



© Tanya Farber / WWF South Africa

CLIMATE CHANGE TRAINING MANUAL

For rural livestock farming communities in South Africa

Many smallholder farmers rely predominantly on the land to graze cattle, grow crops and feed their families, with hopefully some surplus to trade or sell for income.

Yet the changing climate is increasing the frequency of extreme weather events, such as drought, floods, heatwaves and strong winds, which not only damage crops but also increase the vulnerability of small-scale farmers. These intense weather events further erode soils and landscapes, reducing the carrying capacity of these areas for livestock grazing and crop yields. This affects local food security and livelihoods.

WWF is capacitating and supporting smallholder farmers in priority areas to adopt sustainable farming practices and agroecological principles while helping them gain better access to alternative markets.

INTRODUCTION TO THE TRAINING

Purpose of this manual

This manual supports trainers who work with livestock farmers and rural communities to boost sustainable livelihoods and conserve biodiversity. It provides a framework for two workshops, each of which could take a full day of training. interactive sessions for the workshops explain:

- The difference between weather and climate (in simple terms).
- What climate change is and what indicators to look for.
- Practical, local adaptation strategies communities can use.

Training principles

- A full day for each workshop is ideal.
- Keep it interactive: use drawings, storytelling and group discussions.
- Use local examples: farmers learn best from real events in their own area.

- Make the session practical: the training is intended to enhance the trainees' theoretical understanding, but it should all be grounded in practical knowledge.
- Encourage participation from women, youth and herders.
- Capture learnings on newsprint if possible so that the community has access to it later.

WORKSHOP ONE



The first workshop is designed to help participants understand the difference between weather and climate, what climate change is, and how it affects their livestock, land and households.

WEATHER VERSUS CLIMATE

Activity one: trainer-led discussion

Begin by asking the participants if they understand the difference between weather and climate. Write down responses on newsprint for others to consider.

As the discussion unfolds, ensure the following concepts are discussed:

Weather refers to short-term conditions of the atmosphere; it changes every hour or every day. Examples:

- It rained yesterday
- Today is hot and windy
- Tomorrow might be cold.

Climate refers to long-term patterns of weather in a region (usually 30+ years); it changes slowly over decades. Examples:

- Eastern Cape winters are usually dry
- The Drakensberg is normally cold with frost in winter.

Ask if they think understanding the difference between the two is useful to them and why.

As the discussion unfolds, ensure the following concepts are discussed:

- Understanding the difference between weather and climate is essential for rural farmers because their livelihoods depend on long-term patterns, not just daily conditions.
- While weather tells farmers what to expect today or this week, climate reveals the long-term trends that affect things like grazing cycles, water availability and disease risks.
- As climate change increasingly shifts seasons, rainfall patterns and temperatures, farmers who grasp these differences are better able to prepare and adapt. They can make informed decisions that protect their land and stock, and thus their income too.

Activity two: working in groups of four to six

This can be a written or verbal exercise.

Ask participants to decide which of these below refer to weather and which refer to climate:

Hour to hour, day to day
Affects farming systems and seasons
More stable
Very unpredictable
What's happening now / the conditions right now
What usually happens / how the conditions normally are
30-year average patterns
Affects daily comfort

Once they have discussed it in their groups, ask them to share their findings and then reveal the correct answer to discuss the topic further:

Weather: Hour-to-hour, day-to-day Very unpredictable Affects daily comfort What's happening now / conditions right now	Climate: Affects farming systems and seasons More stable What usually happens / how the conditions normally are 30-year average patterns
---	---

WHAT IS CLIMATE CHANGE AND HOW DO WE KNOW IT IS HAPPENING?

Activity one: trainer-led discussion

Ask the participants to share their understanding of what climate change is. Explain that it refers to long-term shifts in temperature, rainfall and seasons caused mainly by human activities. Ask whether they know the main causes. Explain that the main ones are burning fuels, cutting down trees, and unsustainable farming and manufacturing practices.

If you'd like to provide an in-depth understanding, use the box below:

Burning fossil fuels like coal, oil and gas releases large amounts of carbon dioxide (CO₂). This is a problem because CO₂ acts like a blanket around the Earth. The more we release, the thicker the blanket becomes, and the planet gets hotter. These fuels we burn for electricity, transport and industry but relying on fossil fuels is very bad for the environment.

Deforestation (cutting down large numbers of trees and not replacing them) is a problem because when we remove trees, we're taking away something which normally absorbs CO₂ from the air.

Agriculture, through livestock and fertilisers, releases powerful greenhouse gases which are invisible gases in the air that trap heat and make the planet hotter. Examples of these gases include CO₂ and methane.

Industrial processes emit additional greenhouse gases from factories and manufacturing.

Activity two: working in groups of four to six

Explain to the participants that there are different types of signs or indicators that can tell us climate change is happening. These climate change indicators are things that the farmers themselves observe. Explain that they have likely observed some of these already, and maybe they did or didn't understand that these were signs of climate change.

