepared food salads is growing in the European Union and Arab world hence a growing export market for pineapples.

**Mangoes**

There are different mango varieties grown in almost all districts of Uganda accompanied with high consumption levels.

Some of the varieties are suitable for fresh fruit market and others for processing into juice and other products.

Although traditionally, mangoes have been known to grow wildly and on their own, commercial farming of mangoes has been encouraged and many farmers have taken to growing mangoes.

**Potential Market:** Production has increased with increased demand on the local and export markets.

**Passion Fruits**

Production for domestic and export markets continues to be an attractive venture for investment.

Uganda offers an excellent climate for production of the purple passion fruits, lucrative for the export market.

While the yellow passion fruit and the Kawanda hybrid (a hybrid of the purple and the yellow), offer opportunities for the local markets.

**Apple Bananas**

Investment opportunities exist in setting up commercial farms to produce and export apple bananas (ndizi) to the European market. Uganda apple bananas are known for their sweetness, and delicate flavour.
Banana (Matooke)

Uganda is one of the leading world producers of banana. However much of its banana (matooke) is consumed as a staple food crop in major areas of production. The estimated production of matooke all types in 1999/2000 combined was 6,130,000 tons. The western region reported the highest production accounting for 61% of the total output, central region had 1,687,000 tons (30% of the total output), while eastern region had 481,000 tons. Generally growing of matooke was not common in the northern region with only 14,000 tons of matooke food type. Most farmers obtain market for the bananas in the urban district markets. There is however limited export market of these bananas to Europe mainly to serve ethnic tastes of the migrant African and Asian population.

Jackfruit

Agricultural production of the Jackfruit in Uganda is increasing but apart from being consumed fresh on the local market. Traditionally only found in homestead and around compounds planted as a shade cover, the fruit is gaining popularity because of its sweet taste and nutritious value.

Potential Market: The fruit is now being grown commercially and sold in may eating places as a fruit salad.

Citrus Fruits

There are several varieties of oranges, lemons and tangerines that are on high demand on the local market to the extent of importing large volumes from South Africa. However, a potential for increased production exists which is an encouragement to more farmers to engage in commercial production of citrus fruits. Most of the citrus fruits produced are consumed within Uganda. A big market exists in the urban centres of Kampala such as Nakasero, Owino, Nakawa, and Bugolobi.

Papaws

Many varieties of papaws are grown widely in all areas of Uganda, despite absence of specialised farms dedicated for production. The export market is small since the foreign market requires papaws of a consistent small size.

There is a potential for increased papaw production either by contracting local farmers to produce for export or opening commercial farms that will engage in production as well as export of fruit.

However, market for farmers exists from RECO industries Ltd and Victoria Biotechnology Ltd, the only exporters of papin enzyme, a very high value export product.

Avocado

This is a priority food for development as a non-traditional export crop. A number of varieties are grown in most districts of Uganda, some large and others small in size.

Local demand is high and there is potential for increased production.

Potential Market: Opportunities exist in commercial production of the fruit for the local and export markets.
Restless Development (Uganda)
Youth Empowerment Programme (YEP)

Asparagus
Research carried out at Kawanda agricultural research institute shows that high quality asparagus can be produced in Uganda. The institute has also trained farmers and extension workers in the production of this vegetable. The establishment of a large-scale farm for the production and export of asparagus is a viable venture. The market for fresh chilled and frozen vegetables especially mixed legume vegetables has been expanding over the years.

Areas that the government has identified that are potential investment areas include the following:

- **Chilling and Freezing Facilities**: This requires investment in chilling and freezing facilities and being able to produce the vegetables on a large scale to avoid fluctuations in exports.

- **Vegetables**: Vegetables are a major crop produced in all the districts of Uganda and there is a big range of varieties found in the markets. Vegetables of economic importance produced in the country include: tomatoes, spinach, Amaranth (Doodo), Nakati, Cabbage, Spider plant (Jobbyo)

- **Pulses/Legumes**: There are several types of legume that are produced in Uganda. These are bean, French beans, peas, soya beans. Pulses have a market potential both on the domestic and regional export markets

- **Snap beans** (French: High quality snap beans can be produced all year round in Uganda. Marie estates that produce and export fresh and chilled snap beans have demonstrated this. The market for these beans in Europe is big, especially during winter.

- **Dry Beans**: Bean production is practised widely in Uganda. Beans constitute one of the major diets in over 80% of the country’s households. The estimated bean production was 496,000 tons from an area of 618,000 hectares. The western region recorded the highest production, followed by the central region with 150,000 tons. The estimated production of beans in 1999/2000 was higher by 94,000 tons than the figure quoted in the statistical abstract, 2000.

