

# CCAFS EAST AFRICA

Site: Borana/Yabero, Ethiopia



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



Photo: UNICEF

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### Citation:

CCAFS 2015. CCAFS Baseline Survey Indicators for Borana/Yabero, Ethiopia. CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). Copenhagen, Denmark. Available online at: [www.ccafs.cgiar.org](http://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 Borana/Yabero, in Ethiopia.

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-ccaafs-sites](http://www.ccafs.cgiar.org/atlas-ccaafs-sites)

Download the baseline tools, data and reports:  
[www.ccafs.cgiar.org/resources/baseline-surveys](http://www.ccafs.cgiar.org/resources/baseline-surveys)

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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

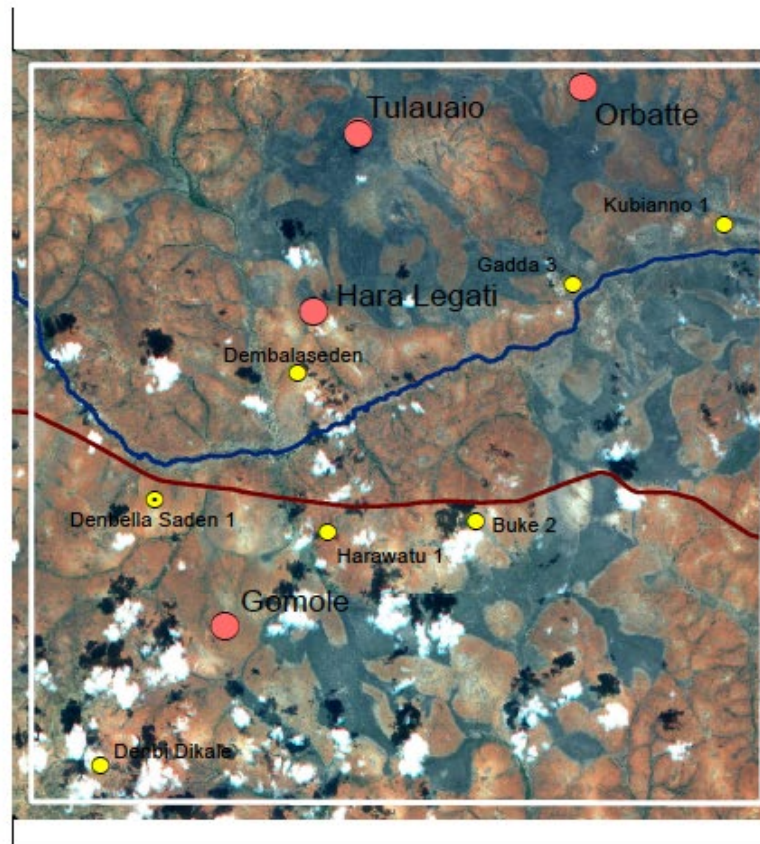


CCAFS Organisational baseline study

# Map

Country: Ethiopia

CCAFS Sampling Frame: Borana - Yabero



CCAFS Site Name (ID):  
Borana (ET01)

CCAFS Sampling Frame  
Name (ID): Yabero (06)

Road

River

Settlement

CCAFS VBS / OBS Village

CCAFS HBS Village

Coordinates of the CCAFS  
Sampling frame

38.296E 4.957N  
38.567E 4.957N  
38.567E 4.686N  
38.296E 4.686N

□ Site location

Source: L. 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	24%		

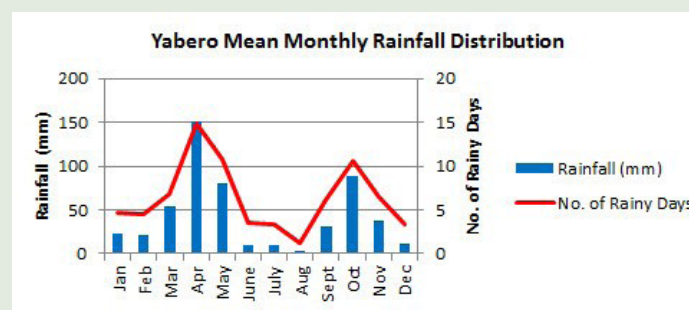
### % households of different sizes

Number of people in the household	Baseline	Mid-term	Final
1	1%		
2	1%		
3	8%		
4	11%		
5	13%		
6	11%		
6+	56%		

