



A TRAINING GUIDE TO TRAINERS

MICRONESIA GROWS TECHNOLOGY

**A Program to Facilitate Distance Learning
for Agriculture and Extension Students at
the College of Micronesia-FSM**

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GLOSSARY

AGRICULTURAL PRODUCT

any product or commodity, raw or processed, that is marketed for human consumption (excluding water, salt, and additives) or animal feed.

ANIMAL

ruminant (e.g. cattle, buffalo, goat, sheep, and deer) and non-ruminant (e.g. poultry, pigs, ostrich, rabbit, and horse) livestock raised for food purposes.

ANNUAL CROP

crop produced by a plant whose entire life cycle is completed within a single growing season.

BIODEGRADABLE INPUTS

inputs composed of natural materials capable of being decomposed by bacteria or other biological means and includes compost, green manure, and plant and animal waste.

BIODIVERSITY

variety of life forms and ecosystem types on Earth. Includes genetic diversity (i.e. diversity within species), species diversity, and ecosystem diversity.

BUFFER ZONE

clearly defined and identifiable boundary area bordering an organic production site that is established to limit application of, or contact with, prohibited substances from an adjacent area.

COMPOST

any product in solid or liquid form, of plant or animal origin, that has undergone substantial decomposition that can supply available nutrients to plants with a total N-P-K 2.5 to less than 5 percent.

CONTAMINATION

contact of organic crops, animals, land, or products with substance that would compromise the organic integrity.

CONVENTIONAL

any material, production, or processing practice that is not certified organic or organic "inconversion".

CROP ROTATION

practice of alternating the species or families of annual/biennial crops grown on a specific field in a planned pattern so as to break weed, pest, and disease cycles and to maintain or improve soil fertility and organic matter content.

FARM UNIT

total area of land under control of one farmer or collective of farmers, and including all the farming activities or enterprises.

GREEN MANURE

crop that is grown and then incorporated into the soil for the purpose of soil improvement, prevention of erosion & nutrient loss, accumulation of plant nutrients, and balancing soil organic matter.

IN-CONVERSION/CONVERSION TO ORGANIC

labeling term that denotes produce and products of plant that are obtained through production and/or processing in accordance with organic agriculture in conversion period intended to market as food.

MONOCULTURE

the practice of cultivating a single crop, plant, livestock, breed in a field or a farming system.

ORGANIC AGRICULTURE

holistic production management system which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles, and soil biological activity.

ORGANIC INTEGRITY

adherence to the principles, objectives, and standards for organic production.

ORGANIC PRODUCE

any agricultural produce that is produced according to the organic agriculture or gathered from nature, and/or handled with post-harvest management.

ORGANIC PRODUCT

product that has been produced or processed and handled in compliance with organic standards.

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GENERAL INSTRUCTION

01

INFORMATION AND INSTRUCTIONS TO THE TRAINER

This manual should be used purely as a facilitator's guide. The sessions under each module are presented with an outcome(s) to facilitate the assessment of participants' understanding and depth of knowledge at the end of each session. Following the outcomes are the topics to be covered and facilitating methodology. However, the facilitator should feel free to adapt the methodology suggested to the needs of participants. To enhance a participatory learning process, some methods of presentation and the steps to follow are therefore outlined. The manual also provides some background information on each session. The information is also meant to aid the facilitator in the preparation for the session. Like all participatory methods, the involvement of the participants in all stages of the learning process is vital. However, all users of this manual must study and research into the content of each module before the presentation. Start each sub-topic and group activity by explaining the objective and learning outcomes expected of them, and ensure they are met.

The session should be interactive, participatory, lively and interesting. Let the participants express themselves in local language, if deemed necessary, for them to understand the concepts. Encourage them to ask questions especially on concepts that they do not understand. Switch to either English or vernacular language when you find some farmers or all of them do not understand you in one of the languages.

Start the session with greetings, welcoming remarks, and introduce yourself. Ensure you have the necessary stationery, equipment, and materials for the trainees: projector, flip charts or whiteboard, whiteboard markers, marking pens, posters, and handouts. Be time conscious as you facilitate the session.

This manual is organized around aspects of Organic Agriculture, its fundamentals and principles, formulating organic concoctions and extracts, and producing organic fertilizers.

02

USERS OF THE MANUAL

The manual is intended to be used by facilitators in conducting training workshops across the College of Micronesia-FSM through the aid of C.R.E extension agents and agriculture major students.

03

PRESENTATION METHODOLOGY

The methods of presentation outlined in the manual are suggested as a guide to the facilitator. The facilitator is expected to use his or her judgement in selecting the appropriate method or combination of methods in presenting each session.

04

ASSESSMENT

At the end of each session, the facilitator is expected to assess/evaluate the participants' understanding and level of knowledge by using a simple question and answer session as appropriate. In some of the sessions, assessment questions are suggested as activities whilst in some, the facilitator is given a free hand in determining the kind of questions to be asked. However, all assessments must relate to the session.