- **Peas**: There are three types of peas, i.e. pigeon, cow and field peas which are produced in the country mainly for the local market. Production of these peas has been on the increase and the trend is likely to continue, since the demand both on the local and foreign market is also increasing. Mostly Kane Agriculture is producing other kinds of peas called the Snow peas entirely for export.

- **Cereal production**: Production of grains is wide spread throughout the country. Cereals are the staple food for majority of Uganda population. Major cereals under production are:

Maize Market
Uganda is located in a region comprising of countries with high consumption levels of grains but often grain production deficits. Export markets for cereals exist in countries such as Kenya, Zambia, Malawi, and Zimbabwe. There are also countries with displaced people such as in Congo and Sudan that aided by donor agencies, which purchase grains from directly from either farmers or agents and exporters. The total production of maize was estimated at 739,000 tons from an area of 665,000 hectares. Eastern region had the highest production of maize and accounted for 55% of the total production. The Northern region was reported with the lowest production of maize accounting for only 8% of the total production of maize.
**Sorghum and Finger Millet**

Growing of sorghum and finger millet was not common in the central region but was predominant in the western, northern and eastern regions of Uganda.

The eastern region registered a fall in production. Of finger millet due to a change in household consumption pattern in favour of maize.

Opportunities still exist in production of sorghum and millet for household consumption, use in industrial brewing, and for production of weaning foods and breakfast cereals.

The total production of sorghum was estimated at 113,000 tons in 1999/2000 from an area of about 243,000 hectares. This was a decrease of about 44% from 203,000 tons estimated in 1995/1996.

**Rice**

Uganda grown rice is preferred on the domestic market than imported one because of its better flavour. Current production however, is still low hence big volumes of imported rice for local consumption.

Opportunities exist in large-scale rice production. are in increased production of rice followed by processing, packaging and branding for the local and regional markets. Then it could easily replace imports at a competitive price.

**Wheat**

Opportunities exist in the wheat growing industry since most of the wheat milled is imported. The demand for wheat flour has been increasing with the growth of the bakery industries.

**Groundnuts**

Groundnuts are generally grown in all regions of Uganda although eastern region has and reported the highest production volume in 1999. Groundnuts are one of the oil seeds that are locally consumed mainly as sauce rather than as an input raw material for oil extraction industry. The total output of groundnuts was estimated at 126,000 tons from an area of about 282,000 hectares.

**Simsim**

This is a traditional source oil production for majority of communities in the northern Uganda. Simsim is increasingly being exported to South East Asian markets and EU countries.

**Root Tubers**

There are several types of root tuber foods produced in Uganda. Common and widespread are cassava, sweet potatoes, and Irish potation. Production of yams is significant in central region of the country.

- **Cassava**

  Cassava is staple food to some communities, particularly in districts surrounding the Western Nile regions. Production in the northern region has not changed. Cassava was largely produced in the eastern region, followed by northern region and least produced in the central region. However, the crop has also gained popularity and grows very well in many other parts of Uganda like in Central and Eastern parts of Uganda. Cassava has many uses apart from being a food crop. Cassava, is now widely used in many processes of manufacturing as a starch ingredient and thus is its demand has increased.

  Opportunities for business now exist in processing and making Cassava starch powder or liquid that can be easily transported and kept over long periods.
• **Sweet Potatoes**
  Total production of sweet potatoes was estimated at 2,620,000 tons. However in eastern region production dropped from 1,475,000 tons in 1995/1996 to 1,029,000 tons in the year 1999/2000. Production dropped in eastern region and in the year 1999/2000 they were mainly grown in western region, accounting for 39% of the total production, the northern region had the lowest production accounting for 2%.

**AGRICULTURAL CASH CROP SUB-SECTOR**

The cash crops sub-sector primarily consists of agricultural production of commodity products mainly for sale on the domestic market as raw material input to industrial establishments or for export markets. The sub-sector comprises of the following commodities.

Market and investment opportunities exist for Ugandan investors to produce and export organic products to Europe, USA and Japan. Especially advantageous are organic products e.g. coffee, tea, cocoa, spices, tropical fruits, vegetables, and citrus fruits that are not produced in the importing countries. Further opportunities exist in the production and export of off-season products such as fruits and vegetables. The government of Uganda has put in place dynamic strategies and an operational framework contained in the plan for Modernisation of agriculture (PMA). In order to improve the fruit and vegetable sector, the following policies have been set:

- Implement Land reforms, so that the potential investors are ensured of secure tenure
- Build the capacity of agriculture related institutions.
- Build capacity for the production and improvement of seeds.
- Finance agricultural research to develop small holder farmers.
- Promote productivity enhancing technologies

**CASH CROPS SUB-SECTOR**

Cash crop production remains the major source of income among the smallholders’ agricultural farmers in Uganda. Cash crops in Uganda comprise of production of coffee, tea, cocoa, cotton, tobacco, spices solely for the export markets. Currently, local consumption of these commodities is very minimal.

