

CSA-Plan: Strategies to put Climate-Smart Agriculture into Practice

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World Bank

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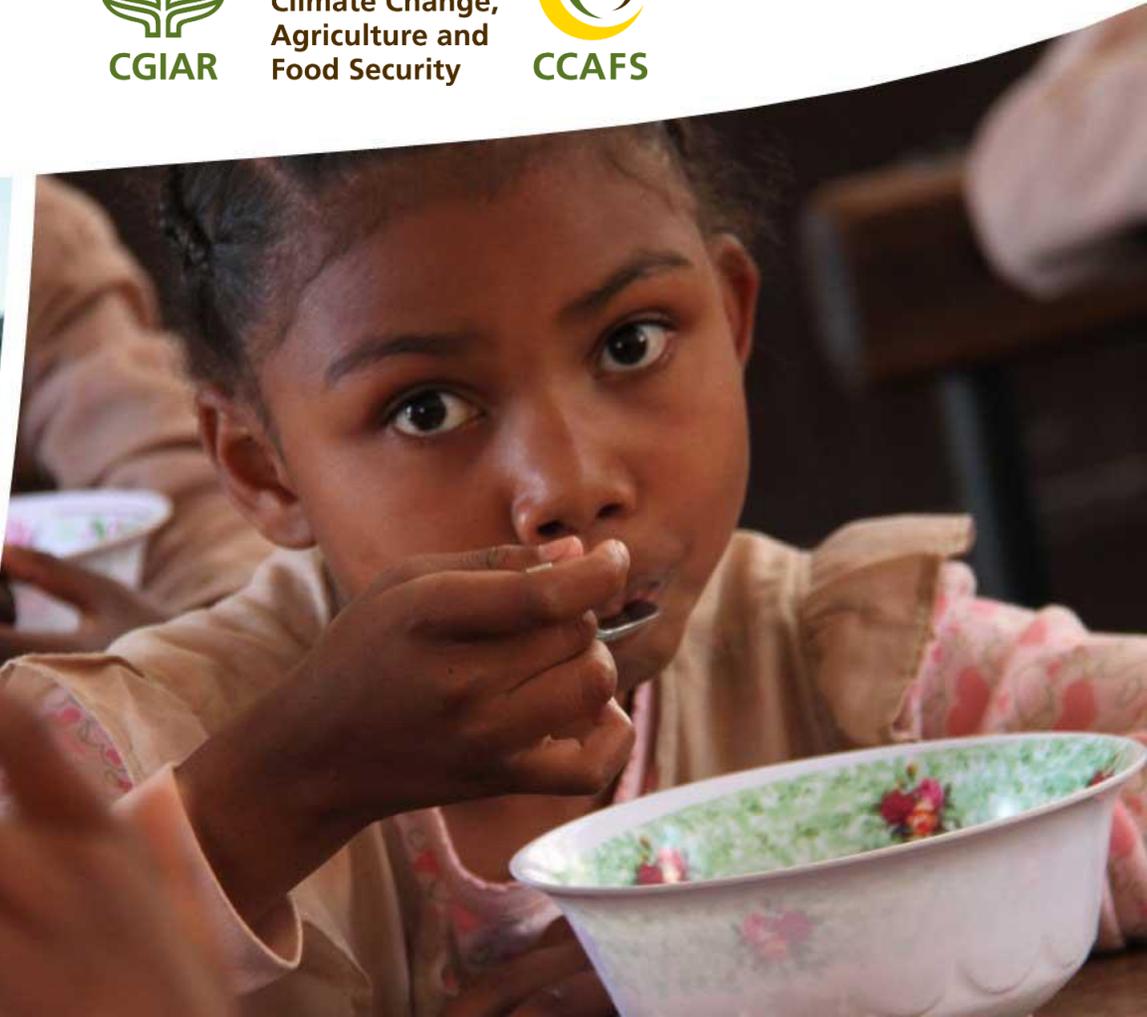
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**PARTNERSHIPS
FOR SCALING**
CLIMATE SMART AGRICULTURE (P4S - CSA)

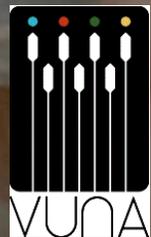
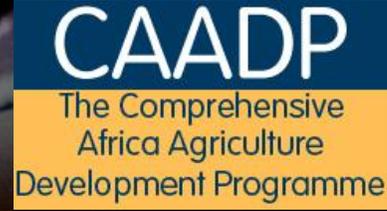


RESEARCH PROGRAM ON
**Climate Change,
Agriculture and
Food Security**



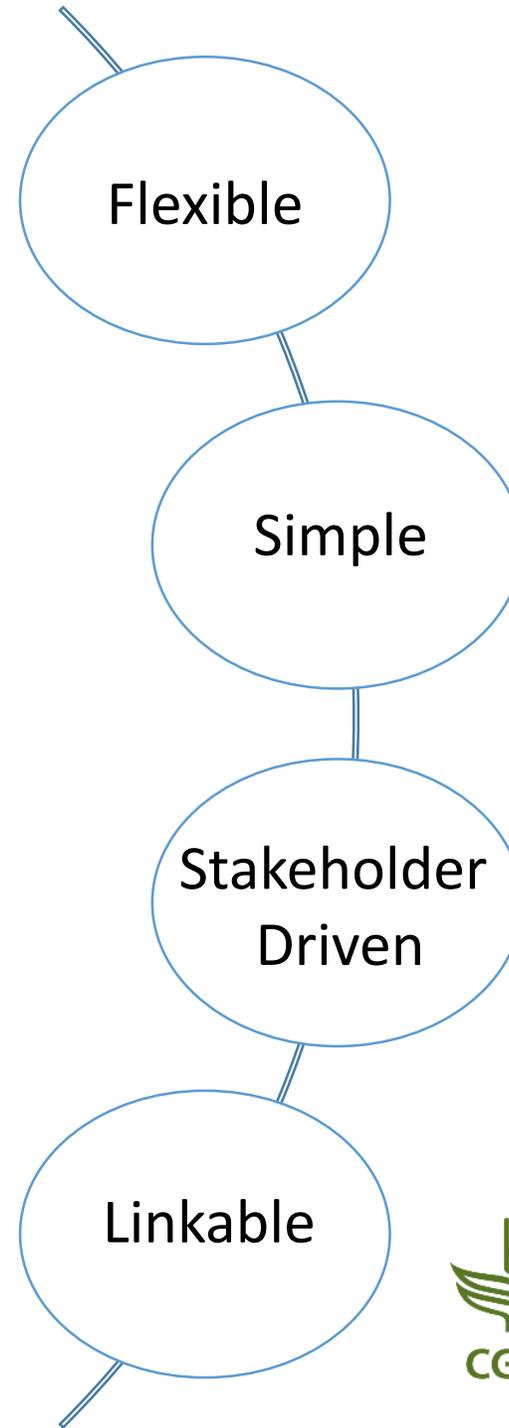


Africa CSA Alliance



CSA-Plan:

