Village Livelihood Program Bougainville

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OVERVIEW

The program is devided into three parts. Part A describes the background to the program as well as identifes some generic skills and knowlege. Part B and Part C sets out the curriculum for health and agriculture volunteers.

Part A: Background to the Village Volunteer Program

Part A: Guide for Village Volunteer Program

- How were the topics selected?
- Structure of the program - (underpinning knowledge/action)
- Principles of community empowerment
- Managing power imbalances
- How to implement the program
- Guidelines on disease outbreaks
- Some principles underpinning the village volunteer program
- Conflict resolution
- Resources to assist village volunteers

Part B: Health curriculum

Part B: Village Volunteer Program: Underpinning knowledge required (What you need to know) and Activities (What you can do)

PART C: Agricultural curriculum

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Introduction

The Village Livelihood program has two main components. The health curriculum is designed to provide village volunteers with underpinning knowledge about disease, how to assist villagers to minimise disease and improve their health, while the agricultural curriculum is aimed to provide knowledge and skills on improving farm productivity and sustainability. The topics also describe activities that can improve livelihoods. A major barrier to improved health and welfare of rural communities in low resource countries is the lack of access to quality health care and sustainable incomes . Our research with farmers in Bougainville and Sulawesi confirmed links between health, livelihood and farm productivity among cocoa smallholders.

While better access to health care is a major concern for most governments there are many activities that individuals and villages can do to improve their own health care and limit the potential for outbreaks of diseases. Similarly, improving farm practices begins with the smallholders themselves. If individuals and families were provided with information about how they can improve their quality of life through changing behaviours, their health and general livelihood would be enhanced significantly. Information about how to prevent disease and improve health care is often not available. While village volunteer programs are not new many focus on specific areas such as maternal and child health and do not have a holistic approach. Areas such as health prevention, promotion, sanitation, infections are usually left to community health workers to manage but improvements in these areas are totally dependent on the communities' appreciation of the health burdens and knowledge about what they can do to make improvements. Changing behaviours and minds requires instruction in real time and place. This can only be done in the villages and by the village people themselves. This program is an empowerment model but with a caveat. Empowerment for improved village livelihoods must be underpinned by knowledge.

Empowerment for social good.
The process by which people, organizations or groups who are powerless (a) become aware of the power dynamics at work in their life context, (b) develop the skills and capacity for gaining some reasonable control over their lives, (c) exercise this control without infringing upon the rights of others, and (d) support the empowerment of others in their community.
(Cattaneo L & Chapman A The Process of Empowerment A Model for Use in Research and Practice October 2010 American Psychologist 65(7):646-5 DOI:10.1037/a0018854)

Community health volunteers have a presence in Bougainville through the Bougainville Healthy Community Programme (BHCP) which is run through the Department of Health of the Autonomous Government of Bougainville. This livelihood program is designed to enhance the training of existing village health and agricultural volunteers as well as train new volunteers where none exist.

Part A: Trainer's Guide

Background

1. Why do we need village volunteers?

Significant health care improvements have been made over the last three decades from scientific discoveries: - we can now treat diseases once untreatable. One of the unintended consequences of these scientific discoveries is the focus on acute care and the significant role of hospitals in healthcare. Today modern health systems spend more health dollars on managing symptoms of diseases rather than on preventing them in the first place. Associated with this are the dangers caused by over treatment and the complexity of healthcare. In addition, many health professions are trained in hospital environments which are remote from village life. Many villages are long distances from available health care. The lack of health professional support in rural communities should not hinder efforts to improve health and livelihoods. There is plenty of evidence suggesting that significant health benefits can be experienced when individuals understand the causes of poor health and how they can, by changing behaviours, minimise or avoid contacting diseases. The Bougainville Autonomous Government emphasises community empowerment in services to the community.

2. How were the topics selected?

In 2017 a livelihood survey covered over 12,000 registered household members. The research demonstrated a strong link between health, nutrition and farm productivity. The topics emerged from an analysis of these activities and discussions with health and agricultural leaders as well as village leaders and communities.

3. How to use this village livelihood curriculum

This curriculum aims to provide village volunteers with the science underpinning disease as well as health and welfare information that can be shared with their communities, thus empowering them to make decisions to improve their own health at both the village and family unit level. The curriculum also includes information and activities required to enhance productivity and improve farming practices.

The curriculum will assist volunteers to provide information in a timely way to members of their communities as well as undertake activities to enhance the wellbeing and livelihoods of households. This curriculum is written in a way that enables volunteers to both learn about disease and present information in a meaningful way to people with low education and literacy.

Structure of the Village Livelihood Program

There are three parts to the Curriculum Guide- Part A is designed for people who are to provide the education to the selected village volunteers as well as some generic skill sets to facilitate communication at the village level. It includes how the Curriculum is structured and how the topics were selected. Part B is the content of the health curriculum and Part C the agricultural curriculum; they include underpinning knowledge about each topic and

describe actions and activities that the volunteers can use to inform their communities, households and individuals. The village volunteer program includes face-to-face learning and mobile applications that will cover the underpinning science associated with health and disease and agricultural practices; one specifically designed for the volunteers' learning levels. Volunteers will also have access to improvement activities designed to address a problem, such as unprotected water wells.

Principles underpinning the Village Livelihood Program and village volunteers

- This curriculum is not designed to turn village volunteers into health or agricultural professionals.
- This curriculum is designed to upskill the volunteers to have a basic scientific knowledge of disease and other health problems, constraints to cocoa production and good agricultural practices and to advise about ways to prevent disease and promote good health and better farming practices in the village context.
- Volunteers will be a resource person for the village- if they do not know about a matter they will be informed about how to find out information.
- Volunteers will be provided with knowledge in good health care or agricultural practice and will model the desired behaviours- such as hand washing, garbage disposal to prevent the spread of infection, removing pod husks to prevent spread of cocoa diseases.
- Volunteers will maintain confidentiality at all times, even when they disagree with the decisions and actions taken by people in the village.
- Volunteers will maintain existing working relationships with health and agricultural professionals and health facilities and agricultural extension services.
- Volunteers should be liked within their communities.
- Each village will nominate two volunteers.
- Village volunteers must be able to read and write and be active members of their village.
- Village volunteers must have good communication skills.

Part B: Health Curriculum

Topic 1: Preventive health care

Topic 1.1 Clean Water

Learning Objective	**Know the role of clean water in good health**
Knowledge Knowledge	How to identify contaminated water and how it develops
	The dangers of drinking contaminated water
	How to identify clean drinking water
	The health benefits of drinking clean water
	What are water borne diseases
	Relationship between diarrhoea and dirty water
	Dangers of drinking from unprotected wells and springs
	How to wash hands with soap
	How to improve water safety
What volunteers can do : Skills	Know how to arrange a village meeting
	Know how to conduct an audit of the villagers' drinking water sources
	Explain to the community or invite someone to talk about how safe drinking water can improve health and minimise sickness • negative impacts of inadequate drinking water • negative impacts of poor sanitation
	Establish a water and sanitation committee to think more closely about how the village might improve the drinking water and sanitation
	Assist village committee to achieve 'open defecation" free status of the village
	Assist families to review their own water and sanitation profile through appraisal, observation and analysis of their open defecation behaviours

	Mobilize community members to improve latrines and to employ hygienic practices.
	Undertake an audit of the drinking water sources in the village
	Hold a community meeting to give the results to the households
	Establish a village committee with the following aims o Improve community hygiene and sanitation knowledge o Achieve 'open defecation" free status of the village
	Explain to the community or Invite someone to talk about how safe drinking water can improve health and minimise sickness ▪ negative impacts of inadequate drinking water ▪ negative impacts of poor sanitation
	Discuss the options for the village ▪ Make a plan to improve the water ▪ Establish a water and sanitation committee to think more closely about how they might improve the drinking water and sanitation
	Aims of the committee o Improve community hygiene and sanitation knowledge o Achieve 'open defecation" free status of the village o Improve the coaching skills of health volunteers and water and sanitation committee members to support toilet construction in their communities. • End Open Defecation (OD) • Families do their own water and sanitation profile through appraisal, observation and analysis of their open defecation behaviours • Discuss the results and the impact on the community as a whole • Develop a plan to build toilets themselves using local and simple materials in line with hygiene and sanitation standards. (The helpline manager will be able to assist)
	Production of health promotion materials such as: ▪ Videos ▪ Posters ▪ Booklets

How volunteers should act: Behaviours	Be respectful of all villagers
	Listen to all villagers and their concerns about hand washing and clean water
	Be encouraging of all villagers to improve hand washing and sanitation.
	Be patient because changing behaviours takes a long time.