**Tea Production**

Uganda is a major grower of tea and the production has been increased following the rehabilitation of a number of tea estates that had been abandoned by their former commercial owners in the 1980s.

Tea production can be increased by planting high yielding varieties and use of fertilisers for maintenance of soil fertility.

Tea Estates like Kasaku at Lugazi, Mehta Tea Estates in Mukono, Rwenzori Tea Estates in Kabaorole, Kamwenge Tea Estates and many others are now in full production.

There are currently good prospects in producing and exporting tea as shown by the continuous upward trend in tea production and exports.
Coffee Production

Uganda is a major producer of coffee. Two types grow in Uganda. Arabica and Robusta.

Good prospects exist in processing coffee into finished products for the local, regional and international markets.

Uganda is currently importing instant and regular coffee. Export of finished regular and instant coffee will increase value and result in better returns for both the farmers and exporters.

Currently only one company in Uganda is exporting small volumes of processed coffee.

Cocoa Production

Currently, cocoa is solely exported as dry beans.

Prospects exist for increased export of cocoa beans as well as opportunities for processing and adding value for the local, regional and export markets.

Uganda currently has no cocoa products producing plant and is importing cocoa for beverage drinks, industrial production of sweets, confectionery and ice cream.

Cotton Production

Cotton was a major export commodity of Uganda in the 1960s and early 1970’s but declined from a peak of 466,775 bales in 1969 to 25,000 bales in 1997.

The recent initiations to revive cotton production had four components.

Among the most important features towards the revival include a cotton project that provides input credit components covering planting seed, ox-ploughs, pesticides and other inputs.

Opportunities in the cotton production are as follows:

- Fertile soils and good climatic conditions with annual rainfall of 750mm-2000mm and a temperature range of 15-30 degrees Celsius are conducive for cotton production 2 harvests times a year.
- Long experience in cotton production since 1903, provides Uganda with a reliable resource base for the development of this industry.
- High potential to produce organic cotton in some areas thus exporting to niche export market that prove premium prices.

Because of the susceptibility of the cotton crop to diseases and pests, investment opportunities exist for pesticide formulators and mixers. At present all chemicals used in cotton production are imported in their finished formulations.

FISHERIES SUB-SECTOR

This sub-sector comprises of fish harvesting and Aquaculture (fish farming). Aquaculture in Uganda is almost exclusively practised at subsistence scale. Government, business organisations, NGOs and donor organisations have all invested substantial resources in improving the fisheries management as well as
production and marketing of fish and fish products. As a result the fisheries infrastructure has greatly improved and support institutions such as the National Bureau of Standards, the Fisheries Department and Research Centres have been strengthened.

The sector continues to be one of the most vibrant, contributing as high as 8.49% of the country’s export revenue in 1998 and covering diverse markets in the world.

Domestically fish is a major source of animal protein for the population and demand for fish is projected to continue growing as the population increases. Lack of stocking material is the major problem facing fish farming. (For more information on this, see www.naro.go.ug)

The potential for investment in large-scale fish farming exists due to current high demand for fresh fish among the population. A closed fish farming system, capable of producing up to 200 tonnes per acre annually and consisting of equipment for breeding, hatching, fish fattening and sales tanks costs approximately USD 1.5 million.
APPENDIX 7: NGO REGISTRY

Below is a list of local NGOs and possible topics/projects. The Restless Development office can help you with contact details of these NGOs. There are other NGOs and CBOs available to work with, and the example topics listed below are just a guideline. If you find a very useful organisation and/or project please let Restless Development know so this list can be updated next year.

Africa 2000 Network (A2N) - Cultivating sunflowers and extraction of oil

Africa 2000 Network (A2N), Fruits of the Nile Factory - Fruit drying

Busoga Trust - Hygiene/hand washing campaign

Busoga Trust, JIDDECO - Water Harvest

Development In Gardening

IRDI (In Kamuli) - Haybox cooker

JIDDECO, IRDI (Kamuli) - Fuel Efficient Stoves

JIDDECO - Poultry

JIDDECO, Africa 2000 Network (A2N) - Tree Nurseries/replantation scheme

Kasenge Riverford Organic Centre - Mushroom farming

Kasenge, NOGAMU - Juice making

NOGAMU - Seed collection, grafting

NOGAMU - Access to market

National Association of Women’s Organisations in Uganda (NAWOU) – Craft making, access to market and export

PSI – Drinking water treatment sensitisation (Waterguard)

Soft Power Health - Malaria sensitisation and net sales

Wildlife club of Uganda (WCU) – can register environmental clubs with them