Alliance

Bioversity International

CIAT
International Center for Tropical Agriculture
Since 1967 *Science to cultivate change*

World Agroforestry Centre

Ministry of Agriculture, Livestock, Fisheries and Cooperatives

Translating Climate-Smart Agriculture Policies into Action

A guidebook for operationalizing climate-smart agriculture into local action planning

CGIAR
Science for a food-secure future

The **Alliance of Bioversity International and the International Center for Tropical Agriculture (CIAT)** delivers research-based solutions that address the global crises of malnutrition, climate change, biodiversity loss, and environmental degradation.

The **Alliance** focuses on the nexus of agriculture, the environment, and nutrition. We work with local, national, and multinational partners across Africa, Asia, Latin America, and the Caribbean, and with the public and private sectors and civil society. Through novel partnerships, the Alliance generates evidence and mainstreams innovations to transform food systems and landscapes so that they sustain the planet, drive prosperity, and nourish people in a climate crisis.

The **Alliance** is part of the **Consultative Group for International Agricultural Research (CGIAR)**, the world's largest agricultural research and innovation partnership for a food-secure future, dedicated to reducing poverty, enhancing food and nutrition security, and improving natural resources.

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World Agroforestry (ICRAF) is a CGIAR Center of excellence in science and development that harnesses the benefits of trees for people and the environment. We are headquartered in Nairobi, Kenya and operate in 38 countries. From farmers' fields to the global sphere, we develop knowledge practices to ensure food security and environmental sustainability. Our vision is an equitable world were all people have viable livelihoods supported by healthy and productive landscapes.

www.worldagroforestry.org

The vision of the **Ministry of Agriculture, Livestock, Fisheries and Cooperatives (MoALFC)** is to secure a wealthy nation anchored by an innovative, commercially oriented, and competitive agricultural sector through the creation of an enabling environment for improved livelihoods, food security, and sustainable natural resource management. To fulfill this vision and mission and build its own culture, the MoALFC operates on the following core values: professionalism, integrity, efficiency, responsiveness, partnerships, and gender equity.

http://www.kilimo.go.ke

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Acknowledgements

Acronyms and abbreviations

AEZs	Agro Ecological Zones
CAADP	Comprehensive Africa Agriculture Development Program
CDM	Climate Development Mechanism
CGIAR	Consultative Group for International Agricultural Research
CIAT	International Center for Tropical Agriculture
CSA	Climate Smart Agriculture
ERA	Evidence for Resilient Agriculture
FAO	Food and Agriculture Organization of the United Nations
ICRAF	World Agroforestry
KCSAIF	Kenya Climate Smart Agriculture Implementation Framework
KCSAS	Kenya Climate Smart Agriculture Strategy
MoALFC	Ministry of Agriculture, Livestock, Fisheries and Cooperatives
NCCAP	National Climate Change Action Plan
NDC	National Determined Contribution
UNFCCC	United Nations Framework Convention on Climate Change

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Guidebook overview

Why this guidebook?

Many countries show evidence of positive progress in translating climate ambition into action at the national level through laws and policies that address adaptation and mitigation. However, there is still a gap in translating national policies into local actions. Bridging this gap requires building the capacity of technical officers and policy makers across scales, including at the levels of subnational governance and local communities, to support effective policy implementation. Against this background, we organized sensitization and capacity building workshops for subnational agricultural officers in Kenya. This guidebook outlines a series of lessons and activities to conduct throughout the workshop and provides a day-by-day agenda (Annex Tables A2.1 and A3.1-A3.4). The outputs of these workshops include completed templates for a CSA action plan and project concept.

The challenge: Understanding the importance of climate change, agriculture, and policy frameworks

The earth's climate is changing, and is likely to continue to do so in the coming decades because of increasing concentrations of greenhouse gases in the atmosphere, mainly due to human activities. Patterns of weather variation, erratic rainfall and the resultant floods, higher temperatures, droughts, and rising sea levels are all witnesses to this trend.

Much of Kenya's agricultural vulnerability to climate change lies in its agricultural systems, which are largely rain-fed, often underdeveloped, and dominated by small-scale farmers with limited financial resources and suboptimal access to infrastructure and information. Regardless of their dependency on weather conditions, these agricultural systems are also diverse and context-specific, and Kenyan farmers possess generations of traditional knowledge that supports resilience. The combination of climatic and non-climatic drivers and stressors, however, exacerbates the vulnerability of Kenya's agricultural systems to climate change.

Building resilient agricultural systems while minimizing emissions is an important agenda in countries like Kenya. Climate-smart agriculture (CSA), a concept and approach that aims to sustainably increase agricultural productivity, enhance resilience, and where possible mitigate greenhouse gas emissions, is key to transforming agricultural systems amidst climate change. Strengthening the capacities of all actors and stakeholders and developing policies to effectively guide the implementation of climate-smart practices, technologies, and innovations will maximize the benefits from this approach. The government of Kenya has made considerable efforts to ensure these outcomes, such as being part of important international and regional commitments, frameworks, and plans; developing national policies, plans, and strategies; and identifying potential financing sources and mechanisms. These international commitments, programs, and plans include the United Nations Framework Convention on Climate Change(UNFCCC), the Nationally Determined Contributions (NDC), the Comprehensive Africa Agriculture Development Program (CAADP), the Malabo Declaration on Accelerated Agricultural Growth and Transformation, and the African Union's Africa Agenda 2063.

In particular, the Kenya Climate Smart Agriculture Strategy (KCSAS) and its Implementation Framework (KCSAIF) enable the transition to agriculture that guarantees food security amid climate variability.[1]

Specific objectives of the KCSAS include the following.

1		Enhancing the adaptive capacity and resilience of farmers, pastoralists, and fisher-folk to the adverse impacts of climate change
2		Developing mechanisms that minimize greenhouse gas emissions from agricultural production systems
3		Creating an enabling regulatory and institutional framework
4		Addressing cross-cutting issues that adversely impact CSA

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1 Government of the Republic of Kenya, "Kenya Climate Smart Agriculture Strategy," 2017, https://bit.ly/35UIOo5; Government of the Republic of Kenya, "The Kenya CSA Implementation Framework," 2018.

The KCSAIF provides broad guidelines which counties or any other stakeholders are expected to use to implement CSA locally. These documents enable the roll out of CSA sensitization and the development of action plans and project concepts.

Using this guidebook: What is its aim, who is its target audience, when is it useful?

What does this guidebook aim to do?

This guidebook outlines a step-by-step process or approach to sensitize subnational agricultural actors to and build their capacities in the following knowledge and skills.

1 CSA national documents, policies, and strategies to facilitate farm-level implementation

2 The identification and assessment of climate risks

3 Prioritizing CSA practices that best address context-specific climate risks and the development of action plans and concepts

By the end of the workshop, participants will have co-developed a template for a CSA action plan and project concept based on national objectives but geared toward their subnational contexts.

Who can use this guidebook?

This guidebook is intended for national officers, non-governmental organizations, civil society organizations, researchers, and implementation enthusiasts who are keen on translating national policies, strategies, plans into local action. The target audience comprises all local stakeholders that need this knowledge to implement agricultural programs and projects that address climate change risks and enhance the resilience of people and ecosystems.

When is this guidebook meant to be used?

This guidebook can support the development of new policy guidelines, commitments, and strategies globally or nationally, or the review or reform of existing ones. It can help translate international and national objectives and commitments into local action.

Lesson 1. Climate change, impacts, and agriculture

Objectives:

1. To introduce basic climate change science based on cause and effect

2. To describe the direct and indirect effects of climate change and agriculture (Figure 1)

3. To identify and explain climate change risks, shocks, and hazards experienced locally

Contents:

1. Introduction to climate change causes, greenhouse effects, and global warming

2. The impacts of climate change on agriculture

3. Agriculture as a contributor to climate change

Resources needed:

1. A PowerPoint presentation

2. A screen and projector

3. Flip charts

4. Markers

Plenary discussion (15 minutes)

Aim: To assess participants' level of understanding of climate change and related concepts (Box 1)

Activity 1.1: PowerPoint presentation about basic climate change science and its impacts on agriculture (20 minutes)

Tip: Use appropriate examples based on the local contexts such as International Panel on Climate Change assessment reports, climate risks and vulnerability reports and case studies from the host region or county or district (Figure 2).[2]

BOX 1:

Sample guiding questions

- What is the climate?

- What are the differences between the weather and climate?

- What is climate change?

- What causes climate change?

- How does agriculture contribute to climate change?

- What positive and negative agricultural impacts of climate change have you have observed?