PROJECT BRIEF

The Federated States of Micronesia are situated in the Pacific Island region and have a mix of traditional cultures impacted greatly by successive Spanish, German, Japanese, United Nations and United States colonizations and territorial agreements. The food systems here are in transition. Large pelagic and near shore aquatic resources are spread across thousands of kilometers and the potential for misuse is extreme. Local land-based agricultural practices are a mix of traditional and imported crop farming and husbandry. Both ocean- and land-based systems are subject to increasingly challenging results from climate change. In this context, one of the most important tools that local communities have is their knowledge. Showing how traditional knowledge integrates with modern, scientific agricultural research and practices is one of the benefits of a robust CRE program.

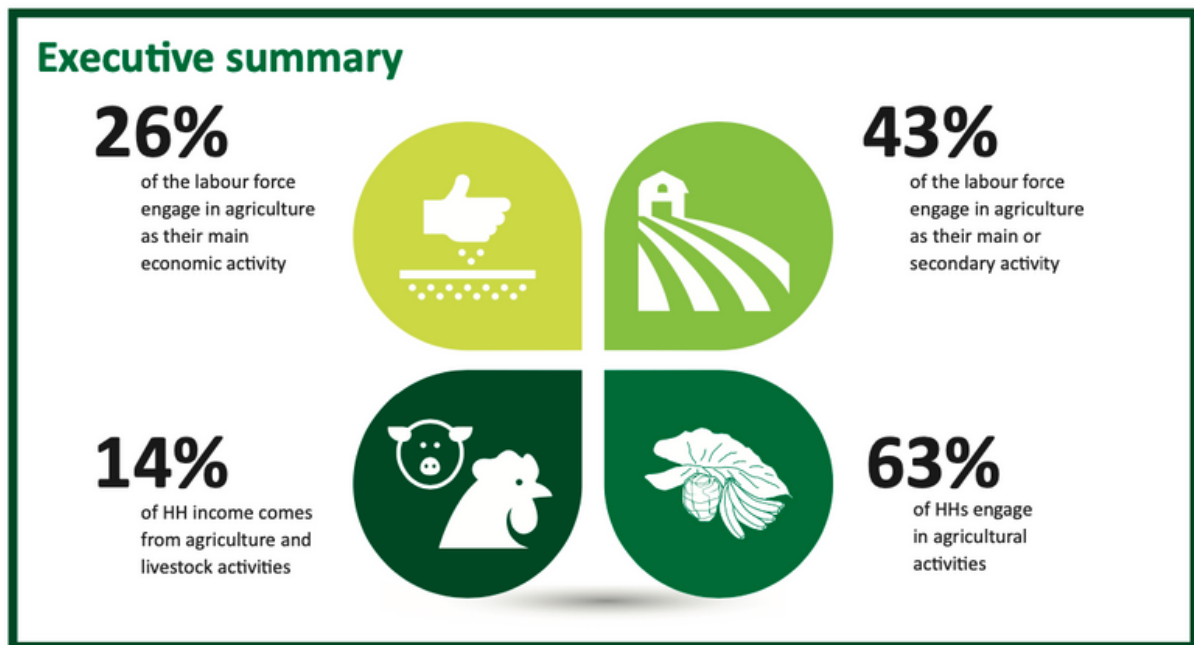
The College of Micronesia-FSM is a learner-centered institution of higher education that is committed to the success of the Federated States of Micronesia by providing academic and career & technical educational programs characterized by continuous improvement and best practices. The college is accredited by the Accrediting Commission for Community and Junior Colleges (ACCJC) of the Western Association of Schools and Colleges (WASC). Prior to the coronavirus pandemic, the college was not accredited to offer distance education programs to its students.

Distance education plays a major part in this process of integration now with the pandemic, as academic offerings of the college are exclusively online where feasible. As a result of the Micronesia Grows Technology program, well-trained agricultural workers will adopt best practices in the region, and will succeed in bringing integrated knowledge to local, state, and regional actors. Acting in concert with the college, which serves all four states of the Federated States of Micronesia (FSM), this progress will reach national communities and impact international practices as well-spoken contributions come from these former agricultural research and extension students. Affording them with personal laptop computers will make this possible in a way that faces forward and opens up access to the whole world of internet offerings in agricultural practices. Familiarity with computing helps make this happen.

The Cooperative Research and Extension (CRE) program provides training, knowledge and skill development in agriculture and aquaculture, nutrition, resource management, and youth and families through our research, extension, and resident instruction programs. The rental program providing laptops to agriculture students will add momentum to the overall goals of the college, and in particular will aid the CRE in its mission to provide unrestrained support in aiding the development of the Federated States of Micronesia.

In a Nutshell

FSM AGRICULTURE



Agriculture is extremely important for the livelihoods of households (HH) across the Federated States of Micronesia (FSM). 63% of HHs report conducting some form of agriculture and forestry. 43% of the labour force conduct agriculture as a primary or secondary activity, and agriculture contributes 14% to overall HH income.

However, most of these agricultural activities are for subsistence. Nearly 40% of HHs produce goods purely for their own consumption (subsistence). Only 24% of FSM HHs have sold any part of their agriculture production. Very few agriculturally active HHs hire labour or use inputs such as fertiliser and irrigation.

