



KHSA

Knowledge Hub for Organic
Agriculture and Agroecology
in Southern Africa

November 2025

Special Knowledge Edition:
From posters to podcasts,
co-created knowledge to
support uptake of organic
agriculture and agroecology
in southern Africa



FOREWORD

It is with great excitement and a deep sense of gratitude to our incredible team that I share this compilation of knowledge products produced. Every single person from our eight partner organisations, including our international partners, worked hard to make this possible. Successfully delivering on a task of this magnitude demands commitment from everyone in our team – from the administrators to the finance officers, the programme managers and the in-field implementers.

A special thanks also goes to the knowledge management, monitoring and evaluation, and communication teams that diligently held the knowledge product development process together. Designing material and learning experiences from a needs-based understanding and testing it to ensure that we deliver exactly what is required to effect change has not been a simple task.

This is therefore not merely a collection of interesting knowledge gathered from the internet, but instead beautiful content uniquely tailored for the lead farmers, educators, organisations, media and policy makers diligently working towards improving our food system.

On that account we celebrate the team's discipline and commitment in addition to the immense creativity that we see here on display. We are also deeply grateful to BMZ for making the resources available to do this work and to GIZ for trusting and supporting us in this process. And we give thanks to all the multipliers who worked with us through needs assessments and validation processes to ensure the rigour of these knowledge products. We hope you enjoy every page in this book!

Angela Coetzee

KHSA Project Director

November 2025

The **Knowledge Hub for Organic Agriculture and Agroecology in Southern Africa** (KHSA) is part of the Knowledge Centre for Organic Agriculture and Agroecology in Africa (KCOA), a collaborative country-led partnership funded by the German Federal Ministry of Economic Cooperation and Development (BMZ) and implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and non-governmental organisations across Africa. The KCOA aims to scale up the adoption of agroecological and organic farming practices through five knowledge hubs in Africa. The other hubs are implemented by GIZ with in-country partners in North, West, East and Central Africa.

You are invited to sign up to the KCOA knowledge platform using the link below to access free and validated agroecological and organic knowledge resources from across Africa and join a network of practitioners working in this field.

kcoa-africa.org



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- A facilitator's guide to participatory theatre
- A short guide to using participatory theatre
- Techniques for food budgeting (video)

Click on the bolded links to access each section



HOW THE KHSA WORKS

KHSA works with eight partner organisations in Zambia, Malawi, Namibia and South Africa. In each country, partners undertake either a sector-wide approach or conduct a Multiplier Support Programme (MSP). The sector-wide approaches focus on strengthening relationships with a broad range of stakeholders to support the uptake of organic and agroecological agriculture. The MSPs are in-depth targeted interventions with a select group of multipliers to build their capacity to more effectively convey information about organic agriculture and agroecology and support small-scale farmers in this regard.

Our partners in Zambia

PELUM Zambia focuses on the sector-wide approach working with policymakers, media, small-scale farmer organisations and lead farmers to raise awareness of the need for a transition towards organic agroecological approaches.

Kasisi Agriculture Training Centre deploys the MSP with farming institutes and farmer training centres in Zambia's Eastern Province. These institutions and centres are places where technocrats and farmers obtain technical information and mentorship.

Our partners in Malawi

The Kusamala Institute of Agriculture and Ecology deployed the sector-wide approach working with

media to raise awareness of the value of agroecological/organic approaches to food systems. Soils, Food and Healthy Communities runs its MSP with its Farmer Research Team, which is a volunteer group of farmers that conducts research and shares knowledge on behalf of and with the community.

Our partners in Namibia

The Namibian Organic Association focuses on the sector-wide approach engaging with academia and research institutions, media, the commercial beef sector and increasingly policymakers. The Namibia Nature Foundation conducts an MSP with lead farmers in the Zambezi region, focused on a community-based agricultural extension model.

Our partners in South Africa

The South African Organic Sector Organisation and Participatory Guarantee Systems South Africa conducted an MSP titled the Pollinator Programme, that works with multipliers to establish and support PGS groups.

The Sustainability Institute

The South-African based Sustainability Institute team supports project design and implementation across the region. For more information on the KHSA, please contact Angela Coetzee, Project Director, at angela@sustainabilityinstitute.net.



DEVELOPMENT OF KNOWLEDGE PRODUCTS

KHSA follows a knowledge collection, validation and dissemination strategy that ensures that the knowledge gathered, created or adapted suits the needs of those for which it was produced. The steps outlined in the adjacent image were followed to ensure that the knowledge was:

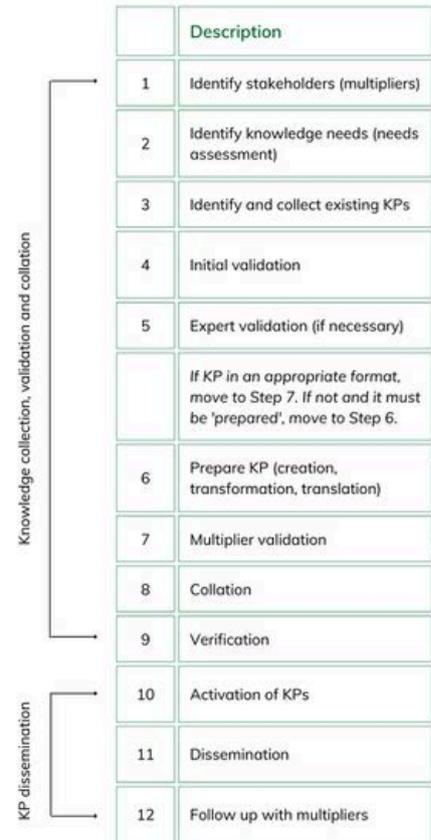
- Contextually relevant.
- Serving the stated needs of the stakeholder group.
- In a format that was appropriate for the context.

Each partner organisation identified their stakeholder groups, ranging from policymakers and media to lead farmer organisations, academia and training institutions. They conducted needs assessments with these groups to determine what knowledge the stakeholder group required in order to advocate for or actively support the transition towards agroecological and organic food and farming systems.

KHSA partner organisations review the stated needs and develop related factually sound and contextual knowledge products (KPs) that are approved by the Knowledge Management and Monitoring and Evaluation officers and manager. These are then shared with the stakeholder group to confirm that it would meet their requirements; if not, they are developed further.

The KPs – ranging from publications, factsheets and posters to 3-D models, videos and podcasts – are then activated with the stakeholder groups to support them in using them with their own networks and work.

These KPs are loaded to a publicly accessible [KCOA Knowledge Platform](#), which hosts all the KPs developed by the five Knowledge Hubs across Africa.



To access KHSA's knowledge products (and a thousand more from across the continent), join Africa's multiplier community [here](#).



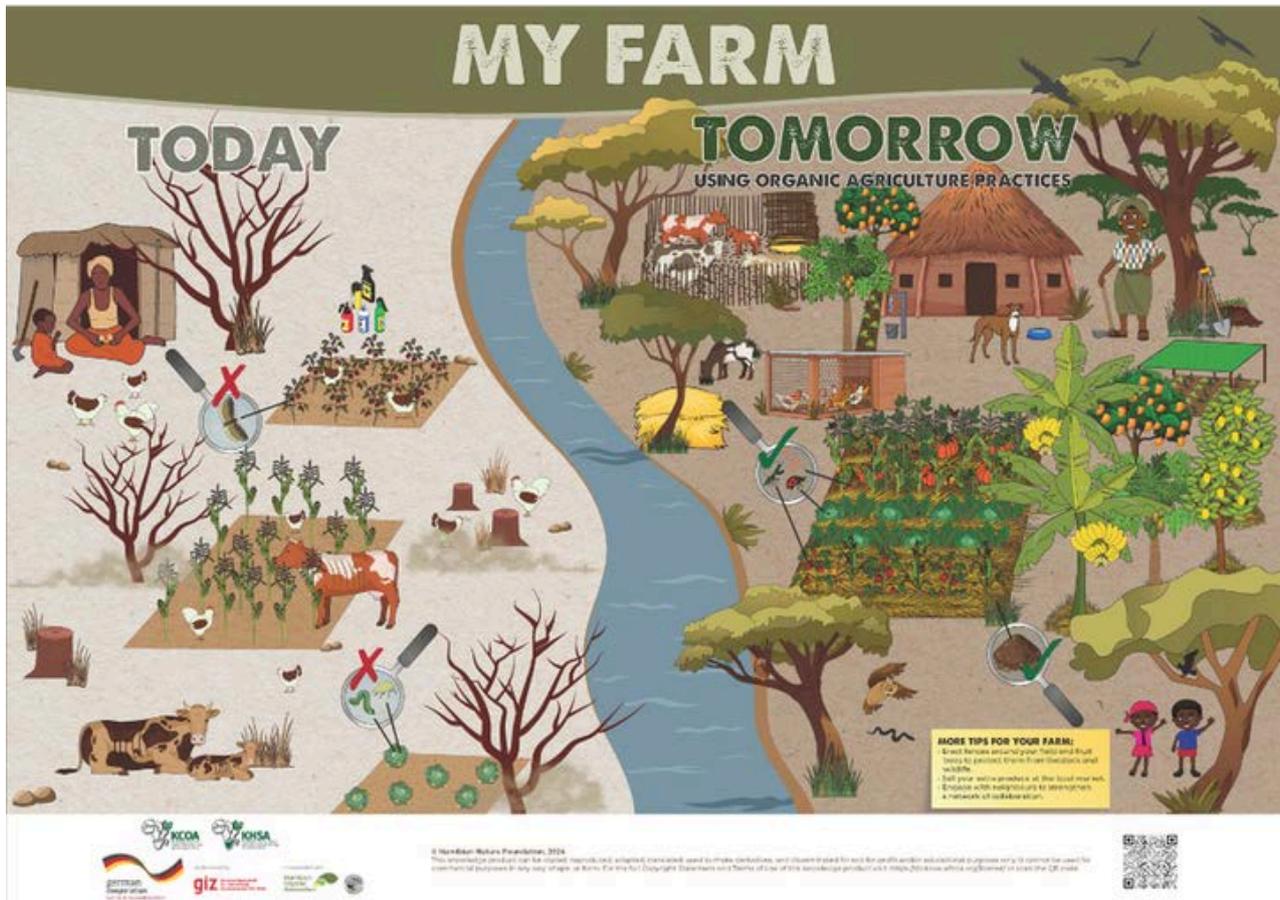
SECTION 1: DREAMING OF A BETTER FUTURE

IN THIS SECTION

- The transition: My farm today, My farm tomorrow
- Why sustainable food and farming systems matter
- Organics and agroecology in response to climate change
- Organic farming for the future (recorded webinar)
- Achieve global food security with organic farming (recorded webinar)
- What makes a good organic agriculture multiplier?
- Beyond attendance: Tips for meaningful, inclusive gender work in projects

Sustainable farming must nourish people and protect ecosystems, but current food systems in Southern Africa are failing on both fronts. Industrial practices like monocultures, synthetic inputs and a focus on cash crops are degrading the environment, harming human health and increasing dependence on costly external inputs.

The following pages highlight resources that explore why transformation is urgent—and how it can be achieved.



THE TRANSITION: MY FARM TODAY, MY FARM TOMORROW

The poster compares conventional farming practices (left) with organic farming practices (right) showing how a farm can change over time.

Country: Namibia

KHSA partner: Namibia Nature Foundation & Namibian Organic Association

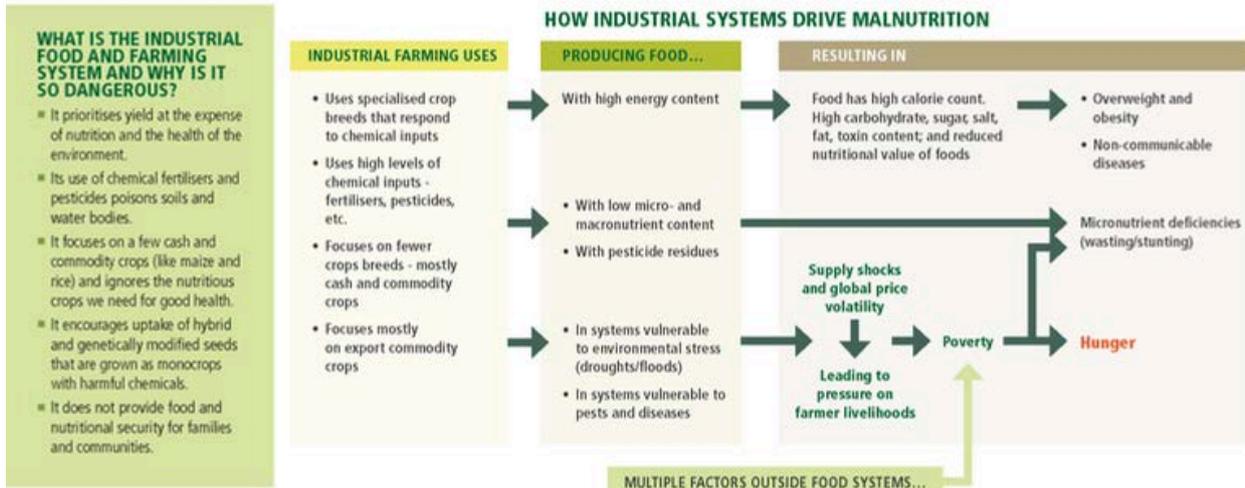
Target group: Farmers, farmer trainers and training organisations

Download in [English](#).

WHY SUSTAINABLE FOOD AND FARMING SYSTEMS MATTER FOR MALAWI



Industrial food and farming systems (from production through retail to consumption) are at the heart of Malawi's current challenges. They contribute to rising levels of malnutrition and illness, drive biodiversity loss and degrade soils, and spur on further climate change crises. We urgently need to transition to sustainable food and farming systems that can provide a response to these crises. Sustainable food and farming systems are those aligned with the Principles of Care, Ecology, Fairness and Health as described by the International Federation of Organic Agricultural Movements (IFOAM)-Organic International.¹ This includes many approaches, such as agroecology, permaculture, organics, biodynamics, and conservation and regenerative agriculture when practiced without chemicals.



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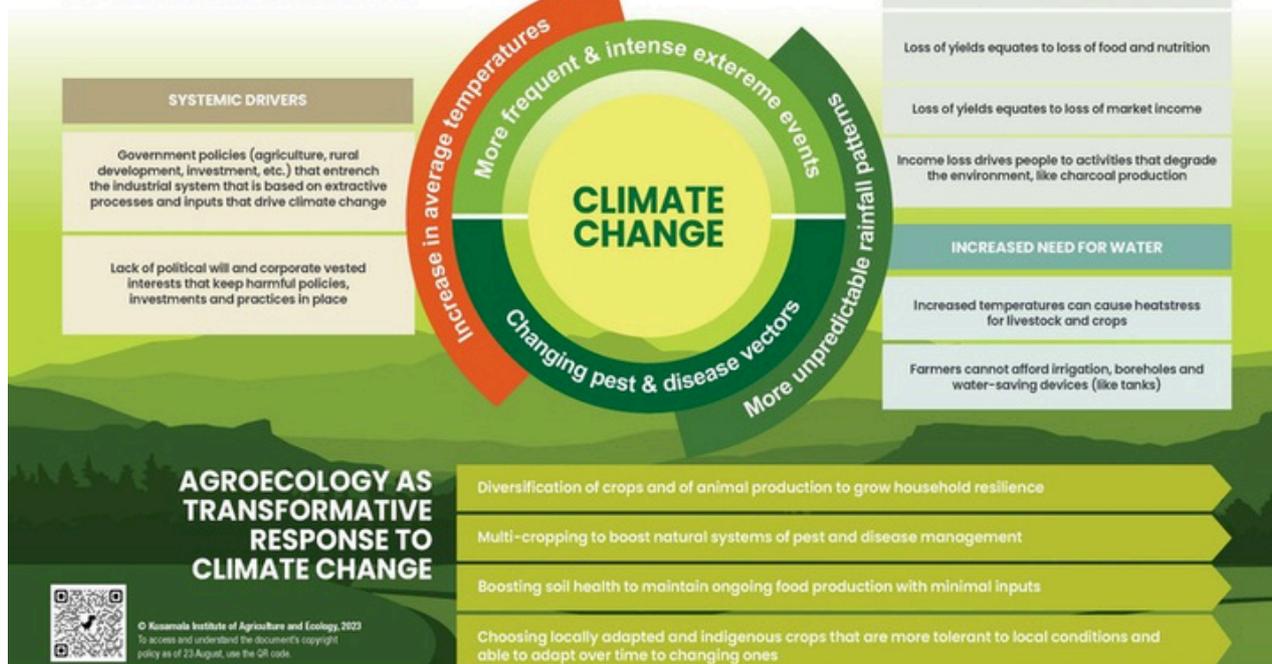
WHY SUSTAINABLE FOOD AND FARMING SYSTEMS MATTER

A 4-page poster series that illustrates how organic/agroecological approaches can support attainment of the Sustainable Development Goals in contrast to conventional agriculture approaches.

Country: Malawi
KHSA partner: Kusamala Institute of Agriculture and Ecology
Target group: Media (journalists and editors); civil society organisations, advocacy groups

Download in [English](#).

ORGANIC AND AGROECOLOGICAL FARMING A TRANSFORMATIVE RESPONSE TO CLIMATE CHANGE



ORGANICS AND AGROECOLOGY IN RESPONSE TO CLIMATE CHANGE

This poster describes how organic farming and agroecological practices can help in addressing climate-related challenges. These practices contribute to the restoration of degraded soils, promote diversity and increase adaptability of local crop seeds for sustainable production.

Country: Malawi

KHSA partner: Kusamala Institute of Agriculture and Ecology

Target group: Media, civil society organisations, advocacy groups, policymakers

Download in [English](#).



ORGANIC FARMING FOR THE FUTURE (RECORDED WEBINAR)

This webinar focused on the relevance of organic agriculture for the future, and how it could help combat challenges around food and nutritional security, climate change and biodiversity loss.

Country: Namibia

KHSA partner: Namibian Organic Association and Namibia Nature Foundation

Target group: Academia, meat sector, commercial and small-scale farmers, general public

Watch in [English](#).



ACHIEVE GLOBAL FOOD SECURITY WITH ORGANIC FARMING (RECORDED WEBINAR)

This webinar focused on the shortfalls of the industrial system and looked at whether and how organic production could help to overcome these.

Country: Namibia

KHSA partner: Namibian Organic Association and Namibia Nature Foundation

Target group: Academia, meat sector, commercial and small-scale farmers, general public

Watch in [English](#).

WHAT MAKES A GOOD ORGANIC AGRICULTURE MULTIPLIER?

Hello, my name is Matilda. Here is what makes a good organic agriculture multiplier.

KNOWLEDGE AND SKILLS

- Understand my purpose as a Multiplier and what makes a good Multiplier – personal practice first;
- Technical Knowledge (how to farm with nature) focus on the basic "key" steps;
- Good time management, organised and good at planning;
- Good observation skills; and
- Reading and talking with others to learn more.

PRACTICE

- Work hard and joyfully as an example;
- Practice what I learnt and know;
- Practice makes perfect;
- Produce food for people (the family), animals and the soil;
- Earn an income;
- Save, store, and share seeds;
- Monitor and keep records; and
- Look after tools, water points and buildings.

VALUES

- Respect and care for yourself and others;
- Confident and courageous;
- Grateful and friendly;
- Willing to share.
- Treat everyone fairly;
- Honest and trustworthy; and
- Willing to accept feedback & be flexible.

HOW I WORK WITH OTHERS

- In my own garden/ farm first;
- Family, neighbours, and friends close by;
- Help and be helped by colleagues;
- Know different cultures and languages;
- Speak with a clear loud voice when communicating with others;
- Listen, to hear the needs and feelings of everyone; and
- Give and receive honest feedback with courage.



WHAT MAKES A GOOD ORGANIC AGRICULTURE MULTIPLIER?

The 2-page poster outlines what it takes to be an effective organic agriculture multiplier, stressing knowledge, skills, values and collaboration. It highlights time management, openness to learning, sustainable practices, respect, care and teamwork, while promoting plant diversity and animal integration for healthy, resilient farms.

Country: Namibia

KHSA partner: Namibia Nature Foundation and Namibian Organic Association

Target group: Farmer trainers, training organisations

Download in [English](#).



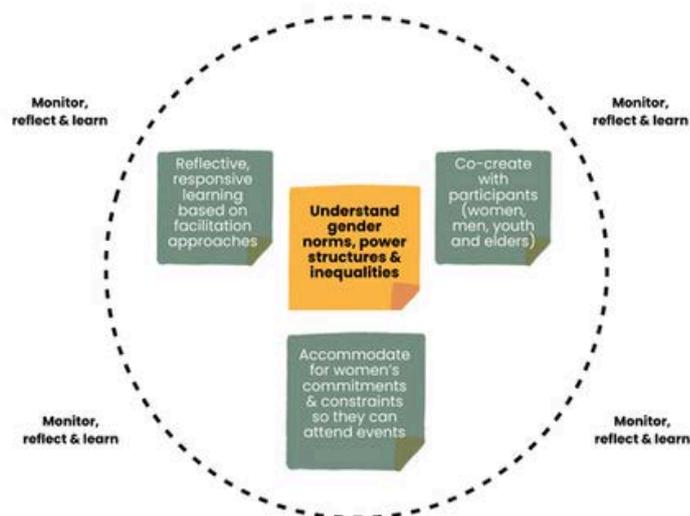
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Beyond Attendance: Tips for Meaningful, Inclusive Gender Work in Projects

GENDER

This tip sheet offers practical ways to make your project, work or farm more inclusive of women. Many of the ideas are drawn from the 2024 Knowledge Centre for Organic Agriculture and Agroecology in Africa's (KCOA's) Gender Guide and aim to support meaningful inclusion that benefits everyone.



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BEYOND ATTENDANCE: TIPS FOR MEANINGFUL, INCLUSIVE GENDER WORK IN PROJECTS

This 4-page tip sheet shares practical ways to make projects, farms or workplaces more inclusive of women, drawing on KCOA's 2024 Gender Guide to promote meaningful participation and shared benefits.

Country: Regional

KHSA partner: Sustainability Institute collaboration with the Knowledge Hub for Organic Agriculture and Agroecology in Central Africa

Target group: Non-governmental organisations, farmer trainers, training organisations

Download in [English](#) or [French](#).



KCOA

Knowledge Centre for
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Agroecology in Africa

KCOA is a collaborative country-led partnership that aims to scale up the adoption of organic and agroecological farming practices through a network of five Knowledge Hubs in Africa. KCOA partners are based in 18 countries and with the involvement of over 30 civil-society organisations.

Scan to discover more!



ENGLISH



FRANÇAIS



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SECTION 2: ORGANIC AND AGROECOLOGICAL APPROACHES

IN THIS SECTION

- What is organic agriculture?
- Basic production principles of organic agriculture
- Permaculture training manual
- SFHC participatory curriculum
- Sustainable organic agriculture manual
- A guide to conservation agriculture
- Low-tech agroecology guide

Sustainable farming must nourish people and protect ecosystems, but current food systems in southern Africa are failing on both fronts. Industrial practices like monocultures, synthetic inputs and a focus on cash crops are degrading the environment, harming human health and increasing dependence on costly external inputs.

The following pages highlight resources that explore why transformation is urgent—and how it can be achieved.

FACTSHEET: WHAT IS ORGANIC AGRICULTURE?



An overview

Organic agriculture is a way of farming that keeps soils, ecosystems and the life that inhabits them, including people, healthy. It uses natural processes and products to produce food in a way that does not harm the environment and that provides people with the nutrients they need for a healthy life. It respects traditional practices, encourages non-harmful innovation and acknowledges the role that science can play in improving farming practices. It also focuses on ensuring that farmers and consumers enjoy mutually fair relationships to support a better quality of life for all involved in the production and consumption of food.¹

Principles of organic agriculture

Organic agriculture is based on four principles of Health, Ecology, Fairness and Care.²

- **Health:** Organic agriculture maintains and builds the health of soil, plants, humans and animals because the health of these elements is interconnected. There is a focus on building immunity, resilience and regeneration. Organic agriculture therefore tries to avoid the use of synthetic fertilisers, animal drugs, food additives and pesticides that may cause harm to soils, ecosystems and people.
- **Ecology:** Organic agriculture works with and mimics living ecosystems and natural cycles to help support their continuing functioning. There is a focus on building and enhancing living soils and ecosystems, recycling materials, maintaining genetic and agricultural diversity and working within context-specific cycles and cultures. Agricultural systems are designed to support these objectives.
- **Fairness:** Organic agriculture emphasises and ensures fairness, justice and respect in relationships between farmers, processors, distributors, traders and consumers, and between these groups and the Earth. There is a focus on supporting a good quality of life for all involved and in helping to support food sovereignty and reducing poverty. This principle also extends to the ethical treatment of animals in accordance with their rights.