Gas emissions, chemical use, soil and crop management, and transportation contribute to climate change

Agriculture

Climate Change

Climate changes impacts on temperature, rainfall and pollution negatively impact agriculture production
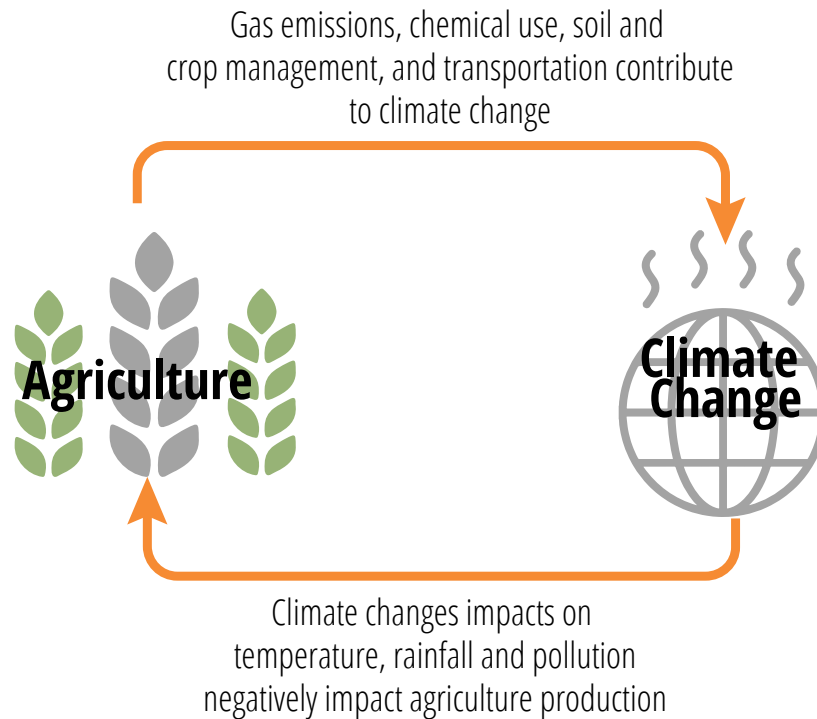
Figure 1: Impacts between climate change and agriculture

Adapted from the United States Department of Agriculture Module 1: Introduction to Climate-Smart Agriculture as an approach to integrated agricultural and climate change-related planning

Drought   **Floods**

Figure 2: Real impacts of climate change on animals and people in Kenya (photo credits: CIAT)

[2] IPCC, "Reports," accessed May 28, 2021, https://www.ipcc.ch/reports/.

Lesson 2. Introduction to Climate-Smart Agriculture

Increase productivity and incomes

Adapt and build resilience to climate change

Reduce or eliminate greenhouse gas emissions
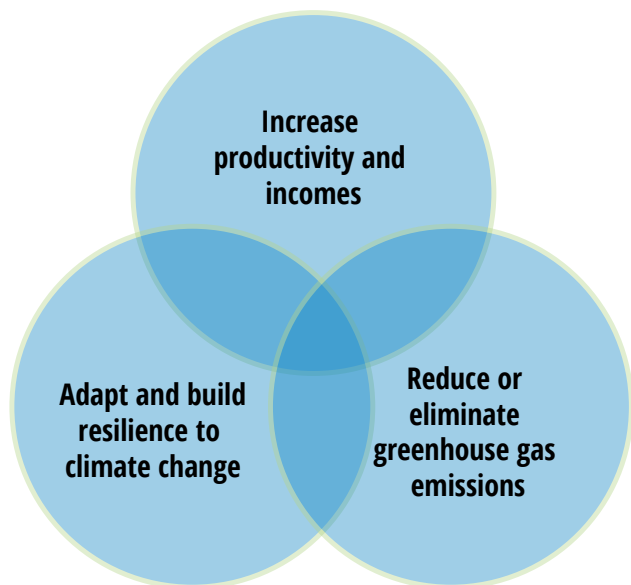
Objectives:

1. To define and understand CSA concepts[1]

2. To introduce the integrated climate-smart landscape approach to resilient systems

3. To appreciate the relevance of CSA in a changing climate

Presentation Contents:

1. Definitions of the CSA pillars

2. A brief history of and introduction to climate-smart landscapes

3. CSA practices at the landscape and farm scales

Resources needed:

1. Screen and projector

2. Flip charts and markers or pens

3. Different-colored sticky notes

Activity 2.1: Understanding climate-smart agriculture goals (20 minutes)

1. Write the 3 CSA goals – productivity, resilience, and mitigation – on three flip charts.

2. Give each participant a marker and 3 sticky notes

3. Explain the exercise. Create and describe a color key such as the following:

   • Productivity = green note

   • Resilience = yellow note

   • Mitigation = pink note

4. Ask each participant to generate as many ideas as possible about the CSA goals (Figure 3).

Aim: To establish how well each CSA goal is understood

Note: It is important to have a discussion after the activity to provide clarification.

Tip: Additional resources include the *Climate-Smart Agriculture: Sourcebook* from the Food and Agriculture Organization of the United Nations (FAO); "Climate-Smart Agriculture: What is it? Why is it needed?" from Climate Change, Agriculture and Food Security (CCAFS), CGIAR, and the FAO; and the FAO's "Climate-smart agriculture training manual – A reference manual for agricultural extension agents."[2]

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[1] Climate Change and Food Security and CGIAR, "What Is Climate-Smart Agriculture?" Climate-Smart Agriculture Guide, 2015, https://bit.ly/35Tj4Zk.

[2] FAO, ***Climate-Smart Agriculture: Sourcebook*** (Rome, Italy: Food and Agriculture Organization of the United Nations, 2014), https://bit.ly/3qoenjD, "Climate-Smart Agriculture: What Is It? Why Is It Needed?" (Rome, Italy: Food and Agriculture Organization of the United Nations, 2014), https://bit.ly/3qs5bKN; FAO, "Climate-Smart Agriculture Training Manual – A Reference Manual for Agricultural Extension Agents" (Rome, 2018).

Figure 3: An example of the outcome of activity 2:1 on understanding the CSA pillars

Lesson 3. Global and national responses to climate change
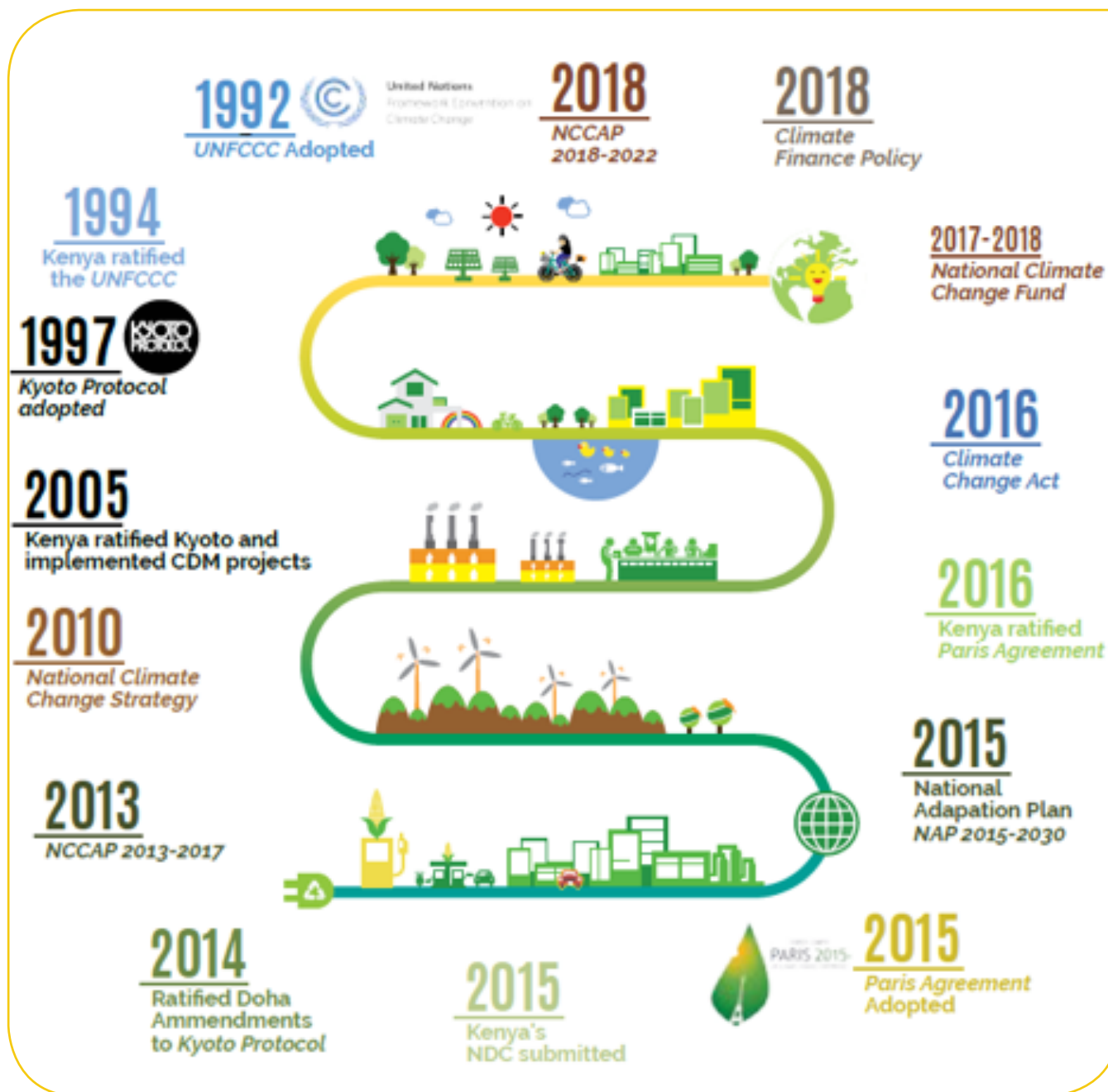
Figure 4: Global and national responses to climate change for Kenya