Area of land cultivated (ha)*	Baseline	Mid-term	Final
Average (mean) per household (ha)	0.67		

### Highest level of education obtained by any household member

No formal education	24%		
Primary	46%		
Secondary	16%		
Post-secondary	13%		



Source: MarkSim<sup>1</sup>

### Ratio of local organisations to total number of organisations named\*

	Baseline	Mid-term	Final
Men's group	2/12		
Women's group	5/9		

\* 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

<sup>1</sup>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	33%		
Water	0%		
Soil	1%		
Tree/agroforestry	100%		
Livestock	15%		

### Adaptation

% households reporting changes to their agricultural practices

	Baseline	Mid-term	Final
0-1 change	31%		
2-10 changes	59%		
11 or more changes	9%		

### Mitigation

% households doing  
Tree management\*

	Baseline	Mid-term	Final
Yes	100%		
No	0%		

Soil management

	Baseline	Mid-term	Final
None	99%		
Some	1%		

Intensification

	Baseline	Mid-term	Final
None	82%		
Low	18%		
High	0%		

Productivity

	Baseline	Mid-term	Final
No Increase	61%		
Some increase	39%		

### Drivers of changes to crop production and land management

% households reporting this driver

	Baseline	Mid-term	Final
Markets	70%		
Weather/climate	35%		
Pest and Diseases	4%		
Labour	5%		
Land	39%		
Projects	1%		

### Drivers of changes to livestock production\*

% households reporting this driver

	Baseline	Mid-term	Final
Markets	75%		
Weather/climate	35%		
Pest and Diseases	8%		
Labour	0%		
Projects	0%		

### Drivers of change in the community

Frequency with which they were mentioned in group discussions

	Men			Women		
	Baseline	Mid-term	Final	Baseline	Mid-term	Final
Population Growth	3			3		
Deforestation	0			0		
Pest and Diseases	0			0		
Information/Knowledge	0			0		
Land Demarcation/fragmentation	0			0		
Soil degradation/Erosion	0			0		
Rainfall Changes	1			1		
Charcoal Burning/Fuel	0			0		
Government	5			5		
Forest Fire/Bush burning	1			1		
Overuse	1			1		
Spiritual/Cultural/Religious	0			0		
Invasive tree species	0			0		
Increase in wealth	0			0		
Increase in livestock	0			0		
Social/Community conflicts	1			1		
Infrastructure	2			2		

\*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
<b>Source of Cash Income other than own farm</b>			
Employment on someone else's farm	4%		
Other off-farm employment	6%		
Business	19%		
Remittances/gifts	11%		
Payments for environmental services	1%		
Payments from government or other projects/programs	7%		
Loan or credit from a formal institution	9%		
Informal loan or credit	9%		
Renting out farm machinery	1%		
Renting out your own land	0%		
No off-farm cash source	52%		
<b>Product diversification</b>			
% of households			
1-4 products (low)	23%		
5-8 products (intermediate)	77%		
9 or more products (high)	0%		
<b>Selling/Commercialization Diversification:</b>			
% of households			
No products sold	14%		
1-2 products sold (low)	47%		
3-5 products sold (intermediate)	39%		
6 or more products sold (high)	0%		



## Food security

### Food Security Index

% households	Baseline	Mid-term	Final
More than 6 hunger months/year	53%		
5-6 hunger months/	24%		
3-4 hunger months/	18%		
1-2 hunger months/	4%		
Food all year round/No hungry period	1%		

