



ANALYSIS OF POTENTIAL VALUE CHAINS FOR SCALING UP CLIMATE-SMART AGRICULTURE IN WEST AFRICA

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Figure: Climate risk profile and impact on agriculture

Despite the development of several CSA options and their positive gains, their wide scale adoption remains a challenge. Integrating the value chain analysis into the Climate-Smart Village (CSV) - Agricultural Research for Development (AR4D) approach sounds positioning as an effective approach for upscaling of CSA.

Objectives

Identify and characterize promising value chains that can support the uptake of CSA in West Africa.

Methodology_

• **Sites :** Ghana, Mali, Niger, Senegal.

O Data collection: Desk review; interviews with Key \bigcirc informants

Data analysis : Situation analysis.

Activities

Climate stressors

- Increased temperatures and evaporation
- Shorter duration of rainy period, reduced rainfall, increased rainfall variability
- Extreme events (droughts, intense rainfall, flooding)
- Sea raising (only in Senegal & Ghana)

t	Impact on agriculture	Impact on livestock				
	 Reduced crop quality and yields due to heat and water stress. 	 Loss of traditional rangelands and water sources alter her- ders' migratory patterns. 				
	 Altered onset and reduced length of growing periods. Increased risk of crop disease & pest infestations. 	 Decreased milk production, meat quality and fertility rates, increased mortality and morbi- dity rates reducing livestock 				

• Deteriorated agricultural land due to desertification, erosion and sand intrusion.

 \bigcirc Selection of promising value chains (VC).

Analysis of climate risk profile.

○ Identification of CSA options that are relevant to the VC.

Results and main achievements

Commons climate risk include (Figure): Increased temperatures and evaporation, shorter duration of rainy period, reduced rainfall, increased rainfall variability and extreme events (droughts, floods).

- \bigcirc 3 to 4 potential VCs have been identified in each country:
 - maize, sorghum, cassava (Ghana)
 - millet, sorghum, groundnut/cowpea (Mali)
 - millet, sorghum, groundnut (Niger)
 - millet, sorghum, groundnut, cowpea (Senegal).

• One agricultural development project has been identified in each country to support the scaling out /up of CSA.

Conclusion and recommendations

- Damage to crops from floods, droughts and erratic rains. Increased food prices, food insecurity and urban-rural/southern migration.
- Soil salinization and saltwater intrusion into coastal aquifers (Ghana & Senegal).

• Heat stress and reduced water and feed supplies (fodder production) for livestock.

production.

competition Increased and conflict over water and land resources.

Permanent migration to southern, coastal and/or urban centers.

Crops

Sorghum

Millet

Maize

Cowpea

ບັ

Cassava

Table : CSA options for potential CS value chains

CSA technologies/practices

Climate information services

CSA technologies and practices should be mainstreamed into the potential value chains through an appropriated institutional arrangement (i.e. value chain based multi-stakeholders innovation platform) to scale up and out CSA in the respective countries.

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Composting/Organic fertilizer		Х	Х		Х	Х
Contour farming		Х	Х		Х	
Crop rotation cereal/legume	Х		Х	Х	Х	Х
Farm managed natural regeneration	Х	Х	Х			
Improved varieties (drought tolerant)	Х	Х	Х	Х	Х	Х
Integrated nutrient management	Х	Х	Х			
Intercropping	Х	Х	Х			
Micro-dosing fertilization	Х	Х	Х			
Mulching	Х	Х	Х		Х	
No/reduced tillage	Х	Х	Х		Х	
Water harvesting (ties ridges, stone bunds, planting pits)	Х	Х	Χ	Х		Х