- **Care:** Organic agriculture supports the precautionary principle in all its management decisions to protect the environment and the health of people today and in the future. No farming practice should be used that puts environmental and human wellbeing at risk.

What makes organic agriculture different from other agricultural approaches?

It differs from conventional farming in three main ways:

- Farmers may not use synthetic inputs such as fertilisers, pesticides and routine animal drugs in organic farming. They should work with natural remedies and systems to ensure the long-term health of soils, crops, animals and people.
- Farmers may not use genetically modified seeds in organic farming. This technology has not been proven unequivocally safe for long-term use and some of the accompanying inputs may have negative effects on the environment and human health.
- Farmers can apply for organic certification if complying with criteria set by third-party certification bodies, or for organic assurance using participatory guarantee systems.

>>

WHAT IS ORGANIC AGRICULTURE?

A 2-page overview of principles and practices of organic agriculture.

Country: Regional

KHSA partner: Sustainability Institute

Target group: General use

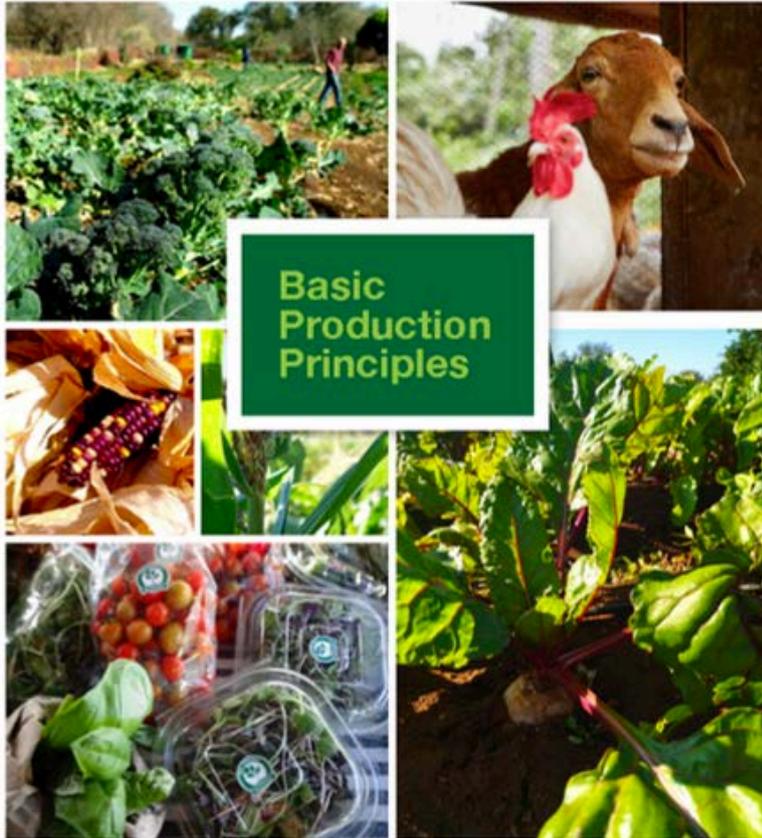
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GROWING THE ORGANIC SECTOR IN SOUTH AFRICA



The Principle
Of Health.

The Principle
Of Ecology.

The Principle
Of Fairness.

The Principle
Of Care.

BASIC PRODUCTION PRINCIPLES OF ORGANIC AGRICULTURE

This manual should be used as an introductory document to organic agricultural principles, including those related to soil and water management, pest and disease control and crop production.

Country: South Africa

KHSA partner: South African Organic Sector Organisation

Target group: Farmer trainers, training organisations, small-scale farmers

Download in [English](#), [isiXhosa](#), [isiZulu](#), [Afrikaans](#), [Sepedi](#), [Xitsonga](#), [Sesotho](#), and [Lesotho Sotho](#).

BUKU LA OPHUNZILA PEMAKACHA



PERMACULTURE TRAINING MANUAL

The Chichewa permaculture manual is a user handbook that contains detailed guidelines on designing sustainable landscapes, soil and water management practices, energy planning, and pest and disease management.

Country: Malawi

KHSA partner: Kusamala Institute of Agriculture and Ecology

Target group: Farmer trainers, training organisations, small-scale farmers

Download in [Chichewa](#).



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Lolembedwa ndi Kusamala Institute of Agriculture and Ecology

ULIMI WOSINTHA UMOYO

Buku Lophunzitsirana
Njira za Chilengedwe,
Kusintha Kwa Nyengo,
Kadyedwe ndi
Chikhalidwe Chabwino

SFHC PARTICIPATORY CURRICULUM

This user-friendly curriculum integrates agroecology, nutrition, climate change and social relationships to support healthier lives. Developed with farmers, scientists and NGOs in Malawi and Tanzania, it uses drama, hands-on activities and creative learning, and can be adapted to other contexts.

Country: Malawi

KHSA partner: Soils, Food and Healthy Communities

Target group: Farmer trainers, training organisations, small-scale farmers

Download in [Chichewa](#).





Sustainable Organic AGRICULTURE MANUAL

SUSTAINABLE ORGANIC AGRICULTURE MANUAL

This trainer's manual provides a comprehensive overview of sustainable methods to build and boost soil health, manage pests and diseases and conserve soils and water. It complements a set of posters.

Country: Zambia

KHSA partner: Kasisi Agricultural Training Centre

Target group: Farmer trainers, training organisations

Download in [English](#) or [Nyanja](#).



POSTER SERIES USER GUIDE

Four poster series covering the following topics:

Mixed alley cropping
Making biochar
Water harvesting pits and trenches
Fencing



LOW-TECH AGROECOLOGY GUIDE

This knowledge product includes four poster sets offering step-by-step guides for low-tech, agroecological practices: mixed alley cropping with pigeon pea (8 posters), making biochar (4), water harvesting with pits and trenches (4) and fencing (7).

Country: Namibia

KHASA partner: Namibia Nature Foundation

Target group: Farmer trainers, training organisations, small-scale farmers

Download in [English](#).



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Scan to discover more!



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SECTION 3: FOCUSING ON SOIL HEALTH

IN THIS SECTION

- Organic agriculture and soil health
- Why is organic matter so important?
- What are microorganisms?
- Why use mulch
- Composting for soil health
- Ingredients for making compost
- Soil fertility management in organic farming
- Step-by-step guide to making compost
- How to make and use compost
- How to make and use bokashi
- How to make and use manure and plant teas
- Making plant teas
- Making liquid manure fertilisers

- How to make and use fermented liquid biofertilisers
- How to make biochar
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- Introduction to organic agriculture and biofertilisers (video podcast)
- Making bokashi and liquid fertilisers (video podcast)
- How to make liquid manure (video podcast)
- Advantages of crop-tree integration: Agroforestry (video podcast)
- Advantages of mixed cropping (video podcast)

Healthy, fertile soils are essential for stable food production and climate resilience. This section presents affordable techniques small-scale farmers can use to restore soil health with locally available materials.

FACTSHEET: ORGANIC AGRICULTURE AND SOIL HEALTH



Why is soil health important?

Soil is the basis of production for our fuel, fibre, animal feed and about 95% of our food.¹ Healthy soils provide the nutrients that plants need to grow and to ward off pests and diseases. Beyond this, they also retain water, regulating its flow, and store carbon, which mitigates climate change.² But the health of soils is declining rapidly around the world – and an estimated 40% of degradation is caused by agricultural activities, most notably through excessive use of chemical fertilisers, pesticides and plant treatment products. Organic agriculture focuses on maintaining and enhancing soil health and fertility.

What makes soils healthy and fertile?

Soil health is defined as “the continued capacity of soil to function as a vital living system” and degradation as a process that “lowers the current and/or future capacity of soil to produce goods or services”.³ Healthy and fertile soils have high levels of organic matter and beneficial organisms.

Organic matter binds the soil together, enabling it to retain water and slowly release it for use by plants.⁴ Organic matter can absorb and retain 90% of its weight in water. It also holds reservoirs of nutrients that are slowly released and used by plants. The plants draw on the phosphates, potassium and calcium, and, in turn, pass on nutrients to the people and animals that consume them.

Soil organic matter comprises particles of:⁵

- Fresh and decomposed plant residues, and animal dung.
- Micro-organisms, such as bacteria, fungi, nematodes, arthropods and protozoa, that consume and transfer nutrients, transforming the organic matter over time into humus.
- Cells and tissues of microbes and the substances that they synthesise.
- Stable organic matter known as colloidal humus, which does not decompose easily.

There is scientific evidence that shows that organically managed soils often have higher percentages of organic matter (8.33%) than those under industrial farming models (7.37%).¹

Organic agriculture production techniques and soil health

The organic agriculture production techniques mentioned below, among others, contribute to maintaining and enhancing soil health and fertility.^{6,7}

- **Crop rotation:** Rotating crops throughout the farm helps to increase the nutrients available in the soil and it lowers the risk of soil-borne pathogens by increasing the soil's microbial biomass.
- **Intercropping:** Growing different crops together in the same field helps plants to share resources, such as the nitrogen supplied by nitrogen-fixing plants. It also helps to reduce the risk of pests and diseases and reduces the need for synthetic inputs.
- **Minimum tillage:** Breaking the soil up as little as possible means that soil organic matter is kept intact and able to provide its vital functions. >>

ORGANIC AGRICULTURE AND SOIL HEALTH

A 2-page overview of how organic agriculture practices can boost soil health and fertility.

Country: Regional

KHSA partner: Sustainability Institute

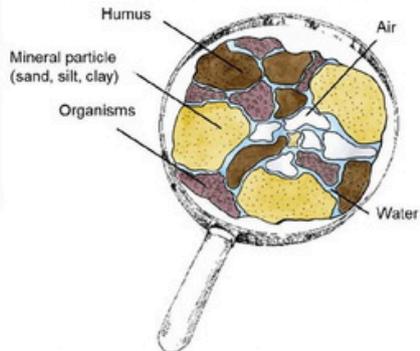
Target group: General use

Download in [English](#).

WHY ORGANIC MATTER IS SO IMPORTANT

Organic matter is anything that used to be living and is now dead and rotting.

Examples: plants, animals, insects, trees, etc.



A microscopic (magnified) view of what soil is made up of - mineral particles, humus and soil organisms that naturally stick together. For good soil fertility there needs to be lots of mineral particles, humus and soil organisms.



ORGANIC MATTER IS IMPORTANT BECAUSE IT...

- Gives the soil a good structure.
- It can hold water up to five times its own weight - the more organic matter, the better the soil can hold water.
- Provides food and an environment for beneficial soil organisms.
- Has a great capacity to keep nutrients and release them continuously to feed plants.
- Prevents soils from becoming too acidic.

HOW TO USE THIS POSTER

The purpose of this poster is to explain what organic matter is and why it is important. Healthy plants and animals start with healthy soil that is full of life that comes from having a lot of organic matter. Strong, fertile soil is needed for plants and trees to grow well and be able to fight off pests and diseases.

Step 1: Explain soil organic matter

- Ask the audience what makes soil fertile.
- Use the responses to explain what soil organic matter is and how it makes soil fertile.
- Explain that organic matter is food for plants. For plants to "eat" the food, the organic matter must be small enough so it can be taken up by the plant's roots. The organisms in the soil break down the organic matter into humus that provides food for the plants.
- Explain that there are four things in a healthy soil: 1. Humus, 2. Soil minerals, 3. Organisms, 4. Water.

Step 2: The benefits of soil organic matter

- Talk about the benefits of organic matter listed on the poster and explain that the more humus, soil minerals, organisms and water in the soil, the greater the benefits.

Definitions

- Humus is dark, organic matter made up of plant and animal remains that have been broken down by soil organisms. It is found in the topsoil, is dark in colour and provides important food for plants.
- Organic matter is all living and dead material from plants and animals.
- Organisms are the small animals and insects that can be seen with the eyes (e.g. earthworms, spiders, mites, millipedes, spring tail, slater) and other living things (e.g. fungi and bacteria) in the soil that are too small to see with the eyes. They break down organic matter into humus and allow water to move through the soil.
- Soil minerals are the elements/parts of soil that help plants grow. For example: nitrogen, potassium, iron, zinc, magnesium, and phosphorus. Minerals are made available to the plants through organic matter and organisms.



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WHY IS ORGANIC MATTER SO IMPORTANT?

The purpose of this poster is to explain what organic matter is and why it is important. The front side of the poster explains what organic matter is and the back side of the poster contains guidelines for the trainer when presenting the poster to farmer groups.

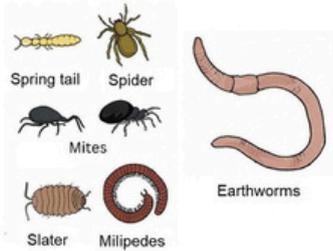
Country: Namibia

KHSA partner: Namibia Nature Foundation and Namibian Organic Association

Target group: Farmer trainers, training organisations

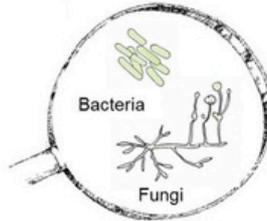
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SOIL ORGANISMS: LIVING THINGS IN THE SOIL THAT MAKE SOIL STRONG



LIVING THINGS YOU CAN SEE (LARGER ORGANISMS):

- Dig tunnels for water and air to get into and flow through the soil.
- Pull dead plants, animals and micro-organisms (organic matter) into the soil.
- Feed on organic material and mix it with the soil making it more fertile.



LIVING THINGS YOU CANNOT SEE (MICRO-ORGANISMS):

- Breakdown organic matter to make plant food.
- Protect plants from disease.
- Improve the soil structure by absorbing minerals from the soil for plants to use.
- Make nutrients available for plants.
- Protect the plants from pests and diseases.



HOW TO USE THIS POSTER

The purpose of this poster is to explain that there are small animals and other living things in the soil. They are important as plants need small food to "eat". The living organisms help "chew" (break down) the food for the plant because it does not have teeth.

Step 1: Explain what living organisms are

- The living organisms that you can see eat the big pieces first, like the leaves, sticks and dead insects. Then the organisms that you cannot see (micro-organisms) make them small enough for the plant to "eat" by absorbing the food/nutrients through the roots.
- Use the points made in the poster to explain how they help build healthy soils.
- Remind farmers those organisms should not be killed as they help make the soil and plants strong.

Step 2: Explain how to look after soil organisms

- Explain that you just need to feed them the food they like, such as mulch and compost. If you do not feed them mulch, some of these organisms might eat the live plant, like termites do.

Definitions

- Organisms are the small animals/insects (e.g., earthworms, spiders, mites, millipedes, spring tail, slater) and other living things (e.g., fungi and bacteria) in the soil. You can see the bigger creatures with your eyes but not the smaller creatures. You need a magnifying glass to see these small micro-organisms.

WHAT ARE MICROORGANISMS?

The purpose of this poster is to explain what microorganisms are, and the role that they play in soil health. The front side describes their activities in the soil and the back side provides guidelines for trainers when using the posters with farmers.

Country: Namibia

KHSA partner: Namibia Nature Foundation and Namibian Organic Association

Target group: Farmer trainers, training organisations

Download in [English](#).

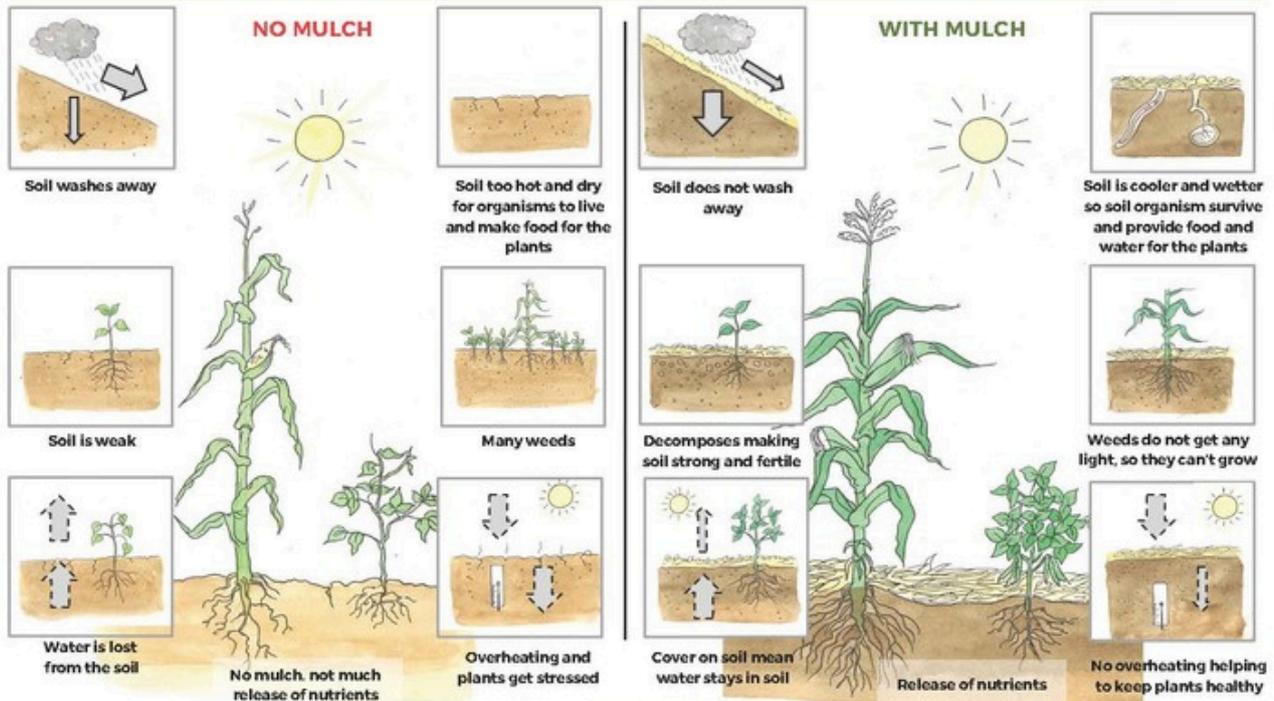


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WHY USE MULCH?

Mulch covers the soil helping to keep water in the soil, keep the soil cool, and add food for the plants. Examples of mulch are maize stover, hay, dried leaves and ground cover plants.



WHY USE MULCH

The front part of the poster depicts the benefits of using mulch and the back part provides guidance to trainers on how to use the poster.

Country: Namibia

KHSA partner: Namibia Nature Foundation and Namibian Organic Association

Target group: Farmer trainers, training organisations

Download in [English](#).

COMPOST MAKES HEALTHY SOIL FOR PLANTS



COMPOSTING FOR SOIL HEALTH

This poster shows how farmers can use compost to increase their production. It highlights the benefits of compost and provides step-by-step instructions on its use.

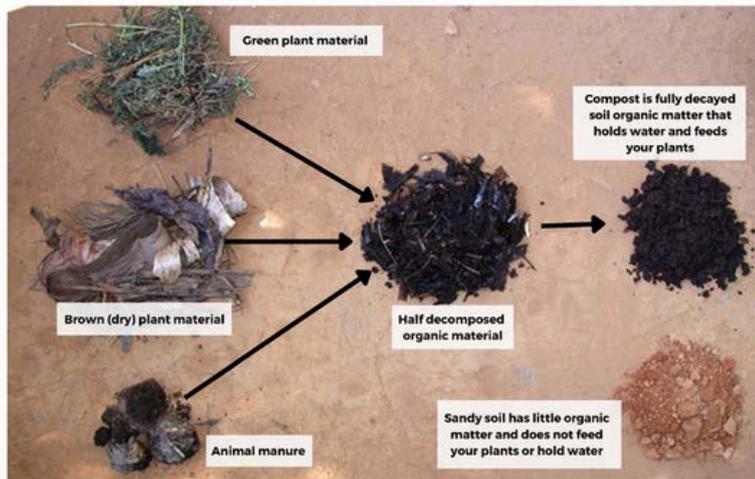
Country: Namibia

KHSA partner: Namibia Nature Foundation and Namibian Organic Association

Target group: Farmer trainers, training organisations, small-scale farmers

Download in [English](#).

COMPOST IS THE BEST SOIL ORGANIC MATTER



Credit: FiBL



HOW TO USE THIS POSTER

The purpose of this poster is to explain how compost is made from the raw ingredients shown on the poster. Compost is a cheap, organic fertiliser that is easy to make using locally available materials. It is healthier for your soil than chemical fertilisers. Compost provides nutrients needed by a plant to grow strong and healthy.

Step 1: Explain how compost is made and how to look after micro-organisms

- Ask if anyone has heard about compost? Ask if anyone is making and using compost?
- Explain how compost is made from the three building blocks – the "greens", the "browns" and the manure. Discuss the materials that are locally available that could be used to make compost.
- Explain that compost makes a home for micro-organisms so they can "chew" (breakdown) the organic matter to a level that the plant can "eat" (absorb nutrients through their roots). When making compost, add water for the micro-organisms to drink and turn the compost to add air so the micro-organisms can breathe.
- A compost heap should be as high as the waist of a tall person. This helps micro-organisms grow in numbers so that there are more of them to break down raw ingredients. The growth in numbers causes the heat in the compost.

Definitions

- Green plant material is any fresh plant material that decomposes quickly and provides nitrogen to the compost. Examples are weeds, green grass, green leaves, vegetable waste, e.g., outer cabbage leaves, vegetable peels.
- Brown material is any dry organic matter. This is a source of carbon. Carbon is an energy source for plants and micro-organisms. Examples are dried leaves, dried grass, old thatch grass and cut up stover.
- Animal manure is an additional source of nitrogen (N), phosphorus (P) and potassium (K), which are important minerals that plants need to be healthy and strong. Manure also helps the compost make a good structure and hold water. To improve your compost, use different types of manure.
- Half-decomposed organic material: The materials in the compost need more time to break down properly.
- Fully decomposed organic material is complete/ready compost: it is fine, dark and smells fertile. Pieces are smaller than the half-decomposed organic material. It is full of nutrients and micro-organisms. If it has not dried out.
- Soil that is poor in organic matter is light in colour; it does not hold water well and has few micro-organisms. Plants will not benefit much from such soil.



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INGREDIENTS FOR MAKING COMPOST

This double-sided poster shows the ingredients that are used to make compost and the back side of the poster provides guidance to trainers using the poster.

Country: Namibia

KNSA partner: Namibia Nature Foundation and Namibian Organic Association

Target group: Farmer trainers, training organisations

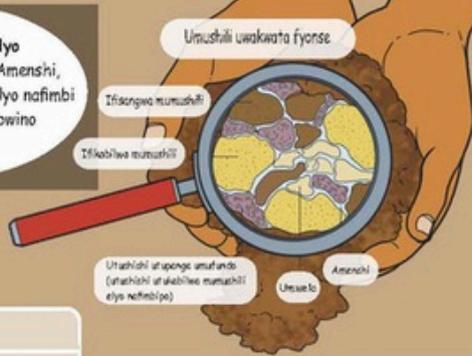
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Ifyakusunga umufundo wamushili mubulimi bwacikaya

BEMBA



Umushili usuma elyo uwamufundo wakwata Amenshi, umwelo, ifipema, umulyo elyo nafimbi ifikabilwa mukukula bwino ukwa cilimwa

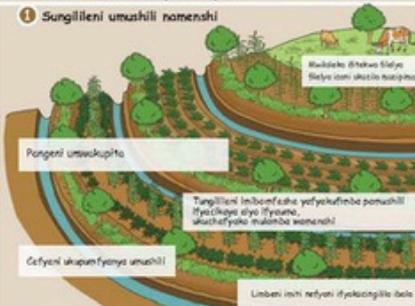


- Ifyaba mumushili ...
- Ifidangayo umulyo waba mumushili elyo ifizafyike ukubandakisa kwo mushili.
 - Ifitangulila ifyaba mumushili ifyefekana lekana nekulanga ukhula ifibemba.
 - Ifinhalo pompho ukubika ukufutyo kwo mulyo ukubandakisa kwo kufutyo kwo ifyafanga amenshi.
 - Ifinhalo ukufutyo kwo mumushili.
 - Ifakakemba umushili ukubo usuma.
 - Ifakachemba utafutyo utafano mumushili utafadika ifimema.

