

Implementing Integrated Population, Health and Environment Interventions in the Lake Victoria Basin

A Training Curriculum

February 2015



ACKNOWLEDGEMENTS

The publication of this integrated training curriculum was made possible with support from the USAID-funded Evidence to Action Project to the Health of People and Environment in the Lake Victoria Basin Project (HoPE-LVB). We would like to thank Linda Bruce for producing the curriculum, which is intended for the cross-training of health and environment workers, community-based groups and governmental and non-governmental organizations who want to implement population, health and environment (PHE) interventions in the Lake Victoria Basin, East Africa and beyond.

Preparation of this curriculum would not have been possible without extensive technical input and support from the HoPE-LVB Project team, including: Lucy Shillingi, Country Representative/HOPE-LVB Project Director, Pathfinder International (Uganda); Dorah Taranta, HoPE-LVB Project Manager/Pathfinder International (Uganda); Jackline Nakajubi, HoPE-LVB Reproductive Health Officer, Pathfinder International (Uganda); Modest Kinawa, HoPE-LVB Reproductive Health Officer, Pathfinder International (Uganda); Antony Omimo, HoPE-LVB Program Manager/Pathfinder International (Kenya); Millicent Kodande, HoPE-LVB Monitoring and Evaluation officer, Pathfinder International (Kenya); Vincent Ohuru, HoPE-LVB Reproductive Health Officer, Pathfinder International (Kenya); Christine Night Odero, HoPE-LVB Reproductive Health Officer, Pathfinder International (Kenya); Charles Kabiswa, Director of Programs, Ecological Christian Organization (ECO); Samuel Mugaya, Conservation and Livelihood Officer, ECO; Juliet Katusiime, ECO; and Teddy Twine, ECO.

We acknowledge the contributions of community members whose valuable feedback improved this curriculum. We would also like to give special thanks and recognition to the following people who provided valuable input to this curriculum: Henrietta Windindi, Family Planning/Population Health and Environment Project, Nyanza Reproductive Health Society (Kenya); Wycliffe Wando Okumu, Institutional & Capacity Development Research, Agricultural Sector Development Support Programme (ASDSP)/Ministry of Agriculture Livestock and Fisheries, Republic of Kenya; and Phillip Agwanda, Country Director Homa Bay County/Fisheries Department, Republic of Kenya and Sarah Nakaziba, Mayuge District Fisheries Officer (Uganda).



USAID
FROM THE AMERICAN PEOPLE

E2A EVIDENCE TO ACTION
for Strengthened Reproductive Health

EXPANDNET

the David &
Lucile Packard
FOUNDATION

MacArthur
Foundation

Pathfinder
INTERNATIONAL
A GLOBAL LEADER IN SEXUAL
AND REPRODUCTIVE HEALTH



FOREWORD

The HoPE-LVB project uses a Population, Health & Environment (PHE) integrated community development approach which supports communities to address their immediate and future needs. Integrating voluntary family planning services and related reproductive health (RH) care with broader development and environmental interventions builds community self-reliance and enables a more resilient environment and population, particularly where population pressures have led to the unsustainable use of natural resources and food insecurity¹. HoPE-LVB is led by Pathfinder International, whose team during Phase I included two local implementing partners Ecological Christian Organization (ECO) in Uganda and OSIENALA-Friends of Lake Victoria in Kenya, as well as advocacy partners Conservation Through Public Health and Partners in Population and Development Africa Regional Office in Uganda. The project is being implemented in select communities in Kenya and Uganda, in two of the five countries comprising the Basin's catchment area.

HoPE-LVB's Phase I covered the period of 2011-2014 and was funded by the John D. and Catherine T. MacArthur Foundation, the David and Lucile Packard Foundation, and USAID's Office of Population and RH. Phase I's goal was to reduce threats to biodiversity conservation and ecosystem degradation in the LVB while simultaneously increasing access to voluntary family planning and RH services in project communities. At the end of Phase I, the project achieved important sectoral objectives in family planning, reproductive health and conservation, as well as successfully developed and tested a model of integration which is being embraced by communities as well as local and regional stakeholders. In Phase II, (December 2014 – March 2017), the model is to be scaled-up through continued advocacy, capacity building of local communities and government bodies as well as NGO partners to expand the coverage of the innovative sustainable development intervention for wider impact across the Lake Victoria Basin.

The aim of this training curriculum is to help HoPE LVB build the technical knowledge and skills needed to support implementation of cross-sectoral integrated PHE activities among many community leaders and members, as well as our local government partners and other NGO colleagues who are interested in replicating the HoPE-LVB model throughout the Lake Victoria Basin and beyond.

¹ De Souza, M. (2014) 'Resilience, integrated development and family planning: building long-term solutions' in *Reproductive Health Matters* 22(43) p.75-83

TABLE OF CONTENTS

INTRODUCTION	7
The HOPE-LVB Project and the purpose of this curriculum.....	7
Who should use this curriculum?.....	8
What is included in this Training Curriculum?.....	8
Making this guide as user-friendly as possible.....	9
NOTES FOR THE FACILITATOR	10
A MORNING REVIEW EXERCISE	13
PROPOSED AGENDA	14
Module 1– INTRODUCTION	16
Trainer’s Resources.....	19
Module 2 – OUR COMMUNITY	20
Module 3 – ECOSYSTEMS	25
Trainer’s Resources.....	35
Module 4 – CONSERVATION AGRICULTURE	37
Trainer’s Resources.....	59
Module 5 – GENDER AND PHE	64
Trainer’s Resources.....	71
Module 6 – SUSTAINABLE FISHERY MANAGEMENT	73
Module 7 – ALTERNATIVE LIVELIHOODS, SACCOs and ENERGY SAVING STOVES	91
Module 8 – WATER, SANITATION and HYGIENE (WASH)	100
Module 9 – REPRODUCTIVE HEALTH and FERTILITY	116
Trainer’s Resources.....	122
Module 10 – FAMILY PLANNING METHODS	124
Module 11 – MATERNAL and CHILD HEALTH	132
Trainer’s Resources.....	147
Module 12 – INTERPERSONAL COMMUNICATION and COUNSELING	149

Module 13 – NEXT STEPS	156
PARTICIPANT HANDOUTS	158
Population, Health and Environment (PHE) Programs	159
Ecosystems	161
Sustainable Fisheries Management.....	173
Alternative Livelihoods, SACCOS, Energy Saving Stoves	175
Water, Hygiene and Sanitation	178
Reproductive Health and Fertility.....	181
Family Planning: Contraceptive Methods	185
Maternal and Child Health	214

INTRODUCTION

Population, health and environment (PHE) is a development approach that recognizes the interconnectedness between people's livelihoods, health and the environment upon which they depend. This is even more relevant as climate change and ecosystem changes increasingly threaten natural resources, food security, human health and sustainable development.

- P** = Population involves the provision of voluntary family planning information and services to address unmet need for contraception and promote birth-spacing and other reproductive health (RH) practices
- H** = Health can be a variety of interventions but usually involves water, hygiene, sanitation and/or maternal and child health
- E** = Environment can include protected area management and biodiversity conservation (preserving the abundance and variety of all species including endemic, endangered, microscopic and more complex organisms on land and water). It can involve a variety of approaches—watershed management, sustainable agriculture, natural resources management

PHE programs focus on the interactions among population, health and environment dynamics and work across several sectors in an integrated fashion.

The HOPE-LVB Project and the purpose of this curriculum

The HoPE-LVB Project employs a PHE approach that gives underserved families and communities living in the Lake Victoria Basin the knowledge and skills to improve their health, reduce poverty and increase their capacity to sustainably manage natural resources.

This curriculum was designed to cross train Agricultural Extension Workers/Agents, Beach Management Units (BMUs), Fishery Officers, Village Health Teams/Community Health Workers (VHT/CHW), Model Households, Women's groups and other behavior change agents in Uganda and Kenya to skillfully promote the health, livelihood and conservation behaviors and practices supported by the HoPE-LVB Project. Families living in the Lake Victoria Basin live integrated lives. For example, a fisherman may also farm, cut trees for firewood/charcoal and income, have a growing family and children, and face health and/or food insecurity issues. For this reason it is important that community agents be familiar with the various practices promoted by the HoPE-LVB Project and other NGOs implementing PHE interventions so that they are able to talk to the community about a variety of positive

livelihood, conservation and health practices that will improve a family's life and conserve the natural resources upon which a family—and community—depends.

Who should use this curriculum?

While this curriculum was developed for use by HoPE-LVB Project staff and its community agents in Uganda and Kenya, it can be used by other NGOs implementing PHE interventions in the Lake Victoria Basin.

This curriculum should be used in its entirety to cross train Agricultural Extension Workers/Agents, BMUs, Fishery Officers, VHT/CHW, Model Households, Women's Groups, and Youth and Young Mother Groups as well as other behavior change agents on healthy livelihood, conservation and health practices. The training is meant to provide these community change agents with enough information so that they can talk to community members about PHE linkages and the variety of practices that will improve livelihoods, family health, food security and conserve the natural resources upon which families and communities depend. When these community agents are familiar with all components of a PHE intervention, they are better able to give integrated messages as well as more detailed information on their areas of expertise. The trained community change agents will, in turn, be responsible for educating the community on the practices they learned as part of an operationally integrated PHE approach.

How long does the training take?

The curriculum is designed for a 3.5 day training but in some communities depending on the capacity to absorb the content, it may take longer. The trainer should design the training based on adequate knowledge about the trainees.

What is included in this Training Curriculum?

The Curriculum contains 13 modules. The content of each module is drawn from HoPE-LVB Project partners' and local Uganda and Kenya government expertise on ecosystems, conservation agriculture, sustainable fisheries management, alternative livelihoods, savings and credit cooperative organizations (SACCOs), energy savings stoves, water, hygiene and sanitation, maternal child health, reproductive health, family planning and interpersonal communication and counseling.

Each module contains one or more participatory learning exercises for teaching the topic covered in that module. Exercises are based on adult learning principles and designed to help participants retain the information learned. Each module includes the following:

Learning Objectives	Describes what participants will be able to do as a result of completing the exercises in the module and is an indicator of participants' learning.
Total Time	Indicates approximate total time allotted to conduct the module's exercises. Some exercises may take more or less time than indicated in the guide depending on the number of participants.
Preparation	Describes the materials and preparation needed for teaching the content and conducting exercises.
Instructions	Provides step-by-step guidance for conducting the session.
Trainers Resources	Some modules contain Trainer's Resources that contain the materials needed to conduct the session.
Participant Handouts	The participant handouts include the basic information covered in each module which participants can refer to after the training is done.

It is important that the training be given in its entirety to ensure that the trained community agents are able to easily discuss PHE linkages and provide holistic solutions to community members as well as appropriately refer them to livelihood and health experts, as needed.

Making this guide as user-friendly as possible

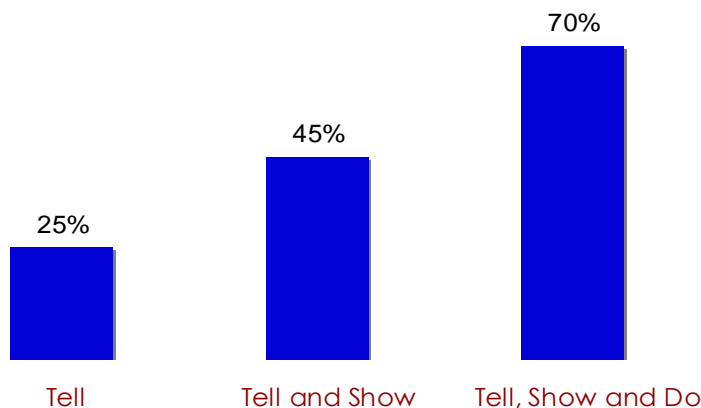
Facilitators/trainers should always assess the content of the curriculum and the workshop participants' needs. Activities and content can and should be adjusted as appropriate. Also, participant handouts may be revised and/or translated to accommodate for local conditions. Translated materials may help ensure that the information is clearly understood by participants.

NOTES FOR THE FACILITATOR

Effective training for adults endorses the following adult learning principles:

- Focus training on real world problems.
- Emphasize how the learning can be applied.
- Relate the learning to the trainees' past experiences.
- Allow debate and challenge of ideas.
- Listen to and respect the opinion of the trainees.
- Encourage trainees to be resources to you and to each other.
- Treat trainees like adults.

Retention of information is one of the biggest challenges of training workshops:



The following facilitation skills will increase workshop participants' learning and retention of information after the workshop is over:

1) Use good attending skills

- Face the participants – eye to eye.
- Scan the entire group – look at everyone.
- Walk toward the trainee (to indicate interest).

- Smile at individuals – show them that you enjoy being with them.
- Nod affirmatively – encourage participation.
- Circle the room during exercises – this enables you to answer participants' questions and assess how they are doing.

2) Use good observation skills:

If you notice that participants are:	Then:
Bored	<ul style="list-style-type: none"> • Speed up the pace of the training. • Take a break. • Stop talking and involve more participation, such as asking open-ended questions, conducting role-plays, or allowing trainees to practice. • Change the training style, use different training techniques, such as role-plays, small group work, and practice. • Use good attending skills.
Confused	<ul style="list-style-type: none"> • Ask questions to clarify trainee's understanding of the topic. • Give examples. • Have others in the group explain the topic. • Demonstrate. • Let participants practice and provide hands-on assistance, if necessary.
Sleepy	<ul style="list-style-type: none"> • Make sure the room is not too warm or stuffy. • Make sure there is enough light. • Use a variety of training methods and aids. • Conduct icebreakers. • Take a break.
Inattentive (Talking to neighbours, writing, looking at watches, shuffling papers)	<ul style="list-style-type: none"> • Stop talking and ask questions. • Use good attending behaviours, especially walking around trainees. • Have participants practice. • Ask others to explain the topic.

	<ul style="list-style-type: none"> • Speed up the pace. • Change your training technique. • Stop talking for a minute.
Attentive and understanding	<ul style="list-style-type: none"> • Keep going.

3) Make the training as participatory and active as possible:

- Use a variety of training methods in the training. Examples of training methods include lectures, games, live demonstrations, small/large group discussions, role-play, case studies, field tours, etc.
- Use a variety of training aids, such as videos, slides, newsprint, transparencies, models, equipment, etc.
- Develop exercises where participants participate in the learning, such as role plays, studies where trainees must develop the solutions, telling a story without an ending and asking participants to complete the ending.
- Allow trainees to practice the skills learned. This allows trainees to “learn by doing” and it allows the trainer to assess trainees’ skills and correct accordingly.

4) Handle difficult questions politely:

- Always acknowledge the effort of the participant, regardless of the type of question. “That is a good question” is always a good response, no matter how difficult or inappropriate the question is.
- Invite the group to answer a participant’s question.
- Minimize potential embarrassment for wrong or inappropriate questions by deferring to the break to answer the question. For example, you could say, “That is a good question, why don’t we talk about it during the break.”
- Defer prolonged discussions that are taking you away from the topic to the break.

A MORNING REVIEW EXERCISE

At the end of Days 1, 2, and 3:

1. Before leaving the workshop, gather all of the flipcharts (that have been written upon) from that day.
2. Tape them on the walls throughout the workshop for the review exercise the next day.

At the beginning Days 2, 3 and 4:

1. Ask participants to stand up and find a partner.
2. Tell participants to go around the room and teach their partner everything that is on all the flipcharts hung on the wall.
3. Mention that the partners should take turns teaching each other.
4. Allow about 15-20 minutes for this refresher exercise.
5. Have participants to take a seat.
6. Ask if there are any questions about the content from the previous day before proceeding with the day's training.

Note: This group exercise is an excellent way to review information from the previous day and actively engage participants in the learning process at the beginning of the 2nd, 3rd and 4th day of the workshop. It also allows time for participants arriving late to settle in before the day's training begins.

PROPOSED AGENDA

DAY 1

8:00-9:00 – Registration

9:00-9:30 – Module 1: Introduction

9:30-10:45 – Module 2: Our Community

10:45-11:00 – Tea Break

11:00-12:15 – Module 3: Ecosystems

12:15-1:00 – Module 4: Conservation Agriculture (Activity A)

1:00-2:00 – Lunch

2:00-5:30 pm – Module 4: Conservation Agriculture (Activities B to F), includes a tea break (time determined by trainer)

DAY 2

8:30-9:00 – Review of Day 1

9:00-10:30 – Module 5: Gender and PHE

10:30-10:50 – Tea Break

10:50-1:00 – Module 6: Sustainable Fisheries Management (Activities A to F)

1:00-2:00 – Lunch

2:00-3:30 – Module 6: Sustainable Fisheries Management (Activities G to I)

3:30-3:45 – Tea Break

3:45-5:00 – Module 7: Alternative Livelihoods, SACCOS, Energy Saving Stoves

DAY 3

8:30-9:00 – Review of Day 2

9:00-10: 45 – Module 8: Water, Sanitation and Hygiene (WASH)

10:45-11:00 – Tea Break

11: 00-11:45 – Module 9: Reproductive Health

11:45-1:00 – Module 10: Family Planning (Activities A and B)

1:00-2:00 – Lunch

2:00-2:45 – Module 10: Family Planning (Activity C)

2:45-5:30 – Module 11: Maternal and Child Health (includes tea break – time to be determined by trainer)

DAY 4

8:30-9:00 – Review of Day 3

9:00-11:00 – Module 12: Interpersonal Communication and Counseling

11:00-11:15 – Tea Break

11:15-12:30 – Module 13: Next Steps

Module 1– INTRODUCTION

Learning Objectives:

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

- Know the other participants in the workshop.
- Develop house rules for the workshop.
- List their expectations for the workshop.
- Understand the objectives of the training.

Total Time: 30 minutes

Preparation:

- Read this module thoroughly.
- Collect the materials needed:
 - flipchart stand
 - flipchart paper (newsprint/manila paper)
 - colored marker pens
 - masking tape
 - name tags for participants
 - a notebook for each participant
 - a pen for each participant
- Prepare a flipchart that says: “Welcome to the Integrated Population, Health and Environment Workshop”. The trainer can also put his/her name on under the title if s/he likes.
- Label a blank flipchart: “House rules”
- Label the next blank flipchart: “Expectations”

- Label the next flipchart paper: “Workshop Objectives.” Then, write the objectives of the workshop – See Trainer’s Resources.
- Label the next flipchart paper: “Agenda”, and list the basic agenda items that will be covered in the training.
- Photocopy enough copies of the Participant Handouts for all participants in the workshop. Make extra copies in the event there are more participants than expected or for when a participant loses his/her handouts.

Instruction:

A. Introductions and House Rules

1. Welcome participants to the workshop.
2. Introduce yourself and any other co-trainer working with you.
3. Have the participants stand up. Ask the participants one by one to tell everyone:
 - Their name
 - Where they work
 - One interesting fact about themselves
4. Once a participant has introduced him/herself, ask them to take a seat.
5. Discuss the house rules that the participants would like to adopt for the duration of the training. (**Note:** List the rules that are agreed upon by the group on the flipchart paper labeled “House Rules” and post the list on the wall.)

B. Expectations, Objectives and Agenda

1. Break participants into small groups of 4 to 6 people. If participants are seated at separate tables, the participants at each table can form a small group.
2. Ask the small groups to develop four expectations they have of the workshop. The participants in each group must agree on the top four expectations.
3. Allow about 10 minutes for the exercise.

4. Beginning with the groups in the back of the room, ask each small group what are their four top expectations. (**Note:** List the expectations on the flip chart labeled “Expectations”.) If some groups state expectations that are already listed on the flipchart, do not add it to the flipchart.
5. After all groups have reported, ask the participants if anyone has any other expectation to add. If so, add them to the list of expectations on the flipchart.
6. Review participants’ expectations with the group.
7. Review workshop objectives (**Note:** Prepared in advance – see Trainer’s Resources).
8. Compare the participants’ expectations with the workshop objectives. If there are participant expectations that will not be met (or covered) during this workshop, assure participants it will be considered for future trainings.
9. Explain that the purpose of this workshop is to cross train NGOs and community agents such as, Village Health Teams (VHTs)/Community Health Workers (CHWs), Agriculture Extension Workers/Agents, Fishery Officers, Beach Management Units (BMUs), Women’s groups, etc. working on the practices and behaviors promoted by the integrated PHE program.
10. Add that when community agents are cross-trained on multi-sector topics that are part of a PHE intervention, they will be able to talk to community members about the various interventions besides their own specialties.
11. Point out that during this training, participants will not become experts on all the topics covered. However, they will learn enough about the topic(s) to introduce basic concepts to community members and know where to refer them for further information.
12. Mention that in order for integrated projects to work, they need to be operationally integrated. This is because community members live integrated, not single sector, lives.
13. Review the agenda for the training and explain how the agenda links to achieving the workshop objectives.
14. Distribute the package of Participant Handouts to all participants.

Trainer's Resources

Workshop Objectives

By the end of this workshop, participants will be able to educate and counsel community members living in the Lake Victoria Basin on:

- Population, health and environment linkages and interventions.
- The cross-cutting nature of gender equality for sustainable development.
- Threats to ecosystems in their community, and how ecosystems and people are interlinked.
- Conservation agriculture practices that maintain/increase the health of the farmland and crops, conserve the environment and improve food security.
- The roles that fishery stakeholders play in participatory sustainable fishery management.
- Alternative livelihoods in their community.
- The benefits of Savings and Credit Cooperation Organizations (SACCOS) and how to join a SACCO in their community.
- Benefits of energy savings stoves.
- The fertility cycle and how to use family planning to plan their families.
- Key health interventions that will improve the health of pregnant women, infants and children.

Module 2 – OUR COMMUNITY²

Learning Objectives:

After this exercise, the participants will be able to:

- Describe the PHE linkages and how they affect their community and family.
- Describe the benefits of integrated PHE interventions.

Total Time: 1 hour, 15 minutes

Preparation:

- Read this module thoroughly.
- Collect the materials needed:
 - flipchart stand and flipchart paper
 - colored paper
 - masking tape
 - colored marker pens
 - chalk
 - scissors
- Make cut-outs from colored paper for “Our Community” exercise. See table below.

If activity is held:	Then:
Indoors	<ul style="list-style-type: none">• Prepare small cut-outs that depict natural resources (e.g. trees, fish, bananas, water) to represent the resources utilized by residents.
Outdoors	<ul style="list-style-type: none">• Collect dry leaves and twigs to substitute for the cut-outs.

² Adapted from: BALANCED Project. 2011. *Population, Health and Environment (PHE) Community-based Distribution System: A Guide for Training PHE Community-based Distributors*. University of Rhode Island. Narragansett, RI.

	<ul style="list-style-type: none"> • Make sure the participants understand what each material represents.
--	--

Instructions:

A. “Our Community” Exercise (30 minutes)

1. Have the participants stand in a clear area.
2. Draw a map of the community or island on the ground/floor or on flipchart paper using chalk or marker pen. With the help of participants, label the areas and mark the boundaries of the agricultural areas, settlements, water-sources/streams, and Lake Victoria.
3. Distribute the cut-outs in the delineated agricultural and coastal areas (e.g., trees and shrubs inside the forest area; fish in the water (lake); crops, bananas, cows, animals inside the agricultural areas).
4. Create a story of how the community looked 20–25 years ago (i.e. lush, lots of trees, fish, birds, small villages, etc.)
5. Invite two participants to stand inside the ‘community’ area. These two volunteers will represent the “first family” who settled in the area.
6. Ask the volunteers playing the ‘first family’ what resources they need for everyday household-use (e.g., shelter, food, water). Have them gather what they need by picking-up the cut-outs representing the ‘resources’ in the area.
7. Ask the volunteer “first family” how many children they are going to have. Let them call other participants who they would like to play the role of the first family’s ‘children’ into the “settlement area”. Have the ‘children’ stand with their ‘parents.’
8. After the children have joined the ‘parents’, ask the volunteer “first family” to gather the resources they need to feed their growing family.
9. Explain that the children have now grown up. Ask the volunteer “first family” to divide its settlement between the ‘parents’ and the number of ‘male children’ they have.
10. Explain that these grown children now have to make a living. Ask both the grown children and the volunteer “first family” to continue to gather the

resources they need (e.g., trees for houses and firewood; fish, bananas, cows, goats, shellfish, etc. for food).

11. Ask the “grown children” to select the number of children they are having from the participants not yet in the exercise. Ask the new “children” volunteers to enter the “community”. Have the volunteer “new families” continue to collect resources for their growing families.
12. Repeat the process until all the ‘resources’ are depleted (there are no more cut-outs to gather) and/or a participant says he/she no longer has space to build his/her house (the settlement has encroached upon the forest/agricultural area or has ‘reclaimed’ part of the sea).
13. Bring the whole group together and ask them the following questions (additional related questions could be added):
 - What did you observe during the exercise?
 - Were the circumstances similar to your experience in your community over the years? In what ways?
 - What did you learn from the exercise?
 - What happens to people when the natural resources are dwindling?

B. Process “Our Community” Exercise (25 minutes)

1. Based on the “Our Community” exercise, ask what are the possible problems facing the participants’ community today? (e.g., fewer trees, farmland, fish, loss of soil fertility, less food and income due to dwindling resources) (**Note:** List responses on a flipchart.)
2. Ask what are the possible reasons for these problems? (e.g., depletion of trees, loss of soil fertility, overfishing, more water borne diseases, growing population)
3. Ask participants to describe the linkages they are seeing between a growing population, natural resources and health of families. (**Note:** List responses on flipchart.)
4. Ask participants what are the opportunities for intervention or remediation that can address these linkages?

5. If not already mentioned, explain that interventions that address the linkages between growing populations, dwindling resources and health of the family and community are called Population, Health and Environment or PHE.
6. Describe some PHE linkages (e.g., over-fishing, destructive farming practices or tree-cutting) can lead to fewer resources and too little money or food to feed and sustain families; and that large families need more resources to live; that smaller families are healthier, have more resources, and tend to use fewer resources so there are resources for the future).

C. The PHE Development Approach (20 minutes)

1. Point out that PHE is a development approach that recognizes the interconnectedness between people their health and environment.
2. Add that people, families and communities live integrated lives. They don't concern themselves with only their health, children, growing and/or selling food, fishing, farming, clean water, shelter, etc. These are interrelated and part of people's everyday life.
3. Explain that people and their environment are also closely linked. This is even more true as climate change and ecosystem changes increasingly threaten natural resources, food security, human health and sustainable development.
4. Mention that integrated PHE interventions focus on the interactions among population, health and environment dynamics. For this reason, PHE programs work across several sectors in an integrated fashion.
5. Ask participants what might be the benefits of implementing integrated interventions that address the health of the environment, natural resources and people living in and around the Lake Victoria Basin. (**Note:** List participants' responses on flip chart.)
6. If not mentioned by participants, add that the PHE approach encourages various sectors to work together toward a shared goal or vision.
7. Add that partnerships between and among sectors such as environment, agriculture, fisheries, health and rural development can be beneficial in:
 - Bringing together organizations that share the same goal, and thus, creating the critical mass necessary to tackle a multi-system problem.

- Bringing together organizations with different skills that provide the expertise needed to address community issues that one individual organization might lack.
 - Increasing organizations' power and impact by combining financial resources.
 - Minimizing overlapping activities—working with multi-sectoral NGOs and community groups can help leverage resources, minimize overlapping activities and create stronger programs for holistic systemic changes in a community.
 - Building on existing programs organizations can contribute to projects that are already established in the field.
 - Filling in service gaps — many organizations (especially those working in conservation) reach remote communities that government health systems sometimes cannot. Such partnerships can help in reaching these remote and underserved communities with holistic interventions.
 - Building capacity — organizations can gain new knowledge and technical skills by working with partners that have different backgrounds and expertise.
 - Putting the project in the larger context—working with the government, in particular, can help link the project to a number of governmental policies at a variety of levels and enable greater leveraging of resources.
8. Tell participants about the PHE projects that are being implemented around the Lake Victoria Basin.

Module 3 – ECOSYSTEMS³

Learning Objectives:

After this exercise, the participants will be able to:

- Identify the ecosystems present in their community, the resources available in each ecosystem and the human activities that threaten these resources.
- Explain how changes to one ecosystem affect other ecosystems and human well-being.
- Explain the links between increasing population and ecosystem degradation.
- Identify integrated PHE actions that can address the threats to the environment and to people's health.

Total Time: 1 hour, 15 minutes

Preparation:

- Read this module thoroughly.
- Collect the materials needed:
 - flipchart stand
 - flipchart paper
 - colored marker pens
 - adhesive tape or masking tape
- Prepare a flipchart with the following Ecosystem Matrix. You might want to use two flipcharts taped together to make the matrix big enough to accommodate all the comments that will be written on it. See example on next page.

³ Adapted from: BALANCED Project. *Population, Health and Environment (PHE) Community-based Distribution System: A Guide for Training PHE Community-based Distributors*. University of Rhode Island. Narragansett, RI. 2011

Ecosystem	Resources	Human Activities	Effects of Human Activities

- Tape the blank Ecosystem matrix on the wall where participants can easily see it.
- If the packet of Participant Handouts was not distributed at the beginning of the workshop, make enough copies of the Participant Handouts for all participants.

Instructions:

A. Understanding Ecosystems in the Community (30 minutes)

1. Divide participants into several groups per type of community they live in, such as a fishing community, farming community, pastoral community, village, etc.
2. Distribute a blank flipchart paper to each group and ask each group to draw a map of the community where they live on the flipchart paper using a marker.
3. Ask participants to identify and draw possible natural resources present in their community, such as, farm land, grassland, wetlands, forests, river/streams, Lake Victoria.
4. Ask participants to identify other resources found in the same area, such as plants, insects, birds, animals, fish, water plants, trees, rocks, human beings, and infrastructures (schools, churches, roads, bridges, etc.) and mark these on their community maps.
5. Allow about 10 minutes for the exercise.
6. Have participants look at the community map they developed and explain that all the resources together in a community form ecosystems.
7. Explain what an ecosystem is: “An ecosystem is the community of organisms (plants, animals, fish, and microorganisms) interacting in a particular location,

plus the non-living part of the environment (air, water, soil, light, rocks, etc.) including the human-built structures” (Marten 2001).

8. Ask one group to show their map to the entire group. Look at the map together with the participants and identify the ecosystem(s) present in their community (e.g. agricultural land, grassland, wetlands, forest, and/or lake ecosystems).
9. Ask the rest of the groups to explain what ecosystems exist in their communities (according to their map). Provide assistance as needed.
10. Drawing from participants’ maps, list the ecosystems identified under the Ecosystems column on the Ecosystem Matrix (**Note:** Make sure this is prepared beforehand – see preparation notes.)
11. Ask what resources are present in each ecosystem listed on the Ecosystem Matrix. Point out that those resources could include: plants, trees, crops, lakes, wetlands, birds, bees, fish, animals, rocks, dirt, water, etc.
12. Per ecosystem identified, list the resources mentioned under the Resource column on the Ecosystem Matrix. See Example 1 below:

Example 1:

Ecosystems	Resources
Forest	Trees, shrubs, birds, bees, people, animals (monkeys/chimpanzees, antelope, guerillas, cattle, goats), fruit, insects, reptiles, streams, rivers, etc.
Farm land	Soil, trees, pasture land, streams/rivers, birds, people, animals (cattle, pigs, goats, sheep), insects, crops.
Grassland	Grass, trees and shrubs, insects, soil, streams/rivers, people, animals (antelope, lions, buffalo, giraffe), birds, rocks
Wetlands	Water, plants, people, animals (hippos, crocodiles, antelopes), insects, fish (lung fish, mud fish), breeding ground for fish (tilapia, mudfish), aquatic trees (kilundu), grass, birds, reptiles
Streams/Rivers	Water, fish, aquatic plants, aquatic animals (hippos, crocodiles), insects, rocks,
Lake	Water, fish, birds, aquatic plants, aquatic animals, insects, breeding grounds for fish, microorganisms, islands (which

Ecosystems	Resources
	has its own ecosystem)

13. Ask participants to describe—to the best of their knowledge—how the natural resources have changed over the last 10 years. (**Note:** List participants’ responses on flipchart.)

14. Next to each resource listed under the Resources column, ask participants whether the resource has diminished or increased, based on their personal observations. Note with a “+” (plus) sign, or a “-“(minus) sign for those resources that have increased (+) or decreased (-). If participants do not know or are not sure, put a “?” (question mark) next to the resource. See Example 2.

Example 2:

Ecosystem	Resources
Forest	Trees -, shrubs+, birds -, antelopes -, gorilla - , people +, insects?
Farmland	Soil fertility -, crop land +, trees - , domestic animals +, birds -, people +, insects?
Grassland	Grass -, insects ?, crop land +, people +, wild animals - , domestic animals +
Lake	Water - /+, fish -, aquatic plants +, aquatic animals - , microorganisms?
Wetlands	Water -, wild plants -, crops +, fish breeding grounds - , people +, animals (hippos, crocodiles) -, insects ?, aquatic trees -

15. Using the example above, probe further to get participants to list as many resources as possible. Mark whether they have increased, decreased, done both, or don’t know.

16. Leave the Ecosystem Matrix posted on the wall where participants can see it.

B. Identifying Human Activities and Effects on Ecosystems (30 minutes)

1. Ask participants why some resources have increased and others have decreased.
2. Divide participants into three groups.

3. Explain that for this next exercise we are going to focus on three ecosystems: forests, farmland and Lake Victoria.
4. Mention that for the three ecosystems, participants are going to complete the Ecosystems Matrix.
5. Assign one of the three ecosystems to each group.
6. Ask each group to identify the following for the ecosystem assigned to them.
 - Human activities that contribute to the decline of resources in their ecosystem.
 - Human activities that contribute to the increase of resources in their ecosystem.
 - The effects of human activities on the ecosystem.
7. Once identified, ask participants to go to the Ecosystem Matrix and complete it for their assigned Ecosystem. See Example 3.