A multi-step planning and implementation guide to scaling CSA



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CSA-Plan



Engagement

Situation Analysis

Target Setting, Climate Risks & Enabling Conditions

Targets, Vulnerability & Impacts, Readiness

Stocktaking for
CSA Action

Prioritizing Interventions

Practices, Programs and Policies

Value for Money & Trade-offs

CSA Investment
Portfolios

Program Implementation

Design, Development & Deployment

Knowledge into Action

Taking CSA to
Scale

Monitoring and Evaluation

Across Scales and Systems

Evidence Based Results Framework

Learning from
Experience

Capacity Strengthening



PARTNERSHIPS FOR SCALING
CLIMATE SMART AGRICULTURE (P4S - CSA)

CSA-Plan



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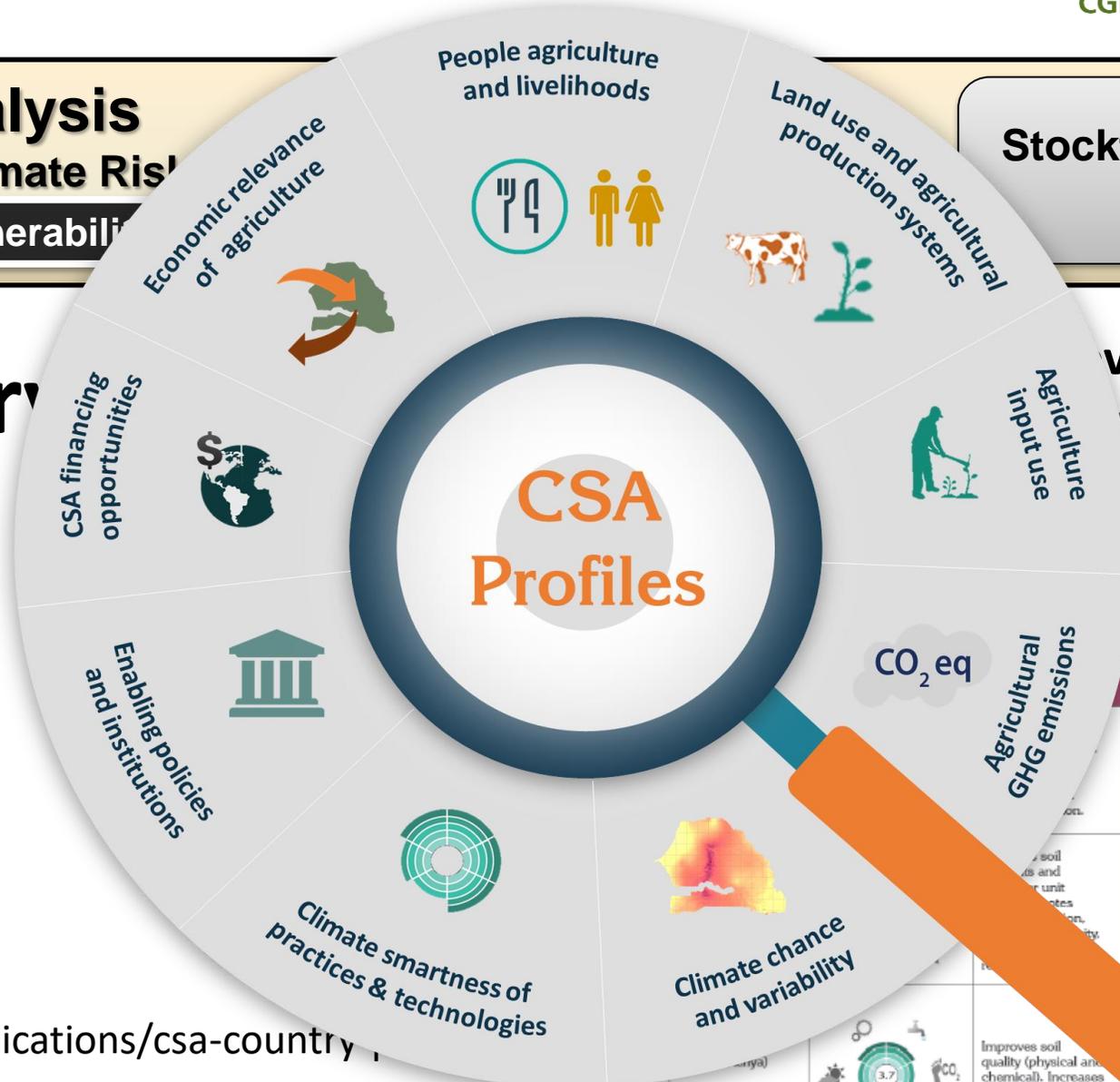
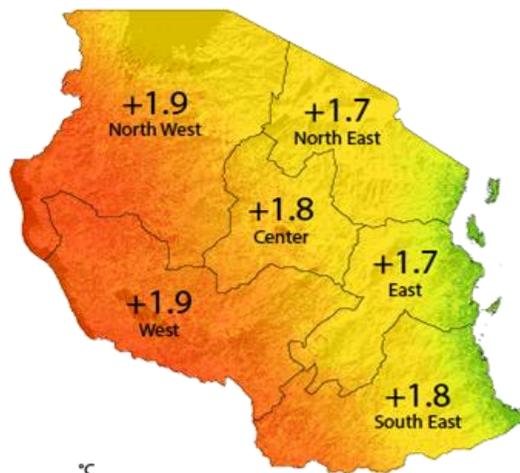
Situation Analysis