- Ifyaba mumushili ifyakwata ubokumu ...
- Ifizula ifinhalo umufundo wamumushili.
 - Ifidangayo umulyo ukufutyo kwo ifipema ifipema umufundo.
 - Ifipanga umushili ukubo usuma.
 - Kufi ifyabika umwelo wase nitrogen ukufutyo mukwetele ukuya kucilimwa pakulala wimbomfema.
 - Kufi ifyafekela pompho ifyo icilimwa cimele phosphorus.
 - Kufi ifyafekela ifinhalo ifyafekela umushili.
 - Kufi ifyafekela utafutyo utafano mumushili.

Intampulo shitatu ishakusungilamo umufundo wamushili munshila yacikaya

1 Sungilleni umushili namenshi



- Gngilleni umushili kumakela icila muphanga elyo nakusandwa kwo mushili.
- Ukuchifutyo ukufutyo kwo mushili.
- Sungeni amenshi nakusandwa ukukula kufi ifayela usuma.

2 Pongeni umufundo elyo nomulyo



- Sankwemo elyo byedini mukwetele ifilima nefyeni ifibandakisa nitrogen mumushili elyo nefilima ifibi ifibomfema mubulimi bakubomfema inchi mukupanga kwo mufundo wochwaka, ifyafekela pompho, umulyo elyo nefimbi ifikabilwa mumushili.

3 Bikwemo umufundo umbi uwasuminishisa



- Bikwemo pompho wamumushili pakulala fakali ukubandakisa.
- Lingonyeni ukuchifutyo kwo acid mumushili pakulala ifilima ifakula bwino (ifilima nge ukubandakisa lime mumushili ukwetele acid).
- Bikwemo umufundo ukufutyo umushili ukwetele umufundo.



Copyright: © PELUM Zambia, 2023
 The original poster was developed in 2020 by FBL under the GIZ's Green Innovation Centre (GIC) Programme within the framework of the German BMBZ's "One World No Hunger" programme. The translation of this poster was funded by PELUM Zambia and the Knowledge Hub for Organic Agriculture in Southern Africa (KOHSA) as part of the global project Knowledge Centre for Organic Agriculture in Africa (KCOA), implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH in partnership with in-country organisations on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ). To access the poster's copyright policy, see the QR code.



SOIL FERTILITY MANAGEMENT IN ORGANIC FARMING

This poster illustrates good organic soil management practices.

Country: Zambia

KHSA partner: PELUM Zambia

Target group: Farmer trainers, training organisations, small-scale farmers

Download this resource in [Bemba](#), [Tonga](#) or [Nyanja](#).

Ifyakupanga umufundo wacikaya uusuma

BEMBA



Ukukaba kuluka panshita yakupanga umufundo



Ukukaba kufuma panshita yakubala kulafutshako ukupaya iceni, amalelele yacilimwa eyo notushishi.

Ifyakuceceta umutonshi panshita yakupanga umufundo



Intampulo shisano pakupanga umufundo wacikaya uusuma

1 Kalonganikeni ifyakubamfya ukufuma pancele ishishakwela

- Fikeni pabakhi ukufuma kunani eyo nefyakubamfya ifyakubapa ketshe apo kamulabamfya.

2 Sankanyeni nokutopilila ifyo mulebamfya

- Sankanyeni igondwe zine apo gani ifyakubamfya ukufuma kufikisa iflaba eyo mubawipi bawetsho, natyandwa flaba ifyo eyo mulebamfya ifyama.

3 Kolonganikeni ifyo musankanye

- Pangeni uluputa ukufika igoyeni, kufakubapa umu, amalelele eyo mulebamfiwa (guyeni nepanankishile).

4 Ceceteni ifyo flakabile panama yanshiku shibili ukufika kuli shitatu

- Akameti nga leshi akweshela + uluputa natyandwa nangu ifyakubamfya ifyakubapa ketshe nangu uluputa bawetsho natyandwa.
- Akameti nga ukukaba + ifisanankishile flabalo bawetsho.

5 Mulepalebula ifyo mulongenike ukufika kumiko itatu

- Fikiseni uluputa panshita panhika 10, 20 na 40.
- Fiyandze ifyeni natyandwa apo natyandwa kufika.
- Mulepalebula ukufika, nga igoyeni.
- Fikibanye kubakula.

STEP-BY-STEP GUIDE TO MAKING COMPOST

This poster outlines the steps on how to make compost manure and the materials needed.

Country: Zambia

KHSA partner: PELUM Zambia

Target group: Farmer trainers, training organisations, small-scale farmers

Download this resource in [Bemba](#), [Tonga](#) or [Nyanja](#).

How to make & use COMPOST

English

What is compost?

Compost is a natural fertilizer. It is made by putting materials like crop residues, straw, vegetable waste (from the kitchen) and manure in layers in a particular order. The materials will start to heat up (cook) and decompose. The compost heap gets turned to help the decomposition process. The compost is ready when it is a dark, rich material. Add the compost to soils to make them strong and healthy.

What you need:

- 20 bags brown material: straw, hay, hulk, maize stover, rice husks, dried leaves.
- 5 bags green material (as available): weeds, vegetation waste (see peas, green grass and leaves of green manure crops).
- 1 bag animal manure.
- Water (moisture) to keep micro-organisms alive. Micro-organisms are small living things that you cannot see with your eyes, but they decompose the heap. They live deep in the soil, where they help to keep soils healthy.
- Twigs/wood sticks.
- Soil.

Do not use:

- Diseased or poisonous plants (like castor beans).
- Plant materials that take a long time to break down.
- Acidic and toxic plants (cassia and eucalyptus) or plants containing things that prevent breakdown (pine needles).
- Cat and dog manure as it can contain dangerous pathogens.
- Animal bones and other animal food waste as they bring rats.
- Any man-made materials, like plastics, glass and aluminium. These materials cannot break down.
- Hazardous materials like old batteries, motor blades and chemical waste.
- Fatty foods and oil.

1 SELECT AND CLEAR SITE
Choose a place that is shady (under a tree), hot, near to the materials you need (animal manure, crop residues and waste). If possible, choose a site close to the field where compost will be used. This saves on time and labour. Clear the site.

2 MARK AND PEG SITE
Measure and mark the size of the heap. Put long pegs at the four corners of the heap. A good size for a heap is 7 metres wide and between 1 to 1.5 metres high. The available material will cover to the height of the heap.

3 ADD BASE LAYER
Place a covered layer of material such as maize husks, hulk and maize straw on the ground. This layer should be 20 centimetres high.

4 ADD BROWN LAYER
Add a layer of brown material like straw, dry leaves or dry husks. The layer should be about 20 centimetres high.

5 WATER HEAP
Add water to the heap after every layer of brown material.

6 ADD GREEN LAYER
Add a layer of green plant material, preferably leaves from legumes like cowpeas, beans, wheat and sorgho. You can include kitchen waste (vegetable peels or rotten vegetables) or weeds. The layer should be about 10 centimetres high.

7 ADD MANURE LAYER
Add a layer of manure. Manure is a source of nitrogen for the compost heap. The manure layer should be between 2 cm to 3 centimetres high. Avoid worm or mouse droppings or soil in the heap if you have it. This soil contains organisms in the compost heap and speeds up the process of decomposition.

8 KEEP LAYERING MATERIALS
Keep adding layers. Add in other layer of brown material, vegetable and water, add a layer of green material, then a layer of manure. Continue some soil or soil compost if you have it. Repeat this process until heap is between 1.5 metres high.

9 COVER HEAP
Cover the whole heap with a layer of grass or straw to protect it from direct sunlight and rain.

10 CHECK TEMPERATURE
Put a long stick into the centre of heap at an angle and leave it for 2 to 3 days. Take the stick out and feel it. If it is warm the compost heap is working well.

11 TURN THE HEAP
If the stick is warm, turn the heap after 7-10 days. Turning means bringing the inside of the heap to the surface and the outside of the heap to the inside. Turn the heap with water when turning. Repeat measuring soil temperature in night, turn every 7-10 days, and compost is ready.

12 FIXING THE HEAP
If the stick is hot the heap is too hot or too dry. Turn for 30 seconds, you will need to turn the heap immediately. If the stick is not heating up, turn the heap if it is not working well. Add your manure to add extra moisture and/or some water (if the heap is too dry).

13 CHECKING COMPOST IS READY
The compost should be ready after the fourth turning or after 5 to 6 weeks. Add the compost in your fields. If it is dark brown and fine like soil it is ready. If it is still rough, then turn the heap again and check after another week.

14 USING COMPOST
Compost can be applied in different ways. Add a small amount in the hole where a seed is going to be planted. Dig it into the bed where crops are going to be planted, or sprinkle it on the base of an already growing crop. If putting it into a hole or spreading it on plant base, cover compost with a little bit of soil.

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How to make & use BOKASHI

What is bokashi?

Bokashi is a Japanese word for making a natural fertiliser by cooking organic matter through decomposition. It is used to rebuild and bring life into soils and provide plants with nutrients to support strong plant growth. Bokashi is ready after only 12 to 15 days and the materials used to make bokashi are easy to find and do not cost much.

What you need:

- 7 bags soil. It is best if it is clay or black soil or soil from termite mounds.
- 7 bags manure from chickens, goats, sheep or cows. You can also mix manures.
- 7 bags brown materials like maize stover, dry leaves or even sisal dust, dry matter should be cut up or broken up into small pieces not longer than a hand width to make it easy to turn in the heap.
- 1 bag crushed charcoal or biochar.
- 5 litres molasses (the thicker the better) or 2 kilograms unrefined cane sugar, preferably brown sugar, made into a syrup by dissolving it in 5 litres of water.
- 500 grams of yeast (instant clover or dried yeast).
- 1 bag bran (wheat, rice, oat) or straw. You can use a mixture of bran and straw.
- 10 to 15 kilograms fine rock dust or wood ash.
- Use untreated water that has no chemicals (like chlorine) added. Note that municipal water is normally treated.

1a CHOOSE SITE
Choose a place to make your bokashi that is protected from the sun, wind and rain. These elements can disturb the fermenting process and reduce the quality of the bokashi.

1b
Make the bokashi on the ground, and never on a concrete floor. Collect the materials and bring to the site.

2 PREPARE MOLASSES MIX
Mix the molasses with 50 litres of water and the yeast in a separate container. Sprinkle every layer with the molasses mix to maintain the moisture.

3a LAYER MATERIALS
Build the heap by layering the different materials on top of each other. Sprinkle every layer with the molasses mix.

3b
The layers can be placed in the following order: a layer of dry material, a layer of manure, a layer of soil, a layer of crushed charcoal and finally a layer of bran.

3c LAYER MATERIALS
All of the layers will eventually be mixed together, so no proper layer sizes are required, but avoid making the layers too thick.

3d
Repeat these layers until all the materials are used up. Make sure the heap is no taller than 1.5 metres.

4 TURN HEAP
When finished, turn the heap 4 times until all the layers are mixed together well. Add some more molasses mix if the heap is still too dry and sticky. Add it in small amounts. The right amount of moisture can be checked using the squeeze test.

5a 'SQUEEZE' TEST
Take a fistful of the mixed bokashi and squeeze it. It should form a sausage mixture that sticks together. If water leaks through your fingers, it means you have too much moisture. Turn heap again and add soil as you turn.

5b
If it doesn't form a sausage shape, you have too little water. Turn the heap again and add some more water. There should be no wet ground under or beside the bokashi heap.

6 CHECK TEMPERATURE
Check the temperature every day. Insert your hand deeply into the heap. The right temperature is about 40°C. You should feel a good amount of heat but be able to keep your hand inside the heap for a minimum of 10 seconds. If you need to pull your hand out before 10 seconds, the heap is too hot. If you feel only a little heat, the heap is too cold. If the heap has the right temperature, turn it 2 times a day (morning and evening) for the first 4 days. Otherwise do this less.

7 FIXING THE BOKASHI
If the heap is cold when you put your hand in, you need to add more molasses (sugar mixture and/or manure) and turn the heap less frequently to start the process again. If your hand burns and you have to pull it out, the heap is too hot. Turn it more often every day or by spreading the materials out slightly to reduce the height of the heap. Keep checking the temperature until you get it right.

8 CONTINUE TURNING
From day 5 to day 10, turn the heap once a day until the temperature inside the heap is the same as the temperature outside. This can take longer in the cold season (up to 10 days) or if the fermentation has started slowly.

9 APPLYING BOKASHI
Use bokashi on soil as it is ready. The heap will continue to break down and can still be used. Fresh bokashi can be acidic and should not make direct contact with roots or leaves. Place bokashi at the bottom of the planting hole and cover with some soil (later you can also bury it beside the plant). Use 1 handful of gran for field crops and leafy vegetables, 2 handfuls for vegetables with roots and 3 handfuls for plants that are continuously harvested (like tomatoes).

A mobile app is available for free on Google Play and the App Store. It provides step-by-step instructions and a checklist for making bokashi. Scan the QR code to download the app.

HOW TO MAKE AND USE BOKASHI

This poster outlines the steps on how to make bokashi and the materials needed. It is also available as a postcard-size accordion brochure.

Country: Zambia
KHSA partner: Kasisi Agricultural Training Centre
Target group: Farmer trainers, training organisations, small-scale farmers

Download poster in [English](#) or [Nyanja](#). Download accordion brochure in [English](#) or [Nyanja](#).

How to make & use MANURE & PLANT TEAS

What are manure & plant teas?

Manure and plant teas are a type of organic/natural liquid fertilizer. They are made by soaking compost, animal manure and/or nutrient-rich plant materials in water for a few days. Green plant materials for making teas include leaves from green manure crops (velvet beans, jack beans, lablab, etc.), leaves from nitrogen-fixing trees (moringas, leucaena, sesbania, etc.) and non-leguminous plants that have lots of nutrients (like cowpea and tobacco).

Why use teas?

- Teas are easy to make and do not need much labour to prepare.
- They do not cost much money and can be made from locally available materials.
- The nutrients in the teas are easy for plants to take up.
- The teas help plants to grow strong and stay healthy.

What you need:

- 20 kilograms (1 bag) of compost or animal manure or green plant materials or a combination of these materials.
- 20 litres of water.
- 1 drum (20-litre drum).
- 1 knapsack sprayer or watering can.
- 1 piece sack or bag that can hold solid material but also let water through easily (like a woven sack or an woven jute bag).
- 1 piece of clean heavy plastic bag that can cover the drum but let air flow easily.
- 1 piece of string (at least 1.5 metres).
- 1 piece of wire (optional).
- 1 stick.

* Adjust amount of water accordingly if you reduce or increase the amount of compost/manure.

Recommendations for use

- Field crops (like cotton or maize): Apply as soon as crops start germinating and carry on till crops are mature. Apply 1 x a week in dry season, Apply 2 x a week in rainy season.
- Vegetables: Start applying immediately after transplanting to help plants recover from transplanting shock. Then apply 1 x a week until crop matures.
- Best time to apply: For all crops it is best to apply the teas in the evening when it is cool and make sure that the soil is moist when you apply.



GATHER MATERIALS

Gather all the materials (20 kilograms of compost or animal manure or green plant materials or a combination of these materials).

You will also need a drum and a sack or bag that can hold solid material.

Fill the drum with water nearly to the top.

MIX INGREDIENTS

Put the manure/compost/leaves or a mixture of these materials in a bag that lets water flow through it easily.



SOAK INGREDIENTS

Tie the sack to a stick with the string or wire and lower the sack into the water.

Make sure that the sack is fully covered by the water but does not touch the bottom of the drum.

If it does touch the bottom of the drum, make the string or wire a bit shorter.

COVER DRUM

Make a small hole in the cloth that will cover the drum, under the string from the stick. Thread the string through the hole and raise it to the stick. Tie the cover firmly to the drum with another string. The cover should let air flow in easily but keep flies out.



MIX THE TEA

DILUTE THE TEA

APPLY THE TEA

Mix the tea twice a day by stirring/lifting the stick up and down 20 times.

The tea is ready for use after 2-3 weeks. Dilute the tea with water before using it to avoid burning the plant leaves or roots. To dilute, add water to the mixture until it is light brown or yellow in colour.

Apply tea to the base of the crop by spraying using a knapsack sprayer with nozzle removed, or a bucket, a cup or watering can. Heavy feeders like vegetables can receive 200 millilitres per plant, other crops 100 millilitres per plant.



HOW TO MAKE AND USE MANURE AND PLANT TEAS

This poster outlines the steps on how to make manure and plant teas and the materials needed. It is also available as a postcard-size accordion brochure.

Country: Zambia

KHSA partner: Kasisi Agricultural Training Centre

Target group: Farmer trainers, training organisations, small-scale farmers

Download poster in [English](#) or [Nyanja](#). Download accordion brochure in [English](#) or [Nyanja](#).

HOW TO MAKE PLANT TEA AS A BIOFERTILISER



1. Collect and chop green sappy leaves.

2. Immerse the plant material into fresh water and cover the drum. Stir every three days.



3. After 15 days, sieve the mixture and dilute it with two parts water.



4. Apply to the plants in the early morning.



Namibian Organic Association

HOW TO USE THIS POSTER

The purpose of the poster is to help people understand how to make and apply plant tea. Plant tea is water with nutrients from mashed plant matter. The nutrients are like liquid manure. But instead of coming from animals, it is made from plants. It is good to remind farmers that there are many ways to make bio-fertilisers (fertilisers using ingredients from nature and natural processes). Farmers need to use what they have available. Note that using plant tea will not improve the soil in the long term and so it is important to use both compost and plant tea in your garden.

Step 1: Explain what plant tea is

- Ask the audience if anyone has heard of plant tea. Ask if anyone is making and using plant tea.
- Explain that plant tea is used as a way of fertilising plants using natural material to keep them strong and healthy and help them to fight off pests.
- Explain that plants can be made using materials that locally available, and so the farmers do not need to spend money buying fertilisers. Any plants can be used to make plant tea.

Step 2: Discuss how to make and use plant tea

- Discuss the kinds of materials that farmers could use to make plant tea. Discuss what kinds of plants are in the area that could be used?
- Explain the instructions in the diagram.
- Explain that before applying the plant tea, they should make sure that the soil is wet. Say that it is best to apply it in the evening. And that the plant tea can be applied once a week.

Step 3: Demonstrate how to make plant tea

- Use the instructions in the diagram to make the plant tea. Moringa is a plant that works well for plant teas.

MAKING PLANT TEAS

This double-sided poster provides easy to follow steps to making plant teas. The back side provides guidelines for using the posters with farmers.

Country: Namibia

KHSA partner: Namibia Nature Foundation and Namibian Organic Association

Target group: Farmer trainers, training organisations

Download in [English](#).



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HOW TO MAKE LIQUID ANIMAL MANURE (A BIOFERTILISER)



1. Fill a bag with manure.



2. Put the bag into a drum with fresh water, so that it is covered by the water. Cover the container. Stir the mixture every 3 to 5 days.



3. After 2 to 3 weeks dilute the mixture with 2 or 3 parts of water.



4. Apply liquid manure to the foot of the plants.



HOW TO USE THIS POSTER

The purpose of this poster is to help people understand how to make and apply liquid animal manure. Liquid manure is manure mixed in water to create a slurry or "juice" that can be easily taken up by plants. It is a quick source of nitrogen. Liquid manure is easy to make and increases the effect of manure, so less manure is needed. If you use fresh manure or manure that has been stored undercover, the liquid manure will be stronger than if using manure that is left exposed to rain and sunlight. Liquid manure will fertilise the plants, but it will not improve the soil in the long term. So, it is important to use both compost and liquid manure in your garden.

Step 1: Explain what liquid animal manure is

- Ask the audience if anyone has heard of liquid manure. Ask if anyone is making and/or using it.
- Use the responses to go into a full explanation of what it is and why it is useful.
- Discuss what kinds of manure can be used to make the liquid manure. Explain that manure from meat-eating animals such as cats and dogs should NOT be used.

Step 2: Explain how to make and apply liquid manure

- Use the 4 steps to explain how to make liquid manure and apply it.
- Explain that it is important to dilute the manure mixture with water (2 parts/bucket of water to 1 part/bucket of liquid manure) or it can burn the plants.

Step 3: Demonstrate how to make liquid animal manure

- Collect fresh animal manure (cattle, goat, pig, chicken, rabbit, etc.) and follow the 4 steps to demonstrate how to make and apply the liquid animal manure. One to two cups can be applied to each plant 2-3 weeks after planting and then continue to apply once a month after that.

MAKING LIQUID MANURE FERTILISERS

This double-sided poster provides easy to follow steps to making liquid animal manure fertiliser. The back side provides guidelines for using the posters with farmers.

Country: Namibia

KHSA partner: Namibia Nature Foundation and Namibian Organic Association

Target group: Farmer trainers, training organisations

Download in [English](#).



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How to make & use FERMENTED LIQUID BIO-FERTILISERS

English

What are fermented liquid bio-fertilisers?

Fermented bio-fertilisers are made from manure and other materials mixed into a liquid that contains nutrients and micro-organisms.

Why use them?

Fermented liquid bio-fertilisers support life in the soil, making a more fertile and providing food for plants to grow. They help plants stay healthy and contribute to the establishment of helpful bacteria and fungi that help in check harmful ones that could damage plants. They can be used instead of chemical fertilisers. This saves farmers money and is better for the soil.

What you need:

- 1 to 50 kilogram sack fresh cow dung or manure
- 4 litres milk or whey
- 4 litres molasses or sugar cane juice (dilute 1 litre with 3 litres of water)
- 4 kilograms wood ash
- 500 grams yeast
- 100 litres water (clean and with no chlorine)
- 2 kilograms mineral salts (optional)
- 200-litre plastic drum
- 1 small drum (minimum 20 litre) for mixing
- Transparent (see-through) fine pipe (2 metre long and 1 centimetre to 1.25 centimetres in diameter) attached to the valve or nipple by a rubber ring
- Irrigation coupling piece
- Disposable plastic bottle (mineral water bottle 1 or 2 litre)
- A wooden stick
- Plastic glue
- Rubber



PREPARE AIR-TIGHT DRUM

You will need a 200-litre drum. It is very important that the air can enter the drum once you have filled it with the bio-fertiliser. Before the drum begins to make an air-tight drum. Step 1: At point A, make a hole in the drum lid or in the side of the pipe (B). Step 2: Insert the pipe in the hole and tightly seal the hole with plastic glue.

Step 3: At point C, insert the other side of the pipe (D) into the plastic bucket. The top of the drum is now airtight. Do not depend on the size of the pipe. Step 4: Fill the bucket with water. Ensure that the other end of the pipe (D) ends inside the water in the bucket or at least in a previous container in the drum (if necessary with water in the bucket).

Once the drum is full of the bio-fertiliser, you will see air bubbles appear in the water. This means that fermentation has started. Make a hole on the top of the drum.

Push in the valve or rubber into the hole and push in the nipple. Connect pipe on the outside.

Put 100 litres of clean water into the 200-litre drum. Add the 50 kilogram sack of fresh cow manure and 4 kilograms of ash. Mix until all ingredients are mixed well together.

MIX MANURE AND WATER



PREPARE SECOND MIXTURE

ADD WATER AND YEAST

COVER DRUM

Put 10 litres of clean water into a separate container.

Add 4 litres of whey or milk and 4 litres of molasses or sugarcane juice. Mix thoroughly together and add this mixture to the contents of the 200-litre drum and stir well. Mix everything together well.

Add this mixture to the solution in the 200-litre drum and stir well.