1.2: Involving villagers in hand hygiene

Learning objective	**Know how clean hands can help minimise the spread of disease (See also 1.3- Know the role of clean water in good health)**
What volunteers need to know: Knowledge	What are germs?
	How germs are spread
	Types of diseases caused by transmitting germs
	Symptoms of people with a disease caused by germs
	Risks of disease to small children
	Safe hand washing
What volunteers can do : Skills	Explain to villagers what germs are and how they spread
	Ensure that villagers understand the information you have given to them
	Actively encourage villagers to discuss their water supply for drinking and washing
	Actively encourage the villagers to discuss a village wide solution to their water supply
	Explain how hand washing can prevent many infections and illnesses
	Tell people about how germs can cause illness particularly in young children
	Advise people to wash their hands with often with soap and water
	Explain to households that it is important to have clean surfaces for cooking
	Explain how to disinfect dirty surfaces and soiled items
	Explain why it is important for infected people who are sick to avoid kissing, hugging, or sharing eating utensils or cups with others.
	Explain why it is important to wash hands after going to the toilet
	Demonstrate hand washing techniques with soap
	Tell people about how germs can cause illness particularly in young children
	Advise people to wash their hands often with soap and water Explain to households that it is important to have clean surfaces for cooking
	Explain why washing hands in a running river or under a tap is better than washing hands in a drum of water that is not changed regularly
	Explain how hand washing can prevent many infections and illnesses
How volunteers should act: Behaviours	Listen to villagers ‘concerns’ about hand washing
	Show understanding of peoples’ worries about germs and infection
	Show respect to all villagers no matter their circumstances

Learning Objective	Know the role of clean water in good health

1.3: Immunisation

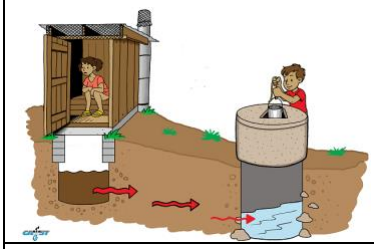
Learning Objective	Know that immunisation saves lives
What volunteers need to know: Knowledge	What is immunisation
	What is a vaccine
	What is the immune system in the body
	Diseases that have been eradicated by vaccines
	What is an infection
	What are bacteria
	What are viruses
What volunteers can do: Skills	Explain the role of vaccines
	Explain how immunization can improve health and protect villagers from diseases
	Explain how disease can be controlled through a vaccination program
	Visit families on a one to one basis for discussions about their attitudes towards vaccinations.
	Ask parents if their children are vaccinated and if they answer 'yes' or 'no'- explain the benefits to them and why it is important to keep a record of the vaccinations.
How volunteers should act: Behaviours	Be respectful of the villagers who hold different views about vaccinations
	Listen to the concerns of villagers about their concerns
	Provide clear information about vaccines to villagers individually and in community meetings.
	Know where the nearest health centres are located
	Know the dates and times for vaccination programs organised by the local health clinics
	Assist families to attend the health clinics for vaccinations
	Provide details of the names of the people responsible for the vaccination program at the health clinics

1.4: Safe Garbage Disposal

Learning Objective	**Know how garbage is a serious health hazard.**
What volunteers need to know: Knowledge	How to identify garbage
	Types of waste in the village
	Dangers of garbage left lying around the village. Household wastes – plastic bottles, plastic bags, tins, bottles Organic matter - animal manure, human waste, vegetation and food scraps Chemicals (such as herbicides, insecticides and fertilisers)
	Dangers of large waste items - such as batteries, tyres, oils, old machinery and dead animals – particularly larger livestock such as cows and horses
	What is safe dumping of garbage
	How to dispose of solid waste (refuse)
	How to engage the whole village in proper garbage disposal
	Strategies for minimizing and recycling solid waste
	Infections associated with handling waste
	Know how to develop a manual disposal system that require a minimum level of costly mechanical equipment.
	Know the barriers to garbage separation
What volunteers can do : Skills	Form a village garbage disposal committee
	Explain to villagers and committee members why garbage disposal is important for health care
	Ask people in the village how they dispose of their rubbish
	Discuss with families how they dispose of rubbish and explain the link between rubbish left lying around and health-particularly for pre-school age children.
	Hold a meeting inviting all the villages to discuss the benefits of composting • At the household-level proper segregation of waste has to be done and it should be ensured that all organic matter is kept aside for composting, which is the best method for disposing this type of waste. • The organic part of the waste that is generated decomposes more easily, attracts insects and causes disease. Organic waste can be composted and then used as a fertilizer. • Worms Improve Compost Image • Small earthworm composting farms, operated by 5-6 people, have proven more successful than traditional composting facilities, though they are not yet in widespread use. Vermiculture benefits from better quality control and the perception that the worm excrement is derived from “clean” vegetable waste, whereas compost is derived from garbage.

	Talk about the three main steps to reducing waste: Reduce, Reuse and Recycle
	Know the benefits of communal collection
	Know how to build a communal refuse pit
How volunteers should act: Behaviours	Be respectful of everyone's opinions and views about garbage disposal
	Be patient as safe garbage disposal is a long-term project that must involve the whole village

1.5: Control of disease vectors

Learning Objective	**Know how to control disease vectors**
What volunteers need to know: Knowledge 	What is a vector
	What is a disease vector
	Types of best known vectors
	Know how diseases are transmitted
	The human cost of vector-borne diseases
	Main vectors and diseases they transmit
	Vector borne diseases
	Role of clean water and sanitation in disease control
What volunteers can do : Skills	Explain what a vector is to individual villagers and at community meetings
	Undertake an audit to locate sources for disease vectors
	Explain how diseases are transmitted to villagers
	Explain how to avoid vector-borne diseases
	Show how to use a bed net
	Show how to protect from day biting mosquitoes (protective clothing)
	Explain how stagnant containers of water are dangerous breeding grounds for mosquitoes
How volunteers should act: Behaviours	Be patient explaining vectors borne diseases to villagers
	Listen to villagers concerns about vector –borne diseases
	Be respectful to all villagers even when they do not fully appreciate how disease is spread.

1.6: Early Recognition of childhood diseases

Learning Objective	**Know how to recognise a sick child**
What volunteers need to know:Knowledge **Use of algorithms appropriate for the modules** **Integrated management of childhood illness IMCI.**	Know the general features of a seriously sick child- ▪ alertness and irritability ▪ breathing (elevated respiratory rate) ▪ skin colour and appearance ▪ fluids in and out - how much your child is drinking and passing urine ▪ Fever
	The burden of child mortality
	The top 5 conditions causing death in children: - : ▪ diarrhea, pneumonia, malaria, measles, and malnutrition
	The role of nutrition in childhood illnesses
	The role of the mother in recognizing signs which indicate that the child should immediately be brought to the clinic.
	How to treat a child at home, including how to give oral drugs, to increase fluid intake during diarrhoea, and to treat local infections being mindful of the dangers of wrong antibiotic.
	The main risk factors which increase the incidence and severity of these diseases in childhood.
	The priority signs for children who need immediate medical attention and treatment: - ▪ Visible severe wasting ▪ Oedema of both feet ▪ Severe palmar pallor ▪ Any sick young infant (< 2 months of age) ▪ Lethargy ▪ Continually irritable and restless ▪ Major burn ▪ Any respiratory distress
	The causes of acute cough (common cold and pneumonia), (tuberculosis), and wheeze (asthma).
	The commonest causes of pneumonia and of wheeze in young children.
	The main causes of dysentery: - intestinal infection with *Shigella*, *Campylobacter jejuni*, or enteroinvasive *E. coli.*
	The components of diarrhoea: (i) rehydration therapy, to correct dehydration and prevent its recurrence until diarrhoea stops; (ii) feeding an appropriate diet, to sustain nutrition, and
	The difference between acute diarrhoea, persistent diarrhoea, and dysentery.
	The burden of disease from malaria in young children
	How to reduce malaria in young children- The use of bed nets treated with a long- acting insecticide markedly reduces the risk of infection and intermittent use of medication.

What volunteers can do: Skills	Assist the mother to increase fluid intake during diarrhoea, and to treat local infections
	Advise the carer about the difference between acute diarrhoea, persistent diarrhoea, and dysentery.
	Convene a community meeting to talk about prevention and treatment of children who are sick.
	Discuss with famililies the danger signs of a sick child including dehydration and when interavenous fluids are required.
	Discuss with families when to seek care for their sick child.
How volunteers should act: Behaviours	Respectfully refer a family to the nearest health facility
	Encourage families to use treated mosquito nets for sleeping

1.7: Common chronic illnesses

Learning Objective	**Know the most common chronic illnesses**
What volunteers need to know: Knowledge	Know the main types of chronic illnesses The 10 most common chronic illnesses ▪ Ischemic heart disease or coronary heart disease ▪ Stroke ▪ Lower respiratory infections ▪ Chronic obstructive pulmonary disease(COPD) ▪ Trachea,broncus,and lung cancers ▪ Diabetes mellitus ▪ Alzheimers disease and other dementias ▪ Dehydration due to diarrheal diseases ▪ Tuberculosis ▪ Cirrhosis ▪
	Ischemic Heart Disease or Coronary Heart Disease (CAD) – ▪ occurs when the blood vessels that supply the heart become narrowed. If left untreated the person will have chest pain, heart failure and arrhythmias. ▪ CAD is on the rise in developing countries. Risk factors • high blood pressure, high cholesterol, smoking, family history of CAD, diabetes, being overweight.
	Stroke ▪ Occurs when an artery in the brain is blocked or leaks. This causes brain cells which are deprived of oxygen to start to die. ▪ A person having a stroke will feel sudden numbness and confusion. They may have trouble walking or seeing. Risk factors • High blood pressure, family history, smoking, being female.
	Lower respiratory infections Infection in the airways and lungs caused by ▪ Influenza or the flu ▪ Pneumonia ▪ Bronchitis

	▪ tuberculosis Infections are usually caused by viruses but can be caused by bacteria as well. Coughing is main symptom, but a person can also feel breathlessness, wheezing, and a tight feeling in the chest. Untreated lower respiratory infections can lead to breathing failure and death. Risk factors o the flu, o poor air quality or frequent exposure to lung irritants, o smoking, o a weak immune system, o crowded childcare settings, which mainly affects infants, asthma, HIV
	Chronic Obstructive Pulmonary Disease (COPD) is a progressive lung disease that has developed over a long time and makes breathing difficult. Chronic bronchitis and emphysema are types of COPD. Risk factors o smoking or secondhand smoke o lung irritants like chemical fumes o family history, o history of respiratory infections as a child
	Trachea,broncus,and lung cancers Respiratory cancers include cancers of the trachea, larynx, bronchus, and lungs. The main causes are smoking, secondhand smoke, and environmental toxins. Household pollutions such as fuels and mold also contribute. Risk factors • people who smoke or use tobacco. • disel fumes • pesticides may also be risks.
	Diabetes Mellitus ▪ is a group of diseases that affect insulin production and use. ▪ In type 1 diabetes, the pancreas can't produce insulin. The cause isn't known. ▪ In type 2 diabetes, the pancreas doesn't produce enough insulin, or insulin can't be used effectively. ▪ Type 2 diabetes can be caused by a number of factors, including poor diet, lack of exercise, and being overweight. Risk factors ▪ excess body weight