Target Setting, Climate Risk

Vulnerability

Stocktaking for CSA Action

CSA Country Profiles

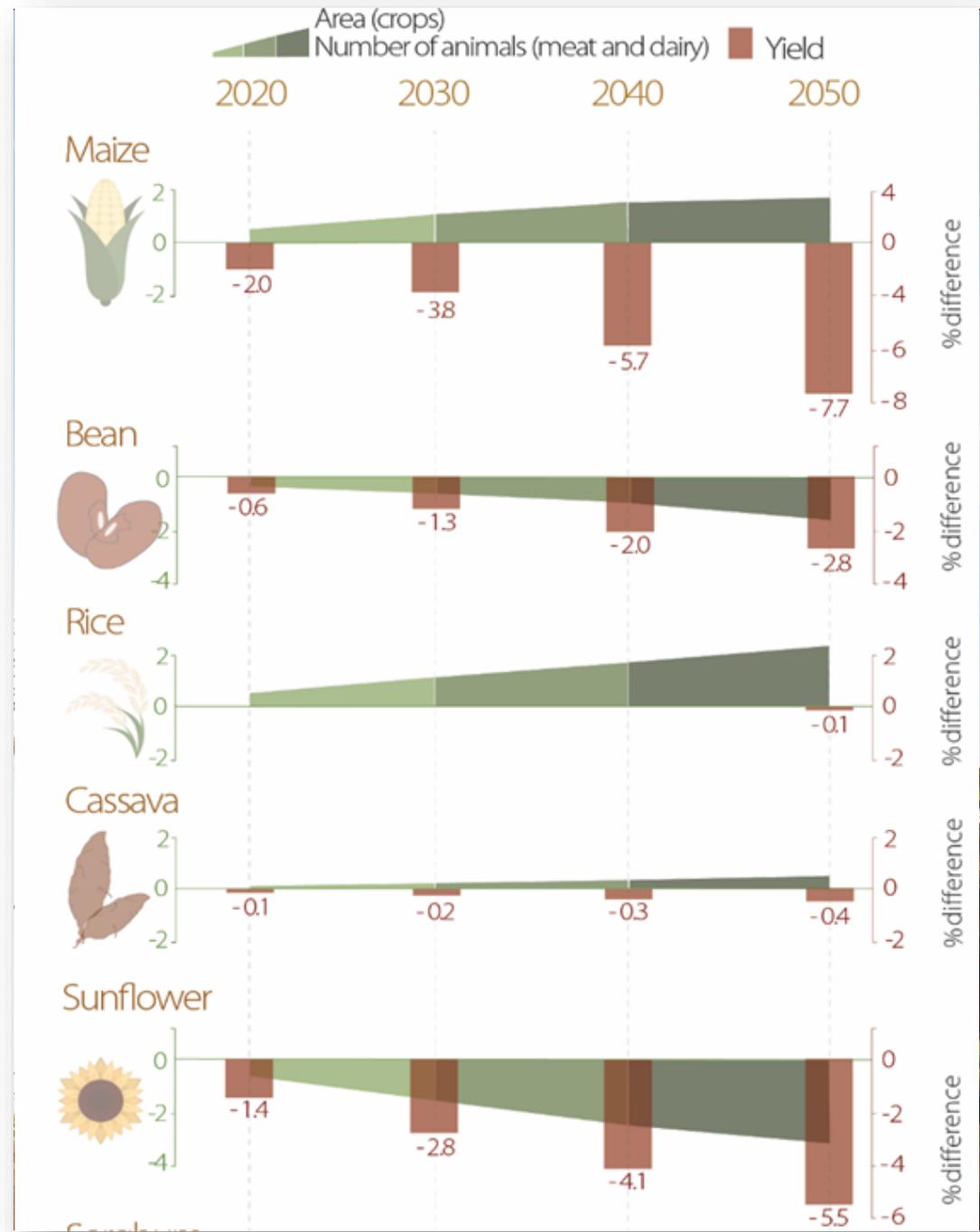
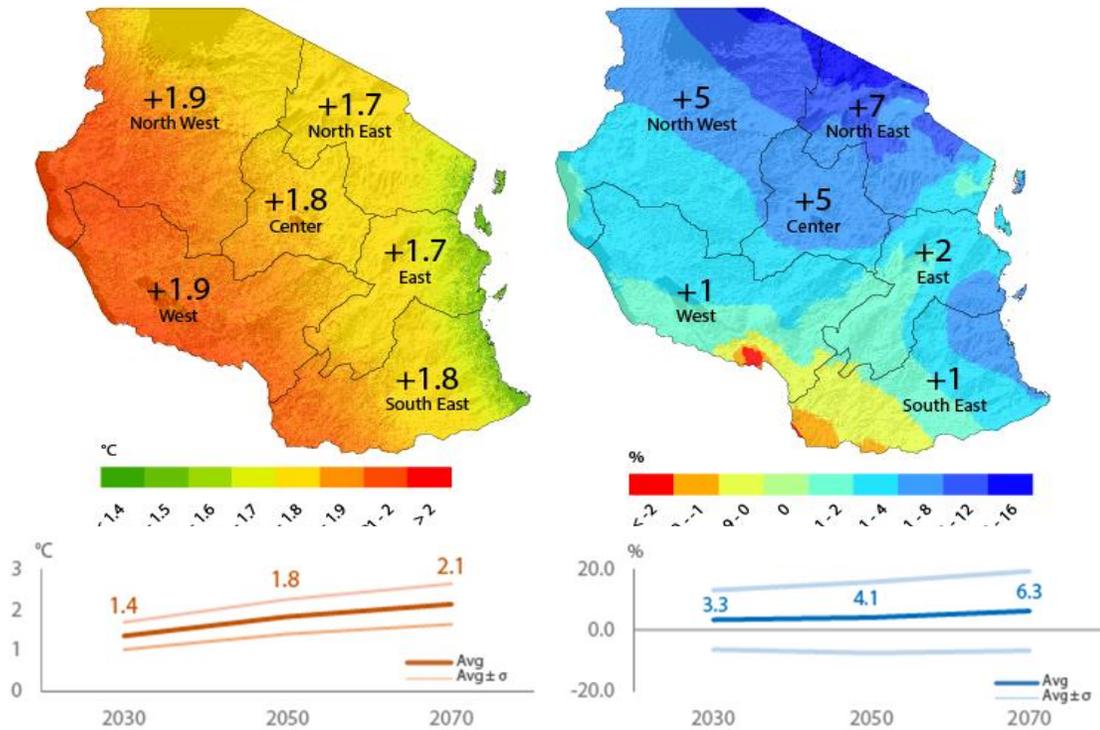


Developed Across Latin America currently being globally

Mitigation	Productivity
Maintains or improves soil carbon stocks and soil organic matter content	Improves yields and income.
Reduces methane emissions and can lead to a reduction in the amount of inorganic fertilizers required.	Improves yields and income.
Improves soil quality (physical and chemical). Increases nitrogen fixation by leguminous crops, reduces the need for inorganic fertilizer requirements.	Increases yields and income. Reduces economic vulnerability by

Climate Change and Impacts

Tanzania Projected Change in Temperature and Precipitation by 2030



Kenya County Climate Risk Profiles:

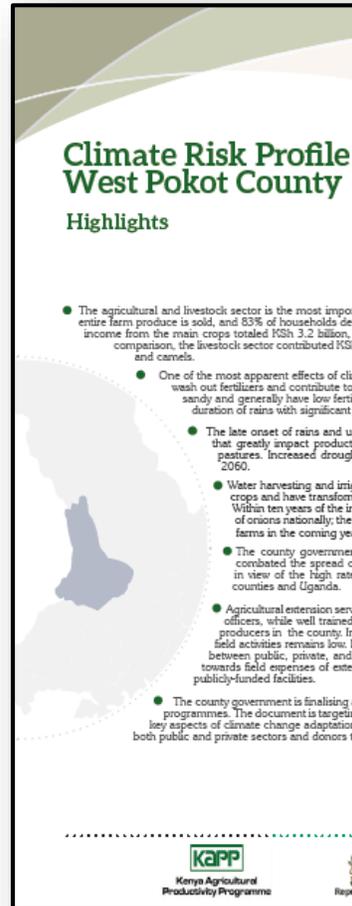
Key Risks and Adaptation Options Identified Across Value Chains

Developed to support the World Bank Kenya Climate Smart Agriculture Project (\$250 million)

Risk profiles were developed through strong engagement with county-level stakeholder

Being developed for 31 Kenyan counties

Provides a platform for CSA engagement and capacity building at the county level



Climate Risk Profile West Pokot County
Highlights

- The agricultural and livestock sector is the most important source of income for the county. In 2014, the entire farm produce is sold, and 83% of households derive income from the main crops totaled KSh 3.2 billion. In comparison, the livestock sector contributed KSh 1.2 billion and camels.
- One of the most apparent effects of climate change is the late onset of rains and the duration of rains with significant impact on crop production.
- The late onset of rains and the duration of rains with significant impact on crop production.
- Water harvesting and irrigation are common practices in the county. In the past ten years, the number of on-farm irrigation systems has increased significantly.
- The county government has been proactive in combating the spread of climate change in view of the high rate of population growth and migration.
- Agricultural extension services are provided by the county government, while well-trained extension officers are available in the county. However, the number of extension officers remains low, and the focus is on public, private, and community-based extension services.
- The county government is finalizing a climate change adaptation program. The document is targeting key aspects of climate change adaptation in both public and private sectors and donors.