Example 3:

Ecosystems	Resources	Human Activities	Effects
Forest	Trees -, shrubs+ birds -, antelopes -, gorilla - , people +	Cutting of trees for fuel and making charcoal to sell for income People converting forests into farmland Killing of wild animals because they attack crops Poor enforcement of laws that protect the forest Increasing population which puts pressure on forest resources	Loss of soil fertility Increased soil erosion Loss of habitat for wild animals, birds, and insects Loss of trees to farmland Less wild life, which is a loss of biodiversity Loss of forest cover for shade and to protect gardens
Lakes	Water -/+ , fish -, aquatic plants +, aquatic animals - , microorganisms ?	Over Fishing Using illegal fishing gears Illegal fishing practices Defecating in and around the lake	Reduced fish stocks in the lake Low fish catches Catching of juvenile fish, reducing breeding

		Dumping waste into the lake Washing in the lake Increasing population Transport in the lake Farming around the lake Encroachment of littoral zones around the lake	capacity Contamination of the lake Water borne diseases, such as diarrhea, cholera and typhoid Encroachment of people on lake resources Increased fishing efforts for food and income Soil run off and siltation from farming Increased water hyacinth and hippo grass from soil run off
Farmland	Soil fertility -, crop land + , trees - , domestic animals +, birds -, , people +, insects ?	Bush burning Tree cutting Poor farming practices, i.e. lack of contour farming, lack of crop rotation, monocropping, etc. Use of chemical fertilizers Use of chemical pesticides Open defecation Land fragmentation Over grazing by livestock	Loss soil fertility Soil and chemical run off into rivers, streams and lake Loss of soil moisture Low crop yields Loss of wind breaks Loss of vegetation coverage

8. When the three groups are done, ask them to take their seats.
9. Read aloud what has been written on the completed Ecosystem Matrix.
10. Ask participants if they would like to provide additional inputs. (**Note:** List responses on the Ecosystem Matrix under the correct ecosystem.)
11. Review each of the “effects” of human activities written on the Ecosystem Matrix, asking how these affect human welfare now and in the future. (**Note:** List responses on flipchart.)
12. Leave out the completed Ecosystem Matrix for the next exercise on the linkages between Ecosystem Health and Human Well-being.

C. Linkages between Ecosystems (15 minutes)

1. Referring to the completed Ecosystem Matrix, review the effects of human activities on the forest ecosystem. Ask how the effects on the forest ecosystem also affect the Lake ecosystem and human welfare.
2. Add any of the following, if not mentioned by participants.
 - Fewer trees increase soil erosion and run off into the Lake during heavy rains.
 - The soil run-off causes siltation in the lake. Siltation destroys shoreline fish breeding grounds and provides nutrients (from soil run off) for the over growth of water hyacinth and hippo grass.
 - Reduced number of breeding groups results in fewer fish for food and income.
 - Loss of income and food can result in food insecurity, poverty and poor health, especially among vulnerable groups such as children under 5 and the elderly.
 - Loss of fisheries resources will lead more people to farm, cut trees for income and other destructive activities.
 - Pollutants in the soil run-off also pollute the lake. Polluted Lake water contributes to illnesses among people who drink the water.
3. Referring to the completed Ecosystem Matrix, point to the effects of human activities in forest ecosystems and ask how they affect the farmland and human welfare.
4. Add any of the following, if not mentioned by participants:
 - Loss of soil fertility from fewer trees reduces crop yields.
 - Poor farming practices contribute to soil erosion and run off of valuable soil nutrients into the lake, reducing soil fertility.
 - Loss of forest cover for shade reduces soil fertility and moisture needed for crops to grow well.
 - Loss of habitat for birds and insects to pollinate the farm crops.

- Less food to eat and less food for income leads to food insecurity and a growing dependence on resources from other ecosystems such as trees from forests, fish from the lake, mining, etc.
5. Referring to the completed Ecosystem Matrix, point to the effects of human activities in the farmland and ask how they affect the lake and human welfare.
 6. Add any of the following, if not mentioned by participants:
 - Poor farming practices result in soil and chemical run off into rivers, streams and lake.
 - Chemical run-off pollutes the lake for fish and humans.
 - Soil run off increases siltation that reduce fish breeding grounds, and the soil nutrients in the siltation contribute to the overgrowth of water hyacinth and hippo grass.
 - Reduced fish yields from lack of breeding grounds leads to smaller fish catches – both quantity and quality (size of fish).
 - Reduced fish yields lead to families using other natural resource for income, such as cutting trees for charcoal, which only contributes more to the siltation problem.
 - Fewer crop and fish yields result in food insecurity and poor health, especially among vulnerable groups such as children under 5 and the elderly.
 7. Ask participants how the growing population around Lake Victoria affects all three of the ecosystems on the Ecosystem Matrix.
 8. Add any of the following if not mentioned by participants:
 - Increased population leads to more people depending on finite natural resources in the lake.
 - Increased populations lead to over fishing. The reduced fish catch then leads fishermen to resort to illegal fishing practices in order to get a better catch.
 - Reduced fish catch leads to more dependence on farming and the cutting of trees for food and income.

- Growing populations also contribute to more and more land being farmed, often invading other ecosystems, such as grasslands and wetlands.
 - Increased farming and destructive agriculture practices impact other ecosystems reducing natural resources for future generations.
 - Fewer productive natural resources will lead to poverty, food insecurity and illness.
9. Emphasize that humans and ecosystems are intricately linked, and that problems created by humans in one ecosystems impact other ecosystems as well as human welfare.
 10. Explain that this is why integrated multi-sectoral PHE approaches are a holistic way to address community-wide issues. This integrated approach helps to ensure that people and ecosystems upon which they depend remain healthy for now and in the future.
 11. Ask participants how PHE interventions can address the threats to the environment and to people's well-being. (**Note:** List responses on flipchart.)
 12. Explain that the PHE programs implemented around the Lake Victoria Basin include all of a selection of the following interventions – in no particular order:
 - Conservation agriculture (for farming communities)
 - Sustainable fisheries (for fisher communities)
 - Alternative livelihoods and saving and loans programs
 - Energy saving stoves
 - Reproductive health and family planning
 - Health interventions, such as maternal and child health activities, nutrition, and/or water, hygiene and sanitation.
 13. Explain that the rest of this training will cover the interventions discussed.
 14. Point out that it is important that all NGOs implementing PHE programs and their agriculture, fisheries, health care partners are familiar with all the PHE interventions that an NGO is implementing. This enables them to provide

integrated counseling messages and helps ensure that PHE activities are operationally linked.

15. Emphasize that community members live integrated – not sector specific – lives. Therefore, all project professionals and volunteers should be able to promote a variety of interventions, in addition to their topic of expertise.
16. Point out that field staff do not need to be experts in all the PHE activities, but they should know enough about the different PHE activities to describe the importance of good fishery practices, conservation agriculture, bee keeping, family planning, for example, to motivate and refer community members to the “topic expert” where they can get more detailed information.
17. Give an example – you can use a local example or the following: In Madagascar an agriculture extension agent was teaching a farmer how to properly plant rice. Normally, farmers take a handful of rice seed and throw it randomly out into the field. The agriculture agent explained that when farmers seed in this fashion, many of the rice seeds land together in one spot and compete for the same nutrients and water. This results in neither of the seeds flourishing into productive rice plants. The agriculture agent shows the farmer how to space the rice seed evenly throughout the field, allowing space for each seed to grow well and produce rice. During the demonstration, the agriculture agent also explains that just like the rice plants, children need time to grow and mature before there is another child in the family. The agent then talks briefly about the benefits of healthy timing and spacing of children and refers the farmer to a health care facility where he and his wife can talk about family planning options.
18. Ask participants if they have questions before proceeding.

Trainer's Resources

Example of a Completed Ecosystem Matrix

Ecosystems	Resources	Human Activities	Effects
Forest	Trees -, shrubs+ birds -, antelopes -, gorilla - , people +	Cutting of trees for fuel and making charcoal to sell for income People converting forests into farmland Killing of wild animals because they attack crops Poor enforcement of laws that protect the forest Increasing population which puts pressure on forest resources	Loss of soil fertility, Increased soil erosion Loss of habitat for wild animals, birds, and insects Loss of trees to farmland Less wild life, which is a loss of biodiversity Loss of forest cover for shade and to protect gardens
Lakes	Water -/+ , fish -, aquatic plants +, aquatic animals - , microorganisms ?	Over fishing Using illegal fishing gears Illegal fishing practices Defecating in and around the lake Dumping waste into the lake Washing in the lake Increasing population Transport in the lake Farming around the lake Encroachment of littoral zones around the lake	Reduced fish stocks in the lake Low fish catches Catching of juvenile fish, reducing breeding capacity Contamination of the lake Water borne diseases, such as diarrhea, cholera and typhoid Encroachment of people on lake resources Increased fishing efforts for food and income Soil run off and siltation from farming Increased water hyacinth and hippo grass from soil run off

Farmland	Soil fertility -, crop land + , trees - , domestic animals +, birds - , , people +, insects ?	Bush burning Tree cutting Poor farming practices, i.e. lack of contour farming, lack of crop rotation, monocropping, etc. Use of chemical fertilizers Use of chemical pesticides Open defecation Land fragmentation Over grazing by livestock	Loss soil fertility Soil and chemical run off into rivers, streams and lake Loss of soil moisture Low crop yields Loss of wind breaks Loss of vegetation coverage
----------	---	--	--

Module 4 – CONSERVATION AGRICULTURE^{4 5 6}

Learning Objectives

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

- Describe the PHE linkages related to conservation agriculture.
- Describe at least 4 benefits of conservation agriculture.
- Describe at least 3 types of organic fertilizers and two types of organic pesticides.
- Describe 2 soil fertility techniques.
- Describe at least 5 types of soil and conservation structures.
- Mention at least 3 kinds of agroforestry practices.
- Describe 3 non-agriculture interventions that contribute to sustainable agriculture.

Total Time: 4 hours

Preparation:

- Read the module thoroughly.
- Collect materials needed:
 - flipchart stand and flipchart paper
 - colored markers
 - masking tape
 - 15 to 20 small cards, or manila paper to cut into cards

⁴ Resource: Wycliffe Wando Okumu, Institutional & Capacity Development Research, Agricultural Sector Development Support Programme (ASDSP), Ministry of Agriculture Livestock and Fisheries, Republic of Kenya

⁵ Resource: *Conservation Agriculture with Trees: Principles and Practice*. World Agroforestry Centre. Nairobi, Kenya 2014

⁶ Resource: *Sustainable Agriculture Manual*. Ecological Christian Organization (ECO). Kampala Uganda. 2003

- Make sure that the completed Ecosystem Matrix (from the previous module) is posted on the wall where participants can see it.
- Label one sheet of flipchart paper, “Farmland”. Draw a horizontal line down the middle of the flipchart paper making two equal sized columns. Label the top of the left hand column, “10 Years Ago”, and the right hand column, “Now.”
- Label another sheet of flipchart paper, “Farm Production”. Draw a horizontal line down the middle of the flipchart paper making two equal sized columns. Label the top of the left hand column, “10 Years Ago”, and the right hand column, “Now”.
- On a flipchart paper, list the seven types of organic fertilizers on the left hand side of the flipchart paper (see Trainers Resources). Allow enough room between the names of the fertilizers for participants to add cards with a description of the type of fertilizer on the right hand side of the flipchart. An alternative is to photocopy the Organic Fertilizer Exercise Key in the Trainer’s Resources, cut out each picture and paste them individually down the left hand side of the flipchart. Again, leave enough space for participants to add cards with the description of the type of fertilizer on the right hand side of the flipchart.
- Prepare cards with the descriptions of the seven types of organic fertilizer - one organic fertilizer per card. See Trainer’s Resources for the content to be written on each card.
- Study the Organic Fertilizer Exercise key so that you can describe the different types of organic fertilizers comfortably.
- Prepare a flipchart with the list of the five soil and water structures: retention ditches, trash lines, Fanya Juu, cut off drains, Fanya Chini. See Trainer’s Resources.
- If there are no Participant Handouts, make a copy of the Agroforestry Table in Trainer’s Resources to distribute to participants.

Instructions:

A. Understanding PHE Linkages and Conservation Agriculture (45 minutes)

PHE Linkages

1. Ask participants what the farmland in their community looked like 10 years ago or when they were children. (**Note:** on the Flipchart labeled “Farmland”, list responses on the left side of the flipchart labeled, “10 years ago”.)
2. Ask what does the farmland in their community look like now? (**Note:** Write responses on the right side of the flipchart labeled, “Now”.)
3. Ask what has changed and why? (**Note:** List responses on a blank flipchart.)
4. Ask what the yield (quantity and quality) of key crops was like 10 years ago. (**Note:** on the Flipchart labeled “Crop Yield”, list responses on the left side of the flipchart labeled, “10 years ago”.)
5. Ask how the yield of key crops is today. (**Note:** Write responses on the right side of the flipchart labeled, “Now”.)
6. Ask what has changed and why. (**Note:** List responses on a blank flipchart.)
7. Ask participants how farming methods might have changed over the years and why. (**Note:** Add responses to the flipchart.)
8. Return to the completed Ecosystem Matrix developed earlier and review the human activities in the “Farmland Ecosystem” and their effects.
9. Ask participants how the problems created in farmland ecosystems impact other ecosystems.
10. Add any of the following, if not mentioned by participants:
 - Lower crop production and yield drive families to increase fishing efforts for food and income. Increased fishing can further deplete dwindling supplies of fish in the Lake.
 - Lower crop yields lead families to expand farming into grasslands, wetlands and forests, destroying the natural resources in these ecosystems.

- Fewer wetlands can diminish critical fish breeding grounds, further contributing to the demise of fisheries in the lake.
- Fewer forests/trees reduce soil fertility and soil moisture needed by plants and crops. It also leads to soil erosion and run-off of rich nutrient soil and chemical fertilizers into the Lake. This run off can destroy important fish breeding grounds and contaminate the lake for animals and humans.
- Low crop yield leads to food insecurity, hunger and disease among humans, especially vulnerable groups such as children and the elderly.

11. Remind participants that human beings and all ecosystems that surround farmlands are intricately linked. One change to the farmland ecosystem impacts other natural resources and human well-being.

Conservation Agriculture

1. Explain that in order to maintain/increase the health of the farmland and crop yields it is important to keep the soil as healthy and fertile as possible.
2. Ask participants what are the characteristics of healthy soil.
3. If not mentioned by participants, add that healthy soil has:
 - Movement of air and water in and out of the soil. A constant supply of air and water promotes plant growth.
 - Organic matter that can decompose and provide nutrients to plants.
 - Soil organisms that recycle nutrients, promote movement of air and moisture, improve soil structure, and suppress pests and diseases of plants.
4. Mention that healthy soil is able to hold water and nutrients and supply them to plants when they need them – without the direct application of external nutrients, such as chemical fertilizers.
5. Refer participants back to the “Farmland Ecosystem” in the Ecosystem Matrix and ask why farmland and soil fertility might have declined over the years.
6. Add any of the following, if not mentioned:
 - Growing only crops that continuously take nutrients from the soil and do not replace them, such as maize, sweet potatoes, cassava and vegetables.

- Lack of trees, leguminous crops and application of organic matter to provide nutrients back to the soil.
 - Soil erosion – the removal of topsoil due to natural, animal and human activity.
7. Explain that rain or other water action and wind are natural causes of soil erosion.
 8. Ask participants what are human causes of erosion.
 9. Add any of the following, if not mentioned by participants:
 - Lack of trees and ground cover to hold top soil
 - Unsuitable cultivation practices
 - Clearing of land for construction
 - Overgrazing
 10. Reinforce that the loss of nutrient-rich topsoil and the reduced water-holding capacity of eroded land are the main effects of soil erosion on agricultural lands and the natural environment.
 11. Point out that the “off-site” effect of soil erosion is the movement of sediment (soil) and agricultural pollutants into waterways and lakes. This can lead to the disruption of lake ecosystems and contamination of drinking water.
 12. Ask participants what are ways to overcome the effects of human activities on farmland described in the Ecosystem Matrix.
 13. If not mentioned, add that conservation agriculture is a key intervention for improving the capacity of farming ecosystems to: a) resist shocks and stresses (e.g. drought, excessive rains, soil erosion); and b) sustain itself over a long period of time.
 14. Point out that conservation agriculture focuses on the protection of the soil top layer, which is responsible for sustaining crop life, but is the most vulnerable to erosion and degradation.
 15. Review the benefits of conservation agriculture.
 - It increases/maintains fertility of the soil.

- Increases soil structure, soil texture, and its ability to absorb and hold moisture for crop growth.
 - Increases crop yield for income and food (food security).
 - Increases soil organic matter and nutrients, thus reducing the need for chemical fertilizers.
 - Crops are healthier (no heavy metals and contaminants from chemical fertilizers).
 - Minimizes soil erosion into waterways and the lake, which reduces siltation and maintains the water level.
 - Reduces runoff of dangerous chemicals into the lake.
 - Conserves the environment.
16. Add that improvements in soil health and agriculture can also have a positive impact on other ecosystems as well.
17. Explain that conservation agriculture, which revolutionized farming systems in Latin America, are now being used as a possible sustainable agriculture solution for sub-Saharan Africa.
18. Mention that the most common conservation agriculture practices are:
- organic agriculture
 - soil fertility management
 - soil and water conservation techniques
 - agroforestry
19. Add that these conservation agriculture practices are the ones most promoted in integrated PHE programs, especially in East Africa.
20. Begin the discussion on conservation agriculture practices with organic farming and the beneficial effects it has on the health of farmland, crop yield and human welfare.

B. Organic Agriculture/Farming (60 minutes)

1. Ask participants if anyone has experience with organic farming. If so, what was it like?
2. If not mentioned, explain that organic agriculture enhances the farmland ecosystem health while minimizing adverse effects on natural resources.
3. Review the benefits to the community of organic agriculture:
 - Organic farming is healthier for humans, animals and fish.
 - Reduces the need for harmful and expensive artificial fertilizer and pesticides.
 - Is less expensive for the farmer.
4. Mention some challenges of converting to organic farming:
 - Yields may be somewhat lower, due to insufficient quality of organic fertilizer.
 - Organic fertilizer takes a while to decompose.
 - Pests may be difficult to initially manage. Requiring some use of artificial pesticides.
 - Lack of capacity of farmers to do organic farming.
 - It is labor intensive.
5. Add, if not already mentioned, that the basic techniques of organic agriculture/farming involve the use of organic fertilizer (instead of chemical fertilizer) and the use of organic insecticides (instead of chemical insecticides).
6. Remind participants that whether crops are organic or not, Uganda and Kenyan laws prohibit farming any closer than 200 meters distance from Lake Victoria or other major waterways.

Making and Using Organic fertilizers

1. Explain that one key feature of organic farming is the use of organic fertilizers.
2. Ask participants what is organic fertilizer.

3. Review the definition, if not mentioned: “It is fertilizer derived from the natural decomposition of any plants or animal material, and has not gone through industrial processing.”
4. Ask if participants have ever used organic fertilizer on their crops. If so, what was the experience like?
5. Mention that organic fertilizers replace/add plant nutrients in the soil in a form that plants can readily take up and use.
6. Add that in contrast, the nutrients in chemical fertilizers may not be readily useable by the plant. Also, they change the PH (salt level) of the soil, and they are toxic to humans, animals, insects and fish.
7. Point out that organic fertilizer is best for plants/crops that take nutrients from the soil (heavy and light feeders). **It is not necessary for leguminous crops.**
8. Tape the flipchart with the names (or illustrations) of seven different types of organic fertilizers on the wall where participants can see it. (**Note:** The flipchart should be prepared beforehand – see preparation notes and Trainer’s Resources).
9. Distribute the cards with individual statements about the seven organic fertilizers to 15 participants – one card per participant. (**Note:** The cards should be prepared beforehand – see preparation notes and Trainer’s Resources.)
10. Ask the participants with the cards to tape their card on the flipchart next to the type of organic fertilizer they think it belongs to.
11. Allow about 5 to 7 minutes for the participants to tape their cards to the flipchart. When done, ask them to take a seat.
12. Beginning with Vegetation Compost, read the cards posted next to it.
13. Ask all participants if the information on the card(s) taped next to Vegetation Compost belongs there. If no, why not, and where should it go?
14. Repeat this process for each type of organic fertilizer until you have reviewed all the cards for the seven types of organic fertilizers.
15. Finally, once all participants’ have had a chance to comment and review each type of organic fertilizer, correct any inaccurate information, moving the cards

to the correct type of fertilizer, as needed. (**Note:** Refer to Organic Fertilizer Key in Trainer's Resources, if needed)

16. Explain that the community can learn more information about each composting method from the local Agricultural Extension Worker/Agent in their community.
17. Ask participants if they have any questions.
18. Answer all questions before proceeding to the next section. If the questions are very technical in nature, allow the participants who work in agriculture to answer them.

Making and Using Organic Pesticides

1. Mention that another key feature of organic farming is the use of organic pesticides for the control of crop pests and diseases.
2. Explain that in order to avoid the use of synthetic chemical pesticides, farmers can use pesticides made from certain plants.
3. Add that organic pesticides are healthier for the soil, the environment, the lake and humans; are inexpensive; and can increase crop yield.
4. Mention that there are a variety of natural-based pesticides depending on the type of pest one is dealing with. However, we are only going to review the four most commonly used around Lake Victoria:
 - red peppers and chilies
 - tobacco leaves
 - neem seed extract and seeds
 - wood ash
5. Begin by explaining that crushed red peppers and chilies mixed with plain and soapy water and allowed to ferment becomes a good pesticide against white flies, aphids, ants and caterpillars.
6. Mention that another common natural pesticide is crushed tobacco leaves prepared in a variety of ways to protect against thrips, caterpillars and mealy bugs.

7. Explain that another popular natural pesticide is the use of neem seed extract and neem seeds to protect against the maize stalk borer, banana weevils, storage pests, and weevils.
8. Add that another commonly used natural pesticide is wood ash which is spread on the vegetables, plants or seed beds to manage soft-bodied insects, aphids, cutworms, nematodes, stalk borer, and termites.
9. Mention that the last commonly used natural pesticide is animal urine (e.g. goats, cows, etc.) diluted in fresh water to deter banana weevils, aphids, and fungal diseases.
12. Ask participants if anyone has ever used these or other types of natural pesticides. If so, what was their experience like?
13. Ask participants if they have used other natural pesticides not discussed.
14. Mention that farmers can obtain more information about organic pesticides from the local Agriculture Extension Worker/Agent in their community.
15. Ask participants if they have any questions.
16. Allow other participants to answer the questions first, then correct as needed.

C. Soil Fertility Management (45 minutes)

1. Explain that traditional farming methods reduce soil fertility which leads to lower crops yields.
2. Mention one key feature of conservation agriculture is maintaining/increasing soil fertility on the farmland.
3. Add that as a conservation agriculture practice, soil fertility management protects the soil from the direct impact of the sun's rays, provides active nutrients to the soil (nitrogen), and improves soil moisture, texture and structure.
4. Point out that improving soil fertility not only increases crop yields but enables the farmland to produce crops for many years, thus contributing to livelihoods and incomes for future generations.
5. Explain that two simple soil fertility management practices we are going to cover is crop rotation and maximum soil cover.

Crop Rotation

1. Mention that when a farmer grows the same annual crop year after year on the same piece of land, the yields gradually decrease because the soil becomes less fertile. Also more weeds can appear as well as pests and diseases.
2. Explain that in order to increase soil fertility and reduce pests and disease build up, it is important to rotate annual crops every season.
3. Add that crop rotation involves planting different crops which have different demands on the soil every successive season.
4. Discuss the benefits of crop rotation:
 - Increases soil fertility and crop yield because while one type of crop takes nutrients (nitrogen) from the land, the second type of crop puts nutrients (nitrogen) back in the land.
 - Helps to prevent disease and pests - the pests and diseases for corn, for example, are not the same pests for sweet potatoes. When the pest's favorite crop is not present, it breaks their lifecycle and prevents them from multiplying.
5. Ask participants if anyone in their community rotates their crops. If not, why?
6. Ask participants what kinds of crops take nutrients from the soil.
7. Add any of the following, if not mentioned by participants:
 - Maize
 - Cassava
 - Sweet potatoes
 - Vegetables
8. Ask participants which annual crops put nutrients back into the soil.
9. Add any of the following, if not mentioned by participants:
 - Beans
 - Cowpeas
 - Groundnuts

- Crotalaria

10. Ask participants what a crop rotation might look like. If a participant provides incorrect information, ask other participants if they have anything to add, inviting them to provide correct information.
11. Referring to the flipchart of the table prepared beforehand, review with participants a sample crop rotation schedule for Uganda and Kenya

Year 1		Year 2		Year 3	
Season 1	Season 2	Season 1	Season 2	Season 1	Season 2
Maize and beans (intercropped)	Sweet potatoes	Sweet potatoes (continuation from previous season)	Maize & beans (or other legumes) intercropped	Cassava intercropped with a legume (except beans)	Cassava (continuation of previous season).

12. Point out that the plan for crop rotation depends on the farmer's needs for food and income.
13. Emphasize the importance of working with a local agriculture extension worker/agent to determine the best crop rotation schedule for each farmer.

Maximum soil cover

1. Explain that soil erosion's potential is increased if the soil has no or very little vegetative cover of plants and/or crop residue.
2. Add that plant residue or cover protects the soil from raindrop impact and splash, and tends to slow down the movement of surface runoff by allowing excessive surface water to infiltrate into the soil.
3. Point out that cover crops provide a protective layer on the soil surface. This is done by planting live cover crops, such as Dolichos lablab, Macuna, sweet potatoes, cow peas, pumpkin, etc. or by spreading dead vegetative material, mainly crop residue, on the soil.
4. Mention that agroforestry tree species can also be used to provide aerial soil cover to slow down the impact of rain.
5. Review the benefits of maximum soil cover:

- Protects the soil from erosion agents, such as wind and water.
 - Helps suppress weeds by smothering their growth.
 - Increases soil fertility and the organic matter content of the soil. When leguminous cover crops, such as dolichos, mucuna, cowpeas, etc. are used, they add nitrogen to the soil.
 - Increases soil moisture by allowing more water to sink into the ground, thus reducing evaporation.
 - Stimulates development of plant roots, which in turn improves soil structure.
 - Allows soil organisms, earthworms and microorganisms to prosper in the soil cover and soil.
6. Explain that the main types of soil cover used by farmers include:
- A range of living plant materials which provide dense ground cover such as, Dolichos lablab, Mucuna, cowpeas, beans, soybeans, sweet potatoes, pumpkin, etc.
 - Mulch or dead plant materials, which include residues and prunings from trees and shrubs
 - A range of tree species (crop friendly) which provide shade, aerial soil cover and biomass.
7. Explain that farmers can plant leguminous crops such as cassava, maize, bananas and coffee in between higher crops. This soil cover not only provides needed nutrients (nitrogen) to the soil, but it helps control weeds, prevents soil run off during heavy rains and maintains soil moisture.
8. Continue the discussion on soil cover by talking about mulch. Explain that mulch is the application of dead, dry vegetation materials, such as elephant grass, spear grass or banana fiber, on the soil surface between both annual and perennial crops.
9. Remind participants that mulch should not contain any plants that have flowered and produced seeds because these will introduce new weeds in the field.

10. Mention that spreading dead, dry vegetation material residues on the soil surface in the right amount also prevents soil erosion, leaves little space and light for weeds to grow, conserves soil moisture, regulates soil temperature and adds organic matter to the soil.
11. Ask if anyone has used live crop ground cover or mulch on their farms. If so, what was the experience like? If no, why not?
12. Explain that trees planted in gardens also provide shade and aerial ground cover. We will talk more about trees during the discussion on agroforestry.
13. Ask participants if they have any questions.
14. Answer all questions before proceeding to the next section.

D Soil and Water Conservation Structures (30 minutes)

1. Mention that in normal farming, there is a large amount of soil and nutrient run-off, especially during rains. This results in:
 - Loss of top soil rich in nutrients, thus reducing soil fertility.
 - Movement of agricultural pollutants into water sources, contaminating the water for fish and humans.
 - Siltation in the lake, lowering water levels and destroying fish breeding areas.
 - Flooding due to reduced capacity of eroded soil to absorb water.
2. Explain that over time a number of soil and water conservation methods have been developed to manage the effects of rain runoff and maintain moisture and nutrients in the soil, especially for farming on hills and slopes.
3. Mention that soil and water conservation structures involve the creation of barriers along slopes (hillsides), which slow the speed of water run-off down the slope.
4. Add that the process of building these structures is called contour farming. This involves ploughing, planting and weeding along the contour of a hill side, i.e. across the slope instead of up and down the slope.

5. Mention that there are several types of contour farming used in PHE programs in Uganda and Kenya. (**Note:** Show the flipchart with the list of these structures.)
 - Retention ditches
 - Trash lines
 - Fanya Juu
 - Cut off drains
 - Fanya Chini
6. Read the characteristics of one of the soil and conservation structures below and ask participants to tell you which one it is. Encourage participants who are agricultural workers/agents to allow other participants to guess first.
 - This soil and conservation structure is a type of barrier that slows the speed of water running down the slope (farm), preventing it from taking soil with it.
 - It is best used on the upper to middle part of the slope where water would gather most momentum.
 - It involves digging ditches/canals and heaping soil on the upper side of the ditch forming a barrier on the upper side of the ditch/canal.
7. Congratulate the first person(s) who tells you that this method is Fanya Juu. If no one guesses that it is Fanya Juu, give participants the answer.
8. Explain that for Fanya Juu, the ditches/canals should be spaced according to the slope and soil depth. For example, for a steeper slope, there are closer intervals between the barriers. In contrast, for more moderate slopes, the intervals between the barriers are larger.
9. Ask if any of the participants have any experience with Fanya Juu, and if so, what was it like?
10. Read the following characteristics of a soil and conservation structure and ask participants to tell you which method this is. Encourage participants who are agricultural workers/agents to allow other participants to guess first.

- This structure is used towards the end the slope where the water run-off has slowed down. Its main purpose is to divert the water from the slope.
 - It involves digging ditches/canals and heaping the soil on the lower side of the ditch. Putting the soil on the lower side of the ditch/canal forces the running water into an outlet, such as a large ditch or canal, diverting it away from the garden.
11. Congratulate the person(s) who tell you that this method is Fanya Chini. If no one guesses that it is Fanya Chini, give participants the answer.
 12. Add that the Fanya Juu and Fanya Chini methods, which last several years, are best used when growing perennial crops because the process is very laborious.
 13. Ask participants if anyone has any experience with Fanya Chini, and if so, what was it like?
 14. Read the following statements about this soil and water conservation method and ask participants what it is. Again, encourage any agricultural extension worker/agents in the class to allow other participants to guess first.
 - This structure involves the placement of plant material barriers, such as maize, rice and sorghum stalks, between crops to prevent soil run off.
 - It is best used when growing annual crops.
 15. Congratulate the person(s) who tells you that this method is called trash lines. If no one guesses that it is trash lines, give participants the answer.
 16. Ask participants if anyone has experience with trash lines, and if so, what was it like?
 17. Read the following statement and ask participants which soil and conservation structure it is.
 - This structure diverts excess water from the crops.
 - It is a series of ditches that are dug across a slope to intercept surface run off and carry it to an outlet such as a canal or stream.
 18. Congratulate the person(s) who tell you that this method is cut off drains. If no one guesses that it is cut off drains, give participants the answer.

19. Add that cut off drains are used to protect cultivated land, compounds, and roads from uncontrolled run off and to divert water from gully heads.
20. Explain that the last soil and conservation structure we are going to discuss is also cut along the contour of a slope to catch and retain incoming run off and hold it until it seeps into the ground. Which method is it?
21. Congratulate the person(s) who tell you that it is retention ditches. If no one guesses that it is retention ditches, give participants the answer.
22. Add that retention ditches are an alternative to cuff off drains. It is best used where there is no nearby waterway to discharge the water runoff. They are also used to harvest water.
23. Ask participants if anyone has any experience with cut off drains or retention ditches, and if so, what was it like.
24. Point out that farmers should talk to their local agriculture extension worker/agent about which structure is best for them and how to construct the structures.
25. Ask if there are any questions before proceeding. Allow participants with existing knowledge of agriculture to answer participants' questions first.

E. Agroforestry (30 minutes)

1. Ask participants whether they have observed a reduction of trees in their community over the years.
2. Ask why this might be.
3. Add any of the following, if not mentioned by participants:
 - Farmers cut down trees for more farmland.
 - Families cut down trees to use for cooking and to make charcoal to sell for money.
 - Families need wood to construct houses.
 - Growing populations increase the demand on trees and wood.
4. Ask what are the consequences of cutting down so many trees?

- Soil erosion, resulting in poor soil fertility and nutrient run off into the lake.
 - Less fodder for animals.
 - Loss of soil fertility and moisture.
 - Reduces number of birds and useful insects.
 - Reduces shade and aerial cover for crops.
 - Reduces the number of natural windbreaks that protect perennial crops.
5. Ask participants what are the benefits of trees and tree cover for the environment, crops, animals and human well-being.
 6. Review any of the following if not mentioned by participants:
 - Trees hold on to the soil and prevent soil erosion, siltation and flooding.
 - Conserve moisture in the soil.
 - Provide nutrients to the soil.
 - Serve as aerial ground cover for crops.
 - Act as much needed wind breakers and shade for humans and animals.
 - Trees are a home for birds and useful insects, such as bees, that protect the environment. Many birds offer opportunities for ecotourism.
 - The leaves provide food for animals and are good fertilizer.
 - Trees are an important source of fruits for human consumption.
 - Some trees provide firewood and medicine for people.
 - Absorb the carbon dioxide from the air and add oxygen to the air.
 7. Explain that agroforestry is an old practice of growing perennial trees and shrubs in association with agricultural crops, pastures and animals.
 8. Add that agroforestry is another important component of conservation agriculture. It includes the planting and use of:

- fertilizer trees for land regeneration, soil health and food security
 - fruit trees for nutrition
 - fodder trees for smallholder livestock production
 - timber and fuel wood; trees for shelter and energy
 - medicinal trees to combat some diseases
9. Review some long-term impacts of agroforestry:
- Contributes to food security by restoring farm soil fertility for food crops and production of fruits.
 - Reduces deforestation and pressure on woodlands by providing fuel wood.
 - Increases diversity of on-farm tree crops and tree cover to buffer farmers against the effects of climate change.
 - Improves nutrition to lessen the impacts of hunger.
 - Moderates the climate. Trees provide shade; absorb carbon dioxide, a gas that is produced by animals and burning fuels.
10. Mention that one of the first agroforestry practices is to conserve existing trees. If you must cut a tree, cut at a level that allows the tree to grow new branches.
11. Ask participants to turn to their Participant Handouts, and review the agroforestry practices provided in the table. (**Note:** If there are no Participant Handouts available, make copies of the Agroforestry Table in the Trainer's Resources and distribute a copy to each participant.)
12. Explain that tree species must be able to fulfill the objective for planting them, e.g. soil conservation in catchment area, improvement of soil fertility (for mulching and green manure), animal fodder, shade and saleable products (fruits, fire wood, charcoal, and craft materials), etc.
13. Point out that for this reason it is important that agricultural extension workers/agents work closely with farmers on agroforestry activities.
14. Mention that while conservation agriculture has many benefits, there are some of the challenges of this type of agriculture, for example:

- It is initially laborious.
- It is sometimes not popular among small farm holders, because of the mixed mindset of the farmers in their cultivation culture.
- Initial cost of trees may be too high for some farmers.
- There is competing use of crop residues – crop residues are usually burnt during land preparation or used as animal feed/bedding construction materials and cooking, and not used as mulch or for soil and conservation structures.
- Trees can lower yields of maize and other food crops, if crop and trees are not spaced wide enough to avoid competition for nutrients and light.

