WWF
SOUTH AFRICA

ONE FOOD: A TOOLKIT FOR FARMERS

CLIMATE RESILIENT, BIODIVERSE, SAFE AND SUSTAINABLE

Food is essential for survival, but the way we produce, transport and manage it affects the environment. Even waste management plays a role in maintaining a healthy food system.

Unmanaged food systems can lead to serious hazards, threatening human, animal and environmental health. These include:

- Contamination from veterinary medications
- Crop and livestock diseases
- Pests and invasive alien plants
- Toxic plants harming livestock
- Wildfires (both arson and natural) damaging agricultural land

Understanding these risks allows farmers to take proactive steps in building a safer, more resilient food system.

What is the One Food concept?

The **One Food** concept takes a holistic view of the food system, integrating human, animal and environmental health. It helps identify hazards and promotes sustainable food production while maintaining healthy ecosystems.

Why is it important?

Food production relies on biodiversity, meaning the variety of plant and animal life within ecosystems. Unsustainable farming practices can disrupt this balance, threatening both food security and nature. The **One Food** approach raises awareness and encourages action to protect biodiversity and ensure long-term sustainability.

Preventing problems before they happen

By learning about risks, like diseases, pests and harmful plants, farmers can act early to protect their crops, livestock and the environment. With the right knowledge and support, they can avoid bigger problems in the future but without awareness, these risks may go unnoticed until it's too late.

DID YOU KNOW?

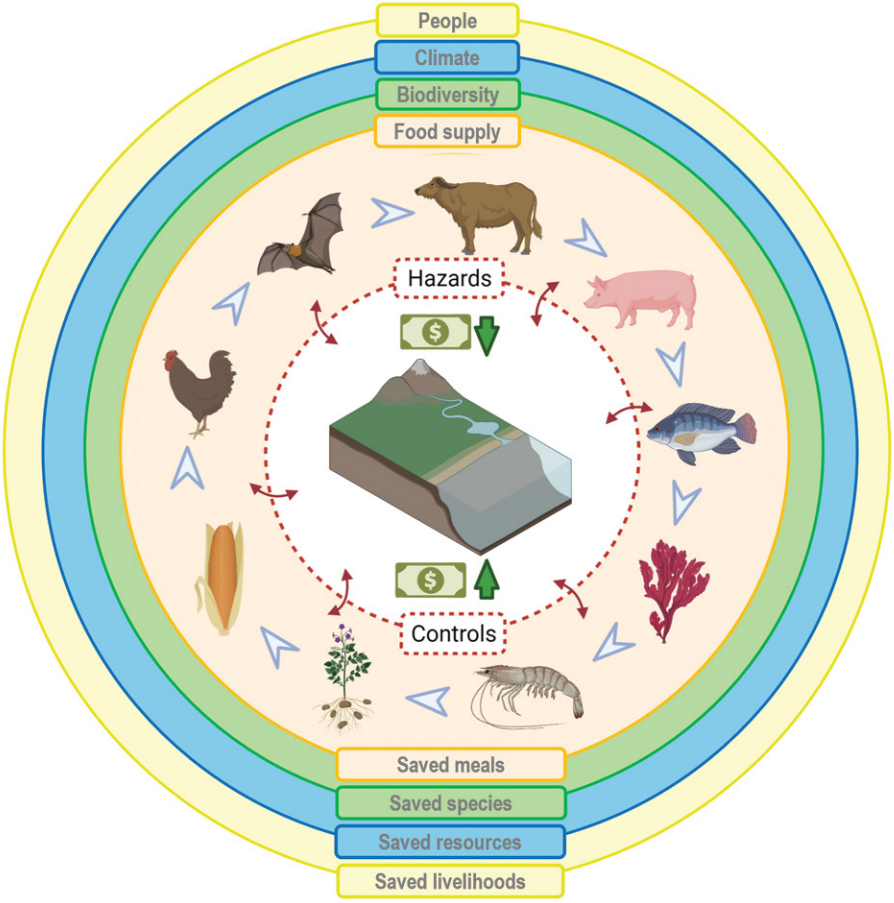
The One Food project aims to support a sustainable food supply and associated benefits including poverty alleviation, improved human health, biodiversity and environmental protection. To achieve this, collaboration among government, civil society and industry leaders is essential.

ONEFOOD

WHAT IS AGROECOLOGY?

Our food systems are connected to people, nature and the climate. When farming and food production are not well managed, they create hazards that can harm our health, biodiversity and the environment. By putting good controls in place, like agroecology and rangeland management, we can protect species, save resources, support livelihoods and ensure healthy meals for our communities.

