Participatory Implementation of climate-smart agriculture to increase the adaptive capacity of communities at CCAFS benchmark sites in West Africa: challenges and opportunities

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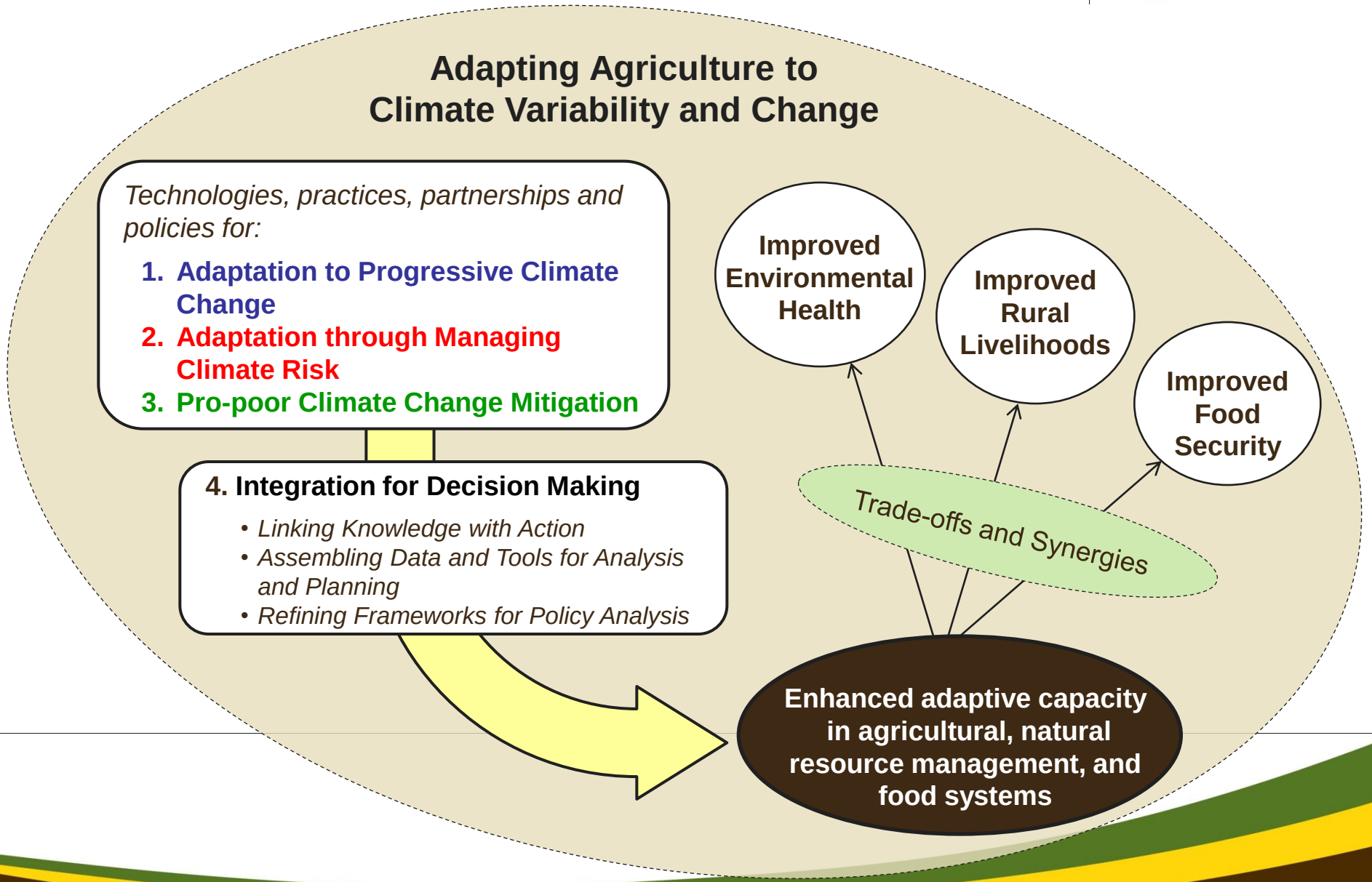
CCAFS objectives

