East Africa Climate-Smart Villages AR4D Sites: 2017 Inventory

CGIAR

RESEARCH PROGRAM ON
Climate Change, Agriculture and Food Security

CCAFS

Borana
Ethiopia

Hoima
Uganda

Nyando
Kenya

Lushoto
Tanzania

CIAT 50 1967–2017

CIP INTERNATIONAL POTATO CENTER

ICRISAT INTERNATIONAL CROPS RESEARCH INSTITUTE FOR THE SEMI-ARID TROPICS

IITA Transforming African Agriculture

50 1967 - 2017

ILRI INTERNATIONAL LIVESTOCK RESEARCH INSTITUTE

KALRO Kenya Agricultural & Livestock Research Organization

HARAMBEE

NARO

MAKERERE UNIVERSITY

SOKOINE UNIVERSITY OF AGRICULTURE "1984" ARDHI NI HAZINA

TANZANIA METEOROLOGICAL AGENCY MAMLAKA YA HALI YA HEWA TANZANIA

Vi AGROFORESTRY

Inventory of CSA practices in East Africa's Climate-Smart Villages

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Total practices: **5**

Practices with mitigation potential: **2**

♀ Gender impact assessed for: **0**

♀ Potential gender impact known for: **5**

CSA sub-practice	Mitigation potential	Country	CSV sites	Crop	Tested	Evaluated	# HH[1]	Gender assessed	Potential gender impacts
Improved breeds (small ruminants)	X	Kenya	Nyando	Galla Goats, Red Maasai Sheep	X	-	2750	-	X
Improved varieties	-	Kenya	Nyando	Sorghum, Pigeon pea, Beans, Maize	X	-	3525	-	X
	-	Uganda	Hoima	Sorghum, Finger millet, Beans, Maize, Cassava, Sweet potatoes	X	-	2700	-	X
	-	Tanzania	Lushoto	Potatoes, Beans, Maize	X	-	1980	-	X
Intercropping	-	Kenya	Nyando	Sorghum-Pigeon pea, Beans-Maize	X	-	3525	-	X
	-	Uganda	Hoima	Beans, Maize	X	-	2700	-	X
	-	Tanzania	Lushoto	Beans, Maize	X	-	1980	-	X
Agroforestry (alley cropping)	X	Kenya	Nyando	Casuarina, Grevillea	X	-	1340	-	X
	X	Uganda	Hoima	Casuarina, Grevillea, Fruit trees	X	-	1390	-	X
	X	Tanzania	Lushoto	Casuarina, Grevillea, Fruit trees	X	-	1210	-	X
Water harvesting (cisterns, tanks, pans)	-	Kenya	Nyando		X	-	215	-	X
	-	Uganda	Hoima		X	-	133	-	X
	-	Tanzania	Lushoto		X	-	312	-	X

[1] HH: households

Inventory of CSA practices in East Africa's Climate-Smart Villages

Agro-Met service	Country	CSV sites	Tested	Evaluated	#HH	Potential gender impacts
Seasonal forecast	Kenya	Nyando	-	-	3525	-
	Uganda	Hoima	-	-	2700	-
	Tanzania	Lushoto	-	-	1980	-

Market services	Country	CSV sites	Available	Tested	Evaluated	# HH	Gender assessed	Potential gender impacts
Input subsidies	Kenya	Nyando	X	-	-	-	-	-
Input subsidies	Uganda	Hoima	X	-	-	-	-	-
Input subsidies	Tanzania	Lushoto	X	-	-	-	-	-

Financial services	Country	CSV sites	Available	Tested	Evaluated	# HH	Gender assessed	Potential gender impacts
Capacity building/ Technical assistance (by dev agencies/ programs)	Kenya	Nyando	X	-	-	3525	-	X
	Uganda	Hoima	X	-	-	2700	-	X
	Tanzania	Lushoto	X	-	-	1980	-	X
Informal individual credits/loans	-	-	-	-	-	-	-	-
Informal group loans	Kenya	Nyando	X	-	-	3525	-	X
	Uganda	Hoima	X	-	-	2700	-	X
	Tanzania	Lushoto	X	-	-	1980	-	X

Contacts

Acknowledgments

Climate-Smart Nyando (Kenya)

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- **1100-2500** m.a.s.l
- **1-5 Ha** Farm size
- **467** HH
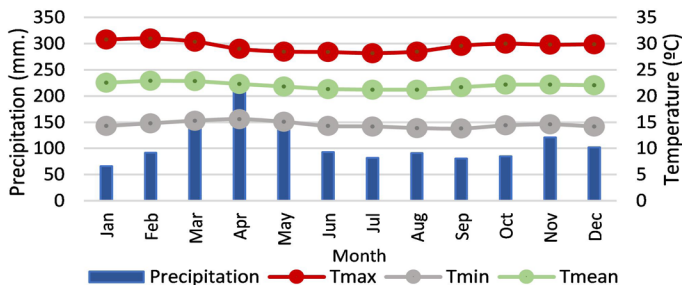- **64%** Headed HH