Source: Centre for Environment, Fisheries and Aquaculture Science (Cefas)



IMPACTS OF LIVESTOCK FARMING ON THE ENVIRONMENT

Livestock farming sustains communities but also poses challenges. Overgrazing weakens soil, reducing carbon storage, while uncontrolled burning degrades land. Many farmers lack resources to adopt better practices.

What can you do?

- **Better waste management:** Keep animal waste away from water sources; compost manure to enrich soil.
- **Controlled grazing:** Rotate grazing areas to prevent soil erosion and improve carbon storage.
- **Fire management:** Use small, controlled burns to maintain rangelands sustainably.

THE IMPACTS OF LIVESTOCK FARMING ON BIODIVERSITY

Biodiversity supports soil health, clean water and strong livestock. Healthy grasslands prevent erosion, but invasive alien plants (IAPs) reduce grazing land. While controlled burns help manage IAPs, frequent burning harms native vegetation and soil. Livestock diseases, like bluetongue and lumpy skin, are also a concern and are made worse by biodiversity loss.

What can you do?

- **Rotational grazing:** Helps plants recover, reduces erosion and improves livestock feed.
- **Invasive plant control:** Use targeted clearing and plant indigenous grasses instead of frequent burning.
- **Natural disease prevention:** Encourage pest-repelling plants to reduce reliance on treatments.

FARMERS AND THEIR CROPS

Most farmers grow cabbage, spinach, beetroot, onions and peas. These crops are hardy, with some (like beetroot and peas) needing less water, which helps during dry months. Growing a variety of crops improves food security and protects against losses from pests and extreme weather.

What can you do?

- **Drought friendly crops:** Crops such as peas, beetroot, sweet potato, cowpeas, groundnuts, kale, swiss chard and amaranth (imbuya) require consistent moisture to thrive but they do tolerate short dry periods better than some other vegetables.
- **Intercropping** (like spinach, onions and beetroot together) improves soil health, reduces pests and helps crops grow better.

KEEPING SOIL HEALTHY

Intercropping, compost and plant residues help farmers improve soil fertility, control pests and retain moisture.

What can you do?

- **Compost and manure:** Add nutrients and improve soil structure.
- **Mulching:** Use dried leaves, grass or crop waste to retain moisture.
- **Crop rotation:** Prevents soil exhaustion and reduces disease.

PEST CONTROL

Farmers face challenges like worms, moles and black spots on cabbage. Instead of costly chemicals, they use natural solutions.

What can you do?

- **Ash:** Sprinkling on plants repels insects.
- **Marigold and blackjack:** These are natural pest deterrents.
- **Hand-picking worms:** Best done early in the morning.
- **Mixed planting:** Combining onions with leafy greens confuses pests and reduces infestations.

WATER AS A PRECIOUS RESOURCE

Most farmers rely on rivers and rainwater tanks, but water shortages pose a big challenge, especially in winter. Poor water quality, like dirty or salty water, can also damage crops.

What can you do?

- **Rainwater harvesting:** Collect rainwater in drums or small pits for later use.
- **Mulching:** Keeps moisture in the soil, reducing the need for frequent watering.
- **Runoff:** Shallow trenches between crops direct water to roots and prevent runoff.
- **Watering:** Early morning or late afternoon reduces water loss from evaporation.

CLIMATE CHANGE AND FARMING CHALLENGES

Farmers report more heat waves, droughts, floods and arson-caused fires, which impact crop growth. Controlled burns can manage land, but uncontrolled fires destroy crops and grazing areas.

What can you do?

- Planting trees and shrubs as windbreaks to reduce wind damage.
- Using raised beds to drain excess water during floods.
- Covering young plants with straw or cloth to protect from frost.
- Learning from weather patterns to better time planting.

WHY AGROECOLOGY WORKS FOR YOU

Saves money by using local resources instead of expensive chemicals.

Improves soil so you can grow healthy crops for many years.

Reduces pests naturally, so there's less crop damage.

Uses water wisely, helping crops survive dry months.

Encourages pollinators like bees, which increase yields.

Working together for stronger farms

Your knowledge and experience are valuable. By sharing ideas, testing small changes and using natural resources wisely, farming can remain productive and sustainable for the future.

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Survey results highlight the complex relationships between climate, biodiversity and food production. Livestock farming in the region is vulnerable to climate change and biodiversity loss. Farmers note the increase of pest and diseases after a fire.

Finding a balance for people and nature to thrive

- Farmers in the region face the challenge of producing food while maintaining healthy land.
- The survey shows that many are open to adopting better land management practices but need support to implement them.
- By improving grazing management, reducing unnecessary burning, and finding natural ways to control pests, farmers can make their land more productive while protecting biodiversity.

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