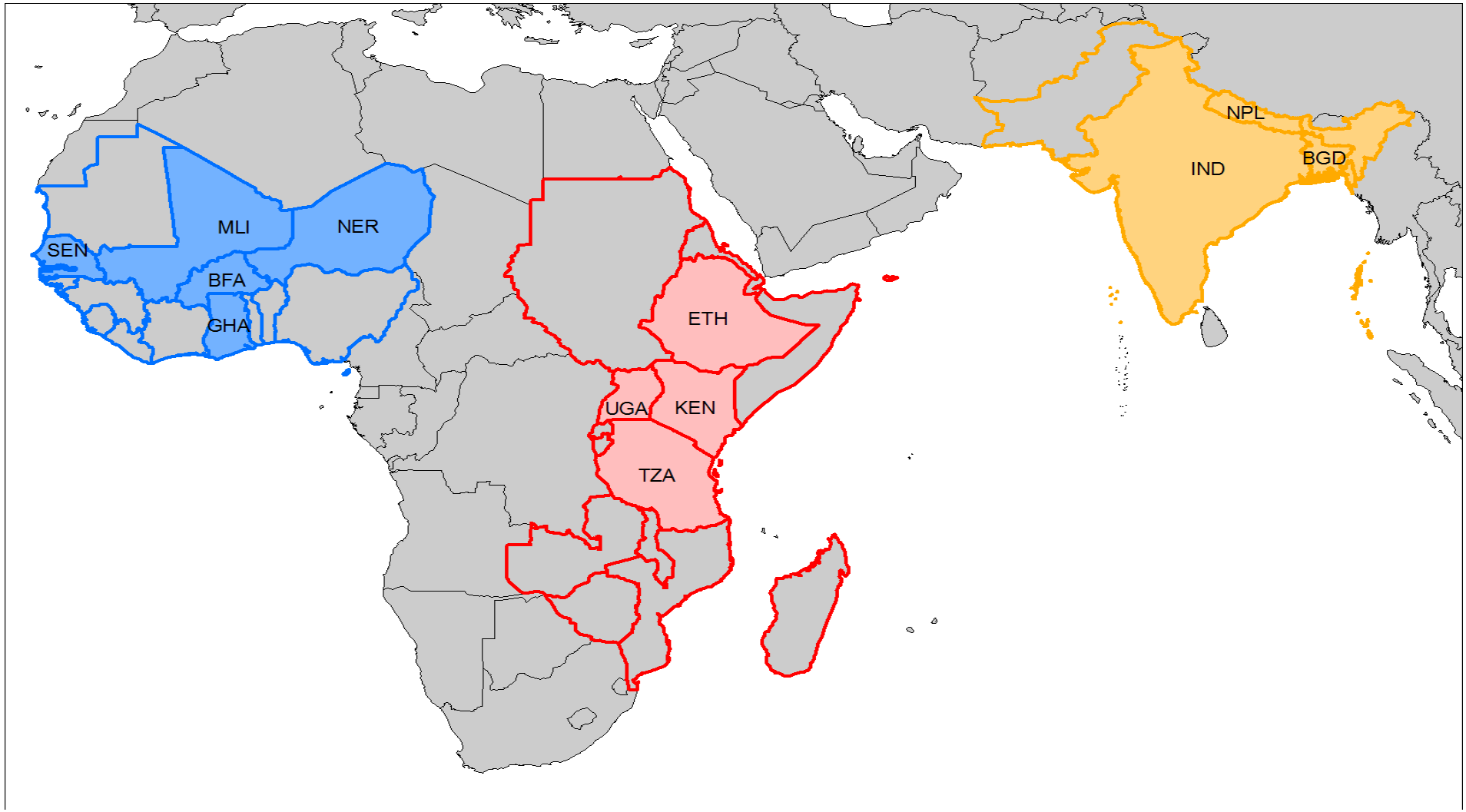
GOAL: To promote a food-secure world through the provision of science-based efforts that support sustainable agriculture and enhance livelihoods while adapting to climate change and conserving natural resources and environmental services

1. Identify and develop **pro-poor adaptation and mitigation practices, technologies and policies** for agriculture and food systems.
2. Support the inclusion of agricultural issues in **climate change policies**, and of climate issues in **agricultural policies**, at all levels.