	▪ high blood pressure ▪ older age ▪ not exercising regularly ▪ an unhealthy diet While diabetes isn't always preventable, a person can control the severity of symptoms by exercising regularly and maintaining good nutrition. Adding more fiber to the diet can help with controlling your blood sugar.
	Alzheimers disease and other dementias Alzheimer's disease is a progressive disease that destroys memory and interrupts normal mental functions. ▪ These include thinking, reasoning, and typical behavior. ▪ Alzheimer's disease is the most common type of dementia. About 60-80% of dementia cases are in fact Alzheimer's. ▪ The disease starts off by causing mild memory problems, difficulty recalling information, and slips in recollection. ▪ Over time, however, the disease progresses and you may not have memory of large periods of time. Risk factors • being older than 65 • a family history of the disease • inheriting genes for the disease from your parents • existing mild cognitive impairment • Down syndrome • unhealthy lifestyle • being female • previous head trauma • being shut off from a community or having poor engagement with other people for extended periods of time
	Dehydration due to diarrheal diseases • Diarrhea is when you pass three or more loose stools in a day. • If your diarrhea lasts more than a few days, your body loses too much water and salt. • This causes dehydration, which can lead to death. • Diarrhea is usually caused by an intestinal virus or bacteria transmitted through contaminated water or food. • It's particularly widespread in places with poor sanitary conditions. • Risk factors • living in an area with poor sanitary conditions • no access to clean water or eats contaminated food • age, with children being the most likely to experience severe symptoms of diarrheal diseases • malnourishment

	• a weakened immune system
	Tuberculosis Tuberculosis (TB) is a lung condition caused by bacteria called *Mycobacterium tuberculosis*. • It is a treatable airborne bacteria , although some strains are resistant to conventional treatments. • TB is one of the top causes of death in people who have HIV. Risk factors • diabetes • HIV infection • a lower body weight • proximity to others with TB • regular use of certain medications like corticosteroids or drugs that suppress the immune system The best prevention against TB is to get the bacillus Calmette-Guerin (BCG) vaccine. This is commonly given to children. If a person thinks they have been exposed to TB bacteria, they can start taking a treatment medication called chemoprophylaxis to reduce the likelihood of developing the condition.
	Cirrhosis ▪ Cirrhosis is the result of chronic or long-term scarring and damage to the liver. ▪ The damage may be the result of a kidney disease, or it can be caused by conditions like viral hepatitis and chronic alcoholism. ▪ A healthy liver filters harmful substances from your blood and sends healthy blood into your body. ▪ As substances damage the liver, scar tissue forms. As more scar tissue forms, the liver has to work harder to function properly. ▪ Ultimately, the liver may stop working. Risk factors ▪ chronic alcohol use ▪ fat accumulation around the liver (nonalcoholic fatty liver disease) ▪ chronic viral hepatitis ▪
What volunteers can do: Skills	Hold village meetings to discuss the benefits of ▪ regular exercise ▪ maintaining a healthy weight ▪ Eating balanced diets-low in salt and high in fruits and vegetables, as well as fibre. ▪ Diet low in saturated fats from meat and diary. ▪ Avoid smoking or being in the presence of others who are smoking. ▪ Drink in moderation
	Hold village meetings to discuss ▪ ways to minimise the spread of infections and diarrheal diseases

	▪ wash hands, stay at home and away from gatherings of people when infected with a virus until better. ▪ Practice good hygiene
	Explain how stagnant containers of water are dangerous grounds for mosquitoes breeding
How volunteers should act: Behaviours	Respectfully discuss with individuals the need to seek treatment if they have symptoms of the above chronic illnesses.
	Advise families that many chronic diseases are preventable and treatable.

Topic 2: Infectious diseases

2.1 Main vectors and diseases they transmit

Learning Objective	**Know the main vectors and the diseases they transmit.**
What volunteers need to know:Knowledge	Identify the following vectors - mosquitoes,sandflies, ticks,triatomine bugs,tsetse flies, fleas,black flies, aquatic snails, lice.
	The main vectors that cause ▪ malaria ▪ lymphatic filariasis, ▪ Japanese encephalitis, ▪ Some haemorrhagic fevers (yellow fever, dengue) ▪ Viral fevers (West Nile).
	What a vector borne disease is
	The diseases caused by insects
	The main ways to control and eradicate disease
	How to protect oneself and their communities from mosquitoes, ticks, bugs, flies and other vectors.
What volunteers can do: Skills	How to convene a community meeting and discuss disease control and eradication methods
	The techniques for engaging with the community as a whole.
	Explain what a vector is to villagers
	Undertake an audit to locate sources for disease vectors
	Explain how diseases are transmitted to villagers
	Explain how to avoid vector-borne diseases
	Show how to use a bed net and wear protective clothing for day biting mosquitoes
How volunteers should act: Behaviours	Protect your family and demonstrate to others in the community how to minimise the opportunity for disease transmission.
	Be patient explaining vectors borne diseases to villagers
	Listen to villagers concerns about vector –borne diseases

	Be respectful to all villagers even when they do not fully appreciate how disease is spread.

2.2 Control of disease vectors

Learning Objective	**Know how disease vectors are controlled**
What volunteers need to know:Knowledge	What is vector control (any method to limit or eradicate the mammals, birds, insects or other arthropods ("vectors") which transmit disease pathogens.

	The most frequent type of vector control
	• Around the house and gardens
	  ○ Insecticide-treated nets.
	  ○ Indoor residual sprays
	  ○ Personal protection
	• Environmental control
	• Reducing contact
	• Chemical control (insecticides)

	Why it is important to control vectors
	The situations that may lead to vector-borne diseases • Poor irrigation, inadequate water systems, inadequate housing, poor wasre disposal, poor water storage, defosteration, loss of biodiversity.
What volunteers can do:Skills	Discuss with community members • the value of wearing light coloured,long sleeved shirts and long trousers with tucked in socks. • Using insect repellant on exposed skin and clothing to protect from being bitten by mosquitoes, sandflies and ticks • The times when vector-borne carriers are present (the role of temperature) • The use of window screens • Sleep under insectitide-treated nets • Checking regularly for ticks • Avoid contact with blood,secretions of infected people and animals • Encourage hygiene in food preparation
	Discuss with the village head a plan to involve the whole village in vector-borne disease control
How volunteers can act: Behaviours	Demonstrate good practice in your own home as an example to others
	Demonstrate good personal protection habits as an example to others
	Be patient explaining vectors borne diseases to villagers
	Listen to villagers concerns about vector-borne diseases
	Be respectful to all villagers even when they do not fully appreciate how disease is spread.

2.3 Detection and control of specific diseases (malaria, dengue, Zika,tuberculosis, viral hepatitis, sexually transmitted diseases)

Learning Objective	**Know how to detect and control for specific diseases**
What volunteers need to know: Knowledge	**Malaria** • Know the principles of prevention and control of malaria ▪ (Need to combine measures aimed at breaking the "man-vector" contact cycle of transmission and curing the infected population. The most effective control measure however is the one that breaks the "man-vector" contact cycle of transmission. • The control of malaria involves education, vector control and control of parasites in man. ▪ Controlling mosquito breeding; ▪ Preventing mosquitoes from biting people; ▪ Killing adult mosquitoes before they bite people; ▪ Killing malaria parasites in the blood before they can cause malaria. This is referred to as chemoprophylaxis; ▪ Early diagnosis, timely and adequate treatment of all Malaria cases. • Know the life cycle of vector mosquitoes, transmission of malaria, • Know prevention methods, treatments and the role of the community in the malaria eradication process. • Know the level of risk for getting malaria. o In endemic areas the most cost effective method of control is the use of Insecticide Treated Nets (ITNs). The coverage must be in more than 80% of the community members for it to have impact.
	Dengue ▪ What is dengue (mosquito borne viral infection (arbovirial) ▪ How dengue is transmitted (*Aedes aegypti*) Mosquito) ▪ The symptoms of dengue (fever,abdominal pain, vomiting, bleeding and effects mainly children.) ▪ The danger periods for biting ▪ How to prevent and cntrol the transmission of dengue virus o preventing mosquitoes from accessing egg-laying habitats by environmental management and modification; o disposing of solid waste properly and removing artificial man-made habitats; o covering, emptying and cleaning of domestic water storage containers on a weekly basis; o applying appropriate insecticides to water storage outdoor containers; o using of personal household protection such as window screens, long-sleeved clothes, insecticide treated materials, coils and vaporizers; o improving community participation and mobilization for sustained vector control;

	○ applying insecticides as space spraying during outbreaks as one of the emergency vector-control measures; ○ active monitoring and surveillance of vectors should be carried out to determine effectiveness of control interventions.
	Zika ▪ What is Zika virus ▪ Know when the risks of being bitten are greater ○ (daytime biting mosquitoes, with increased activity around sunrise and sunset.) Aedes aegypti mosquitoes often live in and around buildings in urban areas. ▪ Know how it is transmitted (*Aedes aegypti* mosquito) ○ Zika virus can also spread through sexual activity (vaginal, oral, or anal) particularly from a man to a woman, but male to male and female to male transmission have also been reported. However, the main way that Zika virus spreads is still by mosquitoes. ▪ Know the high risk situations- pregnany women
	Tuberculosis ▪ What is tuberculosis (TB) ▪ What causes Tuberculosis ▪ People at high risk of tuberculosis ○ People at high risk for progression to TB disease once infected include: Persons with human immunodeficiency virus HIV infection. Persons who were infected with M. tuberculosis within the past 2 years, particularly infants and very young children. ▪ The signs and symptoms of active TB ▪ How to prevent TB ▪ The availability of vaccination for new born babies (BCG)
	Viral hepatitis ▪ What viral hepatitis is ▪ The causes of viral hepatitis ▪ How viral hepatitis is transmitted
	Sexually transmitted Illnesses ▪ What STI's are ▪ The types of sexually transmitted illnesses - syphilis, gonorrhea, chlamydia, trichomoniasis, genital herpes, hepatitis B virus (HBV), and human papillomavirus (HPV), HIV. The impact on health when infected with an STI: ○ Cervical cancer, caused by HPV, is the largest single cause of years of life lost to cancer in the developing world and, because it affects women in their most productive years, has a devastating effect on the well-being of families. ○ Damage to the fallopian tubes from gonorrhea and chlamydia can lead to infertility, as well as tubal pregnancy, an important cause of maternal death in developing countries. ○ Hepatitis B, most frequently transmitted from mother-to-child in endemic areas, can result in chronic infection, liver cancer and liver failure.