	Provision of seeds and other inputs	On-Farm production	Harvesting storage and processing	Product marketing
Maize				
Droughts	Increased demand for drought-tolerant seeds; high costs of mechanized equipment for production	Increased incidence of crop failure and pests and diseases; low crop productivity	High incidence of rodent and storage pests; increase in produce theft, due to scarcity	Increased maize price; abrogation of contractual agreements (due to profitable market prices)
Magnitude of impact	Major	Severe-Moderate	Minor	Moderate
Farmers' current strategies to cope with the risks	Use of certified hybrid seeds; drought tolerant varieties; use of open pollinated maize varieties	staggered cropping; use of small-scale conservation agriculture; irrigation	Storage facilities farmer owned; small scale milling; storage pest control (chemicals/local resources)	stabilization of maize prices (through created maize reserves); form farmer associations/unions to aid produce bargains
Other potential options to increase farmers' adaptive capacity	Promotion of certified drought-tolerant maize varieties; use of compost and farm manure; use of open pollinated varieties	Upscale of conservation agriculture (zero tillage), drip irrigation (drip), water harvesting technologies (band, troughs, pans)	Upscaling of modern silos and plant clinics; use of IPM practices	Grain reserves for dry season milling and processors; associations to link farmers to markets and to improve their market accessibility; online marketing/trading platforms

Situation Analysis

Risks and Enabling Conditions

Vulnerability & Impacts + Readiness

Stocktaking for
CSA Action

Prioritizing Interventions

Practices, Programs and Policies

Trade-offs & Value for Money

CSA Investment
Portfolios

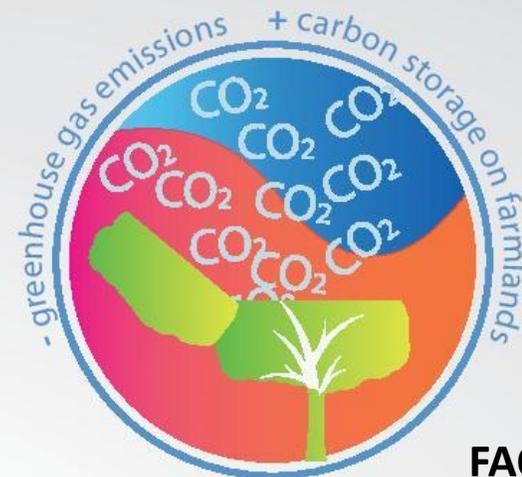
SUSTAINABLY INCREASES



STRENGTHENS RESILIENCE



REDUCES AGRICULTURE'S
CONTRIBUTION TO CLIMATE CHANGE

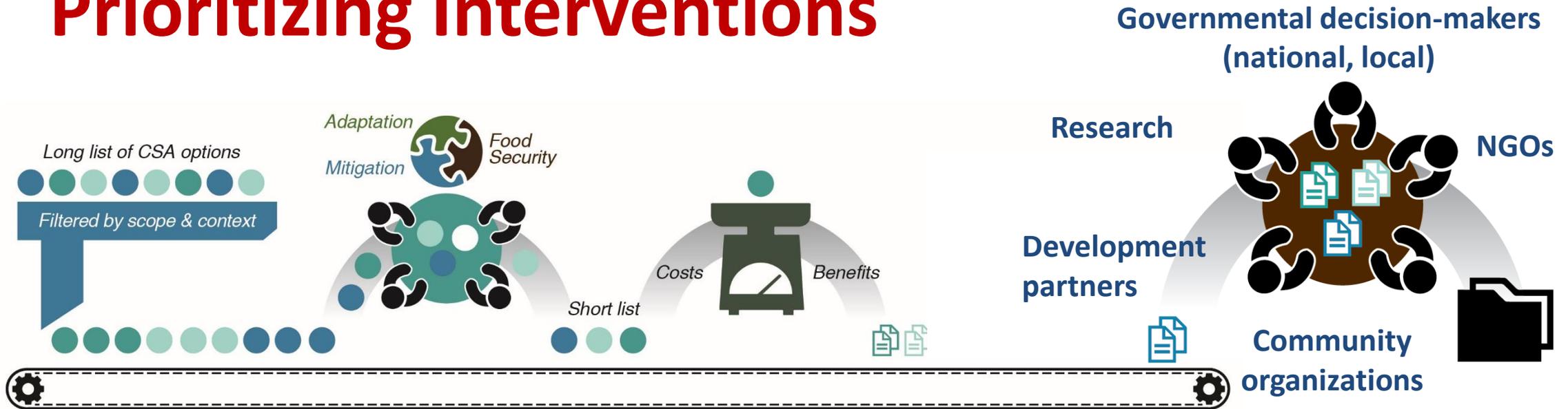


FAO

Trade-offs
among
aspects of
CSA

Synergies
between
aspects of
CSA

Prioritizing Interventions



Results

- **Scope** – region, commodity
- **CSA indicator** selection
- **long list** of CSA practices

Results

- **Short list** of priority practices and programs
- Stakeholder selection via **workshops**