Overall objectives:

1. To build awareness of key national and global policies and legal frameworks on climate change

2. To sensitize participants to the requirements and opportunities for subnational actors to domesticate and implement national climate policies

3. To understand and appreciate the need to develop locally based strategies to respond to climate change impacts

3.1 National and international climate policies, laws, and commitments

Contents:

1. Outline of the relevant global and national climate change laws and policies (Figure 4)

2. Description of national legal and institutional frameworks related to climate change

3. Introduction to national CSA strategies and frameworks and their linkages to national and international climate change policies

Resources needed:

1. Screen and projector

2. PowerPoint presentation

3. Flip charts and markers

4. Markers or pens

Icebreaker (10 minutes)

Aim: To gauge the participant's level of understanding of global and national climate change policies (Box2)

Activity 3.1 A PowerPoint presentation by the facilitator on national and global climate policies (20 minutes)

Aims:

1. To introduce participants to the climate change-related policies in the country under consideration and its agricultural sector (Figure 6)

2. To build awareness of international commitments to which their country is a party

Tip: Explain the purpose of each specific policy or legal framework.

Activity 3.2 Identifying opportunities to operationalize national and global policies at the subnational level (10 minutes)

Aims:

1. To enable participants appreciate the role of national and global climate change-related policies and legal framework

2. To raise awareness about the need to domesticate and implement these policies and frameworks locally to address challenges associated with climate change.

3.2 National strategies and frameworks for climate-smart agriculture implementation

Objective: To deepen participants' understanding of the objectives and components of national frameworks and strategies for CSA implementation (Box 3)

Contents:

1. Objectives and components of the national CSA strategy

2. Objectives and components of the national CSA implementation framework

3. Strategic issues and aspects of implementation

4. Subnational priority actions identified for implementation

Resources needed:

1. Screen and projector

2. PowerPoint presentation

3. Copy of the national CSA strategy, such as the KCSAS

4. Copy of national documents pertaining to CSA implementation, such as the KCSAIF

BOX 2:

Sample guiding questions

• Which national climate change policies do you know about?

• How relevant are they to you at the subnational level?
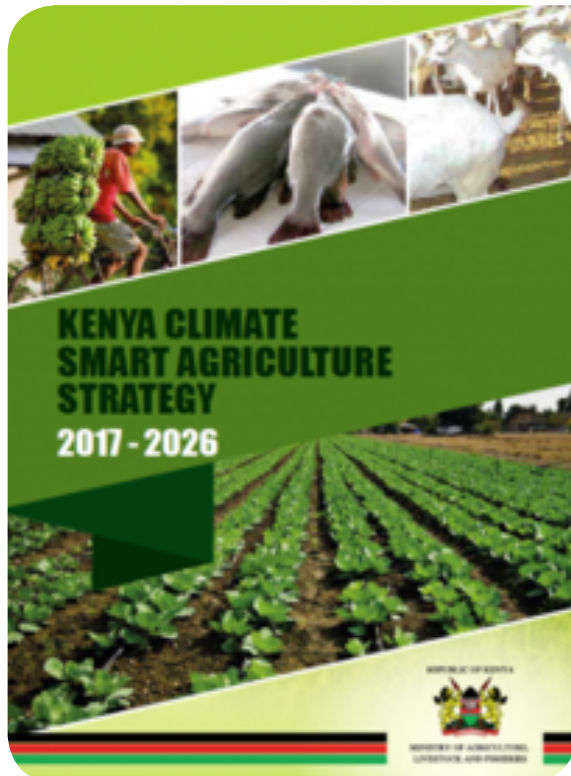
Figure 5: Kenya Climate Smart Agriculture Strategy and Implementation Framework

Plenary icebreaker (5 minutes)

Aim: To gauge participants' understanding of the need for a framework to guide CSA implementation

Activity 3.3: A PowerPoint presentation about the objectives of the national CSA strategy (15 minutes)

Aim: To present the objectives and guiding principles of the strategy

Activity 3.4: A PowerPoint presentation about the national framework and proposed actions for CSA implementation (20 minutes)

Aim: To present national guidelines for implementing CSA

> **Tip:** Emphasize the responsibilities at the subnational level within the national CSA implementation framework.

Activity 3.5: Recommendations and conclusions (20 minutes)

Aims:

1. To encourage participants to develop guiding frameworks for CSA implementation at the subnational level

2. To secure commitments from participants to take responsibility for activities or actions toward CSA implementation

> **Tip:** Ensure clear commitments based on the roles of participants.

BOX 3:

Sample guiding questions

- How relevant are CSA policies at the subnational level?

- What can you do to help implement these policies in the subnational context?

Lesson 4. Prioritizing climate-smart agriculture interventions: the process from long lists to finalists

4.1 Developing a long list of interventions

Steps:

A. Mapping program and project initiatives

B. Linking climate-smart agriculture practices with knowledge

C. Subnational climate risk profiles

D. Rose, bud, thorn

Overall objectives:

1. To evaluate ongoing, past, and future projects and programs at the subnational level with attention to CSA practices

2. To develop a long list of CSA interventions using key national strategic documents, policies, plans, and programs, such as the KCSAS and KCSAIF, as well as the Evidence for Resilient Agriculture (ERA) platform, the Data Atlas, and relevant national or subnational climate risk profiles

BOX 4:

Sample guiding questions

- Do you think a framework to guide CSA implementation is necessary?

- What actions do you think require guidelines?

BOX 5:

Sample guiding questions

- What guiding frameworks do you think the local government can provide for CSA implementation?

- What activities or steps are required to develop these frameworks?

Tip: In the following exercises, participants may be grouped based on their sub-sector expertise in crops, livestock, fisheries, water, or the environment.

A. Mapping of program and project initiatives

Objectives:

1. To identify all the climate-smart practices undertaken locally

2. To understand the spatial distribution of local CSA initiatives and projects

3. To identify partners involved in these CSA initiatives and projects

4. To identify gaps and opportunities for CSA scaling

Contents:

1. Definitions of local administrative units or agro ecological zones (AEZs)

2. Descriptions of priority value chains, including crops, livestock, and fish, in each of these units or AEZs

3. Agricultural projects and partners within each of these units or AEZs

4. Status of these agricultural projects in terms of activities, expected outputs and target beneficiaries

Resources needed:

1. Screen and projector

2. Flip charts and markers

3. Manilla cards

4. Sticky notes

Activity 4.1: Assessment of climate-smart agriculture practices (60 minutes)

1. Group participants according to their sub-sectors, such as agriculture, livestock, fisheries, land, or water.

2. Give each group manila cards in a specific color.

3. Ask the groups to think of relevant projects.

4. For each project, have them provide the following information on one manila card(Figure 6): name, partners, location, units or AEZs where the project is implemented, priority value chains, CSA practices (Figure 7) involved, status, outputs, resources, and target beneficiaries.