	○ Genital herpes and other genital ulcer diseases increase risk of HIV transmission. ▪ Strategies for prevention and treatment. ○ Some viral STIs can be prevented with vaccines (HPV and HBV) , ○ most STIs (including some caused by viruses) can be prevented with male latex condoms. ○ Many common STIs can be cured with widely and affordable available antibiotic drugs, and symptoms and infectiousness of certain viral STIs (e.g., HIV) can be ameliorated with antiviral drugs.
What volunteers can do: Skills	Undertake a survey of the village's understanding of prevention and treatment seeking behaviours
	Identify the location of the stagnant water is in the villlage (slow flowing water, swamps, rice fields, water tanks, small ponds, borrow-pits,ditches,other objects(plant pots)
	Identify methods for eradicating stagnant water (using sand to fill, removing containers, covers, repair leaking taps)
	Identify ways to prevent mosquito bites (nets, residual spray methods, safe sprays, protective cloths, wire or nylon mesh, screens, coils
	Hold discussion meetings with villagers about vector-borne disease using pictures and visual tutorials available for the internet (if available)
	Undertake an audit of households that use mosquito nets (treated and non treated); window screens.
	Know the main ways to avoid getting bitten ▪ Sleep in well-screened areas at night ▪ Use insectitide treated bed nets ▪ Use mosquito repellant ▪ Wear long sleeves ▪ Use insect repellant on exposed skin
	Discuss with individuals the main ways they can protect others from getting an infection such as TB
	Discuss with family members the main ways to minimise the spread of TB and discuss privately with the family
How volunteers should act: Behaviours	Encourage community ownership and welcome the thoughts and ideas of the community
	Be sensitive to families where a member of the household has an infection
	Actively assist individuals who are unwell to seek health care

Topic 3: Medications

Adherence to medications

Learning Objective	**Take medications appropriately and minimise the use of antibiotics.**
What volunteers should know: Knowledge	What medicines are ▪ Cure, treat symptoms, help diagnose ▪ Traditional medicines
	The types of medications available ▪ Store or pharmacy bought; doctor prescription; hospital/clinic provided medications
	Understand medications and what they do
	The main risks of taking prescription drugs
	Discontinuing treatments
	Common bad effects (upset tummy)
	Side effects ▪ Drug-drug interactions ▪ Food -drug interactions ▪ Allergic reactions
	What an adverse drug reaction is
	What is an antibiotic
	What is an antimicrobial drug
	Prevent and treat infections or diseases caused by bacteria.
	The main types of infections and diseases that require antibiotics ▪ Respiratory track infections ▪ Skin infections ▪ Infected wounds
	How antibiotics work ▪ broad spectrum antibiotics (eg, amoxicillin and gentamicin). ▪ narrow spectrum antibiotics (eg, penicillin).
	How to store and dispose of antibiotics
	The risks of taking antiobiotics when not required or not completing course
	What antibiotic resistance means ▪ Antibiotic resistance can lead to longer stays in hospital, higher costs and increased deaths
	Some infections are harder to treat
	Know what a superbug is
	Know how to prevent the spread of infections
What volunteers can do: Skills	Undertake a medication audit- by asking families about their medications

	Hold a village meeting to discuss the importance of adhering to medication instructions ▪ Difference between colds and flu which are caused by viruses, noting that nearly all upper respiratory tract infections are viral. ▪ Taking the right dose of antibiotic at the right time ▪ The dangers to the community of taking an antiobotic when not required ▪ How to prevent the spread of infections
	Disposing of medications
How volunteers should act: Behaviours	When discussing medications with individuals or families remember to remind people to check ✓ **Name** – who is the medicine for? ✓ **Medicine** – look at the label and refer to the care plan: is it the right medicine and is it in date? ✓ **Dose** – look at the details on the label carefully: how much? ✓ **Time** – when did they last take their medicine? ✓ **How** – how should they take the medicine? Swallowed whole, or dissolved in water? With or without food?

Topic 4: Nutrition

4.1 Under and over nutrition

Learning Objective	**How under and over nutrition impacts on health and well being**
What volunteers should know: Knowledge	What is healthy eating
	What is a nutrient ○ What are the 6 essential nutrients ▪ protein, carbohydrates, fat, water, vitamins, and minerals ○ Know the different food groups ▪ Fruits and vegetables ▪ Whole grains ▪ Meat and beans ▪ Milk and diary ▪ Fats and oils
	The signs of good nutrition
	The symptoms of lack of nutrition
	How a poor diet can affect the health of a person ○ Stunting ○ Obesity
	The impact of a poor diet on a child's growth and development
	How to keep food safe and clean
	The common ways that food becomes unsafe
	How to prevent food contamination
	The danger signs of unsafe food ○ Fresh foods ○ Dry foods ○ Oils and fats ○ Cans
	The role of poor nutrition in obesity
What volunteers can do: Skills	Demonstrate a cooking class to the village using healthy foods
	Establish a mothers group to discuss healthy eating and recipes
	Convene village meetings to discuss the role of nutrition in health
	Be sensitive when discussing nutrition with families

How volunteers should act: Behaviours	Assist families to select healthy food types
	Advise households of the risks of processed food
	Adopt healthy eating habits in your family

Topic 5: Preventing stunting in children

5.1 Maternal and child health

Learning objective	**Know how to improve maternal and child health to prevent stunting in children**
What volunteers should know: Knowledge	What undernourished means
	The consequences of under nourishment
	What malnourished means
	What protein-energy malnutrition means
	The effects of undernutrition
	What specific-nutrient deficiency means
	How malnutrition and infection make each other worse
	How to recognise malnutrition before it becomes severe
	How women become undernourished o From childhood o Not enough food to cover energy needs o Heavy physical load o Not enough different types of food o No extra food when pregnant o No extra food when lactating o Babies when very young
	The health impacts of having too many births too close together
	The cycle of under nutrition in women
	How to prevent undernutrition in women
	How to prevent undernutrition in women;particularly iron deficiency. o Growing more food o Increasing incomes o Reducing workloads o Teaching schoolchildren o Educating the community
	What is stunting
	The causes of stunting
	How children 6-12 months are vulnerable to undernourishment o Lack of weaning food o Prone to infections o Stop growing
	How children become undernourished in the ages 1 to 3 years o Children do not eat enough o Food they eat is not rich in energy and nutrients o They are more active and need more energy o They are exposed to more infections, which reduces appetite.
	How children become undernourished from 3 to 5 years of age o If they were previously malnourished o Have a severe infection o Severe food shortage

	○ Severe problem in the family- death of mother, neglected child
	The relationship beyween worm infection and nutrition ○ Know the types of worms and the symptoms if infected ○ Roundworms ○ Hook worms
What volunteers can do: Skills	Convene a village meeting to discuss how to prevent and treat worm infections ○ Improve water sanitation, hygiene and living standards ○ Improve housing
	Help to 'deworm' people – mainly children- on a regular basis
	Identify where to get the drugs to treat worm infections
	Talk to families about any concerns for their childrens' growth
	Identify pregnant women in the village and encourage them to eat healthy foods
	Discuss with them the impact of poor nutrition during pregnancy on the development of their baby. • encourage women to have an extra snack a day; • eat health foods.
	Encourage a woman to rest more during pregnancy
	Arrange others to help with heavy work, organise a support team during the last 3 months of pregnancy and for the first 2 months after delivery.
	Discuss with men in the family how they can help the woman to eat more and work less.
	Encourage women to space their births for the nutrition of the mother as well as the baby
	Discuss the options available for family planning methods
How volunteers should act: Behaviours	Be sensitive to family circumstances when discussing food
	Be confident when speaking to men in the family if there are worries about the health of a a woman or child in the family
	Have a close relationship with the health clinic staff and midwives

Topic 6: Antenatal care/post natal care

Learning Objective	**Know the role of good anti-natal and post natal care in the prevention of stunting**
What volunteers should know: Knowledge	Know how undernutrition affects pregnancy and childbirth o Effects on the woman o Effects on the baby
	Know the impact of long term consequenes of low birth weight and premature delivery o Low birth weight babies o Premature babies
	Know the causes of low birth weight o Undernutrition of the mother o Young age of the mother o Intermittent treatment of malaria during pregnancy o Congenital problems o Need to test women for syphilis, HBV and HIV o Other causes
	Know the the impact of severe malnutrition before and after birth on the development of a child's brain.
	Know the benefits of breast feeding
What volunteers can do: Skills	Show mothers how to express breast milk
	Know the midwives and seek their advice if particular concerns about the health of a woman or child.
	Instruct mothers how to use formula milk correctly
	Encourage mothers who appear undernourished to take extra nutrients o Giving iron and folate prevents anaemia and can increase the baby's birth weight and prevent spinal cord malformations. o Giving high doses of iodine prevents iodine deficiency disorders
	Help the mother to feed her baby from a cup and not a bottle
	Encourage the mother to let the ababy start suckling as soon as they are able
How volunteers should act: Behaviours	Be sensitive to family circumstances when discussing food
	Be confident when speaking to men in the family if there are worries about the health of a a woman or child in the family
	Have a close relationship with the health clinic staff and midwives

Topic 6: Eye Health

6.1 Understanding vision problems

Objective	**Know the types of vision problems that can occur**
What volunteers should know: Knowledge	The 4 broad categories of vision function o normal vision o moderate vision impairment o severe vision impairment o blindness.
	The types of vision problems o errors of refraction -- the way light rays are focused inside the eye ▪ Nearsightedness ▪ Farsightedness
	Main eye disease- disorders of the functional eye and its processing units ▪ cataracts, glaucoma, and age-related macular degeneration, diabetic retinopathy, corneal opacities (infectious and inflammatory diseases)
	The main causes of moderate to severe visual impairment o uncorrected refractive errors, o un-operated cataract, o age-related macular degeneration o glaucoma, diabetic retinopathy
	The main causes of blindness o un-operated cataract o uncorrected refractive error o glaucoma
	The people most at risk of vision problems o People ver 50 years o Children under 15 years
	The symptoms for eye diseases o Red eye, pink eye, dry eyes, blurry vision.
What volunteers can do: Skills	Identify existing health services that include eye health and prevention programs.
	Identify possible funding assistance to help families visit a health clinic if they cannot afford to travel.
	Undertake an inventory of the households and seek information about any vison problems- impairment
	Assist individuals to make an appointment with the health clinic
	Know the health clinic program for eye health
	Assist people to arrange transport to clinics
	Discuss with the health clinic the possibility of bringing an outreach service to the village if the eye clinic is more than 1 hour away