Results

- Ranked short list based on **economic analysis**

Results

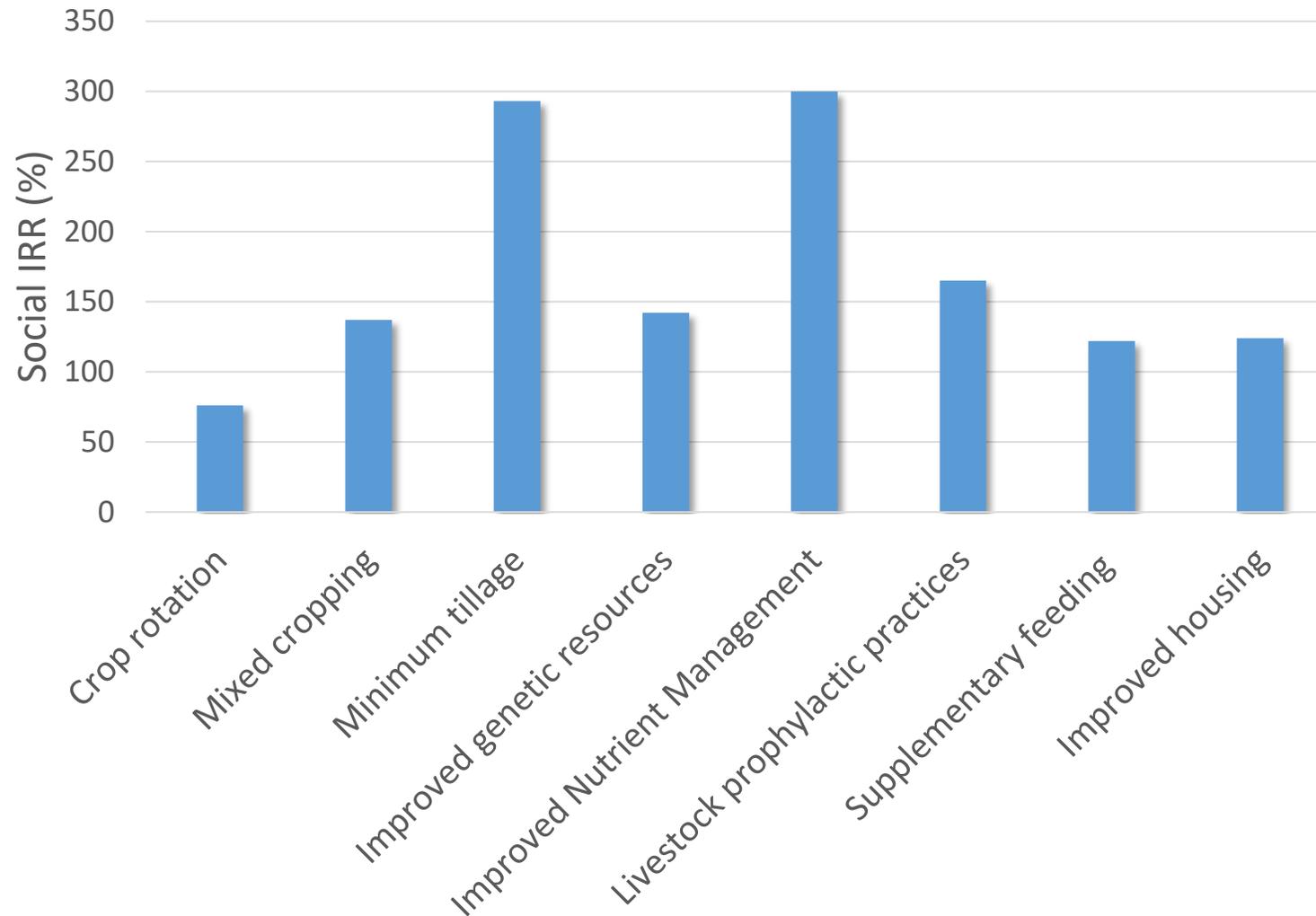
- **CSA investment portfolios**
- Identified opportunities and constraints



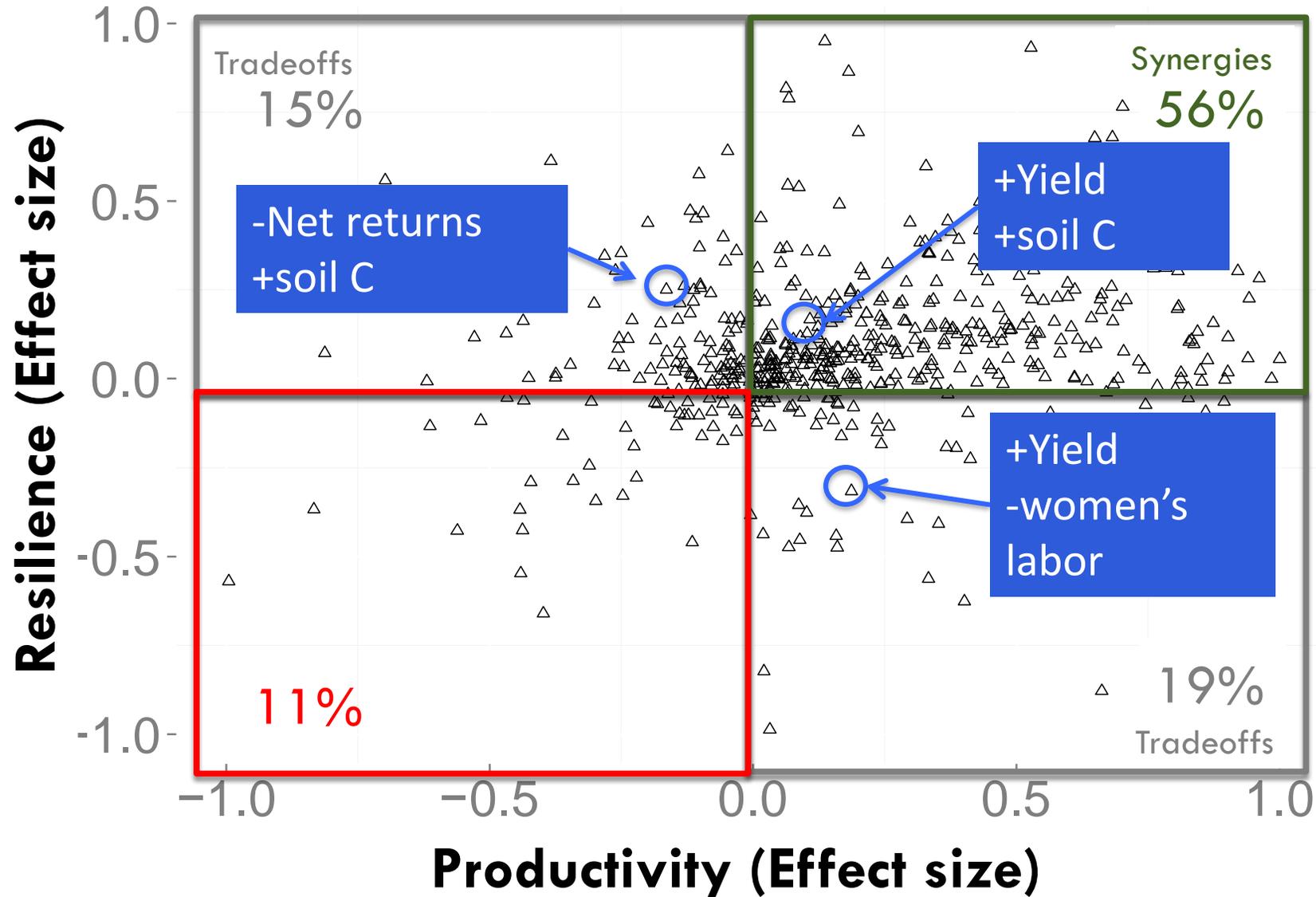
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CSA Cost-benefit Analysis



CSA Compendium: Synergies and trade-offs with CSA



Rosenstock et al.

