CCAFS WEST AFRICA

Site: Segou/Cinzana, Mali

CGIAR

RESEARCH PROGRAM ON
Climate Change, Agriculture and Food Security

CCAFS

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CCAFS Baseline Indicators for Segou/Cinzana in Mali, West Africa

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Citation:

CCAFS 2015. CCAFS Baseline Survey Indicators for Sekou/Cinzana, Mali. CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). Copenhagen, Denmark. Available online at: www.ccafs.cgiar.org.

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Introduction

The CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) is a strategic partnership of CGIAR and Future Earth led by the International Center for Tropical Agriculture (CIAT). CCAFS brings together the world's best researchers in agricultural science, development research, climate science and Earth System science to identify and address the most important interactions, synergies and trade-offs between climate change, agriculture and food security.

CCAFS is focusing its research for development efforts in five regions, East and West Africa, South and Southeast Asia as well as Latin America, working in 25 research sites. The regions represent areas that are particularly vulnerable to climate change, and the sites are focal locations to generate knowledge and learning that can be applied and adapted to other regions worldwide.

Extensive baselines have been implemented at all CCAFS sites and consist of analysed information collected at three levels: households, communities and organisations. The baselines capture the big picture of how farmers are changing their practices in light of climate change and other pressures. The aim is to revisit the same communities and households in five and again in ten years to document changes in livelihoods, resource management practices and other factors over time and update these indicator documents accordingly. The CCAFS baseline is a key component of the program's monitoring and evaluation system.

This document series compiles key indicators from the three levels of the baseline for each site. Indicators include: demography and basic site characteristics of each site, rainfall distribution, changes in farming practices and land management, income sources, food security and food sources, asset ownership by households and involvement in organisations and more.

This CCAFS baseline indicator document was developed for the CCAFS site at Segou/Cinzana, in Mali.

The baseline indicator series is complemented by CCAFS site atlases, that include site maps with climate information, biophysical characteristics and socio-economic factors. Site maps are available at: www.ccafs.cgiar.org/atlas-ccafs-sites

Download the baseline tools, data and reports:
www.cafs.cgiar.org/resources/baseline-surveys

Get in touch:
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Sources

Throughout this document the sources of data for the indicators are colour coded as follows:

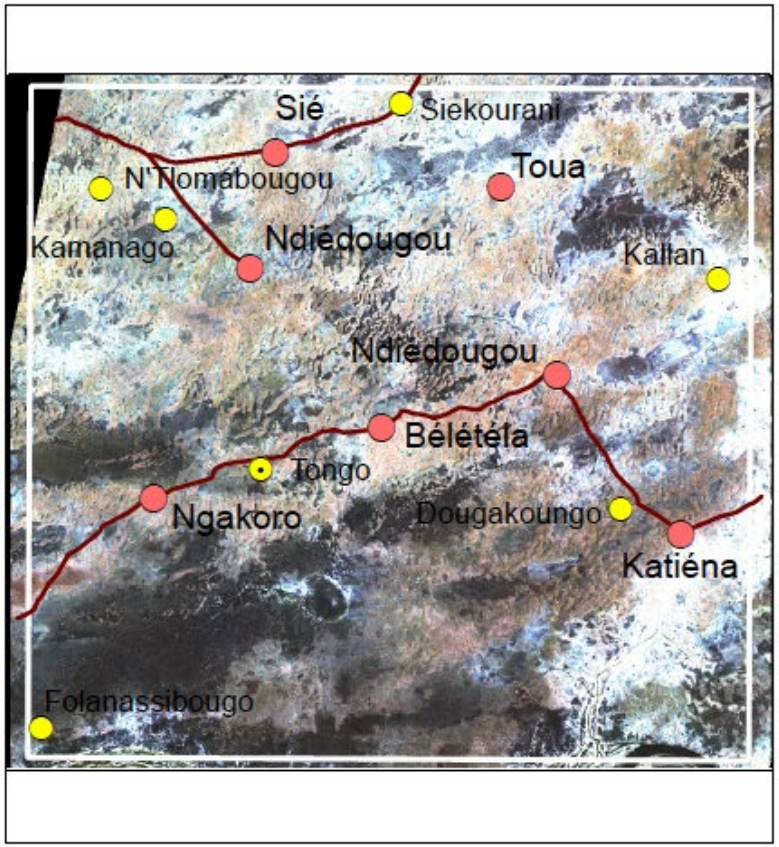
CCAFS Household baseline study | CCAFS Village baseline study | CCAFS Organisational baseline study