5. Request that each group choose a representative to present on the projects they identified.

6. Ensure someone records all the information they present to visualize any gaps in administrative units and AEZs.

Aims:

1. To identify and review local projects

2. To highlight current CSA practices

Note: Each manila card will contain information about one project, program, or initiative. The facilitator will write the CSA practices on sticky notes as the participants present. This information may also be recorded in a spreadsheet detailing the projects in all the sub-sectors represented by participants in this activity (Figure 6).
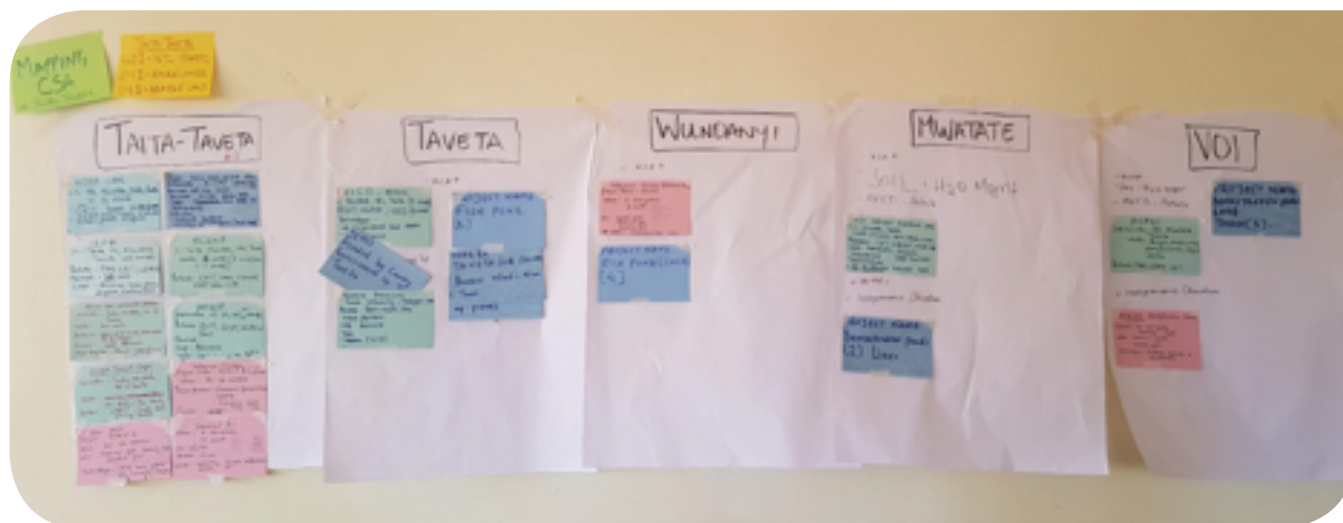
Figure 6: Mapping of projects according to location
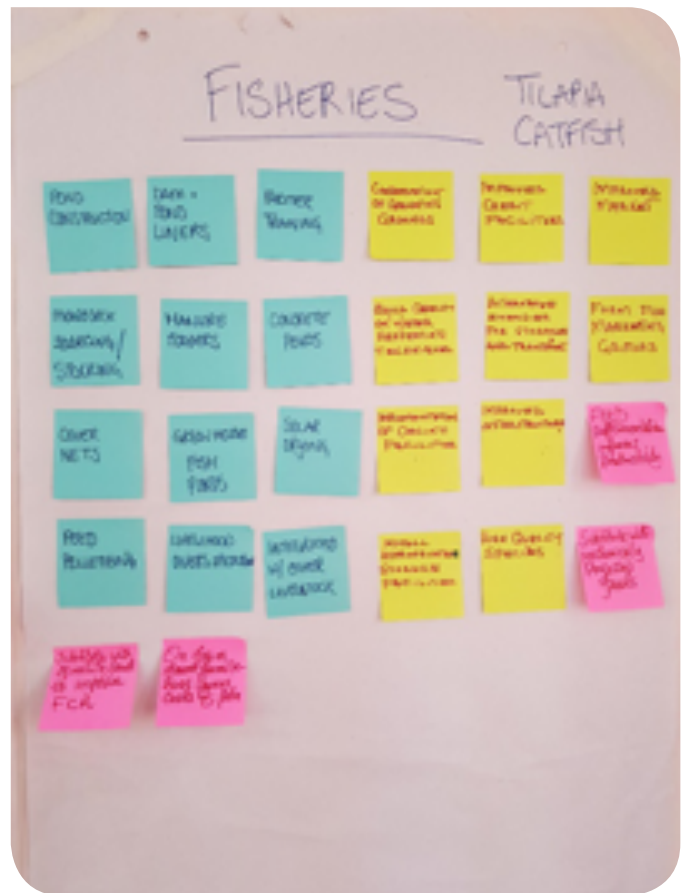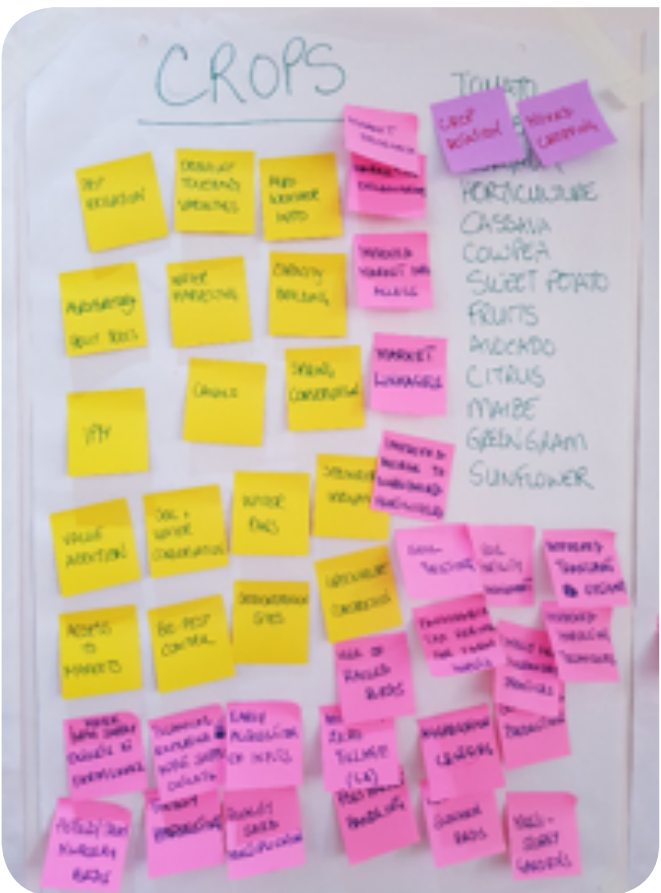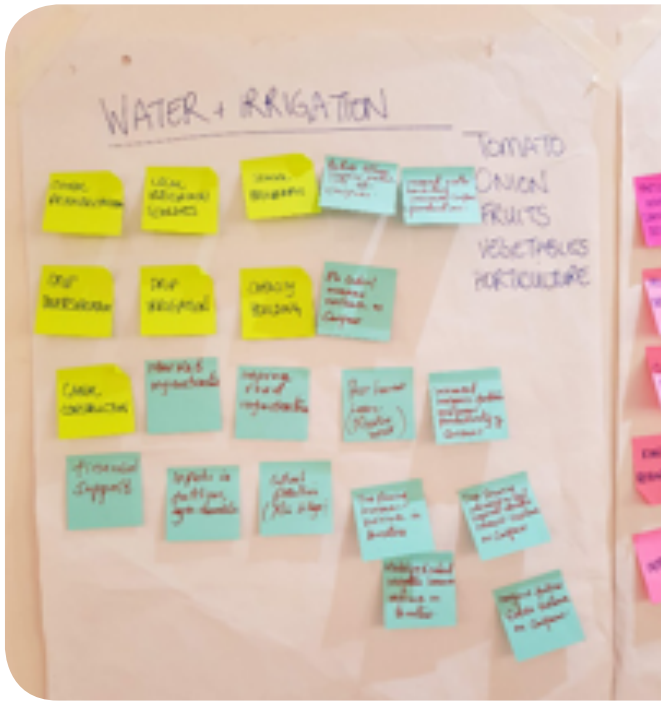
Figure 7: CSA practices as a result of the mapping of projects