### Food security organisational linkages

		Men groups		
		Baseline	Mid-term	Final
Organisation receives	Funding	1		
	Capacity Building	0		
	Food	1		
Organisation provides	Funding	1		
	Capacity Building	0		
	Food	1		

		Women groups		
		Baseline	Mid-term	Final
Organisation receives	Funding	0		
	Capacity Building	0		
	Food	3		
Organisation provides	Funding	0		
	Capacity Building	0		
	Food	3		

### 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	0%		
% households mainly consuming from own farm in the month of lowest shortage	70%		

### 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	6/11		
Access	4/7		
Utilisation	1/3		

Women's group	Baseline	Mid-term	Final
Availability	5/13		
Access	2/5		
Utilisation	0/4		

\* 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
<b>Is there an issue with the resource?</b>					
<b>Irrigation</b>	M	Yes	Diminishing quantity of water		
	F	Yes	Water pans dry up in dry season		
<b>Farmland</b>	M	No			
	F	Yes	Very small yield and often crop failure due to inadequate rainfall		
<b>Forest</b>	M	Yes	Woodley valley: affected by soil erosion		
	F	yes	No, plenty of trees (Bush land)		
<b>Pasture</b>	M	Yes	Pature area has reduced. Lots of encroachment and erosion		
	F	Yes	Currently facind drought, animals do not have pasture. Bushes have invaded the pasture.		
<b>Markets</b>	M	Yes	limited choices of goods and services. Long distance to and from village		
	F	No			
<b>Is there a problem of access to the resource?</b>					
<b>Irrigation</b>	M	Yes	Water pans owned and managed by community		
	F	Yes	Water pans owned and managed by community		
<b>Farmland</b>	M	Yes	owned and managed by individuals		
	F	Yes	The land is administered communally but cultivated individually		
<b>Forest</b>	M	No			
	F	Yes	No, it is free, fetch without restriction		
<b>Pasture</b>	M	Yes	Enclosures are owned and managed by members of the village		
	F	Yes			
<b>Markets</b>	M	Yes	owned by community and managed by local government and community		
	F	No			
<b>Is there any local action in place to address the problem?</b>					
<b>Irrigation</b>	M	Yes	Water pans collect water		
	F	Yes	Water pans collect water		
<b>Farmland</b>	M	No			
	F	Yes	Protected grass for young animals in enclosures		
<b>Forest</b>	M	No			
	F	No			
<b>Pasture</b>	M	No			
	F	No	Enclosures to protect grass for young animals		
<b>Markets</b>	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	1%		
Water catchment/management	9%		
Soil improvement related	2%		
Crop improvement related	0%		
Irrigation	2%		
Savings/credit related	24%		
Agricultural product marketing	13%		
Agricultural productivity enhancement related	18%		
Seed production	0%		
Vegetable production	0%		
Other group not mentioned above?	7%		
No groups	49%		