How volunteers should act: Behaviours	Actively encourage people with vision problems to seek treatment as early treatment can prevent blindness
	Be sensitive to the concerns of a person with vision problems
	Be understanding of a person's fears about eye surgery and/or fear of doctors
	Be empathic with those suffering vision impairment

6.2 Prevention and treatment of vision problems

Objective	**Know the ways that people can be treated and helped with their vision problems**
What volunteers should know: Knowledge	The benefits of early diagnosis and treatment
	The barriers to people seeking eye care
	Vision impairment in children impacts on their education
	Vision impairment in farmers impacts on their productivity
What volunteers can do: Skills	Identify existing health services that include eye health and prevention programs.
	Undertake an inventory of the households and seek information about any vison problems- impairment
	Assist individuals to make an appointment with the health clinic
	Know the health clinic program for eye health
	Assist people to arrange transport to clinics
	Discuss with the health clinic the possibility of bringing an outreach service to the village if the eye clinic is more than 1 hour away
	Identify possible funding assistance to help families visit a health clinic if they cannot afford to travel.
How volunteers should act: Behaviours	Actively encourage people with vision problems to seek treatment as early treatment can prevent blindness
	Be sensitive to the concerns of a person with vision problems
	Be understanding of a person’s fears about eye surgery and/or fear of doctors

Topic 7: Family Planning

7.1 Education

Objective	**Know the role of family planning in women and family wellbeing**
What volunteers should know: Knowledge	What family planning is o What it covers
	The benefits of contraception /family planning o Preventing pregnancy-related risks in women o Reducing infant mortality o Helping to prevent HIV/AIDS o Empowering people and enhancing educational opportunities o Reducing adolescent pregnancies o Slowing population growth
	Who provides contraception/ family planning services
	The risks of unsafe abortions
	The barriers to family planning o Personal to the woman o Contraception not readily available o Opposed to family planning o Cultural and religious barriers
What volunteers can do: Skills	Meet with newly formed couples of reproductive age and provide them with family planning information
	Motivate ever-married women to use family planning
	Establish groups for pregnant and lactating women
	Establish groups for women with children under 5 years
	Establish groups for parents of teenagers and the elderly
	Attend and organise meetings about family planning on a regular basis
	Keep records of initiatives
	Develop methods to stop discrimination against families that do not have children
	Provide information, education, awareness-raising and counselling
	Implement strategies to promote economic self security
How volunteers should act: Behaviours	Be sensitive to personal beliefs about attitudes to family planning and contraception
	Be able to assist families in conflict to resolve differences of opinion
	Involve males in conversations about family planning as much as possible

7.2 Contraception

Objective	**Know the different types of contraception**
What volunteers should know: Knowledge	What is contraception
	The different types of contraception
	The different methods available in your place
	How the main ones work
	The side effects of different contraceptives and health risks
	The reasons why women avoid using contraception
	Where to get contraception
What volunteers can do: Skills	Be sensitive to women who may be wary of using contraception
	Involve both husband and wife in discussions about contraception
	Provide information, education, awareness-raising and counselling
	Implement strategies to promote economic self security
	Keep records of initiatives
How volunteers should act: Behaviours	Be sensitive to personal beliefs about attitudes to family planning and contraception
	Be able to assist families in conflict to resolve differences of opinion
	Involve males in conversations about contraception as much as possible

Topic 8: Health Promotion

8.1 Life style improvement,physical fitness,stress control

Learning Objective	**Know the activities that are good for health**
What volunteers should know: Knowledge	The role that individuals and families can play in promoting healthy activities
	The main health risks associated with lifestyle Tobacco, alcohol, poor diet, little physical activity
	The main health risks associated with lifestyle o Tobacco, alcohol, poor diet, little physical activity
	The health benefits of regular exercise
	How exercise controls weight
	The ways to manage stress and emotional upset
	What a lifestyle management program is
What volunteers can do: Skills	Create an exercise group
	Assist the group to develop an exercise schedule
	Ask a person to identify the sources of stress in their life
	Identifying the right environment for discussions with stressed individuals.
How volunteers should act: Behaviours	Encourage people to exercise regularly
	Demonstrate by adopting a healthy lifestyle
	Be non-judgemental of families in their effort or lack of effort to adopt a healthy lifestyle.

8.2 Smoking cessation

Learning Objective	**Know how smoking is very bad for one's health**
What volunteers should know: Knowledge	The dangers of smoking
	The different methods for smoking cessation
	The impact of tobacco use on tobacco users and others
	The main three challenges to quitting
	The dangers of secondhand tobacco smoke
	The dangers of children smoking
	The dangers of pregnant women smoking
	Know the common excuses for not quitting
	The withdrawal symptoms and side effects if giving up smoking
What volunteers can do: Skills	How to support a person giving up smoking
	Convene a village meeting to discuss the dangers of smoking.
	Invite a health professional to talk with the community about the dangers of smoking
	Know how to talk to a person about giving up smoking
How volunteers should act: Behaviours	Be non-judgemental in discussions about smoking

8.3 Diet

Learning Objective	**Know how diet is essential for good health**
What volunteers should know: Knowledge	The components of a healthy diet ○ eat mostly foods derived from plants—vegetables, fruits, whole grains and legumes (beans, peas, lentils)—and limit highly processed foods
	How a healthy diet can prevent disease
	How micronutrients (iron, folic cid, zinc, iodine) can improve birth outcomes for women
	The dangers of eating processed foods
	The dangers of added sugar to food and drinks
	The relationship between processed food and obesity
What volunteers can do: Skills	Establish a food co-op for distribution of healthy food groups
	Convene meetings in the village to discuss healthy diets
	Discuss with mothers and families how to establish a balanced healthy diet
How volunteers should act: Behaviours	Be encouraging of people trying to lose weight
	Be non-judgemental about people's choice of food

8.4 Dental care

Learning Objective	**Know the benefits of healthy teeth**
What volunteers should know: Knowledge	The elements of good dental health care
	The main oral problems
	The common oral diseases and conditions
	How to maintain good oral health
	Where the nearest dental services are available
	Know the association between oral diseases and tobacco use
	Know how to prevent oral conditions from childhood
What volunteers can do:Skills	Demonstrate the correct way of brushing teeth
	Discuss with families the ways to maintain oral hygiene- tooth brushing with fluoride toothpaste, healthy diets and health promoting behaviours.
	Convene public information meetings about oral health
How volunteers should act: Behaviours	Assist families with dental problems with appointments and transport

Part C: Curriculum for Agricultural Topics

Topic 1. GAP and cocoa planting material

1.1 Good Agricultural Practice and family involvement

Learning objective	Benefits of cocoa farming
Knowledge	What is a commodity?
	Why do cocoa prices change?
	Why is cocoa farming a suitable family business?
	What is a family business with gender balance?
	Can cocoa be produced with other marketable goods?
	What are shade and intercropping?
	How can cocoa be raised with livestock?
	Where can information on cocoa growing be obtained?
	Where can information on livestock be obtained?
	What is GAP?
Skills and behaviours	Accessing market prices
	Accessing general information on cocoa growing
	Downloading or accessing apps: ICCRI, Swiss Contact
	Accessing information on livestock
	Choosing other crop species, including suitable shade
	Discuss in a participatory manner options for the smallholder family
	In discussion make sure both male/female household members provide their point of view
Key points	Cocoa prices are not controlled in Indonesia
	High production in West Africa can bring down global prices and, therefore, farm-gate prices; conversely low production in WA leads to price increases
	Cocoa is a high value crop that can be produced with other saleable products; as a shade crop, trees such as coconut can add value to farm production
	Optimal farm production requires good agricultural practice (GAP) with adequate inputs and labour
	Livestock can be integrated into cocoa production (see Topic 6) providing manure for soil improvement or compost production

Learning objective	How to apply Good Agricultural Practice (GAP)
Knowledge	What happens if cocoa is unmanaged?
	What is GAP?
	What inputs are needed including labour hours on the farm?
	What are levels of cocoa farm management?
	Is GAP for cocoa useful on a diversified farm?
Skills and behaviours	Demonstrate how to assess productivity
	Explain GAP principles
	Conduct a demonstration test using a different clone or management practice
	Explain options that used labour-intensive management with low capital investment
	Explain the benefits of intensive management
	Develop, using a participatory approach, step-by-step plans based on different options
	Respect obstacles to applying GAP
	Listen to the main concerns of villagers on farm productivity
	Hold participatory discussions on promising strategies

1.2 Seedlings and cocoa genotypes

Learning objective	Seed-planted and clonal cocoa
Knowledge	What is seed-planted cocoa?
	What is clonal cocoa?
	Is clonal cocoa always better?
	How is clonal cocoa propagated? How do grafting methods vary?
	How is seed stored and transported?
Skills and behaviours	Explain as human children are different, individual seed-planted trees are different too
	Explain selection- some genotypes with higher production can be selected and propagated
	Explain advantages of grafting to produce clones: known genotype, shorter time to fruiting, the grafted tree is identical to the parent
	Describe types of grafting: sambung samping, sambung pucuk, chupon grafting
	Demonstrate clonal propagation by grafting; organise farmers to practice grafting
	Explain some disadvantages of clonal cocoa: shorter productive life-span, uniformity on the farm can make is susceptible to unexpected problems e.g flooding, pest/diseases
	Explain advantage of using a mixture of clones – more genetic variation on the farm
	Explain rehabilitation by grafting – grafted clones are now widely used to rehabilitate unproductive farms
	Explain how improved cocoa (budwood or grafted seedlings) can be purchased
	Explain treatment of seed for storage
	Explain how to plant seeds in polybags with soil
Key points	Seed-grown cocoa is variable- some individuals are more resistant to pest/diseases than others, some are more productive etc.
	Clonal cocoa has the same genes as the budwood tree source used to propagate it by grafting- but some variation still occurs (as trees interact with environment and microclimates)
	Clonal cocoa is now much more popular as improved genotypes become more available
	However, government release of clones in certified nurseries is slow
	A clone garden provides a mixture of high-yielding and/or resistant clones and source of budwood for grafting
	Side- and chupon-grafting are used to rejuvenate production: mature trees are grafted on one or two sides, or unproductive trees are cut back to stimulate chupon growth- chupons are then top-grafted