Climate change indicators

In groups of four to six, participants should look at the following list and discuss if they have noticed any of these changes:

Temperature indicators

- More very hot days and warmer nights than usual
- Heat stress in livestock
- Shorter cold season / less frost

Rainfall indicators

- Rainy seasons starting late or ending early
- Longer dry spells between rains
- More "all-at-once" heavy rain
- Flash floods

Environmental indicators

- Streams drying earlier than before
- Poor pasture regrowth
- Alien invasive plants spreading
- Soil erosion increasing
- Wetlands getting smaller

Livestock indicators

- More tick-borne diseases
- Lower fertility
- Lamb mortality during heatwaves or cold snaps
- More feed shortages

Activity three: feedback session to map climate change

Using a flipchart and markers, ask participants to list changes they have noticed in the past 10 to 20 years. This creates the foundation for discussing adaptation.

Together through discussion, sort the responses into:

- Temperature
- Rainfall
- Pasture/land changes
- Animal health changes.

WHY CLIMATE CHANGE MATTERS FOR FARMERS

Activity one: trainer-led brainstorm

Ask the participants to brainstorm the impacts of climate change on animals, land and household income. Some of these they will already have experienced and others might happen going forward. Use the following keywords to kick-start the discussion and prompt further responses:

Impacts on animals

- Heat stress → lower fertility
- Disease
- Available water
- Poor body and wool condition.

Impacts on land

- Reduced grass quality from drought
- Overgrazing due to limited grazing areas
- Soil erosion from heavy rain
- Triggers frequent wildfire events
- Loss of biodiversity for medicinal plant use.

Impacts on households

- Higher feed costs
- Lower income during drought
- Potential conflict around water points or grazing
- Increased workload for herders.

WORKSHOP TWO



The second workshop is designed to help participants understand that they have at least some agency over how climate change affects them. By embracing adaptation strategies, they can ensure the best protection against climate change for themselves, the land, their livestock and livelihoods.

ADAPTATION STRATEGIES

Activity one: adaptation strategies explored through storytelling

Kick off by discussing what we mean by climate adaptation strategies:

These are ways rural farmers can adjust to the new conditions caused by climate change. They are practical actions that can help rural farmers cope with the impacts of climate change and continue producing food and caring for livestock even when weather patterns become less predictable.

Now divide the participants into four groups. Each group should create a story or mini drama around their given theme, using the tips below. The story should create a before-and-after scenario with an intervention in the middle. Give each group a theme from the list below:

Water management

- Protect natural springs and fence them off
- Build or repair small dams
- Install tanks and gutters for rainwater harvesting
- Create protected drinking points to reduce erosion.

Feed and pasture management

- Plant drought-tolerant fodder (e.g., lucerne, lablab, Japanese radish)
- Make hay or silage during good seasons
- Use feed banks or community fodder storage
- Rotate grazing areas to allow grass to rest
- Reseed bare patches.

Animal health adaptation

- Improved parasite and tick control
- Vaccinate strategically (not over-vaccinating)
- Provide shade and shelter
- Adjust handling and herding to cooler times of day
- Supplement with minerals during dry spells.

Herd management

- Choose hardy breeds (Bonsmara, Beefmaster, Afrikaner, indigenous sheep)
- Reduce herd size during drought (“strategic destocking”)
- Keep records of births, deaths and productivity
- Improve kraal design (ventilation, raised floors).

Early warning and planning

- Use weather SMS alerts
- Plan shearing, lambing, and sales around seasonal forecasts
- Create community early-warning groups
- Keep emergency feed for unexpected dry spells.

Strengthening local institutions

- Community grazing agreements
- Joint water management committees
- Sharing equipment (borehole pumps, trailers, balers)
- Farmer groups for disease surveillance and information sharing.

Financial and livelihood adaptation

- Save money or buy feed early in the season
- Diversify income (i.e. crops, poultry, wool processing, crafts)
- Explore livestock insurance (i.e. fire, lightning, drought options).

Each group presents their story or mini drama, and after all have been showcased, augment the learnings by discussing the various bullet points under each adaptation strategy.

FINDING LOCAL SOLUTIONS

Activity one: mapping activity with the full group

- Draw a map of the community land (grazing, water points, kraals).
- Ask participants to mark where climate risks occur.
- Now mark where adaptation actions can be placed. For example, identify a suitable place for a firebreak or identify a grazing area that could be rested.
- Discuss which actions are easiest to start this season.

Activity two: final content discussion

- Which adaptation ideas can we start immediately?
- Which need help from the municipality or extension officers?
- Who will take responsibility for which action?
- How will we track our progress?

Activity three: close-out sharing

Stand in a circle. Ask each participant to share the one most valuable tip they learnt from the workshops. Ask others to raise both their hands and wiggle their fingers if they also found that learning useful. End with a song or prayer, as the community sees fit.

Notes:

For more information, you can contact: Nompendolo Mgwali: nmgwali@wwf.org.za

- *This work has been generously funded by the H&M Group*



Lasting positive outcomes for people and nature in the places where we work and from priority environmental challenges we focus on.

FOR NATURE. FOR YOU.

www.wwf.org.za

WWF-SA is a registered non-profit organisation, number 003-226 NPO. © 1986 Panda symbol WWF – World Wide Fund for Nature (Formerly World Wildlife Fund) ® “WWF” is a WWF Registered Trademark

1st Floor, Bridge House, Boundary Terraces Mariendahl Lane, Newlands, Cape Town. P.O.Box 23273, Claremont 7735, t +27 21 657 6600, e: info@wwf.org.za, www.wwf.org.za