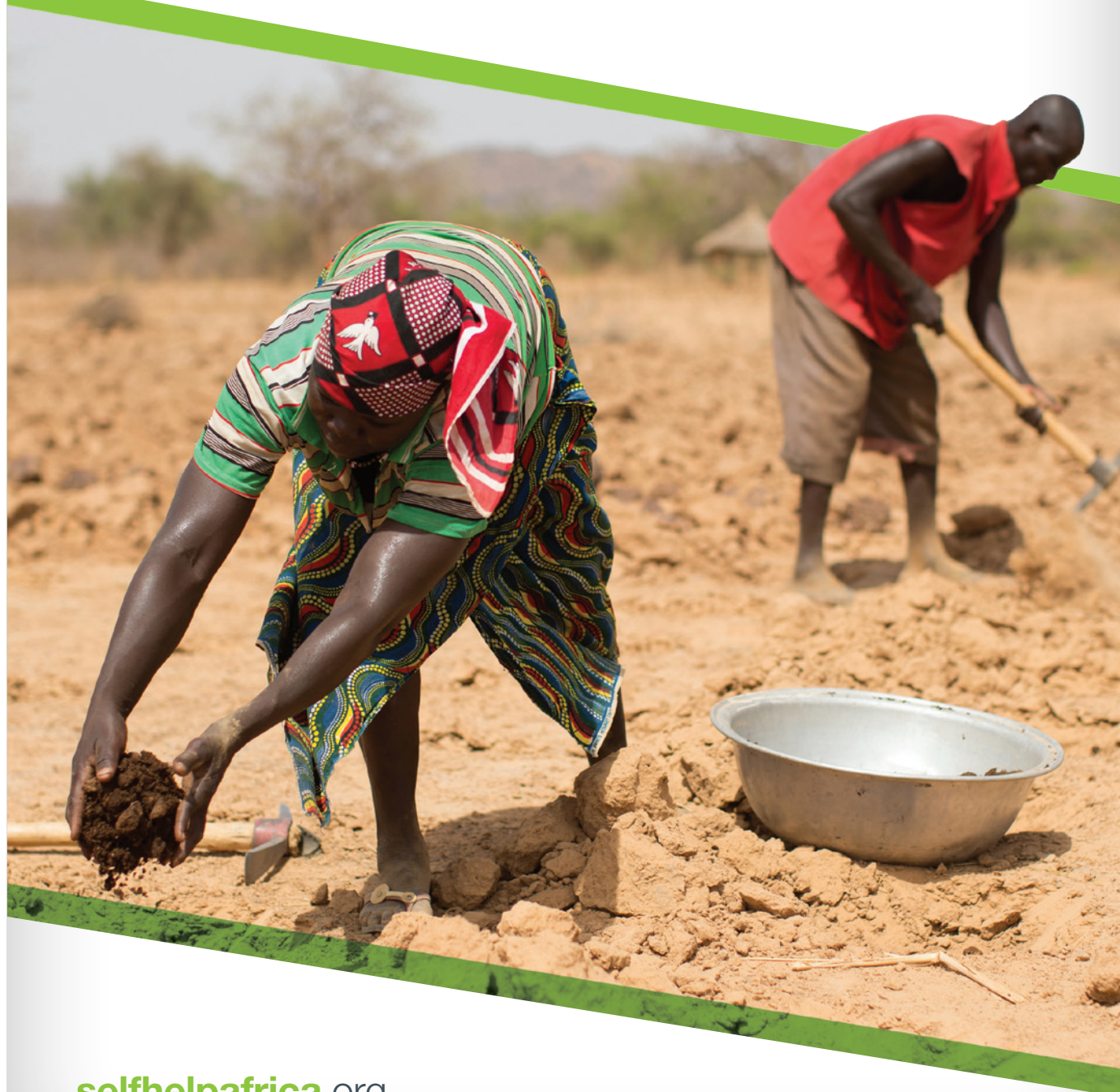




**Self Help  
Africa**

# **CLIMATE-SMART AGRICULTURE** (CSA)





Baba Wedrago, Sika Village, Burkina Faso

## THE CHALLENGE

### Climate Change and Smallholder Farmers

Long-term changes in the world's climate are a reality and must be factored into the design of SHA's work, particularly long-term investments in the tropics and sub tropics. SHA's focus on farmers and agricultural entrepreneurs in Africa implies that many of those with whom we work are often those who are directly affected by changes in climate. For these individuals and communities we need to focus on increasing their resilience to climate change and enabling them to take advantage of new livelihood opportunities through Climate-Smart Agriculture (CSA).



# What are we committed to?

## IN SELF HELP AFRICA

In Embracing Change - SHA's Strategic Plan 2017–2021 SHA is committed to addressing food, nutrition and income security, through, among others:

- Average increase in income for 100% of smallholder farmers.
- Reduction in stunting of children under five by 5%.
- Support to 30 agri-enterprises with a view to scaling up their operations to regional/national markets.
- Increase in turnover for supported agri-enterprises by more than 10%, year on year.
- Increase in profit/surplus of agri-enterprises supported, year on year

All these aspects will be affected by climate change unless SHA factors climate change into project design. In this sense, CSA becomes an overriding theme in our Strategic Plan.