Agricultural production varies considerably across states. The most important food crops (in terms of total value sold, gifted and consumed) were: taro in Yap, breadfruit in Chuuk, yam in Pohnpei and banana in Kosrae.

Other crops also provide significant income in some states. Sakau (kava) had the highest value of production in total, and provides the highest income from sales, with more than USD2.5 million in sales in Pohnpei. Betel nut was a major income earner in Yap, and was sold, gifted and consumed across all states.

Livestock is also important for subsistence. 51% of HHs reported raising livestock but only 20% of these HHs sold their production. Pigs are the most important livestock, with 80% of livestock HHs reporting having pigs.

PRE-TEST

Direction. Read and analyze the questions thoroughly. Choose the letter of the correct answer.

01

It is the art, science, and business of growing plants and raising animals for the consumption and economic use of man.

- a. Organic Agriculture b. Horticulture c. Animal Science d. Agriculture

02

This is a production system that sustains the health of soils, ecosystems and people.

- a. Conventional Agriculture b. Organic Agriculture
c. Biodynamic Agriculture d. Agriculture

03

Which principle of organic agriculture emphasizes the importance of equity, respect, justice, and stewardship in all levels of food production chain?

- a. Principle of Ecology b. Principle of Care
c. Principle of Fairness d. Principle of Health

04

Which principle of organic agriculture tells you to prioritize management practices over conventional methods of farming?

- a. Principle of Ecology b. Principle of Care
c. Principle of Fairness d. Principle of Health

05

Which principle of organic agriculture underlines the importance of sustaining and enhancing the life of every organism in farm ecosystems?

- a. Principle of Ecology b. Principle of Care
c. Principle of Fairness d. Principle of Health

06

Which principle states that organic agriculture should be managed in a responsible manner in order to protect the health and well-being of current and future generations and the environment?

- a. Principle of Ecology b. Principle of Care
c. Principle of Fairness d. Principle of Health

07

True or False: Safety measures in the farm is a shared responsibility between the farmer and the farm owner.

- a. True b. False



MODULE 1

INTRODUCTION TO ORGANIC AGRICULTURE

This module covers the knowledge, skills, and attitudes you need to know about Organic Agriculture. It includes an overview of Organic Agriculture, and its underlying principles, models of organic agriculture, industry sectors, opportunities, and trends. It also introduces to the Fundamentals of Organic Agriculture.





OBJECTIVES

AT THE END OF THE MODULE, YOU SHOULD BE ABLE TO:

- Define organic agriculture as a production system;
- Describe industry sectors, opportunities, and trends;
- Explain the different Models & Principles of Organic Agriculture;
- Enumerate farm tools and equipment;
- Familiarize with health and safety procedures in the workplace.

Topic 1 What is Organic Agriculture?

INTRODUCTION

AGRICULTURE: FROM HUNTER-GATHERERS TO FARMERS

Agriculture is the art, science, and business of growing plants and raising animals for the consumption and economic use of man (Narvaez, 2005). Agriculture provides food, fabrics, and other raw materials. Its invention allowed us to go from hunting and foraging to pursuing activities such as employment, education, etc. (National Geographic, n.d.).

THE GREEN REVOLUTION VS. THE ORGANIC MOVEMENT

Over the years, loss of arable soil, water contamination, pesticide poisoning, and more environmental problems have forced people to reflect on the use of agricultural lands.

More and more people realized the need to shift to a holistic food production system – from one that focuses on farm productivity and profit, to one that acknowledges the multiple facets of agriculture like environment, health, sustainability, social justice, and indigenous knowledge. We call this the “Organic Movement.”

The Organic Movement gained popularity in the ‘70s and ‘80s to counter the ill effects of the “Green Revolution” which was then presented as the key to food security for the growing population. The “Green Revolution” was characterized by the adoption of new technologies – high-yield varieties, irrigation, mechanization, and the heavy use of agrochemicals and chemical fertilizers. While this greatly increased food production, it brought challenges to ecology, health, and social equity.

DEFINITION

BY FOOD AND AGRICULTURE ORGANIZATION (FAO) OF THE UNITED NATIONS (2007)

Organic agriculture is an integrated production management system which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles and soil biological activity.

BY THE INTERNATIONAL FEDERATION OF ORGANIC AGRICULTURE MOVEMENTS (2005)

Organic Agriculture is a production system that sustains the health of soils, ecosystems and people. It relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects. Organic Agriculture combines tradition, innovation and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved.

While these definitions are phrased differently, the common themes in their definition of organic agriculture are:

- Organic agriculture is a production system.
- It promotes and enhances the health of agro-ecosystems including soil, biodiversity, and people.
- It relies on ecological/natural processes.
- It emphasizes management practices over the use of off-farm inputs.
- It utilizes cultural, biological, and mechanical methods as opposed to synthetic materials.

PRINCIPLES OF ORGANIC AGRICULTURE

Organic agriculture should sustain and enhance the health of soil, plant, animal, human and planet as one and indivisible.

Organic agriculture should be managed in a precautionary and responsible manner to protect the health and well-being of current and future generations and the environment.

Organic agriculture should be based on living ecological systems and cycles, work with them, emulate them and help sustain them.



Organic agriculture should build on relationships that ensure fairness with regard to the common environment and life opportunities.