	Chupons can also be left to develop into a new tree that to improve productivity
	Seeds can be stored for a week in sawdust

1.3 Nurseries and improved planting material

Learning objective	**Beginning a nursery for improved planting material**
Knowledge	What is a nursery's role in GAP
	Why farmers need nurseries
	Individual and group-managed nurseries
	Improved planting material- how to select and propagate
	What are the main principles of nursery management
	How is planting material propagated as clones or from seed?
Skills and behaviours	Explain there are many kinds of nursery, including nurseries as enterprises
	Explain benefits of using improved planting material as clones
	Remind trainees of difference between clonal and seed-planted material
	Explain clonal propagation methods in nursery or on mature trees
	Finding resources to construct a nursery
	Explain role of roofing: to shade and protect from wind-borne spores
	Explain importance of drainage: wet floors encourage Phytophthora infections
	Explain removal of infected seedlings most effective control measure but if incidence is high fungicides might be needed: metalaxyl for Phytophthora, other fungicides for Rhizoctonia (another soil-borne pathogen)
	Insectides may be needed for caterpillars or weevils
	Participate in discussions on resourcing materials for nursery construction
Key points	Nurseries are used to produce seedlings which are planted on the farm when a few months old or grafted with improved cocoa clones to replace unproductive cocoa trees on the farm
	Nurseries provide shade for seedlings- cocoa is shade-requiring; shade can be provided by palm fronds or shade cloth
	Requirements for construction: wood supports for frame (2x4 or similar), stones laid down which prevent splash of soil-borne spores onto seedlings (especially *Phytophthora palmivora* spores), a water tank or water supply, hose piping, plastic UV-proof sheeting, shade cloth or palm fronds. Seedlings are planted in polybags containing soil and compost. Nurseries for business purposes may have raised tables for seedlings making access easier – this also minimises splash
	Nurseries should if possible be situated more than 100 m from mature cocoa, the maximum distance for wind-dispersion of VSD spores
	If this is not possible, UV-resistant plastic roofing prevents VSD infections as it blocks the spores dispersed by wind
	Dampness and poor drainage encourages Phytophthora (wilt disease)
	Nurseries need daily management and watering, water is added carefully minimising splash, diseased seedlings are removed, weeding is by hand (as seedlings are sensitive to herbicides), fungicides are used to control Phytophthora which causes seedling wilt

	If soils are poor and fertiliser is needed add 20 g (a tablespoon) of NPK per polybag after seedlings have hardened
	Seedlings are planted when about 0.5 m tall, if left too long the polybags will distort growth
	Fungicides and insectides include metalaxyl, pyrethroids, malathion and white oil (mealy bugs)

1.4 Farmer testing

Learning objective	**Understand benefits of on-farm testing**
Knowledge	What is on-farm testing?
	Why should testing be done on the farm?
	Why is a control needed?
	Recording results
Skills and behaviours	Provide examples of testing: seed-planted and clonal cocoa; two or more clones; soil amendments
	Demonstrate design and implementation of a farmer test
	Explain principles of control treatments when conducting tests on the farm
	Explain how to separate harvests for record keeping
	Simple record keeping
	Guide smallholders on using results to make decisions
Key points	Farmer testing should include only a portion of trees (e.g 20 trees)
	Farmers can test their ideas systematically, rather than relying on hearsay or memory
	A notebook or Excel file is sufficient for recording observations

Topic 2 Planting cocoa and shade trees

2.1 Shade and its role

Learning objective	**Understand the role of shade**
Knowledge	What is the role of shade?
	How can shade be provided for young cocoa trees?
	Does mature cocoa need shade?
	Do zero shade farms work? How much shade is optimal?
	What are some other benefits provided by shade trees?
	Which species are suitable as shade?
	How can over-shading be prevented?
Skills and behaviours	Explain that shade should be immediately available to young cocoa when planted on the farm: some farmers plant banana trees or use coconut fronds for shade in the early stages after planting
	Explain how to develop a program for planting shade trees prior to cocoa
	Example: coconut shade is supplemented with Gliricidia, especially during establishment of coconuts (Gliridia grows faster)
	Demonstrate planting Gliricidia: 1.5 m long sticks, distance 4 x 4 m (similar distance to cocoa) and 20-30 cm deep
	Explain how larger spacing of larger trees (e.g. fruit trees) is important to prevent over-shading; coconut is planted with 12 m spacing
	Explain how to control shading by pruning
	Explain how including other trees (slow growing) can reduce need for pruning shade
	Explain how mixed farm systems which use shade tree foliage are ‘self-pruning’ as feed is collected daily
Key points	Young cocoa (up to 12 months) needs 50% shade, this is reduced to 20-30% by the time cocoa trees are 4 years old and are partly self-shading; cocoa is shade-requiring as it is adapted to grow as a sub-storey tree in rainforest
	Zero shade requires high inputs of fertiliser and water; zero shade is not suitable for smallholders as trees may become stressed: weed growth is higher, water stress is greater, exposure encourages some insects
	The most popular shade is Gliricidia (gamal)- it can be planted clonally as sticks, provides ideal shade if pruned, is a source of animal feed, as a legume it adds N to the soil (N fixation)
	Other legumes are also useful e.g. Leucaena, but this is susceptible to Psyllids and can self seed
	Glyricidia can be hard to manage so other slower growing trees (coconuts, fruit trees) can minimise the need to prune shade- alternatively Gliricidia is useful as fodder (see Mixed Farming)
	Shade trees provide other sources of income: coconuts provide alternative income in addition to fruit trees- durian, langsat

	Some trees can be kept for timber
	Litter provides organic matter for the soil; shade trees control soil erosion, especially on slopes; they maintain humidity on the farm reducing water loss
	The fencing tree, Kayu Jawa, provides some shade and also antiseptics as medicines

2.2 Planting cocoa

Learning objective	Preparation for planting cocoa
Knowledge	Why is planting distance critical?
	Compare some common planting distances
	How should the land be prepared for planting?
	How can survey methods be used to locate planting holes?
Skills and behaviours	Explain advantages of planting distances: 3 x 3 m, 3 x 4 m, 4 x 4 m
	Explain clonal cocoa on flat land can be planted 3 x 3 m
	Cocoa on sloping land 4 x 2 m (4 m between rows along contour of land) and 2 m within rows
	Planting holes prepared in advance up to 6 months before planting; size 60 x 60 x 60 cm
	Explain how to cut polybag and plant without disturbing soil around roots
	Explain it is better to use mixture of 3+ clones, all high yielding but with a different genetic base
Key points	Planting distance accounts for canopy width and the rhizosphere (root zone) of trees when they are mature; competion for soil nutrients and water is minimised
	Topsoil kept separate when digging planting holes, compost can be mixed in when planting; or litter can make up for lack of volume

Topic 3 Tree Management

3.1 Pruning cocoa trees

Learning objective	**Know the role of pruning in cocoa management**
Knowledge	What is the main purpose of pruning?
	What is tree architecture?
	What is tipping?
	Why is flowering important?
	How much light should penetrate the canopy?
	How can pruning reduce pest/disease impacts?
	What is formation pruning?
	What is maintenance pruning?
	What are suckers/chupons?
Skills and behaviours	Show flowering on pruned cocoa or in demo plot
	Show how to assess light penetration
	Demonstrate formation pruning (including tipping)
	Demonstrate maintenance pruning and removal of suckers/chupons
	Explain the importance of keeping trees relatively small
	Explain that chupons can generate a productive new tree by cutting back the mother tree (a method of rehabilitation)
	Chupons can also be top-grafted with productive clones
Key points	Pruning allows light to penetrate the canopy and stimulates flowering, therefore pod production
	Pruning is also used to provide a form that encourages pod production, has non-horizontal branches (favoured as resting places for adult CPB moths), is accessible and not too large (tall trees make harvest and pruning more difficult)
	Removing the tip of seedlings planted on the farm or grafts encourages lateral growth
	Formation should be a tree with about 5 lateral branches
	Pruning to keep trees small makes management easier: harvest and access to diseased pods, and possibilities for producing food crops or intercropping increase (see Topic 6)

3.2. Weed control

Learning objective	Know how to control weeds
Knowledge	What are weeds?
	Why should weeds be removed?
	What are manual and chemical methods of weed control?
	Understand potential impact of pesticide chemicals on bean quality
	What are residue limits?
	What are import restrictions?
	Can ground cover crops or mulches control weeds?
Skills and behaviours	Demonstrate weeding methods by slashing or by brush cutter
	Demonstrate advantage of brush cutters as opposed to chemicals
	Describe dosages necessary for herbicidal treatment
	Demonstrate safe use
	Identify safety gear required
	Encourage trials of ground legumes (which add nitrogen), other ground cover such as patchouli or mulches.
Key points	Weeding of young cocoa is particularly important; around trees weeds removed by hand to avoid damage
	Herbicide should not drift onto young cocoa
	In mature plantings, less weeding is required due to shading
	Overuse of herbicides can result in excessive residue content in cocoa beans; shipments have been rejected e.g. by Japan
	Many herbicides target grasses; other weeds survive
	Overuse of herbicides creates herbicide resistance problems