## IN IRELAND

*A Better World – Ireland's Policy for International Development*, recognises that “the effects of climate change threaten to undermine gains to date in tackling poverty, and the achievement of all development goals. Throughout this century, the impact of climate change is projected to slow down economic growth, exacerbate gender inequality, intensify fragility, further erode food security, and prolong existing and create new poverty traps” and the policy prioritises climate action in all interventions relating to food and agriculture to ‘future proof’ development cooperation and ensure that the poorest and most vulnerable – and those furthest behind – have agency in global climate action.

# Our Global commitments

SHA's support for CSA will contribute to at least two Sustainable Development Goals

## ZERO HUNGER

- By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons.
- By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.
- By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.



## CLIMATE ACTION

- Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.
- Integrate climate change measures into national policies, strategies and planning.
- Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.
- Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities.







## What does Climate-Smart Agriculture mean to us?

**FAO defines Climate-Smart Agriculture as agricultural practices that:**

1. Sustainably increase agricultural productivity and incomes (Assets).
2. Adapt and build resilience to climate change (Vulnerability, Adaptation and Resilience).
3. Reduce and/or remove greenhouse gases emissions, where possible (Mitigation).

**In addition to these criteria SHA will, in consultation with our target beneficiaries, ensure that agricultural practices:**

- a. Increase gender equality within households and communities.
- b. Provide nutrition and health benefits despite anticipated changes in the climate in a defined region. (Nutrition-Sensitive Agriculture).
- c. Build, or prevent the decline of, soil fertility.
- d. Do not negatively affect the local environment, biodiversity, ecosystems and hydrology.
- e. Do not negatively affect pastoralist communities and indigenous communities who share common resources.
- f. Do not create a monopoly for the owners of the technology.
- g. Do not displace or exclude other technologies that would score higher on the CSA scale (Alternatives Analysis).
- h. Show a higher ratio of benefits to risks than that of existing technologies (Risk Benefit Analysis).
- i. Adequately mitigate any negative consequences of the technology.

We believe that technologies and approaches do not have to fulfil all of FAO's criteria to be considered climate-smart; it is sufficient for them to meet the criteria mentioned above.

### OUR FOCUS

SHA believes that through the sustainable intensification model we can achieve the first two principles of CSA

Agriculture is a major source of greenhouse gas emissions, particularly methane and nitrous oxides. SHA, however, will not focus directly on reducing greenhouse gas emissions as poor smallholder farmers are not significant contributors to these and should not be obliged to reduce their carbon emissions. Nonetheless, through the promotion of CSA practices, SHA will contribute to carbon sequestration.

CSA provides an excellent opportunity for the much needed transformation by uniting agriculture, development and climate change under a common agenda, integrating the three dimensions of sustainable development (economic, social and environmental) to address food security and climate challenges. CSA therefore sustainably increases agricultural production and incomes, builds the resilience of agricultural systems to climate change and enhances C-sequestration.

The promotion of CSA technologies is highly context specific. Technologies that reduce greenhouse gas emissions on some soils may increase these emissions, relative to conventional agriculture, in other contexts. All proposed technologies therefore have to be assessed using agro-ecological analysis, involving the study of agro-ecosystems, including human and environmental elements (farming systems) to enhance the resilience and ecological, socio-economic and cultural sustainability of farming systems.



## How to Start

To ensure that all agriculture, livestock, NRM and Enterprise interventions are climate-smart, all SHA's country programs will regularly review the available information on historic climate trends and variability, the predictions from Global Circulation Models and the experiences of farmers, using participatory rural assessment (PRA) tools, and make this information available for project planning. During the implementation of agricultural development projects, field staff will be encouraged to collect periodic weather information and make the data available to both SHA and Government decision makers. This will ensure that, when designing agricultural projects technical staff will, with the assistance of Government and private sector extension staff and researchers, assess the potential impact of climate change and climate shocks on the farming systems and natural resources to determine:

**Exposure:** generally linked to location. What are the climatic changes and shocks to which SHA's target beneficiaries will be exposed? Critical factors for crops and livestock will be changes in rainfall and rainfall patterns and changes in temperature extremes, especially high night-time temperatures.

**Sensitivity:** how will the crops, livestock and natural resources that form the farming systems respond to the predicted climate shocks and stresses?

By assessing **exposure** and **sensitivity** with the community, SHA and partners can prioritise the critical risks for agriculture and help farmers develop adaptation strategies. These need to take into account adaptive capacity: Do the farming households and communities understand the changes required to reduce the sensitivity of the crops and livestock to climate change? Are there innovative farmers in the community already adapting to climate change? Do our target beneficiaries have the capital, labour and time to make the changes? Adapting to new crops and agronomic methods will require access to research, extension services, inputs, capital and exposure to farmers who already practice CSA techniques.