The Principle of Health underlines the importance of health in farm ecosystems, not just the absence of illness but the physical, mental, social and ecological well-being from the smallest microorganism to human beings.

The Principle of Ecology states that organic agricultural practices must be in tune with nature. Organic management should be adapted to local conditions, not to conventional methods of farming.

The Principle of Care should unite science and indigenous knowledge in the pursuit of appropriate technologies.

The Principle of Fairness emphasizes the importance of equity, respect, justice, and stewardship in organic agriculture.

MODELS OF ORGANIC AGRICULTURE



INTEGRATED DIVERSIFIED ORGANIC FARMING SYSTEM

Is an approach to farming that focuses on the functional diversity in a farm, rather than monocultures.

KOREAN NATURAL FARMING

Developed by an agricultural researcher named Cho Han-kyu in the late 1960's. Its an approach to agriculture that specializes in producing farm input to improve plant growth.

PERMA CULTURE

Developed by David Holmgrem, from the words, "perma" and "agriculture". It is an approach not limited to farming that focuses on design philosophy.

BIO DYNAMICS

Is an approach to farming, gardening, food and nutrition that includes esoteric concepts. It integrates scientific understanding with spirituality and ethics.

Topic 2 Organic Agriculture Industry

INTRODUCTION

According to FSM Agriculture Policy, "by 2023, FSM will have a vibrant, robust and productive agriculture sector that sustainably supports food security, healthy lifestyles, strong social safety nets, and promotes a greener economy. The sector will provide good employment and income generation opportunities, economic growth and a decreased trade deficit. This will help ensure a happy, healthy, prosperous and peaceful nation".

The Federated States of Micronesia is comprised of more than 600 islands in the western Pacific ocean, broken down into four nation-states: Pohnpei, Kosrae, Chuuk and Yap. In recent years, the main focus for the government has been to foster sustainable agriculture in Micronesia, for the sake of farmers and the Micronesian economy.

Agriculture contributes significantly to the livelihoods and food security of a large proportion of FSM's population and is identified in the SDP, along with fisheries and tourism, as a key productive sector for sustainable economic growth.

Agriculture is a very large part of the Micronesian economy, and the majority of its economic activity revolves around subsistence agriculture and fishing, some of the country's main crops including breadfruit, banana, taro and yams, its main exports being fish, black pepper and betel nut.

However, despite the fruitfulness and diversity of the Micronesian food supply, local communities have little opportunities to purchase fresh produce, because the majority of produce available in Micronesia is imported and expensive. The truth is that Micronesia can improve its agricultural environment by taking advantage of adequate resources and skilled farmers to improve the situation. Hence, farmers should pilot organic farming through the assistance of C.R.E agents and agriculture major students across FSM.

INDUSTRY SUB-SECTORS, OPPORTUNITIES, TRENDS

FSM should put premium in Organic Agriculture and should start now. Farmers should convert to organic farming because of the following:

- It does not require a large portion of land to reach an economy of scale;
- It requires cheaper and less input compared to conventional agriculture;
- It makes the ecosystem around it better.

Due to the pandemic, there is a strong consumer demand for organic produce. The market will continue to grow as more and more people demand practices that do not harm the environment.

Marketing channels in the form of digital applications and social media have also surfaced. This improves market linkage for farmers, traders, and consumers which C.R.E agents and agriculture students should materialize to improve production function.

Another burgeoning sector is agri-tourism. Farms that allows tourists to visit and participate in farming activities have grown in number, generating additional income and utilizing tourism as tool for marketing.