16. Ask participants how they can overcome these challenges. (**Note:** List responses on flipchart.)

17. If not already mentioned, explain that PHE projects can address these challenges using a variety of methods, such as:

- Model households can demonstrate the positive effects of conservation agriculture and encourage the community to implement the same methods they use.
- Cross training of VHT/CHWs, agricultural extension agents/workers, Beach Management Units, Fishery Officers, women and youth groups on conservation agriculture and its importance to the community. Farmers learn of the benefits of these agriculture practices from several community resource groups.
- Constant reinforcement of PHE linkages and how conservation agriculture contributes to a holistic approach keeping people and the environment healthy for many years to come.
- Implementation of behavior change communication activities, such as radio spots, drama, and interpersonal communication (one-on-one counseling).
- Working with youth who are more open and receptive to learning new things
- Working closely with farmers and women's groups.

18. Ask if participants have any question.
- a. Answer all questions before proceeding.

F. Non Agricultural Interventions that Affect Sustainable Agriculture (10 minutes)

1. Ask participants what are some non-agriculture interventions that can help sustain agriculture over time. (**Note:** List responses on flipchart.)
2. Mention that alternative livelihoods can help to bring more income to the family and reduce over dependency on farming.
3. Point out that increased household income is a contributor to food consumption and food security.
4. Ask participants what are some alternative livelihoods that families could engage in to help bring extra income. (**Note:** List responses on flipchart.)
5. Add any of the following, if not mentioned by participants:
 - Bee keeping
 - Small farmyard animal rearing (goats, chickens)
 - Vegetable gardens – for food and income
 - Plant and tree nurseries
 - Liquid Soap making and weaving table cloths
 - Bread baking
6. Explain that we will be covering alternative livelihoods in another session.
7. Mention that based on 2011 population statistics, Uganda's population will double by 2031.⁷
8. Ask participants what impact the growing population will have on farmland and natural resources.
9. Remind participants that just as trees and crops need space and nutrients to grow strong and healthy, so do children.

⁷ Population Reference Bureau 2011 <http://www.prb.org/Publications/Datasheets/2011/world-population-data-sheet/uganda.aspx>

10. Explain that families have a right to plan how many children they wish to have.

11. Review the benefits of healthy timing and spacing of children:

- Planned families need less food, fish, firewood, water and other natural resources to survive.
- Planned families have more time to engage in income-generating activities.
- Planned families have time to save for children's education.

12. Add that later in the training we will talk about how to space your family in a healthy way.

Trainer's Resources


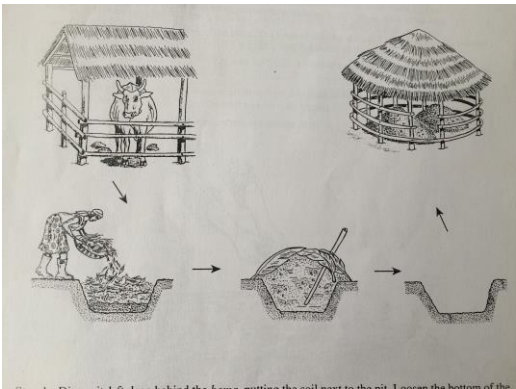
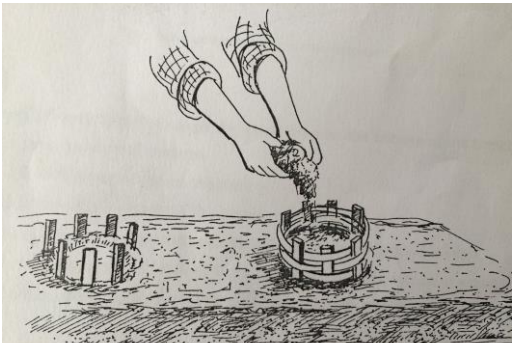
Organic Fertilizer Exercise

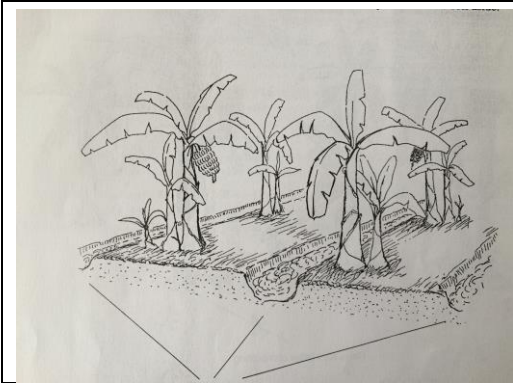
Write the following statements on separate cards. One statement per card.

- A mix of various plant materials and animal manure, which are decomposed under controlled conditions to produce an organic soil fertilizer containing balanced plant nutrients.
- This composted material is great for all types of crops, including perennial and annual crops.
- Manure (which includes both animal droppings and vegetable material) is taken out of the animal enclosure and composted immediately.
- This composted material can be used for all types of crops.
- Decomposable home garbage (vegetable matter), garden and farm waste and leguminous plant remains (groundnuts, beans, peas, etc.) are allowed to rot in a basket half buried in the garden.
- This composted material can be used to grow vegetables throughout the year.
- Different types of vegetable matter and animal dung are put in trenches dug between compost.
- This composted material is best used for already established perennial crops like bananas and coffee.
- Composted material is placed in pits dug between the perennial plants, covered and allowed to compost.
- This compost is best used for perennial plants like coffee and bananas.
- Animal manure, urine manure or plant tea is placed in a strong bag or gunny sack, suspended in a steel drum or jerry can and left to compost.
- This compost is best used for vegetable gardens in concert with compost used at planting.
- This compost material quickly provides crops with adequate natural plant nutrients during a growing season.
- Green plants and weeds are turned into the soil after each season about three to four weeks before planting.

- This composted material allows the farmer to grow his own fertilizer with food crops right where it will be used.

Organic Fertilizer Exercise Key

<i>Type of Organic Fertilizer</i>	<i>Description</i>
	<p><u>Vegetation compost</u> is a mix of various plant materials and animal manure, which are decomposed under controlled conditions to produce an organic soil fertilizer containing balanced plant nutrients. The compost material takes about two to three months to be done.</p> <p>The composted material is great for all types of crops, including perennial and annual crops.</p>
	<p><u>Farm yard manure:</u> When farmers keep livestock in an enclosure (boma), they add bedding material made up of dry vegetative material to the boma to absorb animal droppings and urine.</p> <p>Each time that manure (which includes both animal droppings and vegetable material) is taken out of the enclosure it should be composted immediately. It takes about 6 weeks for the manure to decompose. The composted material can be used for all types of crops.</p> <p>Note: Never apply fresh manure to the field. It must always be composted.</p>
	<p><u>Basket composting:</u> Decomposable home garbage (vegetable matter), garden and farm waste and leguminous plant remains (groundnuts, beans, peas, etc.) are allowed to rot in a basket half buried in the garden.</p> <p>Plant seedlings are planted around the basket compost so that they can tap into the composted fertilizer as they grow. Basket composting allows farmers to grow vegetables throughout the year because the vegetables can always tap into the basket compost for up to two to three growing seasons.</p>



Trench composting involves the digging of trenches between rows of plants/trees and adding different types of vegetable matter and animal dung to the trenches to compost.

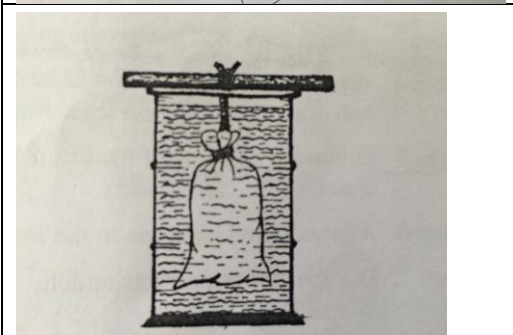
The materials in the trench take about 3 to 6 weeks to decompose, after which the roots of the plants grow toward the trench to tap into the nutrient-rich fertilizer.

This compost method is best used for already established perennial crops like bananas and coffee.



Sunken basket composting is another version of the “trench composting”, which involves the digging of pits between the perennial plants (coffee, bananas, etc.), adding composting material to the pit, covering it with soil and allowing to compost.

Just like trench composting, the plants’ roots grow toward the sunken pits to absorb the nutrient rich composed fertilizer.



Liquid manure is a composting process that aims to provide crops with adequate natural plant nutrients quickly during the growing season. It is a critical component of vegetable gardening and can be used to complement compost used at planting, especially in the rainy season when leaching is common.

The materials are used to make liquid manure compost in about 14 days, after which the liquid can be used to fertilize vegetable crops.



Green manure enables the farmer to grow his own fertilizer with food crops right where it will be used. This reduces time, land and labour normally needed to prepare compost.

Making green manure involves turning over the green plants, especially leguminous one, and weeds into the soil after each season about three to four weeks before planting. This will add rich plant nutrients to the soil and improve the soil structure in preparation for the new crops.

Sample Crop Rotation Table

Year 1		Year 2		Year 3	
Season 1	Season 2	Season 1	Season 2	Season 1	Season 2
Maize and beans (intercropped)	Sweet potatoes	Sweet potatoes (continuation from previous season)	Maize & beans (or other legume) intercropped	Cassava intercropped with a legume (except beans)	Cassava (continuation of previous season).

Agroforestry Practices

- Conserve existing trees. If you must cut a tree, cut at a level that allows the tree to grow new branches.
- Other agroforestry practices:

Practice	Benefits
<i>Calliandra</i> , fruit, ornamental and high-value medicinal trees can be planted on the home compound or near homesteads.	These trees provide shade, shelter, fruits, fodder for animals and other products.
Multipurpose trees, such as <i>Gravellia robusta</i> , <i>Gravellia maesopsis emini</i> , <i>Albizia</i> , <i>Markhamia lutea</i> , and <i>Bathedavia</i> , can be planted in the cropland. They can be scattered haphazardly or in some systematic pattern in the cropland.	These types of trees conserve soil fertility and soil moisture, provide nitrogen to the soil, act as wind breaks and provide aerial soil cover, critical for the health of the crops and the land they are planted on.
Trees and shrubs can be planted along and around a farm.	They prevent soil run off, form a protective barrier and mark boundaries.
Crops, preferably leguminous, fertilizer or fodder trees can be planted in between hedgerows of planted shrubs and trees.	The shrubs and trees prevent soil erosion, and provide aerial soil cover while the crops provide nutrients to the trees and shrubs.
Taungya system is the intercropping of forestry trees and agricultural crops during the first five years of establishment of a	The trees prevent soil erosion and provide aerial soil cover and moisture for the crops, while the crops provide

forestry plantation.	nutrients to the growing trees.
----------------------	---------------------------------

Module 5 – GENDER AND PHE

Learning Objectives:

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

- Describe the meaning of power.
- Identify four types of power.
- Describe the roles of men and women (and boys and girls) as well as the tasks associated with these roles related to health, care-giving, family dynamics, and conservation activities

Total Time: 2 hours

Preparation:

- Read this module thoroughly.
- Collect the materials needed:
 - flipchart stand
 - flipchart paper (newsprint/manila paper)
 - colored marker pens
 - masking tape
- Tape together four sheets of flipchart to make one large square. Tape the large square of flipchart paper to the wall.
- Prepare a sheet of flipchart paper with Paul and Flora story (see Trainer’s Resources) and set it aside.
- Make enough copies of the handout of Paul and Flora’s Story and the “The Types of Power in SASA!” for all participants – see Trainer’s Resources.
- Identify a space where participants can easily move (run) around where there is approximately 10 meters between two points. Label on one site (wall or tree) as, “Men/Boys” and the other site (wall or tree) as, “Women/Girls”.

Instruction:

A. Understanding Power (30 minutes)

1. Write the word “power” in the middle of a large square of flipchart paper (**Note:** This square should be prepared beforehand – see Preparation notes).
2. Ask participants to take turns contributing words and expressions that mean “power.”
3. Write all contributions on the flipchart, around the word “power.” Keep this process at the pace of a fast brainstorm. (Contributions could include: strength, ability, authority, violence, force, prestige, control, money, energy, etc.)
4. Thank participants for their contributions.
5. Ask and discuss: “Would you consider power as positive or negative? Why?”
6. Distribute the handout with Paul and Flora’s story and the Types of Power and explain that there are many types of power which can be used positively or negatively.
7. Hang the prepared flipchart with the Paul and Flora story on the wall. (**Note:** prepared beforehand – see Preparation notes.)
8. Read the story on the flipchart. Read “*mmmm*” when you encounter a gap (indicated by a space____) in the text.
9. Ask participants to find a partner. Explain the exercise as follows:
 - a. “Working with your neighbor, try to complete the spaces in the text on the flipchart [using the four words from the handout: ‘within’, ‘over’, ‘with’, ‘to’].”
 - b. Try to fill in one word in each space. The spaces are numbered from one to four.
 - c. “You will have 3 minutes to do this.”
10. Ensure there are no questions. Then ask participants to turn to their neighbor and begin the exercise.
11. After 3 minutes, ask participants to stop the exercise.

12. Ask participants to suggest the words that fill in the four spaces [in Paul and Flora's story]. Discuss [the words] until you reach an agreement.
13. As a group, fill in the missing words on the flipchart, in a different color than the text, if possible. Below the words that should be in each blank space:
 - a. Within
 - b. Over
 - c. With
 - d. To
14. Explain that there are different kinds of power:
 - power within oneself
 - power over someone
 - power with others
 - power to do something.
15. Point out that power can be used positively and negatively.
16. Ask participants to return to their neighbor and discuss what they understand by each of these types of power. Give participants 5 minutes for this discussion.
17. Facilitate a discussion with the entire group about the four types of power, drawing attention to the difference between positive power and negative power. (**Note:** Refer to "The Types of Power in SASA!" handout for detailed information.)
18. Summarize as follows:
 - There are different types of power.
 - Power can be used positively and negatively.
 - We all have power within us, even if at times we don't realize it.
 - Using our power over someone else is an abuse of that person's rights.

- We can join our power with others to give support.
- We all have power to do something, to act.

19. Ask if participants have any questions before proceeding.

B. Men and Women Roles Game (30 minutes)⁸

1. Show participants the two locations where the group activity will take place. (**Note:** Beforehand, identify two spaces about 10 meters apart and label one site as, “Men/Boys” and the other as, “Women/Girls” – see preparation notes).
2. Ask the group to form a circle and read this out loud: “Today we are going to talk about what it means to be a man or a woman.”
3. Divide the participants into two groups: one group with women and another group with men.
4. Show the groups where the “Women/Girls” group is located and where the “Men/Boys” group is located.
5. Select a spot in the middle of the two locations and call this “BOTH MEN/BOYS AND WOMEN/GIRLS”.
6. Explain the following instructions:
 - I am going to say a word.
 - I want you to run to the location where you think that word belongs. For example, if I say the word “mother,” you run to the “WOMEN” location because only women can be mothers. If I say the word “tall” and you think both men and women can be tall, you run to the space for “BOTH MEN/BOYS AND WOMEN/GIRLS.”
7. Read the first word from the Table below.
8. Once everyone runs to a location, ask at least two participants from each side to tell you why they chose that location. Encourage the others to share and debate as well.

⁸ Pathfinder International, GREAT Activity Cards, http://www.pathfinder.org/publications-tools/pdfs/Activity_Cards_ENGLISH_MPOA.pdf.

9. When they finish discussing, repeat the process for the remaining words in the list.

Word List Table

Strong	Financially successful	Catches fish
A good communicator	Leader	Takes care of children
Collects firewood	Cooks	Decision-maker in family
Works the farm	Weak	Loving
Unfaithful	Saves money	Member of Beach management unit
Spends money	Washes clothes	Energy saving stoves
Votes in BMU	Violent	Cares for the farm animals
Goes to school	PHE champion	Manages the money in the household
Fetches water	Owens land	

10. Once you are finished with the word game, ask participants to form a circle and ask these questions. Give them time to respond before moving onto the next question.⁹

- Which of these words were difficult to decide whether they belong to Men/Boys, Women/Girls or both?
- Many people believe that only men can be strong, financially successful, and make decisions for the family. They also believe that only women can do the cooking and be good communicators. How do you feel about these beliefs?
- Can an ideal man be caring and kind? Explain your answer.

⁹ Feel free to ask additional questions to foster further dialogue and discussion surrounding norms and perceptions related to specific roles and/or tasks related to PHE specifically.

- Can an ideal woman be strong and make decisions for the family? Explain your answer.
 - If your younger sister or cousin told you she wants to be a fisherman, what would you say to her?
 - If your wife wanted to join a SACCO, what would you say to her?
 - If your young brother or cousin told you he wants to stay at home and take care of his children, what would you say to him?
11. Explain that sometimes people in our community expect us to do things or be a certain way just because we are male or female. But, you would be surprised by how much both men and women can do the same things. For instance, both men and women can be strong, brave, funny, violent, powerful, and caring. Men and women can be police officers, carpenters, cooks, and sellers in the market.
 12. Go around the circle and tell us one thing that you would like to try that members of your sex do not typically do. For instance, as a man, you may want to try cooking. As a woman, you may want to own land or lead a BMU.
 13. Ask participants what would happen if they actually tried doing what they propose. (**Note:** there may be social norms or group pressure not to do it.)
 14. Ask participants how this new role would define them as a Man or as a Woman.
 15. Ask participants how PHE activities help to address gender roles.

C. Gender in Agriculture (20 minutes)

1. Ask participants what roles men play in agriculture. (**Note:** Draw a line down the middle of the flipchart and record participants' responses on the left hand side of the flipchart.)
2. Ask participants what roles women play in agriculture. (**Note:** Record the participants' responses on the right hand side of the flipchart.)
3. After reviewing the responses on the flipchart, initiate a discussion around the role of gender in agriculture by asking the following questions. (**Note:** Feel free to ask different questions as well.)

- Do the number of activities that women do in agriculture seem more, less or about even with men? Explain.
 - In addition to taking care of the house, caring for the children and other chores, does a woman's role in agriculture seem proportionate to what men are responsible for in the family?
 - What is women's involvement in the management of the farm and decisions on the income from the sale of vegetables and farm produce?
4. Ask why women's roles in agriculture and decision making about resources are not bigger.
 5. Ask how women can become more involved in decision making. (**Note:** List responses on flipchart.)
 6. Ask what local leaders can do to involve more women in decision making. (**Note:** Add responses to the flipchart.)
 7. Ask what PHE programs can do to support women and encourage them to become involved in decision making. (**Note:** Add responses to the flipchart.)
 8. Ask if participants have any questions or comments.

Trainer's Resources

Write on flipchart the Paul and Flora Story

Paul and Flora are husband and wife. They are activists in the community. As individuals, they both have power (a) _____ themselves. Paul was married once before, but his wife left him, because he was using his power (b) _____ her by trying to control everything she did. But in his relationship with Flora, Paul has changed. Now, each of them join power (c) _____ the other as they support each other and any friends trying to have equal and respectful relationships. They believe that relationships between women and men are happiest and safest this way, and that is why they have decided to use their power (d) _____ foster a change in community norms and create a community that encourages non-violence.

Understanding Power Handout

Paul and Flora are husband and wife. They are activists in the community. As individuals, they both have power (a) _____ themselves. Paul was married once before, but his wife left him, because he was using his power (b) _____ her by trying to control everything she did. But in his relationship with Flora, Paul has changed. Now, each of them join power (c) _____ the other as they support each other and any friends trying to have equal and respectful relationships. They believe that relationships between women and men are happiest and safest this way, and that is why they have decided to use their power (d) _____ foster a change in community norms and create a community that encourages non-violence.

Types of Power Handout¹⁰

Power within is the strength that arises from inside ourselves when we recognize the equal ability within all of us to positively influence our own lives and community. By discovering the positive *power within* ourselves, we are compelled to address the negative uses of power that create injustice in our communities.

Power over means the power that one person or group uses to control another person or group. This control might come from direct violence or more indirectly, from the community beliefs and practices that position men as superior to women. Using one's *power over* another is injustice.

Power with means the power felt when two or more people come together to do something that they could not do alone. *Power with* includes joining our power with individuals as well as groups to respond to injustice with positive energy and support.

Power to is the belief, energy and actions that individuals and groups use to create positive change. *Power to* is when individuals proactively work to ensure that all community members enjoy the full spectrum of human rights and are able to achieve their full potential.

¹⁰ From: SASA! Activist Kit. <http://raisingvoices.org/sasa/download-sasa/>

Module 6 – SUSTAINABLE FISHERY MANAGEMENT^{11 12 13 14}

Objectives:

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

- List at least 5 threats to fisheries in Lake Victoria and the impact of these threats on several ecosystems and human well-being.
- Describe the role that BMUs play in sustainable fisheries management.
- Describe the role that central and local government play in sustainable fisheries management.
- Describe the role that local leaders play in sustainable fisheries management.
- Describe the role that fishers play in sustainable fisheries management.
- List at least five benefits of co-management of fisheries.
- Describe three non-fishery interventions that contribute to sustainable fisheries management.

Time: 3 hours and 30 minutes

Preparation

- Read this module thoroughly.
- Collect the materials needed:
 - flipchart stand and flipchart paper
 - marker pens
 - adhesive tape or masking tape

¹¹ Resource: *Training of Beach Management Units: BMU Fisheries Management Manual*. Department of Fisheries Resources, Entebbe, Uganda: Integrated Lake Management. Kampala, Uganda. 2004.

¹² Resource: *Community Trainers Handbook on Sustainable Fisheries and Business Skills: A Field Handbook for Malawi Fisheries Association and Beach Village Committees*. Government of Malawi. Department of Fisheries, Ministry of Agriculture, Irrigation and Water Development. Lilongwe, Malawi. 2012.

¹³ Resource: *Beach Management Units in Fish Quality and Assurance: Learner's Reader Book 1*. Ministry of Gender, Labour and Social Development. Kampala Uganda.

¹⁴ Resource: Sarah Nakaziba, Mayuge District Fisheries Officer (Uganda) November 2014.

- 50 small cards or manila paper to make into cards
- Make sure that the Ecosystem Matrix completed the discussion on ecosystems (Module 4) is posted on the wall where participants can see it.
- Bring sweets for prizes
- Prepare a flipchart of a big tree with three parts: the stem (trunk); up to 20 roots coming from the bottom of the stem (trunk) and five branches on top of the trunk. On the stem (trunk), write: "Co-management of Fisheries". On each branch write one of the following stakeholder roles: BMU; central/local government; local leader; fisher; NGO. Post the flipchart on the wall where participants are able to see it.
- If there are no cards available, make cards out of manila paper, cutting the paper into four cards per sheet. Make about 50 cards.

Instructions

A. Understand PHE Linkages and Threats to Fishery Resources (20 minutes)

1. Review the completed Ecosystem Matrix (from earlier exercise) and ask participants to explain the linkages between human activities and the effects on fisheries.
2. Add any of the following, if not mentioned by participants.
 - People need to eat and sell fish for income. As the human population increases more food will be required. This means that more fish need to be caught or farmed. However, lakes and rivers can only produce a certain amount of fish and cannot keep producing fish for everyone to eat.
 - Fisher folk using under-sized mesh nets and illegal gear and methods, often targeting the capture of immature fish before giving them a chance to breed and reproduce.
 - Fishers fishing in breeding areas, interrupting the breeding process and not allowing the regeneration of fish.
 - Farmers using chemicals and fertilizers on their fields that run off into the lake during the rainy season damaging fish habitats.
 - Farmers cultivating hillsides, sometimes unwisely, causing soil erosion and

sediment run off into the lake, making water shallower and causing loss of adequate fish breed sites

- Cutting trees around lakes and rivers leading to more soil erosion into the lake, reducing the number of shoreline breeding areas
 - Industry pollutants going into the waterways polluting the water for fish and humans
 - Due to fewer fish catches, some fishers result in sand mining, taking sand from the lake and selling for income, disrupting the lake ecosystem
3. Ask participants if these human activities and their effects continue, what will happen to the lake and fisheries resources?
 4. Add any of the following, if not mentioned by participants.
 - Fish stocks may be reduced to a point beyond which they cannot recover.
 - Fewer fish stocks would lead to an increase in rural poverty through loss of employment and income.
 - The loss of locally produced high quality food would give rise to reduced food security and poorer nutrition (especially seen in rural children).
 - Fewer fish stocks would result in lost revenue for local and central governments.
 7. Ask how threats to fisheries affect other ecosystems around Lake Victoria. Refer participants back to the completed Ecosystem matrix posted on the wall.
 8. Review any of the following, if not mentioned by participants:
 - Food insecurity (from fewer fish) can result in malnourished children and the elderly, and subsequently, disease.
 - More people will turn to farming, putting immense pressure on dwindling farmland resources, soil fertility and productivity.
 - Fewer fish increases pressure on forests as more and more people cut trees for farmland, growing food and making charcoal for income.
 - People will expand farming into grasslands, reducing the amount of grassland for pastoral and wild animals.

- People will fish more in valuable wetlands, reducing nature's fisheries breeding grounds, reducing wild animals, reducing number of birds important for the wetland ecosystem.
9. Mention that sustainable fishing management will help to offset the threats to fisheries in Lake Victoria. It will also reduce the results of these threats on other important ecosystems around the lake.

B. Sustainable Fishing Management (15 minutes)

1. Mention that wild fish stocks differ greatly from renewable natural resources in Uganda and Kenya. Unlike agricultural crops, fish are mobile and can move great distances between districts and even between countries.
2. Ask who depends on fishing around Lake Victoria. (**Note:** List responses on flipchart.)
3. Add any of the following, not mentioned by participants:
 - People at the beach, such as the fishers, boat owners, fish traders, processor agents
 - People who handle the fish after it leaves the beach, such as the fish transporters, artisan and industrial processors, fish traders, etc.
 - People who supply those involved with fishing or fish handling, such as suppliers of the fishing gear, boat builders, suppliers of ice, etc.
 - Institutions that depend on the revenues from the fisheries sector, such as the local government and central government.
 - Consumers, such as other fish, birds and people, depend on fish for food.
4. Explain that fish are a shared resource belonging to no one individual, district or country, but upon which people, districts and governments depend. This makes them vulnerable to excessive depletion by the increasing number of people trying to catch and utilize the same finite resources.
5. Break participants into small groups and ask each group to list ways in which fisheries in Lake Victoria can be improved. Allow about 10 minutes for the exercise.

6. Gather the group together and ask a spokesperson from each group to report on the ways to protect fisheries discussed in their group. (**Note:** List responses on flipchart.)
7. Add any of the following to the flipchart, if not already mentioned:
 - Protection of breeding and fish nursery grounds to guard against of destruction of eggs and catching juveniles.
 - Restriction on use of illegal fishing gears and fishing methods to ensure that only the right-sized fish are caught.
 - Registration of boats to control entry into the Lake and, hence, checking over fishing.
 - Monitoring control and surveillance (MCS) to ensure that fisheries regulations are enforced and followed.
 - Promoting closed seasons for fishing.
 - The development of alternatives sources of livelihood for income to reduce pressure on fisheries.
8. Drawing on the participants' responses, point out that sustaining the quality and quantity of fish in Lake Victoria for now and the future involves several types of people working together to provide a multi-faceted approach to sustainable fisheries management.
9. Point out that the people and agencies that have an interest in fisheries resources are called "fisheries stakeholders". They all have an important role to play in protecting the fisheries resources in Lake Victoria for now and for future generations.

C. Role of Beach Management Units in Sustainable Fisheries Management (30 minutes)

1. Mention that a Beach Management Unit (BMU) is an organization of fisherfolk at the beach within a fishing community.
2. Explain that the only legal right of access to fishing resources at gazetted and designated landing sites is through joining a BMU. If a fisher does not join a BMU, he/she will not be able to operate legally in fisheries.

3. Ask participants who should become members of a BMU. (**Note:** List responses on flipchart.)
4. Add any of the following to the flipchart, if not mentioned by participants:
 - Boat crew/baria
 - Boat owners and managers
 - Boat charterers
 - Boat repairers
 - Fish processors, such as small scale fish processors that smoke and dry the fish.
 - Fish mongers/traders
 - Local fish gear makers or repairers
 - Fishing equipment dealers
5. Point out that BMUs must include everyone involved in fisheries at a beach/landing site.
6. Add that BMUs must have at least 30 boats so that they are big enough to plan and raise revenue to operate effectively.
7. Explain that BMUs have the authority for fisheries planning and management. In order to effectively manage shared fisheries resources, BMUs must communicate and cooperate with one another and with local governments.
8. Ask participants what kinds of things BMUs do. (**Note:** List responses on flipchart.)
9. Refer participants to their Participant Handouts and review the roles of BMUs. As needed, correct any statement previously written on the flipchart. (**Note:** if Participant Handouts are not available, below are the roles of BMUs).
 - Keep records of people working in fisheries at the beach as well as number of boats and gears.
 - Work with the government to license fishers and register boats.

- Collect revenue from sources agreed by the BMU Assembly.
- Draft fisheries by-laws.
- Protect young and breeding fish by educating members about illegal fishing, reporting incidences of illegal fishing and trading to police, and/or fisheries officers.
- Conduct fishery operations to fight illegal fishing and bad fishing practices.
- Collect accurate information on fishery issues and share the information with local governments, central government and research institutions.
- Improve safety of the fishers.
- Keep the beach clean (hygiene and sanitation).
- Work to tackle cross-cutting issues such as health (including HIV), woman's affairs, welfare, environment, gender, education, etc.
- Encourage its members to save regularly and use credit wisely.

10. Ask who can explain how BMUs are structured.

11. Add any of the following, if not mentioned: BMUs are composed of:

- A BMU assembly, which includes all the registered BMU members. The BMU Assembly elects the executive committee and other committees, and approves plans and budgets developed by the BMU executive committee.
- A BMU committee consists of 9 to 15 BMU members elected by the BMU Assembly members to perform legal and administrative duties of the BMU. The composition of a BMU committee should be as follows: 30% boat owners; 30% crew; 30% other stakeholder groups; 10% fish mongers/traders. Of this composition, 30% must be women.
- BMU subcommittees are headed by members of the BMU executive committee and are formed depending on the by-laws of the BMU to address cross-cutting issues such as monitoring, control and surveillance, health (including HIV), hygiene and sanitation, environment, women affairs, education, welfare, etc.

12. Ask participants what would be some qualifications for a good BMU leader.
(**Note:** List responses on flipchart.)

13. Add any of the following to the flipchart, if not mentioned by participants:

- Must not be involved in any fishery illegalities.
- Must be a registered member of the BMU.
- Must be 18 years and above and a citizen of the country.
- Cannot be known as corrupt.
- Must be able to read and write.
- Must be willing to share information and mobilize BMU members

14. Ask participants if they have any questions before proceeding.

D. Role of Central and Local Governments in Sustainable Fisheries Management (20 minutes)

1. Explain that the central governments formulate policies, laws and regulations that support sustainable fisheries.

2. Explain some of the laws and regulations regarding fisheries:

- For example in Uganda: The Fish Act, Chapter 197 describes the legal fishing practices of Uganda and how people who illegally fish, will be handled and disciplined.
- Statutory instruments on quality fishing assurance describe how fish should be caught and handled from water to plate.
- Statutory instruments on fisheries licensing describes fee structure for licenses and permits.
- A BMU statute that describes the role of BMUs.

3. Explain that the role of the local government is to implement and enforce the policies, laws and regulations at the local level, working hand in hand with the BMUs.

4. Mention that local governments also:

- sensitize and train BMUs and community members on fisheries management
 - work together with BMUs to discipline illegal fishers by arresting them, taking them to court and destroying the culprits illegal fishing gears
 - work with the BMUs so that after they register and vet the fishers, the local government licenses the fisher
 - lobby for funding for a BMU and helps BMUs write project proposals to implement measures that support the fisher community overall, such as building of latrines, acquiring legal fishing gears, construction of fish handling facilities, etc.
5. Reinforce that that local governments are active and supportive partners of the fishing community.
 6. Ask if participants have any questions before proceeding.

E. Role of Local Leaders in Sustainable Fisheries Management (15 minutes)

1. Ask participants who are the local leaders in fishing communities. (**Note:** List responses on flipchart.)
2. Add any of the following to the flipchart, if not mentioned by participants:
 - Local council 1, 2 and 3
 - Religious leaders (pastors, reverends, imams)
 - Cultural leaders
 - Village chiefs and elders
3. Review each type of local leader and ask how they can help with sustainable fisheries management.
4. Add any of the following, if not mentioned by participants:
 - Local councils 1, 2 and 3 help to ensure that policies and laws are adhered to, support enforcement of policies and laws, approve community by-laws; and supervise BMUs (only local council 1).
 - Church and cultural leaders can help in sensitization of legal fishing

practices and the consequences of illegal fishing as well as mobilize the community around fishery issues.

- Village chiefs and elders also help to sensitize and mobilize the community around:
 - Observance of fishery regulations
 - Adherence to the use of legal gears by fishers.
 - Advocate for not fishing in fish breeding areas
 - Advocate for the protection of the environment and natural resources upon which the community depends.
 - Local leaders are in a position to:
 - be an example in fighting corruption.
 - be members of the BMU.
 - be an adviser within the BMUs and endorse decisions made by the BMU committees.
 - settle disputes among the fishing community.
 - take matters that cannot be solved locally to higher authorities.
5. Ask participants what PHE projects can do to involve more local leaders to help with sustainable fishery management.
 6. Add any of the following, if not mentioned by participants:
 - Make sure that local community leaders know the threats to fisheries.
 - Explain the importance of sustainable fishery management and how it can be achieved.
 - Organize regular meetings with local leaders.
 - Recruit them as “champions of change”.
 7. Ask if participants have any questions before proceeding.