For most of SHA's beneficiaries, who are generally labour and land constrained, the emphasis will be on increasing crop yields per unit area (**Sustainable Intensification**) and the diversification of farming systems to diversify diets and spread risks. In some circumstances, however, specialisation in particular farm enterprises, or extensive farming and herding may be more effective livelihoods strategies.





## What do we expect from research?

SHA will work with research institutions and other agencies to undertake **adaptive research** to understand, document and overcome the constraints to CSA adoption for smallholder farmers (the extreme poor and marginalised groups), including women's workloads and access to technology and extension services; understanding the nutritional implications of climate change and how these can be addressed through CSA; and policy incentives to promote and adopt CSA as well as evaluating the socio-economic benefits arising out of the adoption of different CSA practices.



## How will we advocate for CSA?

SHA will support advocacy efforts to increase support for CSA in our target countries through donor support and market-based CSA initiatives. We will work through our national and international networks, including the Irish Forum for International Agricultural Development (IFIAD), Dóchas Working Group on Livelihoods, Food and Nutrition Security, the UK All Party Parliamentary Group and the FAO Civil Society Mechanism.

In-country SHA will advocate for an increased adoption of CSA through the reform of agro-input subsidy schemes; the reform of government agriculture and livestock extension services; the provision of social protection payments and grants linked to climate change adaptation; private sector initiatives; the improvement of smallholder access to CSA technologies, and the protection of smallholder farmers' and pastoralists' land and intellectual property rights. We will promote private sector investment in the provision of CSA technologies, appropriate insurance services and Information and Communications Technology (ICT), and advocate for the government to create an enabling environment for the provision of these services.

By advocating leading edge solutions aimed at building the resilience of agriculture and food systems we will contribute to delivering on the Paris Agreement, the Sendai Framework for Disaster Risk Reduction, and the 2030 Sustainable Development Goals.

# What are we doing already?

The below table provides examples of CSA Approaches and Technologies that have been used by SHA over the years and how they meet FAO's three pillars of CSA. A full list by country is provided in SHA's CSA portfolio.

		Where is this climate-smart?	Increasing productivity	Adaption	Mitigation
<b>CROP PRODUCTION</b>	Conservation Agriculture (CA)/ CA with trees.	Semi-arid/ regions with uncertain rainfall	✓	✓	✓
	System for Rice Intensification (SRI)	Irrigated rice where water is limited	✓	✓	
	Improving the supply of Drought Tolerant/ resistant crops & varieties	Semi-arid/ regions with uncertain rainfall	✓	✓	
	Improving the supply of Quick Maturing Varieties/ drought avoiding varieties	Semi-arid/ regions with uncertain rainfall	✓	✓	
	Water efficient household vegetable production: keyhole, sack and tower gardens	Semi-arid/ regions with uncertain rainfall	✓	✓	
	Integrated Soil Fertility Management	All regions	✓	✓	✓
	Post-Harvest Storage	All regions	✓		
<b>WATER</b>	High Efficiency Irrigation	Irrigated areas	✓	✓	
	Rainwater Harvesting (on & off farm)	All regions	✓	✓	
<b>NRM</b>	Functional Landscape Approach	All regions	✓	✓	
<b>FORESTRY &amp; AGRO-FORESTRY</b>	Fruit trees, including wild fruits	All regions	✓	✓	
	Fertiliser trees	All regions	✓	✓	✓
	Natural Forest Management	All regions	✓	✓	✓
	Woodlots/ plantations/ reforestation	All regions	✓	✓	✓
	Farmer Managed Natural Regeneration	Semi-arid/ regions with uncertain rainfall	✓	✓	✓
<b>LIVESTOCK</b>	Animal Health	All regions	✓		
	Water for Livestock	All regions	✓	✓	
	Fodder	All regions	✓	✓	
	Livestock breeding	Regions expected to become significantly wetter or dryer	✓	✓	
	Rangeland Management	All regions	✓	✓	✓
	Early Warning Systems	All regions		✓	
<b>ENERGY</b>	Fuel Efficient stoves	All regions			✓
	Insurance	Regions with uncertain rainfall		✓	

## Some useful resources

Technical information on Resilience can be found in SHA's **Resilience Technical Brief**.

CRS's Pocket Guide: [Extension practice for agricultural adaptation](#) provides a simple, practical approach to climate change planning. Some of the data required for understanding crop sensitivity to temperatures and rainfall can be found in USAID's [Agricultural Adaptation to Climate Change in the Sahel: A Review of Fifteen Crops Cultivated in the Sahel](#).

CARE's [Gender-sensitive Climate Vulnerability and Capacity Analysis \(GCVCA\)](#) approach is a comprehensive resource. The online CSA Guide provides a gateway to online resources for implementing Climate-Smart Agriculture <https://csa.guide/>.

Irish Aid in collaboration with IIED has established a [Climate and Development Learning Platform](#) that hosts a collection of research reports, national adaptation plans and planning tools for some of SHA's target countries.

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