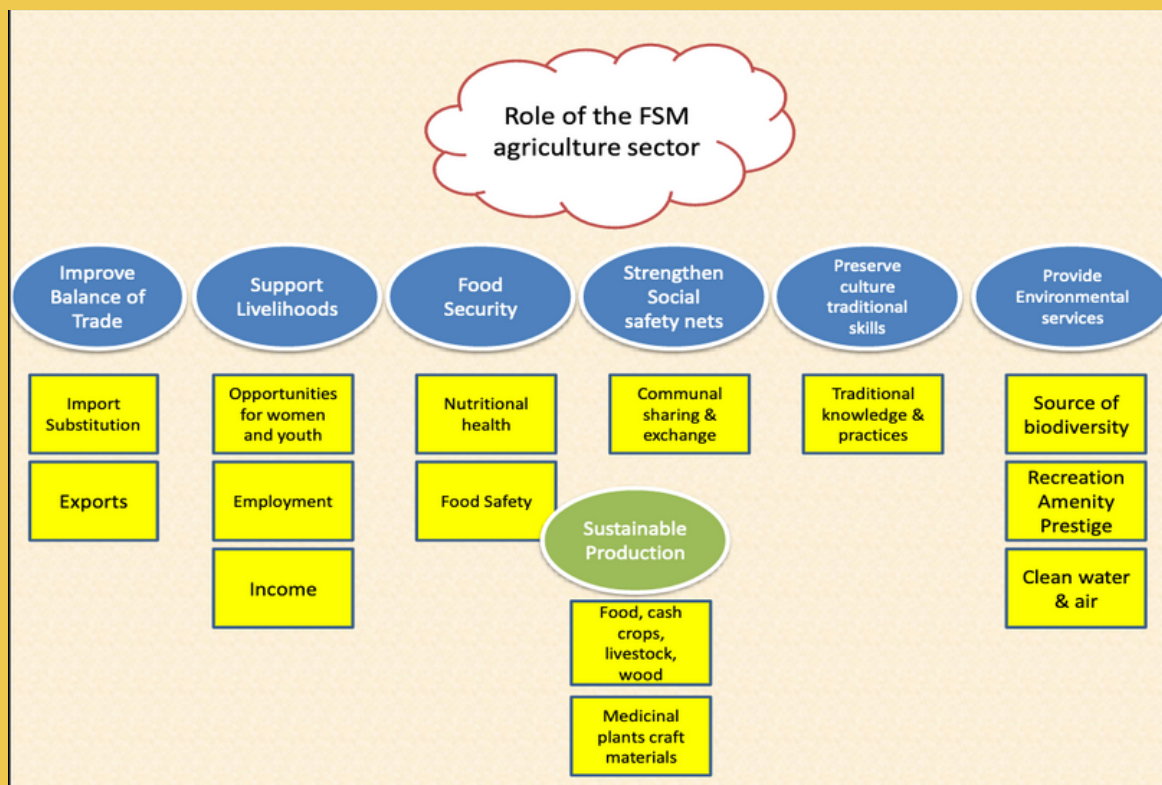
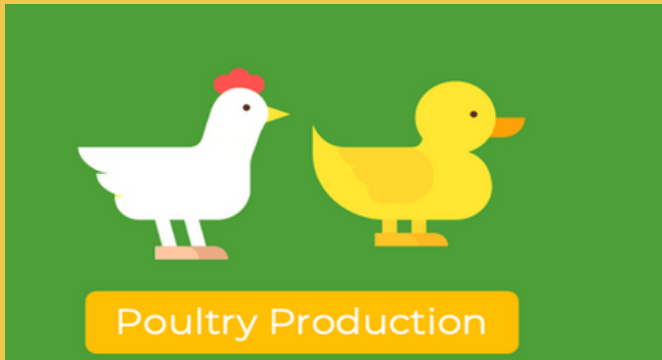


Figure 1. Role of the FSM Agriculture Sector



Households that engaged in livestock activities had a total of approximately 77,900 chickens, 25,000 pigs and 14,000 dogs. Households that raise pigs had three pigs on average, and households with chickens had nine chickens on average.

Chickens made up 5%, and dogs, other livestock or livestock products (e.g. eggs) just 2%.



FSM offers a variety of high quality frozen and fresh tuna and bottom fish products which can be shipped out of the FSM by air or sea on a regular basis. Modern fish processing, packaging facilities and handling procedures are being developed and implemented to meet international standards for export products from the FSM.

Fishing is traditionally a way of life in the FSM and fishermen now are being well trained in modern methods of fishing, fish handling and quality control procedures.



Pigs were the most valuable animals for sale, home consumption and gifting. Overall, pigs represented 94% of the total value of livestock production sold, consumed or gifted.

In 2019, livestock production index for Micronesia (Federated States of) was 103.9 index. Though Micronesia (Federated States of) livestock production index fluctuated substantially in recent years, it tended to increase through 2000 - 2019 period ending at 103.9 index in 2019.



The most common items harvested by households are banana, taro, coconut, breadfruit and papaya. The most common products sold are betel nut, sakau (kava), banana, lime/lemon and cucumber. The highest value crops produced were sakau, taro, breadfruit, banana and yams. Rich volcanic soil and heavy rainfall make gourmet Pohnpei peppers highly regarded.

Topic 3 Fundamentals of Organic Agriculture



Farm tools vary in function and can be grouped into different categories. Let's take a look at these tools and their categories.

- Garden Tools
- Carpentry Tools
- Cutting Tools
- Measuring Tools
- Hand Tools
- Storage Tools



Figure 2. Garden Tools

- Hand sprinkler
- Shovel
- Digging bar
- Digging blade
- Spading fork
- Rake
- Hoe
- Pick mattock
- Step ladder
- Broomstick
- Tool storage
- Seedling bag/tray
- Hand trowel
- Hole digger



Figure 3. Carpentry Tools

- Clamp
- Hammer
- Tape measure
- Screwdriver
- Carpenter square
- Saw
- Chisel
- Block plane
- Crow bar



Figure 4. Cutting Tools

- Slicing knife
- Trimming knife
- Picking knife
- Bolo
- Scythe
- Sickle
- Pruning shears



Figure 5. Measuring Tools

- Weighing scale
- Measuring cup
- Measuring tape
- Meter stick
- Soil thermometer
- pH meter
- Portable soil analyzer kit
- Calculator



Figure 6. Hand Tools

- Syringe
- Funnel
- Wooden ladle
- Strainer
- Sand sieve



Figure 7. Storage Tools

- Plastic drum
- Pail
- Basin
- Plastic bottle
- Plastic container
- Crate



IMPLEMENT



**Appendages to
mechanized machinery**

The machines used in agricultural practices to reduce human labour and enhance field crop are called agriculture implements. Major agricultural implements include harvesters, drag, disk harrows, cultivators, seed drill, harrows, spade, pickage, plough, etc.