Fill the 200-litre drum with water up to the 100-litre mark. Add 500 grams yeast. Mix well.

Cover the drum with a lid (sawdust) to start the process of fermenting the mixture. Keep it in the shade to prevent it from heating up. The best temperature is 30-40°C. (Use the temperature on the stomach of a cow.)



CHECK BOTTLE

CHECK READINESS

APPLYING BIO-FERTILISERS

Keep drum sealed for 3-4 weeks to allow the fermentation to happen. In cold places it can take 6-12 weeks. Look at the bottle. If gas is no longer being released (there are no bubbles in the plastic bottle), fermentation has stopped. You can now open the drum.

The bio-fertiliser is ready when it smells like alcohol, is foaming on top and if it is a little brown or slightly transparent. It is not ready when the surface cream is green and the colour of the liquid is cloudy, or if the surface already in the drum is covered by a black growth. It can be used. But it is not of good quality and won't last long.

Once the drum is open, you can't close it again to continue fermenting as the liquid has been exposed to oxygen. So nothing has gone wrong if it smells rotten, or if you block it out or the surface and like under heat or too much or too. It should not be used because it might introduce the wrong bacteria in your soil.

Put 1 litre of the liquid into 20 litres of water. Use a spray nozzle to spray the bio-fertiliser on plants or trees that are planted or near a row of 1 metre x 1 metre x 1 metre of bio-fertiliser (1000 ml/litre) to apply on crops planted on starting. Use as a top-dressing or between 2-3 weeks.



HOW TO MAKE AND USE FERMENTED LIQUID BIO-FERTILISERS

This poster outlines the steps on how to make and use liquid biofertilisers and the materials needed. It is also available as a postcard-size accordion brochure.

Country: Zambia

KHSA partner: Kasisi Agricultural Training Centre

Target group: Farmer trainers, training organisations, small-scale farmers

Download poster in [English](#) or [Nyanja](#). Download accordion brochure in [English](#) or [Nyanja](#).

POSTER SERIES USER GUIDE

MAKING BIOCHAR



HOW TO MAKE BIOCHAR

This poster series gives step-by-step instructions for making and using biochar with a low-tech approach, showing how to prepare, burn, charge and apply biochar to improve soil fertility, water retention and biodiversity.

Country: Namibia

KHSA partner: Namibia Nature Foundation and Namibian Organic Association

Target group: Farmer trainers, training organisations, small-scale farmers

Download in [English](#).



POSTER SERIES USER GUIDE

MIXED ALLEY CROPPING



MIXED ALLEY CROPPING

This poster series gives a step-by-step guide to mixed alley cropping with pigeon pea, showing how to prepare and plant fields to improve soil, boost yields, prevent pests, provide shade, food, mulch and green manure.

Country: Namibia

KHSA partner: Namibia Nature Foundation and Namibian Organic Association

Target group: Farmer trainers, training organisations, small-scale farmers

Download in [English](#).





INTRODUCTION TO ORGANIC AGRICULTURE AND BIOFERTILISERS (VIDEO PODCAST)

This episode of the Mlimi wa Chilengedwe podcast dives into the principles of organic farming and the role of biofertilisers. Two farmers discuss how these practices can restore soil health, cut dependence on synthetic inputs and support more sustainable, resilient agriculture.

Country: Malawi

KHSA partner: Soils, Food and Healthy Communities

Target group: Farmer trainers, training organisations, small-scale farmers

Watch podcast in [Tumbuka with English sub-titles](#)



MAKING BOKASHI AND LIQUID FERTILISERS (VIDEO PODCAST)

This episode of the Mlimi wa Chilengedwe podcast explores how to make bokashi and other biofertilisers. Two farmers share practical tips and insights on producing these nutrient-rich organic inputs and explain how they support healthy, productive farming.

Country: Malawi

KHSA partner: Soils, Food and Healthy Communities

Target group: Farmer trainers, training organisations, small-scale farmers

Watch podcast in [Tumbuka with English sub-titles](#)



HOW TO MAKE LIQUID MANURE (VIDEO PODCAST)

This episode of the Mlimi wa Chilengedwe podcast explores the value of organic liquid manure for farmers in Malawi. It highlights its benefits—improved soil fertility, stronger plant growth and sustainable waste use—and offers practical guidance on making and applying it using local materials for maximum impact.

Country: Malawi

KHSA partner: Soils, Food and Healthy Communities

Target group: Farmer trainers, training organisations, small-scale farmers

Watch podcast in [Tumbuka with English sub-titles](#)



ADVANTAGES OF CROP-TREE INTEGRATION: AGROFORESTRY (VIDEO PODCAST)

This episode of the Mlimi wa Chilengedwe podcast highlights the benefits of crop-tree integration, or agroforestry. It explores how incorporating trees into farming systems can boost soil fertility, increase crop yields and offer a range of ecological and economic advantages.

Country: Malawi

KHSA partner: Soils, Food and Healthy Communities

Target group: Farmer trainers, training organisations, small-scale farmers

Watch podcast in [Tumbuka with English sub-titles](#)



ADVANTAGES OF MIXED CROPPING IN ORGANIC AGRICULTURE (VIDEO PODCAST)

This episode of the Mlimi wa Chilengedwe podcast explores mixed cropping—an organic farming practice where multiple crops are grown together in the same field. It highlights the benefits, such as improved soil health and resilience to pests, and offers practical guidance on crop selection and managing challenges for successful implementation.

Country: Malawi

KHSA partner: Soils, Food and Healthy Communities

Target group: Farmer trainers, training organisations, small-scale farmers

Watch podcast in [Tumbuka with English sub-titles](#)



KCOA

Knowledge Centre for
Organic Agriculture and
Agroecology in Africa

KCOA is a collaborative country-led partnership that aims to scale up the adoption of organic and agroecological farming practices through a network of five Knowledge Hubs in Africa. KCOA partners are based in 18 countries and with the involvement of over 30 civil-society organisations.

Scan to discover more!



ENGLISH



FRANÇAIS



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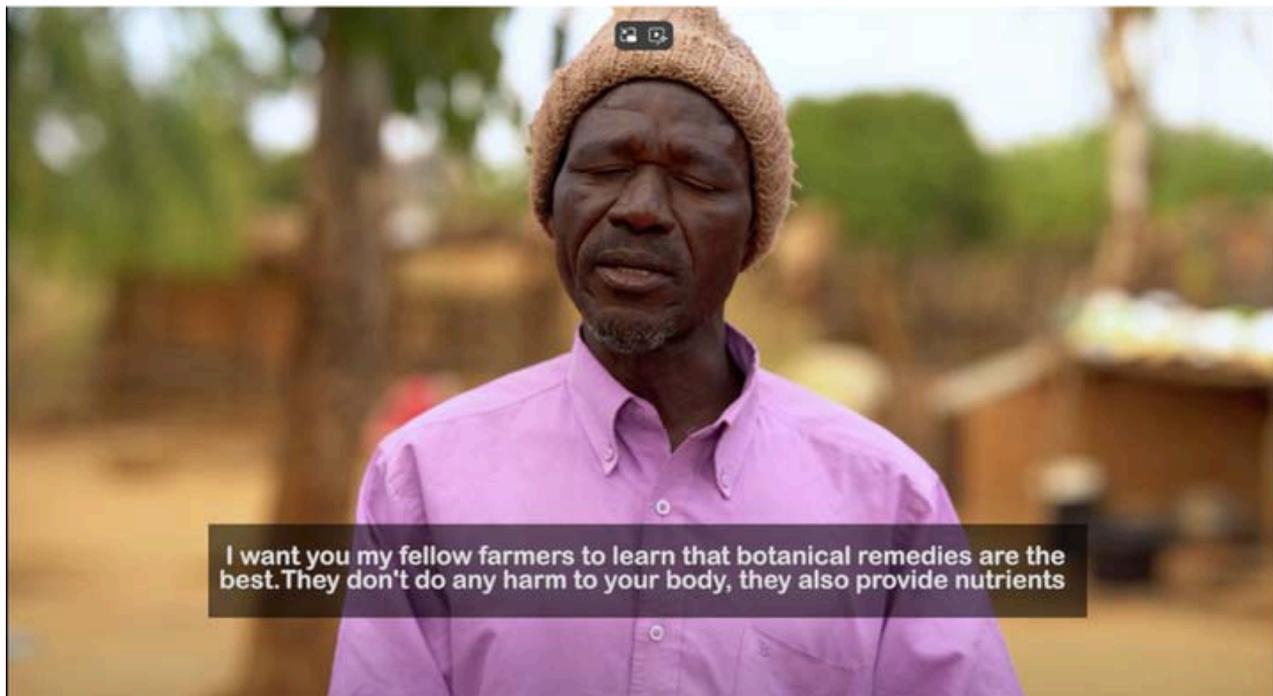
SECTION 4: SUSTAINABLE PEST & DISEASE MANAGEMENT

IN THIS SECTION

- How to make and use botanicals for pest management (video)
- How to make and use botanicals for pest management
- Managing pests and diseases the organic way (recorded webinar)
- Dealing with pests organically
- Dealing with diseases organically
- How to plan vegetable production
- How to make and use organic pesticides
- How to manage weeds organically

Controlling pests and diseases without harmful synthetic pesticides is a major challenge for small-scale farmers. Unsustainable practices like monocropping disrupt natural pest-predator balances and degrade soils, making crops more vulnerable. Agroecological and organic methods restore this balance through biodiversity, mixed cropping and healthy soils, building resilience.

This section offers resources on safe, organic ways to deal with pests and diseases that protect both ecosystems and human health.



HOW TO MAKE AND USE BOTANICALS FOR PEST MANAGEMENT (VIDEO)

This video details how to use botanical remedies for pesticide management. It takes one through a step-by-step process on how to control pests both pre-harvest and post-harvest. It also talks about safety procedures when handling botanicals. It goes further to give examples of the plants one can use for pest control.

Country: Malawi

KHSA partner: Soils, Food and Healthy Communities

Target group: Farmer trainers, training organisations, small-scale farmers
Watch in [Tumbuka](#) or [Chichewa](#) (English sub-titles)

The videos have also been prepared as pre-harvest guidance in [Tumbuka](#) and [Chichewa](#) and post-harvest guidance in [Tumbuka](#) and [Chichewa](#).



HOW TO USE BOTANICALS

Many plants can be used to make botanical sprays. These sprays can be applied to your crops to protect them from pests. *Tephrosia vogelii* (mtezeza) and *Vernonia amygdalina* (chisoyo) are two of the plants that can be used to make botanical sprays. Farmers from Mzimba tested these plants to learn which ones work best. They found out that remedies made from these plants can protect maize and beans from pests such as fall army worm, stalk borer, caterpillars, aphids and weevils. Mtezeza works very well for beans and Chisoyo works very well for maize.

Safety instructions: Always wash your hands after making the preparation and when you apply it to your crops. wear a cloth over your mouth and nose as a precaution.

Step 1:
Gather leaves from the plant or plants that you want to use.

Step 2:
Dry the leaves in a dry, shady place.

Step 3:
Pound the leaves to make powder. Store the powder in a dark, dry place.

Step 4:
Mix 1 kilogram powder with 5 litres of water and 1 spoon of soap shavings.

Step 5:
Soak the solution overnight. Then strain the solution using a cloth. Remember when you are mixing and spraying the botanicals, wear something to protect your hands, like sugar bags. Wear a cloth over your nose and mouth.

Step 6:
You can use a broom to apply or a plastic bottle as a sprayer. Apply the spray to your crops in the afternoon.



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UMO MUNGA GWILISKILA NTCHITO MANKHWALA GHA CHIBOYI MU MBEWU ZINU

Vyakumela vinandi mungagwilisya ntchito pakupanga mankhwala ya chiboyi. Mankhwala ya chiboyi mungapopela mbewu zinu kuti zithasike ku tuvibungu. Mtezeza, chisoyo, na deliya niyakumela ivyo mungagwilisya ntchito pakupanga mankhwala ya chiboyi.

Waleni waku Mzimba walikupanga kafukufuku kuti wasange mankhwala wa chiboyi uwo wungawowira kuthaska mbeu zawo ku vibungu. Iwo wakasanga kuti mankhwala ghose ghatatu (mtezeza, chisoyo na deliya) ghaku thaska ngoma na nchunga ku tuvibungu tyakukozgana na ntchembere zandonda, kapuchi, tuvibungu tonyake, nyinda zamu mbewu kweniso fufuzi. Mtezeza ukovwila chomene ku ntchunga. Chisoyo na deliya vikovwila ku ngoma.

Nthowa Zakuvwila Ku Mankhwala gha chiboyi: Nyengo iliyose gezani mu mawoko apo mukusozga mankhwala ya chiboyi kweniso apo mukupakopela mbewu zinu; jilani kumilomo na mphuno na salu panyake kanthaulo kuti mujivikile.

Ndondomeko 1:
Tolani mani/mahamba kufuma kumakuni panyake chakumela icho mukhumba kugwilisya ntchito.

Ndondomeko 2:
Yanikani mani/mahamba pamalo gha komila gha muwili.

Ndondomeko 3:
Pulani mahamba kuti vizgoke wufu. Sungani mankhwala yinu mu muwili.

Ndondomeko 4:
Sazgani 1 kg ya mankhwala na 5 litres ya maji na kupata sopo yakuzula sipuni yimoza yichoko (teaspoon).

Ndondomeko 5:
Tupikani usiku umozo (maola 24). Sujani pakugwiliska ntchito kasalu katuwa. Kujithaska: Nyengo ya kusazga naku popela mankhwala ya chiboyi, vwalani vintu mumawoko ngeti mapepala ya suga kweniso ku maso kujala mphuno na mlomo.

Ndondomeko 6:
Popelani mbewu zinu nyengo ya m'hanya. Mungagwilisya ntchito chithanyelo panyale botolo la putasitiki.



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HOW TO MAKE AND USE BOTANICALS FOR PEST MANAGEMENT

This leaflet tells how to make and use botanical sprays to protect crops from pests. It provides step-by-step instructions for preparing the spray using common plants and household items.

Country: Malawi

KHSA partner: Soils, Food and Healthy Communities

Target group: Farmer trainers, training organisations, small-scale farmers

Download leaflet in [English](#) or [Tumbuka](#).

THE NAMIBIAN ORGANIC ASSOCIATION (NOA)
&
NAMIBIA UNIVERSITY OF SCIENCE AND TECHNOLOGY (NUST)
PRESENT:

ORGANIC AGRICULTURE

GUEST LECTURE SERIES



Kristina Waldschmidt

Dirk Wölbling

Dr Shepard Ndlela

TOPIC:

MANAGING PESTS AND DISEASES IN
ORGANIC FARMING

- WEDNESDAY
- 25 OCTOBER 2023
- 18H00 - 19H30
- NUST HOTEL SCHOOL
- BEETHOVEN STREET



@Namibian Organic Association

PROUDLY BROUGHT TO YOU BY



MANAGING PESTS AND DISEASES THE ORGANIC WAY (RECORDED WEBINAR)

This webinar focused on the relevance of organic agriculture for the future, and how it could help combat challenges around food and nutritional security, climate change and biodiversity loss.

Country: Namibia

KNSA partner: Namibian Organic Association and Namibia Nature Foundation

Target group: Academia, meat sector, commercial and small-scale farmers

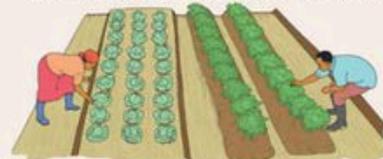
Watch in [English](#).

Ifyakubombela patushishi tutebelela umusalu munshila iyacikaya

BEMBA



Ishbeni apafikile utushishi ukupitila mukucoceta maibalo cila nshita



- Ethyocho**
- Cocetani muNlomo (ukubakopa fye na umu mawoyila) ifilima Ifyakubombela) chaweha mukababwisa utushishi nga nshirandacha.
 - Mamoni (shibula) ifi nga utushishi utalalya ifilima, utalalya ifipunde munshila yofilima, ukabwisa nanga ukabwisa elyo nanga utushishi ukalya ifilima ukabwisa utanga ukubakopa fye ukabwisa kuu tushishi.
 - Cocetani Inbali shonke Ishibula Lambeni kugeni fyma Ifye Inshonke.
 - Komani Inbali fye cila cila nshita nga mukucoceta maibalo fyma.
 - Bomfyan utalalya ukabwisa utushishi utalalya nanga fyma ukabwisa. Cocetani nokabwisa utalalya cila mawoyila.
 - Cocetani ifilima namabwisa umu utushishi utalalya chaweha.

Intampulo shiritatu ishakubombela patushishi munshila yacikaya

1 Moneni ukutula ifilimwa fili umu fingamena bwino

Byeleni ifiga mambali yabale

Kikwina amafundo

Byeleni panshila yalanga

Bomfyan Inbali Ishibakwisa utushishi

- Ukuphanga shubiyala ifilima mukabwisa kukabwisa mukabwisa utushishi utalalya mukabwisi.
- Ukutula mambali amafundo amafundo mukabwisa ifilima ifiyala.
- Zakuta utalalya namabwisa shibula kubamabwisi kuti ifilima bwino ukabwisa namabwisa mukabwisi.
- Bomfyan Inbali Ishibakwisa utushishi ukabwisa mukabwisa.

2 Tungilani ifilimwa utushishi munshila yacikaya, cocetani utushishi. Elyo nameni bwino izala nokutanga ifilimwa ifiyabwisa.

Fumyemba nakabwisa ifilimwa ifiyabwisa namabwisa nanga mukabwisa fyma ifiyabwisa.

Fyateniso utu mawoyila utushishi

Tungilani ifilimwa ifiyabwisa utushishi mukabwisa yacikaya.

- Gingilani nshita ifiyabwisa fye nshita elyo nshita ifiyabwisa amabwisa ifye mawoyila fyma mukabwisa nanga ukabwisa pakuti kufilima kuti colanga ifiyabwisa utushishi.
- Ukutula ifilimwa ukabwisa pakuti cila mabwisa ifiyabwisa utushishi elyo nanga ifiyabwisa utushishi fyma fyma utushishi.
- Ukucoceta cila nshita kufilima mukabwisa nanga nga kompani utushishi.

3 Cintintilani utushishi ukubomfya inshila shakubombela kabili ishosumishwa

Tayeni Ifyakwisa, utalalya nanga nanga mukabwisa utushishi

Bomfyan umu utalalya utushishi panshila yalanga

Komfyan utalalya cila nshita

- Umuti mawoyila ukabwisa utushishi ukabwisa nanga fyma utushishi fyma.
- Namoni umu utalalya utushishi elyo namoni utalalya utushishi fyma nanga fyma mukabwisa, amafunda yal umu mukabwisa elyo namoni yal umu mukabwisa, elyo namoni yal umu mukabwisa fyma utushishi, utalalya fyma utushishi, utalalya fyma utushishi.
- Utushishi fyma namoni elyo namoni fyma utushishi fyma utushishi kuti fyma utushishi ukabwisa mukabwisa yalalya utushishi.



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 The original poster was developed in 2020 by FBL under the GIZ's Green Innovation Center (GIC) Programme within the framework of the German BMZ's 'One World One Hunger' programme. The translation of the poster was funded by PELUM Zambia and the Knowledge Hub for Organic Agriculture in Southern Africa (KOSA) as part of the global project Knowledge Centre for Organic Agriculture in Africa (KOSA), implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH in partnership with in-country organisations on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ). To access the poster's copyright policy, see the QR code.



DEALING WITH PESTS ORGANICALLY

This poster outlines ways to minimise pest attacks on crops.

Country: Zambia

KHSA partner: PELUM Zambia

Target group: Farmer trainers, training organisations, small-scale farmers

Download this resource in [Bemba](#), [Tonga](#) or [Nyanja](#).

Ifyakubombela pamalwele yamusalu munshila yacikaya



Bushe mwalishiba
Amalwele ayaleta utushishi elyo nobwafya yaleta kufilimwa amalwele ayatebelela ifilimwa fyenu?
Ukashisha amalwele kulanga walisha ukucyfaka ubona usi buleta amalwele munshila yacikaya elyo tulingilila ubani bwana nenonde

Amalwele ayaleta utushishi elyo nobwafya yaleta kufilimwa



Ifyakubombela

- Ukwingililwa, ukashishi, amalwele akama
- Ukufaka amalwele akama elyo nokabala peffilimwa ifyakubombela lokona pacifilimwa.
- Ukupanga amalwele elyo nokama kwafilimwa.

Ukushinda kwama

- Ifufu, amalwele, ifashibala. Abantu elyo nenonde
- Ifyakubombela mabala ifakwata amalwele ifi ngo lobata shamba, lobata lishamba kule elyo nokushinda.

Ifyakubombela

- Ifilimwa ifi ifatela fye elyo nokubala.
- Dangi fye ifilimwa ukupanga kukukwata wa ifilimwa mabala nakwata.
- Ukubona ifilimwa kwafilimwa.

Ukushinda kwama

- Ifufu, amalwele, ifashibala. Abantu elyo nenonde
- Ifilimwa ifakwata amalwele elyo/nango ifilimwa fye ifilimwa.

Ifyakubombela

- Amalwele yacifilimwa ukukwata nalingi fye lokwata lokwata ifyakubombela lokwata fye mabala.
- Ifilimwa kwafu.

Ukushinda kwama

- Ifyakubombela mabala ifakwata amalwele ifi ngo lobata shamba, lobata lishamba kule elyo nokushinda.
- Utushishi ukushinda amalwele

Intampuka shitaru ishakubombela pamalwele munshila yacikaya

1 Moneni ukutlala ifilimwa filekula bafu

• Bakenisi ukufunda ukufunda
• Bulelwa ifilimwa mukufunda
• Kosheni ifilimwa
• Tukashonyeni ifilimwa mukufunda
• Bonfanyi ukushinda fyakubombela ifakwata amalwele

- Ukupanga amalwele kwama ifilimwa mukufunda nokushinda mukufunda ifilimwa amalwele yafama kwafilimwa.
- Ukushishi amalwele amalwele amalwele ifilimwa ifilimwa.
- Imbata lokushinda amalwele shikwafilimwa.
- Ukupanga ukushinda ifilimwa nango ifilimwa kwafilimwa kufi kwafilimwa amalwele yacifilimwa nango ukufunda ukufunda amalwele.

2 Ukufwalisha amalwele mukusanga ifilimwa ubusika

• Fuyeni lokwata bafu ifilimwa nokwata fuyeni ifakwata amalwele

• Linye nokwata ukwata ngo kufi mukufunda fuyeni

- Ukusanga amalwele ukushinda kufi ukushinda ama ukushinda.
- Ukushinda amalwele yefilimwa ukushinda nokwata ifilimwa amalwele.
- Ukushinda nge bokwata bwanga, nishi apashikwata ukushinda kwafilimwa elyo nokwata ama kufi fuyeni.

3 Cincintlani amalwele notushishi tutanda amalwele ukubombela umuti usama

• Sontosi ukufi pashikwata yefilimwa

• Cincintlani ukushinda ukushinda ukushinda ukushinda ukushinda

- Ukushishi kufi kwafilimwa fye ukushishi mukufunda ukushinda (shamba ifi no Z) elyo nokwata ukushinda ukushinda ukushinda (ifilimwa ifilimwa).
- Amalwele yafama nokwata ukushinda nge mukusanga ifilimwa ifilimwa (ngi ukushinda copper kufi kwafilimwa).
- Umoti ukushinda ukushinda ukushinda ifilimwa ifilimwa amalwele fye, lokwata ukushinda yefilimwa kufilimwa.

DEALING WITH DISEASES ORGANICALLY

This poster outlines ways to minimise the occurrences of diseases.