F. Role of Fishers in Sustainable Fisheries Management (30 minutes)

1. Remind participants that fish are a finite resource. When they are gone, there will be no fish for their children to catch for food or income.
2. Point out that at the rate of population growth around the lake and the level of illegal fishing practices, the fish supply could dwindle quickly.
3. Add that by fishing in breeding grounds and catching juvenile fish, fishers are not allowing fish to replenish, essentially killing off the community's supply of food and income.
4. Ask what fishers can do to help to sustain fishery resources in the lake. (**Note:** List response on flipchart.)
5. Explain that we are going to discuss in depth the issues raised during this session.

Sustainable Fishing Practices

1. Mention that since most fishing is done by nets, fishers need to use legal fish nets so that they only catch mature fish, allowing the younger fish to grow, mature and breed.
2. Ask who knows the legal mesh size of fish net for catching Nile perch.
3. Have participants correct each other if the mesh size provided is wrong. Give the first person to provide the correct answer a prize (such as a piece of candy/chocolate, pen).
4. Explain that the legal mesh size of fish net for catching Nile perch is 6 inches and above, if not mentioned by participants.
5. Ask who knows the legal mesh size of fish net for catching Tilapia.
6. Have participants correct each other if the legal mesh size provided is wrong. Give the first person to provide the correct answer a prize (such as a piece of candy/chocolate, pen).
7. Explain that the legal mesh size of fish net for catching Tilapia is 5 inches and above, if not mentioned by participants.
8. Ask who knows the legal mesh size of fish net for catching Omena/Daga (mukene).

9. Have participants correct each other if the legal mesh size provided is wrong. Give the first person to provide the correct answer a prize (such as a piece of candy/chocolate, pen).
10. Explain that the legal mesh size of fish net for catching Omena/Dagaa (mukene) is 5 millimeters and above, if not mentioned by participants.
11. Mention that for fishing with hooks, number 9 hook and below is recommended for catching Nile Perch and Tilapia.
12. Ask participants what are illegal fishing practices in their community.
13. Add any of the following, if not mentioned by participants:
 - Fishing without a valid fishing license or permit.
 - Fishing in breeding ground areas.
 - Using chemicals, lanterns and other harmful methods to catch fish.
 - Using fishing boats less than 28 feet long.
14. Ask participants how they can encourage fishers to not engage in these illegal fishing practices.
15. Ask how some of the suggestions presented can be enforced in the fishing community.
16. Mention that BMU by-laws and government laws help to enforce some the actions proposed by participants. This is why it is so important to work together with BMUs and local governments.
17. Add that participants can also join BMUs or lobby within their own BMU to advocate for by laws that enforce sustainable fishing practices.
18. Ask if participants have any questions or comments.

G. Co-management or Participatory Fisheries Management (40 minutes)

1. Explain that resources in and around the Lake should be co-managed together with all of the stakeholders responsible for the management of fisheries.

2. Add that BMUs, Fishery Officers staff from local and Central governments, fishers, and local leaders are all involved in the co-management of the Lake's resources.
3. Mention that together, they can:
 - Plan together
 - Work together
 - Share information
 - Work out solutions
 - Educate the community on fishing bye-laws, sanitation issues, etc.
4. Post the illustration of a big tree on the wall where participants can see it. (**Note:** Prepare the illustration of the tree beforehand – see preparation notes.)
5. Divide participants into five small groups. Give one group the role of the BMU, the second group the role of the local/central government, the third group the role of fisher folk, the fourth group the role of local leaders, and the 5th group the role of an NGO implementing a PHE program.
6. Distribute 10 cards to each group.
7. Ask each group to decide on four “root causes” that lead to the need for co-management of fishery resources on Lake Victoria. Write one cause per card, not to exceed four cards per small group.
8. Explain that each group should agree on only four root causes.
9. Allow about 5 to 10 minutes for the small groups to identify and write the root causes on their cards.
10. Ask each group to tape their cards to the roots of the big tree drawn on the flipchart.
11. Have participants get together in their small groups again and identify “positive effects” that their role has on co-management of fisheries.
12. Ask participants to write each “positive effect” on a separate card. Point out that they can use as few or as many cards as they have. (**Note:** participants will only have 6 cards left.)

13. Allow about 10 minutes for participants to finish the activity.
14. Ask participants to tape their cards to the branch of the big tree that has the name of their role on it. The cards should be placed like leaves from the branch.
15. While participants are at the “tree”, ask a representative from each group to describe the root causes they put at the roots of the tree, then the “positive effects” of their role hanging from their branch.
16. Once all small groups have discussed the root causes and effects ask them to take a seat.
17. Mention that the completed tree represents all the positive effects that co-management of fisheries can have on the sustainable management of Lake Victoria, its resources and the health of the community.
18. Add that by working together the community can achieve a lot and protect the lake and its resources for now and future generations.

H. Non-fishery interventions that Contribute to Sustainable Fisheries (20 minutes)

Agroforestry

1. Explain that the community is losing trees at a rapid rate.
2. Ask participants what is the impact of fewer trees to Lake Victoria and its fishing resources.
3. Add any of the following, if not mentioned by participants:
 - Fewer trees result in water, soil and nutrient run-off into the lake.
 - The soil run-off causes siltation which lowers the water level of the lake shore line and disrupts important fish breeding sites.
 - The rich nutrients in the soil siltation also contribute to the over growth of water hyacinth and hippo grass.
 - Soil and water run-off also include chemical pollutants, which destroys living organisms in the lake which are food for the fish, kills fish and contaminates drinking water for humans.

4. Explain that planting trees around the lake will help to prevent soil and pollution run-off. The trees also serve as windbreakers.
5. Refer participants back to the discussion on agroforestry from the previous session.

Alternative Livelihoods

1. Mention that fisher folk can also engage in alternative livelihoods to earn extra income and take the pressure off of fishing.
2. Explain that even modest increases in income are associated with meaningful increases in fish consumption and food security.¹⁵
3. Point out that there are several alternative livelihoods that PHE programs in Kenya and Uganda are promoting. These include:
 - Cage fish farming
 - Bee keeping – to create honey for income
 - Small farmyard animal rearing (goats, chickens)
 - Vegetable gardens – for food and income
 - Plant and tree nurseries – for income
 - Production of soap and baking buns for income generation
 - Handcraft making – mats, baskets(for income)
4. Explain that we will discuss alternative livelihoods in the next session.

Healthy Timing and Spacing of Pregnancies

1. Mention that based on 2011 population statistics, Uganda's population will double by 2031.¹⁶
2. Point out that while the population is increasing, the natural resources are not, and, in fact, they are decreasing.

¹⁵ Fiorella, K.J et al. Fishing for food? Analyzing links between fishing livelihoods and food security around Lake Victoria, Kenya. Springer Science and Business Media Dordrecht and International Society for Plant Pathology. 2014

¹⁶ Population Reference Bureau 2011 <http://www.prb.org/Publications/Datasheets/2011/world-population-data-sheet/uganda.aspx>

3. Ask participants what impact population growth will have on natural resources around and in the Lake.
4. Explain that just like we are planning our fisheries resources, people can plan their families.
5. Mention that juvenile fish need time to grow and mature and so do our children. Thus, healthy timing and spacing of children is important for the health of children and the family.
6. Add that families have the right to access health care and family planning services that will help them plan their families.
7. Explain that we will learn more about family planning later in the training. But, it should be seen as another strategy for planning resources around Lake Victoria.

Water, Hygiene and Sanitation

1. Mention that human waste, rubbish, soap used for washing clothes and other items, as well as bathing run-off kill the food that fish depend on and contaminate the water for human consumption.
2. Ask participants what health and sanitation practices could contribute to reduced lake pollution.
3. Review any of the following, if not mentioned by participants:
 - Use pit latrines built no closer than 30 meters from the lake to keep the lake clean.
 - Build rubbish pits to reduce disease for humans, animals and fish. The rubbish pits should be no closer than 30 meters from the lake.
 - Separate plastic from rubbish and burn the plastic. Plastic and polythene are very bad for the lake and land.
 - Women should carry water to bathe or wash clothes at home – not in the lake.
 - Do not wash cars and other things in the Lake. Instead, get buckets of water from the lake to wash items away from the Lake.

4. Ask participants how they can encourage community members to practice better water, hygiene and sanitation practices around the Lake. (**Note:** List responses on flipchart.)
5. Mention that more information on water, hygiene and sanitation will be provided in the next session.
6. Ask if they have any questions or comments before proceeding.

I. Gender in Sustainable Fisheries (15 minutes)

1. Ask participants what roles men play in fisheries. (**Note:** Draw a line down the middle of the flipchart and record participants' responses on the left hand side of the flipchart.)
2. Ask participants what roles women play in fisheries. (**Note:** Record the participants' responses on the right hand side of the flipchart.)
3. After reviewing the responses on the flipchart, initiate a discussion around the role of gender in fisheries by asking the following questions. (**Note:** Feel free to ask different questions as well.)
 - Do the number of activities that women do in fisheries seem more, less or about even with men? Explain.
 - Being very honest, how “visible” are women’s role in fisheries? Explain.
 - What is women’s involvement in fisheries management and decision making like in your community?
4. Ask why women’s roles in fisheries management and decision making are not bigger.
5. Ask how women can become more involved in the co-management of the fisheries resources. (**Note:** List responses on flipchart.)
6. Ask what local governments can do to encourage more women to become involved in decision making. (**Note:** Add responses to the flipchart.)
7. Ask what local leaders can do to involve more women in decision making. (**Note:** Add responses to the flipchart.)
8. Conclude the session by mentioning ways that women’s roles can be enhanced, if they have not been mentioned by participants:

- Women can be encouraged to actively participate in women's groups and BMUs.
 - Women can be well represented in decision making processes, training and other development activities.
 - Women can be given more access to fisheries resources
 - Women can be taught alternative livelihoods to increase their economic and social empowerment.
9. Ask if participants have any questions or comments.

Module 7 – ALTERNATIVE LIVELIHOODS¹⁷, SACCOs¹⁸ and ENERGY SAVING STOVES¹⁹

Learning Objectives

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

- Describe at least 5 alternative livelihoods available to the community
- Describe the function of a SACCO
- Describe at least 5 benefits to joining a SACCO
- Describe at least 5 advantages of energy saving stoves to the family and environment.

Total Time: 1 hour, 15 minutes

Preparation:

- Read module thoroughly.
- Collect materials needed:
 - flipchart stand
 - flipchart paper
 - colored markers
 - scissors
 - masking tape

¹⁷ Resource: Sarah Nakaziba, Mayuge District Fisheries Officer

¹⁸ Resource: SACCO Development Training Report. Community Fund Limited & Ecological Christian Organization (ECO). Kampala, Uganda. September 2014

¹⁹ Resource: A Construction Manual for Energy Saving House Stoves (Rocket Lorena and Shielded Fires Stoves). Ecological Christian Organization. Kampala. Uganda.

Instructions:

A. Alternative Livelihoods (20 minutes)

1. Ask participants why it is important to have several sources of income.
2. Add any of the following, if not mentioned by participants:
 - Additional income can provide extra money to the family for school fees, food and medicines.
 - Having another source of income takes pressure off the use of natural resources, such as fish and farmland, for income.
 - Having another source of income provides a safety-net for when income from agriculture and/or fisheries is lower than expected.
 - For BMUs, another source of income would help them to raise funding to implement the sustainable fisheries practices they are promoting.
 - For women, having another source of income can give them more economic and social power to make decisions about the family.
3. Explain that a variety of PHE programs as well as natural resource management projects promote alternative livelihoods as a source of additional income for families.
4. Point out that the alternative livelihood activities in fishing and farming communities should be environmentally sustainable and suitable to the community and individuals.
5. Ask participants what are some alternative sources of income in their community. (**Note:** List responses on flipchart.)
6. Add to flipchart some sources of alternative income offered by PHE programs in the community, if not mentioned by participants:
 - Apiculture (bee keeping)
 - Small farmyard animal rearing (goats, chickens)
 - Vegetable gardens
 - Tree nurseries

- Soap making, weaving table cloths and other crafts
 - Bread baking
 - Cage fishing
7. Mention that participants and the community can get advice on how to develop alternative livelihoods from the following people:
 - For beekeeping, creating tree nurseries, and rearing of small animals and farming contact the local agricultural extension agent/worker and cluster heads.
 - For cage fishing contact the local Fisheries Department or Fisheries Officer
 - For making soap and table cloths, tree nurseries, beekeeping, and other livelihoods contact women's groups and cluster heads trained on alternative livelihoods.
 8. Ask what roles men play in adopting alternative livelihoods. (**Note:** Draw a line down the middle of the flipchart and record participants' responses on the left hand side of the flipchart.)
 9. Ask what roles women play in adopting alternative livelihoods. (**Note:** Draw a line down the middle of the flipchart and record participants' responses on the right hand side of the flipchart.)
 10. After reviewing the responses on the flipchart, initiate a discussion around the role of gender and alternative livelihoods by asking the following questions. (**Note:** Feel free to ask different questions as well.)
 - Are more women or more men most likely to adopt an alternative livelihood to supplement a family's income?
 - Why?
 - Who makes decisions about how the money earned from alternative livelihoods are used within the family?
 11. Ask what PHE programs can do to ensure gender equality in alternative livelihood programs.
 12. Ask if participants have any questions or comments before proceeding.

B. Savings and Credit Cooperative Organizations (SACCOs) (35 minutes)

1. Explain that saving is defined as setting aside part of one's income for the future.
2. Ask participants if the people in their community save money. If not, why?
3. Add any of the following, if not mentioned by participants:
 - lack of a savings culture
 - irresponsible behavior
 - unexpected expenses such as funerals, medical emergencies, extra marriage expenses
 - migratory nature of fishing communities
4. Ask participants what is the importance of saving money.
5. Add that families should save money so that they are able to:
 - educate their children
 - have money for medicine and health care
 - start a new business
 - to construct a house
 - purchase land
 - purchase farm animals
 - have money in case of an emergency
6. Mention that in East Africa, there are savings and credit cooperatives organizations (SACCOs) that are:
 - community owned, community initiated, community-based financial organizations
 - organized and financed by their members
 - utilized and managed by its members

7. Explain that the purpose of these SACCOs is to provide members with affordable financial services to improve their economic and social wellbeing through generating income and asset accumulation.
8. Add that voluntary savings mobilization is a critical tool that SACCOs use to meet this purpose, which is equally or more important than the provision of credit services.
9. Explain that SACCOs have:
 - Savings mobilization services as its primary ingredient of sources fund.
 - Internally-generated savings as an independent supply of funds.
 - Sustainable supply of funds that is invested in the local community/members.
 - Members as savers who provide funds, and as borrowers who utilize funds, form the basis for a self-sufficient and balanced financial intermediation.
8. Review some of SACCO's core activities:
 - savings mobilization
 - savings management
 - training members
 - credit provision at affordable costs.
9. Point out that it is not in the mandate of SACCOs to do business that competes with its members or diverts focus from providing financial services to members.
10. Explain how to become a member of a local SACCO:
 - A person must buy at least one share in a SACCO. Bylaws of the particular SACCO determine from time to time the minimum share value for each member to pay.
 - Credit union/SACCO members purchase a share in the SACCO whenever they join. With the purchase of shares, members gain access to the services provided by the SACCO, which includes savings, credit, training, insurance etc.

- The law allows each member one vote at the Annual General Meeting (AGM) despite the number and amount shares a member has purchased in the SACCO.

11. Explain how members benefit from its SACCO services:

- Members will be treated equally.
- Members can access fully their Savings and Deposits.
- Members can borrow if they meet the requirements.
- Members can get training services and guidance.

12. Point out that members must benefit from the financial services provided by the SACCO. If the services provided by the SACCO don't benefit or meet members' needs, then there is no need for its existence.

13. Explain that community members can talk to BMUs, Women's groups, Model Households, VHTs/CHWs on how to join or form a SACCO in their community, and about how to save.

14. Ask participants who are more likely to avail themselves of SACCOs, and why.

15. If more men avail themselves of SACCOs, ask how more women can be encouraged to join.

16. Ask who most benefits from SACCOs membership, men, women and/or the family.

17. Ask who in the family makes the decisions about saving money and how the saved money is spent.

18. Ask how PHE programs can ensure gender equality when it comes to participating in SACCOs and making decisions about money within the family. (**Note:** List responses on flipchart.)

19. Ask participants if they have questions or comments before proceeding.

C. Understanding Energy - Savings Stoves (20 minutes)

1. Mention that trees are being cut down to supply the family with firewood for cooking.

2. Ask participants what are the negative impacts of the loss of trees to several ecosystems. Probe to get the impact on farmland, grassland, lakes and fisheries.
3. Add any of the following, if not mentioned by participants:
 - Loss of trees contributes to soil erosion and nutrient run-off from farmlands, depleting soil fertility and reducing crop yield.
 - The soil and nutrient run off usually goes into streams, rivers and Lake Victoria, causing siltation (soil build up), which invades fish breeding areas and contributes to the overgrowth of hippo grass and water hyacinth.
 - Loss of trees reduces valuable nutrients and moisture in the soil, thus, reducing crop yields.
 - Loss of trees decreases aerial soil cover, causing land and crops to dry out more quickly.
 - Loss of trees decreases the chance that there will be trees for future generations, thus reducing food and income for your children and grandchildren.
4. Mention that one of the most successful strategies to sustainably contribute to the reduction of the harmful effects of cutting down many trees is the use of energy-efficient technologies, such as energy-saving stoves.
5. Add that a simple household energy-saving stove doubles the energy efficiency of cooking.
6. Mention that these improved stoves help families to have firewood savings of 50 to 60 percent when compared to the traditional open 3 stone fire.
7. Explain that one day's worth of firewood for a traditional stone fire lasts two to three days when using an energy-efficient stove.
8. Ask participants if they own or have used an energy-saving stove. If so, ask what their experience was like.
9. Explain that there are several types of energy-saving stoves, but the most common one used for PHE programs in Uganda and Kenya is the rocket stove.

10. Ask participants what might be the benefits of using energy-saving stoves.
(**Note:** List responses on flipchart.)

11. Add any of the following, if not mentioned by participants:

- **Saves money:** The household rocket stove uses less firewood than a traditional 3-stone open fire. The amount of wood needed for a traditional stove in one day, lasts 2 to 3 days with a rocket stove.
- **Cooks faster:** The rocket stove fire produces more heat than a traditional 3 stone fire stove, thus cooking food much more quickly.
- **Less smoke:** The rocket stove produces less smoke than a traditional stove. This reduces the amount of respiratory infections among adults and children. This reduces the time a woman or other care giver needs to spend going to a health care facility as well as the money spent on medicine.
- **Easy to use:** Once lit, the rocket stove fire will not go out unless the user stops adding firewood. There is no need to blow at the flames to keep the fire burning as with a traditional 3-stone stove.
- **Safe to use:** Rocket stoves are safer to use because the fire is shielded. There is less likelihood of accidents or burns to the user and children.
- **Affordable:** Rocket stoves are constructed using locally available materials, such as anthill soil or clay for the body and grass or sawdust for insulation.
- **Heat retention:** These stoves retain heat for a significant period of time which enhances the efficiency during simmering. And, they can be used as food warmers.
- **Environment friendly:** These stoves use less firewood and therefore contribute to the reduction in the deforestation rate. The rocket stoves are also less pollutant because of their nearly smokeless operation.

12. Ask how the use of energy-saving stoves benefits women and girls in the family.

13. Ask how the use of energy-saving stoves benefits men in the family.

14. If not mentioned, explain that because the rocket stoves requires less wood and cooking time, the women's and girls' times are freed up to pursue studies, alternative livelihoods or other income generating activities.
15. Explain that community members can learn how to build and use energy-saving stoves from HOPE-LVB Model Households.
16. Ask participants if they have any questions before proceeding to the next session on water, sanitation and hygiene.

Module 8 – WATER, SANITATION and HYGIENE (WASH)²⁰

Learning objectives:

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

- Describe the contamination cycle.
- Describe 3 key water, sanitation and hygiene practices that are the most effective in breaking the contamination cycle.
- Describe at least 4 benefits of key water, hygiene and sanitation practices.
- Demonstrate correct hand washing.
- Describe how to make safe and clean drinking water
- Describe three effective ways to safely dispose of human and animal feces.

Total Time: 1 hour and 45 minutes

Preparation:

- Read this module thoroughly.
- Collect materials needed:
 - flipchart stand and flipchart paper
 - colored markers
 - masking tape
 - a jug of water and a basin for washing hands
 - soap
 - three plastic water bottles filled with potable (safe, drinkable) water

²⁰ Adapted from: Water, Sanitation, and Hygiene Improvement Training Package for the Prevention of Diarrheal Disease: Guide for Training Outreach Workers. Hygiene Improvement Project (HIP). Academy of Educational Development. Washington, DC. 2009.

- salt
 - feces or millet/sorghum to make fake feces.
 - blade of grass or a piece of thread or string
 - narrow-necked container with a tight-fitting lid, preferably one with a spigot (i.e. a jerry can).
 - long handled ladle
- Add enough salt to one of the water bottles to make the water taste very salty.
 - Prepare a flipchart with the Contamination Cycle on it – see Trainer’s Resources for an example
 - Prepare a flipchart with the Assessment of Fecal Disposal table – see Trainer’s Resources for an example.
 - Prepare a flipchart of the Sanitation Ladder – see Trainer’s Resources for an example

Instructions:

A. Understanding Diseases and PHE Linkages (15 minutes)

1. Ask participants if their children or children in their community ever get diarrhea. If so, how frequently?
2. Ask if participants are aware of any children in their community who have died from diarrhea/dehydration. If so, tell us about it.
3. Explain that diarrhea is one of the biggest killers of children under five worldwide. It is also a big contributor to the premature death of people with compromised immune systems, such as the elderly and people with HIV/AIDs.
4. Add that water and food contaminated with feces can cause diseases, such as cholera, typhoid, hepatitis A, and rotavirus, which can lead to death among both children and adults.
5. Mention that diarrhea affects children’s and the elderly’s nutritional status as well as increases a mothers’ time away from work to care for the child/ill person, school absences, and household expenses for treatment.

6. Ask participants how germs that cause diarrhea enter the body.
7. Add any of the following, if not mentioned by participants. Explain that these are the “5 F’s”:
 - Fluids (through contaminated water)
 - Fields (touching anything that has outdoor feces on it)
 - Flies (transmitting disease)
 - Fingers (dirty hands to mouth)
 - Food (infected by fluids, flies, or fingers and then ingested)
8. Explain that the majority of all cases of diarrhea are caused by:
 - Poor hygiene
 - Unclean water
 - Inadequate sanitation
9. Ask how poor sanitation practices that cause diarrhea and illnesses affect families and ecosystems.
10. Add any of the following, if not mentioned by participants:
 - Poor sanitation can contaminate food and water with typhoid, cholera and other food borne diseases, causing illness and death.
 - When people defecate in the open or near the lake, the feces runs into the lake contaminating the water for people and animals. When people drink contaminated lake water they can get diarrhea, cholera, and typhoid
 - Illnesses take mothers and fathers away from their farming and/or fisheries activities, reducing the potential for income generation.
 - Diarrhea among family members reduces the positive impact of a healthy diet.

B. The Contamination Cycle (15 minutes)

1. Post the flipchart of the Contamination Cycle on the wall where participants can see it. (**Note:** The Contamination Cycle should be prepared beforehand – see preparation notes and Trainer’s Resources.)
2. Review the contamination cycle with participants.
3. Ask participants what kind of water sanitation and hygiene practices can interrupt the contamination cycle.
4. If not mentioned, review the three **key** sanitation and hygiene practices which have the greatest potential for preventing diarrhea and water borne diseases:
 - Safe drinking water
 - Correct hand washing
 - Safe disposal of feces
5. Ask participants what are some benefits of good sanitation and hygiene practices to families, food production and income generation.
6. Add any of the following, if not mentioned by participants
 - **Healthy Children:** Improved WASH practices lead to less diarrhea and childhood illness and better child survival.
 - **HIV/AIDS:** Improved WASH practices are critical for persons living with HIV/AIDS because they live at high risk of contracting diarrhea, which can cause or contribute to their premature death.
 - **Food Production:** Diarrhea among persons working in fisheries and agriculture reduces their availability to work, their productivity and their income, sometimes at critical harvest or planting times. Also, handling fish with dirty hands or when sick with diarrhea, vomiting or fever, contaminates the fish and increases spoilage and loses of already smaller fish catches.
 - **Income generation:** As in the case of food production, diarrhea in a family reduces the amount of time available to work, increases contamination of fish, resulting in loss of income. Diarrhea also causes a family to buy medicine, thus taking from their income.

7. Explain that we are going to discuss three key water, sanitation and hygiene practices that have the most impact on reducing diarrhea and illness in the community:

C. Making Water Clean and Safe to Drink (30 minutes)

Exercise 1: Salty water: Clear but Unpleasant

1. Show two bottles of water; one with no salt and the other with salt (**Note:** prepare bottle of salty water beforehand – see preparation notes).
2. Ask for two volunteers to come forward and face the other participants.
3. Show them the two bottles at a time (the salty water and non-salty water) and ask them to raise their hands if they think the water in both bottles is “safe” to drink. Ask why.
4. Pour some of the non-salty water into two glasses or cups and ask the two volunteers to drink the water.
5. Have participants to observe the volunteers’ faces.
6. Then, pour some of the salty water into two glasses or cups and ask the two volunteers to drink the water.
7. Have participants observe the volunteers’ faces.
8. Ask the volunteers what they thought of the second glass of water.
9. Explain that the last glass of water was clear but very salty.
10. Reinforce the point that although water may appear clear, clean, and safe to drink, it can contain things that you cannot see that can make people ill.

Exercise 2: Clear but Contaminated

1. Tell participants that you are going to continue to show ways that water can be contaminated but still not look harmful.
2. Ask for a volunteer to come forward and face everyone.
3. Place the feces or fake feces made from millet or sorghum where everyone can see it. (**Note:** prepare the feces or fake feces beforehand – see preparation notes)

4. Hold one end of a blade of grass, thread or piece of string in each hand and run it through the feces (or fake feces).
5. Dip the contaminated blade of grass, thread or string in the remaining bottle of clean water and remove it.
6. Ask the volunteer to take a drink of the water – only to see their reaction. **DO NOT ALLOW ANYONE TO CONSUME THE WATER.**
7. Conduct a discussion on the volunteer's and group's reaction to the contaminated water.
8. Stress that although the water looks clear, it is, in fact, contaminated with feces.
9. Explain that this is the reality in many of our communities – the water looks clean and clear but it has feces in it. These feces, especially human feces, are the main cause of diarrhea and other water borne diseases in the community.
10. Lead a discussion about the local sources of water. Use any of these questions to initiate the discussion:
 - Where do most people in the community get their water?
 - Could there be contamination even if the water appears “clear and clean”
 - What might be some sources of contamination in the community?
11. Answer any questions or comments before proceeding.

Making water safe to drink

1. Introduce safe drinking water by asking the following questions and initiate a discussion around participants' response.
 - Where do most people get their water?
 - How do they carry their water from the source?
 - How do most people store their water at home?
 - Do people treat the water in any way before drinking it? If so, how?

- How many different ways do people treat their water? (e.g. bleach, filters, boiling, etc.)
2. Ask participants what kind of safe water practices can reduce the incidence of diarrhea and other water borne diseases.
 3. Add any of the following, if not mentioned by participants:
 - Treat drinking water by boiling. Or, use water purification tablets or commercial water filters, if available.
 - Transport the clean drinking water properly.
 - Store the drinking water safely.
 - Retrieve and serve the clean drinking water in ways that avoid re-contaminating it.
 4. Explain that boiling water is the best method for killing the germs that cause diarrhea and illnesses. Water purification tablets and commercial water filters, especially if used together, are also effective for killing most of the germs that cause diarrhea.²¹
 5. Mention that boiling water is one of the most commonly used methods to make safe drinking water, especially when water purification tablets are not available and/or commercial water filters are not affordable.
 6. Ask participants how do they normally boil water, using these questions:
(**Note:** Record responses on flipchart.)
 - Where is the water boiled?
 - What do you boil the water in?
 - How long do they boil the water?
 - Where do they store the boiled water?
 - How is the boiled water served?
 7. Discuss the key points on how to boil water.
 - a) Place the water in a teapot or pot.

²¹ *A Guide to Drinking Water Treatment and Sanitation for Backcountry and Travel Use*. Centers for Disease Control and Preventions. Atlanta, Georgia. 2009.

- b) Heat the water until large bubbles appear (a rolling boil). Boil for 1 minute.
 - c) Cover the water and let it cool
8. Ask where is the best place to store clean, boiled water
 9. If not mentioned by participants, explain that boiled water should be placed in a secure storage container, preferably one with a narrow neck, tight fitting lid, and a spigot, such as a jerry can, to avoid recontamination of the water.
 10. Show participants a narrow-necked container with a tight-fitting lid (e.g. a jerry can). Discuss where the community can purchase or obtain such containers, especially ones with a spigot, if possible.
 11. Explain that using such a container prevents hands, dippers or cups from touching the water and re-contaminating it.
 12. Ask participants how long boiled water can be stored.
 13. Explain the following, if not mentioned by participants:
 - If stored in a narrow-necked container with a tight-fitting lid, the water can be stored for a week.
 - If not stored in a narrow-necked container with a tight fitting lid, boiled water can only be stored for 24 hours.
 14. Point out that if the container where the boiled water is stored does not have a spigot, then pour the water into the clean drinking container or dip a long-handled ladle (scoop) into the water, being careful that the person's hand does not touch the water.
 15. Talk about ways that are less "ideal" for storing boiled water e.g. in uncovered wide-mouth pots, in clay pots with a piece of cloth covering the open.
 16. Explain that germs grow on wet surfaces; therefore it is important to thoroughly dry the dishes, glasses and utensils that a family uses to eat.
 17. Add that families can dry and sanitize their dishes by building a drying rack outside the house, and placing the dishes, glasses and utensils on it to dry in the sun.

18. Mention that the sun is kind of a disinfectant, and is optimal for drying dishes, as opposed to using a dirty (and possibly damp) dish towel. This helps to disrupt the contamination cycle.

19. Summarize the following points:

- Boiling is the safest way to make water safe to drink.
- Boiled water needs to be stored and served properly.
- Care needs to be taken not to re-contaminate the boiled water.
- Dry dishes in the sun on a drying rack built outside the house.

20. Answer any questions or comments before proceeding.

D. Correct Hand Washing (20 minutes)

1. Invite a volunteer to the front of the room without explaining what you are going to do.
2. Stand next to the volunteer so that everyone can see you and the volunteer.
3. Simulate a violent coughing fit, covering your mouth with your hand. Then offer that same hand to the volunteer for a handshake or greeting.
4. Ask participants what they saw. Ask what they think might happen when you shake the volunteer's hand. Listen carefully to their answers.
5. Explain that hands can look and seem clean but still have contagious germs on them, even if you cannot see them.
6. Begin the discussion on hand washing by asking participants about their own hand washing practices
7. Ask the following questions and initiate a discussion around participants' response.
 - How often do you wash their hands?
 - When are you most likely to wash your hands?
 - What do you use to wash your hands?

- Do you have soap for washing hands in your house? Do community members usually have soap for washing hand in their homes?
 - What do people do when soap is not available?
 - What do people do when water is scarce?
8. Bring out a water jug, wash bowl and soap.
 9. Ask for a volunteer to demonstrate how to properly wash hands.
 10. Ask participants if they have anything to add.
 11. Add any of the following, if not demonstrated by the volunteer or mentioned by participants.
 - a) Wet the hands and lather them with soap
 - b) Rub the hands and fingers together well three times (for about 20 seconds)
 - c) Rinse the hands with water until all of the soap or cleansing agent is gone.
 - d) Air dry the hands or dry them with a clean, dry towel or paper.
 - e) Wash your hands at key times: after defecation or contact with feces, before eating and before preparing food.
 12. Ask what families can use if they do not have soap.
 13. If not mentioned, explain that an abrasive substance, such as ash or sand can be used if there is no soap – as long as the person washes and rinses thoroughly with water.
 14. Mention that it is not necessary to wash hands with treated water as long as soap or an abrasive substance and water are used.
 15. Initiate a discussion about when people in the community normally wash their hands with soap or ash, using any of the following questions:
 - How many times a day do they wash their hands?
 - Do they help their children wash their hands?
 - Do many people wash with water only?

16. Ask participants what are the critical times for washing hands.

17. Add any of the following, if not mentioned by participants:

- Before preparing any type of food
- Before eating food
- After going to the latrine or bathroom
- After contact with any feces, human (such as babies) or animal
- After returning from the field.
- Before breastfeeding and/or feeding an infant.

18. In order to overcome some of the barriers to proper hand washing, hand washing should be made easy. Hand washing facilities with water and soap should be kept in key places, such as:

- In the kitchen to encourage hand washing before food preparation.
- Around eating areas.
- Beside the latrine, so that people exiting the latrine can wash their hands immediately. Explain that an agricultural extension agent or health worker can show a family how to make a tippy tap which can be built next to the latrine.
- Places where fish is processed, so that fish processors have clean hands when handling fish.

19. Answer any questions or comments before proceeding to safe drinking water.

E. Safe disposal of Feces (20 minutes)

1. Explain that diseases such as hepatitis A, cholera, typhoid, amoebic dysentery, rotavirus and polio are transmitted via the fecal oral route – that is fecal matter entering the body through the mouth.
2. Ask participants how feces are disposed of in their community.
3. Post the flipchart of the Assessment of Feces Disposal on the wall (**Note:** prepare flipchart beforehand – see preparation notes).

4. Ask participants to go to the flipchart and for each of the 7 questions, put an “x” in the column that best represents what they observe in the community.
5. Allow about 5 minutes for participants to write on the flipchart. Once participants are done, ask them to take a seat.
6. Point out that some of the answers are positive actions to properly dispose of feces, and others are negative actions to dispose of feces which can put people at risk of contamination.
7. Review the flipchart and for each question point out how many people are still disposing of feces incorrectly.
8. Ask participants if they think that children’s feces or adult feces have more germs that cause diarrhea.
9. If not mentioned, explain that children’s feces have more germs in them and are, therefore, more dangerous.
10. Ask participants what happens when people defecate in the open. Probe using the following questions:
 - What is the perception of someone who defecates in open areas?
 - Where do the feces go?
 - What happens to the feces when it rains?
 - How do people feel when stepping in feces?
12. Emphasize that all feces are potentially dangerous and need to be treated with care because all feces contain germs that can cause illnesses.
13. Explain that human feces should be deposited in a latrine or toilet where it cannot be transported by the following routes:
 - Water
 - Dirt
 - Food
 - Flies
 - Hands

14. Ask participants what kind of sanitation practices can reduce people's risk of being contaminated with feces.
15. Emphasize the following, if not mentioned by participants:
 - Do not defecate in the open or in the lake.
 - Use pit latrines or toilets
17. Post the flipchart of the Sanitation Ladder.
18. Ask participants to break into 8 small groups. Assign a different sanitation method from the Sanitation Ladder to each group.
19. Ask participants to brainstorm the pros, cons and obstacles to the feces disposal method they were assigned.
20. Allow about 5 to 7 minutes for the exercise.
21. Ask each group to report on the pros, cons and obstacles to using the method they were assigned.
22. Explain that each step on the ladder has advantages and disadvantages, but it is important to move up the ladder in order to isolate feces and their contamination potential.
23. Emphasize that all feces disposal methods should be placed at least 200 meters from a stream, river or lake.
24. Ask participants if they handle animal feces.
25. Add that the best way to dispose of animal manure is to collect it every day, or every several days if animals are kept in a sheltered area, and compost it immediately. The compost can be used as organic fertilizer for annual and perennial crops.
26. Reinforce that correct hand washing, clean drinking water and safe disposal of feces are the three most effective ways of breaking the contamination cycle and reducing the incidence of diarrhea and illnesses caused by feces contamination.
27. Ask participants if they have any questions or comments before proceeding to the next session.