Figure 8. Farm Implements

- Harrow
- Plow
- Harvester
- Seeder
- Rice planter
- Rotavator

EQUIPMENT



Can run on Electric, Diesel, Petrol, or Hydraulic

Farm equipment means equipment, machinery, and repair parts manufactured for use on farms in connection with the production or preparation for market use of food resources.

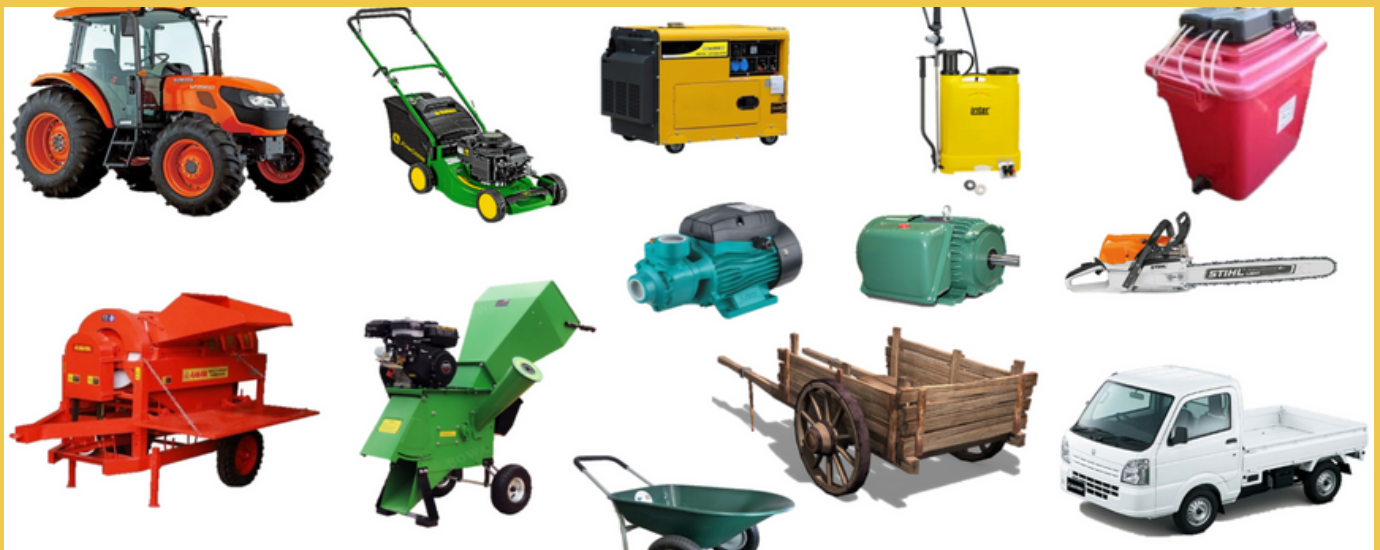


Figure 9. Farm Equipment

- Tractor
- Mower
- Knapsack sprayer
- Agricultural motors
- Compost tea brewer
- Water pumps
- Agricultural shredder
- Generators
- Thresher
- Cart
- Chain saw
- Wheelbarrow
- Service vehicle

Topic 4 Maintenance and Storage of Farm Tools, Implements, and Equipment

Tools and equipment make work in the farm easier. Knowledge of proper handling and maintenance before, during, and after every use will help them last longer.

There are two types of maintenance for farm tools, implements, and equipment: preventive and corrective.

PREVENTIVE MAINTENANCE

Refers to the set of actions regularly taken to lessen the likelihood of breakage or equipment failure.

CORRECTIVE MAINTENANCE

Refers to the set of actions taken to identify, isolate, and restore the optimum operational condition of a tool, implement, or equipment. Can be done to broken tool/implement/equipment or poorly-performing ones.

BEFORE	DURING	AFTER
<ul style="list-style-type: none"> Oil or grease the metal parts of tools and equipment. Sharpen cutting tools to decrease the amount of effort needed to use them. Inspect handles, make sure they are firmly attached to the tool. If not, repair or replace. Inspect the engine compartment, radiator fans, and the areas under control centers. Check for worn parts, loose belts, and oil leaks. Read the manufacturer's manual. 	<ul style="list-style-type: none"> Pick the right tool for the right job. This will ensure safety as well as improve efficiency. Using the wrong tool for the job will decrease durability. Follow the manufacturer's prescribed procedures in operating the tool/implement/equipment. 	<ul style="list-style-type: none"> Wash and dry soiled tools after every use. Do not store tools on the floor. You can use silica gels to keep tools and equipment dry in storage. Schedule regular clean-ups for bigger equipment during the off-season. Apply touch-up paint to scratched or corroded areas. Follow prescribed procedures in cleaning and stowing tools/implements/equipment.

Table 1. Preventive Maintenance for Tools, Implements, & Equipment

Topic 5 Health and Safety Measures in Farm Operation

An accident is any unplanned and undesirable result of the contact of a person or a structure with a hazard. Hazard is a potential danger, which, if not eliminated or controlled can result to death or injury, property damage, and other losses.