CSA Project/ Activities	Kieni East	Kieni West	Mathira East	Mathira West	Mukurwe-ini	Othaya	Nyeri Central	Tetu	Wards	Entire county	Project Partners	Commodities	CSA Practices/ Activities	Number of Farmers	Status	Outputs (if any)	Reource Materials	target	Priority VCs	Identified Gaps
Upper Tana									26	Y	IFAD Spanish trust fund GoK County GoK Community		Water harvesting SWC Integrated Pest management Seed bulking Income generating activities (upland arrowroots), Greenhouses, fruit prdn, tree nursuries, energy saving jikos, value addition (bananas),	NA	ongoing	Improved incomes and livelihoods Improved security	Annual and semi reports			
Greening project										Y	County GoNyeri JKUAT KARLO Licenced private nurseries,	Avocadoes Mangoes Macadamia	procurement deliveries of seedlings capacity building,		ongoing	130,000 seedlings distributed and planted, reports				
other activities										Y			1) SLM 2) Certified …. pest and diseases survey, Soil health, soil testing, Greenhouses and potato warehouse drought tolerant varieties Capacity building on CS technologies promotion of IPM (Plant clinics) Coffee improvement							
Kenya Agr Insurance Program										N	GoK, County Govt, Consortium of Insurance Co., farmers	maize	sensitization of farmers, Procurement of premiums,		ongoing (2nd year)	reports, historical yield data, informed farmers		This		
greening projects									Rugi, Mukurweni central, Figu, Gakawa, Mugunda, Gatarakwa	N	County govt, Community, World Bank, GoK		Development of beans, potato, banana value chains, water harvesting, Agforestry, Drought tolerant, weather agroadvisory, water efficient techs, CA	10000, 15000, 13000	Ongoing	6 CIAPs (Community integrated action plans), water sub-projects, group profiling,tree nurseries				

CSA Project/Activities	Kieni East	Kieni West	Mathira East	Mathira West	Mukurwe-ini	Othaya	Nyeri Central	Tetu	Wards	Entire county	Project Partners	Commodities	CSA Practices/Activities	Number of Farmers	Status	Outputs (if any)	Reource Materials	target	Priority VCs	Identified Gaps
Upper Tana Nairobi water fund				■	■	■		■		N	TNC, NAirobi water fund, GPA, Nyeri County, Community		Construction & lining of water pans, riverbank protection (Bamboo planting) SWC, fruit and indigenous trees, energy		ongoing	reports, ~1000 water pans, fruits &indigenous trees				
One Acre fund									Mukurweni central, rugi, Gikodi, Mukurweni west	N	Go Nyeri, Bill Gates, Community	Maize, Horticulture, beans	credits for farm inputs, solar kits, energy saving jikos, capacity building	1000	ongoing	1000 farmers with inputs				
Pioneer fund (NGO)						■				N	Germany Fund, GoK, GoNyeri		indigenous trees, kitchen gardens, drip irrigation, fruit tree (avocado), bananas, Moringa	250 vulnerable farmers, 120	ongoing	increased area under drip, improved livelihoods, improved nutritional status				
ASDSP 2	■	■								N	G0K, GoNyeri, Swedish govt, community, Private extension providers	potato (irish)	Value chain development		Phase 1 complete, Phase 2 in the intial stage	Improved...., community empowerment, cooperative establishment				
NDMA	■	■								N	GoK, County govt, community		monthly bulletings, EWS, Weather advisory, Food situation assessment, water harvesting, emergency response, drought recovery seeds, County steering group????		ongoing					
PELIS(Plantation Establishment and Livelihood Improvement Systems			■	■				■		N	KFS, CFA, Communities, GoK, County govt		reafforestation of water towers, bean and potato prdn	8000	ongoing	increased forest cover, increased food security, increased river flow, community empowerment, reports				
SIVAP(Small-holder Irrigation Value Addition Project)	■	■							Narumoro/ Kiamathaga?)	N			horticultural crops, irrigation-dam excavation,	1200	ongoing	baseline report, Feasibility report, Bill of quantities				

CSA Project/ Activities	Kieni East	Kieni West	Mathira East	Mathira West	Mukurwe-ini	Othaya	Nyeri Central	Tetu	Wards	Entire county	Project Partners	Commodities	CSA Practices/ Activities	Number of Farmers	Status	Outputs (if any)	Reource Materials	target	Priority VCs	Identified Gaps
Construction of boreholes	■	■	■	■	■	■	■	■	all wards	Y					ongoing					
Kimondo					■				central ward	Y	County Govt. Nyeri		waterpans		Ongoing					
Kiria Earth dam		■								N			earthdam,		ongoing					
Simbara Kamatongu		■							Muiga	N	County Govt		pipes	4000HH			reports			
EmBaringo water project		■							Gatarakwa	N	county govt, Community		construction of 225 cubic metres							
Kimathi muhoya-Irrigation water project								■	Kimathi muhoya	N	County govt, Communtiy		Water tank		ongoing	reports				
Kimathi muhoya-Irrigation water project										N	County govt, Communtiy		water tank, procurement of pipes		Ongoing		reports			
Kanjuri water project			■							N	County govt, Community			1000HH			reports			
Hika water project			■						Ruguru	N	County govt, Community		Procurement of pipes	2000HH			reports			
Itiati water borehole			■						Karatina	N	County govt, Community			1500HH	ongoing					
Nganyuthe water project		■							Gatarakwa	N	County govt, Community		purchase of pipes	3000HH	Ongoing					
Aguthi/Gaki			■					■	Tetu,aguthi gaaki ward	N	County govt, Community		water tank		Ongoing					
Iruri water project			■						Ruguru	N	County govt, Community			1800HH	Ongoing					
Karithi water project			■						Karatina	N	County govt, Community		distribution main line	3000HH						
Nyange/Kirinyaga	■									N	County govt, Community		storage water tank (225m3)		ongoing					
Rehabilitation of Kamangura earth dam									Gakawa	N	KCSAP, County govt, Community			600HH	ongoing					
Rehabilitation of Lusoi earth dam-KCSAP	■								Thegu	N	KCSAP, County govt, Community			800HH	ongoing					

Figure 8: The Nyeri County evaluation of all crop and animal projects

Translating Climate-Smart Agriculture Policies into Action

B. Linking climate-smart agriculture practices with knowledge

Overall objectives:

1. To highlight CSA practices across different AEZs

2. To identify additional appropriate CSA practices for various sub-sectors

3. To utilize scientific evidence and improve analytical and decision-making skills

Resources needed:

1. Flip charts

2. Markers

3. Sticky notes

4. A copy of the Data Atlas[4]

5. Computers

6. Internet

7. Access to the ERA platform[5]

Activity 4.2: Using the Data Atlas (30 minutes)

1. Provide each group or participant with a copy of the Data Atlas book.

2. Explain what Data Atlas is and how to read the graphs (Figure 8).

3. Once the participants understand how to read graphs, allow them to discuss and interrogate graphs pertaining to CSA practices in their AEZs.

4. The groups will then choose additional potential CSA practices, which will contribute to the long list.

5. Ensure that these practices are recorded, for instance using the flip charts or sticky notes.

Aim: To promote CSA practices that are evidence-based

Activity 4.3: Using the Evidence for Resilient Agriculture platform (30 minutes)

1. Provide each group or participant with a computer and a link to the ERA platform.

2. Explain what ERA is and how to read the graphs

3. Once the participants understand how to read graphs, allow them to generate, discuss, and interrogate graphs pertaining to CSA practices in their AEZs.

4. The groups will then choose additional potential CSA practices, which will contribute to the long list.

Aim: To promote CSA practices that are evidence-based

Note: Use the ERA resource material available on the website for this activity (Box 6).

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4 Lamanna et al., "Data Atlas for Climate-Smart Agriculture in Kenya."

5 CCAFS, CGIAR, and ICRAF, "Evidence for Resilient Agriculture | Agricultural Decisions, Rooted in Data.," Evidence for Resilient Agriculture, 2021, https://http://localhost:8000/.

How to use the Evidence for Resilient Agriculture platform

How to examine outcomes using Evidence for Resilient Agriculture:

- Open your web browser.

- Into the address bar, type "era.ccafs.cgiar.org."

- Navigate to the "Analyze" tab.

- In the menu on the left, click "Examine Outcome."

- Select up to 3 practices that interest you.

- Choose an outcome: productivity, mitigation, or resilience.

- Select up to 3 products, such as maize, cassava, or oil palm.

- Finally, choose an aggregate level by indicator, pillar, and outcome.

How to assess climate-smart potential

- Open your web browser.

- Into the address bar, type "era.ccafs.cgiar.org."

- Navigate to the "Analyze" tab.

- Click on "Assess Climate-Smartness."

- Select the practice grouping level: either "Practice Cluster" or "Practice."

- Specify whether you want to include data from papers wherein the practice was used by itself ("Solo") or along with other practices ("Combinations").

- Select the practices of your choice, such as feed addition, agroforestry, or pruning.