Map

Country: Mali

Site location

CCAFS Sampling Frame: Segou - Cinzana



CCAFS Site Name (ID): Segou (MA01)

CCAFS Sampling Frame Name (ID): Cinzana (09)

Road

Settlement

CCAFS VBS / OBS Village

CCAFS HBS Village

Coordinates of the CCAFS Sampling frame

5.613W 13.228N
5.911W 13.228N
5.911W 13.509N
5.613W 13.509N

SourceL Förch W et al. 2013. Core Sites in the CCAFS Regions: East Africa, West Africa and South Asia, Version 3. Copenhagen: Denmark. CCAFS

Demography and basic site characteristics

	Baseline	Mid-term	Final
Ratio of women headed households	1%		

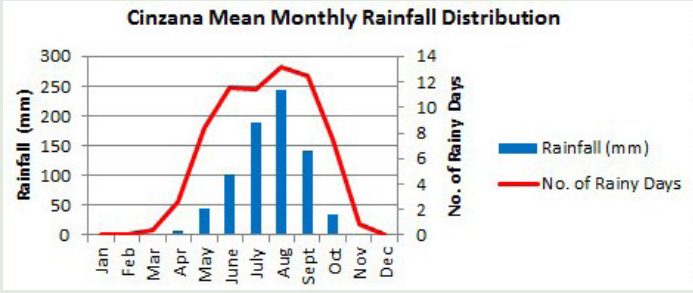
% households of different sizes

Number of people in the household	Baseline	Mid-term	Final
1	0%		
2	0%		
3	3%		
4	3%		
5	5%		
6	2%		
6+	87%		

Area of land cultivated (ha)*	1273.45		
Average (mean) per household (ha)	9.03		

Highest level of education obtained by any household member

No formal education	25%		
Primary	72%		
Secondary	4%		
Post-secondary	0%		



Source: MarkSim[1]

Ratio of local organisations to total number of organisations named*

	Baseline	Mid-term	Final
Men's group	9/19		
Women's group	2/8		

** Organisations have been recoded by CCAFS researchers from original data (participant perceptions of community, local and beyond local) to categories of local and external.*

*Area of land cultivated (ha) is the total amount of owned or rented land used for growing food or aquaculture

[1]Source: Jones P G, Thornton P K, Diaz W and Wilkens P W. 2002. MarkSim, a computer tool that generates simulated weather data for crop modeling and risk assessment. Version 1, 2002. CD-ROM and Users Manual. CIAT, AA6713, Cali, Colombia, 87 pp.

Changes in farming practices and drivers of changes in resources

% households introducing 3 changes or more		Baseline	Mid-term	Final
	Crop	5%		
	Water	0%		
	Soil	5%		
	Tree/agroforestry	89%		
	Livestock	26%		

Adaptation

% households reporting changes to their agricultural pratices				
	0-1 change	18%		
	2-10 changes	72%		
	11 or more changes	11%		

Mitigation

% households doing				
Tree management*	Yes	89%		
	No	11%		
Soil management	None	31%		
	Some	69%		
Intensification	None	27%		
	Low	65%		
	High	9%		
Productivity	No Increase	47%		
	Some increase	53%		

Drivers of changes to crop production and land management

% households reporting this driver	Baseline	Mid-term	Final
Markets	73%		
Weather/climate	45%		
Pest and Diseases	4%		
Labour	33%		
Land	55%		
Projects	11%		