Country: Zambia

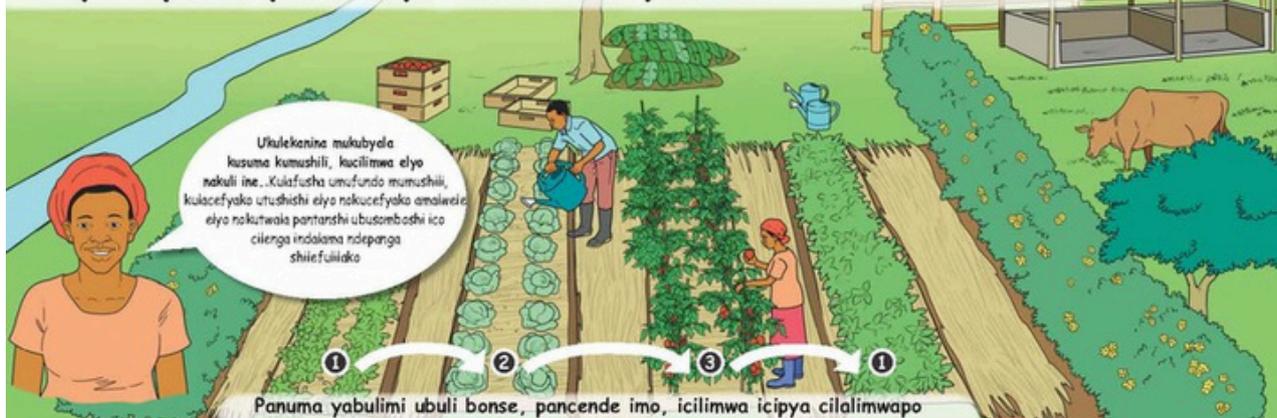
KHSA partner: PELUM Zambia

Target group: Farmer trainers, training organisations, small-scale farmers

Download this resource in [Bemba](#), [Tonga](#) or [Nyanja](#).

Ifyakupekanya imibyalile isuma iyamusalu mukulekanina

BEMBA



Panuma yabulimi ubuli bonse, pancende imo, icilimwa icipya cilalimwapo ukukonka namapange yakubya ifilimwa mukulekanina



1 Umufundo uyo balima nangu icilimwa icitwala inseke
Ifili nga cilamba itwa velvet bean, sunhemp, nacilemba imbi.



2 Ifilimwa ifikwata sana amabula
Ifili nga cabbage, broccoli, rope, spinach.



3 Ifilimwa ifishikwata sana amabula nangu ifyaba pakati
Ifili nga mali mali, pepper, ifambu fyabakaya, carrot, kanyense.



1 Umufundo uyo balima nangu icilimwa icitwala inseke
Ifili nga cilamba itwa velvet bean, sunhemp, nacilemba imbi.

Ifyakaite

- Ukupetula ibala apangi.
- Seleni umusalu lefundi ibili elyo nacilimwa o'hwala inseke (umufundo uyo balima) ifilimwa ifyo maakulakane pakubya.
- Ifyakukana pakubya mukulekanina kabili kibomfwe ifyo ifilimwa ifyapane fyalimwa malibala lima.

Ifakifwe ukwata

- Ukulimwa umufundo wazutulu utwo wina nangu utuzulu uwaba mulupwa luto pancende itwo ituku ibili mukulekanina mutulim.
- Ukubomfwe ifishile kuzutulu nge utuzulu malibala itwo itwo utuzulu utuzulu wazutulu luto laline na fiye malibomfwe nge utuzulu.



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The original poster was developed in 2020 by F&L under the GIZ's Green Innovation Centre (GIC) Programme within the framework of the German BMBWF's "One World No Hunger" programme. The translation of this poster was funded by PELUM Zambia and the Knowledge Hub for Organic Agriculture in Southern Africa (KOSA) as part of the global project Knowledge Centre for Organic Agriculture in Africa (KCOA), implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH in partnership with in-country organisations on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ). To access the poster's copyright policy, see the QR code.



HOW TO PLAN VEGETABLE PRODUCTION

Having a rotation of vegetable planting helps to combat pests and diseases.

Country: Zambia

KHSA partner: PELUM Zambia

Target group: Farmer trainers, training organisations, small-scale farmers

Download this resource in [Bemba](#), [Tonga](#) or [Nyanja](#).

How to make & use ORGANIC PESTICIDES

English

What are organic pesticides?

Organic pesticides are pesticides made using products from nature including certain leaves or plants, parts of plants or plant extracts to fight certain pests and diseases. The first step in preventing pests and diseases is to build healthy soils or control them using living organisms, helpful insects, cultural practices or destroying diseased plants. As a last resort, organic pesticides can be used. This is because organic pesticides are less harmful than chemical pesticides but they can still kill some important insects and other animals that are good for plants and for the soil.

Why use organic pesticides?

- Organic pesticides are easy to make and do not require a lot of follow-up.
- Organic pesticides do not cost much money to make.
- Organic pesticides can be made using locally available materials.

Good pest and disease management practices

- Identify the problem early! Check the leaves and roots of your plants daily.
- Identify the pest or disease that is attacking your plant. This will help you choose the right solution. Some good ways to do this are:
 - Using insect traps: Use bright-colored buckets half-filled with sticky material and a light to attract insects at night.
 - Look around and on the plant: You can often find the insects in the soil on the plant, e.g., red spider mites or aphids on the underside of leaves, tracks on the soil showing a soil miner, etc.
 - Check the roots: Cutworms cut the stem near the roots and kill them by gnawing at the stem under the surface making it break.
 - Look at your plant: Look for signs of disease on your plant like withering, leaf colour that is not right, white or grey stuff on the leaves, and bumps on the stem.
- Know your insects' friends: It is important to know which ones are helpful insects that eat pests such as ladybirds, wasps, and bees, and which ones are harmful insects (pests like fall army worms, aphids, maize borers).

What you need

- 1 bucket (20 litres) of neem leaves or Tephrosia leaves or snake beans
- 1 piece of cloth that can hold solid material but also let water through easily
- 2 buckets (20 litres)
- 1 knapsack sprayer or watering can
- 1 pestle and mortar

Safety measures

- Wash your hands thoroughly after making or using.
- Avoid contact with your eyes.
- Cover and put out of reach with children.
- Wear protective gear like gloves and protective glasses.

NEEM

(Azadirachta indica)

Effective against pests like the fall armyworm and stalk borers. Neem can be used both to prevent pest and fight infestations.



POUND AND SOAK LEAVES

Put in 1 bucket (20 litres) of fresh, locally picked healthy neem leaves into a powder. Mix the powdered leaves with 8 bucket (20 litres) of water and allow to sit for 42 hours.



STRAIN THROUGH A CLOTH

Place a piece of cloth over the opening to the knapsack sprayer or watering can and pour the neem mixture onto the cloth. The cloth will catch the leaves and ensure that only the liquid goes to the sprayer or watering can.



APPLY NEEM PESTICIDE

Pour the neem pesticide into a knapsack sprayer or watering can. Spray the plant with the sprayer or water at the base of the plant using a watering can.

TEPHROSIA

(Tephrosia vogelii)

Effective against aphids, cutworms, and termites.



POUND AND SOAK LEAVES

Put in 1 bucket (20 litres) of fresh, locally picked healthy tephrosia leaves into a powder. Mix the powdered leaves with 20 litres of water and allow to sit for 12 hours.



STRAIN THROUGH A CLOTH

Place a piece of cloth over the opening to the knapsack sprayer or watering can and pour the tephrosia mixture onto the cloth. The cloth will catch the leaves and ensure that only the liquid goes to the sprayer or watering can.



APPLY TEPHROSIA PESTICIDE

Put 1 part tephrosia pesticide to 4 parts water, e.g., 1 bucket of tephrosia pesticide to 4 buckets of water. Spray the plant with a knapsack sprayer or water at the base of the plant using a watering can. It is best to apply early in the morning or late afternoon. To prevent pests apply to crops once a week, even.

SNAKE BEAN

(Swartzia madagascariensis)

Effective against termites, pests and aphids.



POUND AND SOAK BEANS

Put in 50 grams of dry snake beans (approximately two hands full). Mix with 1 litre of water and allow to sit for 24 hours.



STRAIN THROUGH A CLOTH

Place a piece of cloth over the opening of the knapsack sprayer or watering can and pour the snake bean mixture onto the cloth. The cloth will catch the bean pieces and ensure that only the liquid goes to the sprayer or watering can.



APPLY SNAKE BEAN PESTICIDE

Pour around plant or spray on leaves. It is best to apply the snake bean pesticide early in the morning or late afternoon.

This knowledge product was developed and published with the support of the European Union under the leadership of the European Union. The views expressed in this publication are those of the author(s) and do not necessarily reflect those of the European Union.



HOW TO MAKE AND USE ORGANIC PESTICIDES

This poster outlines the steps on how to make and use three types of organic pesticides. It is also available as a postcard-size accordion brochure.

Country: Zambia

KHSA partner: Kasisi Agricultural Training Centre

Target group: Farmer trainers, training organisations, small-scale farmers

Download poster in [English](#) or [Nyanja](#). Download accordion brochure in [English](#) or [Nyanja](#).

Ifyakusekwila mumabala mulebomfya umufundo wacikaya

BEMBA



Nshifwaya ukubika icani mwibala. Ndashikwila icani cilimo bwangu bwangu elyo ndacumika nangu ukupanga umufundo wacikaya. Elyo ndasakamana bwino amabala yandi.

Makupanda nangu ukakompa icani nshifwaya ifyakubekela.

Bikemiso umufundo ukafuna kufishala mwibala.

Mafasurinihwa inama ukafya icani ukafya muzipita elyo nakifiba pafifwea.

Mulebomfya umu wacikaya ukufishala ukufishala kufifwea.

Mulekisa ififwea ifikula bwangu ifipela umufundo komathuli.

Mulekkanisa mukubyo kwafifwea / ukubyo ififwea ukafika pati cimo mwibala.

Mulesekela nemimwe nangu ukubomfya ificisolobelo.

Moneni ukutha kusapikanya bwino ibala.

Inshila yakusekwilamo mwibala

1 Cefyeniko ukubikemo kwa cani



- Wumveni ificisolobelo fya mwibala elyo nefimashini apo nemulebomfya.

2 Byaleni bwino ififwea



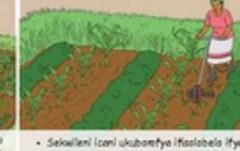
- Bomfanyi imbuto izama kubili iyakwacha abami.
- Byaleni pamande apashini icani.
- Ngu cayene byaleni ififwea ifimane ifino ukafika ukubyo imbuto fya.

3 Mulekisa icani cilimo



- Cincet icani ukamane kwa cani fukukula nomufundo ufuna kufishala mwibala, fisebani pafifwea nangu byaleni ififwea ukafika pati cimo mwibala lina.
- Mulebomfya ngu umufundo icani cilimo bwangu ngu masekela kano ngu masekela.

4 Sekweleni panahita yakaga



- Sekweleni icani ukubomfya ificisolobelo ifya yana ifya teclakula sana.
- Biken icani pakauba pakufika cume.

5 Mulekosalonganya icani



- Sekweleni bwangu icani cilimo mukwengufyene.
- Sekweleni imbuto yacani apo teclakula.



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 The original poster was developed in 2020 by F&L under the GIZ's Green Innovation Centre (GIC) Programme within the framework of the German BMBWF's 'One World No Hunger' programme. The translation of this poster was funded by PELUM Zambia and the Knowledge Hub for Organic Agriculture in Southern Africa (KOSA) as part of the global project Knowledge Centre for Organic Agriculture in Africa (KCOA), implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH in partnership with in-country organisations on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ). To access the poster's copyright policy, see the QR code.



HOW TO MANAGE WEEDS ORGANICALLY

This poster illustrates practices that help to manage weeds without synthetic chemicals.

Country: Zambia

KHSA partner: PELUM Zambia

Target group: Farmer trainers, training organisations, small-scale farmers

Download this resource in [Bemba](#), [Tonga](#) or [Nyanja](#).



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Scan to discover more!



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SECTION 5: SUSTAINABLE LIVESTOCK PRODUCTION

IN THIS SECTION

- Organic livestock production principles
- Organic livestock series and factsheets
- Case studies: Regenerative livestock production in Namibia
- Holistic animal husbandry
- Organic livestock video series

Livestock are vital to food security, livelihoods and soil health across African farming systems, with the continent home to 85% of the world's livestock keepers. However, industrial livestock production is a major driver of greenhouse gas emissions, water pollution and land degradation. As demand for animal products rises, adopting regenerative, organic livestock practices is essential for safeguarding human and ecological health. This section shares resources and case studies highlighting the benefits of sustainable livestock systems.

ORGANIC LIVESTOCK PRODUCTION PRINCIPLES



This manual focuses on the production of beef cattle, sheep and goats. The principles are the same for dairy cattle, poultry and other livestock – some details however are unique to the individual type of animal under consideration.

The reader must note that these discussions are generic in nature, based on the NOA's Organic Standard version 1.1, dated 29 June 2010.

The reader must always refer to the specific standards against which they seek certification or are certified, as requirements do differ and standards are reviewed and updated.

Of particular significance in this regard are the Regulations of the United States' National Organic Programme and the Canada Organic Regime. The differences are significant and, in some instances, make them stricter than the EU Regulations and IFOAM standards.

7.1. The first principles of organic livestock production

To gain an idea of the first principles of organic livestock production, the prospect organic livestock producer needs to look at the definitions of organic agriculture in different Regulations and Standards:

- IFOAM: 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".

"Organic livestock" husbandry is based on the harmonious relationship between

ORGANIC LIVESTOCK PRODUCTION PRINCIPLES (CHP 7)

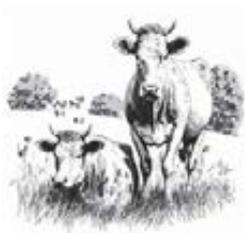
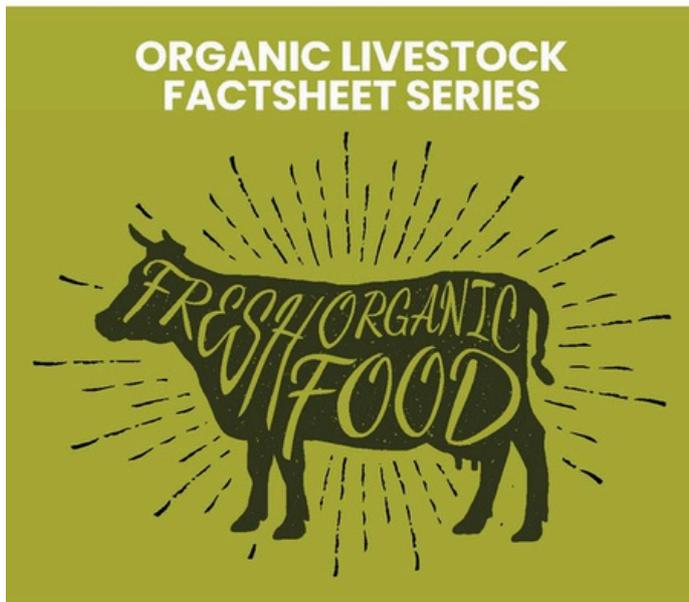
Chapter 7 of the Namibian Organic Association's Organic Production Manual provides guidance to the principles of organic livestock production, specifically focusing on beef cattle, sheep and goats. Key principles outlined include holistic farm management, biodiversity enhancement, nutrient cycling promotion, ecological balance, and prioritising the health of soil, plants, animals and humans.

Country: Namibia

KHSA partner: Namibian Organic Association

Target group: Commercial and small-scale livestock producers

Download in [English](#).



The Booklet Series on Organic Livestock

The booklet series consists of six factsheets, each focusing on a different aspect of organic livestock production in Namibia. Each factsheet goes into detail on its specific topic: 1. Organic Livestock Production, 2. Benefits of Organic (Grass-Fed) Livestock, 3. Organic Slaughter and Processing, 4. Market Opportunities for Organic Meat, 5. Alternative Feed & Supplements for Organic Livestock and 6. Organic Crop Production for Animal Feed.

Country: Namibia
KHSA partner: Namibian Organic Association
Target group: Farmer trainers, training organisations, small-scale farmers



ORGANIC LIVESTOCK SERIES AND FACTSHEETS

The booklet consists of six factsheets, each focusing on a different aspect of organic livestock production in Namibia. Each factsheet goes into detail on its specific topic: 1. Organic Livestock Production, 2. Benefits of Organic (Grass-Fed) Livestock, 3. Organic Slaughter and Processing, 4. Market Opportunities for Organic Meat, 5. Alternative Feed & Supplements for Organic Livestock and 6. Organic Crop Production for Animal Feed.

Country: Namibia

KHSA partner: Namibian Organic Association

Target group: Farmer trainers, training organisations, small-scale farmers

Download in [English](#). It can also be downloaded as individual factsheets: [Organic Livestock Production](#), [Benefits of Organic \(Grass-Fed\) Livestock](#), [Organic Slaughter and Processing](#), [Market Opportunities for Organic Meat](#), [Alternative Feed & Supplements for Organic Livestock](#) and [Organic Crop Production for Animal Feed](#).

These individual factsheets are also available in Afrikaans: [Organiese vleisproduksie in Namibië](#); [Voordele van organiese veldafgeronde vee](#); [Organiese slag en verwerking](#); [Markgeleenthede vir organiese beesvleis](#); [Alternatiewe voer en aanvullings vir organiese vee en Organiese gewasproduksie vir veevoer](#).



CASE STUDIES: REGENERATIVE LIVESTOCK PRODUCTION IN NAMIBIA



CASE STUDIES: REGENERATIVE LIVESTOCK PRODUCTION IN NAMIBIA

The three case studies profiled in this publication are drawn from the National Agricultural Union's publication *Regenerating Namibian Livestock Farmers*, which serves to support the government's Regenerative Livestock Production Strategy (2019). These case studies provide concrete examples of how Namibian farmers are putting organic principles into practice. All three farms use regenerative grazing practices, one of them is certified organic.

Country: Namibia

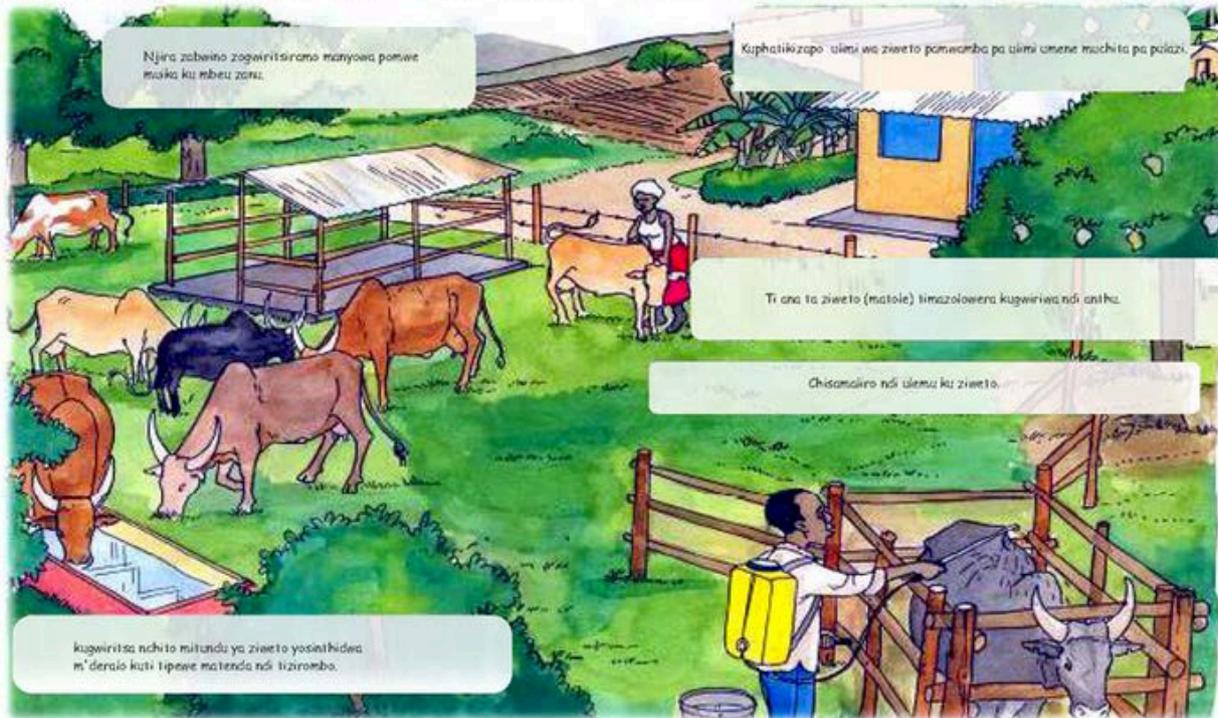
KHSA partner: Namibian Organic Association

Target group: Commercial and small-scale livestock producers

Download in [English](#).

The three fuller case studies ([Krumhuk](#), [Tsuwandes](#), [Dabis](#)) can be downloaded separately in English.

NJIRA ZABWINO ZA KASAMALIDWE KA ZIWETO MOPANDA KUGWIRITSA NCHITO MANKHWALA



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HOLISTIC ANIMAL HUSBANDRY

The poster illustrates good animal husbandry practices.

Country: Zambia

KHSA partner: PELUM Zambia

Target group: Farmer trainers, training organisations, small-scale farmers

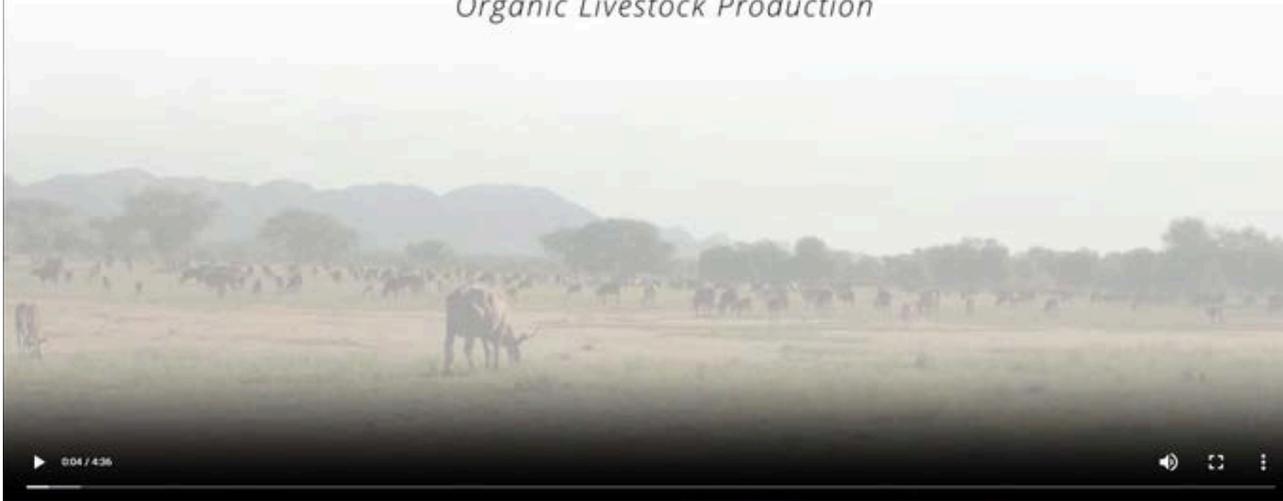
Download this resource in [Nyanja](#), [Bemba](#) and [Tonga](#).

Namibian
Organic
Association



INTRODUCTION TO ORGANIC AGRICULTURE

Organic Livestock Production



ORGANIC LIVESTOCK VIDEO SERIES

This series of 7 videos highlight the different aspects of organic livestock management from the principles of production to animal welfare, working with adapted breeds, sustainable grazing approaches, feeding organic livestock and the health benefits of organic meat consumption and organic livestock markets.

Country: Namibia

KHSA partner: Namibian Organic Association

Target group: Commercial and small-scale livestock producers, policymakers, consumers

Watch the videos on [Organic livestock management](#), [Animal welfare](#), [Working with adapted breeds](#), [Sustainable grazing approaches](#), [Feeding organic livestock](#), [Health benefits of organic consumption](#) and [Organic livestock markets](#) in English.



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SECTION 6: WATER CONSERVATION

IN THIS SECTION

- Factsheet: Organic agriculture and water
- Soil and water conservation techniques (video podcast)
- Drought tolerant crops and crop varieties (video podcast)
- Waterwise tips for farmers
- Contour practices for soil and water conservation
- Water harvesting in pits and trenches poster series

According to the World Health Organization, water scarcity affects 1 in 3 people in Africa. Climate change-induced impacts such as shifting rainfall patterns and more frequent and intense droughts will exacerbate already challenging circumstances for the continent's farmers. A 2022 study found that only 13 of 54 African countries had a modest level of water security. The implications for farmers are dire, as most smallholder farmers practice rainfed agriculture. The following resources provide some practical guidance to farmers in how to do this.

