

Soil, Food systems and Climate

The Complex linkage and connection

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The Malawi context

SIMPSON FOUNDATION MALAWI

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Simpson Foundation



▶ We are a locally registered NGO in Malawi

▶ **Vision:** Enhancing resilient and adaptive communities

▶ **Area of focus:**

- Sustainable agriculture
- Health and Well being.
- Equity and Justice
- Environment and Natural resources

▶ **Approach :** we work through capacity building of active youth groups as drivers of change.

▶ 2020 We were accepted as members of consortium and partners of 4 per 1000.

▶ Achievements

- We are working with Taoloka youth organization in Soil Healthy for food security and climate (Capacity building)
- Participated in the 4 per 1000 fair in 2021 show casing a Solar corridor farming system and Commercialization of natural fruits as way of Ecosystem regeneration.
- Participated and shortlisted by Scientific and Technical committee in the call for proposal 2021.
- We have engaged the Lilongwe University of Agriculture and Natural Resources (LUANAR) and Chitedze Agricultural Research for soil modelling and sampling partnership in the Soil Health project (Baseline, soil protocol monitoring and verification)

▶ Lessons to Share

- Action for Soils, food systems and climate should be evidence based with realistic indicators/measurement and default methods to verify **how much** our actions are contribution (changes in Soils, changes in food productivity, changes in emissions relative to the baseline)
- We need to capacity building to understanding the evidence through Monitoring, Reporting and Verification protocols for Soil, food systems and emissions.
- After going through the 4 per 1000 call for projects process, our perspective of Climate action has change from Planting of trees to how much carbon organic stocks the tree is adding /maintaining in the soil relative to baseline.to adapt and mitigate climate change

Complex Interaction, Linkage and Connection Soil, Food system and Climate

- ▶ **Soils, food systems and climate change** are closely intertwined with a **dynamic relationship**.
- ▶ Agriculture is key for food production and it depends directly on natural resources – biodiversity, land, vegetation, rainfall and sunlight – which are, also linked to climate and weather conditions.
- ▶ However, agriculture, forest and other land use (AFOLU) contribute about one-fifth of global GHG emissions (FAO The state of Food and Agriculture: Climate change, Agriculture and Food security 2016).
- ▶ Land degradation, conversion of forest to farm land and poor agricultural practices are destroying the soil (resulting in loss of soil organic carbons, emissions of ghg, disruption of nutrient recycling and loss of water storage efficiency)
- ▶ Increase of climate change impacts on agriculture, it is making growing of crops, raising of animals, managing of forests and catching difficult.



Soil erosion/ land degradation Malawi

Soils

An essential and non-renewable natural resource vital to ecosystems and human life

- ▶ Soils are the foundation for food production and many essential ecosystem services to ensure food security.
- ▶ The role of soil is scientifically validated and recognized as one of the key resources for climate change mitigation and adaptation, as it constitute the main carbon reservoir in the ecosystems.
- ▶ Soil organic carbon (SOC), is a core component of soil health, and plays a key role in the overall behavior of soils, ecosystems and agroecosystems.
- ▶ Increasing soil organic carbon enhances overall soil health and fertility, the resilience and sustainability of agriculture and, in turn, improves food security and nutrition for all.
- ▶ Maintaining and increasing Soil Organic Carbon stocks is very important for reducing GHG emissions and removing CO₂ from the atmosphere.
- ▶ However, despite the soil being a foundation for food production it remain exposed to extreme devastating climatic weather events like floods, cyclones, drought and winds.



floods impact of cyclone Anna Malawi

Food systems

- ▶ A food system : the interactions of humans with the natural environment such as climate, water, land and biodiversity and their effects on human health and nutrition.
- ▶ However the agricultural food systems in Malawi (southern Africa region) are becoming more sensitive to changes in climate due to :
 - a. rising temperatures and increased temperature variability,
 - b. changes in levels and frequency of precipitation,
 - c. a greater frequency of dry spells and droughts,
 - d. increasing intensity of extreme weather events (cyclones, and floods)
- ▶ During October to December 2021 growing season:
 - Malawi (southern African region) received below-average rainfall with the season onset delayed by over 30 days.
 - Reports of pests and migratory locust were reported (Angola, Botswana, Namibia, Zambia and Zimbabwe)
- ▶ The southern region food systems are struggling to delivers food security and nutrition in ways that are :
 - a) profitable (economic sustainability)
 - b) broad-based benefits for society (social sustainability)
 - c) positive or neutral impact on the natural environment (environmental sustainability)