CCAFS FRAMEWORK



Place-based field work



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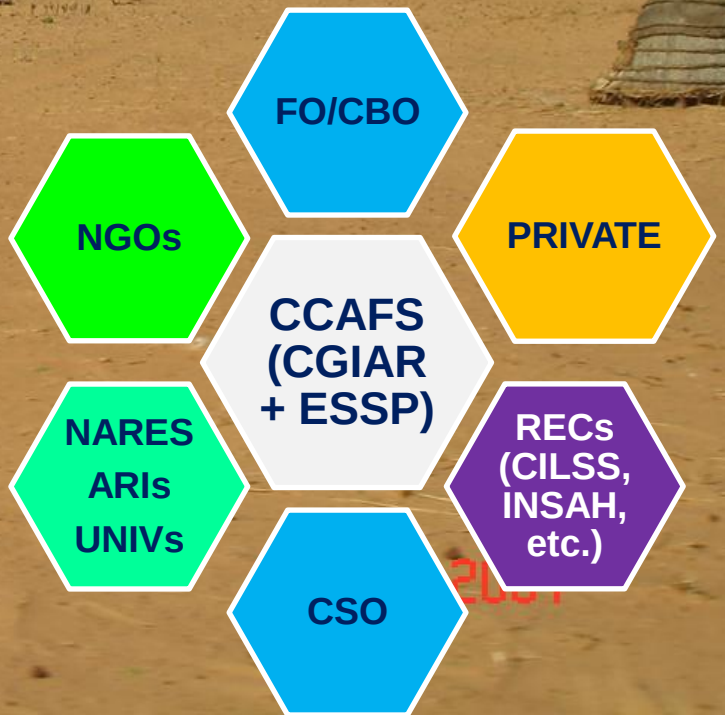
STRATEGY

PARTICIPATORY ACTION RESEARCH

Objective: Test, adapt and monitor strategic innovations supporting climate-smart agriculture

Approach: particular actions, interventions tested and implemented simultaneously with local partners, researchers & development workers cooperating closely

PARTNERS



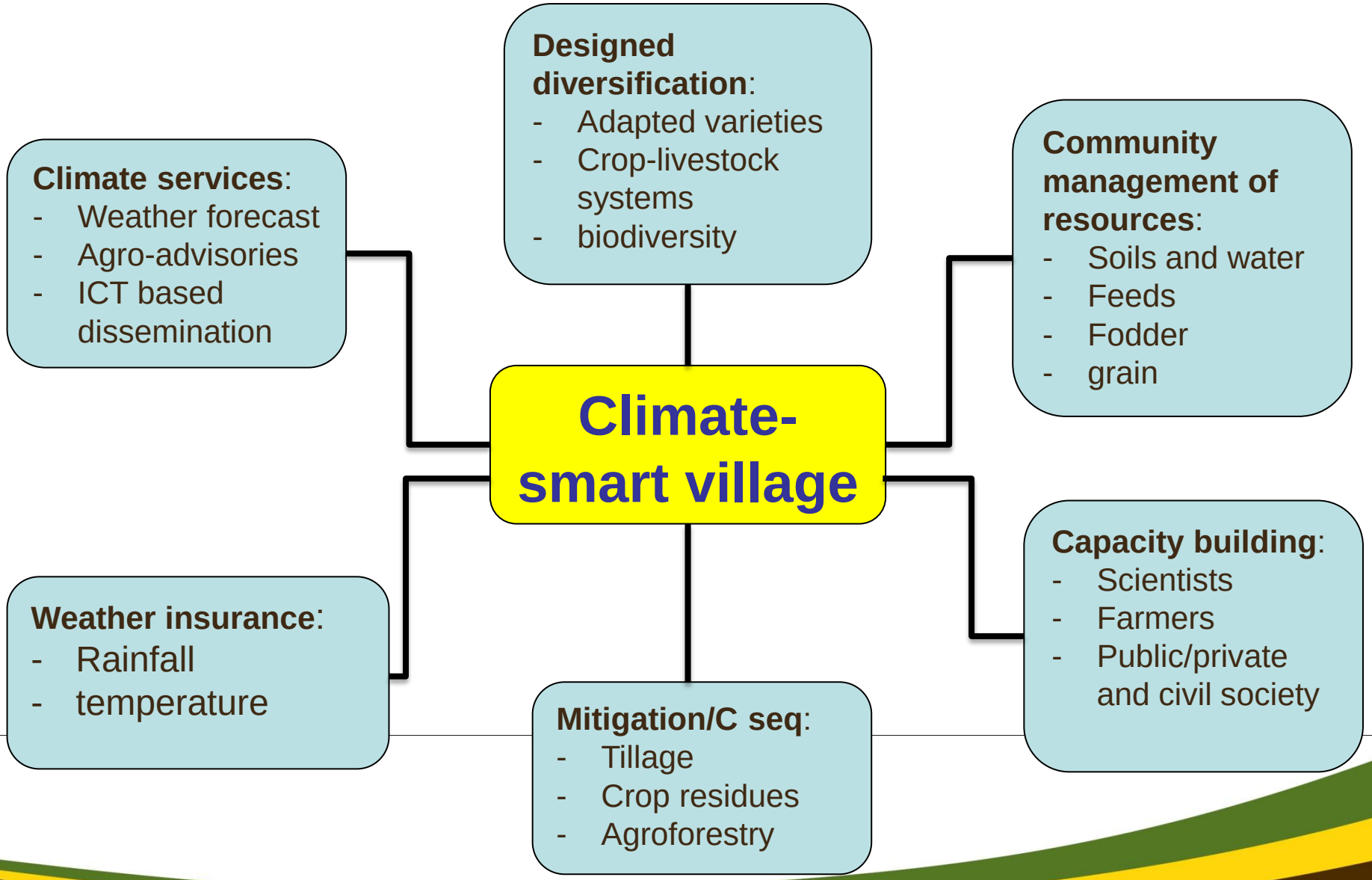
PAR to CSA in CCAFS benchmark sites in West Africa