3.3 Shade and land management

Learning objective	**Know how to manage shade trees**
Knowledge	What happens when gamal and other shade trees are unmanaged?
	How can light penetration be maintained?
	How can aeration be improved, and why is this important?
	How can high branches be reached?
	How can raising goats help shade management?
Skills and behaviours	Demonstrate how to check for required shade
	Demonstrate how to prune Gliricidia trees
	Explain the benefits of mixed farming to shade management (see Topic 6)
Key points	Gliricidia is fast growing and requires management
	As it is a fodder plant, raising goats is an efficient way to manage shade trees, while providing goat feed

3.4 Maintain good drainage

Learning objective	**Know how to maintain good drainage**
Knowledge	Why is drainage important?
	What happens to cocoa if the soil is flooded?
	How can drainage be improved?
	What is the role of soil type in drainage?
	How can soil type be identified?
Skills and behaviours	Show quick methods to determine drainage capacity of soil
	Demonstrate establishment of drainage ditches with smaller drains joining larger drains at a lower elevation
	Test use of *in situ* trench composting in water retention
Key points	Open drainage ditches are dug to prevent flooding and water logging of trees (this is a common problem in Sulawesi)
	Small drains should slope down gradually to a major drain (if too steep, soil erosion occurs)
	Maintenance of drainage reduces transmission of Phytophthora diseases (busuk buah and kanker batang)

Topic 4 Pests and diseases of cocoa

4.1 Important pests and diseases

Learning objective	**Know the important pest/diseases of cocoa**
Knowledge	What are the main pest/diseases on cocoa?
	What problems do they cause to productivity and quality?
	How Phytophthora be identifed on pods and stems?
	What weather conditions favour Phytophthora infections?
	How can VSD be identified?
	How does VSD spread from tree to tree?
	How can cocoa pod borer (CPB) damage be assessed?
	How can we recognise Helopeltis damage?
	Know the signs of stem borer and some less common pest/diseases
Skills and behaviours	Show black pod and stem canker
	Show VSD on leaves and in vascular tissue
	Show vascular traces on petioles
	Demonstrate CPB damage assessment
	Show the impact of CPB on bean quality: flat beans, clumped beans
	Show Helopeltis (*Helopeltis antonii*) damaged pods; show impact on pod development
	Ask farmers what steps they take to control pests and diseases
	Use photos to show some less common pest/diseases
	Explain how to assess general losses to pests/diseases
	Show trainees life cycle posters
Key points	Phytophthora (*Phytophthora palmivora*) needs wet conditions for spores to spread; it infects different parts of the cocoa plant (stem, pods, seedlings)
	VSD (caused by a fungus, *Ceratobasidium theobromae*) needs wet conditions for spore production; it infects leaves and branches
	CPB (*Cramerella conopomorpha*) larvae infest pods causing damage to beans; some beans can be recovered if infestation is not heavy

4.2 Control of pests/diseases

Learning objective	**Know the role of sanitation and frequent harvesting**
Knowledge	What is sanitation?
	What is frequent harvesting?
	Why do Phytophthora infected pods cause new infections on the farm?
	What are the best sanitation methods? Discuss possibilities of *in situ* composting
	Why do CPB infested pods on trees continue the CPB life cycle
	How can pod shredding improve sanitation?
	What is sanitation pruning?
Skills and behaviours	Demonstrate the collection of infected/infested pods and treatment for sanitation
	Demonstrate the benefits of *in situ* compost methods (see Topic 5)
	Demonstrate sanitation pruning
	Show farmers treatment for stem canker (painting copper based fungicides)
Key points	Spores that spread Phytophthora swim in water
	Frequent harvesting (every 7-10 days) prevents CPB life cycle being completed
	Removing branches below VSD infections prevents sporulation and new infections
	Pod shredding or composting removes source of Phytophthora spores and CPB larvae
	Pruning improves aeration (as well as light); heavy shade encourages some fungal diseases and Phytophthora

Applying IPDM Principles

Learning objective	**Know how to apply IPDM principles**
Knowledge	What is integrated pest and disease management (IPDM)
	What are four main levels of management
	How can tree and soil management reduce pest/disease impacts?
	Why do some management methods cross-over to others
	What pesticide chemicals can be used in IPDM
	Understand dangers posed by pesticides to health and beneficial insects
	What is pod sleeving?
Skills and behaviours	Describe principles of Integrated Pest and Disease Management
	Explain four levels of management: (1) farmer practice; (2) 1 plus pruning and sanitation; (3) 2 plus soil amendment; (4) 3 plus targeted pesticide use
	Show how management has common targets: pruning improves aeration and reduces VSD; composting infected pods reduces spore load and supplements soil nutrition etc.
	Emphasise role of composting in removing infective sources: either in separate location or *in situ* in between trees
	Explain why infected pods should be covered
	Demonstrate use of safety gear for spraying and safe use
	Explain why targeted spraying is better for health, environment and economical
	Demonstrate method of pod sleeving
	Stem canker may need chemical treatment:
Key points	Pests and disease impacts can be reduced by simple management methods including sanitation and pruning
	IPDM reduces pesticide load making it safer for humans and environment; more biodiversity on the farm encourages natural enemies of pests such as parasitic wasps
	Chemicals to control VSD are uneconomic; IPDM measures are the most effective
	Pods sleeving is labour intensive but returns at harvest time are almost 100%
	Insecticides may kill pollinators of cocoa, as well as other beneficial insects; in addition, they are expensive

Topic 5 Soil Nutrition

5.1 Soil nutrients and soil amendment

Learning objective	**Know the purpose of soil amendment**
Knowledge	What is soil health?
	What is nutrient uptake?
	What are macronutrients?
	What are micronutrients?
	What is organic matter? What are the main roles of organic matter?
	What are soil microorganisms? Why are they important?
	What fertilisers are recommended? What are the application rates?
	How can organic matter content be maintained or improved?
Skills and behaviours	Explain the role of soil in providing nutrients to plants and in yield.
	Explain the importance of macronutrients and fertiliser formulations
	Explain the role of micronutrients
	Explain the role of organic matter
	Explain the role of compost in maintaining soil health
	Explain contribution of legumes and shade trees to soil health
	Discuss why many farmers do not apply enough fertiliser. Show how soil amendment can be tested on the farm
	Explain that adding fertiliser to a poorly managed farm is a waste of money and resources;fertiliser application should be combined with good management (see Topics 3 and 4)
Key points	Most production loss from poor soil nutrition is due to lack of uptake of macronutrients
	Uptake should not be confused with supply: if nutrients are readily leached then most fertiliser is lost (meaning money thrown away)
	Organic matter improves nutrient availability (and uptake), encourages soil microbes (which have a number of functions including nutrient retention, nitrogen conversion, improving availability of micronutrients)
	Fertiliser formulation is important – most subsidised NPK fertilisers are too low in K (compared to N) and have no Mg; some specialised formulations for cocoa have been developed
	On typical Sulawesi soils, provided organic matter (C content) is >2%, recommendations for mature cocoa (total in 2 applications): 250 g NPK per tree per year (NPKMg is recommended if available), 50 g triple superphosphate (or if combined with diammonium phosphate and ammonium sulphate then reduce amount of NPK); rock phosphate adds P; KCl adds more K.

5.2 Recycling farm waste into compost

Learning objective	**Know how to use pod husks and organic materials to make compost**
Knowledge	What is composting?
	How does compost enhance soil health?
	What role do soil microbes play?
	How can microbial activity be used to promote composting?
	What is *in situ* (trench) composting?
	How can in situ composting protect trees from drought conditions in the dry season?
Skills and behaviours	Demonstrate recycling farm waste to make compost
	Demonstrate the use of promoting microbes
	Demonstrate *in situ* compost in trenches between trees
	Explain roles of compost in nutrient supply, soil microorganisms and water conservation
	Listen to farmers' opinions on value of fertiliser and compost
Key points	Composting is promoted by a mixture of microbes (bacteria and fungi) and can be purchased e.g. EM4, Promi
	Trench compositing *in situ* means that pod husks and other organic wastes do not have to be transferred off the farm- so saves labour for transport of farm waste; either long trenches are dug and gradually filled in or deep holes in between four trees
	Further labour saving is achieved by hiring a rice field hand plough (this could be rented by a farmer group). The plough fits in between cocoa rows and can be used to dig a trench rapidly; trenches are usually 20 x 30 cm (20 cm deep, 30 cm wide) and placed in between every second row of cocoa in the first year, and then in the remaining rows in the second year
	Any organic material including pruned branches can be added to the trench, with microbial promoters if available: for example for 1 sack of organic material (about 40 kg) dissolve 40 g Promi (approx. 8 teaspoons) in 10 L water and distribute through the layers of organic material in the trench
	The trenches (pods husks) should be covered with soil to prevent dispersal of infection agents
	New lateral roots and earthworms can be observed in trenches with compost
	Using trench composting and other organic fertilisers (such as liquid formulations which are sprayed) greatly reduces the need for NPK or urea

Topic 6 Diversification on the farm

6.1 Forms of diversification

Learning Objective	**Diversification, income and nutrition**
Knowledge	What is crop and animal diversification?
	What are the benefits of diversifying the farm?
	Shade trees and intercropping
	Livestock (see Mixed Farming)
	How can diversification benefit nutrition?
	How can improved income benefit nutrition?
	How gender involvement can enhance business and nutrition (see Health Curriculum)
	How can diversification contribute to intensification of cocoa production?
	How can diversification improve soil and plant health? (Topic 5)
	How can diversification improve human nutrition? (See Health curriculum)
	What is One Health (see Health curriculum)
Skills and behaviours	Explain distribution of income through the year
	Explain need for capital input (see Topic 1, inputs required for GAP)
	Show and explain demonstration plot of vegetables Explain nutritional value of vegetables, eggs
	Explain links between diversification and one health
	Provide examples of business diversification
	Explain importance of balanced gender roles
Key points	Resource efficiency may be increased on a diversified farm
	Shade trees can be used for feed, while manure is used to improve soil nutrition
	A one health approach benefits with vegetables, meat and eggs