Trainer's Resources

The Contamination Cycle

- a) People defecate in the open, on the ground or in the lake, or poop is left in the open (disposal of baby feces, animal feces, etc.).
- b) The feces spread out on the ground and contaminate food crops, people and animals
- c) Feces in the soil often contaminate the water supply, and then we drink contaminated water.
- d) Feces may spread by rain to water sources, also contaminating the water that people drink.
- e) Feces on the ground attract flies, and flies contaminated with feces land on food that people eat.
- f) People who do not wash their hands after using the toilet spread germs from feces to crops, people, food, water, etc.

Assessment of Feces Disposal²²

Where do adults defecate?	On the ground, in the bush	In or near the stream, river, lake	In the latrine
Who uses the latrine?	Dad always uses it	Mom always uses it	Children always use it
Where do children under 5 years old defecate?	In the yard	In the latrine alone	In the latrine with mom
Who cleans the baby?	No one	Mom	Older brother of sister
Where do you dispose of the baby's feces?	Outside on the ground	In the latrine	In a bucket of water with chlorine
Where do you dispose of the feces of elderly and sick people?	Outside on the ground	In the bush, garden or river/stream or lake	In the latrine
What do you do with animal poop?	Leave it on the ground	Picked up daily and put in a pile	Picked up daily and used for composting

²² Adapted from: Water, Sanitation, and Hygiene Improvement Training Package for the Prevention of Diarrheal Disease: Guide for Training Outreach Workers. Hygiene Improvement Project (HIP). Academy of Educational Development. Washington, DC. 2009

Steps on the Sanitation Ladder (ascending order)

8. Flush toilet with sewage and waste water treatment
7. Flush toilet with onsite disposal ↑
6. An improved pit latrine with ventilation ↑
5. An improved pit latrine (generally means an improved slab) or Ecosan solution ↑
4. A traditional pit latrine or basic Ecosan solution (this option meets the Millennium Development Goals criteria for feces disposal) ↑
3. Cat's method (in a small hole and covered with earth) ↑
2. Defecation in the open – indiscriminately ↑
1. Defecation in the compound by young children ↑

Module 9 – REPRODUCTIVE HEALTH and FERTILITY ²³

Learning Objectives:

After this exercise, participants will be able to:

- Identify the principal male and female reproductive organs
- Describe what fertility is.
- Identify the normal range of the menstrual cycle
- Describe the process of fertilization and implantation.

Total Time: 45 minutes

Preparation:

- Read this module thoroughly.
- Collect materials needed:
 - flipchart stand and paper
 - scissors
 - masking tape
 - box or basket
 - drawings of the female and male reproductive systems (see Trainer's Materials)
 - marking pens
- Cut each drawing of the male and female reproductive systems into four pieces (like for a puzzle)—make sure each piece includes one part of the reproductive system. See Trainers Resources for drawings of the male and female genitalia.

²³ Adapted from: Population, Health and Environment (PHE) Community-based Distribution System: A Guide for Training PHE Community-based Distributors. BALANCED Project. 2011. University of Rhode Island. Narragansett, RI.

- Prepare two flipcharts, one labeled “Female Reproductive System” and another labeled “Male Reproductive System”.
- Hang each labeled flipchart on the wall where participants can see them.

Instructions:

A. Reproductive Health (RH) Puzzle (15 minutes)

1. Divide participants into 8 small groups and ask them to stand up in their groups.
2. Put the pieces of the male and female reproductive health in a box or basket, and mix them up. (**Note:** prepare the pieces of the puzzle beforehand – see preparation notes.)
3. Pass the basket/box around and ask each small group to take one piece.
4. Explain that the pieces are from drawings of the male and female reproductive systems.
5. Ask each small group to decide if their puzzle piece belongs to the male or female reproductive health system.
6. Tell participants to look for other participants who have pieces from the same reproductive health system so they can put their pieces together to form a complete drawing.
7. Once they have identified all of the parts for their reproductive system, ask participants to tape their pieces in the order that they belong on one of the flipcharts labeled beforehand.
8. Once the female and male reproductive health systems have been taped on the flipcharts, ask participants to explain the parts of their respective reproductive system to the group.
9. Correct wrong information.

B. Reproductive Health Functions (10 minutes)

1. Ask a couple of participants from the group responsible for the male reproductive system to explain the functions of each part of the male reproductive system.

2. Ask other participants to provide/add any additional information.
3. Pointing to the flipchart with the male reproductive health picture, explain the following functions, if not mentioned by participants.

Male Parts	Functions
Penis	Male organ for sexual intercourse, urinary excretion and ejaculation of sperm.
Scrotum	Sac below the penis that holds the testes. The scrotum contracts or relaxes to regulate the temperature of the testes to protect the sperm.
Urethra	Tube that provides passage for urine and semen.
Testes	Site of the production of sperm and the male hormone testosterone.
Vas deferens	Tubes that provide passage for sperm from the storage place to the urethra during ejaculation.

3. Ask a couple of participants from the group responsible for the female reproductive system to explain the functions of each part of the female reproductive system.
4. Ask other participants to provide/add any additional information.
5. Pointing to the flipchart with the female reproductive health picture, explain the following functions, if not mentioned by participants.

Female Parts	Functions
Urethra	Opening for the passage of urine.
Vagina	An elastic, muscular canal that provides passage for menstrual flow, for birth of babies, and receives the penis during sexual intercourse.
Cervix	The neck of the uterus where cervical mucus is secreted; entrance between the vagina and the uterus.
Uterus	A hollow organ that houses and protects the fetus during pregnancy; commonly called the womb; inner lining of the uterus undergoes thickening in the ovulatory and early post-ovulatory stages of the menstrual cycle to prepare the uterus for possible implantation of the fertilized egg.

Female Parts	Functions
Fallopian tubes	Two tubes that extend from the uterus to the ovaries; sperm travels through the tubes to reach the egg; fertilization of the egg takes place in the tubes; the fertilized egg then travels to the uterus where further growth takes place
Ovaries	Two round-shaped structures responsible for the development and expulsion of the egg and the development of female hormones, i.e., estrogen and progesterone

6. Clarify any doubts and/or answer any remaining questions.

C. Fertility (10 minutes)

1. Ask participants what is fertility.
2. Add any of the following, if not mentioned by participants:
 - Ability to achieve pregnancy within a single menstrual cycle
 - Begins in puberty:
 - female—when she begins to menstruate
 - male—when he begins to produce sperm
 - Ends in:
 - Female—menopause
 - Male—no specific age, but later in life.
3. Ask participants what is the female menstrual cycle.
4. Review any of the following, if not mentioned by participants:
 - A monthly (approximate) cycle of ovulation and shedding of the lining of the uterus.
 - Cycle responds to changing levels of two main hormones: estrogen and progesterone
 - Menstrual period marks the start of the menstrual cycle

- The cycle's normal range is 25 – 35 days; the average cycle is 28 days.
 - First day of the cycle = first day of menstrual bleeding: average duration of menstruation is 3 to 7 days.
 - Last day of the cycle = the day before the first day of the next menstrual cycle
5. Refer participants to “Three Stages of the Menstrual Cycle” found in the Participant Handouts and review the three stages with them.

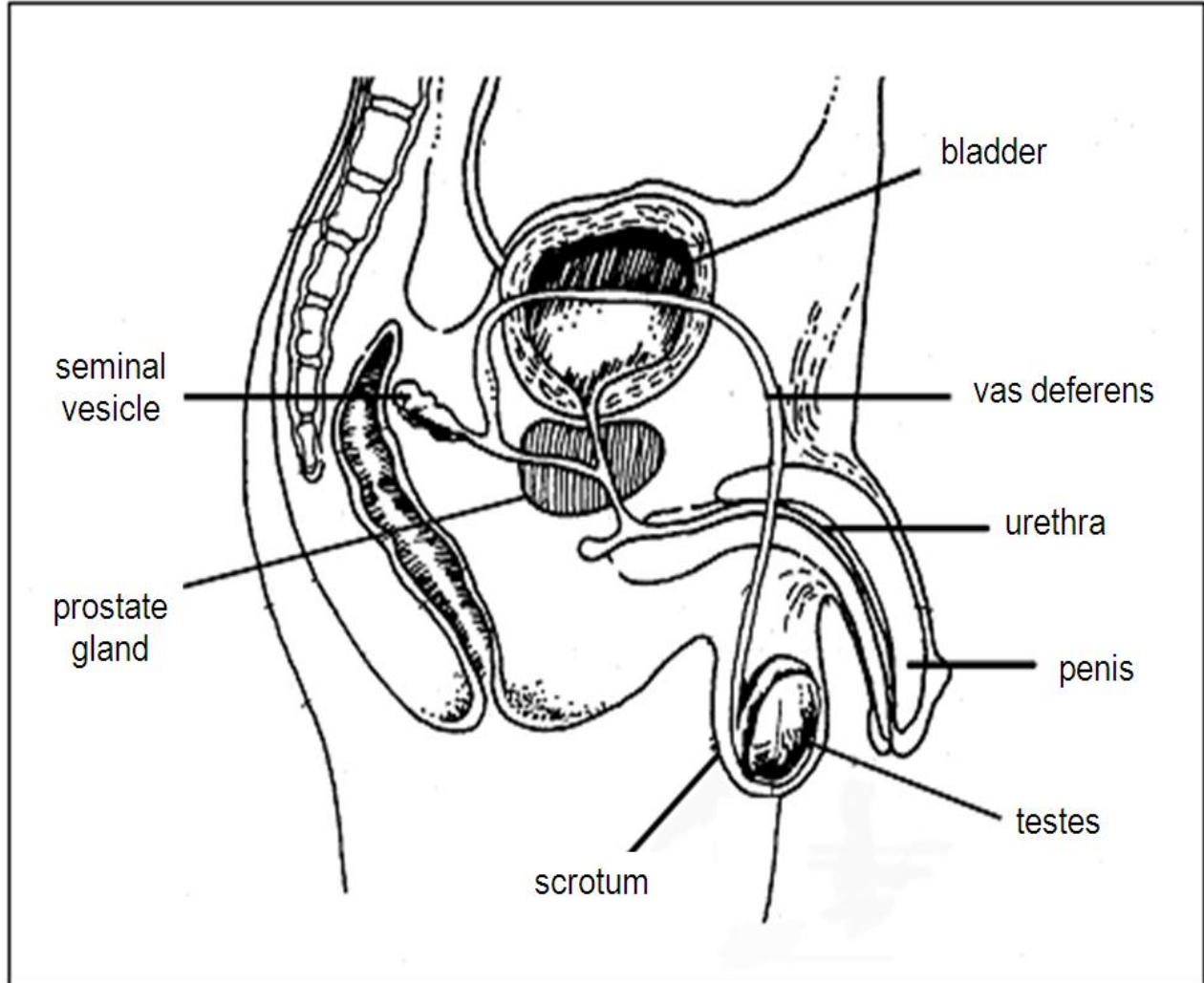
D. Fertilization and Implantation (10 minutes)

1. Ask participants if they can explain what ovulation is.
2. If not mentioned, explain that ovulation occurs about once a month when the woman's ovary releases an egg.
3. If not mentioned by participants, mention that two events can happen to the egg after being released from the ovary:
 - egg could be fertilized during sex and then implanted in the uterus, resulting in pregnancy
 - egg is not fertilized (no sex or protected sex/FP), resulting in menstruation
4. Review key facts about fertilization.
 - Union of the egg and the sperm during penetrative sex.
 - Sperm will take minutes to hours to travel through to the fallopian tube to reach the egg
 - More than 100 million sperm cells are ejaculated and start the journey; approximately 500 will reach the correct fallopian tube; only one will fertilize the mature egg
 - Sperm may remain viable (live) for three days
5. Explain that fertilization does not always result in a pregnancy. The egg must penetrate and embed itself into the uterus.
6. Review key points about implantation:

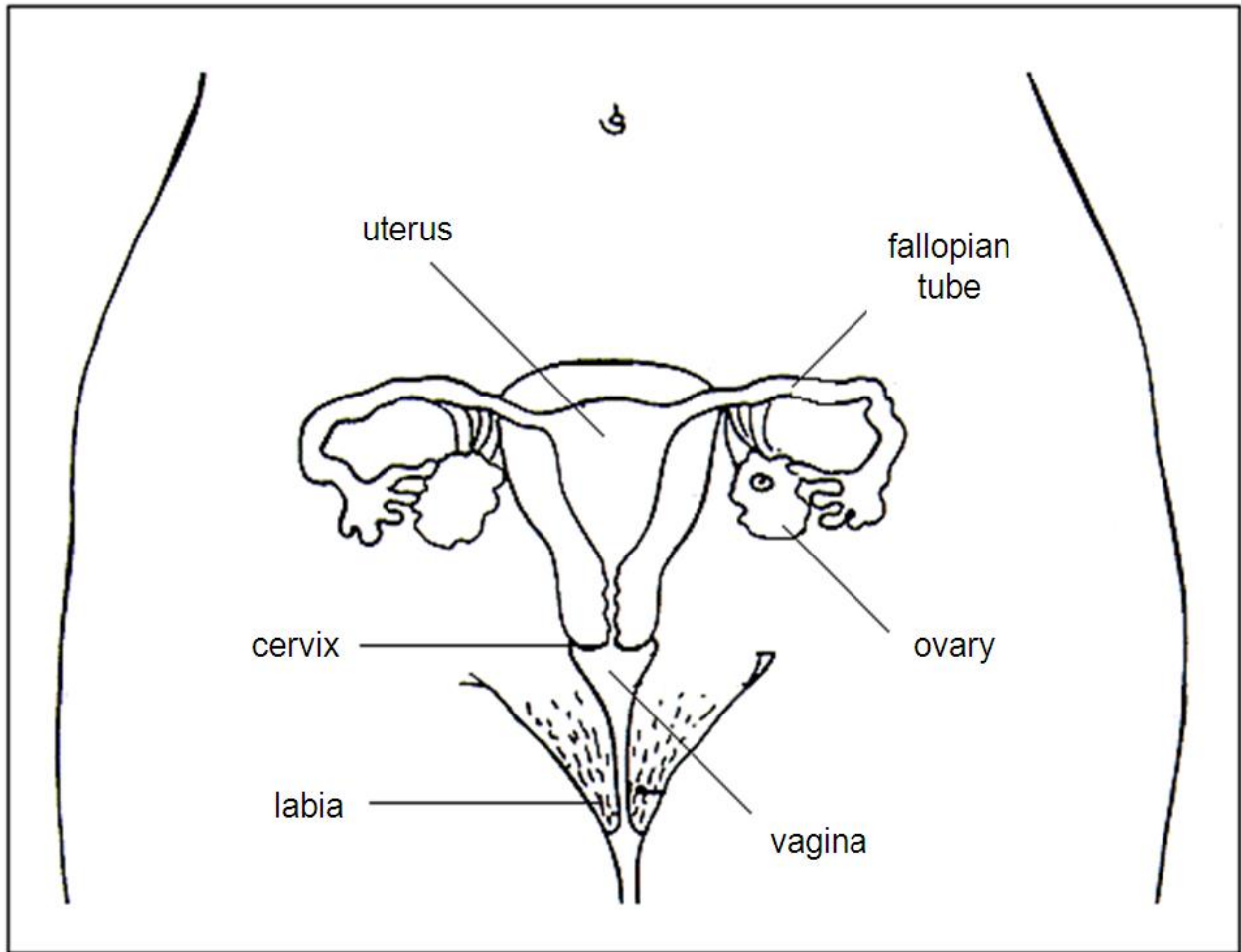
- Takes six to seven days for the fertilized egg to travel from the fallopian tube to the uterus.
 - The fertilized egg penetrates and is embedded into the uterus to establish contact with the mother's blood supply for nourishment
 - Once embedded, this event establishes pregnancy
7. Refer participants to the Schematic Diagram of the Fate of the Egg in the Participants Handouts for this module, and review the schematic with them.
 8. Ask participants if they have any questions or comments before proceeding.

Trainer's Resources

Male Anatomy



Female Anatomy



Module 10 – FAMILY PLANNING METHODS^{24 25 26}

Learning Objectives:

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

- Describe the PHE linkages between population growth and the environment.
- Describe the benefits of family planning to well-being of families and the environment
- Describe the different types of family planning methods available in Uganda and Kenya.
- Identify and clarify negative rumors about different contraceptive methods

Total Time: 2 hours

Preparation:

- Read this module thoroughly.
- Collect the materials needed:
 - flipchart stand and paper (newsprint)
 - marking pens
 - masking tape
 - three blank sheets of paper
- Develop a flipchart with a vertical list of the following types of family planning methods: barrier; hormonal; IUCD; fertility awareness; Vasectomy and tubal ligation.

²⁴ Adapted from: *Population, Health and Environment (PHE) Community-based Distribution System: A Guide for Training PHE Community-based Distributors*. BALANCED Project. University of Rhode Island. Narragansett, RI. 2011

²⁵ *Family Planning: A Global Handbook for Providers*. World Health Organization Department of Reproductive Health and Johns Hopkins Bloomberg School of Public Health/Center for Communication Programs (CCP), Knowledge for Health Project. Baltimore and Geneva. CCP and WHO. 2011

²⁶ *National Family Planning Guides for Service Providers*. Ministry of Public Health and Sanitation: Division of Reproductive Health. Nairobi, Kenya. 2009.

- Tape the flipchart on the workshop room wall.
- If possible, identify the most common rumors that are circulating in areas where the participants work beforehand, for group discussion.

Instructions:

A. PHE Linkages (15 minutes)

1. Remind participants that based on 2011 population statistics, Uganda's population will double by 2031.²⁷
2. Explain that the population will double because people are living longer and families are growing at a fast rate.
3. Ask participants how their environment will change if the size of their community doubles, and twice as many people are fishing, farming, cutting trees and using other natural resources. (**Note:** List responses on flipchart.)
4. Add any of the following to the flipchart, if not mentioned by participants:
 - There would be fewer trees for firewood and income.
 - The reduction of trees would contribute to increased soil erosion, a decline in soil fertility and, thus crop yield, and increased siltation in the Lake.
 - More grassland and wetlands would be converted into farmland, disrupting and destroying ecosystems that provide resources to the community.
 - More people would turn to fishing, resulting in a further decline in fish catch.
 - Fewer resources would lead to food insecurity, hunger and illness.
5. Ask participants if they have anything to add.

²⁷ Population Reference Bureau 2011 <http://www.prb.org/Publications/Datasheets/2011/world-population-data-sheet/uganda.aspx>

B. Family Planning Methods (45 minutes)

1. Explain that just as plants and trees need space to grow strong and healthy and juvenile fish need time to grow and mature, children also need time to grow healthy and strong before another sibling comes along.
2. Mention that healthy timing and spacing of children through family planning allows couples to plan their families so that:
 - they can decide how many children they wish to have
 - their children can grow strong and healthy
 - the mother is able recuperate her health before having another child.
 - the couple has time to save for the child's education
 - the family needs fewer resources to live and be healthy
3. Explain that the use of family planning/contraception:
 - allows couples to space their children and have the number of children they choose
 - enables women who wish to limit the size of their family to do so
 - reinforces people's rights to determine the number and spacing of their children
 - helps prevent sexually transmitted infections, including HIV/AIDs
 - delays pregnancies for adolescent women
4. Add that women and families have the right to decide how many children they wish to have, and to use voluntary family planning services when they want to space their births.
5. Mention that there are several types of family planning methods available in Kenya and Uganda.
6. Referring to the flipchart with the list of contraceptive methods (prepared beforehand), review the types of family planning methods available:

- Barrier methods, such as the condom. These form a physical barrier to prevent the sperm from meeting the egg.
 - Hormonal methods, which include the pill, injectables, and implants. These methods contain hormones that stop the woman's body from ovulating (releasing an egg during her cycle).
 - Intrauterine devices that prevent a fertilized egg from implanting on the uterus.
 - Fertility awareness methods that make women aware of when they are fertile so they can avoid having sex or use a barrier method.
 - Permanent methods for couples who have completed their family and no longer wish to have more children
7. Refer participants to their Participant Handout and briefly review the different methods commonly available in Uganda and Kenya.
 8. Describe the referral system for project behavior change agents.
 9. Ask participants if they have any questions or comments before proceeding.

C. Men's Role in FP (15 minutes)

1. Explain that decisions about family size and the use of family planning are usually made by the men in the family.
2. Add that if men allow their wives to use family planning, it is still considered a "woman's issue," although it is usually the man who makes the final decision.
3. Ask participants how men in their community feel about healthy timing and spacing of the children.
4. Ask participants, as PHE community agents, how they can improve men's knowledge and attitudes around spacing their children. (**Note:** List responses on flipchart.)
5. If not mentioned, offer some of the following suggestions:
 - Male community agents, such as BMU members, Fishery Officers, Agriculture Extension Agents, etc., can talk to men about the

importance of spacing their children during their discussions on agriculture, fisheries management, alternative livelihoods, etc.

- Male community agents can discuss their experience with planning their own family as well as address any rumors their male counterparts might reveal during a discussion.
 - During counseling sessions with women, VHTs/CHWs can encourage couple counseling so that they are counseling the couple, not just the woman. One way to achieve this is to know when men will be at home and visit women during those times.
 - Discussions between husband and wife about planning their families should be encouraged, especially for young couples preparing to marry.
6. Ask participants what role men in their community play in family planning.
 7. Ask what role could men in their community play in supporting family planning. (**Note:** List responses on flipchart.)
 8. If not mentioned, add any of the following:
 - Men could support the woman's decision to use contraceptives to plan their family.
 - Men could allow women to visit the VHT/CHW and/or health facility to obtain a contraceptive method.
 - Men could make money available for transportation to a health clinic and other expenses for the women to get family planning.
 - Men could become involved in fertility awareness methods.
 9. Ask what NGOs and PHE programs can do to involve more men in family planning. (**Note:** Add responses to the flipchart.)
 10. Add any of the following, if not mentioned by participants.
 - Conduct sensitization campaigns on birth spacing and family planning directed at men.
 - Conduct behavior change communications activities in areas where men congregate.

- Help ensure that health facilities have the family planning methods available for the community.

11. Ask if participants have any questions or comments.

D. Gossip and Rumors (45 minutes)

Activity 1: How Rumors Spread

1. Ask participants to stand and form a semi-circle.
2. Give the person in the middle of the semi-circle and the last person in the semi-circle each a blank sheet of paper.
3. Give the first person in the semi-circle the sheet of paper with a written message (see "Preparation notes") and ask him/her to read it silently to him/herself. Do not let anyone else read or see the message.
4. After one minute, collect the written message.
5. Ask the person who read the message to whisper the same message to the second person in the semi-circle. Tell the person that they may only say the message once, no matter what. Ask the person to take care that no one else hears the message.
6. Ask the second person to whisper the message to the next person, and so on. Remind participants that they may not repeat the message and to take care that no one else hears the message.
7. Tell the two participants in the semi-circle who have a blank sheet of paper to write down what they heard from their colleague.
8. Expect participants to begin to giggle and/or talk, especially if the semi-circle is large. Remind them to be as quiet as possible so that the participant listening to the message can actually hear it.
9. Remind participants that this activity is not a contest of speed in relaying the message, they can take their time. But, they may not repeat the message twice.
10. Remind the middle and last person of the group that receives the message to write what s/he heard on the piece of paper given to them at the beginning of the exercise.

11. Ask the person in the middle with the sheet of paper to read the message s/he wrote down.
12. Ask the last person of the group to read the message s/he wrote down to the entire group.
13. Now, read aloud the original written message that was given to the first person.
14. Compare it to what the two participants read member —pointing out any information that was wrong and/or excluded from the original message.
15. Ask participants how the message could have changed so much.
16. Mention that what they just experienced is an example of how gossip and rumors are started and how real information can get distorted.
17. Point out that gossip and rumors are unverified information or opinions that are widely disseminated with no discernible source.
18. Add that as this activity illustrates, the original written message received by the first member was already unverified information coming from a person who also heard it from an unverified source. The first member then relayed what s/he remembered to another person, creating even more gossip since the original message was already distorted.

Activity 2: Responding to Rumors and Gossip

1. Explain that rumors and gossip are:
 - Unreliable information passed around the community, mostly by word of mouth
 - Often inaccurate or false statements without a known and reliable source
2. Mention that rumors are one reason for the lack of acceptance and use of family planning methods. It is important to understand that rumors about family planning methods causing health problems are hidden barriers that discourage people from using family planning to space their children.
3. Ask participants what are all the rumors they have heard about the different family planning methods. (**Note:** List responses on flipchart.)

4. Review each rumor listed and ask participant what they would say to a person who said that rumor. Discuss all the rumors mentioned on the flipchart.
5. Work through each of the rumors presented, making sure that the participants themselves fully understand why the rumors are false.
6. Refer participants to the Participant Handout for Module 10 on how to refute some of these rumors.
7. Mention that the best way to counteract rumors/gossip and misconceptions are to:
 - Explain politely why the rumor is not true and explain the facts in simple ways that the client can easily understand
 - Give examples of satisfied users of contraceptives
 - Find out what else the client needs to know in order to have confidence in the method
 - Always tell the truth; do not hide side effects or probable problems that may occur
 - Refer the client to other health service providers for assistance
8. Remember that your participants are from the community and may believe these rumors themselves. They need to know not only that a rumor is not true, but also why it is not true.
9. Mention that this handout is a guide to use when talking to community members about family planning, especially when rumors and misconceptions are presented.

Module 11 – MATERNAL and CHILD HEALTH²⁸

Learning Objectives:

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

1. Describe the linkages between healthy families and resources.
2. Describe how healthy families contribute to the health of the community and the natural resources upon which it depends.
3. Describe how men can help their partners have a healthy pregnancy and childbirth.
4. List the key items that should be in a birth plan.
5. Describe what women can do to have a healthy pregnancy.
6. Identify ways to overcome obstacles to proper care during pregnancy.

Total Time: 2 hours, 30 minutes

Preparation:

- Read this module thoroughly.
- Collect the materials needed
 - flipchart stand
 - flipchart paper
 - colored marker pens
 - scissors
- Make a photocopy of the role play scenes (see Trainer's Resources). Cut along the dotted line separating the two scenes so that they are available to give to each couple playing the role play.
- Write the antenatal visit schedule on a flipchart (see Trainer's Resources).

²⁸ Resource: *Community Peer Educators Manual*. Elizabeth Glaser Pediatric Aids Foundation. 2010

- Write the infant/child immunization schedule on a flipchart (see Trainer’s Resources).

Instructions:

A. Maternal and Child Health and PHE linkage (15 minutes)^{29 30}

1. Begin the session by asking participants about the health of women and children in their community.
2. Building on participants’ responses as appropriate, mention some information about the health of children in Kenya and Uganda. (**Note:** If available, use data specific to where the HoPE-LVB and other PHE programs are being implemented.) For example:
 - Infant mortality (infants 2 to 11 months) in Kenya is the highest in Nyanza Province where several PHE projects are being implemented. One in 10 infants die before their first birthday, compared to 1 in 25 children in the Central region.
 - Of those who survive to their first birthday, almost 1 in 7 children in Nyanza die before attaining their 5th birthday. In the Central Region only 1 in 20 children die. The risk of dying before age five is almost three times higher in Nyanza than in Central province.
 - In Uganda one in every 19 infants dies before they reach their first birthday.
 - Of those who survive to their first birthday, 1 in 11 children die before their 5th birthday.
3. Ask participants what is the impact of sick families on the community. (**Note:** List responses on flipchart.)
4. Add any of the following to the flipchart, if not mentioned by participants:
 - Illness may reduce participation in income-generating activities, such as fish processing, farming, and alternative livelihoods.

²⁹ Kenya National Bureau of Statistics (KNBS) and ICF Macro. 2010. *Kenya Demographic and Health Survey 2008-09*. Calverton, Maryland: KNBS and ICF Macro.

³⁰ Uganda Bureau of Statistics (UBOS) and ICF International Inc. 2012. *Uganda Demographic and Health Survey 2011*. Kampala, Uganda: UBOS and Calverton, Maryland: ICF International Inc.

- Illness can result in less food production and food insecurity.
 - Illness requires medical care and expenses; thus, reducing a family's financial safety net for education, emergencies, creation of new businesses, etc.
 - High morbidity within a household may also affect natural resource stewardship and inter-generational knowledge transfer about resource use.
5. Ask participants what are ways to reduce illness in PHE program sites. (**Note:** List responses on flipchart.)
 6. Linking participants' responses related to maternal and child health activities, explain that we are going to discuss these in more depth.

B. Antenatal Care/ANC (45 minutes)

Antenatal Care Visits

1. Ask what a woman and her husband can do to have a healthy pregnancy. (**Note:** List responses on flipchart.)
2. Add any of the following to the flipchart, if not mentioned by participants:
 - The pregnant woman should attend all her ANC visits.
 - The woman should eat a balanced diet and as much as she likes while pregnant
 - The pregnant woman should obtain medicine to protect against malaria – two doses of IPTp – and follow the instructions.
 - The pregnant woman should obtain and sleep under an insecticide-treated mosquito net.
 - The husband and family members should reduce the wife/partner's workload.
 - The family should find ways for the pregnant woman to get more rest.
3. Ask if pregnant women in the community do all of these things discussed. Why or why not?

4. Ask how the family members in your community help pregnant women to take better care of themselves? If they do little, why?
5. Ask how many times a pregnant woman should go to the health facility for antenatal care?
6. If not mentioned, explain that a pregnant woman should attend at least 4 ANC visits.
7. Ask why it is important that a pregnant woman attend all 4 ANC visits.
8. Review any of the following not mentioned.
 - Timely completion of ANC visits is very beneficial to the health of the mother and the fetus.
 - During visits, health care workers monitor the pregnancy progress and the growth of the fetus
 - Health care workers also screen women for HIV, and as needed counsel on prevention of mother to child transmission of the virus.
 - Mothers learn about good nutrition and takes vitamins.
 - Mothers learn how to avoid getting malaria.
 - Any complications are determined early. This allows for treatment at the health facility. If any complications go undetected and untreated, this may result in illness or death of the mother and child.
9. Explain that in both Uganda and Kenya, less than 50 percent of pregnant women attend all four prenatal visits.
10. Referring to the flipchart with the ANC schedule (prepared beforehand – see preparation notes), review the antenatal care schedule with participants.

As soon as the woman knows she is pregnant	Make 1 st ANC visit.
At 4 to 6 months of pregnancy	Make 2 nd ANC visit.
At 7 to 8 months of pregnancy	Make 3 rd ANC visit.

At 2 weeks before due date	Make 4 th ANC visit.
----------------------------	---------------------------------

11. Refer participants to their Participant Handouts and discuss the table which describes what a pregnant woman can expect during each ANC visit.
12. Point out that participants do not need to remember all these details, but it is good that they understand how important these visits are to the health of the mother and the fetus.
13. Ask whether most pregnant women in the community go to 4 ANC visits. If not, why?
14. Ask how community agents (VHTs/CHWs, Agriculture Extension Worker/Agents, BMUs, Fisheries Officers, Women's groups), as well as family members can encourage women to attend all 4 ANC visits. (**Note:** List responses on flipchart.)

Malaria

1. Explain that we are now going to talk about one of the leading causes of illness and death in Africa – malaria.
2. Ask why pregnant women should protect themselves from malaria.
3. Add any of the following, if not mentioned by participants:
 - Malaria during pregnancy can cause anemia (weak blood), miscarriages, low birth weight and premature babies, and death of mother and fetus.
 - Pregnant women are less able to fight the malaria infection so they become very sick.
 - Treatment for malaria is very complicated for pregnant women.
4. Mention that in order to protect pregnant women from getting malaria, they are given two doses of IPTp during their ANC visit.
5. Point out that it is also important that pregnant women sleep under a mosquito net, preferably an insecticide treated one. This will also help protect the mother and fetus from malaria.

6. Explain that insecticide-treated mosquito nets are available for pregnant women for free at government health facilities. They are also available for a fee at different places, such as at the market, pharmacies, small shops and kiosks, etc.
7. Ask if pregnant women in the community sleep under insecticide-treated mosquito nets. If not, why? Allow time to discuss.
8. If many pregnant women are not sleeping under mosquito nets, what can community agents do to encourage this practice? (**Note:** List responses on flipchart.)

Pregnant Woman's Diet

1. Mention that pregnant women need to eat well during their pregnancy. Lack of enough food and nutrients in her diet can cause illness and make the woman weak.
2. Point out that on average a woman should gain about 9 to 13 kilos during pregnancy. If she does not gain enough weight the baby may be underweight at birth.
3. Explain that underweight babies are more likely to die during their first year of life. They are also more likely to have illnesses, such as diarrhea, anemia and colic.
4. Ask participants what a balanced diet for a pregnant mother consists of.
5. Discuss any of the following, if not mentioned by participants.
 - Consuming a balanced, healthy diet, and eating more food than normal so that she can gain the extra kilos.
 - Energy giving foods, such as maize, potatoes, yams, sweet potatoes, matoke, or porridge should be eaten three times a day. Fats, such as cooking oil, butter/margarine, avocados, are also an important source of energy and should be eaten at every meal.
 - Body building foods, including eggs, chicken, milk foods, meat, fish (omena/mukene), beans, groundnuts at least three times a day.
 - Protective foods, including all vegetables (spinach, managu, star vegetable (saga), carrots and all fruits (mango, pawpaw, pineapples,

tomatoes, bananas/plantains, oranges, watermelon) should also be eaten at least three times a day.