Drivers of changes to livestock production*

% households reporting this driver	Baseline	Mid-term	Final
Markets	74%		
Weather/climate	19%		
Pest and Diseases	48%		
Labour	0%		
Projects	0%		

Drivers of change in the community

	Men			Women		
Frequency with which they were mentioned in group discussions	Baseline	Mid-term	Final	Baseline	Mid-term	Final
Population Growth	2			3		
Deforestation	3			0		
Pest and Diseases	0			0		
Information/Knowledge	0			0		
Land Demarcation/fragmentation	0			0		
Soil degradation/Erosion	0			1		
Rainfall Changes	1			0		
Charcoal Burning/Fuel	0			0		
Government	0			0		
Forest Fire/Bush burning	0			0		
Overuse	0			0		
Spiritual/Cultural/Religious	0			0		
Invasive tree species	0			0		
Increase in wealth	0			0		
Increase in livestock	1			0		
Social/Community conflicts	0			0		
Infrastructure	1			1		

*For tree/agroforestry changes these are the households who have either planted or protected trees within the last year

*For livestock changes these are the households who have made 3 of more of the changes in the livestock section

Livelihood diversification

	Baseline	Mid-term	Final
Source of Cash Income other than own farm			
Employment on someone else's farm	33%		
Other off-farm employment	26%		
Business	65%		
Remittances/gifts	20%		
Payments for environmental services	3%		
Payments from government or other projects/programs	4%		
Loan or credit from a formal institution	38%		
Informal loan or credit	56%		
Renting out farm machinery	11%		
Renting out your own land	5%		
No off-farm cash source	6%		
Product diversification			
% of households			
1-4 products (low)	2%		
5-8 products (intermediate)	33%		
9 or more products (high)	65%		
Selling/Commercialization Diversification:			
% of households			
No products sold	4%		
1-2 products sold (low)	31%		
3-5 products sold (intermediate)	53%		
6 or more products sold (high)	12%		

Food security

Food Security Index

% households	Baseline	Mid-term	Final
More than 6 hunger months/year	0%		
5-6 hunger months/	1%		
3-4 hunger months/	9%		
1-2 hunger months/	39%		
Food all year round/No hungry period	51%		

Food security organisational linkages

Men groups

Organisation receives	Baseline	Mid-term	Final
Funding	0		
Capacity Building	0		
Food	0		
Organisation provides			
Funding	0		
Capacity Building	0		
Food	0		

Women groups

Organisation receives	Baseline	Mid-term	Final
Funding	1		
Capacity Building	1		
Food	1		
Organisation provides			
Funding	2		
Capacity Building	3		
Food	1		

Source of food during highest and lowest shortage months	Baseline	Mid-term	Final
% households mainly consuming from own farm in the month of highest shortage	43%		
% households mainly consuming from own farm in the month of lowest shortage	99%		

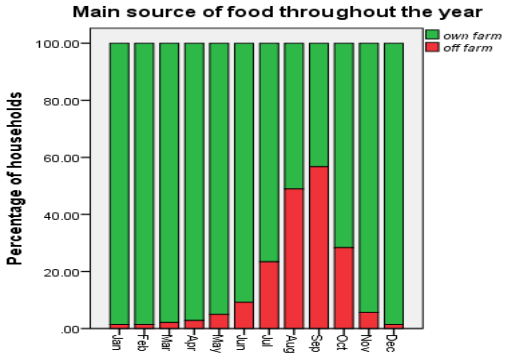
Ratio of local organisations to total number of organisations named in each area of food security work*

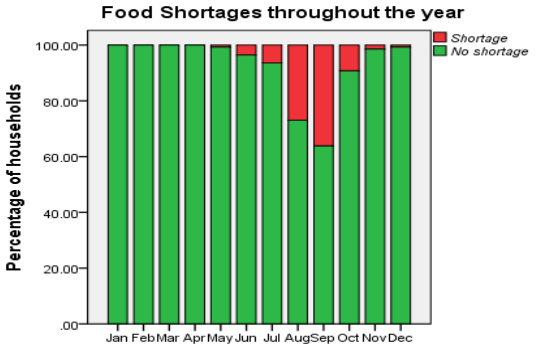
Men's group	Baseline	Mid-term	Final
Availability	4/9		
Access	1/2		
Utilisation	1/2		