Priorities Matter for Designing CSA Programs

Equal Adaptation & Productivity	Adaptation Only	Productivity Only	Maize Yield Only	Maize Yield considering adoption rates
Green Manure	Green Manure	Green Manure	Organic Fertilizer	Inorganic Fertilizer
Mulching	Organic Fertilizer	Water Harvesting	Water Harvesting	Intercropping
Organic Fertilizer	Mulching	Mulching	Inorganic Fertilizer	Water Harvesting
Water Harvesting	Reduced Tillage	Agroforestry	Green Manure	Organic Fertilizer
Pruning	Crop Residue	Organic Fertilizer	Zai Pits	Zai Pits
Inorganic Fertilizer	Pruning	Inorganic Fertilizer	Intercropping	Mulching
Agroforestry	Inorganic Fertilizer	Pruning	Mulching	Reduced Tillage
Crop Residue	Intercropping	Intercropping	Reduced Tillage	Crop Residue
Reduced Tillage	Agroforestry	Crop Residue	Improved Variety	Green Manure
Intercropping	Water Harvesting	Reduced Tillage	Crop Residue	Crop Rotation
			Agroforestry	Improved Variety
			Crop Rotation	Agroforestry

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Vulnerability & Impacts + Readiness

Stocktaking for CSA
Action

Targeting & Prioritizing

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Trade-offs & Value for Money

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Program Implementation

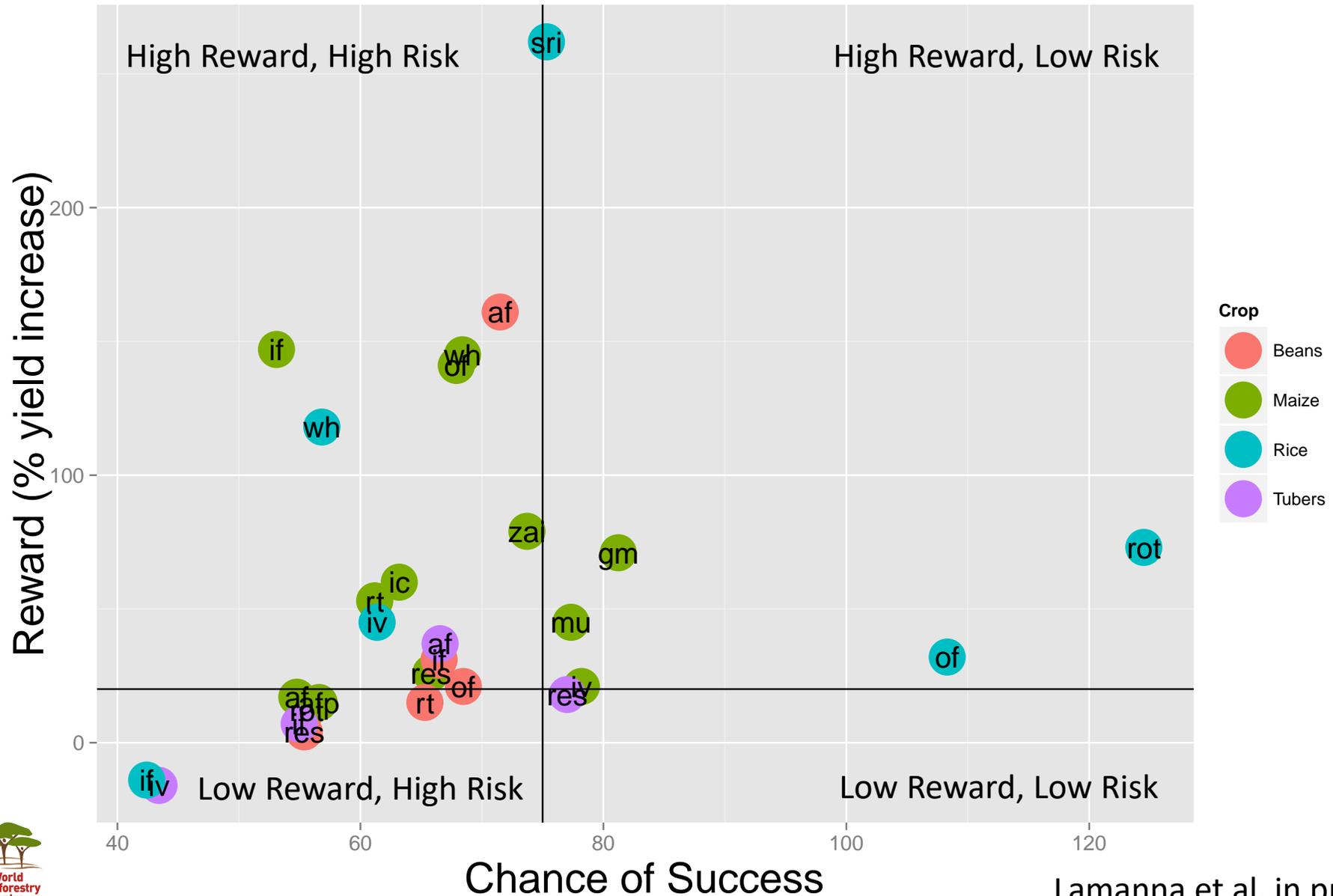
Design & Implementation Guidelines

Knowledge into Action

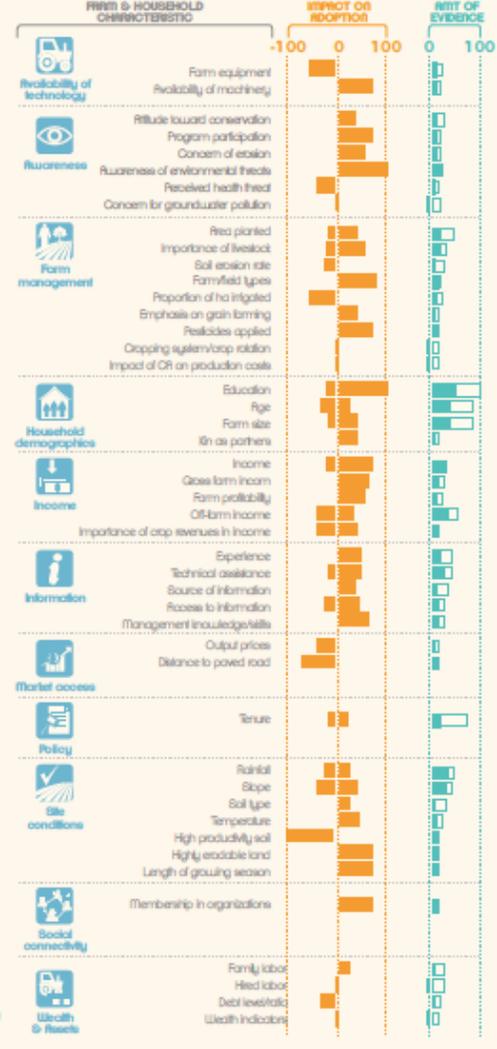
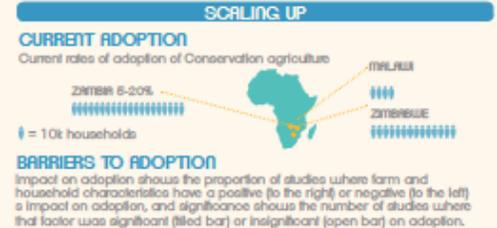
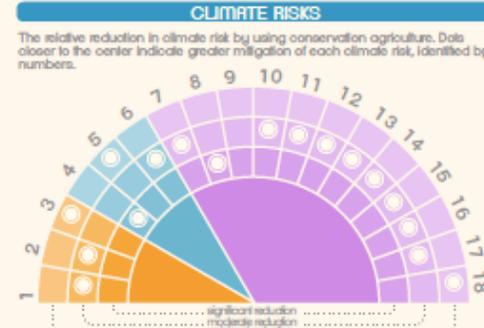
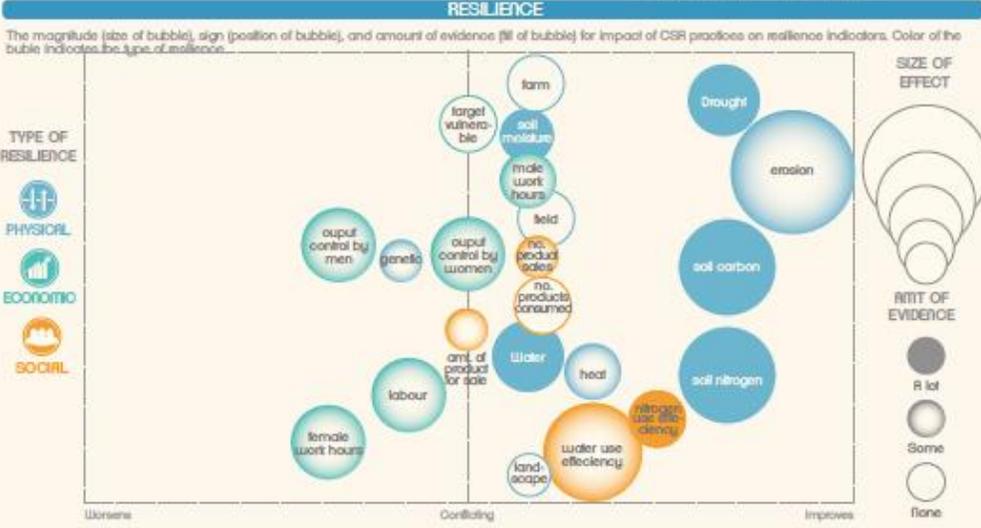
Taking CSA to Scale