4 TYPES OF HAZARDS

1. Chemical – skin absorption, eye contamination, ingestion, inhalation, injection of harmful chemicals.
2. Physical – noise, heat/cold stress, vibration, illumination, pressure
3. Biological – any biological substance that pose a threat to health
4. Ergonomic – mismatch between the worker and the equipment or workstation which causes strain injuries and long-term disabilities

3 APPROACHES IN DEALING WITH HAZARDS

1. Engineering Control – ensuring safety at the design level, examples:
 - Smart Design; Process Review; Isolation; Ventilation
2. Administrative Control – controlling the worker’s exposure to hazards
 - Standard Operating Procedures (SOPs); Medical Examination
 - Increased breaks; Reduced work hours in the contaminated areas
3. Personal Protective Equipment – last line of defense

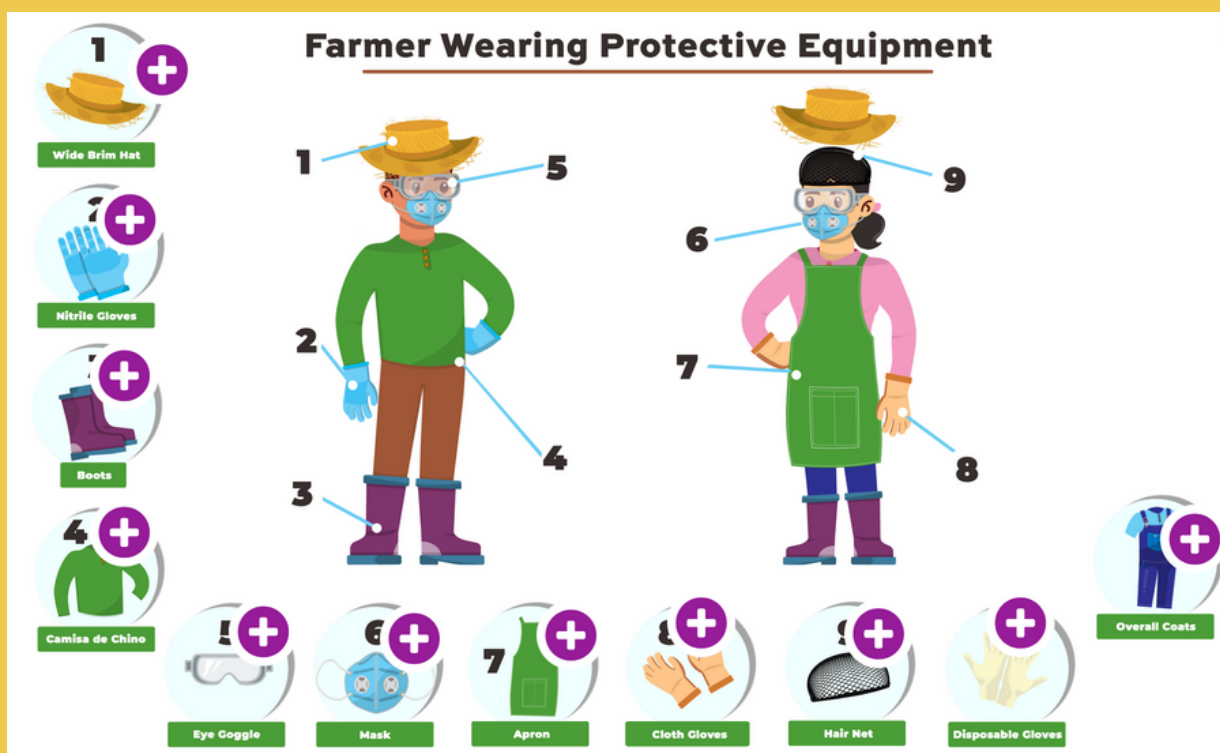


Figure 10. Farm Personal Protective Equipment

	Tools	Implements & Equipment
FARM OWNER	<ul style="list-style-type: none"> • Train your personnel in the proper use of tools. • Provide PPEs in tip-top shape. • Regularly inspect tools to check if repair or replacement is needed. • Quakeproof the storage area if possible. 	<ul style="list-style-type: none"> • As much as possible, before even acquiring an implement or equipment, check for guards that provide barrier between the operator and a hazardous part of the machine. • As much as possible, match the equipment with the operator. <ul style="list-style-type: none"> ◦ Arrange equipment in a way that lessens lifting and travelling. ◦ Consider work height. ◦ Make the ON and OFF controls readily accessible. ◦ Allow workers to rest. An over-fatigued worker can endanger himself and the workplace. • Provide proper safety training. • If possible, quakeproof the structure where you keep the equipment.
FARM WORKER	<ul style="list-style-type: none"> • Use the right tool for the job. This will cost you less effort and decrease the likelihood of an accident. • Inspect your tools before using them. A loose handle can cause the blade to fly off, possibly hitting you or another worker. • Keep tools sharp and clean. • Always wear PPEs. • Always be mindful when handling tools. • Handle cutting or pointed tools with extra care. • For tools powered by battery or electricity: • Follow manufacturer’s instructions on how to use the tool. <ul style="list-style-type: none"> ◦ Inspect power lines and electrical circuits. ◦ Do not wear loose clothing, dangling objects or jewelries. ◦ Hair must be tied back. ◦ Disconnect when not in use, before servicing and cleaning, and when changing accessories. ◦ Keep water away from power tools. • Regularly inspect tools to check if repair or replacement is needed. • Label damaged tools with “Do Not Use”. • Store tools properly. 	<ul style="list-style-type: none"> • Always wear prescribed PPE. • Before operating an implement/equipment, do an inspection or a circle check to look for leaks, broken parts, loose wiring, loose screws, and others. • Do not operate implement/equipment unless guards are in place. • Presence of mind is required when handling implement/equipment. • Do not operate an implement/equipment while intoxicated.