Women's group	Baseline	Mid-term	Final
Availability	2/5		
Access	2/6		
Utilisation	1/4		

** Organisations have been recoded by CCAFS researchers from original data (participant perceptions of community, local and beyond local) to categories of local and external.*

These charts are taken from the Household Baseline Survey - Food Security Section





Collective action in natural resource management (NRM)

Resource	Gender	Discussed	Baseline	Mid-term	Final
Is there an issue with the resource?					
Irrigation	M	Yes	Ponds are drying up; lack of maintenance		
	F	Yes	Some wells dry up in dry season		
Farmland	M	Yes	soil becoming poorer and poorer, can't produce without fertilizer, Reduction of rainfall		
	F	Yes	Exhausted soil, lack of means to buy fertilizer, poor acces to manure. Not enough rainfall		
Forest	M	Yes	Arbitrary tree cutting		
	F	Yes	Forest has become sparse		
Pasture	M	Yes	Degraded land, the ground sinks during the rainy season		
	F	Yes	Former farmland.		
Markets	M	No			
	F	No			
Is there a problem of access to the resource?					
Irrigation	M	Yes	Ponds are communal		
	F	Yes	Communal management		
Farmland	M	Yes	Lack of farmland. Family owned farmland and also communal farmland		
	F	Yes	Community land is abbandoned. Private land is man (husband) owned.		
Forest	M	Yes	Community resource		
	F	No			
Pasture	M	Yes	Community resource, free access		
	F	Yes	Community resource, free access		
Markets	M	No			
	F	No			
Is there any local action in place to address the problem?					
Irrigation	M	No			
	F	No			
Farmland	M	No			
	F	No			
Forest	M	No			
	F	No			
Pasture	M	No			
	F	No			
Markets	M	No			
	F	No			

Membership of organisations and organisational agendas

% households with at least one member belonging to organised groups

	Baseline	Mid-term	Final
Tree nursery/tree planting	11%		
Water catchment/management	0%		
Soil improvement related	1%		
Crop improvement related	0%		
Irrigation	0%		
Savings/credit related	65%		
Agricultural product marketing	14%		
Agricultural productivity enhancement related	70%		
Seed production	4%		
Vegetable production	8%		
Other group not mentioned above?	3%		
No groups	12%		

Ratio of local organisations involved in Natural Resource Management to total number of organisations involved in NRM*

	Baseline	Mid-term	Final
Men's group	0/4		
Women's group	2/6		

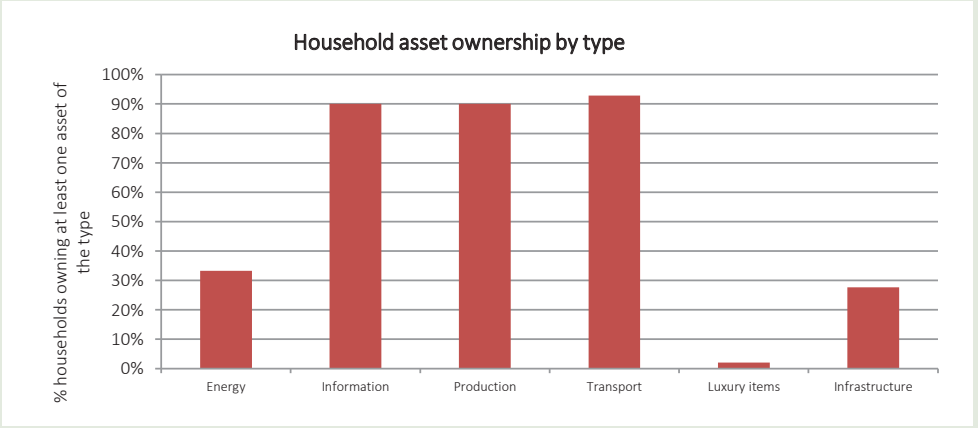
** Organisations have been recoded by CCAFS researchers from original data (participant perceptions of community, local and beyond local) to categories of local and external.*