A partnership between ICRISAT and ICRAF (2012):

Objectives:

- To test and validate a scalable climate-smart model for agricultural development that integrates a range of innovative agricultural risk management strategies
- To enable farmers, developers and managers of agricultural carbon, and policy makers to develop cost-effective options for agricultural mitigation that support local sustainable development, especially related to food security and climate change adaptation
- To build African project managers' capacity for institutional analysis and design for agricultural carbon projects
- To enable rigorous tracking of institutional changes and impacts over time.

APPROACH


Designed diversification:
- Adapted varieties
- Crop-livestock systems
- biodiversity
Climate services:
- Weather forecast
- Agro-advisories
- ICT based dissemination
Community management of resources:
- Soils and water
- Feeds
- Fodder
- grain
Climate-smart village
Weather insurance:
- Rainfall
- temperature
Capacity building:
- Scientists
- Farmers
- Public/private and civil society
Mitigation/C seq:
- Tillage
- Crop residues
- Agroforestry

Designed diversification:
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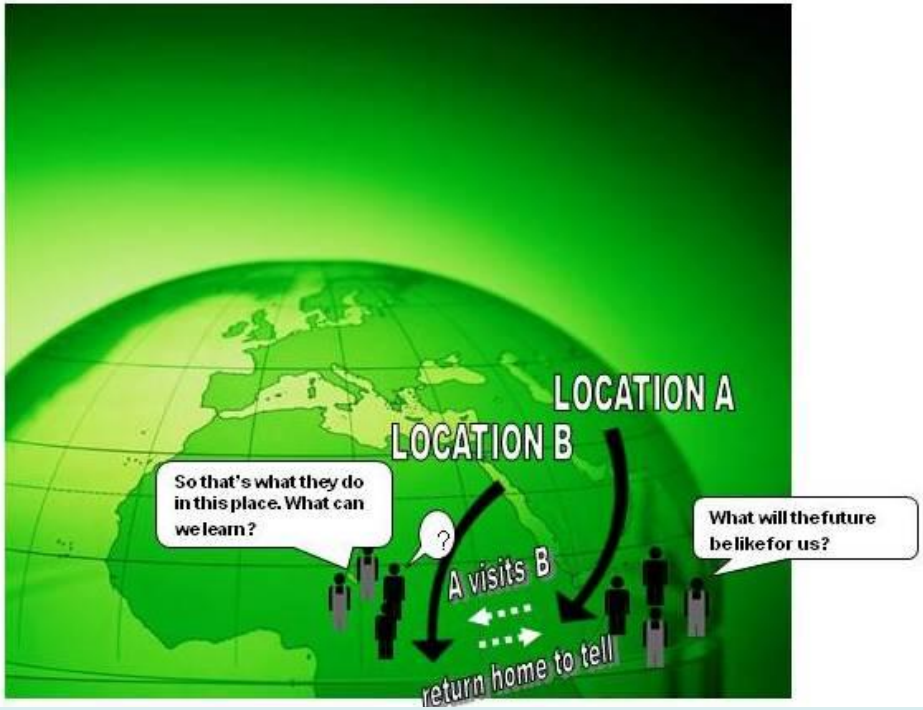
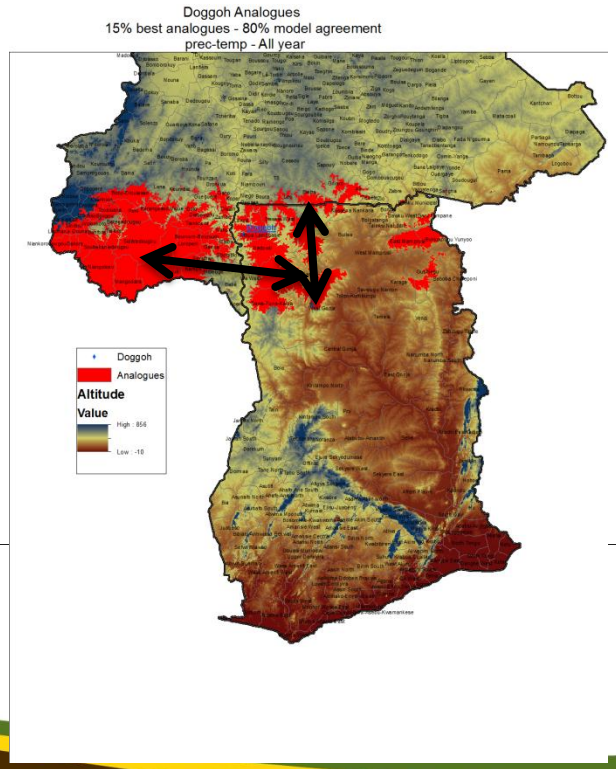
Community management of resources:
- Soils and water
- Feeds
- Fodder

Analogue and scenario tools for designing adaptation strategies in agriculture





- **Facilitate a shared learning process is to develop locally appropriate solutions to climate change generated by farmers and other relevant stakeholders**
- **Participatory video to enable farmers to document the process themselves and to enable communication horizontally and vertically with other stakeholders in the agricultural innovation system**