6. Ask if this way of eating is common practice among pregnant women in the community.
7. If not, what are ways to encourage pregnant women to eat a balanced diet and more food in general? (**Note:** List responses on flipchart.)

Danger Signs During Pregnancy

1. Ask what the danger signs are for a woman during pregnancy.
2. Add any of the following, if not mentioned by participants:
 - Any bleeding from the vagina
 - Bad headache
 - Swelling in the hands or feet
 - Convulsions, fits, loss of consciousness
 - A high fever
 - Severe abdominal pain
 - The baby is not moving at all
3. Point out that pregnant women who complain of any of these danger signs should be referred to a health care facility immediately.
4. Point out that many of the problems that women have during childbirth happen because they do not go for the ANC visits or do not deliver in a health facility.
5. Ask participants why women might not go to the health facility if they experience any danger signs during pregnancy.
6. Add any of the following, if not mentioned by participants:
 - Women and families may not know what the danger signs are
 - Women may not be able to make a decision to go to the health facility on their own, and the husband is not present.

- Women are not able to get to the health facility in time.
 - Women are not able to get quality care in time.
 - Women may not have transport or money to pay for transport.
7. Ask participants what are ways to help women deal with the barriers to getting care if they experience any danger signs during pregnancy. (**Note:** List responses on flipchart.)

Birth plan

1. Ask how women and families in their community prepare for the birth of their baby, including dealing with emergencies.
2. Ask if this enough? If not, why?
3. Explain that developing a birth plan is one way to prepare for the pregnancy, birth and after birth care.
4. Emphasize that not planning for the birth can lead to emergency situations that put the mother and fetus at great risk during pregnancy and childbirth.
5. Point out that it is very important that the family prepare a birth plan during the time the woman is pregnant. Normally a birth plan is completed during one of the ANC visits.
6. Ask participants what should be included in a birth plan? (**Note:** List responses on flipchart.)
7. Add any of the following to the flipchart, if not mentioned by participants:
 - Date that the baby is due.
 - Name of the Health facility where the baby will be born.
 - Who will be the birth partner – the person who is with the pregnant woman during childbirth? It could be father of the baby, mother, sister, mother-in-law, other family member or Community Health Volunteer (Village Health Team/VHT in Uganda; Community Health worker/CHW in Kenya).
 - Plan for dealing with any danger signs that present themselves.

- Which health care facility will the woman go to in case of an emergency or when she is going to give birth?
 - How will she get to the facility?
 - How long will it take to get to the facility?
 - How much will it cost for transport?
 - How will the family raise the cost for transport and other expenses?
8. Reinforce the importance for families to make a birth plan as soon as the woman knows she is pregnant. The birth plan can be revised during the pregnancy, but families need to plan for the birth and what to do in emergencies.

C. Men's role in pregnancy (30 minutes)

1. Ask for 4 volunteers to conduct two role plays: one role play per pair.
2. Gather the four volunteers together out of earshot of participants and give them instructions for the two role plays:
 - Ask two of the volunteers to play the role of the husband. The remaining two volunteers will play the role of the pregnant wife.
 - Explain that there will be two different situations that involve the couples.
 - Tell the first volunteer playing the husband that he will role play an unsupportive husband of a wife who is 6 months pregnant. The couple already has 4 young children. Give the volunteer playing the role of the husband the role-play scene for the unsupportive husband and ask him to read it. (**Note:** Cut out role play beforehand - See Trainer's Resources.)
 - Tell the second volunteer playing the husband that he will role play a supportive husband of a wife who is 6 months pregnant. The couple already has 4 young children. Give the volunteer playing the husband the scene for the supportive husband and ask him to read it. (**Note:** Cut out role play beforehand - See Trainer's Resources.)

3. Ask the couple with the “unsupportive husband” scene to role play for a few minutes.
4. When the role play is done, ask participants if the scene in the role play is typical in the community. Why or why not? Allow participants to discuss.
5. Ask the couple with the “supportive husband” scene to role play for a few minutes.
6. When this second role play is done, ask participants the following questions:
 - How was the husband different from the husband in the first role play?
 - How did the husband support his wife?
 - What else could he have done?
 - Is this typical in the community?
 - How can male involvement during pregnancy be encouraged (write responses on flipchart)?
7. Ask participants if men in their community traditionally help their wives during pregnancy.
8. If yes, ask in what ways. If no, probe for why men might not help their pregnant partners.
9. Ask what are ways to encourage men to help their pregnant wives? (**Note:** List responses on flipchart.)
10. Add any of the following to the flipchart, if not mentioned by participants:
 - Make sure that the pregnant wife gets the food and medical care she needs.
 - Pay for transport, fees, and medicine.
 - Escort wife to antenatal services.
 - Take over physically demanding work.
 - Provide encouragement and emotional support.

11. Ask if there are any questions or comments before proceeding.

D. Postnatal care (15 minutes)

1. Explain that after giving birth to her baby the mother needs to attend two postpartum visits at the health facility to ensure the health of the mother and baby.
2. Mention that the first post-natal care (PNC) visit should be 14 days after delivery; the second visit should be 6 weeks after delivery - during the baby's first clinic visit.
3. Mention that during these two PNC visits:
 - The mother and baby will be examined for any infections.
 - The mother will be counseled on breastfeeding, caring for her newborn, her diet during breastfeeding, post-partum danger signs, etc.
 - The infant will be given its first vaccination.
 - The mother will be counseled on contraceptive methods.
4. Ask participants what are some things a postpartum women should do herself after the birth of her baby.
5. Discuss any of the following, if not mentioned by participants:
 - Get a lot of rest during the first six weeks after giving birth.
 - Eat a balanced diet and more food than normal. She can eat all foods, such as eggs, meats, fish, beans, milk, vegetables, matoke, sweet potatoes and fruits, This will keep the mother strong while breastfeeding.
 - Drink a lot of fluids.
 - Refrain from having sexual intercourse for at least 6 weeks post-partum.
 - Never put any plant or herbal medicine inside the vagina or on the umbilical cord of the baby.
 - Never tie her stomach.

6. Point out ways that mothers and caregivers can keep babies healthy.
 - Keep the baby at home.
 - Wash hands with soap and water frequently before breastfeeding, after disposing of the infant's feces, and after using the toilet.
 - Take care of the cord as instructed at the health facility.
 - Keep the baby warm.
 - Breastfeed the baby exclusively for the first six months.
7. Ask participants if they have any questions before proceeding.

E. Immunizations (20 minutes)

1. Ask participants what are some childhood diseases they have heard of.
2. Inquire if they know of any community members who have lost their children to childhood diseases.
3. Ask what is a sure way to protect against diseases that often kill children?
4. If not mentioned, explain that children are protected from diseases when they get their immunizations.
5. Point out that immunizations prevent many childhood diseases and save millions of baby's lives every year.
6. Mention that vaccines used for immunizations work by building the baby's defenses against the disease. Immunization only works if given before the disease strikes.
7. Inquire if there are common beliefs or myths about immunization in the community. (**Note:** List responses on flipchart.)
8. Ask what you would say to a family that does not immunize their child because of the belief or myth. (**Note:** Add the response next to the myth or common belief mentioned by participants and previously noted on the flipchart.)
9. Explain that it is safe to immunize children even if he or she has an illness, a disability or is malnourished.

10. Mention that right after birth, the baby is given the first immunization and the mother will be given an immunization card.
11. Tell participants to encourage mothers to always keep their immunization card safe and bring it to the health center every time they bring their child.
12. Review the types of immunizations a child needs:
- BCG – protects against tuberculosis.
 - Polio – protects against the crippling disease called polio. This vaccine is given orally. It should be given four times before the child is one year old.
 - DPT – this vaccine protects against Diphtheria, Pertussis (whooping cough) and Tetanus.
 - Measles – Measles is one of the most dangerous of childhood diseases. The measles vaccine only needs to be given once – when the child is 9 months old.
 - Hep B – protects against Hepatitis B, which is an infection of the liver.
 - *Haemophilus influenzae* type b (Hib) which causes pneumonia and meningitis.
 - Pneumococcal – protects against pneumonia
14. Explain that Ministries of Health in Kenya and Uganda are now combining the DPT with Hep B and Hib vaccines to form the Pentavalent vaccine. The Pentavalent is delivered at the same time as DPT vaccines were originally scheduled.
15. Review the immunization schedule:

Age of baby	Vaccines
At birth	BCG and polio zero.
6 weeks	Polio 1, DPT (Pentavalent)
10 weeks	Polio 2, DPT (Pentavalent)(2 nd dose)
14 weeks	Polio 3, DPT (Pentavalent) (3 rd dose)

9 months	Measles
12 months	Varicella (chicken pox), Vitamin A, deworm
18 months	Measles

16. Emphasize that children should get ALL of their immunizations on time. If not, the child is not protected.
17. Ask participants if they have any questions about what we discussed.
18. Answer all questions before proceeding to the module.

F. Exercise (25 minutes)

1. Break participants into six small groups.
2. Give each small group one of the following topics: (**Note:** List these on flipchart so that you can remember the group topics).
 - Antenatal care visits
 - Malaria prevention during pregnancy
 - Danger signs during pregnancy
 - Birth plans
 - Post natal care
 - Child immunizations
3. Ask each group to discuss the following, taking notes on their discussion:
 - Why do families not adhere to the health intervention assigned to the group? What are the obstacles?
 - What can they do to help families overcome the obstacle?
 - What can others do to help families overcome the obstacle (community, PHE program, NGOs, MOH, etc.)
4. Bring the participants back together and ask a representative from each small group to share what their group discussed.

5. If appropriate, make a list of actions that participants can do after the workshop to help ensure the health of pregnant women and the safe delivery and health of their child.
6. Ask if there are questions or comments before proceeding.

Trainer's Resources

Antenatal Care Visit Schedule

As soon as the woman knows she is pregnant	Make 1 st ANC visit.
At 4 to 6 months of pregnancy	Make 2 nd ANC visit.
At 7 to 8 months of pregnancy	Make 3 rd ANC visit.
At 2 weeks before due date	Make 4 th ANC visit.

Infant/Child Immunization Schedule

Age of baby	Vaccines
At birth	BCG and polio zero.
6 weeks	Polio 1, DPT (Pentavalent)
10 weeks	Polio 2, DPT (Pentavalent) (2 nd dose)
14 weeks	Polio 3, DPT (Pentavalent) (3 rd dose)
9 months	Measles
12 months	Varicella (chicken pox), Vitamin A, deworm
18 months	Measles

See roles plays on next page.

Role Plays

Make a copy of these scenes then cut along the dotted line to separate the scenes. You will give the description of these roles to each pair role-playing their scene

Cut here -----

Scene for Role play 1: Unsupportive husband

The unsupportive husband does not help his wife even though she is 6 months pregnant. He thinks she should continue doing the same amount of work, does not need to eat more, and that it is too expensive to go to a health facility for exams.

It is a typical evening in a rural community. The wife is just returning for the day at the market selling vegetables. The husband is returning from shamba (farm).

Cut here -----

Scene for Role play 2: Supportive husband

The supportive husband helps his wife so she does not have to work as hard, he helps her make sure she gets rest, he gives her money to buy extra food, and he goes with her to her antenatal visits at the health facility.

It is morning and the couple is just getting up. The children must get ready for school. The wife is going to the market to sell vegetables and the husband is going to the shamba. The wife has her second antenatal clinic visit today.

Module 12 – INTERPERSONAL COMMUNICATION and COUNSELING

Learning objectives:

By the end of this session participants will be able to:

- Demonstrate good verbal communication skills
- Demonstrate good non-verbal communication skills
- Counsel community members on PHE linkages and the positive agriculture, fishery, conservation and health practices learned during the training.

Total Time: 2 hours

Preparation:

- Read this module thoroughly.
- Collect the materials needed:
 - flipchart stand
 - flipchart paper
 - colored paper
 - masking tape
 - 10 to 15 eye masks or pieces of cloth to act as blind folds.
- Have enough HoPE-LVB counseling flipcharts or other PHE-oriented counseling materials to use during the practice session.

Instructions:

A. Role of Community Agents on Behavior Change (15 minutes)

1. Mention that over the last couple of days we have talked about the challenges to the health of the community and environment, such as growing population, unsustainable agriculture and/or fishing practices, that

- affect human well-being and the natural resources upon which people depend.
2. Add that we have also discussed how unfavorable health and livelihood practices affect the many ecosystems in which people live, and how threats to one ecosystem affects other ecosystems as well as human well-being.
 3. Explain that one of the key roles of community agents, such as VHTs/CHWs, Agriculture Extension Workers/Agents, BMUs, Fishery Officers, Women's groups, etc., working on PHE programs is to counsel community members on the PHE linkages and healthy practices that together improve the health of the people and environment upon which they depend.
 4. Add that community change agents' role is also to provide a supportive environment that will enable people to initiate and sustain positive behaviors.

B. Blindfold Exercise (20 minutes)

1. Ask participants to stand up and find a partner. Explain that they will be working in pairs.
2. Once everyone has a partner, distribute one blindfold to each pair.
3. Ask one person in the pair to put on the blindfold. Make sure they cannot see anything.
4. Now, tell the "seeing" partner to guide the blindfolded person around the room. If there is room, tell participants to take their blindfolded partner outside the workshop space too.
5. Give the group about 5 to 7 minutes then ask them to switch roles.
6. After about 5 to 7 minutes, ask the second blindfolded partner to take off the blindfold. Have everyone take a seat.
7. Ask participants the following questions about the exercise:
 - What was it like to be blindfolded?
 - What did your guide do to make you more comfortable and confident? (**Note:** List responses on flipchart.)

- What did the guide do to make you uncomfortable or unsure?
 - What was it like to be the guide?
 - Ask the guides, what they tried to do to make the blindfolded person more comfortable? Did it work? If not, why? (**Note:** add responses to previous flipchart).
8. Ask participants what they learned from the exercise.
 9. Using the questions below, ask how this exercise relates to counseling community members on the positive behaviors and practices promoted by the PHE program in their community.
 - How is the client's role similar to the person who was blindfolded?
 - How is the guide's role similar to the community agent talking to community agents?
 - How are the roles different?
 10. If not mentioned, explain that the exercise demonstrates many of the traits that community agents need to be good educators and communicators of the positive messages, behaviors and practices that PHE programs are promoting.
 11. Discuss some of the traits that the exercise demonstrates, and which counselors should use when talking to the community.
 - Empathy, understanding and acceptance of the family, farmer, fisherfolk, etc. who may not know how to improve their situation.
 - Trust between the community member and the community agent, so that the community member is better able to listen to new information that may often conflict with the way he/she does things.
 - Ability to clearly articulate information and steps that empower the community member to solve problems and improve his/her life for now and future generations.
 12. Explain that these are interpersonal communication skills which good educators and behavior change agents use to empower community action.

C. Interpersonal Communication skills (25 minutes)

1. Explain that a big part in building a trusting relationship with the community is communication, which is also referred to as interpersonal communication (between two or more people).
2. Ask participants what is good interpersonal communication. (**Note:** List responses on flipchart.)
3. Add any of the following to the flipchart, if not mentioned by participants:
 - Person-to-person communication – it goes two ways. It is a dialogue.
 - Involves the sharing of information, thoughts and feelings.
 - Involves both verbal and non-verbal skills.
4. Explain that there is much more to interpersonal communication than the message or what is said.
5. Mention that good verbal and non-verbal communication skills help community agents to transmit the message in a way that it can be understood, and which allows the community agent to assess how the information is being received by the community member.
6. Explain that “verbal” communication is what is said out loud. It includes:
 - The message
 - The tone of the message
 - How loud or soft the message was presented
 - Language
 - Sighs
7. Ask participants what are some good verbal communication skills. (**Note:** List responses on flipchart.)
8. Add any of the following to the flipchart, if not mentioned by participants.
 - Expressing empathy for how the client is feeling using a soft understanding tone.

- Using good, open-ended questions to gently probe for additional information and to check the community members' understanding of the message/discussion.
 - Affirming what was heard by paraphrasing what the community member has said.
9. Ask participants if they have any comments or questions.
 10. Have participants stand up.
 11. Then ask them to arrange themselves in a queue according to their birth day – only the month and day of the birthday not the year.
 12. Explain that when the group is finished, they all should be in a queue with the first person in the queue having a birthday in January or early in the year and the last person with a birthday in December or latest in the year.
 13. Emphasize that while they are arranging themselves in the order of their birthdays, **they may not talk**. There should be no words spoken while they are arranging themselves in order.
 14. Allow about 10 minutes for participants to try to arrange themselves in the order of their birthdays. (**Note:** Make sure you observe the participants and see how they are communicating.)
 15. When participants are done, ask participants to give the month of their birthday to make sure participants completed the exercise correctly.
 16. Ask the following questions and list responses on flipchart:
 - How did you arrange yourselves in this order?
 - How did you communicate?
 - What skills did you use that worked the best?
 - What were some of the challenges of communicating without words?
 - How easy or difficult was the exercise?
 17. Ask participants what are some good non-verbal skills they learned during this exercise? (**Note:** List responses on flipchart.)

18. Ask what are good non-verbal skills to use when talking to community members about PHE and positive behaviors/practices the project is promoting? (**Note:** Add responses to previous flipchart.)
19. Discuss and add any of the following to the flipchart, if not mentioned by participants:
 - Posture – sit up straight and upright
 - Eye contact - sit/stand face-to-face with the client, looking them in the eyes. (**Note:** if eye-to-eye contact has a negative cultural connotation, ask what other way can body language indicate interest).
 - Height/seating – make sure to sit or stand as the client is doing.
 - Body language – avoid crossing your legs or folding your hands when talking to the client.
 - Use positive and affirmative facial expressions.
 - Nod affirmatively to indicate interest and understanding.
20. Reinforce that that the purpose of interpersonal communication is to understand and be understood, and that using good verbal and non-verbal communication can help community members to be effective communicators.

D. Practice (60 minutes)

1. Divide participants into pairs.
2. Distribute the HoPE-LVB counseling flipchart or any other counseling material on PHE or integrated topics to each pair.
3. Ask the pairs to take turns counseling each on the following using the counseling materials available:
 - PHE and ecosystem linkages
 - Conservation agriculture
 - Sustainable fisheries management

- Alternative livelihoods, SACCOs, energy saving stoves
 - Reproductive health and family planning.
 - Maternal and child health
4. Walk around the room providing constructive feedback on the interpersonal communication techniques used by the participants.
 5. Allow about 30 to 45 minutes for participants to practice the counseling. If time allows, have them practice as much as possible, as practice makes perfect.
 6. If time allows, ask the participants to find another partner and practice counseling on PHE again.
 7. Once the counseling exercise(s) has ended, ask participants what the counseling practice was like:
 - Was it difficult to talk about the linkages?
 - Which topics did you struggle with the most, and why?
 - What went well?
 8. Ask participants what they learned from the counseling process.
 9. Ask participants what they will do differently (or continue to do), when talking to community members about PHE and the various behaviors and practices learnt during the workshop. (**Note:** List responses on flipchart.)

Module 13 – NEXT STEPS

Objectives:

By the end of this session, participants will describe what they will do differently after the workshop.

Total Time: 1 hour

Preparation:

- Read this module thoroughly.
- Collect the materials/equipment needed:
 - flipchart stand
 - flipchart paper (newsprint)
 - colored marker pens
 - certificates
 - evaluation form
- If awarding certificates of completion make sure they are printed, signed and ready to be distributed.
- For workshop closure, invite someone, such as the government or other official, Project Director or a key community stakeholder, to provide closing remarks.
- If refreshments will be served to celebrate the end of the workshop, arrange for these to arrive around the time of anticipated end of the workshop.

Instructions:

1. Ask participants what they learned that will help them to do their jobs better.
2. Ask participants what they will do differently after this workshop. (**Note:** List responses on flipchart.)

3. Thank participants for their hard work and attention.
4. Ask if they have any questions before ending the workshop.
5. Distribute any support materials not previously provided during the workshop.
6. If there is an evaluation form, ask participants to complete it before proceeding.
7. If you have asked a speaker or head of the Project to provide closing remarks, ask them to speak at this time.
8. Hand out certificates of completion to each participant before closing the workshop.
9. Provide refreshments. (Optional)

PARTICIPANT HANDOUTS

Population, Health and Environment (PHE) Programs

People, families and communities live integrated lives. They don't concern themselves with only their health, children, growing and/or selling food, fishing, farming, clean water, shelter, etc. These are interrelated and part of people's everyday life.

Population, health and environment (PHE) is a development approach that recognizes the interconnectedness between people's livelihoods, health and the environment upon which they depend. This is even truer as climate change and ecosystem changes increasingly threaten natural resources, food security, human health and sustainable development.

- P =** Population involves the provision of voluntary FP information and services to address unmet need for contraception and promote birth-spacing and other RH practices
- H =** Health can be a variety of interventions but usually involves water, hygiene, sanitation and/or maternal and child health
- E =** Environment can include protected area management and biodiversity conservation (preserving the abundance and variety of all species including endemic, endangered, microscopic and more complex organisms on land and water). It can involve a variety of approaches— watershed management, sustainable agriculture, and natural resources management

PHE programs focus on the interactions among population, health and environment dynamics and work across several sectors in an integrated fashion. The strong partnerships that develop between and among the environment, agriculture, fisheries, health and rural development sectors can be beneficial in that they:

- Bring together organizations that share the same goal and, thus, creating the critical mass necessary to tackle a multi-system problem.
- Bring together organizations with different skills that provide the expertise needed to address community issues that one individual organization might lack.

- Increase organizations' power and impact by combining financial resources.
- Minimize overlapping activities—working with multi-sector NGOs and community groups that can help leverage resources, minimize overlapping activities and create stronger programs for holistic systemic changes in a community.
- Build on existing programs organizations can contribute to projects that are already established in the field.
- Fill in service gaps — many organizations (especially those working in conservation) reach remote communities that government health systems sometimes cannot. Such partnerships can help in reaching these remote and underserved communities with holistic interventions.
- Build capacity — organizations can gain new knowledge and technical skills by working with partners that have different backgrounds and expertise.
- Put the project in the larger context—working with the government, in particular, can help link the project to a number of governmental policies at a variety of levels and enable greater leveraging of resources.

Ecosystems ³¹

Ecosystem: Is a biological environment consisting of all organisms living in a particular area, as well as all non-living (abiotic) physical components of the environment with which the organisms interact, such as air, soil, water, and sunlight; a biological community and its physical environment.

Impact of human activities on different ecosystems:

Ecosystems	Resources	Human Activities	Effects
Forest	Trees -, shrubs+ birds -, antelopes -, gorilla - , people +	Clear cut logging Cutting of trees for fuel and making charcoal to sell for income People converting forests into farmland Killing of wild animals because they attack crops Poor enforcement of laws that protect the forest Increasing population which puts pressure on forest resources	Continuous loss of forest cover Loss of soil fertility, Increased soil erosion Loss of habitat for wild animals, birds, and insects Loss of trees to farmland Less wild life, which is a loss of biodiversity Loss of forest cover for shade and to protect gardens
Lakes	Water - /+ , fish -, aquatic plants +, aquatic animals - , microorganisms ?	Over Fishing Using illegal fishing gears Illegal fishing practices Defecating in and around the lake Dumping waste into the lake Washing in the lake Increasing population Transport in the lake Farming around the lake Encroachment of littoral	Reduced fish stocks in the lake Low fish catches Catching of juvenile fish, reducing breeding capacity Contamination of the lake Water borne diseases, such as diarrhea, cholera and typhoid Encroachment of

³¹ Adapted from: BALANCED Project. *Population, Health and Environment (PHE) Community-based Distribution System: A Guide for Training PHE Community-based Distributors*. University of Rhode Island. Narragansett, RI. 2011

		zones around the lake	<p>people on lake resources</p> <p>Increased fishing efforts for food and income</p> <p>Soil run off and siltation from farming</p> <p>Increased water hyacinth and hippo grass from soil run off</p>
Farmland	<p>Soil fertility -, crop land + , trees - , domestic animals +, birds -, , people +, insects ?</p>	<p>Bush burning</p> <p>Tree cutting</p> <p>Poor farming practices, i.e. lack of contour farming, lack of crop rotation, mono-cropping, etc.</p> <p>Use of chemical fertilizers</p> <p>Use of chemical pesticides</p> <p>Open defecation</p> <p>Land fragmentation</p> <p>Over grazing by livestock</p>	<p>Loss soil fertility</p> <p>Soil and chemical run off into rivers, streams and lake</p> <p>Loss of soil moisture</p> <p>Low crop yields</p> <p>Loss of wind breaks</p> <p>Loss of vegetation coverage</p>

Tropical forest ecosystem

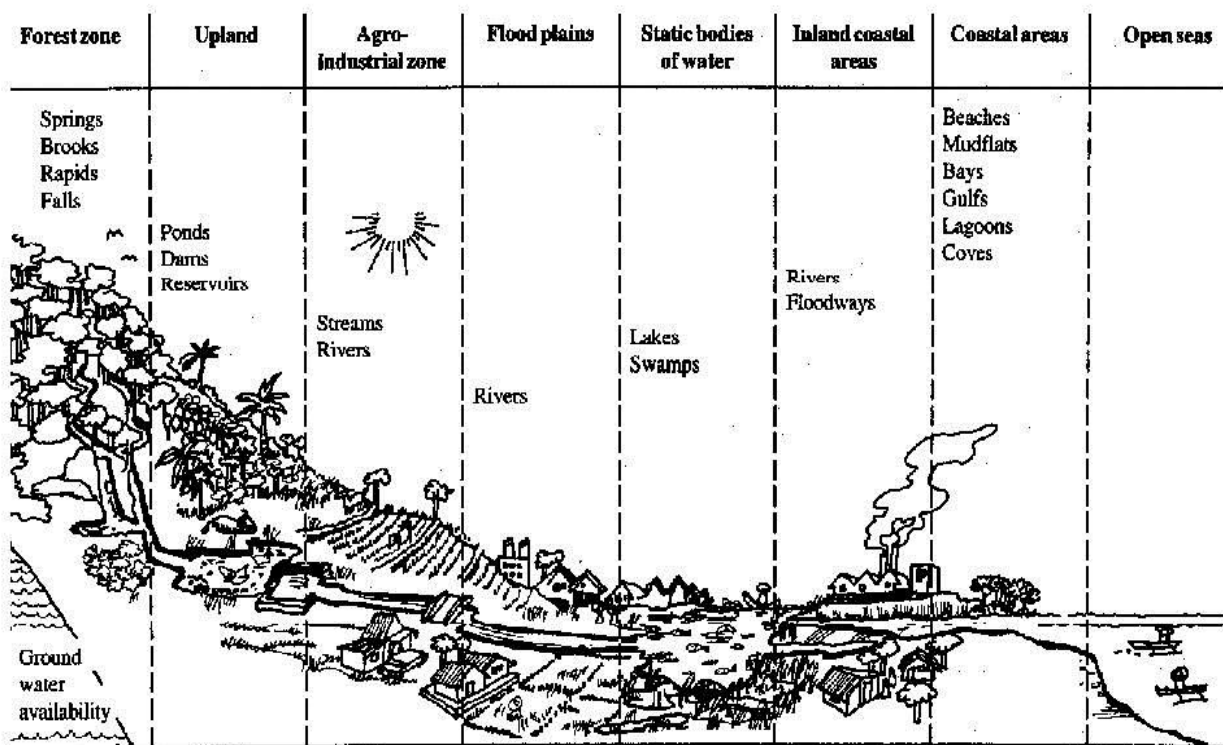
Distinct characteristics	<ul style="list-style-type: none"> Floral species have stilts and knee rooting system. 	<ul style="list-style-type: none"> Plants are salt tolerant. 	<ul style="list-style-type: none"> Often found on limestone 	<ul style="list-style-type: none"> Multilayered forest structures: high diversity 	<ul style="list-style-type: none"> Relatively pure homogeneous pine species: low diversity 	<ul style="list-style-type: none"> Stunted growth forest structure; trees covered with mosses.
Elevation meters above sea level (asi)	<ul style="list-style-type: none"> Mostly lowlands 			<ul style="list-style-type: none"> Range: 1200-1500 	<ul style="list-style-type: none"> Range: 1500-2000 	<ul style="list-style-type: none"> Above 3050
Water	<ul style="list-style-type: none"> Water table high (periodically) Coastal salt water Brackish water 		<ul style="list-style-type: none"> Spring water; ground water; surface water 			
Representative wildlife	<ul style="list-style-type: none"> Heron Sea eagle Philippine crocodile Kingfisher Flyeater Tabon bird 	<ul style="list-style-type: none"> Fan tail Rail Wild pig Deer Hawk Falcon 	<ul style="list-style-type: none"> Fowl Bats 	<ul style="list-style-type: none"> Swallow Woodpecker Cross bill 	<ul style="list-style-type: none"> Horn bill Eagle Dove Cloud rat 	
Mangrove forest	Beach forest	Molave forest	Dipterocarp forest	Pine forest	Mossy forest	

Source: International Institute of Rural Reconstruction (IIRR) 1992

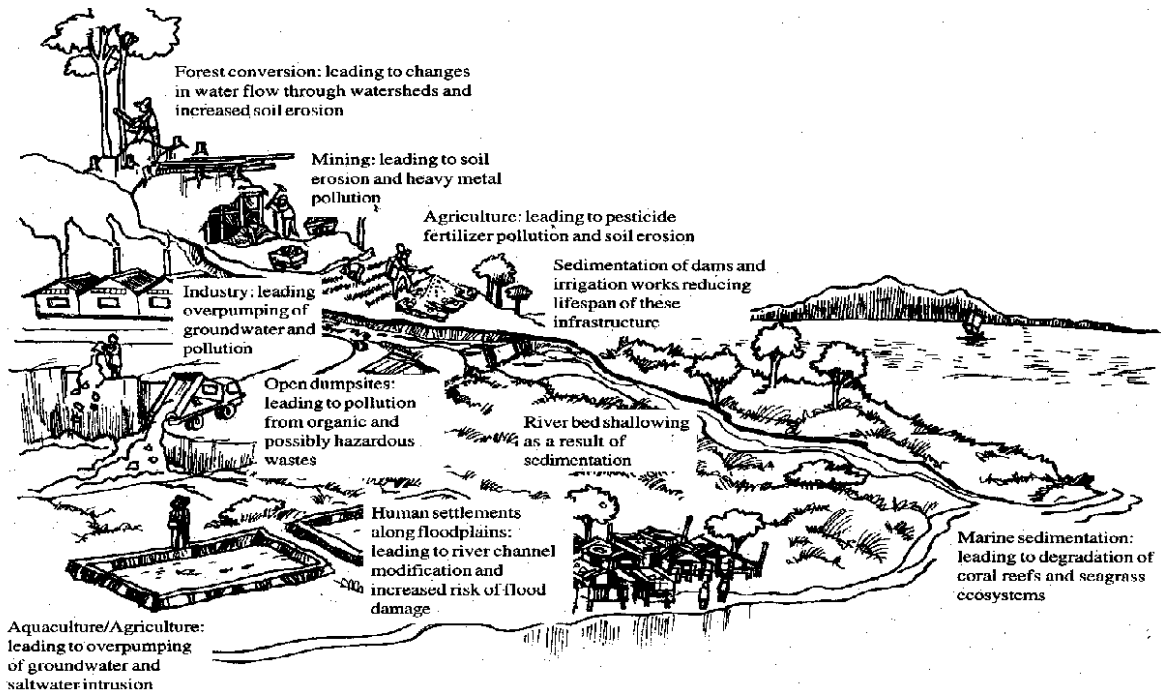
Tropical forest ecosystems are situated in the equatorial belt of the earth. This portion of the earth is called the tropical zone. It accounts for about 40 percent of earth's surface. Within this zone are two major types of tropical forest ecosystems: (1) the rainforest; and, (2) the monsoon or seasonal forest. The rainforest is one of the oldest and most complex ecosystems on earth. Tropical forests are ecologically important for their role in:

- Maintaining well-balanced local, regional and or global climates—vegetation can affect-climate in several different ways, via heat balance, surface roughness, the hydrological cycle (precipitation and evapo-transpiration) and carbon storage.
- Serving as a living storehouse of biodiversity—reduction in structural diversity inevitably follows from human interaction with tropical rainforests, as they are progressively simplified by increasing degrees of interference, e.g., timber utilization, encroaching farmland, etc. Biodiversity has a life-sustaining effect on human beings.
- Human populations located in the tropics depend on the forest resources base for basic sustenance. Thus, the disappearance of the forest due to massive disturbances in the forest ecosystem would mean loss of human lives.