- Choose the product and product indicator: for instance, goats and either milk or meat.

- Set the mean annual temperature (e.g., 15-18) and rainfall (e.g., 700-850) of areas of interest.

- Select the outcome of interest: productivity, mitigation, or resilience.

- The resulting visualization will calculate effect sizes and provide maps that report the mean and record the number of studies in parentheses.

How to identify interactions

The goal here is to explore whether it's beneficial or antagonistic to use a CSA practice together with others rather than alone. For example, reduced till can be practiced alone or together with mulching or the application of organic or inorganic fertilizers.

- Open your web browser.

- Into the address bar, type "era.ccafs.cgiar.org."

- Navigate to the "Analyze" tab.

- Click on "Identify Interactions."

- Select your focal practice, such as reduced tillage.

- The tools will respond by selecting all the observations that use that practice alone or in combination.

- Select product category, such as Legumes.

- Select the specific product, such as Lablab.

- Set mean annual temperature (e.g., 15-18) and mean annual rainfall (e.g., 750-1100).

- Set the minimum number of studies (e.g., 4).

- Choose how you would like to order your bars: for instance, by productivity, resilience, or mitigation.

How to discover synergies

The premise of CSA is that food security and climate change can be addressed simultaneously. Changing management practices affects productivity, mitigation, and resilience outcomes. Some of these changes can be positive synergies, some can be ambivalent tradeoffs, and others can all be negative.

- Open your web browser.

- Into the address bar, type "era.ccafs.cgiar.org."

- Navigate to the "Analyze" tab.

- Click on "Discover Synergies."

- Select any management practices of interest.

- Choose any products of interest.

Select as many AEZs as are relevant.
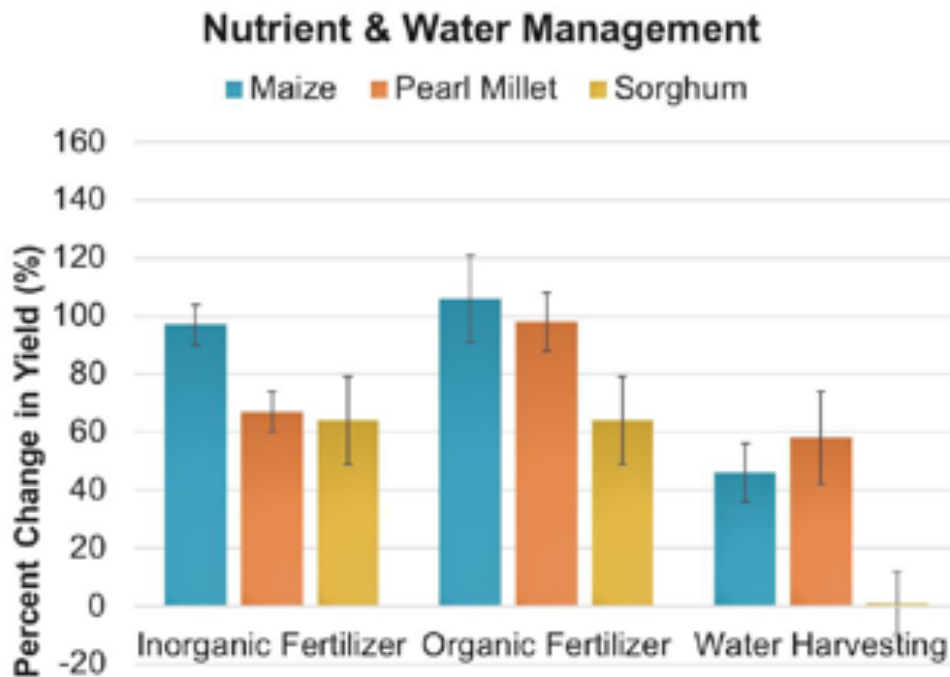
Figure 9: Changes in yield of different crops in response to different CSA practices in the Semi-Arid Agro ecological Zone.

Adapted from Data Atlas 2019

C. Subnational climate risk profiles

Objective: To identify additional CSA practices for the long list

Resources needed:

1. Flip charts

2. Markers

3. Sticky notes

4. Climate Risk Profile document[6]

Activity 4.4: Using subnational climate risk profiles (30 minutes)

1. Provide each group or participant with a copy of the relevant climate risk profile.

2. Explain to the group what a climate risk profile is and its relevance to this activity.

3. Ask the groups to identify promising CSA options from the climate risk profile (Figure 10).

4. Participants can write these options on sticky notes so facilitators can gather and display them for all to see.

5. Have participants add these options to their long list of potential CSA practices.

6 CGIAR, "CIAT Kenya County Climate Risk Profiles."

Figure 10: Excerpt from the Kajiado County climate risk profile showing relevant hazards, their magnitude, and promising interventions

D. Rose, bud, thorn
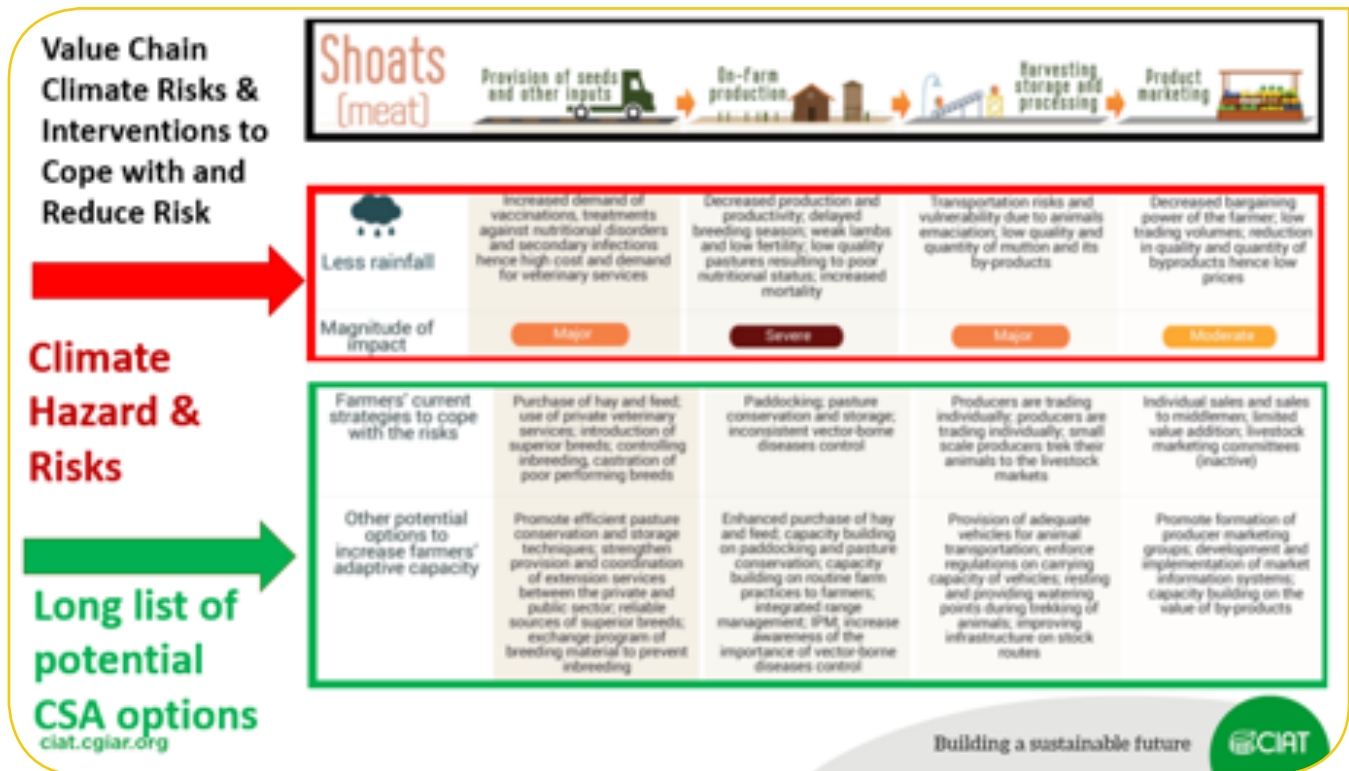
Objectives:

1. To understand what is working, what is not, and opportunity areas

2. To promote constructive discussions among the participants

Resources needed:

1. Flip chart

2. Marker pens

3. Sticky notes in three colors, such as pink, green, and yellow

Activity 4.5: Identifying roses, buds, and thorns in climate-smart agriculture (45 minutes)

1. Give each participant a marker and 3 sticky notes

2. Explain the exercise.

3. Devise and explain a color key like the following:

   - Pink note = rose = positive aspect

   - Yellow note = thorn = negative aspect

   - Green note = bud = improvement opportunity

4. Get each participant to generate as many ideas or insights as possible with regard to the mapped CSA initiatives (Figure 11)

5. Let the group take a few minutes to reflect on these themes.

6. Lead a short discussion about the data that has surfaced from the exercise.

Aims:

1. To consolidate gains, weaknesses, and opportunities.

2. To inform the strategic focus of CSA action plans, strategies, and project concepts.

Note: You can use any colors available to you; just specify which ones represent roses, buds, and thorns.