- CSA Program Development
- Implementation Guides
- Business models
- Incentive schemes

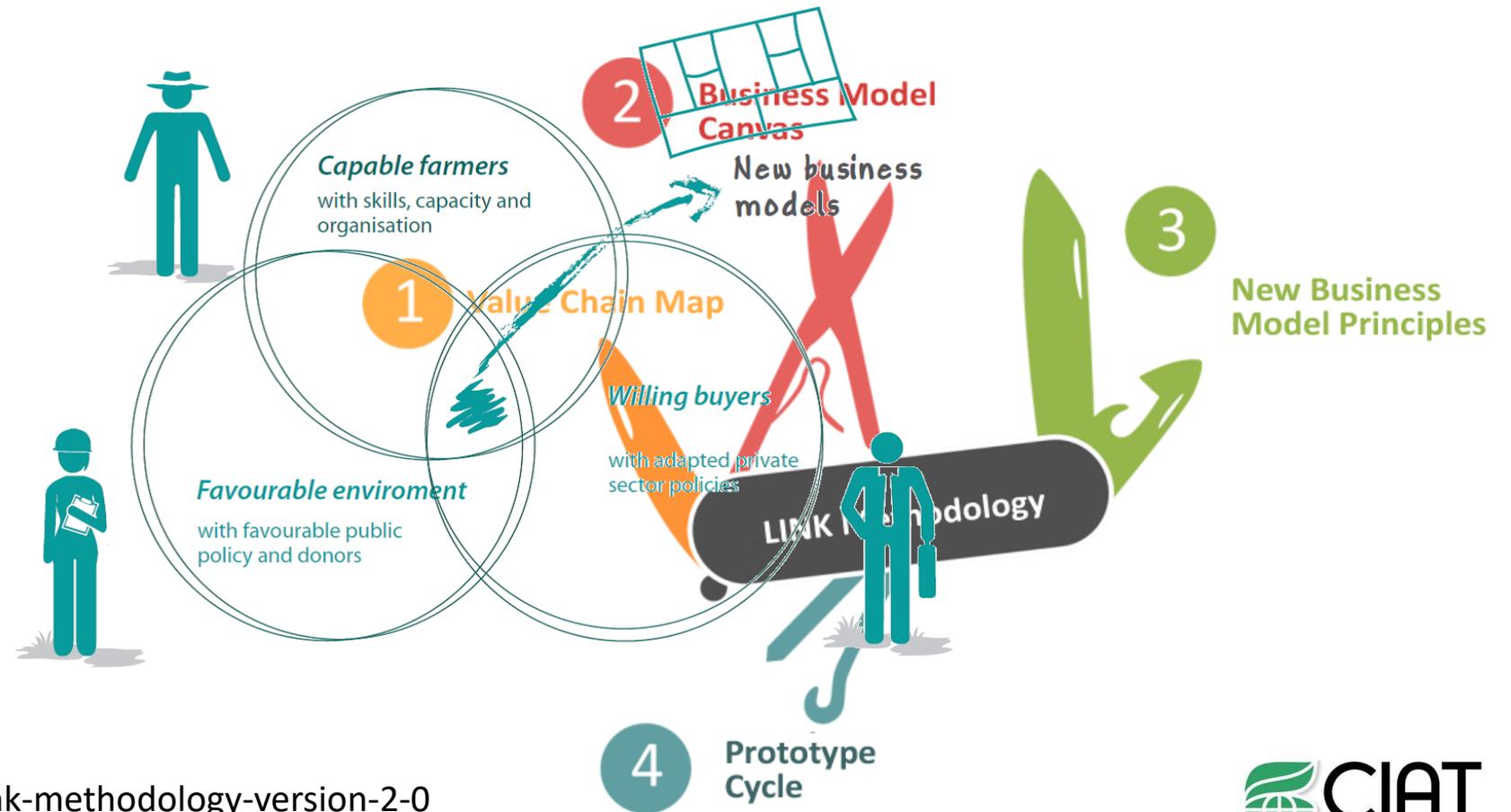
CSA Compendium: Risk vs. Reward of CSA



CSA X-Ray: Prioritizing with Data

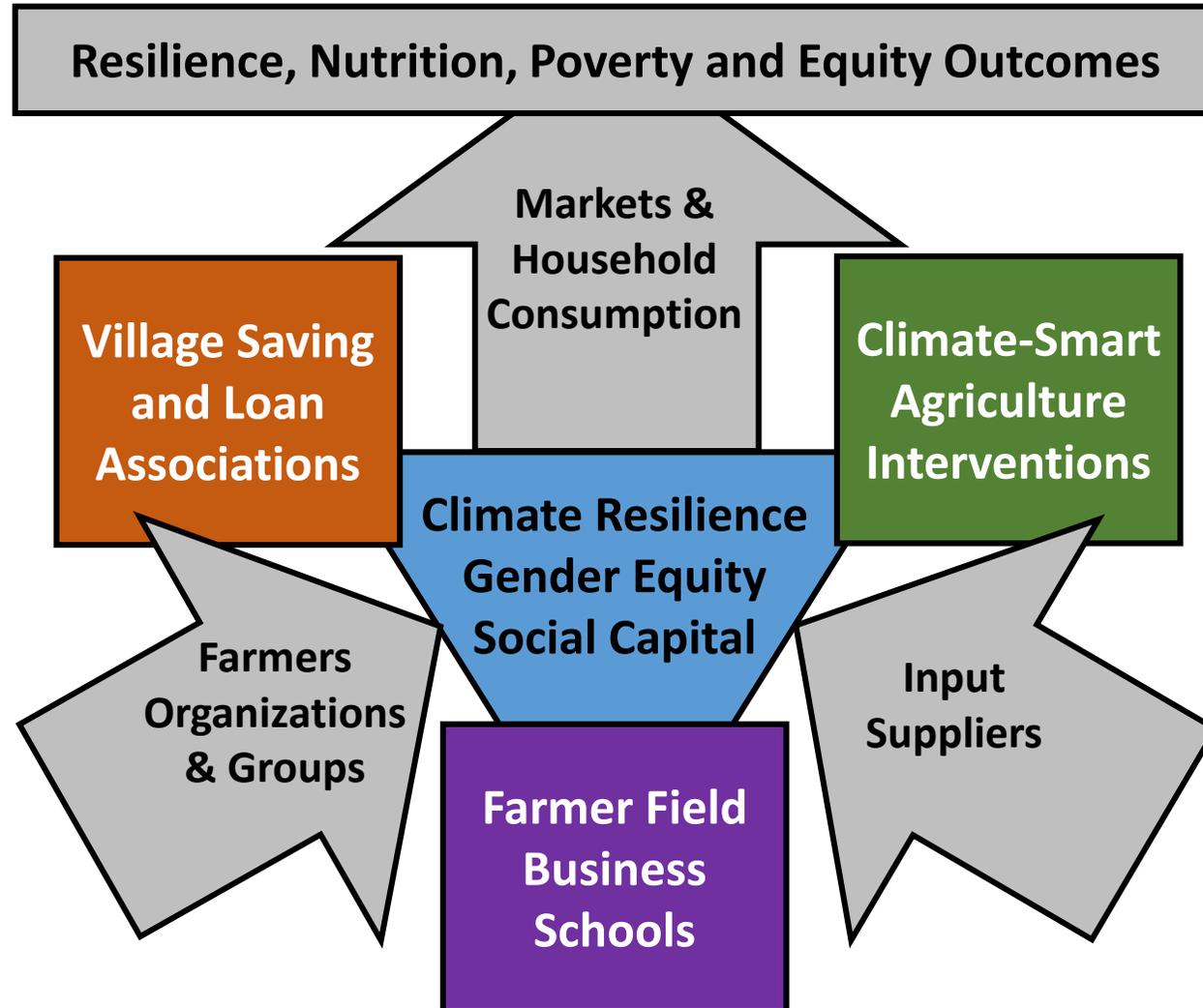


Linking Farmers to Markets through Climate Smart Value Chains: LINK2.0



<http://dapa.ciat.cgiar.org/link-methodology-version-2-0>

Program Design & Implementation: Innovative Finance and Business Models for Scaling CSA



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Rural Household Multi-Indicator Survey (RHoMIS)

A practical minimum data approach to create harmonized datasets at scale

CHALLENGE

Idiosyncratic data limits understanding & responses



Every development partner has, or is developing, a unique approach to monitoring CSA which is likely to create a pile of information difficult to make sense of

APPROACH

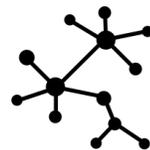
Interoperable monitoring systems by design



Cost-effective & rapid survey



Flexible, inclusive of a 'core-set'



Links & builds on existing efforts