FACTSHEET: ORGANIC AGRICULTURE AND WATER



Water: an essential element of agricultural production

Water is an essential building block of ecological and socioeconomic resilience of food systems. Conventional agriculture is a significant and often wasteful user of groundwater, and the chemicals used contaminate ground and surface water bodies. Organic farming systems, in contrast, work to build soil organic matter, which provides several benefits regarding water.

Organic agriculture and sustainable water management

Organic agricultural principles and practices focus on managing water resources responsibly and sustainably. Organic farming systems apply those principles in multiple ways:

- **Improving soil health:** The focus is on building soil's organic matter, making them more fertile and able to retain more water for a longer period. Soils with high levels of organic matter are more resilient to erosion and the resultant loss of topsoil, and to nutrient leaching. They have less need for external inputs and enhanced microbial biodiversity.
- **Using crop cover and rotations:** Planting cover crops, rotating crops and using green manure or mulch enhances the biomass and diversity of soil organisms, which helps to stabilise soil nitrogen. Cover crops increase water capture, reducing water consumption.
- **Enhancing agrobiodiversity:** Maintaining or even enhancing agrobiodiversity on farms helps to improve soil quality and facilitate the capture and cycling of nutrients. It also provides the soil cover needed to improve water infiltration and lower nutrient runoff.
- **Using organic fertilizers and biocontrol agents:** The focus is on using organic manure and applying cultural and biological pest management techniques that have no negative impact on water bodies. Techniques include using pest-resistant crop varieties, understanding pest dynamics and enhancing natural enemies. If chemical pesticides are necessary, only biologically derived substances registered for organic farming are used.
- **Integrated water management:** This approach aims to conserve and recycle nutrients within the farming system, thereby making the most use of the water available and capturing and redirecting it where possible into the fields.



The Knowledge Hub for Organic Agriculture and Agroecology in Southern Africa (KHS A) is part of the Knowledge Centre for Organic Agriculture and Agroecology in Africa (KCOA), a collaborative country-led partnership funded by the German Federal Ministry of Economic Cooperation and Development (BMZ) and implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and non-governmental organisations across Africa. The KCOA aims to scale up adoption of organic farming practices through five knowledge hubs in Africa over a four-year period.

The South African-based Sustainability Institute supports project implementation in southern Africa. Activities are focused in Zambia, led by Participatory Ecological Land Use Management (PELUM) Zambia; in Namibia led by the Namibia Nature Foundation (NNF) in collaboration with the Namibian Organic Association (NOA); and in South Africa led by the South African Organic Sector Organisation (SAOSO). The project will extend to Malawi in 2021. The other hubs are implemented by GIZ in North, West and Eastern and Central Africa. For more information about KHS A, contact the Project Director Angela Coetzee on angela@sustainabilityinstitute.net.

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FACTSHEET: ORGANIC AGRICULTURE AND WATER

A one-page factsheet illustrating the water-saving benefits generated through organic and agroecological production practices.

Country: Regional
KHS A partner: Sustainability Institute
Target group: General use

Download in [English](#).



SOIL AND WATER CONSERVATION TECHNIQUES (VIDEO PODCAST)

This episode of the Mlimi wa Chilengedwe podcast highlights soil and water conservation for organic farmers in Malawi. It introduces techniques like swales (Kukumba Ngalande), mulching, cover cropping and terracing, all of which help prevent erosion, retain moisture and improve soil health.

Country: Malawi

KHSA partner: Soils, Food and Healthy Communities

Target group: Farmer trainers, training organisations, small-scale farmers

Watch podcast in [Tumbuka with English sub-titles](#)



DROUGHT TOLERANT CROPS & CROP VARIETIES (VIDEO PODCAST)

This Mlimi wa Chilengedwe podcast episode explores the value of drought-tolerant crops for organic farmers in Malawi. It highlights their benefits—reduced crop failure, better soil health and sustainable resource use—and offers guidance on choosing suitable crops based on local conditions. The episode also promotes conservation practices like mulching, cover cropping, water harvesting and integrated pest management to enhance success.

Country: Malawi

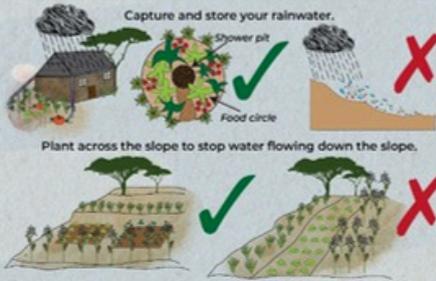
KHSA partner: Soils, Food and Healthy Communities

Target group: Farmer trainers, training organisations, small-scale farmers

Watch podcast in [Tumbuka with English sub-titles](#)

HOW TO SAVE WATER IN FARMING

CATCH YOUR WATER



USE YOUR WATER WISELY

Water when it is cooler – in the early morning or evening.



Use drip irrigation not overhead sprinklers.



PLANT WISELY

Choose crops that need less water and so are more drought resistant, e.g., "five years", okra, pigeon pea and sorghum/millet.



ENVIRONMENT

Match the size of your garden/field to the water available.



Do not waste space in your garden.



Add organic matter like compost or manure to the soil. This helps soil "hold" water.



Cover the soil. Use mulch and grow cover crops like pumpkins and cowpeas. This also stops the weeds.



Grow trees and shrubs for shade and a wind break.



Shade your seedling nursery to protect them from sun and wind.



Hello! My name is Marike.
Do you know any other
water-saving tricks?
Send them to
agric@nwf.org.na



WATERWISE TIPS FOR FARMERS

The poster gives practical advice and information on how to save water in farming.

Country: Namibia
KHSA partner: Namibian Organic Association and Namibia Nature Foundation

Target group: Trainers, small-scale farmers

Download this poster in English [here](#).



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Contour practices for soil & water conservation

English

What is soil and water conservation?

Soil and water conservation is the protecting and preserving of soil and water as key resources for sustainable agricultural production. Conservation practices help to stop erosion, ensure that soil stays healthy and fertile, and to keep as much water as possible in the soil. Healthy soil has a strong structure that prevents erosion but allows water to sink into the soil easily and quickly.

Why are soil and water important?

Soil, particularly topsoil, holds all the nutrients and water that plants need to grow. Plants need water to make their own food and to move the food to different parts of the plants - from the roots to the stems, leaves or fruits. Water also allows plants through their leaves (transpiration). This helps to keep plants cool in hot weather, stopping them from overheating and withering.

3 Principles of soil and water conservation

- Disturb the soil as little as possible to allow soil to keep its structure, provide a stable living space for micro-organisms and allow water to sink in.
- Cover the soil as much as possible to keep it cool, stop water loss and prevent erosion.
- Mix and rotate crops to keep soil healthy by preventing soil diseases. Different crops take different nutrients from the soil. Crop rotation helps the soil to regenerate and remain balanced.

The contour practices

When a field is on a slope or it is badly eroded, further action must be taken to conserve soil and water. One way to do this is digging trenches along the contour lines of the land. Contour lines are imaginary lines that link points of the same height above sea level. The trenches allow water to sink into the soil and any soil that is washed away down the slope will enter the trench. This stops the runoff and loss of fertile soil. There are three steps to the contour practice:

- ▶ Building an a-frame
- ▶ Determining the contour line
- ▶ Making the contour design.

What you need

- ▶ 2 x 2-metre long poles
- ▶ 1 x 1.5-metre pole
- ▶ Wire/rope/string
- ▶ 3 metres of string
- ▶ Wooden stakes or pegs (the number will depend on the size of land you are working with)
- ▶ Peg/marker (piece of charcoal/anything that can be used to draw/make a mark)
- ▶ An axe or jemmy
- ▶ A stone or heavy piece of wood
- ▶ Spade



MAKE AN A-FRAME

Take the two 2-metre poles and hold or tie them together. Then roll the 1.5-metre pole to the other two poles, approximately halfway down, making an 'A'. Tie the string around the stone and attach the other end of the string to the top of the 'A'.



CAUBRATE THE A-FRAME

Place the A-frame on the ground and hammer a peg/stone into the ground at the point where each of the A-frame poles meet the ground - this is to mark the spot where the legs meet the ground.

Look at where the rope (that has the rock tied to it) crosses the centre pole (the crossbar). Make a mark on top of the crossbar where the rope touches it. Turn the A-frame around and place the two poles/stone back next to the pegs in the ground. Look at where the string crosses the crossbar, when it settles, and make another mark.



Note mark the point between the two marks made on the cross bar. This is the centre mark and when the string hangs over this middle mark, it means that the legs are in ground that is the same level - the contour line.



FIND THE CONTOUR LINE

Place the A-frame on the ground and move it around slightly until the rope hangs over the centre mark on the cross bar. Then bang a stake or peg into the ground next to the front leg of the A-frame. This will be the start of the contour line.



MAP THE CONTOUR LINE

Leave front leg on ground, swing A-frame around so that the back leg comes in front. Move it till the string lines up with the middle mark on the crossbar. When it does, hammer a stick or peg into the ground next to the front leg. Slowly across the slope repeating this process. Do not lift the A-frame off the ground at any point. The pegs set out the contour line.



CHECK THE CONTOUR LINE

Keep marking the contour line to the end of the field. Look at the line of pegs. It should be relatively straight and not a zigzag pattern. If a peg is completely out of line, move it to make it straighter line. The size and steepness (slope) of the land will influence how many contour lines are required. The steeper the slope the more contour lines needed.

TYPES OF CONTOUR STRUCTURES



GRASS STRIP
Plant tuft-grasses like vetiver, napier and guinea grass in strips across the slope to help hold the soil and slow down water that is eroding down the slope. Use the grass as fodder.



CONTOUR DITCH & RIDGE
Dig ditches along the contour line (30 centimetres deep by 50 centimetres wide). Use soil from ditch to make a ridge on downhill-facing side of ditch. Place plants with strong root systems in this soil to hold it in place.



STONE LINE
Place stones along contour line, bigger stones on downhill side and smaller ones on uphill side. This will slow down water and let it sink into the soil. Grow crops between the stone lines.



CONTOUR PRACTICES FOR SOIL & WATER CONSERVATION

This poster outlines the principles of soil and water conservation and various contour practices.

Country: Zambia

KHSA partner: Kasisi Agricultural Training Centre

Target group: Farmer trainers, training organisations, small-scale farmers

Download poster in [English](#) or [Nyanja](#). Download accordion brochure in [English](#) or [Nyanja](#).

Store water and nutrients underground in organic matter



WATER HARVESTING
IN PITS AND TRENCHES

WATER HARVESTING
IN PITS AND TRENCHES

Store water and nutrients underground in organic matter



Additional information to share

Farmer can only believe into the ground and fill them with organic matter. Organic matter is anything that would be living and is more about soil biology. In a pit, it normally, insects, trees etc.

The organic matter holds water that flows into the hole.

Do not throw the organic matter breaks down and becomes carbon and the plants using. This is a soil-enriching method.

The compost is not intended to be removed from the pit but left there for the roots of neighbouring plants to filter the water and nutrients from the water and soil.

As the material in the pit decomposes, it will release water at the top.

KEY MESSAGES

- Instead of storing water in a container, farmers can store water in organic matter in the soil
- This water is protected from sun and wind and does not evaporate
- The plants fetch water and nutrients themselves with their roots and with the help of soil life
- Grey water with soap and "dirt" is cleaned by the micro-organisms that live in the organic matter
- No nappies, glass, plastic, sand or stones may be added to the pit or trenches



A project funded by the German Government
under the leadership of GIZ



Types of water pits



Water Harvesting in Pits and Trenches

Roof run-off trenches



Water Harvesting in Pits and Trenches

WATER HARVESTING IN PITS AND TRENCHES POSTER SERIES

This set of four posters each depicts a different method of harvesting water; the back side of each poster provides more detail and key messaging.

Country: Namibia

KHSA partner: Namibia Nature Foundation and Namibian Organic Association

Target group: Farmer trainers, training organisations, small-scale farmers

Download the poster series in [English](#).



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SECTION 7: CERTIFICATION SYSTEMS

IN THIS SECTION

- Organic frameworks and structures
- Organic certification systems
- South African organic certification landscape
- Organic certification Namibia (brochure)
- Organic certification Namibia (manual)
- Organic certification in Namibia: A Guide to NOA's Participatory Guarantee System
- PGS: How it works
- PGS: Key elements and features
- PGS farm visit guide
- PGS farm assessment templates

Certification systems verify how food is produced, with organic systems ensuring adherence to organic principles. In KHSA, partners focus on Participatory Guarantee Systems (PGS)—affordable, community-based assurance models involving farmers, consumers and other stakeholders. Popular across Africa, PGS offers a practical alternative to costly third-party certification. This section provides resources on setting up and running PGS, including guidance on farm assessment visits.



FACTSHEET: ORGANIC FRAMEWORKS AND STRUCTURES



Overview of frameworks

There is no single set of standards that is universally accepted by all countries for organic agricultural principles and their application through production, processing, labelling and marketing practices. There are international and regional frameworks that provide guidelines, but these are not prescriptive. Often countries do not legislate production methods and so certification is needed to verify production claims. Some countries and regions have set their own national organic standards, which are used by third-party certification agencies. International and regional standards play a critical role in ensuring the quality of organically produced goods, and enable entry into external markets. Demand for organic products is growing rapidly and Africa is well poised to take advantage of this market.

International guidelines and regional organic standards

There are several bodies that provide guidelines for organic production, processing, marketing and labelling. These guidelines are voluntary and include the United Nations Conference on Trade and Development–United Nations Environment Programme with its Best Practices for Organic Policy and Organic Equivalence Tools¹ and the Codex Alimentarius Commission, which sets food safety standards.² The International Federation of Organic Agricultural Movements (IFOAM) Organics International, with members in more than 100 countries, has influenced guidelines, codified standards and helped to enforce rules related to organic production. Its standard is the base for many national-level organic standards. Main regional standards are the European Union Organic Standards, the Pacific Organic Standards, the Asia Regional Organic Standards and the East African Organic Product Standards.

Some national standards with significant organic market share are the United States Department of Agriculture Organic Certification (NOP), Bio Suisse and the Japanese

MAJOR CERTIFICATION STANDARDS

Standards for organic certification are typically drawn from the following organisations:

- **IFOAM Standard:** IFOAM works in about 100 countries through more than 800 affiliate organisations. Its standards can be used for third-party certification, participatory guarantee systems and community supported agriculture. They consider the need for differentiated criteria in distinct locations.¹
- **Naturland:** Established in 1982, Naturland's comprehensive standards require a full farm conversion, include requirements on social responsibility and have stringent regulations for stocking density and treatment of animals.¹
- **Demeter Biodynamic® Farm Standard:** This beyond organic standards to emphasise that the farm must "meet its own needs from the living dynamic of the farm itself".¹

Agricultural Standard (IAS). Private certification agencies align their standards of certification for organic production to the national or regional standards applicable for domestic, import and export trade. Significant certification organisations are Demeter International, Kiwa BCS Öko-Garantie GmbH, Control Union and Ecocert. >>

ORGANIC FRAMEWORKS AND STRUCTURES

This two-page factsheet provides an overview of major organic certification systems.

Country: Regional
KHSA partner: Sustainability Institute

Target group: General use

Download in [English](#).

¹ Jung, O.J.L. 2018 African Organic Product Standards for the African Continent? Prospects and Limitations. [online] Available: <http://www.sidsfo.org.za/pdf/pdf/21n1733.pdf>.

² [ibid.](#)



ORGANIC CERTIFICATION SYSTEMS



Organic certification is a guarantee that food production was undertaken according to a set of organic standards. These can be national organic standards, which some countries have, or they can be organic standards adopted by certain economic regions. All standards align to the organic principles and practices set out by the International Federation of Organic Agricultural Movements (IFOAM)-Organics International. They differ sometimes in the level of strictness or volumes of paperwork required. The benefit of organic certification for producers is that they can enter a niche market – often international markets where demand for organics is high – and they can often receive a price premium. For consumers, organic certification provides the assurance that the food bought and consumed was produced according to organic standards, including not containing pesticides or other chemical residues.

1ST PARTY ASSURANCE	2ND PARTY ASSURANCE	3RD PARTY ASSURANCE
<p>When a farmer claims that s/he produced according to a set of organic standards. 1st party assurance works in community contexts where farmers and consumers know each other and trust the quality of production.</p>	<p>When other people in the community provide assurance that the farmers are producing to organic standards. 2nd party assurance works in local market settings where relationships can be traced. It provides a collective guarantee according to collectively agreed standards.</p>	<p>When an external auditor who works for an accreditation or certification body visits the farm to check that it meets the organic standards of a selected certifying body. 3rd party work in contexts where no relationship exists between producers, the market and consumers.</p>
BENEFITS OF THESE SYSTEMS		
<ul style="list-style-type: none"> It is free. There is no administrative burden of proof. It encourages short value chains. It encourages a strong relationship of trust between farmers and consumers. 	<ul style="list-style-type: none"> It is affordable. The group that sets itself up as an assurance body can set the costs for farm visits and assessments. It is inclusive, drawing often on groups of farmers plus consumers, retailers and others interested in the local food system. It builds stakeholder knowledge of local food systems. Uses a logo to indicate certification. 	<ul style="list-style-type: none"> It enables entry into formal retail chains and export markets. Provides external communication (logo) to unrelated parties that a set (usually publicly accepted) standard has been met.
DISADVANTAGES OF THESE SYSTEMS		
<ul style="list-style-type: none"> It is open to abuse and incidences of fraudulent claims of organic production are increasing in Southern Africa. It doesn't enable entry into organic niche markets or formal retail chains. 	<ul style="list-style-type: none"> It works well at the local level and national levels, but 2nd party assurance is not yet accepted for export purposes. Although there is a move in the West African region to accept 2nd party assurance for export purposes to other countries within the region. 	<ul style="list-style-type: none"> It is expensive as all the costs of the auditor need to be covered. There are not many certified auditors in Southern Africa and often the person has to be brought in from overseas. Comprehensive record keeping is required It is characterised by untraceable relationships.



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ORGANIC CERTIFICATION SYSTEMS

An overview of types of certification systems.

Country: Malawi

KHSA partner: Kusamala Institute of Agriculture and Ecology

Target group: Media, general public, farmers

Download this resource in [English](#).



SOUTH AFRICAN ORGANIC CERTIFICATION LANDSCAPE

The booklet provides an overview of the organic certification processes and labels in the South African context

Country: South Africa

KHSA partner: South African Organic Sector Organisation and PGS SA

Target group: Farmers, PGS groups

Download this resource in [English](#).

CONVERTING FROM CONVENTIONAL TO ORGANIC FARM MANAGEMENT

Compliant with the IFOAM Norms 2014
(updated June 2019)

Organic agriculture is based on 4 principles:
Health · Ecology · Fairness · Care

ORGANIC CERTIFICATION IN NAMIBIA
The Namibian Organic Association (NOA) assesses farms according to the principles of the Participatory Guarantee System (PGS). Namibian standards for certification are based on the Norms developed by the International Federation of Organic Agriculture Movements (IFOAM) - Organics International. PGS is a locally focussed quality assurance system that differs from third-party certification in that it relies on a transparent and equitable inspection where fellow farmers and parties inspect each other and are personally responsible for the outcome. This process relies on volunteers and practical involvement. IFOAM - Organics International addresses organic production worldwide.

CONVERTING TO ORGANIC PRODUCTION
Since most farming operations have been under conventional management systems with unrestricted use of chemicals often for several decades, farms undergo a conversion period during which the operation transitions to organic practices. During the conversion period, all requirements laid down in the relevant organic standards have to be followed, including regular inspections. From the second year of conversion onwards, products may be sold and labelled as "in-conversion to organic". Products may be sold as "organic" if harvested 36 months after the last use of prohibited inputs. The applicable conversion period is determined during the first audit of an operation.



CERTIFICATION OF ORGANIC PRODUCE FOR THE LOCAL MARKET

under the Namibian Organic Association's (NOA) Participatory Guarantee System (PGS)

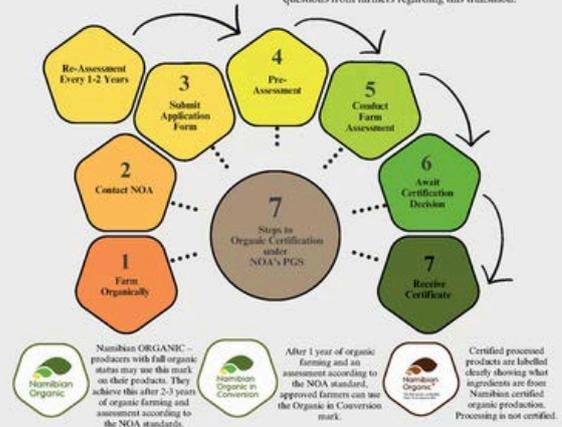
Organic agriculture is based on 4 principles:
Health · Ecology · Fairness · Care

The Namibian Organic Association (NOA) assesses farms according to organic standards based on the International Federation of Organic Agriculture Movements (IFOAM) - Organics International Norms for Participatory Guarantee Systems (PGS), developed in 2014 and updated in 2019.

As a locally focussed quality assurance system, PGS differs from third-party certification in that it relies on a transparent and equitable inspection where fellow farmers and parties inspect each other and are personally responsible for the outcome. This process relies on volunteers and practical involvement.

IFOAM - Organics International is an international movement that addresses organic production worldwide.

This document specifies the steps it takes to become a certified Namibian organic producer or farmer and aims to answer the most common questions from farmers regarding this transition.



ORGANIC CERTIFICATION BROCHURES

This series of brochures covers all aspects of organic certification, including for livestock.

Country: Namibia

KHSA partner: Namibian Organic Association

Target group: Farmers, PGS groups

Download [Converting to organic farm management](#), [Steps to organic certification](#), [Organic processing and labelling](#), [Organic livestock production](#) and [Organic crop production](#) in English.



CHAPTER 6

ORGANIC CERTIFICATION

6.1. ORGANIC CERTIFICATION	03
6.1.1. WHAT IS ORGANIC CERTIFICATION?	03
6.1.2. ORGANIC STANDARDS	04
6.1.3. WHAT CAN BE CERTIFIED?	04
6.1.4. WHAT IS THE PURPOSE OF CERTIFICATION?	05

ORGANIC CERTIFICATION MANUAL

Chapter 6 explains Namibian organic standards and how to use them.

Country: Namibia

KHSA partner: Namibian Organic Association

Target group: Farmers, PGS groups

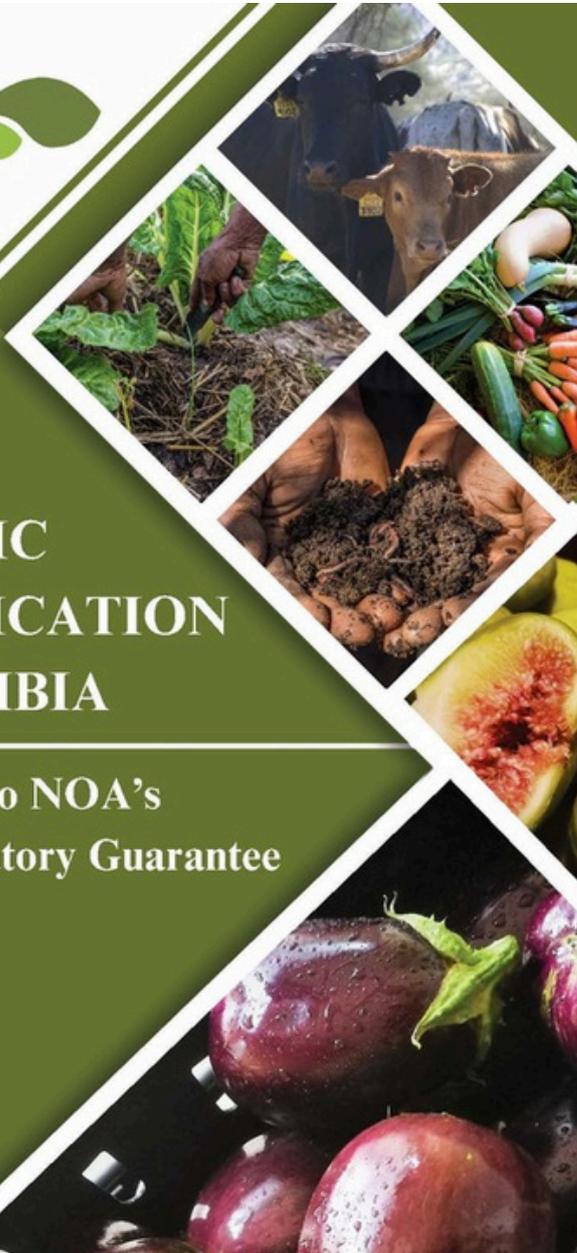
Download in [English](#).