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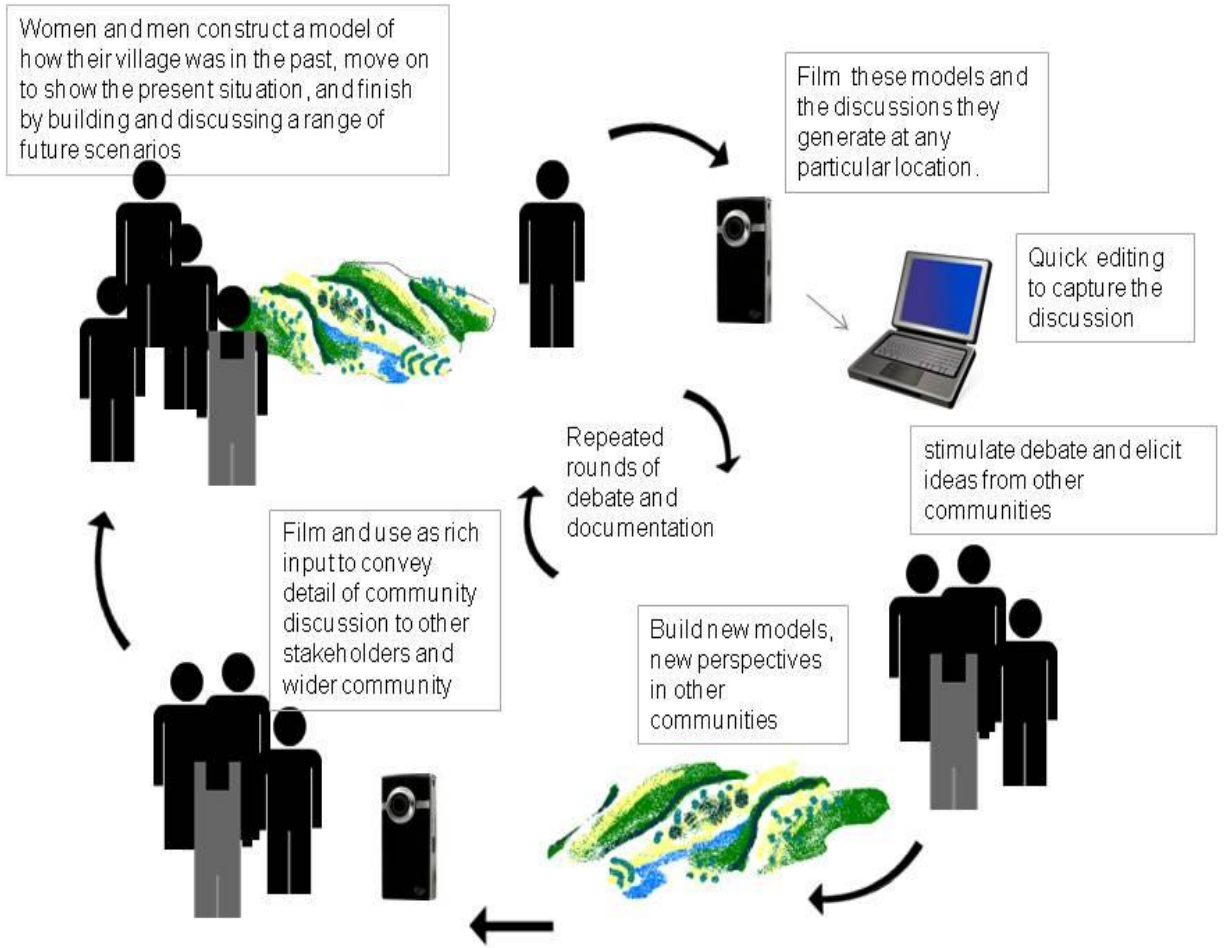
Analogue and scenario tools



Some climate-smart agricultural practices

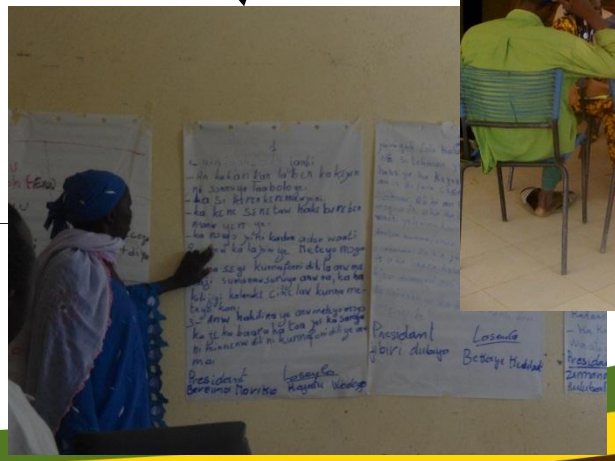
Crop management	Livestock management	Soil and water management	Agroforestry	Integrated food energy systems
• Intercropping with legumes • Crop rotations • New crop varieties • Improved storage and processing techniques • Greater crop diversity	• Improved feeding strategies • Rotational grazing • Fodder crops • Grassland restoration and conservation • Manure treatment • Improved livestock health • Animal husbandry improvements	• Conservation agriculture • Contour planting • Terraces and bunds • Planting pits • Water storage • Alternate wetting and drying (rice) • Dams, pits, ridges • Improved irrigation (drip)	• Boundary trees and hedgerows • Nitrogen-fixing trees on farms • Multipurpose trees • Improved fallow with fertilizer shrubs • Woodlots • Fruit orchards	• Biogas • Production of energy plants • Improved stoves

Climate services:
- Weather forecast
- Agro-advisories
- ICT based dissemination

Mali-agro-met advisory program: up-scaling: **Putting climate information in the hand of farmers for decision making** (ANM, USAID, IER, AGHRYMET, extension, etc.

using probabilistic seasonal forecast and evaluate the impact of the forecast products and communication process on farmers' management decision

Capacity building:
- Scientists
- Farmers
- Public/private and civil society



http://ccafs.cgiar.org/blog/putting-climate-forecasts-farmers-hands

National level analysis of climate change adaptation and mitigation efforts in agriculture

Developing national knowledge exchange platforms comprising institutions in charge of defining national policies for agr., food sec. and env

Four national stakeholders consultation workshops reports with recommendations on research needs and priorities available to guide further actions

Weather insurance:
- Rainfall
- temperature

Test: baseline studies towards the introduction of a weather-based insurance scheme to the Lawra (Upper West) farming community.