Tip: Include only one issue, idea, or insight per sticky note.

Figure 11: Outcome of the rose, bud, thorn activity

4.2 Producing a short list of practices

Objectives:

1. To reduce this long list of potential investments by applying several filters and indicators.

2. To produce a short list of CSA investments.

3. Developing the short list of CSA practices

Aim: To arrive at a short list of priority CSA actions to inform the development of the action plan or project concept.

Resources needed:

1. Flip charts

2. Markers

3. Sticky notes from the previous Rose/Bud/Thorn activity

4. Sticky notes with the CSA practices from all the previous activities

5. Sticky dots (for voting)

Note: You can organize the insights around various relevant themes or goals or topics before voting. This could be informed by the strategic objectives/ goals in National CSA strategies or implementation frameworks

Tip: In this exercise, participants may be grouped based on their sub-sector expertise in crops, livestock, fisheries, water, or the environment.

Activity 4.6: Voting on climate-smart agriculture options (20 minutes)

1. Ask participants to organize insights around themes or topics (Figure 12)

   - Resilience and Mitigation of greenhouse gas emissions

   - Productivity

   - Institutional coordination

   - Information and advisory

   - Identification of underlying, cross-cutting issues such as human resource capacity and finance that could constrain the realization of CSA objectives

2. Use sticky notes from the long list of CSA practices generated and from the rose, bud, and thorn activity and group them around the identified theme or topics.

3. Have the participants "vote" on options or opportunities.

4. Ask them to vote using numbered sticky dots in order of priority to determine what to work on first and why.

5. Let the group take a few minutes to reflect on this voting exercise; a priority list was developed to guide the development of the project concepts (see Figure 10).

6. Lead a discussion about the prioritised CSA options that has surfaced from the exercise.

Note: The topics used to organize options in this activity were guided by the National CSA Strategy and Implementation Framework for Kenya before voting.
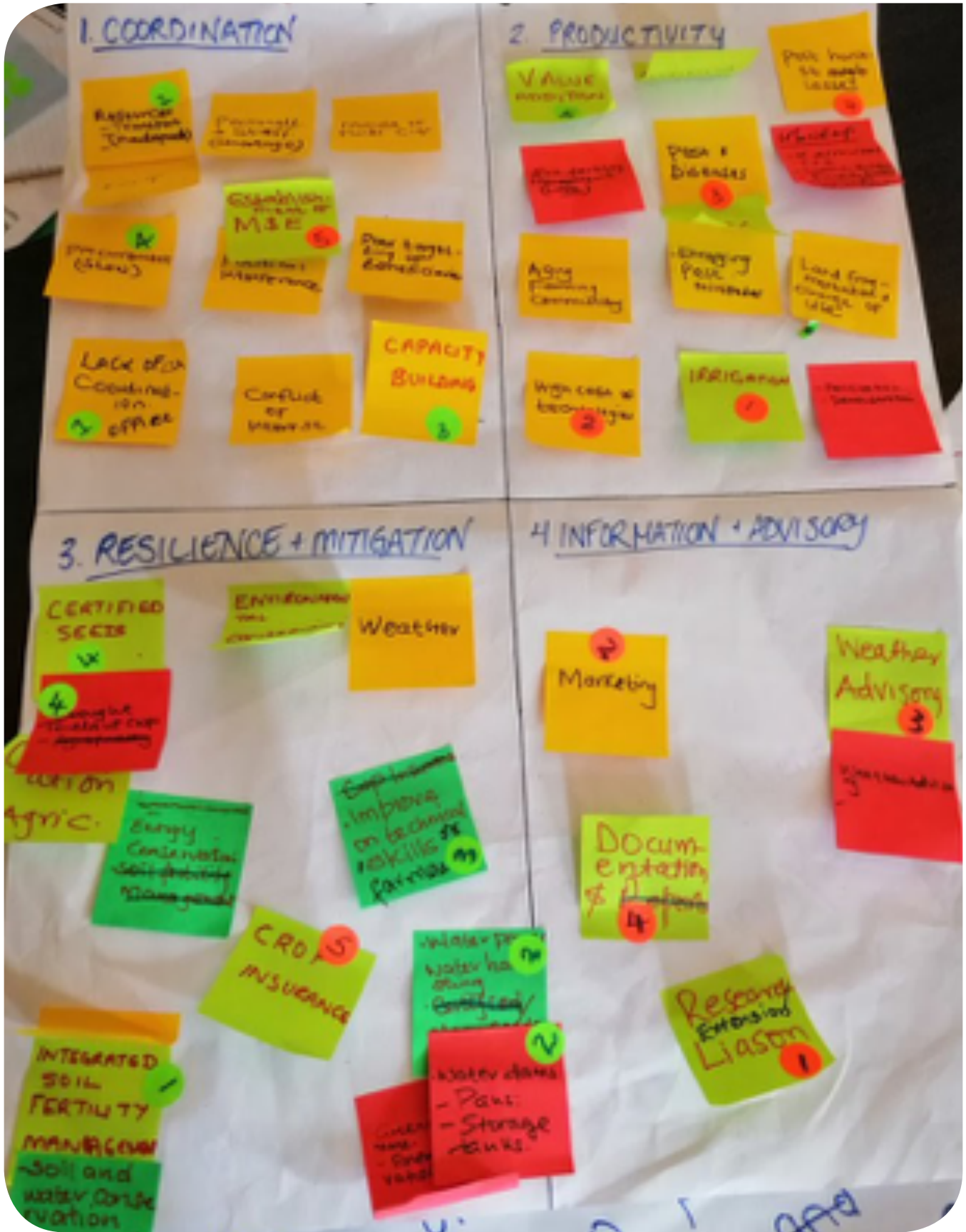
Figure 12: Voting on Climate Smart Agriculture Options

Lesson 5. The development of climate-smart agriculture action plans and project concepts

5.1 Development of an action plan

The short list of priority CSA options will fill the action template. Each action is then assessed based on its implementers and target beneficiaries, the resources required for success in terms of finance, policy, and human capacity, how each action will be measured or evaluated, the amount of time necessary for its completion, and its desired outcome.

Objective: To build an action plan based on the prioritized actions.

Contents of the action plan template:

1. Prioritized actions

2. Their implementers and beneficiaries

3. Resources needed

4. Their timing

5. Desired outcomes

Resources needed:

1. Screen and projector

2. Flip charts and markers

3. Manilla cards

4. Sticky notes

Activity 5.1: Developing a climate-smart agriculture action plan using the selected priority actions (60 minutes)

1. Import the short list of priority CSA options into an action template (Table 1).

2. For each action, determine the following information.

   - Implementers and target beneficiaries

   - Resources required for success, for example in terms of finance, policy, and human capacity

   - How each action will be measured or evaluated

   - The amount of time necessary for its completion

   - Its desired outcome

3. Record this information within the template.

4. Have participants assess each action based on the template contents.

Aim: To familiarize participants with CSA action planning

Tip: Allow the participants to present after each activity to enable review.

Table 1. Action plan template

Component	Guiding question
Proposed actions	Which actions do you propose to meet your CSA goal?
Action 1.	
Action 2.	
Action 3.	
Beneficiaries	Which people or groups will benefit from each action?
Action 1.	
Action 2.	
Action 3.	
Implementers	Who will be responsible for rolling out each action?
Action 1.	
Action 2.	
Action 3.	
Resources needed	Which resources, such as finance, policy, or human capacity, are necessary to achieve your CSA goal?
Action 1.	
Action 2.	
Action 3.	
Indicators	How will you measure progress on each action?
Action 1.	
Action 2.	
Action 3.	
Timing	How much time do you need to complete each action?
Action 1.	
Action 2.	
Action 3.	
Outcome	How will you know that you have achieved your CSA goal?
Action 1.	
Action 2.	
Action 3.	

5.2 Development of a project concept

Objective: To build a project concept based on prioritized actions.