Dry spell compromise maize yields in Malawi

The gender implication: “Safeguarding and protecting rights”

- ▶ Around 45-80% of food in the region is produced by women, they are the most affected by climate change, and more often left out in the decision making process of Soil, food security and Climate.
- ▶ Women are more dependent on natural resources for their livelihoods which are under threat with impacts of climate change. They need to be part of the decision-making that governs land and natural resources.
- ▶ Women are in charge of securing water, food, and firewood as these resources are declining with climate change they face violence or harassment during climate related disasters.
- ▶ Extreme weather such as droughts and floods, overstretch the work load of women making them unavailable for climate related community actions.

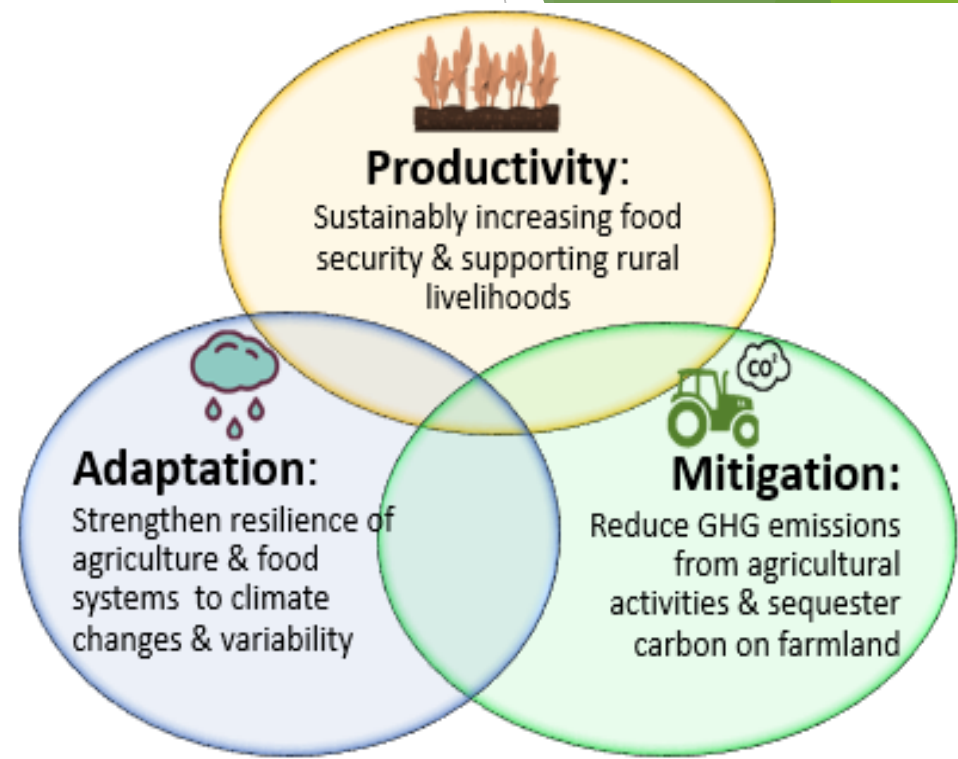


Displaced women and children in search of food and water

A Call for Action together

- ▶ A common Understanding of the Interaction of Soil, Food system and Climate is a common opportunity tackle **Hunger, Poverty and Climate change together**.
- ▶ If we **ALL** understand **this Complex Interaction, Linkage and Connection** of we can **ALL** together call for **Action** to halt and reverse the current trends in Soil, Food system and Climate.
- ▶ **CLIMATE CHANGE IS ALREADY AFFECTING AGRICULTURE AND FOOD SECURITY in the region** and, without urgent action, **Million of people** are at risk of hunger and poverty.
- **Climate-smart agriculture** has great potential to address Soils, Food systems and Climate related problems:
 - Sustainably increasing agricultural productivity and incomes
 - Adapting and building resilience to climate change
 - Reducing and/or removing greenhouse gas emissions, where possible

- ▶ **Climate change needs SMART solutions in Soils and Food systems**



Climate Smart Agriculture

THANK YOU FOR YOUR ATTENTION



Conservation farming: hole planting station plot marking demonstration Taoloka youth group