Household assets

% household with assets by type	Baseline	Mid-term	Final
Basic level	1%		
Intermediate level	37%		
High level	62%		

% households ownership			
Transport			
Bicycle	91%		
Motorcycle	54%		
Car or Truck	1%		
Production			
Tractor	0%		
Mechanical Plough	89%		
Mill	2%		
Water pump/Treadle pump	1%		
Thresher	0%		
Boat	0%		
Fishing Nets	4%		
Energy			
Solar Panel	9%		
Generator	2%		
Battery	29%		
Biogas Digester	0%		
LPG	1%		
Information			
Radio	87%		
Television	11%		
Cell Phone	56%		
Computer	0%		
Internet Access	0%		
Luxury			
Refrigerator	0%		
Air Conditioning	0%		
Electric Fan	0%		
Bank Account	2%		

Infrastructure	Baseline	Mid-term	Final
Improved storage facility for crops	14%		
Water storage tank	1%		
Well/borehole	5%		
Running/tap water in dwelling	0%		
Electricity from a grid	0%		
Improved housing	3%		
Improved roofing	5%		
Separate housing for farm animals	11%		



Networks of information

Networks of information - Men Group			
	Baseline	Mid-term	Final
Information on new varieties			
Elders	No		
Youth	No		
Youssouf Coulibaly	No		
Sidi Kourouma	No		
The men	No		
Cheick Keita	No		
Boureima Keita	No		
People from village, labourers and workers at Cinzana research Centre (IER/CRA)	Yes		
Seed producers	Yes		
Village chief's envoy	Yes		
Trader	No		
"Projects"	No		
JICA	No		
Meteorological service	No		
Agricultural extension service	No		
IER	Yes		
Peace Corps	No		
PRECAD	Yes		
Local authority, district (Prédecture)	No		
Radio	No		
Television	No		
The village chief	No		

Networks of information - Men Group			
	Baseline	Mid-term	Final
Beginning of planting season			
Elders	Yes		
Youth	No		
Youssouf Coulibaly	No		
Sidi Kourouma	No		
The men	No		
Cheick Keita	No		
Boureima Keita	No		
People from village, labourers and workers at Cinzana research Centre (IER/CRA)	No		
Seed producers	No		
Village chief's envoy	No		
Trader	No		
"Projects"	No		
JICA	No		
Meteorological service	No		
Agricultural extension service	No		
IER	No		
Peace Corps	No		
PRECAD	No		
Local authority, district (Prédecture)	No		
Radio	Yes		
Television	No		
The village chief	No		

Networks of information - Men Group			
	Baseline	Mid-term	Final
National food security stocks			
Elders	No		
Youth	No		
Youssouf Coulibaly	No		
Sidi Kourouma	No		
The men	No		
Cheick Keita	No		
Boureima Keita	No		
People from village, labourers and workers at Cinzana research Centre (IER/CRA)	No		
Seed producers	No		
Village chief's envoy	No		
Trader	Yes		
"Projects"	No		
JICA	No		
Meteorological service	No		
Agricultural extension service	No		
IER	No		
Peace Corps	No		
PRECAD	No		
Local authority, district (Prédecture)	Yes		
Radio	Yes		
Television	No		
The village chief	Yes		

Networks of information

Networks of information - Women Group			
	Baseline	Mid-term	Final
Right seeds			
Elders	No		
Youth	No		
Youssouf Coulibaly	No		
Sidi Kourouma	Yes		
The men	No		
Cheick Keita	Yes		
Boureima Keita	Yes		
People from village, labourers and workers at Cinzana research Centre (IER/CRA)	No		
Seed producers	No		
Village chief's envoy	No		
Trader	No		
"Projects"	No		
JICA	No		
Meteorological service	No		
Agricultural extension service	No		
IER	Yes		
Peace Corps	Yes		
PRECAD	No		
Local authority, district (Prédecture)	No		
Radio	No		
Television	No		
The village chief	No		