2.1 Farmer survey (farmers + extension workers, banks):
Major crops, cropping systems, cropping cycles, farming structures, h[illegible], associations, farmer-extension linkages, knowledge of agricultural insurance and other insurances.

2.2 Meteorological data analysis:
Acquisition of long term meteorological data, statistical analysis of data (trends, etc.) data evaluation for missing gaps, filling of gaps, rain gauge network and density, weather station auditing,

2.3 Soil information:
Soil types, soil sampling from farmers' fields, soil texture, soil depth, water holding capacity

2.4 Insurance-bank linkages
Education for the financial institutions present in Lawra in crop insurance and crop insurance software usage to determine premiums and payouts

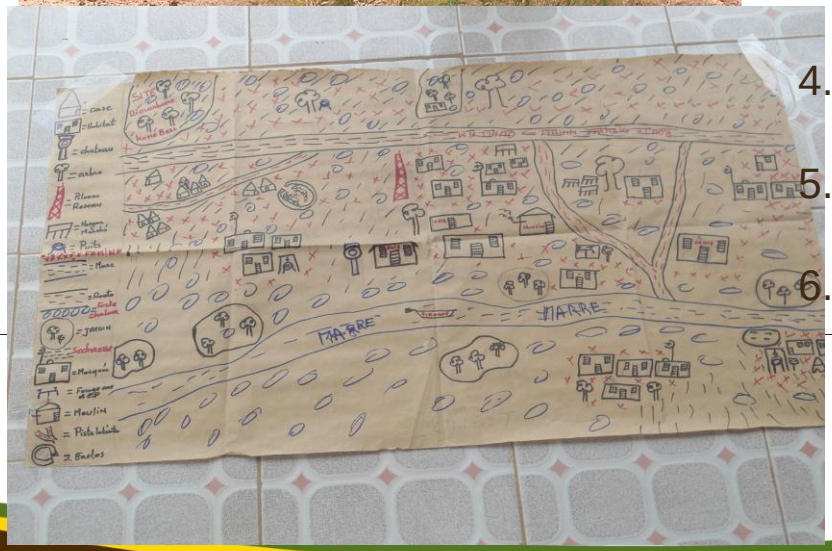
2.5 Farmer association training in crop insurance
Farmer education, group discussions on crop insurance – benefits, access, claims, premiums, etc.

2.6 Research crop insurance as an innovation against climate change impact on food security

2.7 Piloting and insurance scheme at Laura

Mitigation/C seq:
- Agroforestry
- Tillage
- Crop residues

Niger: Mitigation Options and Incentive Mechanisms for agricultural climate change mitigation to benefit the smallholders



1. Provide snapshot of current status and provide baseline for later assessments on mitigation and adaptation
2. Explore mitigation options at farm level and their associated costs, benefits and barriers for their adoption
3. Explore options for incentive mechanisms and associated institutional arrangements that support smallholder livelihoods and food security
4. Identify mechanisms specifically to reach women and the poor
5. Develop a framework for identifying feasible, pro-poor incentives for smallholders
6. Identify priorities for action and research in agricultural mitigation community to enhance incentives

CONCLUDING REMARKS

- Achieving CSA needs an integrated approach *(agencies charged with agriculture, forestry, environment, water resource management and weather forecasting often face challenges in designing and supporting implementation of integrated programs).*
- Provide an enabling legal and political environment
- How to bring different funding mechanisms together and combine them with public, private and international development financing to invest at the scale needed to achieve the goals of climate-smart agriculture and food security
- Successful CSA programs need a long term commitment and strong local ownership, through bottom-up approaches that are adapted to local circumstances. They need to be implemented to scale to have impact, and landscape restoration and social protection measures can often advantageously be combined
- Human/social dimension of climate change
- Involve all stakeholders in the project-planning process
- Improve access to knowledge and capacity strengthening (short & long-terms)
- Improve access to farm implements and capital
- Communication efforts for widespread dissemination of information

CCAFS West Africa

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