Contents:

1. Project goal
2. Justifications
3. Activities
4. Outputs
5. Beneficiaries
6. Impacts
7. Project costs

Resources needed:

1. Screen and projector

2. Flip charts and markers

3. Manilla cards

4. Sticky notes

Activity 5.2: Developing a CSA project concept using the selected priority actions (60-90 minutes)
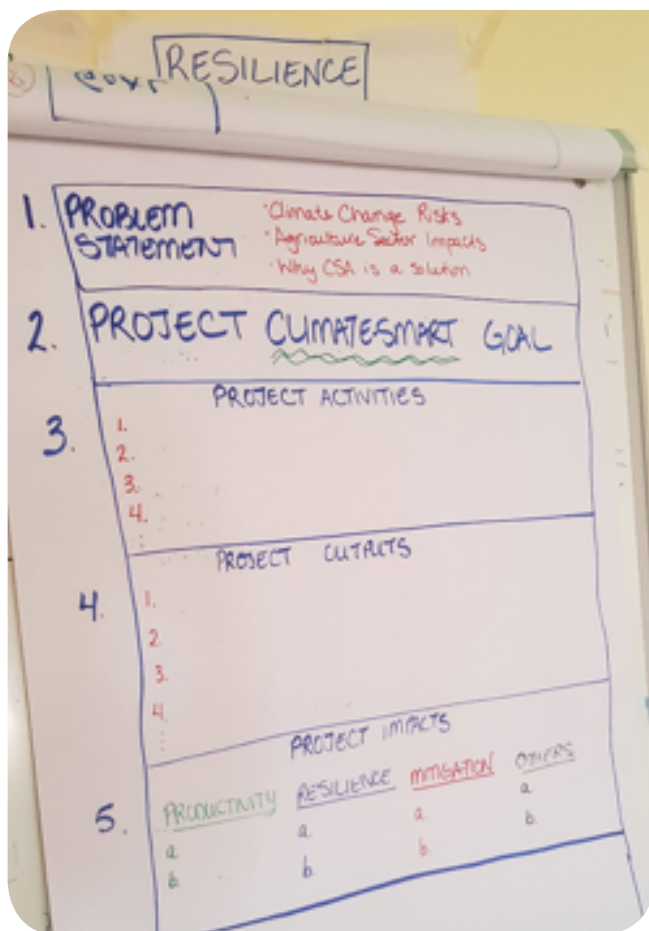
1. Have participants brainstorm using sticky notes or manilla cards to do the following:

   - Pinpoint the project goal

   - Determine project activities and indicators

   - Enumerate project outputs, impacts, and beneficiaries

   - Identify partners and financiers

Figure 13: Example of the project concept template on the flipchart

2. Facilitators can then post their notes for everyone to see and discuss.

3. Guide plenary group discussion to decide on a goal, activities, indicators, outputs, impacts, beneficiaries, partners, and financiers.

4. Fill this information into the project concept template (Table 2) using flipcharts (Figure 13)

Aim: To familiarize with the development of a project concept

Tip: Allow the participants to present after each activity to enable review alternatively you can go round the groups to ensure that they understand all the elements in the project concept templates.

Activity 5.3: Group Pitches (60 minutes)

1. Having filled the project concept template have the participants prepare power point pitches (Figure 14)

2. The groups should select one representative to present their prepared pitch

3. Pitch presentation (set pitch for 10 minutes with 5 minutes Questions and Answers)

Aim: To enable further discussions between the different sub sectors and explore opportunities for collaboration or possible integration between projects.

Figure 14. Groups preparing for their project pitches

Table 2. Project concept template

Project components	CSA Project Title
Goal	
Justification	
Activities	
Indicators	
Outputs	
Beneficiaries	
Impacts	
Costs	
Potential partners	

Annexes

Annex 1. Workshop objectives

1. To create awareness of climate change impacts in agriculture and related global and national response, actions, and commitments

2. To build an understanding of CSA and the national CSA strategy and framework for its implementation

3. To map out CSA initiatives at the subnational level and identify any gaps or opportunities

4. To jointly identify priority CSA actions for the country, district, or region, and develop an implementation plan or mechanism

5. To collectively identify actions for promotion, out-scaling, or up-scaling and develop a CSA action plan

Annex 2. Agenda for sub national assembly members (policy makers) day 1

County, District, or Regional Leadership Workshop:

Sensitization and Dissemination of the National Climate-Smart Agriculture Strategy and Implementation Framework and Enhancing Capacity for Resilient Agricultural Planning

Table A2.1 Agenda for day 1

Time	Activities (Lessons 1 and 3)	Responsible
Participants: County Assembly, Chief Executive Commissioners of Agriculture and directors, and the facilitating team		
8:30-10:00	Welcome remarks	Facilitators
	Introduction	Facilitators
	Mission objectives	Facilitators
10:00-10:30 Tea Break		
10:30-11:00	Global and national policy responses, and local opportunities	Facilitators
11:00-11:30	Climate change and Agriculture	Facilitators
11:30-12:30	Presentations on the National CSA strategy and CSA Implementation Framework	Facilitators
12:30-13:30	County, district, or regional feedback, and commitments to the initiative	Facilitators
13:00-13:15	Concluding remarks	Facilitators
13:00-14:00 Lunch and departure		

Annex 3. Agenda for Technical Agriculture Officers days 2 through 5

County, District, or Regional Technical Workshop:
Climate-Smart Agriculture and Low-Emissions Development Action Planning

Table A3.1 Agenda for day 2

Setting the stage: Climate change, CSA, and national policy responses Participants: Agricultural-sector directors, technical officers, and the facilitating team		
Time	**Activities (Lessons 1, 2 and 3)**	**Responsible**
8:00-10:00	Welcome remarks	Regional leader in Agriculture
	Introductions	All
	Mission objectives	Facilitating teams
10:00-10:30 Tea		
10:30-11:00	Climate change and agriculture	Facilitating team
11:00-11:30	Global and national responses to climate change	Facilitating team
11:30-12:30	Introduction to Climate Smart Agriculture	Facilitating team
12:30-13:00	Understanding climate-smart agriculture goals	Participants
13:00 – 14:00 Lunch		
14:00-14:45	National CSA strategy, issues, and objectives related to climate change	Facilitating team
14:45-15:30	National CSA implementation framework	Facilitating team
16.00-16.30	Plenary and review of the day's work	Participants
16:30-17:00 Tea and Departure		

Table A3.2 Agenda for day 3

Creating an inventory of CSA options for a country or region Participants: Agricultural-sector directors, officers, and the facilitating team		
Time	**Activities (Lesson 4)**	**Responsible**
8:30-10:30	Mapping CSA initiatives in the country, district, or region	Participants
10:30-11:00 Tea		
11:00-12:00	Presentation of CSA inventory	Facilitating team; Participants
12:00-13:00	Climate risk profiles	Facilitating team; Participants
13:00-14:00 Lunch		
14:00-15:30	CSA options for the local contexts based on examples from a global database	Facilitating team
15:30-16:30	Rose, bud, thorn: CSA successes, opportunities, and challenges for the country, district, or region	Participants
16:30-17:00	Plenary and review of the day's work	Participants
17:00 Tea and departure		

Table A3.3 Agenda for day 4

From inventory to action plan: Prioritizing CSA actions at subnational level Participants: Agricultural-sector directors, officers, and the facilitating team		
Time	**Activities (Lesson 5.1)**	**Responsible**
8:30-10:30	Matching CSA actions to National CSA strategy or implementation framework objectives	Participants
10:30-11:00 Tea		
11:00-12:00	Prioritization of CSA actions	Facilitating team: Participants
12:00-13:00	Presentation of prioritized CSA actions to plenary	Participants
13:00-14:00 Lunch		
14:00-14:30	Creating a CSA Action Plan - Presentation	Facilitating team
14:30-16:30	Building the CSA action plans	Facilitating team; sub-sector groups
16:30-17:00 Tea and departure		

Table A3.4 Agenda for day 5

Toward a CSA concept note or business case Participants: Agricultural-sector directors, officers, and the facilitating team		
Time	**Activities (Lesson 5.2)**	**Responsible**
8:30-9:30	Elements of a concept note or business case	Facilitating team
9:30-10:30	Prioritization of one action to develop into a concept note or business case	Participants
10:30-11:00 Tea		
11:00-12:30	Development of concept note or business case	Participants
12:30-13:00	Next steps and wrapping up the development process	Facilitating team
13:00-14:00 Lunch		
14:00-16:00	Group pitches	Participants
16:00-16:30	Workshop Closing	Regional leader in Agriculture
16:30-17:00 Tea and departure		

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Alliance