Table 2. Safety in Handling Tools, Implements, & Equipment

EMERGENCY PREPAREDNESS

Before a Disaster or Emergency

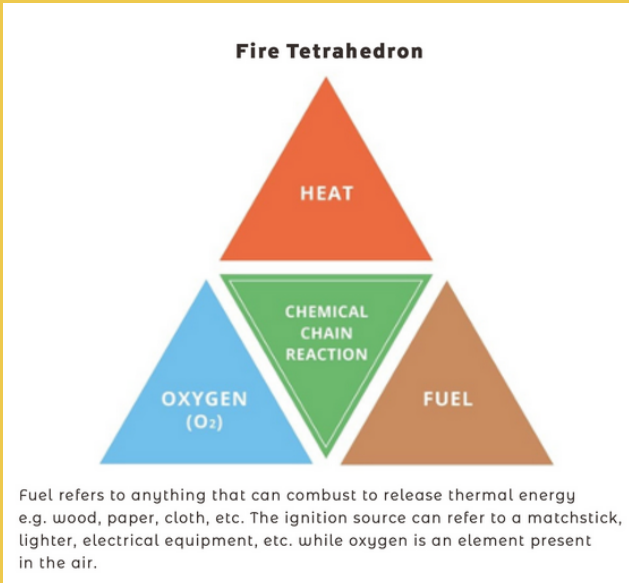
- Know the warning signals.
- Stay alert for emergency broadcasts.
- Prepare “Go-Bags” or emergency supply kit.
- Draw a map indicating the following
 - designated assembly point
 - buildings and structures
 - access routes
 - fences and gates
 - locations of livestock
 - locations of all hazardous substances
 - electrical shutoff locations
- Make an inventory of the following:
 - livestock
 - crops
 - tools and equipment
 - hazardous substances
- Keep a list of emergency phone numbers.
- Stockpile supplies needed to protect the farm
- Identify areas to relocate your assets.
- Prepare farm employees.
- Determine modes of communication before, during, and after.
- Identify focal persons among the employees.
 - Head Count and Reporting
 - Livestock
 - Fire Extinguisher
 - First Aiders
- Search and Rescue



In the event of a natural disaster, follow these evacuation procedures:

- When the safety alarm rings, proceed to the designated assembly point.
- If the "go-bag" is located near you, bring it. Otherwise do not bother.
- If inside a multiple-storey building, the employees closest to the doors/stairways must be first to leave. The last person to leave shall close the door.
- Employees must move quickly and safely as possible without creating more hazards.
- Keep calm and listen for information or instructions.
- Proceed to access routes.
- Focal persons must account for their teammates/group members. Other focal persons must perform their delegated duties.

FIRE SAFETY



You remember the acronym **PASS**:

- Pull the pin.
- Aim low at the base of the fire.
- Squeeze the handle slowly.
- Sweep the nozzle side to side.

DO'S:

- Avoid clutter of flammable materials.
- Maintain heating systems.
- Install smoke detectors and fire extinguishers in buildings.
- Watch for leaks or deterioration in fuel storage and delivery equipment.

DON'TS:

- Store fuel in food or drink containers.
- Smoke in areas where flammable materials are stored.
- Re-fuel engines inside buildings or when hot or running.
- Store wet hay



POST-TEST

Direction. Read and analyze the questions thoroughly. Choose the letter of the correct answer.

01

It is the art, science, and business of growing plants and raising animals for the consumption and economic use of man.

- a. Organic Agriculture b. Horticulture c. Animal Science d. Agriculture

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This is a production system that sustains the health of soils, ecosystems and people.

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c. Principle of Fairness d. Principle of Health

04

Which principle of organic agriculture tells you to prioritize management practices over conventional methods of farming?

- a. Principle of Ecology b. Principle of Care
c. Principle of Fairness d. Principle of Health

05

Which principle of organic agriculture underlines the importance of sustaining and enhancing the life of every organism in farm ecosystems?

- a. Principle of Ecology b. Principle of Care
c. Principle of Fairness d. Principle of Health

06

Which principle states that organic agriculture should be managed in a responsible manner in order to protect the health and well-being of current and future generations and the environment?

- a. Principle of Ecology b. Principle of Care
c. Principle of Fairness d. Principle of Health

07

True or False: Safety measures in the farm is a shared responsibility between the farmer and the farm owner.

- a. True b. False

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