Input-output of freshwater from one ecosystem to another (interconnectedness of ecosystems)

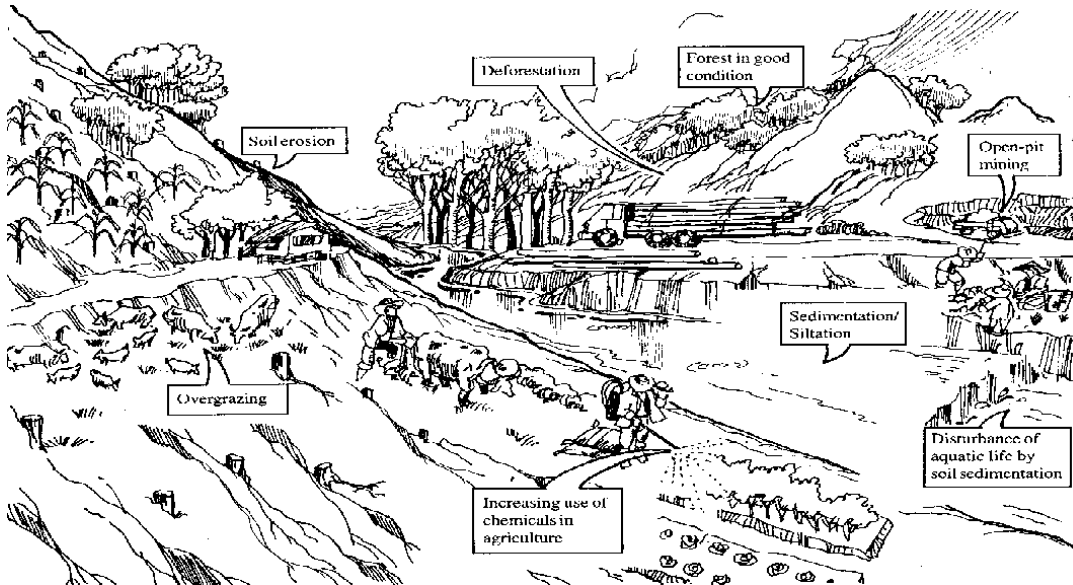


Human intrusion into the water cycle



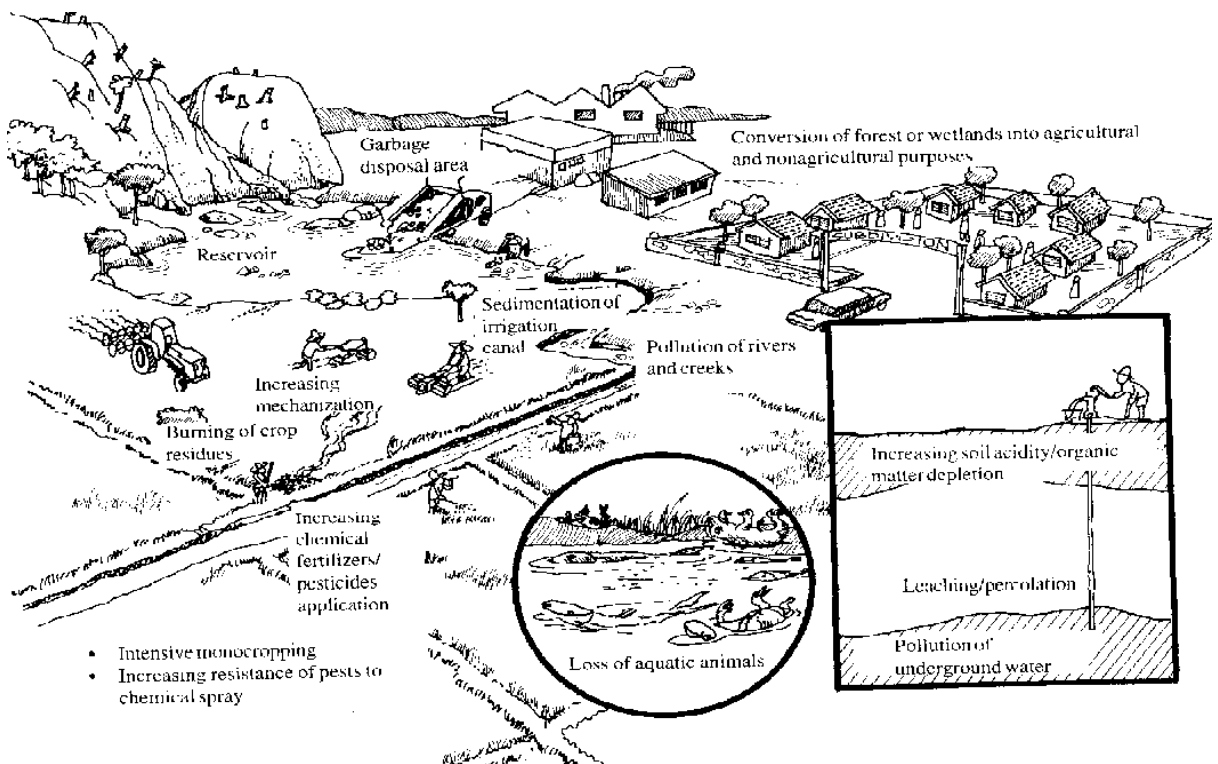
Source: IIRR 1992

Degradation of uplands



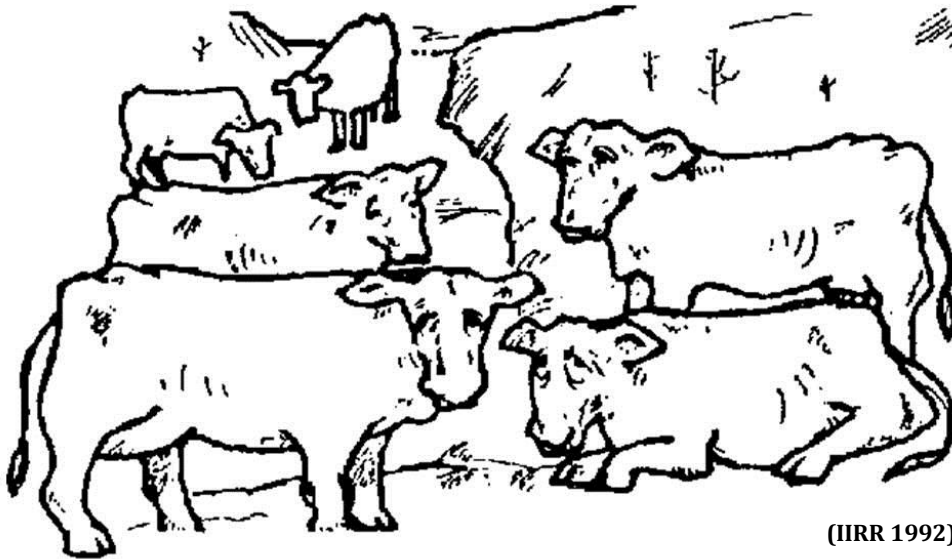
Source: IIRR 1992

Lowland degradation



Source: IIRR 1992

Browsing/overgrazing



(IRR 1992)

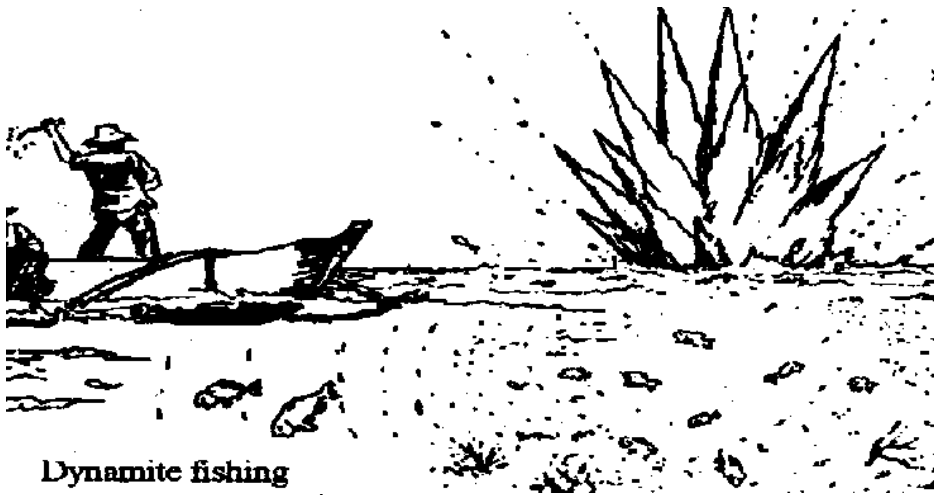
can lead to erosion and soil compaction

Insufficient fodder—especially during dry periods and droughts—forces animals to forage on available fodder growing in the distant grazing areas. Overgrazing on the earth's natural cover contributes to land degradation and soil erosion.

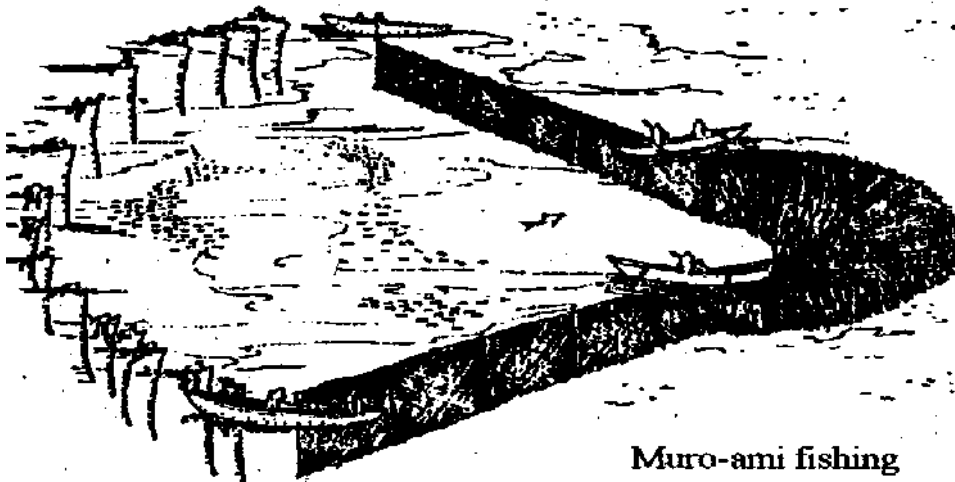
Massive herding of animals creates gullies that contribute to soil erosion, soil compaction, marching of wetlands and dust storms in dry, windy areas.

Free-grazing of animals destroys both less-valued and high-valued grass, crops, plants and trees that can lead to loss of various plant resources.

Illegal fishing activities

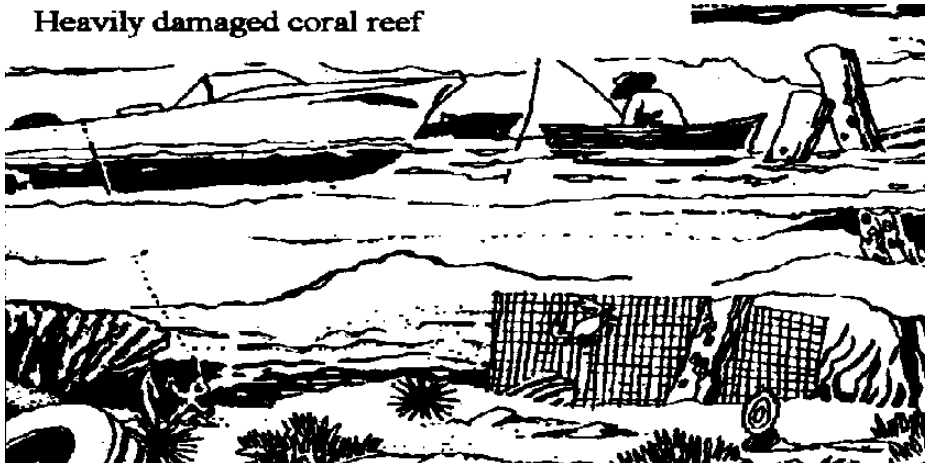


Dynamite fishing



Muro-ami fishing


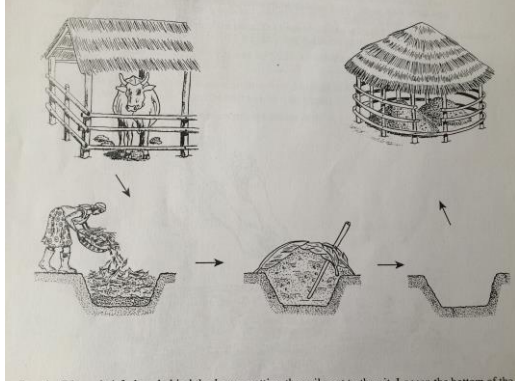
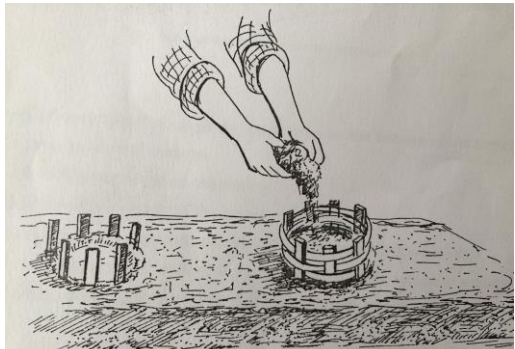
Heavily damaged coral reef

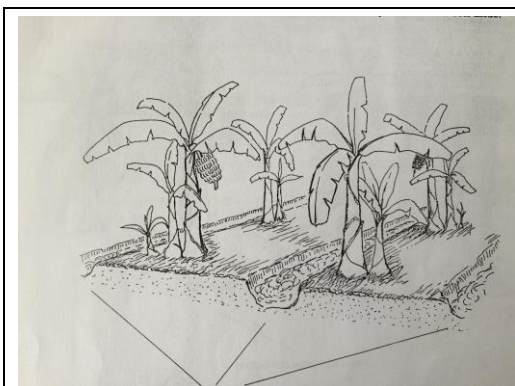


Source: IIRR 1992

Conservation Agriculture and Agroforestry

Organic farming and use of organic fertilizers

<i>Type of Organic Fertilizer</i>	<i>Description</i>
	<p><u>Vegetation compost</u> is a mix of various plant materials and animal manure, which are decomposed under controlled conditions to produce an organic soil fertilizer containing balanced plant nutrients.</p> <p>The compost material takes about 2 to 3 months to be done. The composted material is great for all types of crops, including perennial and annual crops.</p>
	<p><u>Farm yard manure:</u> When farmers keep livestock in an enclosure (boma), they add bedding material made up of dry vegetative material to the boma to absorb animal droppings and urine.</p> <p>Each time that manure (which includes both animal droppings and vegetable material) is taken out of the enclosure it should be composted immediately. It takes about 6 weeks for the manure to decompose. The composted material can be used for all types of crops.</p> <p>Note: Never apply fresh manure to the field. It must always be composted.</p>
	<p><u>Basket composting:</u> Decomposable home garbage (vegetable matter), garden and farm waste and leguminous plant remains (groundnuts, beans, peas, etc.) are allowed to rot in a basket half buried in the garden.</p> <p>Plant seedlings are planted around the basket compost so that they can tap into the composted fertilizer as they grow.</p> <p>Basket composting allows farmers to grow vegetables throughout the year because the vegetables can always tap into the basket compost for up to two to three growing seasons.</p>



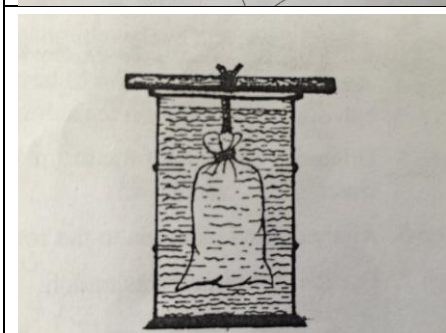
Trench composting is best used for already established perennial crops like bananas and coffee. It involves the digging of trenches between rows of plants/trees and adding different types of vegetable matter and animal dung to the trenches to compost.

The materials in the trench take about 3 to 6 weeks to decompose, after which the roots of the plants grow toward the trench to tap into the nutrient-rich fertilizer.



Sunken basket composting is another version of the “trench composting”, which involves the digging of pits between the perennial plants (coffee, bananas, etc.), adding composting material to the pit, covering it with soil and allowing to compost.

Just like trench composting, the plants’ roots grow toward the sunken pits to absorb the nutrient rich composed fertilizer.



Liquid manure is a composting process that provides crops with adequate natural plant nutrients quickly during the growing season. It is a good complement to compost used at planting.

Animal manure, urine manure or plant tea is placed in a strong bag or gunny sack, suspended in a steel drum or jerry can and left to compost.

The materials compost in about 14 days, after which the liquid can be used to fertilize vegetable crops.



Green manure enables the farmer to grow his own fertilizer with food crops right where it will be used. This reduces time, land and labour normally needed to prepare compost.

Making green manure involves turning over the green plants and weeds into the soil after each season about three to four weeks before planting. This will add rich plant nutrients to the soil and improve the soil structure in preparation for the new crops.

Soil Fertility Management Techniques

Crop rotation	Rotating annual crops every season increases soil fertility and reduces pests and disease build up. Crop rotation involves planting crops that take nutrients from the soil (maize, cassava, sweet potato, vegetables) one season, and planting crops that add nutrients back to the soil (beans, cowpeas, groundnuts, Crotalaria) the next season. Crop rotation should be done every successive season.
Maximum soil cover	<p>Cover crops involve providing a protective layer on the soil surface. This is done by planting live cover crops, such as Dolichos lablab, Macuna, sweet potatoes, cow peas, pumpkin or spreading of dead, dry vegetative material, mainly crop residue (mulch) on the soil surface. Agroforestry tree species can also be used to provide aerial soil cover.</p> <p>Planting live cover crops and mulch prevents soil erosion, leaves little space and light for weeds to grow, conserves soil moisture, regulates soil temperature and adds organic matter to the soil. Live leguminous crops also add nutrients to the soil that crops need.</p>

Soil and Water Conservation Structures for Farming on Hills and Slopes

Soil and Water Conservation Structure	Description
Fanya Juu	<p>Fanya Juu is best used on the upper to middle part of the slope where water would gather most momentum. It involves digging ditches/canals and heaping soil on the upper side of the ditch forming a barrier on the upper side of the ditch/canal. This barrier slows the speed of water running down the slope (farm), preventing it from taking soil with it.</p> <p>Ditches/canals should be spaced according to the slope and soil depth. For a steeper slope there should be closer intervals between the barriers, and for more moderate slopes, the intervals between the barriers is larger.</p>
Fanya Chini	<p>Fanya Chini is used towards the end the slope where the water run-off has slowed down. Its main purpose is to divert the water from the slope. It involves digging ditches/canals and heaping the soil on the lower side of the ditch. Putting the soil on the lower side of the ditch/canal forces the running water into an outlet, such as a large ditch or canal, diverting it away from the garden.</p>
Trash Lines	<p>Trash lines are plant material barriers, such as maize, rice and sorghum stalks, placed between crops to prevent soil run off. They are best used when growing annual crops.</p>
Cut off drains	<p>Cut off drains are another method of diverting excess water. They are dug across a slope to intercept surface run off and carry it to an outlet such as a canal or stream. Cut off drains are used to protect cultivated land, compounds, and roads from uncontrolled run off and to divert water from gully heads.</p>
Retention ditches	<p>Retention ditches are also cut along the contour of a slope. They catch and retain incoming run off and hold it until it seeps into the ground. These ditches are an alternative to cuff off drains where there is no nearby waterway to discharge the water runoff into. They are also used to harvest water.</p>

Agroforestry Practices

- Conserve existing trees. If you must cut a tree, cut at a level that allows the tree to grow new branches.
- Other agroforestry practices include:

Practice	Benefits
Plant <i>Calliandra</i> , fruit, ornamental and high-value medicinal trees on the home compound or near homesteads.	These trees provide shade, shelter, fruits, fodder for animals and other products.
Plant multipurpose trees, such as <i>Gravellia robusta</i> , <i>Gravellia maesopsis emini</i> , <i>Albizia</i> , <i>Markhamia lutea</i> , and <i>Bathedavia</i> , in the cropland. They can be scattered haphazardly or in some systematic pattern in the cropland.	These types of trees conserve soil fertility and soil moisture, provide nitrogen to the soil, act as wind breaks and provide aerial soil cover, critical for the health of the crops and the land they are planted on.
Plant trees and shrubs planted along and around a farm.	They prevent soil run off, form a protective barrier and mark boundaries.
Hedgerow planting: In between hedgerows of planted shrubs and trees, plant crops, preferably leguminous, fertilizer or fodder trees.	The shrubs and trees prevent soil erosion, and provide aerial soil cover while the crops provide nutrients to the trees and shrubs.
Taungya system is the intercropping of forestry trees and agricultural crops during the first five years of establishment of a forestry plantation.	The trees prevent soil erosion and provide aerial soil cover and moisture for the crops, while the crops provide nutrients to the growing trees.

Sustainable Fisheries Management

Sustaining the quality and quantity of fish in Lake Victoria for now and the future involves several types of people working together to provide a multi-faceted approach to sustainable fisheries management.

People and agencies that have an interest in fisheries resources are considered “fisheries stakeholders”. All of these stakeholders have an important role to play in protecting the fisheries resources in Lake Victoria for now and for future generations.

Fisheries Stakeholders and their Roles in Sustainable Fisheries Management

- a) Central and Local governments – they formulate policies, laws and regulations that support sustainable fisheries.
- b) Beach Management Units (BMU) – an organization of fisherfolk at the beach within a fishing community. Their roles include:
 - Keep records of people working in fisheries at the beach and of boats and gears.
 - Work with the government to license fishers and register boats.
 - Collect revenue from sources agreed by the BMU Assembly.
 - Draft fisheries by-laws.
 - Protect young and breeding fish by educating members about illegal fishing, reporting incidences of illegal fishing and trading to police, and/or fisheries officers.
 - Conduct fishery operations to fight illegal fishing and bad fishing practices.
 - Collect accurate information on fishery issues and share the information with local governments, central government and research institutions.
 - Improve safety of the fishers.
 - Keep the beach clean (hygiene and sanitation).

- Work to tackle cross-cutting issues such as health (including HIV), woman's affairs, welfare, environment, gender, education, etc.
- Encourage its members to save regularly and use credit wisely.

c) Local leaders, such as:

- Local councils 1, 2 and 3 help to ensure that policies and laws are adhered to, support enforcement of policies and laws, approve community by-laws, and supervise BMUs (only local council 1).
- Church and cultural leaders can help in the sensitization of legal fishing practices and the consequences of illegal fishing as well as mobilize the community around fishery issues.
- Village chiefs and elders also help to sensitize and mobilize the community around adherence to fishery regulations.

d) Fishers

- Use legal size fishing nets and legal gear to fish.
- Obtain a valid fishing license or permit.
- Never fish in breeding ground areas.
- Never use chemicals, lanterns and other harmful methods to catch fish.
- Use fishing boats 28 feet or longer

Alternative Livelihoods, SACCOS, Energy Saving Stoves

Benefits of alternative livelihoods

- Additional income can provide extra money to the family for school fees, food and medicines
- Having another source of income takes pressure off the use of natural resources, such as fish and farmland, for income.
- Having another source of income provides a safety-net for when income from agriculture and/or fisheries is lower than expected.
- For BMUs, another source of income would help them to raise funding to implement the sustainable fisheries practices they are promoting.
- For women, having another source of income can give them more economic and social power to make decisions about the family.

Types of alternative livelihoods

- Apiculture (bee keeping)
- Small farmyard animal rearing (goats, chickens)
- Vegetable gardens
- Tree nurseries
- Soap making, weaving table cloths and other crafts
- Bread baking
- Cage fishing

Where to get information about alternative livelihoods

- For beekeeping, creating tree nurseries, rearing of small animals, and farming contact the local agricultural extension agent/worker and trained women's/youth groups.
- For cage fishing contact the local Fisheries Department or Fisheries Officer

- For making soap and table cloths, tree nurseries, beekeeping, and other livelihoods contact women's/youth groups trained on alternative livelihoods.

Savings and Credit Cooperative Organization (SACCOS)

Reasons for saving money

- educate children
- have money for medicine and health care
- start a new business
- to construct a house
- purchase land
- purchase farm animals
- have money in case of an emergency

SACCOS core activities

- savings mobilization
- savings management
- training members
- credit provision at affordable costs

How to become a member of a SACCO

- A person must buy at least one share in a SACCO. Bylaws of the particular SACCO determine from time to time the minimum share value for each member to pay.
- Credit union/SACCO members purchase a share in the SACCO whenever they join. With the purchase of shares, members gain access to the services provided by the SACCO, which includes savings, credit, training, insurance etc.

- The law allows for each member one vote at the Annual General Meeting (AGM) despite the number and amount shares a member has purchased in the SACCO.

Benefits of Energy Savings Stoves

- **Saves money:** the household rocket stove uses less firewood than a traditional 3-stone open fire. The amount of wood needed for a traditional stove in one day, lasts 2 to 3 days with a rocket stove.
- **Cooks faster:** the rocket stove fire produces more heat than a traditional 3 stone fire stove, thus cooking food much more quickly.
- **Less smoke:** The rocket stove produces less smoke than a traditional stove. This reduces the amount of respiratory infections among adults and children.
- **Easy to use:** once lit, the rocket stove fire will not go out unless the user stops adding firewood. There is no need to blow at the flames to keep the fire burning as with a traditional 3-stone stove.
- **Safe to use:** Rocket stoves are safer to use because the fire is shielded. There is less likelihood of accidents or burns to the user and children.
- **Affordable:** Rocket stoves are constructed using locally available materials such as anthill soil or clay for the body and grass or sawdust for insulation.
- **Heat retention:** These stoves retain heat for a significant period of time which enhances the efficiency during simmering. And, they can be used as food warmers.
- **Environment friendly:** These stoves use less firewood and therefore contribute to the reduction in the deforestation rate. The rocket stoves are also less pollutant because of their nearly smokeless operation.

Water, Hygiene and Sanitation

How germs that cause diarrhea and illness enter the body:

- Fluids (through contaminated water)
- Fields (touching anything that has outdoor feces on it)
- Flies (transmitting disease)
- Fingers (dirty hands to mouth)
- Food (infected by fluids, flies, or fingers and then ingested)

The majority of all cases of diarrhea are caused by:

- Poor hygiene
- Unclean water
- Inadequate sanitation

The three **key** sanitation and hygiene practices that have the greatest potential for preventing diarrhea and water borne diseases are:

- Safe drinking water
- Correct hand washing
- Safe disposal of feces

Benefits to good water, hygiene and sanitation practices:

- Healthy Children: Improved WASH practices lead to less diarrhea and childhood illness and better child survival.
- HIV/AIDS: Improved WASH practices are critical for persons living with HIV/AIDS because they live at high risk of contracting diarrhea, which can cause or contribute to their premature death.
- Food Production: Diarrhea among persons working in fisheries and agriculture reduces their availability to work, their productivity and their income, sometimes at critical harvest or planting times. Also, handling fish

with dirty hands or when sick with diarrhea, vomiting or fever, contaminates the fish and increases spoilage and losses of already smaller fish catches.

- Income generation: As in the case of food production, diarrhea in a family reduces the amount of time available to work, increases contamination of fish, resulting in loss of income. Diarrhea also causes a family to buy medicine, thus taking from their income.

Making Safe Drinking Water

Boiling water is the best method for killing the germs that cause diarrhea and illnesses.³²

- 1) Place the water in a teapot or pot.
- 2) Heat the water until large bubbles appear (a rolling boil). Boil for 1 minute.
- 3) Cover the water and let it cool

Water purification tablets and commercial water filters, especially if used together are also effective for killing most of the germs that cause diarrhea.

The boiled water should be placed in a secure storage container, preferably one with a narrow neck, tight fitting lid, and a spigot, such as a jerry can, to avoid recontamination of the water.

If there is no spigot on the container, pour the water into the clean drinking container or dip a long-handled ladle (scoop) into the water, being careful that the person's hand does not touch the water.

Correct hand washing

Proper hand washing procedures:

- 1) Wet the hands and lather them with soap
- 2) Rub the hands and fingers together well three times (for about 20 seconds)
- 3) Rinse the hands with water until all of the soap or cleansing agent is gone.

³² *A Guide to Drinking Water Treatment and Sanitation for Backcountry and Travel Use*. Centers for Disease Control and Preventions. Atlanta, Georgia. 2009.

- 4) Air dry the hands or dry them with a clean towel or paper.
- 5) Wash your hands at key times:
 - after defecation or contact with feces (including children's feces)
 - before preparing food
 - before eating

Safe Feces Disposal

Diseases such as hepatitis A, cholera, typhoid, amoebic dysentery, rotavirus and polio are transmitted via the fecal oral route that is fecal matter entering the body through the mouth.

The most effective way of disposing of human feces is:

- Use a latrine or toilet that is no closer than 200 meters from any water source to defecate
- Never defecate in the open.
- Never defecate close to a water source

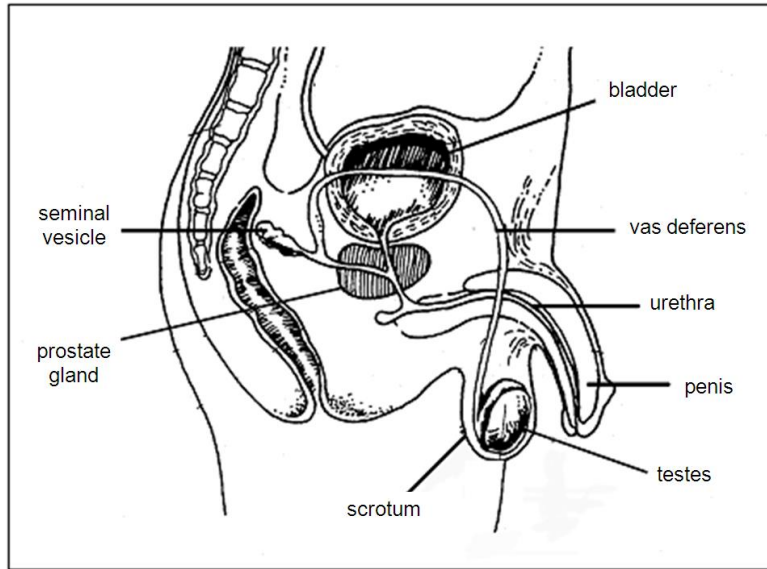
The most effective way of disposing of animal feces is:

- Keep animals in a shelter or boma.
- Collect the manure (and any vegetable matter) from the shelter and compost it immediately.

Reproductive Health and Fertility

Important parts of the male reproductive system and their function

Male Reproductive Anatomy

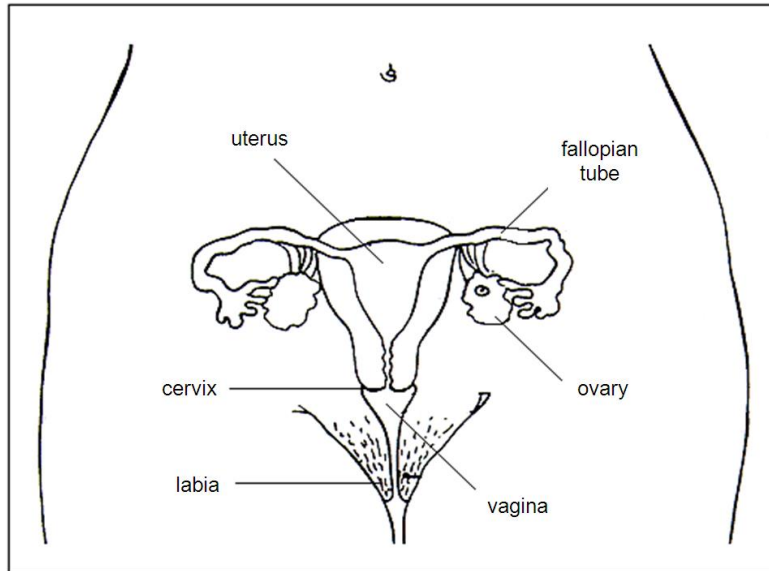


Parts and Functions of the Male Reproductive System

Parts	Functions
Penis	Male organ for sexual intercourse, for urinary excretion and ejaculation of sperm
Scrotum	Sac below the penis that holds the two testes. The scrotal muscle contracts or relaxes to regulate the temperature of the testes to make it compatible with the viability of the sperm
Urethra	Tube that provides passage for urine and semen
Testes	Site of the production of sperm and the male hormone, i.e., testosterone
Vas deferens	Tubes that provide passage for sperm from the storage place to the urethra during ejaculation
Prostate gland	Round-shaped body located below the urinary bladder that secretes fluids that aid in the motility of the sperm

Important parts of the female reproductive system and their function

Internal Female Reproductive Anatomy



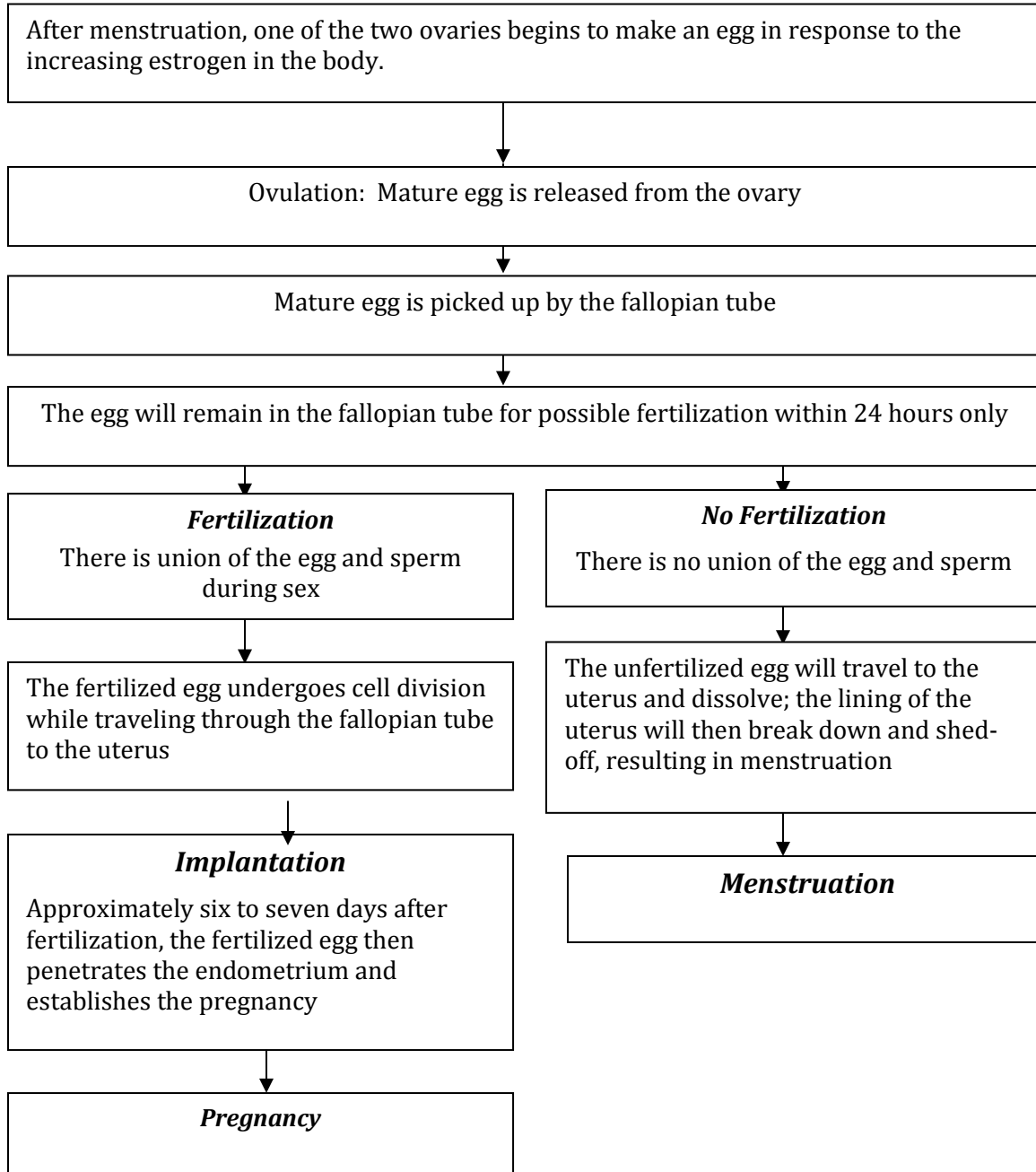
Parts and Functions of the Female Reproductive System

Parts	Functions
Vagina	An elastic, muscular canal that provides passage for menstrual flow, for birth of babies, and receives the penis during sexual intercourse
Cervix	The neck of the uterus where cervical mucus is secreted; entrance between the vagina and the uterus
Uterus	A thick-walled hollow organ that houses and protects the fetus during pregnancy; commonly called the womb; inner lining of the uterus (endometrium) undergoes thickening in the ovulatory and early post-ovulatory stages of the menstrual cycle to prepare the uterus for possible implantation of the fertilized egg
Fallopian tubes	Two tubes that extend from the uterus to the ovaries; sperm travels through the tubes to reach the egg; fertilization of the egg takes place in the tubes, which then travels to the uterus where further growth takes place
Ovaries	Two round-shaped structures responsible for the development and expulsion of the egg and the development of female hormones, i.e., estrogen and progesterone

The Three Stages of the Menstrual Cycle

Stages	Description
Pre-ovulatory	<ul style="list-style-type: none">• Phase when menstruation occurs; usually occurs in the first 3 to 7 days of this phase• After menstruation begins, estrogen steadily increases in preparation for the release of the mature egg from the ovary.• Ovaries are the source of eggs and the hormones that regulate female reproduction.
Ovulatory	<ul style="list-style-type: none">• Release of the mature egg from the ovary; usually only one egg is released.• Occurs approximately 14 days before a woman begins to menstruate.• Can happen at different times during different cycles• Period when a woman is <u>most fertile</u> and most likely to conceive if she has unprotected sex and is not using family planning.
Post-ovulatory	<ul style="list-style-type: none">• Last phase of the menstrual cycle• Lining of the uterus thickens to prepare the uterus for possible implantation of the fertilized egg.• If no fertilization occurs, shedding of the lining occurs, resulting in menstruation.