Namibian
Organic
Association



ORGANIC CERTIFICATION IN NAMIBIA

A guide to NOA's
Participatory Guarantee
System



ORGANIC CERTIFICATION IN NAMIBIA: A GUIDE TO NOA'S PARTICIPATORY GUARANTEE SYSTEM

This booklet introduces the Namibian Organic Association's Participatory Guarantee System (PGS) for local organic certification. It outlines the principles of organic agriculture, key steps for farmers converting to organic production and the certification process, with guidelines for crops, livestock, processing and labelling,

Country: Namibia

KHSA partner: Namibian Organic Association

Target group: Farmers, PGS groups

Download in [English](#).



PGS | SOUTH AFRICA
Local organic certification for farmers and consumers



Participatory Guarantee Systems (PGS) ensure the organic certification of our food through the participation of farmers and consumers.

How it works



PGS: HOW IT WORKS

An infographic poster that explains the key elements of how a PGS works.

Country: South Africa

KHSA partner: South African Organic Sector Organisation and PGS SA

Target group: PGS groups, general public

Download this resource in [English](#).

Participatory Guarantee Systems

Local organic certification for farmers and consumers



PGS | SOUTH AFRICA

6 ELEMENTS — 10 FEATURES



Learn more at www.pgssa.org.za



PGS: KEY ELEMENTS AND FEATURES

An infographic poster that explains the key elements and features of PGS systems.

Country: South Africa

KHSA partner: South African Organic Sector Organisation and PGS SA

Target group: PGS groups, general public

Download this resource in [English](#).



The Principle
Of Health.

The Principle
Of Ecology.

The Principle
Of Fairness.

The Principle
Of Care.

PGS FARM VISIT GUIDE

A book detailing how to undertake farm assessments related to organic production in the PGS system.

Country: South Africa

KHSA partner: South African Organic Sector Organisation and PGS SA

Target group: PGS groups
Download this resource in [English](#).

PGS FARM VISIT GUIDE (VIDEO SERIES)

A series of videos of farm assessment visits related to animal husbandry and cooperative development.

Country: South Africa

KHSA partner: South African Organic Sector Organisation and PGS SA

Target group: PGS groups

Watch videos [one](#), [two](#), [three](#) and [four](#) on PGS crop assessment and videos [one](#), [two](#) and [three](#) on PGS assessment of animal husbandry in English.



PGS | SOUTH AFRICA

2023

SIMPLIFIED FARM ASSESSMENT TEMPLATE

ENGLISH



PGS | SOUTH AFRICA

2023

FARM ASSESSMENT TEMPLATE

XITSONGA



PGS FARM ASSESSMENT TEMPLATES

This series comprises PGS farm assessment templates.

Country: South Africa

KHSA partner: South African Organic Sector Organisation and PGS SA

Target group: PGS groups

Download the assessment form for crops in [Afrikaans](#), [isiXhosa](#), [isiZulu](#), [Sepedi](#), [South Sotho](#) and [Xitsonga](#), for seed production in [Afrikaans](#), [isiXhosa](#), [South Sotho](#) and [Xitsonga](#) and for animal husbandry in [Afrikaans](#), [isiXhosa](#), [isiZulu](#), [Sepedi](#), [South Sotho](#) and [Xitsonga](#), and for agro-processing in [English](#).

Simplified PGS farm assessment forms are available in [English](#), [Afrikaans](#), [isiXhosa](#), [Sepedi](#), [Sesotho](#), [Xitsonga](#) and [isiZulu](#).



KCOA

Knowledge Centre for
Organic Agriculture and
Agroecology in Africa

KCOA is a collaborative country-led partnership that aims to scale up the adoption of organic and agroecological farming practices through a network of five Knowledge Hubs in Africa. KCOA partners are based in 18 countries and with the involvement of over 30 civil-society organisations.

Scan to discover more!



ENGLISH



FRANÇAIS



Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

In cooperation with



KCOA-AFRICA.ORG



SECTION 9: ADVOCACY

IN THIS SECTION

- Agroecological Multi-ministerial Policy Briefing Pack
- ISAN Magazine
- Support organic poster series
- Why eat organics poster
- Think before you eat brochure
- Benefits of organic farming brochure
- Indigenous recipe book
- Status quo of Malawi's food and farming system
- Food and farming systems: Jargon Dictionary
- Zambia policy brief: Sustaining our food system with organic farming
- Malawi's Permaculture Hotspots map

There is a need to undertake advocacy at different levels to support the transition to sustainable food systems. This includes working with and generating relevant materials to influence policymakers, funders, communities, local government structures and others. KHSA partners have worked with policymakers, media, community structures and other multipliers able to influence key stakeholders through their networks. The resources documented on the following pages are a result of needs assessments conducted with their selected stakeholder groups, and serve to fill stated knowledge gaps.



AGROECOLOGICAL MULTI-MINISTERIAL POLICY 2024 BRIEFING PACK



AGROECOLOGICAL MULTI-MINISTERIAL POLICY BRIEFING PACK

A booklet developed to show the interlinked nature of policymaking related to food systems, with an emphasis on gender considerations.

Country: Zambia
KHSA partner: PELUM
Zambia
Target group:
Policymakers

Download this resource
in [English](#).



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In cooperation with



ISAN MAGAZINE

FOR SUSTAINABLE FOOD SYSTEMS

April-June 2025

ISSUE
13



ISAN MAGAZINE

FOR SUSTAINABLE FOOD SYSTEMS

November 2024

Food & Seed
Festival Edition



ISAN MAGAZINE

FOR SUSTAINABLE FOOD SYSTEMS

February 2025

Media perspectives
on climate change
in southern Africa

This edition is
proudly
sponsored by:



ISAN MAGAZINE

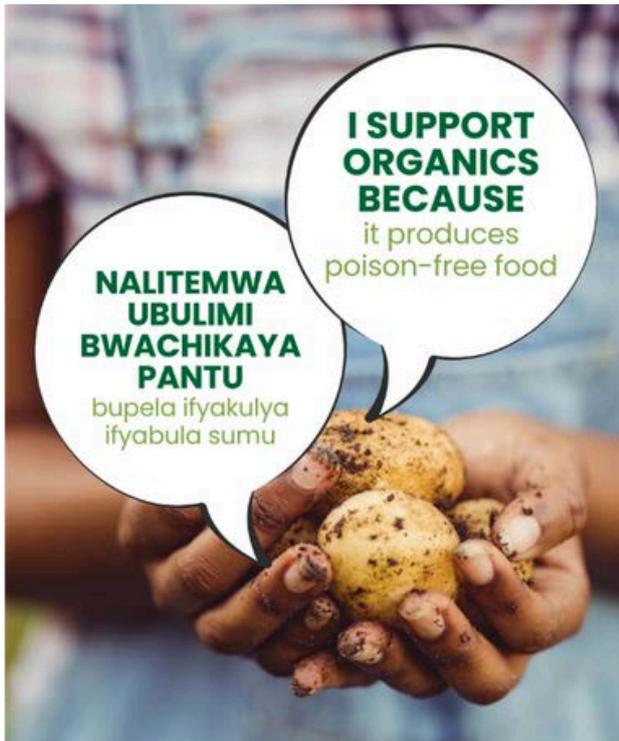
KHSA founded the quarterly ISAN magazine, which is shared with about 16 000 people and loaded to the United Nations Food and Agriculture Family Farming database.

Country: Regional

KHSA partner: Sustainability Institute

Target group: Farmers, farmer organisations, civil society organisations, consumers

Subscribe to receive the free magazine quarterly by email.



#organicsouthernafrica
#KHSA



#organicsouthernafrica
#KHSA

SUPPORT ORGANIC POSTER SERIES

Created for use at events, workshops and fairs.

Country: South Africa and Malawi

KHSA partner: Sustainability Institute

Target group: General public, farming organisations

Download these resources in [English/Chichewe](#).

Why eat organic?



1 Higher nutritional content

Research¹ shows that organic food may contain significantly more minerals and vitamins than food that is conventionally farmed.



6 Create a demand for certified organic food

When we purchase organic food, we create a demand which the organic farmer will fill, leading to a more readily available, larger supply of healthy food. Asking for certified organic food is also important to push farmers to certify and protect organic production from false claims.

2 Reduce pesticide residue in your food

Studies² have shown that eating organic, even after just a short period, may radically reduce the pesticide load in your body. Conventionally farmed crops are sprayed with various insecticides, fungicides, weedkillers and chemical fertilisers.



7 Avoid eating irradiated food

The process of food irradiation is not a natural one and thus cannot be considered an organic practice.

3 Protect our water

Organic farmers use natural fertilisers and pest control methods, as well as composting and buffer zones, to recycle nutrients and protect surrounding water bodies.³



8 Avoid GMOs in your food

Studies have raised questions over the health⁴, environmental⁵, social and economic⁶ implications of genetically modified (GM) crops and farmers planting GM crops often use more harmful chemicals in an attempt to combat weed resistance⁷.



4 Support healthy farmers and farmworkers

Organic farming does not expose farmers, farmworkers or neighbouring communities to dangerous pesticides that negatively impact their health.



9 Preserve biodiversity and our pollinators

Studies⁸ have raised questions over the health⁹, environmental, social and economic implications of GM crops and farmers planting GM crops often use more harmful chemicals in an attempt to combat weed resistance.



5 Assist in building health soils

Healthy soil is the foundation of any organic farm. Sound organic practices build the soil by making compost and adding it to the soil, using green and animal manures, and other organic farming methods.¹⁰

10 Support your local organic farmers

Organic farming is regenerative and sustainable with a wide range of benefits for our food, environment and communities. Smallholder farmers such as Participatory Guarantee Systems or PGS contribute to food security in the country.¹¹



For the references used in this document, use the QR code.



© PGS South Africa, 2023. To access and understand the document's copyright, use this QR code.



Learn more at www.pgssa.org.za and www.SAOSO.org

WHY EAT ORGANICS POSTER

Poster created for use at events, workshops, fairs, websites and for emailing.

Country: South Africa

KHSA partner: South African Organic Sector Organisation

Target group: General public, farming organisations

Download this resource in English [here](#), as well as in [isiXhosa](#), [isiZulu](#), [Afrikaans](#), [Sepedi](#), [Sotho](#) and [Xitsonga](#).

Organic is GMO-free

Organic food is produced without the use of genetically modified organisms (GMOs) and harmful synthetic chemicals. In fact, organic food production places a total ban on the use of GMOs.

Why?

With organic agriculture's principles of Health, Ecology, Fairness and Care in mind, the technology and the system within which genetic engineering is implemented across the world do not align with the principles of organic farming and food production.



Genetic engineering is a particular kind of seed breeding that takes place in laboratories and involves the altering of the DNA of the seed. It is an expensive process and so the seeds are protected by intellectual property rights. This makes them expensive for farmers to buy, and they are forbidden by law to save them for replanting the following year. This disrupts local farming systems that are dependent on a model of saving, sharing, gifting and exchanging seed and it creates a well-documented reliance on large agrochemical companies to supply seed year after year.

In Namibia, GMO food is labelled as such. Check the label before you buy.

Food, grown from GM seed, that can end up on your plate, includes:

- Maize (most maize imported from South Africa is grown from GM seed) and maize products, including thickeners, binders, emulsifiers and texture enhancers.
- Soybean, which is also found in many products, including bread.
- Cotton, including cotton seed oil in vegetable cooking oil and margarine animal feed.
- Dairy, as most imported dairy products are derived from the milk of cows that have been treated with the genetically engineered rBST hormone.

The cultivation and import of GM crops are regulated in Namibia through the Biosafety Act of 2006. The cultivation of GM crops is currently not permitted in Namibia unless there has been a rigorous application process with environmental and social impact assessments conducted with public participation.

Visit our website to read more about the risks of GMOs.

Frequently asked questions

Why is organic food more expensive?

Organic agriculture does not necessarily cost more to produce than conventional agriculture. The higher cost of organic produce is often due to the fact that conventional agriculture sells food for less than the true cost of production, due to externalization of costs and subsidies. This means that the true cost of production, including the costs of pesticide-related health issues and biodiversity loss, is not accurately reflected in the price.

What is the difference between 'bio' and 'organic'?

In the European Union, 'bio' refers to 'biologisch', which means organic. In southern Africa, it refers to 'biological', which implies a sustainable method of agriculture by including more biological approaches, but still uses chemicals in the production and does not follow the systemic organic approach.

How do I support the work of NOA?

Farm organically, become a member, support us with a donation, buy organic produce and create awareness on organic agriculture within your networks.

Connect with us and our community via the following channels:

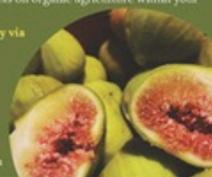
- www.noa.org.na
- [Info@noa.org.na](mailto:info@noa.org.na)
- Namibian Organic Association
- [namibian_organic_association](https://www.facebook.com/namibian_organic_association)

Is 'natural' the same as 'organic'?

No. Organic agriculture is based upon a systems approach and is aligned with standards that can be verified and are recognized internationally. Natural foods have no legal definition or recognition, and so since there are no requirements to provide proof, there is the possibility for fraud and misuse of the term.

How do I know it is organic?

To ensure organic produce is genuine, look for trustworthy marks such as the Namibian Organic Mark or other international organic certification marks. These marks certify the produce according to organic standards. In case of doubt, contact the Namibian Organic Association (NOA) to avoid false claims.



Think Before You Eat! Think Namibian Organic!



Reasons to eat Namibian organic food

- ✓ Great tasting, healthy and nutritious
- ✓ Pesticide-free and not genetically modified
- ✓ Good for soils, plants and biodiversity
- ✓ Produced locally, with a reduced carbon footprint
- ✓ High animal welfare: Animals roam freely and are fed organic feed free of GMOs, growth hormones, or routine antibiotics



THINK BEFORE YOU EAT BROCHURE

Brochure detailing the benefits of eating organically and what to look out for.

Country: South Africa

KHSA partner: Namibian Organic Association

Target group: General public, farming organisations

Download this resource in [English](#).

SOME BENEFITS OF ORGANIC AGRICULTURE



Builds soil health
It focuses on building soil health by growing the organic matter of the soil, boosting its ability to retain water and supporting effective nutrient cycling. This plays a significant role in producing plants rich in nutrients that are more resistant to drought, pests and diseases.



Uses water sustainably
Organically managed soils retain more water and for longer periods. There are no synthetic chemicals used and so no damaging impact on water bodies. This approach aims to make the most and best use of the water available.



Builds resilience to climate change
Studies show that organic practices can sequester more carbon than conventional approaches. Organic agriculture also helps build resilience through more consistent yields in the face of a changing climate, increased availability and quality of water, and production of a diversity of nutritious foods.



Provides cost benefits to farmers
The benefits to farmers include lower costs of production over the long-term because there is no need to purchase external inputs, more consistent yields, a premium market price, and the creation of a resilient farming system.

ORGANIC AGRICULTURE IN ZAMBIA

- **Land under cultivation**
Only 5 479 hectares under certified production with uncertified production taking place on about 5.9 million hectares. Many farmers may be practising organic agriculture already by default.
- **Organic products produced in Zambia**
Organic products in Zambia include grains, vegetables, soybean, honey, essential oils, baobab powder, moringa, groundnuts, sunflower, mushrooms, fruits and peanut butter. PGS-certified products include soybeans, groundnuts, sunflower and vegetables.
- **Governance of the sector**
There is no functional certification body and PGS groups are operating without a supportive national framework. The sector has not grown significantly in the past 10 years, but market demand for organic product appears to be growing.



THE BENEFITS OF ORGANIC FARMING



BENEFITS OF ORGANIC FARMING BROCHURE

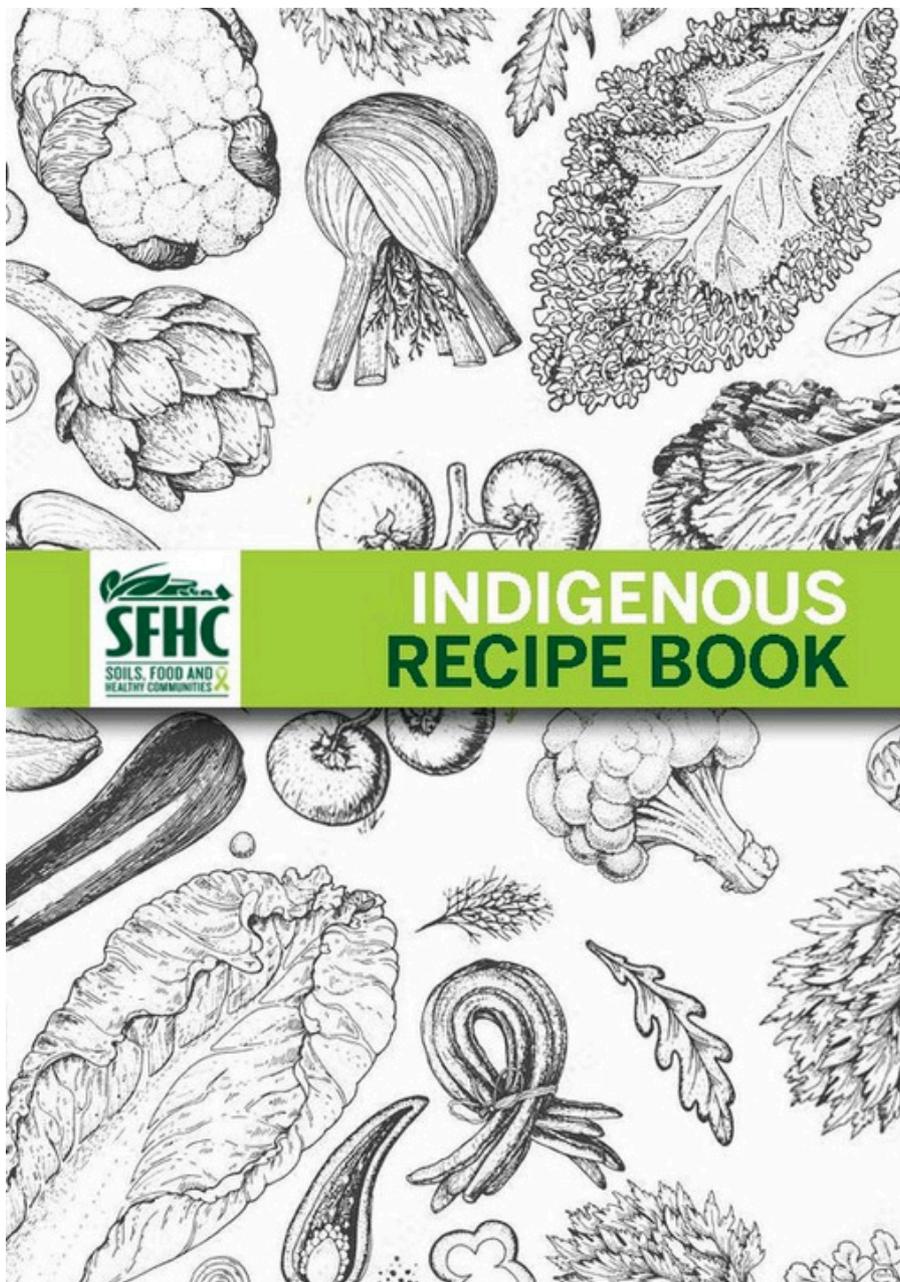
Created for use at events, workshops and fairs.

Country: Zambia

KHSA partner: PELUM Zambia

Target group: General public

Download this resource in [English](#).



INDIGENOUS RECIPE BOOK

Created for use by farmer trainers, farmer organisations and farmers

Country: Malawi

KHSA partner: Soils, Food and Healthy Communities

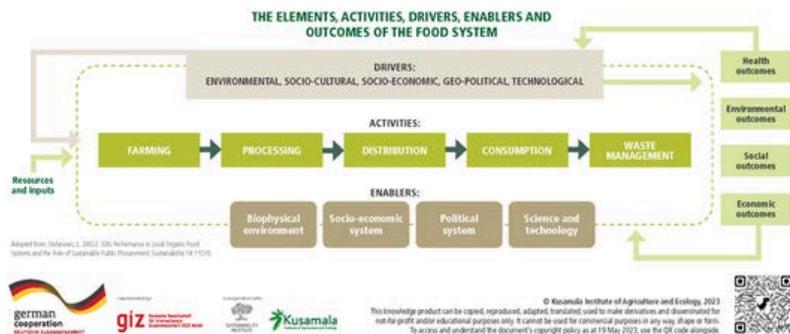
Target group: Farmer Research Team, agricultural trainers and farmers

Download this resource in [English](#) and in [Tumbuka](#).

STATUS QUO OF MALAWI'S FOOD AND FARMING SYSTEM



Food sits at the heart of our everyday lives. It is part of our history, our culture, our knowledge base about the natural world. Its production, processing and consumption cannot be separated from our social and economic systems. In the industrial farming system, food is viewed as a commodity – as a product to sell onto external markets to generate revenue to pay for services and goods. This has led to food and food production becoming separated from the idea of care of the environment, of food as nutrition and medicine, of food as part of our cultural identity. Governments often focus just on the production of food and they ignore the rest of the complex food system. This results in challenges in the farming and food system being treated separately, instead of looking at the system as a whole. Some of these challenges are hunger and malnutrition, economic exclusion from markets, food loss and waste, long carbon-emitting transport chains and significant volumes of packaging waste, as examples. The diagram below shows the complexity of the farming and food system.



STATUS QUO OF MALAWI'S FOOD AND FARMING SYSTEM

A multi-page brochure developed to show how policies influence food systems and how conventional food systems limit the ability to attain the Sustainable Development Goals, in contrast to agroecological methods.

Country: Malawi
KHSA partner: Kusamala Institute of Agriculture and Ecology
Target group: Media, advocacy organisations, policymakers, general public.

Download this resource in [English](#).

NATIONAL POLICIES THAT SUPPORT A NEGATIVE TRAJECTORY

These policies, among others, guide regulatory agencies, government departments and other state organs as regards planning, budgeting and implementation in the agricultural sector. They serve to entrench the conventional model, despite the known negative human and ecological health consequences. They do not have sight of organic or agroecological farming, thereby marginalising this as a sustainable approach to ending hunger and poverty and ensuring environmental sustainability.