Networks of information - Women Group			
	Baseline	Mid-term	Final
Use of fertiliser			
Elders	No		
Youth	No		
Youssouf Coulibaly	Yes		
Sidi Kourouma	Yes		
The men	Yes		
Cheick Keita	No		
Boureima Keita	No		
People from village, labourers and workers at Cinzana research Centre (IER/CRA)	No		
Seed producers	No		
Village chief's envoy	No		
Trader	No		
"Projects"	Yes		
JICA	No		
Meteorological service	No		
Agricultural extension service	Yes		
IER	Yes		
Peace Corps	Yes		
PRECAD	No		
Local authority, district (Prédecture)	No		
Radio	Yes		
Television	Yes		
The village chief	No		

Networks of information - Women Group			
	Baseline	Mid-term	Final
Rainfall forecasts			
Elders	Yes		
Youth	Yes		
Youssouf Coulibaly	Yes		
Sidi Kourouma	No		
The men	No		
Cheick Keita	No		
Boureima Keita	No		
People from village, labourers and workers at Cinzana research Centre (IER/CRA)	No		
Seed producers	No		
Village chief's envoy	No		
Trader	No		
"Projects"	Yes		
JICA	Yes		
Meteorological service	Yes		
Agricultural extension service	Yes		
IER	No		
Peace Corps	No		
PRECAD	No		
Local authority, district (Prédecture)	No		
Radio	Yes		
Television	Yes		
The village chief	No		

Networks of information

% of households receiving weather-related information	Baseline	Mid-term	Final
Start of the rains	65%		
Forecast of extreme events	45%		
Forecase of pest or disease outbreak	25%		
2-3 month weather forecast	18%		
2-3 day weather forecast	53%		

Of households receiving information, who in the family receives it	Baseline	Mid-term	Final
Start of the rains			
Men	89%		
Women	1%		
Both	10%		
Forecast of extreme events			
Men	89%		
Women	0%		
Both	11%		
2-3 month weather forecast			
Men	81%		
Women	0%		
Both	19%		
2-3 day weather forecast			
Men	87%		
Women	0%		
Both	14%		
Forecast of pest or disease outbreak			
Men	89%		
Women	3%		
Both	9%		

Organisational priorities

Relative importance in the portfolio of organisations placed on climate or weather related activities

		Baseline	Mid-term	Final
Allocation of time				
	Very high	0%		
	High	0%		
	Medium	23%		
	Low	62%		
	None	15%		
Allocation of staff				
	Very high	0%		
	High	0%		
	Medium	31%		
	Low	23%		
	None	46%		
Allocation of budget				
	Very high	0%		
	High	0%		
	Medium	15%		
	Low	15%		
	None	69%		

Organisational priorities

Match of organisational activities to perceived needs of communities			
	Organisation activities		
Community issues about natural resources and infrastructure	Baseline	Mid-term	Final
Sparse forest/Savannah: No useful trees but baobab; forest has become sparse with low density vegetation; big pressure, deforestation	reforestation, tree planting and development of mini-nurseries; prohibition of logging and bushfires; supply of seedlings;		
Grassland: Former farmlands left fallow; degraded soil	Protection of grazing land and training in pasture & herd management;		
Ponds/backwater: Ponds and some wells are drying up; lack of maintenance	hydro-agricultural planning;		
Roads: poor state, dirt roads impassable in rainy season. Main paved road is OK	Road construction to access the market; road repairs;		
Farmland: soil exhausted, can't provide enough food; insufficient rainfall; no access to fertilizer (expensive) or manure	sustainable farming focused on composting and organic fertilisers; training on the production of organic manure and compost production ; provide seed for horticulture and encourage horticulture hedges; introduction of improved seeds and appropriate planting calendars; promotion of drought resistant crops		

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Photo: N. Palmer