Schematic Diagram of the Fate of the Egg



Family Planning: Contraceptive Methods³³

Most common FP methods in Kenya and Uganda:

Barrier Methods

- Male condoms
- Female condoms

Hormonal methods

- Combined oral contraceptive pills (COC)
- Progestin-only contraceptive pills (POPs)
- Injectables (DMPA, NET-EN)

Long-acting methods

- Intrauterine Contraceptive Device (IUCD, such as Copper T and the hormone releasing LNG20-IUD)
- Contraceptive implants

Fertility Awareness methods

- Standard Days Method (SDM)
- Lactational Amenorrhea Method (LAM)

Emergency Contraception Pills (ECPs)

A description of all these methods follows

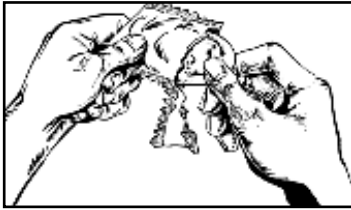
³³ Pathfinder International, *Cue Cards for Counseling Adults on Contraception*, 2014.

BARRIER METHODS

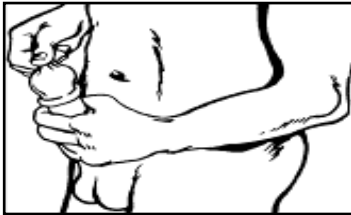
Male Condoms

Male Condom	
What is it?	<ul style="list-style-type: none">• A latex (rubber) sheath worn over the erect penis during sex
How does it work?	<ul style="list-style-type: none">• Prevents sperm from entering the vagina
How effective is it?	If 100 couples use condoms for 1 year, typically 15 become pregnant
Advantages	<ul style="list-style-type: none">• Can be used without seeing a health provider• Can serve as temporary or back-up method if a woman misses a pill or has to abstain when using a fertility awareness method• Protects against pregnancy and STIs, including HIV• Increases male participation in family planning
Disadvantages	<ul style="list-style-type: none">• Interrupts sex and may decrease sensation• Can break easily if not stored properly a dry, dark place away from light, moisture, and heat• One-time use only• Requires partner cooperation• Not appropriate for men or women allergic to latex.
Available from:	Small kiosks, VHT/CHWs, Pharmacists, Health Facilities and at outreaches

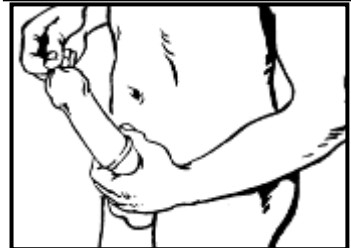
Proper Use



- Carefully open the package so the condom does not tear.



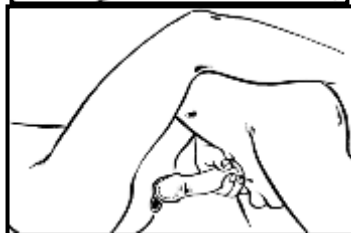
- Squeeze tip of condom and put it on end of hard penis.



- Continue squeezing tip to leave enough space for the semen, while unrolling condom until it covers all of penis.



- Always put on condom before entering partner.

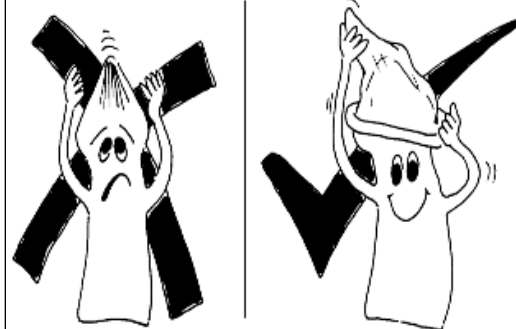
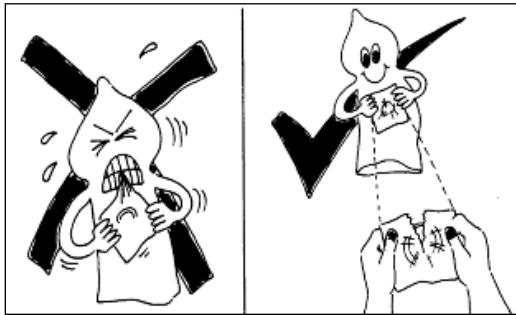
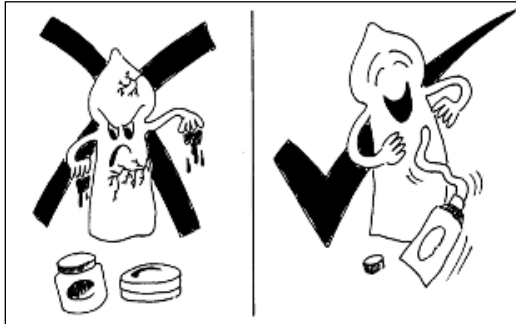
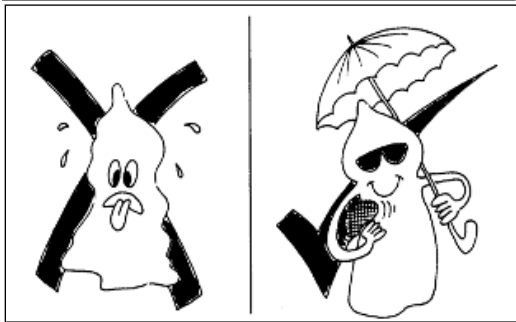


- After ejaculation (coming), hold rim of condom and pull penis out before it gets soft.

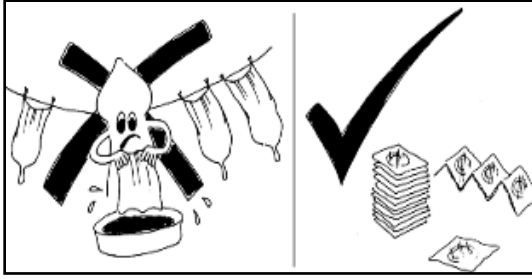


- Slide condom off without spilling semen inside vagina.

Proper Care



- Do not use condoms that are dry, dirty, brittle, yellowed, sticky, melted or damaged.
- Store in dark, dry place, away from sunlight, moisture and heat.
- Do not keep your condom in a tight pocket or in your wallet for a long period—it is too warm.
- Do not use grease, oils, lotions, or petroleum jelly to lubricate condoms—these oils cause the condom to break.
- Use only water-based lubricants.
- Do not use your teeth or other sharp objects to open the package—it may tear the condom.
- Tear the condom package, and then open carefully using the guides in the package.
- Do not pull the condom tight over the head of the penis—it may cause the condom to burst.
- Squeeze the air out of the tip of the condom before you put it on to leave space for the semen to collect.
- Do not unroll the condom to check for tears before putting it on.
- Unroll the condom directly onto an erect penis.



- Do not wash out and attempt to re-use a condom—it may break.
- Use condoms one at a time and properly dispose of it after use. Keep new supplies available.

Female Condom



Female Condom	
What is it?	<ul style="list-style-type: none"> • A sheath made of a thin, transparent, soft, plastic film or latex rubber with flexible rings at both ends placed into the vagina before having sex
How does it work?	<ul style="list-style-type: none"> • Prevents sperm from entering the vagina
How effective is it?	If 100 women use the female condom for 1 year, typically 21 become pregnant.
Advantages	<ul style="list-style-type: none"> • Woman can initiate their use • Woman is in control of their use • Can be used without seeing a health provider • Can serve as temporary or back-up method if a woman misses a pill or has to abstain when using a fertility awareness method • Protects against pregnancy and sexually transmitted infections, including HIV • Can feel more natural during sex than male condoms
Disadvantages	<ul style="list-style-type: none"> • Interrupts sex and may decrease sensation • Can break easily if not stored properly • Requires partner cooperation • May be relatively expensive

Female Condom	
Available	CBD agents (counsel, provide), VHT/CHWs (counsel, provide –if available), Pharmacists (counsel, provide – if available), Health Facilities (counsel, provide)

HORMONAL METHODS

Combined Oral Contraceptive Pills (COCs)



Combined Oral Contraceptive Pills (The Pill)	
What is it?	<ul style="list-style-type: none">• A pill that a woman takes every day to prevent pregnancy
How does it work?	<ul style="list-style-type: none">• A woman takes one pill every day—with the pill being most effective when taken at the same time every day• The pill contains small amounts of the hormones estrogen and progestin• Estrogen and progestin make the mucus around the cervix thick, which stops sperm from meeting the egg• The hormones also stop the release of eggs from the ovaries (ovulation)
How effective is it?	If 100 women use COCs for 1 year, typically 8 become pregnant.
Advantages	<ul style="list-style-type: none">• Woman can control the method• Can be stopped at any time without a provider's help• Do not interfere with sex• Help prevent cancer of the uterus and ovaries• Help prevent pelvic inflammatory disease (PID)• Safe for a woman with HIV/AIDS, whether or not she takes anti-retroviral (ARV) medicines

Combined Oral Contraceptive Pills (The Pill)	
Disadvantages	<ul style="list-style-type: none"> • Woman must remember to take a pill once a day, every day • May cause irregular bleeding during first few months of use • May also cause absence of periods or other side effects • Do not protect against sexually transmitted infections (STIs), including HIV
Available from:	VHT/CHWs (counsel, provide or refer), Pharmacists (counsel, provide), Health Facilities (counsel, provide)

Progestin-Only Contraceptive Pills (POPs)

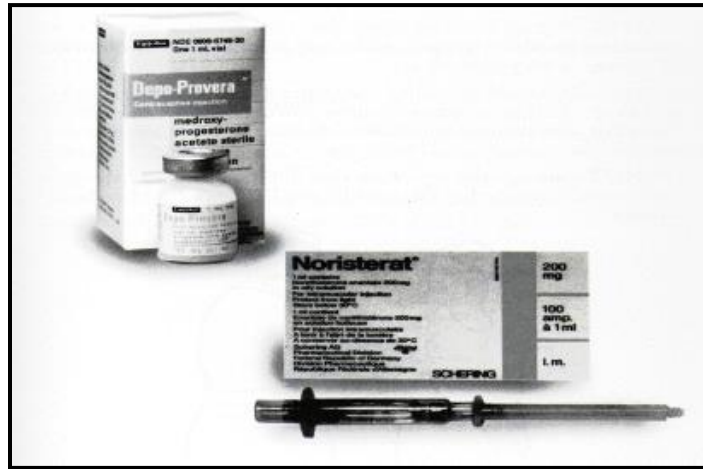


Progestin-Only Pills (Mini-pill)	
What is it?	<ul style="list-style-type: none"> • A pill that a woman takes every day to prevent pregnancy
How does it work?	<ul style="list-style-type: none"> • Woman takes one pill every day and is most effective when taken at the same time every day • Contains small amounts of hormone (progestin) • Progestin makes the mucus around the cervix thick, which stops sperm from meeting the egg • Also stops the release of eggs from the ovaries (ovulation)
How effective is it?	<p>POPs are very effective for breastfeeding women. If 100 breastfeeding women use POPs for 1 year, typically 1 becomes pregnant.</p> <p>As typically used, they are less effective for non-breastfeeding women. If 100 non-breastfeeding women use POPs for 1 year, typically 3–10 women become pregnant.</p>
Advantages	<ul style="list-style-type: none"> • Safe for women who are breastfeeding—may begin the mini-pill six weeks after giving birth • Woman controls the method • Can be stopped at any time without a provider's help • Do not interfere with sex • Safe for a woman with HIV/AIDS, whether or not she takes anti-retroviral (ARV) medicines

Progestin-Only Pills (Mini-pill)	
Disadvantages	<ul style="list-style-type: none"> • May cause irregular monthly bleeding and for breastfeeding women may cause delayed return of monthly bleeding • Woman must remember to take a pill once a day, every day • Do not protect against STIs, including HIV
Available from:	VHT/CHWs (counsel, provide or refer), Pharmacists (counsel, provide), Health Facilities (counsel, provide)

Hormonal Injectables

Progestin-Only Injectables (DMPA & NET-EN)



Progestin-Only Injectables (DMPA & NET-EN)	
What is it?	<ul style="list-style-type: none"> Injectable contraceptive that contains progestin that is given every two to three months, depending on which of the two types of injectable are used: <ul style="list-style-type: none"> - DMPA (known as Depo-provera ®, Depo, Megestron, and Petogen) - NET-EN (Noristerat®)
How does it work?	<ul style="list-style-type: none"> Contains the hormone progestin Progestin makes the mucus around the cervix thick, which prevents the sperm from meeting the egg Stops the release of eggs from the ovaries (ovulation) DMPA injections (every three months)
How effective is it?	If 100 women use DMPA for 1 year, typically 3 become pregnant.
Advantages	<ul style="list-style-type: none"> Safe for women who are breastfeeding Private, i.e., no one can tell you are using an injectable Does not interfere with sex Helps prevent against certain cancers of the uterus and pelvic inflammatory disease (PID) Safe for women with HIV/AIDS, whether or not she takes anti-retroviral (ARV) medicines

Progestin-Only Injectables (DMPA & NET-EN)	
Disadvantages	<ul style="list-style-type: none"> • May cause irregular or no menstrual bleeding • There is a delay in fertility after woman stops the injection—it takes about four months longer than with most other methods to return to fertility • Does not protect from STIs, including HIV
Available from:	CBDs (counsel, refer), VHT/CHWs (counsel, refer), Pharmacists (counsel, sell, and refer for injection), Health Facilities (counsel, provide)

Combined Injectable Contraceptives (CICs)



CICs (Monthly Injectables) – not commonly available in Kenya	
What is it?	<ul style="list-style-type: none"> Injectable contraceptive that contains two hormones—progestin and estrogen—and is given every 30 days Commonly known as Cyclofem, Cyclo-provera, Lunelle and Novafem
How does it work?	<ul style="list-style-type: none"> Progestin and estrogen make the mucus around the cervix thick, which stops the sperm from meeting the egg The hormones also stop the release of eggs from the ovaries. Woman needs an injection every four weeks (30 days) to prevent pregnancy
How effective is it?	<p>Pregnancy rate in first year of use is:</p> <ul style="list-style-type: none"> With no missed or late injections—1 pregnancy per 100 women With some missed or late injections—3 pregnancies per 100 women
Advantages	<ul style="list-style-type: none"> More regular monthly bleeding than with DMPA or NET-EN injectables Private, no one can tell you are using an injectable Does not interfere with sex Does not require any daily action, such as taking pills Safe for women with HIV/AIDS, whether or not she takes anti-retroviral (ARV) medicines
Disadvantages	<ul style="list-style-type: none"> There is a delay in fertility after a woman stops the injection—it takes about one month longer than with most other methods Does not protect from STIs, including HIV

CICs (Monthly Injectables) – not commonly available in Kenya

Available at:	VHT/CHWs (counsel, refer), Pharmacists (counsel, sell and refer for injection), Health Facilities (counsel, provide)
----------------------	--

LONG-ACTING METHODS

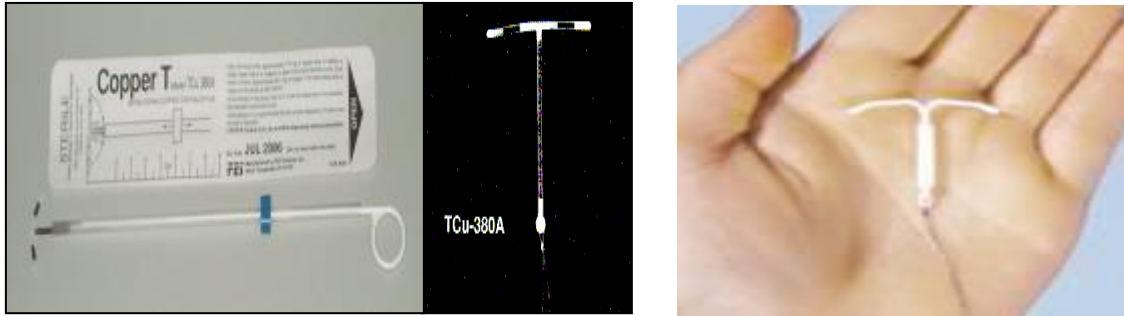
Hormonal Implants (Jadelle®, Implanon™, Sinoplant II® [Zarin])



Hormonal Implants	
What is it?	<ul style="list-style-type: none"> • Small plastic rods or capsules—each about the size of a match stick—are inserted under the skin of a woman’s upper arm and slowly release progesterone into the woman’s blood • There are several types of implants: <ul style="list-style-type: none"> – Jadelle®: two rods, effective five years – Implanon™: one rod, effective three years – Sinoplant (II)® [Zarin]: two rods, effective four years
How does it work?	<ul style="list-style-type: none"> • A trained provider inserts the implants under the skin, usually on the inside of a woman’s upper arm • The implants slowly release a hormone (progesterone) • Progesterone thickens the mucus around the cervix, which stops sperm from meeting the egg • The hormones also stop the release of eggs from the ovaries (ovulation)
How effective is it?	Pregnancy rate in the first year of use is up to 1 pregnancy per 100 women

Hormonal Implants	
Advantages	<ul style="list-style-type: none"> • Provide long-term protection from pregnancy for three to five years—length of protection depends on implant • Safe for women who are breastfeeding—may get implants six weeks after giving birth • Usually safe for a woman with HIV/AIDS, but if on anti-retroviral (ARV) medicines, check medical eligibility • Do not interfere with sex
Disadvantages	<ul style="list-style-type: none"> • Often cause changes in monthly bleeding (menstrual irregularities/spotting) • A trained provider must insert and remove implants • Do not protect against sexually transmitted infections including HIV • May be difficult to obtain locally
Available from:	VHT/CHWs (counsel, refer), Pharmacists (counsel, sell, refer for insertion), Health Facilities (counsel, provide)

Intrauterine Contraceptive Device (IUCD)



	Copper-bearing IUD	Levonorgestrel IUD (Mirena)
What is it?	<ul style="list-style-type: none"> • Small T-shaped plastic and copper device inserted into the uterus by a trained provider • Most IUDs have one or two thin strings that hang from the cervix into the vagina 	<ul style="list-style-type: none"> • Small T-shaped plastic device that contains the hormone levonorgestrel • Has two thin strings that hang from the cervix into the vagina
How does it work?	<ul style="list-style-type: none"> • Prevents sperm from meeting the egg 	<ul style="list-style-type: none"> • Works by 1) thickening cervical mucus, 2) incapacitation of sperm and 3) alteration of the endometrium
How effective is it?	<ul style="list-style-type: none"> • In first year of use—less than 1 pregnancy per 100 women • More than 10 years of use—2 pregnancies per 100 women 	<ul style="list-style-type: none"> • In first year of use—less than 1 pregnancy per 100 women • More than five years of use—less than 1 pregnancy per 100 women
Advantages	<ul style="list-style-type: none"> • One of the most effective and long-lasting methods • Does not require woman to do anything once inserted • Does not interfere with sex • Immediate return to fertility after removal • Safe for a woman with HIV or on anti-retroviral (ARV) medicines and is clinically well 	<ul style="list-style-type: none"> • One of the most effective and long-lasting methods • Does not require woman to do anything once inserted • Does not interfere with sex • Immediate return to fertility after removal • Safe for a woman with HIV or on anti-retroviral (ARV) medicines and is clinically well
Disadvantages	<ul style="list-style-type: none"> • Slight pain and bleeding during the first few days after insertion 	<ul style="list-style-type: none"> • Slight pain and bleeding during the first few days after insertion

	Copper-bearing IUD	Levonorgestrel IUD (Mirena)
	<ul style="list-style-type: none"> • Typically causes longer and heavier bleeding and pain during menstruation especially in the first 3 to 6 months • Does not protect from sexually transmitted infections (STIs), including HIV (use condoms if at risk) • Needs to be inserted by a trained health care provider 	<ul style="list-style-type: none"> • Changes in bleeding patterns—usually lighter or less frequent menstruation • Does not protect from STIs, including HIV (use condoms if at risk) • Needs to be inserted by a trained health care provider
Available at:	VHT/CHWs (counsel, refer), Pharmacists (counsel, sell, refer), Health Facilities (counsel, insert)	VHT/CHWs (counsel, refer), Pharmacists (counsel, sell, refer), Health Facilities (counsel, insert)

FERTILITY AWARENESS METHODS

Standard Days Method®



Standard Days Method	
What is it?	<ul style="list-style-type: none"> The woman keeps track of her menstrual cycle to know the days that she can get pregnant (fertile days) Effective for women whose menstrual cycles are consistently between 26-32 days
How does it work?	<ul style="list-style-type: none"> Mark a calendar or use Cyclebeads® (Moonbeads in Uganda) to track the days a woman can get pregnant and the days she is not likely to get pregnant The days a woman can get pregnant are days 8 through 19 of her menstrual cycle On those days, the woman must abstain from having vaginal sex to avoid getting pregnant, or she can use a condom or other barrier method
How effective is it?	<p>If 100 women with 26–32-day cycles use SDM for 1 year, 13 women will become pregnant.</p>
Advantages	<ul style="list-style-type: none"> Allows couple to adhere to religious or cultural norms about contraception Safe for a woman with HIV/AIDS, whether or not she takes anti-retroviral (ARV) medicines

Standard Days Method	
Disadvantages	<ul style="list-style-type: none"> • Woman needs counseling on how to correctly use the method • Requires partner cooperation • During the 12 days when the woman can get pregnant, the couple must abstain from unprotected sex or use a barrier method (condoms) • Does not protect against sexually transmitted infections (STIs), including HIV
Available from:	VHT/CHWs (counsel, refer), Pharmacists (counsel, provide Moonbeads or Cyclebeads or refer) Health Facilities (counsel, provide)

Lactational Amenorrhea Method (LAM)



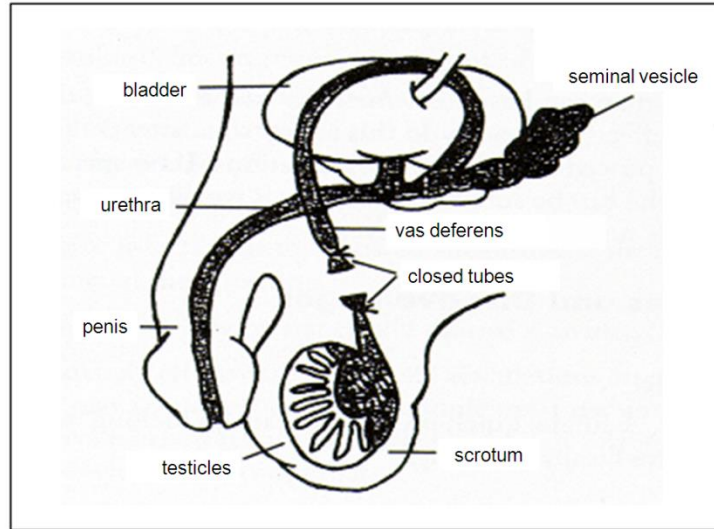
Lactational Amenorrhea Method (LAM)	
What is it?	<ul style="list-style-type: none"> • LAM is the use of full or nearly full breastfeeding to delay the return to fertility after having a baby • LAM requires that the following three conditions be met: <ul style="list-style-type: none"> – The woman’s monthly menstruation has not returned since giving birth, and – The baby is fully or nearly fully breast-fed and is fed often—day and night, and – The baby is less than six months old • It is a temporary family planning method
How does it work?	<ul style="list-style-type: none"> • Fully or nearly fully breastfeeding stops the release of hormones that cause a woman to release eggs from her ovaries (ovulate)
How effective is it?	<p>Pregnancy rate in first six months after childbirth is:</p> <ul style="list-style-type: none"> • When all three conditions are met—less than 1 pregnancy per 100 women • When less than three conditions are met—2 pregnancies per 100 women
Advantages	<ul style="list-style-type: none"> • Allows couple to adhere to religious or cultural norms about contraception • Does not interfere with sex • No costs and no supplies needed • Safe for mothers with HIV, whether or not she takes anti-retroviral (ARV) medicines. Breastfeeding will not make their

Lactational Amenorrhea Method (LAM)	
	condition worse. There is a chance, however, of transmitting HIV to the infant through breastfeeding.
Disadvantages	<ul style="list-style-type: none"> • Effectiveness after six months postpartum is not certain • Fully or nearly fully breastfeeding may be inconvenient or difficult for some women • Mothers with HIV could pass HIV to their infants through breastfeeding • Does not protect against sexually transmitted infections, including HIV
Available from	CBD agents (create awareness, refer), VHT/CHWs (counsel, support, refer), Health Facilities (counsel, support)

PERMANENT METHODS

Voluntary Surgical Contraception (VSC) Methods

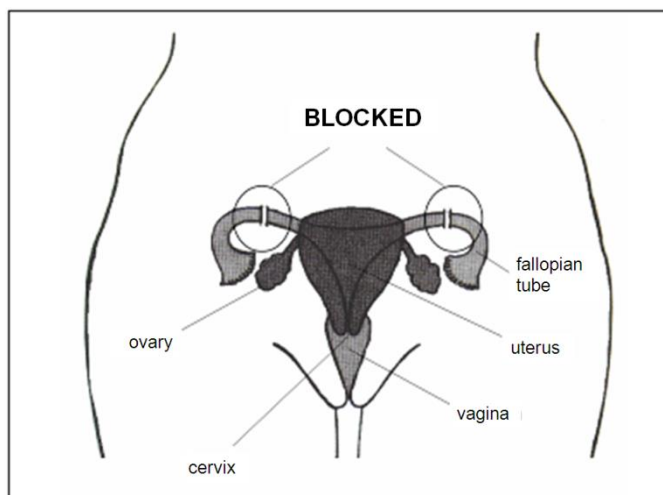
Vasectomy



Vasectomy	
What is it?	<ul style="list-style-type: none">• A simple, safe surgical procedure for men who do not want more children• Requires informed consent
How does it work?	<ul style="list-style-type: none">• A trained provider makes a puncture or small cut and closes off the tubes from the testicles to the penis• Closing off the tubes keeps sperm out of the semen• A man can still have erections and ejaculate semen—but with no sperm
How effective is it?	<p>Male sterilization is a highly effective method, but it is not fully effective until 3 months after the procedure.</p> <p>When men cannot have their semen examined 3 months after the procedure, typically 2-3 women out of 100 women whose partners have had a vasectomy become pregnant in the first year.</p>

Vasectomy	
Advantages	<ul style="list-style-type: none"> • Highly effective, but still has a small risk of failure • Safe and convenient • Increased enjoyment of sex because no worries about getting partner pregnant • Safe for a man with HIV/AIDS, whether or not he takes anti-retroviral (ARV) medicines
Disadvantages	<ul style="list-style-type: none"> • Not fully effective until three months after the procedure—as such, the couple must use condoms or another method for first three months after the surgical procedure • Permanent—can no longer have children • Requires trained provider • Does not protect against STIs, including HIV
Available at	CBDs, VHT/CHWs (refer), Pharmacists (refer), Health facility (counsel, provide)

Female Sterilization



Female Sterilization	
What is it?	<ul style="list-style-type: none"> • Permanent method for women who do not want more children • Requires informed consent
How does it work?	<ul style="list-style-type: none"> • A trained provider makes a small incision in the woman's abdomen • The provider ties off (or blocks) the two fallopian tubes that carry eggs from the ovary to the uterus • The eggs can never join with the sperm
How effective is it?	Pregnancy rate after the procedure is: <ul style="list-style-type: none"> • In first year—less than 1 pregnancy per 100 women • More than 10 years—2 pregnancies per 100 women
Advantages	<ul style="list-style-type: none"> • Highly effective • No need to worry about contraception anymore • Does not affect sexual desire • Safe for a woman with HIV/AIDS, whether or not she takes anti-retroviral (ARV) medicines

Female Sterilization	
Disadvantages	<ul style="list-style-type: none"> • Requires trained provider • Permanent—can no longer have children • Complications from surgery and anesthesia are possible • Special arrangements are needed for a woman with AIDS • Does not protect against sexually transmitted infections (STIs), including HIV
Available at	CBDs, VHT/CHWs (refer), Pharmacists (refer), Health facility (counsel, provide)

EMERGENCY CONTRACEPTION PILLS (ECP)

Emergency Contraception Pills	
What is it?	<ul style="list-style-type: none"> • The only method that can help prevent pregnancy after a woman has had unprotected sex • Must be used within five days of having unprotected sex • Should be taken as soon as possible after unprotected sex
How does it work?	<ul style="list-style-type: none"> • ECPs contain the same hormones as combined and progestin-only oral contraceptive pills, but in higher doses • These hormones prevent the release of eggs from the woman's ovaries
How effective is it?	<p>If 100 women use progestin-only ECPs, between 0 and 48 will become pregnant.</p> <ul style="list-style-type: none"> • High body mass index (BMI) may decrease the effectiveness. • ECPs are most effective when used shortly after unprotected sex.
Advantages	<ul style="list-style-type: none"> • Women can use ECPs if there has been forced sex (rape) • Can be used if there has been contraceptive mistakes or failures, such as: <ul style="list-style-type: none"> – Condom broke, slipped or was not used correctly – Woman missed three or more combined oral contraceptive pills (COCs) – Woman started a new packet of pills three or more days late – Woman is more than seven to 14 days late for a repeat injection of injectable contraception – Woman used the Standard Days Method incorrectly • Reduces the need for abortion • Safe for a woman with HIV/AIDS, whether or not she takes anti-retroviral (ARV) medicines
Disadvantages	<ul style="list-style-type: none"> • Not recommended for regular use as it is not effective as a continuous method of contraception • Do not protect against STIs, including HIV
Available from:	VHT/CHWs (refer), Pharmacists (counsel, sell) and Health

Emergency Contraception Pills	
	Facilities (counsel, provide)

Maternal and Child Health

ANC Visit Schedule for Pregnant Women

As soon as the woman knows she is pregnant	Make 1 st ANC visit.
At 4 to 6 months of pregnancy	Make 2 nd ANC visit.
At 7 to 8 months of pregnancy	Make 3 rd ANC visit.
At 2 weeks before due date	Make 4 th ANC visit.

What a pregnant women can expect from a health care provider during each antenatal visit

<p>1st ANC Visit (as soon as woman knows she is pregnant)</p> <ul style="list-style-type: none"> ○ Take a history ○ Take basic vital signs and, if possible, the woman's weight; ○ Look for anemia ○ Screen for HIV and syphilis ○ Give a tetanus toxoid shot ○ Discuss birth preparedness, emergency readiness and develop a birth plan ○ Give intermittent malaria prevention (IPTp) according to national protocol. If service is not provided at the facility, refer the client. ○ Tell her about danger signs <p><i>If more than 16 weeks</i></p> <ul style="list-style-type: none"> ○ Give first IPTp for malaria ○ Give iron and folate tablets two 	<p>2nd ANC Visit – at 4 to 6 months of pregnancy</p> <ul style="list-style-type: none"> ○ Check on individual birth plan ○ Give first SP ○ Give iron and folate tablets two weeks after taking SP (for malaria) ○ Listen for foetal sound ○ Counsel and educate, as needed
---	--

weeks after testing SP.	
<p>3rd ANC visit - At 7 to 8 months of pregnancy</p> <ul style="list-style-type: none"> ○ Check individual birth plan ○ Give second SP ○ Remind women to take iron and folate two weeks after SP (for malaria) ○ Give tetanus toxoid (if 4 weeks after 1st dose) ○ Listen to fetal heart sound ○ Counsel and educate, as needed 	<p>4th ANC visit - At two week before due date</p> <ul style="list-style-type: none"> ○ Check on individual birth plan ○ Look for anaemia ○ Check fetal presentation ○ Give iron and folate ○ Counsel and advise, as needed

Danger signs during pregnancy

- Any bleeding from the vagina
- Bad headache
- Swelling in the hands or feet
- Convulsions or fits
- Loss of consciousness
- A high fever
- Heavy vaginal discharge
- Severe abdominal pain
- Difficulty breathing
- Painful urination
- A lot of vomiting
- Very pale palms of hand or nail beds
- The baby is not moving at all

- Foul smelling vaginal discharge

Check List for Preparing a Birth Plan.

1. Date that the baby is due.
2. Plan for dealing with any danger signs that present themselves.
3. Name of the Health facility where the baby will be born
4. Who will be the birth partner
 - Person who is with the pregnant woman during childbirth
 - Person who can recognize warning signs during pregnancy and encourage/help woman to get help as needed.
 - Could be father of the baby, sister, mother-in-law, other family member or Community Health Volunteer (CHT in Kenya; Village Health Team [VHT] member in Uganda)
5. Which facility will the woman go to in case of an emergency?
 - How will she get there?
 - How long will it take to get there?
 - How much will it cost for transport?
 - How will the family raise the cost for transport and other expenses?