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

	Baseline	Mid-term	Final
<b>Men's group</b>	3/7		
<b>Women's group</b>	3/7		

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

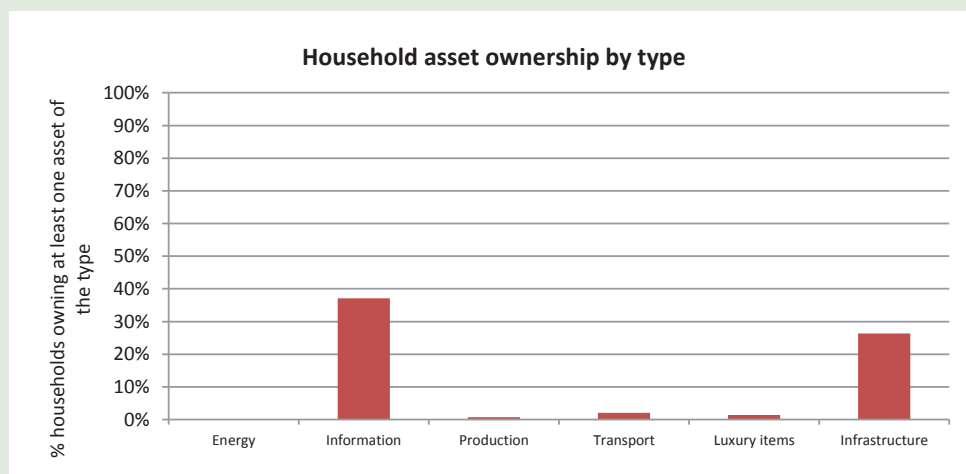
## Household assets

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

### % households ownership

Category	Asset Type	Baseline	Mid-term	Final
Transport	Bicycle	2%		
	Motorcycle	0%		
	Car or Truck	0%		
Production	Tractor	0%		
	Mechanical Plough	1%		
	Mill	0%		
	Water pump/Treadle pump	0%		
	Thresher	0%		
	Boat	0%		
	Fishing Nets	0%		
Energy	Solar Panel	0%		
	Generator	0%		
	Battery	0%		
	Biogas Digester	0%		
	LPG	0%		
Information	Radio	19%		
	Television	0%		
	Cell Phone	30%		
	Computer	0%		
	Internet Access	0%		
Luxury	Refrigerator	0%		
	Air Conditioning	0%		
	Electric Fan	0%		
	Bank Account	1%		

Infrastructure	Baseline	Mid-term	Final
Improved storage facility for crops	24%		
Water storage tank	0%		
Well/borehole	4%		
Running/tap water in dwelling	0%		
Electricity from a grid	0%		
Improved housing	0%		
Improved roofing	0%		
Separate housing for farm animals	0%		



## Networks of information

### Networks of information - Men Group

	Baseline	Mid-term	Final
<b>Start of rains</b>			
Family	Yes		
Friends	No		
Neighbour	No		
Elderly people	No		
Organisations	No		
Radio	Yes		
TV	No		
Newspaper	No		
Personal observation	Yes		
Functions/Meetings	No		

### Networks of information - Men Group

	Baseline	Mid-term	Final
<b>Prevailing peace</b>			
Family	Yes		
Friends	Yes		
Neighbour	No		
Elderly people	No		
Organisations	No		
Radio	No		
TV	No		
Newspaper	No		
Personal observation	No		
Functions/Meetings	No		

### Networks of information - Men Group

	Baseline	Mid-term	Final
<b>Livelihoods options</b>			
Family	No		
Friends	No		
Neighbour	No		
Elderly people	No		
Organisations	No		
Radio	No		
TV	No		
Newspaper	No		
Personal observation	No		
Functions/Meetings	Yes		

### Networks of information - Women Group

	Baseline	Mid-term	Final
<b>Marketing</b>			
Family	No		
Friends	Yes		
Neighbour	No		
Elderly people	No		
Organisations	No		
Radio	Yes		
TV	No		
Newspaper	No		
Personal observation	No		
Functions/Meetings	No		

### Networks of information - Women Group

	Baseline	Mid-term	Final
<b>Weather information</b>			
Family	No		
Friends	No		
Neighbour	Yes		
Elderly people	No		
Organisations	No		
Radio	Yes		
TV	No		
Newspaper	No		
Personal observation	Yes		
Functions/Meetings	Yes		

## Networks of information

### Networks of information - Men Group

	Baseline	Mid-term	Final
<b>Pasture prospect</b>			
Family	No		
Friends	Yes		
Neighbours	No		
Old women	No		
Organisations	No		
Radio	No		
TV	No		
Newspaper	No		
Personal observation	No		
Functions/Meetings	No		