- Pesticides Act (2002):** The Pesticide Control Board has a mandate to "monitor and control the import, export, manufacture, distribution, sale, storage, use and disposal of pesticides in Malawi." There is possibly a lack of capacity – financial and human – to ensure that pesticides are properly regulated, used and disposed. Pesticide use is growing rapidly in Malawi – about 2 000 tons more are being used each year. There are challenges around the illegal importation and trade of pesticides, many of which are banned in Malawi and elsewhere in the world.¹ Malawi condones the use of high-risk pesticides with a population that has limited understanding of the human and ecological risks related to improper or unsafe use, storage and disposal of them.² There is limited uptake of integrated pest management in the country, and no mention in the Pesticides Act of biopesticides.
- National Agricultural Policy (2018-2030):** The policy remains focused on commercial agriculture and does not give consideration to sustainable agricultural production approaches such as organics, agroecology and permaculture. The exclusion of these from such a significant government policy means that they are marginalised in terms of support (budgetary and extension).
- Draft Crops Bill (2021-2022):** This bill aims to regulate the production, sale and marketing of selected key crops, including staple crops such as maize and wheat, but also common small-scale farmer crops such as ground nuts and pigeon peas. It would effectively set market prices and require the registration of small-scale growers at institutions to which they would sell their crops. This is an important bill, but it makes no mention of sustainable practices to support production.
- Seed Bill (2022):** The Seed Bill further entrenches the interests of commercial seed breeders and agrochemical companies over those of small-holder farmers whose rights to freely save, share, exchange and use seed (known as Farmers' Rights) are curtailed. An equitable and sustainable seed system should act to ensure Farmers' Rights and protect in-situ seed saving and use as a climate change adaptation strategy.
- National Agriculture Extension and Advisory Services Strategy (2020-2025):** This strategy does extend beyond a conventional approach to agricultural extension and advisory services to take a broader view of how extension can support climate change adaptation, enhanced nutrition outcomes and ecosystem regeneration. There is, however, no mention of organic agriculture in the strategy, which encompasses these outcomes and more, in its principles and production practices.
- Agricultural Input Programme (Previously the Farm Input Subsidy Programme):** In this programme, government provides a significant subsidy on fertiliser to selected and registered small-scale farmers. As with these programmes elsewhere in Africa, there is much debate about their effectiveness in alleviating food insecurity and poverty. The subsidies tend to go to better-off farmers,³ farmers come to



¹ Iqbal, J. (2018). Agricultural pesticide use in Malawi. *Journal of Health Politics, Policy and Law* 43(10): 1820-1832. <https://doi.org/10.1215/03616878-15308717>

² Iqbal, J. (2018). Agricultural pesticide use in Malawi. *Journal of Health Politics, Policy and Law* 43(10): 1820-1832. <https://doi.org/10.1215/03616878-15308717>

³ Louisa, J., Aron-Daniel, J. & Fofana, M. (2013). *What are the benefits of organic? Malawi's farm input subsidy program? A critical review*. *International Institute for Environment and Development* 10: 11-19. <https://www.iied.org/>



FOOD AND FARMING SYSTEMS: JARGON DICTIONARY

A dictionary developed to support journalists in demystifying complex terminology in their stories, with a user-friendly English and Chichewa version.

Country: Malawi

KHSA partner: Kusamala Institute of Agriculture and Ecology

Target group: Media, civil society organisations, farmer training organisations

Download this resource in [English/Chichewa](#) or in [English](#).



Policy Brief

Volume 1 | Issue 1
November 2021



SUSTAINING OUR FOOD SYSTEM WITH ORGANIC FARMING

Agriculture is at the center of international policy debate on food system transformation. Agriculture is not just about food, fibre and feed production and livelihoods, but also about environmental sustainability, health, and human and ecological rights. It is time, especially with the occurrence of climate change and now COVID-19, that we relook at our agriculture system and promote agricultural practices that increase production and productivity, build ecosystem health, and boost food and nutrition security.

About this policy brief

This policy brief summarises the challenges around agriculture in Zambia and presents the benefits of adopting an organic system, with reference to the African Union's goal related to organic agriculture. It concludes with recommendations on the adoption of organic agriculture to improve production and productivity in agriculture and ensure environmental sustainability.

What is organic agriculture?

The International Federation of Organic Agricultural Movements (IFOAM) Organics International defines organic agriculture as "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 good quality of life for all involved."

Benefits of organic agriculture

Organic agriculture provides multiple social, economic and ecological benefits. It is a key tool to build resilience to climate change.

Organic agriculture:

- Maintains and improves soil fertility and structure, which supports food production, sequesters carbon in soil, and reduces erosion.
- Conserves and enhances farmed and wild biodiversity.
- Reduces the risk of human, animal and environmental exposure to toxic chemicals.
- Promotes sustainable agricultural practices that meet local conditions and satisfy markets.

ZAMBIA POLICY BRIEF

This 2021 policy brief was developed to inform the inclusion of organic agriculture in Zambia's agricultural policy.

Country: Zambia

KHSA partner: PELUM Zambia

Target group: Policymakers

Download this resource in [English](#).

MALAWI'S PERMACULTURE HOTSPOTS

1. Baylor Children's Hospital, Lilongwe District

Improving lives of mothers and children with a permaculture garden at the health facility that provides an opportunity to teach patients about healthy crop cultivation. Tel: +26 (0)5993437625

2. Kusamala Institute of Agriculture and Ecology, Lilongwe District

Demonstrates the utilisation of local solutions to help in addressing permanent challenges through permaculture through trainings, outreach, advocacy and consultancies. Tel: +26 (0)588897676

3. SCOPE Malawi, Lilongwe District

An organisation that uses permaculture as a tool to assist schools to redesign their grounds in an ecologically sound manner with impressive results. Tel: +26 (0)5881028082

4. Moyo Farm, Lilongwe District

An organically certified farm with a diverse food forest. It demonstrates permaculture by ensuring the interaction of different plant and animal species in the ecosystem. Tel: +26 (0)5999821959

5. NeverEndingFoods Permaculture, Lilongwe

A permaculture centre that demonstrates the viability of permaculture and nutrition at the household level. Tel: +26 (0)5999242642

6. Gulugule, Chikwaka District

An NGO that is home to a demonstration and inspiration center where people are trained and coached in life skills and sustainable lifestyles. Tel: +26 (0)5996652236

7. Mangochi Orphan Education Trust, Mangochi District

Supports orphans' education and training. Implements outreach programmes to help communities sustain their natural-resourced based livelihood strategies through permaculture practices. Tel: +26 (0)588873270

8. Malawi Schools Permaculture/Butterfly Space, Nkhatabay District

Registered charity organisation that provides tourism services through an Eco Lodge, as well as outreach community services through environmentally friendly interventions. Tel: +26 (0)5997139313

9. Mushroom Farm Malawi, Rumphi/Livingstonia District

An eco-lodge involved in tourism, sustainable local development and empowerment. The lodge serves local dishes grown organically on its perma-gardens. Tel: +26 (0)5880173784

10. Nihaka Farm, Blantyre District

Eco-friendly farm that produces crops and livestock. They also process natural herbs for the export market. Tel: +26 (0)5991502600

11. Panthunzi Eco Solutions, Blantyre District

A permaculture specialist that offers training, consultancy services and landscaping using permaculture design principles. Tel: +26 (0)5888201867

12. Samaritan Trust, Blantyre District

Works with vulnerable children and helps their families to become self-sustaining. Tel: +26 (0)5881888112

13. Soil Food and Healthy Communities Organisation, Mzimba/Ekwendeni District

A participatory farmer-led non-profit organisation using agroecological training to improve food and nutrition security in Malawi. Tel: +26 (0)5888517468

14. Tikondwe Freedom Gardens, Dowa District

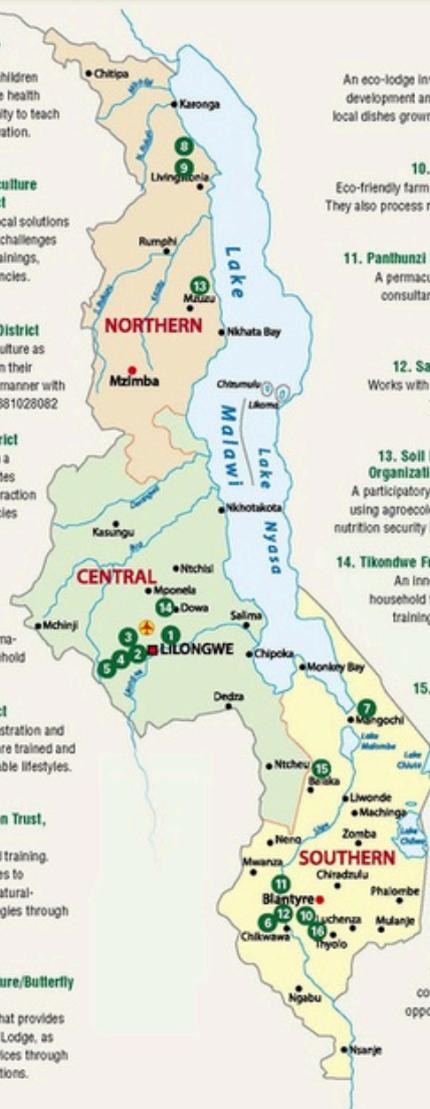
An innovative farm established to achieve household food and nutrition security through training and by providing accommodation and volunteering opportunities. Tel: +26 (0)5995595623

15. Zisinthe Farm and Community Garden, Ntcheu District

Provides permaculture-based agricultural training and resources in partnership with KIAE to neighbouring communities. Tel: +26 (0)5995243199

16. Ecology Sustainability and Permaculture Centre, Thyolo District

A sustainability focused social enterprise focused on encouraging better environmental practices in farming, building, business and life through training, community projects and volunteering opportunities. Tel: +26 (0)5994551329/ +26 (0)5999291900



MALAWI'S PERMACULTURE HOTSPOTS MAP

A map of key information sources on agroecology/permaculture and organic agriculture in Malawi, developed for journalists.

Country: Malawi

KHSA partner: Kusamala Institute of Agriculture and Ecology

Target group: Media

Download this resource in [English](#).



KCOA

Knowledge Centre for
Organic Agriculture and
Agroecology in Africa

KCOA is a collaborative country-led partnership that aims to scale up the adoption of organic and agroecological farming practices through a network of five Knowledge Hubs in Africa. KCOA partners are based in 18 countries and with the involvement of over 30 civil-society organisations.

Scan to discover more!



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SECTION 9: AGROECOLOGICAL MARKETS

IN THIS SECTION

- How to set up a farmers' market
- Beyond production: exploring markets and adding value to organic and indigenous products (webinar)
- Making farming more profitable through organic practices (webinar)

Farmers in Africa produce for own consumption and for markets. These markets take various forms from farm-gate sales to more formal retail markets. Finding markets that value agroecologically and organically produced foods can be challenging. There are many aspects to building a market for agroecological and organic produce. This section provides some insights into different channels being used by stakeholders in these sectors.



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SOOSO
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GROWING THE ORGANIC SECTOR IN SOUTH AFRICA



How to set up a Farmers' Market

A guide for South African PGS groups to establish and host Farmers' Markets

HOW TO SET UP A FARMERS' MARKET

A resource that provides guidelines to establishing a successful farmers' market with case studies of best practice examples.

Country: South Africa

KHSA partner: South African Organic Sector Organisation and PGS SA

Target group: Farmers, consumers, farmers organisations, PGS groups

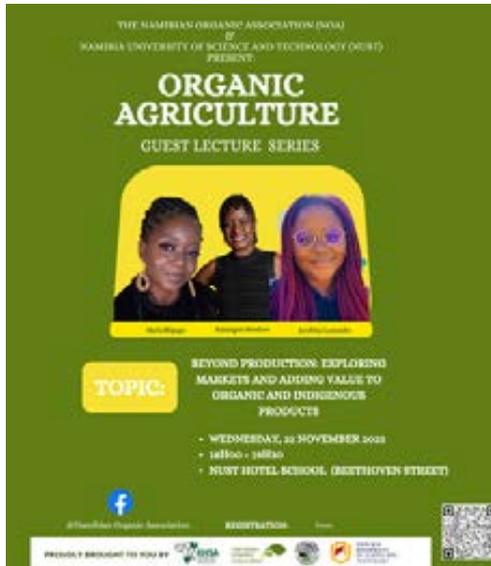
Download this resource in [English](#).

The Principle
Of Health.

The Principle
Of Ecology.

The Principle
Of Fairness.

The Principle
Of Care.



BEYOND PRODUCTION: EXPLORING MARKETS AND ADDING VALUE TO ORGANIC AND INDIGENOUS PRODUCTS (WEBINAR)

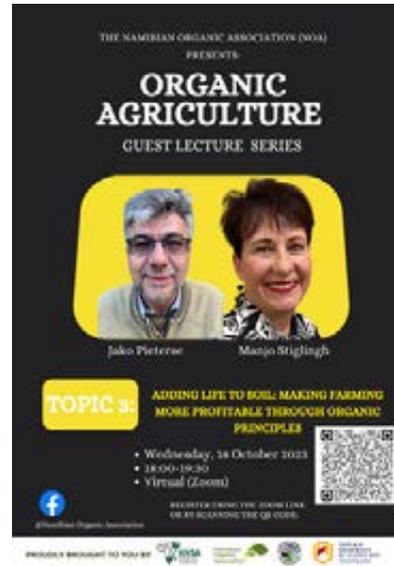
A recorded webinar of farmer stories of how they got into farming or food production, how they reached markets with their organic and/or indigenous foods, concluding with inspiration for agricultural graduates and entrepreneurs.

Country: Namibia

KHSA partner: Namibian Organic Association and Namibia Nature Foundation

Target group: Farmers, general public, academia

Watch this resource in [English](#).



MAKING FARMING MORE PROFITABLE THROUGH ORGANIC PRACTICES (WEBINAR)

A recorded webinar explores how integrating organic practices into conventional farming can boost profitability. Guest experts show how healthy soils improve fertility, reduce weeds, support biodiversity and enhance water retention, outlining steps for transitioning to organic systems.

Country: Namibia

KHSA partner: Namibian Organic Association and Namibia Nature Foundation

Target group: Farmers, general public, academia

watch this resource in [English](#).



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SECTION 10: MODELS AND METHODS

IN THIS SECTION

- A guide to using and setting up a 3D model for homestead design
- Using a garden lay-out model (video)
- A guide to hosting a permaculture blitz
- How to construct and use a deep litter system
- Building and managing low-tech fences
- A facilitator's guide to participatory theatre
- A short guide to using participatory theatre
- Techniques for food budgeting (video)

This collection of knowledge products offers practical, low-cost tools for sustainable homestead design and management.

It includes 3D models to visualise homestead layouts, a garden layout model video for diversified food gardens, and a guide to hosting a permaculture blitz for collaborative learning, as well as using participatory theatre. Resources cover constructing and using deep litter systems for livestock and building low-tech fences.

REC

A DEMONSTRATION OF A GARDEN LAYOUT MODEL



Namibian
Organic
Association



0:05 / 4:26



USING A GARDEN LAY-OUT MODEL (VIDEO)

This video, created by the Namibian Organic Association, explains how to create and use a garden or field layout model to demonstrate organic agriculture practices for planting vegetables, crops and trees. The video shows the materials used and provides practical examples.

Country: Namibia

KHSA partner: Namibian Organic Association and Namibia Nature Foundation

Target group: Small-scale farmers, trainers

Watch in [English](#).

A guide to hosting a *Permaculture Blitz*

Namibian
Organic
Association



A permaculture blitz, or 'perma blitz', is a one or two-day event in which a group of volunteers come together and design or re-design a garden/farm according to permaculture principles. Participants learn these principles by putting them into practice. This community-driven learning approach helps to build sustainable, resilient landscapes.

STEP 1 Preparation

1 Select Site

- Identify an interested individual/organisation willing to host a permaculture blitz at their property and committed to maintaining the measures implemented.
- Visit the site to understand factors such as sunlight exposure, soil quality, land tenure, social structures, water availability and accessibility that will affect the design and implementation of the permaculture blitz.

2 Assemble a team

- Invite volunteers interested in permaculture and sustainable gardening practices.
- Identify individuals with expertise in permaculture design, gardening, landscaping, carpentry, plumbing and other relevant skills to provide guidance and leadership and confirm their availability for the date of the event.

3 Visit the site

- If possible, the expert who will facilitate the event should visit the site to develop a draft permaculture design plan that incorporates principles such as diversity, integration, efficiency and sustainability.
- Determine the specific elements to be implemented during the event, such as planting fruit trees, implementing rain harvesting features or producing biochar. Identify material required to work efficiently, to be procured/organised in advance.

4 Organise logistics

- Determine the date, time and duration of the permaculture blitz, taking into account the availability of volunteers and weather conditions
- Organise what needs to be transported (tools, materials, etc.) in advance.
- Identify a site with ablutions suitable for camping. Preferably, volunteers should stay together, so that discussions about activities can continue throughout the event.
- Quantify and buy food and water required for the entire period of the event.

Perma blitz Principles

- Observe and interact
- Catch and store energy
- Obtain a yield
- Apply self-regulation and accept feedback
- Use renewable resources
- Produce no waste
- Design from patterns to details
- Integrate rather than segregate
- Use small and slow solutions
- Use and value diversity
- Use edges and value the marginal
- Creatively use and respond to change



A GUIDE TO HOSTING A PERMACULTURE BLITZ

This two-page guide outlines how to run a permaculture blitz—a one- or two-day event where volunteers come together to design or farm using sustainable permaculture principles. It covers planning, team coordination and hands-on techniques like rainwater harvesting and tree planting. The guide also highlights the importance of follow-up care to ensure long-term success and community resilience.

Country: Namibia

KHSA partner: Namibia Nature Foundation

Target group: Farmer trainers, training organisations, small-scale farmers

Download in [English](#).



HOW TO CONSTRUCT AND USE A DEEP LITTER SYSTEM

This video demonstrates how to construct and use a deep litter system to make rich compost.

Country: Namibia

KHSA partner: Namibia Nature Foundation and Namibian Organic Association

Target group: Farmer trainers, training organisations, farmers

Watch in [English](#).

POSTER SERIES USER GUIDE

FENCING

BUILDING AND MANAGING LOW-TECH FENCES

This poster series gives practical guidance on building and managing low-tech fences, promoting natural materials and living fences over conventional options. It covers challenges with traditional and wire fences, plus tips for stronger, longer-lasting designs.

Country: Namibia

KHSA partner:
Namibia Nature
Foundation and
Namibian Organic
Association

Target group: Farmer
trainers, training
organisations, small-
scale farmers

Download this
resource in [English](#).



A FACILITATOR'S GUIDE TO PARTICIPATORY THEATRE

FOR COMMUNITY
ENGAGEMENT
AND ADVOCACY



A FACILITATOR'S GUIDE TO PARTICIPATORY THEATRE

A guide on how to use participatory theatre to engage communities around key topics, including gender.

Country: Malawi
KHSA partner: Soils, Food and Healthy Communities
Target group: Training organisations, community-based organisations

Download this resource in [English](#).





A SHORT GUIDE TO USING PARTICIPATORY THEATRE

This document provides guidance for multipliers in hosting participatory theatre sessions in communities, as well as four scripts that can be used or adapted for various settings.

Preparing for the session

- **Gather a group of participants:** Invite a diverse group of farmers, including men, women and youth, to participate in the workshop.
- **Create a safe space:** Establish a comfortable and inclusive environment where participants feel encouraged to express their thoughts and opinions freely.
- **Introduce the concept:** Briefly explain the purpose of interactive theatre and its role in creating space to discuss topics such as gender, climate change and food budgeting.
- **Read the script to participants:** Read the script aloud to the participants, ensuring everyone understands the story and its underlying issues.

Setting up the performance

- **Group participants:** Divide the participants into smaller groups of 4-5 people.
- **Assign roles:** Assign each group a specific role in the play, such as the Phiri family members, the aunt or the audience members who will intervene.
- **Discuss and rehearse:** Within each group, discuss the character motivations, expressions and interactions. Encourage exploration of different scenarios.

- **Feedback and reflection:** After each group's rehearsal, facilitate a group discussion to provide feedback and reflect on the performance's effectiveness in conveying the message.

Performance and audience engagement

- **Set up the stage:** Arrange the performance space to allow for audience interaction, such as an open area or a stage with audience seating nearby.
- **Execute performance:** Have each group perform their assigned scene, incorporating their improvised elements and audience interactions.
- **Facilitate a discussion:** After each scene, pause the performance and facilitate a discussion with the audience, encouraging them to suggest alternative actions for the characters and explore potential solutions to the issue portrayed.
- **Wrap-up and conclusion:** Conclude the workshop by summarising the key themes and takeaways. Encourage participants to apply the lessons learned.

Important points to remember when facilitating plays

- **Encourage open discussions:** Create a supportive environment where participants feel

comfortable expressing their thoughts and opinions, even if they challenge traditional norms.

- **Emphasise education and empowerment:** Highlight the importance of education for everyone, enabling them to pursue their aspirations and break free from limiting societal expectations.
- **Address underlying issues:** Encourage participants to reflect on the root causes of inequality and consider ways to address them effectively.
- **Community awareness and action:** Promote awareness about social justice and equality within the community, encouraging participants to advocate for change and support initiatives that empower marginalised groups.
- **Creative roleplaying:** Encourage audience participation by incorporating roleplaying scenarios where they can suggest alternative actions for the characters and explore solutions to the issues.
- **Respectful dialogue:** Maintain a respectful and inclusive environment throughout the discussion, acknowledging cultural norms while advocating for the rights and wellbeing of all individuals.

A SHORT GUIDE TO USING PARTICIPATORY THEATRE

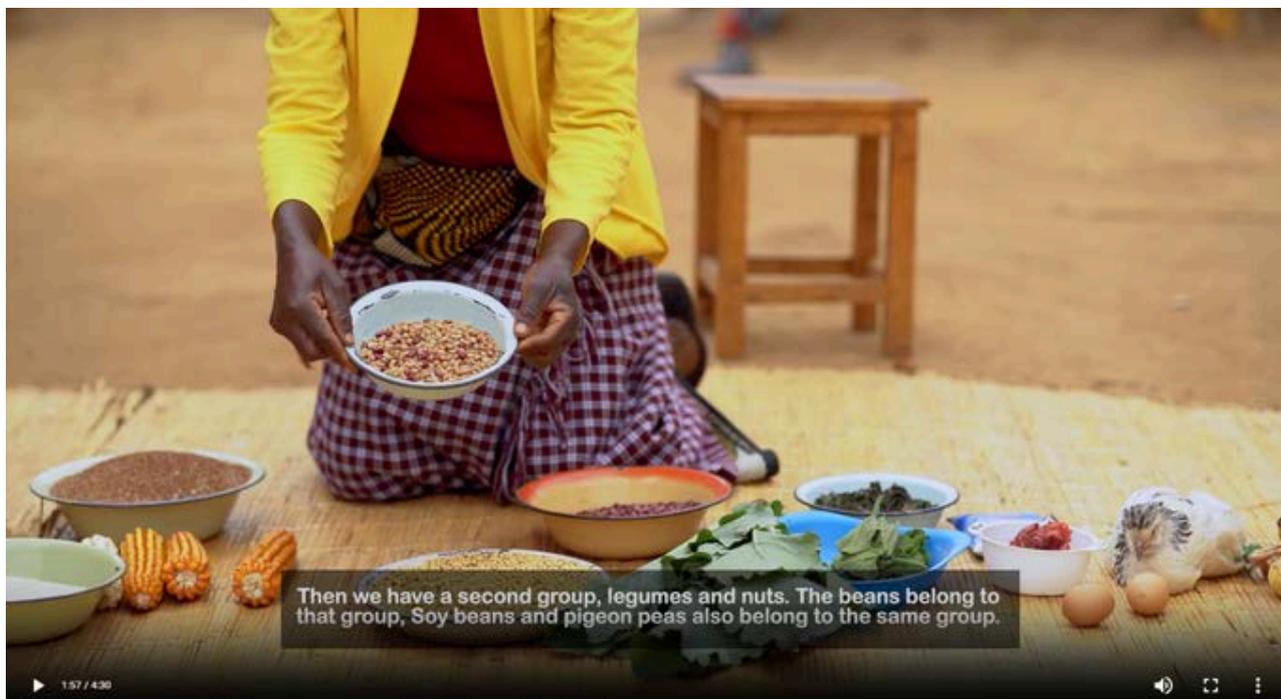
An overview of how to plan a participatory theatre session with example scripts.

Country: Malawi

KHSA partner: Soils, Food and Healthy Communities

Target group: Training organisations, community-based organisations

Download this resource in [English](#).



TECHNIQUES FOR FOOD BUDGETING (VIDEO)

Malawian farmer Mary Nzima shares her wisdom in this video! Learn proven techniques to manage your harvest and plan your meals, ensuring your family has enough nutritious food to last until the next harvesting season. The video is in Tumbuka with English subtitles.

Country: Malawi

KHSA partner: Soils, Food and Healthy Communities

Target group: Farmer trainers, training organisations, small-scale farmers

Watch the video in [Tumbuka with English sub-titles](#) or in [Chichewa with English sub-titles](#).



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