6.2 Other crops and vegetables on the farm

Learning Objective	Supplementary crops compatible with cocoa
Knowledge	Principles of inter-cropping
	Shade trees that can contribute to income
	What products/commodities can be inter-cropped with cocoa
	How can vegetable growing contribute to savings and nutrition?
	Crop production and gender roles
Skills and behaviour	Demonstrate how vegetables can be grown
	Begin a small demo vegetable garden
	Invite farmers who grow other crops to share their experience
Key points	Farm architecture may be suitable for intercropping without taking much space e.g. black pepper is supported by Gamal shade trees, or food crops can be grown in between cocoa rows
	While competition for nutrients may reduce availability to cocoa, using composting methods and applying suitable fertilisers may provide sufficient nutrient sources; in addition, litter from other crops; growing other crops can be used to use resources more efficiently- they may have different nutrient requirements from cocoa, so do not directly compete for all soil nutrients
	Pruning cocoa to keep trees small is also a good strategy for intercropping as light penetration enables the production of food or other crops

6.3 Mixed farming

Learning Objective	**Mixed farm models: diversification by raising livestock**
Knowledge	What are the main benefits of mixed farming?
	What livestock types can be produced with cocoa?
	Why can mixed farming increase efficiency?
	Some examples of mixed farming
	Know shade trees that can be used as feed
	Livestock and one health: human nutrition, soil and plant health, as well as economic benefits
Skills and behaviours	Explain principles of mixed farming and efficiency of resource use
	Explain how mixed farming can contribute to child nutrition and supplement income
	Explain improved quality of compost (see Topic 5)
	Explain relation between livestock and human health (One Health)
	Explain relation of livestock management and clean water sources
Key points	Mixed farming reduces the need to purchase inputs and uses resources on the farm, particularly livestock feed and manure
	Mixed farming adds value to the farm and livestock provide added security (similar to savings or assets)

Goats.

Learning Objective	**Raising goats on cocoa farms**
Knowledge	Why are goats suitable for cocoa farms?
	What are cost/benefit ratios?
	What breeds of goat are available?
	What is the main market for goats?
	What are the most important goat diseases in West Sulawesi?
Skills and behaviours	Explain integration of goat feed, shade trees, manure and compost
	Explain principles of Cost-Benefit Analysis (CBA)
	Develop example CBA in participation with farmers
Key points	Goat prices rise during religious festivals; they are also in demand for baby showers and weddings
	The market is exclusively for live animals
	Export to Kalimantan provides lucrative trade
	Larger breeds are available (transported from Java) and can be crossed with local breeds
	Goats consume foliage from tree legumes, grasses and also cocoa leaves especially as silage; prunings are left for a day before feeding goats
	Manure can be collected by specially designed pens
	Goat transport between provinces requires a health certificate; goats may carry a number of diseases e.g tetanus
	Pen flooring may contribute to high rates of kid mortality – using rubber matting on the pen floor is recommended for young kids

Topic 7 Post-harvest practices

7.1 Harvesting and drying beans

Learning objective	**Know requirements of the market**
Knowledge	When should pods be harvested?
	How are beans extracted from pods?
	What is the market demand for wet and dry beans?
	How can be beans be dried and stored?
	What are the main quality characteristics of cocoa beans?
	What are the main buyer requirements when selling dry beans?
	How are CPB-infested pods harvested?
Skills and behaviours	Demonstrate harvesting methods
	Demonstrate drying methods e.g solar drying
	Explain industry requirements for bean quality
	Explain how farmer coop programs promote consistent qualitiy Demonstrate how moisture content is evaluated
	Explain how CPB impairs cocoa quality
	Explain differences between production and quality losses
Key points	Standard Moisture content for dry beans is 7%
	Collectors pay discount prices for beans that are not dried properly

7.2 Fermentation

Learning objective	Fermentation of cocoa beans
Knowledge	What is cocoa fermentation?
	What is the current market demand for fermented beans ?
	What is the current market for fermented beans (see below, Topic 8)
	What volume of wet beans are required for successful fermentation?
	How can benefits/drawbacks of fermentation be assessed?
	What are the main requirements for applying fermentation?
	What are the main markets for fermented beans?
	What are the optimum number of days for fermentation before drying?
	Individual versus farmer group fermentation
Skills and behaviours	Explain industry requirements for fermentation
	Explain basic technology and equipment needed Explain how to combine harvests to achieve required volumes
	Explain markets and linkages to buyers
	Explain the optimum number of days for fermentation
	Explain water loss and reduced weight
	Demonstrate fermentation technology
	Listen to problems to introducing fermentation technologies
	Listen to impediments to adopting fermentation technology
Key points	Fermentation requires minimum volumes (about 250 kg wet beans)
	Village enterprises can purchase wet beans or use produce from a group of farmers
	Fermentation should take place 5-6 days – too short a time increases acidity, too long and the beans become black and downgraded in terms of flavour
	A market linkage is essential
	Fermentation boxes are robust (e.g. 60 x 70 cm with a minimum depth of wet beans of 50 cm which should be added at the same time then covered (with sacking, or leaves)

Topic 8. Farmer cooperatives, information and markets

8.1 The cocoa farm and markets

Learning objective	**Understand cocoa markets**
Knowledge	What is an international commodity market?
	How are cocoa prices set in the market?
	Why does shortening the supply chain improve farm-gate prices?
	What is a guaranteed market?
	How can farmers link with major traders?
	What is tracking?
	What is CocoaTrace?
	Is there a demand for fermented beans?
Skills and behaviours	Invite speaker from a farmer cooperative(s) such as Amanah
	Invite speaker from Swiss Contact/Rikolto on gender balance
	Demonstrate CocoaTrace and explain digital methods to track sales
	Provide training day with cooperative
	Understand variability in product quality and difficulties in achieving compliance
	Understand special relations that may occur between farmers and local buyers
	Listen to community concerns about selling directly to major traders
	Explain benefits of improved productivity and quality to family
	Explain benefits of a guaranteed market/buyer
Key points	Domestic prices in Indonesia follow the international market closely (research from IPB)
	Tracking cocoa sources is increasingly important for consumer markets- was it produced sustainably? Was child labour used?

8.2 Farmer cooperatives and sustainability programs

Learning objective	**Understand the role of farmer organisations**
Knowledge	What is the role of the farmers' group?
	What is the role of the women's group?
	What is a farmer cooperative?
	Who can join a coop?
	What are the benefits of joing a farmer cooperative? What is bargaining power?
	How do farmer groups and cooperatives work together?
	How is produce transported to the farmer coop? and further on to the cocoa trading company?
Skills and behaviours	Invite speaker from a farmer cooperative(s) such as Amanah
	Invite speaker from Swiss Contact/Rikolto on gender balance
	Demonstrate CocoaTrace and explain digital methods to track sales
	Provide training day with cooperative
	Understand variability in product quality and difficulties in achieving compliance
	Understand special relations that may occur between farmers and local buyers
	Listen to community concerns about selling directly to major traders
	Explain benefits of improved productivity and quality to family
	Explain benefits of a guaranteed market/buyer
Key points	Farmer organisations are linked to major traders; they provide a market and require bean quality standards are adhered to
	Training is provided and support services, such as advice on how to access finance

Sustainability

Learning Objective	Certification and sustainability programs
Knowledge	What is cocoa sustainability?
	What is cocoa certification?
	What are company-owned sustainability standards?
	What is the relationship between farmer cooperatives and sustainability programs?
	What are buying stations?
	What is the role of local collectors?
	How can sustainability programs benefit farmers and the community?
	What kind of training is provided to members?
Skills and behaviours	Explain quality and certification standards
	Explain compliance requirements
	Explain the origin of premium payments?
	Explain the allocation of premium to farmers
	Understand difficulties faced in achieving compliance
	Understand the limited premiums provided and low incentive
	Explore ways that certification programs can be improved in participatory discussions
Key points	Many farmer organisations are linked to certification programs under trading companies
	Premium payments are provided (by importing chocolate companies) on compliance to a set of sustainability standards by farmers; but these payments vary as internal management costs absorb some of the premium

Topic 9 Satellite businesses associated with cocoa

9.1 Cocoa supply chain

Learning Objective	Cocoa supply chain and diversification
Knowledge	What is the cocoa supply chain?
	What are main material requirements/services that support the supply chain?
	How can demand for improved seedling/clones be met?
	How can enterprise be linked to the cocoa supply chain?
Skills and behaviours	Show a diagram of a cocoa supply chain
	List services that support the supply chain
Key points	Supply chains needs various support services: farmer training, grafting, seedlings for replanting, farm chemicals, rental equipment
	Enterprises can be developed: nurseries, farm shops, expertise

9.2 Nursery enterprise

Learning objective	Starting a nursery enterprise
Knowledge	How can a nursery enterprise be established?
	Compare individual and group options
	What materials are needed for construction?
	What is the best roof material?
	How big should the nursery be?
	Where are polybags and other materials available?
	How can rootsock seedlings be produced?
	Are professional grafting services available?
	Where can improved cocoa clones be obtained?
	How can a seedling market be accessed?
Skills and behaviours	Explain demand for seedlings of improved clones
	Explain construction principles of a nursery
	Explain the advantage of UV-resistant plastic sheeting and its role in preventing VSD infections
	Explain the added value of a grafted seedling
Key points	Commercial nurseries require permanent (robust) structures, are larger, include a good water supply and raised tables for ease of access with less soil splash
	Government certification is required to sell clones

Topic 10 Financial management and accessing capital

10.1 Household finance

Learning Objective	**Household financial management and book-keeping**
Knowledge	What is book-keeping?
	What is finance?
	What is formal finance?
	What are the advantages of formal finance?
	How can formal finance be accessed?
	How can savings be established?
Skills and behaviours	Explain how to apply for formal finance
	Explain how to establish a savings account
	Teach basic book-keeping
	Develop example financial plans
	Involve both men and women in financial planning
Key points	Access to finance is improved by financial literacy

10.2 Savings and access to capital

Learning Objective	**Accessing capital**
Knowledge	How can capital for investment be accessed?
	What security is necessary?
	How can sustainability programs assist?
	What is the difference between formal and informal finance?
	Why are savings important?
Skills and behaviours	Explain how capital can be used to initiate a business
	Explain the obstacles to obtaining capital
	Explain the value of financial plans and savings
Key points	Book-keeping is highly regarded by banks and loan officers