### Networks of information - Men Group

	Baseline	Mid-term	Final
<b>Market information</b>			
Family	No		
Friends	Yes		
Neighbours	No		
Old women	No		
Organisations	No		
Radio	No		
TV	No		
Newspaper	No		
Personal observation	No		
Functions/Meetings	No		

### Networks of information - Men Group

	Baseline	Mid-term	Final
<b>Veterinary information</b>			
Family	No		
Friends	No		
Neighbours	No		
Old women	Yes		
Organisations	No		
Radio	No		
TV	No		
Newspaper	No		
Personal observation	No		
Functions/Meetings	No		

### Networks of information - Men Group

	Baseline	Mid-term	Final
<b>Drought information</b>			
Family	Yes		
Friends	No		
Neighbours	No		
Old women	No		
Organisations	No		
Radio	No		
TV	No		
Newspaper	No		
Personal observation	No		
Functions/Meetings	No		

## Networks of information

% of households receiving weather-related information			
	Baseline	Mid-term	Final
Start of the rains	17%		
Forecast of extreme events	54%		
Forecast of pest or disease outbreak	1%		
2-3 month weather forecast	3%		
2-3 day weather forecast	2%		

Of households receiving information, who in the family receives it			
	Baseline	Mid-term	Final
Start of the rains			
Men	58%		
Women	13%		
Both	29%		

Forecast of extreme events			
Men	79%		
Women	8%		
Both	13%		

	Baseline	Mid-term	Final
2-3 month weather forecast			
Men	25%		
Women	25%		
Both	50%		

2-3 day weather forecast			
Men	67%		
Women	0%		
Both	33%		

	Baseline	Mid-term	Final
Forecast of pest or disease outbreak			
Men	100%		
Women	0%		
Both	0%		

## Organisational priorities

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

	Baseline	Mid-term	Final
<b>Allocation of time</b>			
Very high	0%		
High	10%		
Medium	30%		
Low	60%		
None	0%		
<b>Allocation of staff</b>			
Very high	0%		
High	10%		
Medium	10%		
Low	80%		
None	0%		
<b>Allocation of budget</b>			
Very high	0%		
High	0%		
Medium	20%		
Low	40%		
None	40%		



## Organisational priorities

Match of organisational activities to perceived needs of communities			
Community issues about natural resources and infrastructure	Organisation activities		
	Baseline	Mid-term	Final
<b>Wooded valley:</b> affected by soil erosion	Tree nurseries, tree seed collection and tree planting; awareness raising about the negative effect of deforestation; forest management and control of charcoal burning; Identification and promotion of useful non timber forest products		
<b>Bush land:</b> plenty of trees	Bush thinning; management of invasive bush and tree species		
<b>Grassland:</b> Pasture area reduced, lot of encroachment and erosion.	Dry and wet season rangeland management, establishment of enclosures; protection of key grazing areas; forage production; herd management;		
<b>Water pan/ pond:</b> dries up during dry season	Promotion of water conservation; Water point development and rehabilitation; Water harvesting and conservation; Construction, maintenance and distribution of ponds, cement cisterns and wells in line with availability of pasture to avoid rangeland degradation		
<b>Farmland:</b> cultivation is dependent on erratic rainfall	Soil conservation; promotion of growing fruits; promotion of short season crop varieties in dry land;		
<b>Settlements:</b> better housing	Awareness raising on resettlement in environmentally sound ways; promotion of building protection to avoid asset depletion due to weather/climate related events; Resettlement, relocation and concentration		
<b>Roads:</b> in bad condition, adversely affected by rain. Do not have good bridges	Support construction of access roads to markets and public services		
<b>Schools:</b> Long distance from villages	Expansion and promotion of education (adult and child) and improvement of quality control; Raise awareness on environmental protection in schools and adult education;		
<b>Markets:</b> Limited good and service choices, Long distance from villages.	Extension on small scale fattening for market; Give advice on livestock and livestock product marketing; Support construction of access roads to markets and public services		



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