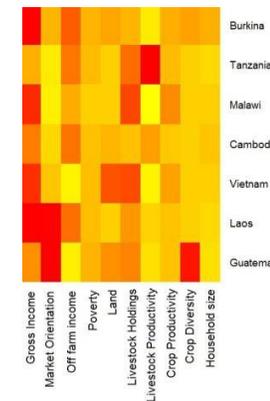


Innovate to reach accuracy at scale

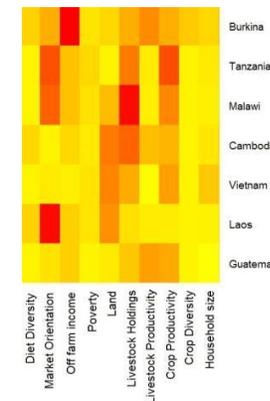
OUTCOME

Characterizing and tracking change at scale

Dietary diversity



Gross income



Diagnose risks, detect relationships and monitor changes among climate, agriculture, gender, nutrition, and poverty

Big Data Opportunities in Agriculture



Platform for
Big Data
in Agriculture



<http://bigdata.cgiar.org>



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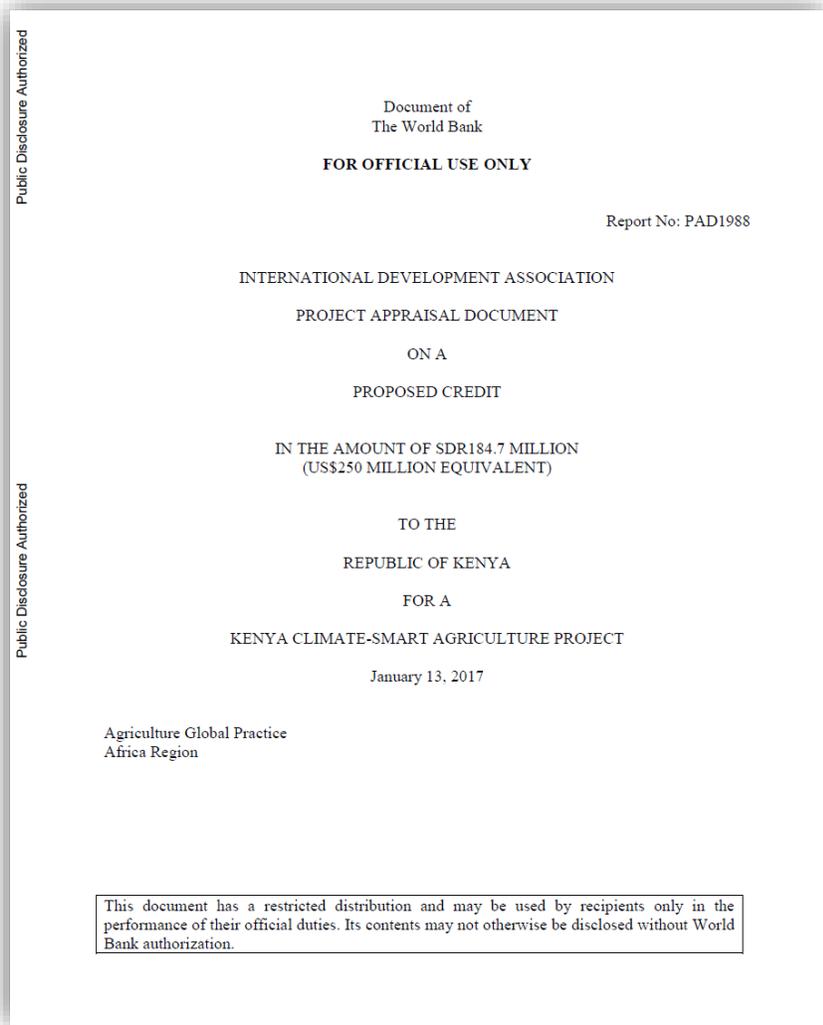
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World Bank Kenya Climate Smart Agriculture Project: Design & Implementation Support



World Bank Kenya Climate Smart Agriculture Project Key Design Principles

- Prioritization of promising CSA interventions
- Scaling up of promising interventions
- Value chain (VC) approach
- Gender Sensitivity
- Nutrition informed
- Collaboration among agencies
- Complementarity with other interventions





International Center for Tropical Agriculture
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