Photo: T. Muchaba (CCAFS)

Photo: K. Trautmann

Main crops and livestock ♀ Women specific

Food: beans, maize, green grams, pigeon pea, cowpeas, sweet potatoes ♀
Food/cash: sorghum, finger millet ♀, tomatoes, kales, cassava ♀, bananas ♀, sheep ♀, goat ♀♂, cow, fish, chicken

Climate-related risks

High rainfall variability in the expected onset, long dry spells and extreme flooding during the late onset. Extensive soil erosion leading to land degradation affecting about 40% of the landscape
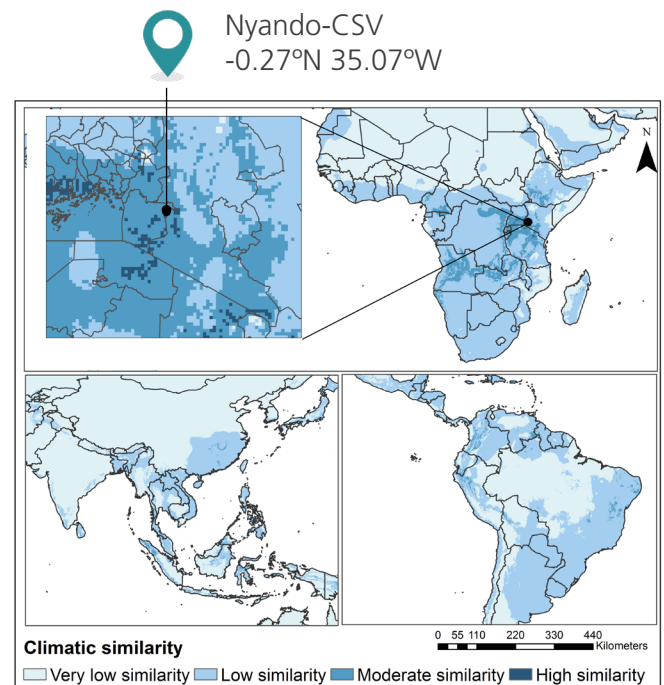
Climatic conditions

Source: www.worldclim.org

Parameter	Amount	Narrative
Total annual P	1.337 mm	In a single rainy season of 524 mm (Mar-May) and a dry season of 813 mm (Jun-Feb)
Max # of consecutive dry months	5 months (< 100 mm)	
Max T rainy season	30.4^{0}C	
Max T dry season	31.0^{0}C	
Highest Tmin	15.6^{0}C	April

*CCAFS Household (2011), Community and Gender baselines (2014)

Areas of climatic similarit

Nyando-CSV
-0.27ºN 35.07ºW

Climatic similarity
☐ Very low similarity ☐ Low similarity ☐ Moderate similarity ☐ High similarity

Areas whose future projected climate (by 2030) is similar to the current climate in this CSV

Source: www.ccafs-analogues.org

Climate-Smart Nyando (Kenya)

RESEARCH PROGRAM ON
Climate Change, Agriculture and Food Security

CGIAR   CCAFS

- 1100-2500 m.a.s.l
- 1-5 Ha Farm size
- 467 HH
- 64% Headed HH

2017: Field testing of CSA portfolio and # of households involved

- i Tested
- Evaluated
- Tested & Evaluated
- U Mitigation potential
- Households
- ▲ Available in Site, not by CCAFS
- ♀ Gender aspect assessed
- ♀ Potential gender impact

CSA Practices	Agro-climatic services	Financial services	Market incentives
Tree planting (casuarina, grevillea) — 1340	Seasonal forecast (meteorological forecasting, indigenous knowledge) — 3525	Capacity building tech. assistance — 3525	Input subsidies
Improved breeds (Galla goats, Red maasai sheep) — 2750		Informal group loans — 3525	
Improved varieties (sorghum, pigeon pea, beans, maize, millet) — 3525			
Water harvesting — 215			
Intercropping (sorghum-pigeon pea, beans-maize) — 3525			

Flagship projects

- Regional and national engagement, synthesis and strategic research (incl. PAR in CSVs)
- Analyzing the science-policy-practice interface in climate change adaptation in East and West Africa

Contacts

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CSV coordinator
John Recha
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Partners

ILRI INTERNATIONAL LIVESTOCK RESEARCH INSTITUTE

KALRO Kenya Agricultural & Livestock Research Organization

Vi AGROFORESTRY

International Livestock Research Institute (ILRI), Kenya Agricultural and Livestock Research Organization (KALRO), Kenya Meteorological Department Kericho and Kisumu County Departments of Agriculture, Livestock and Fisheries, Vi Agroforestry

CGIAR Science for a food-secure future

Australian Government
Australian Centre for International Agricultural Research

Irish Aid
An Roinn Gnóthaí Eachtracha agus Trádála
Department of Foreign Affairs and Trade

Ministry of Foreign Affairs of the Netherlands

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra
Swiss Agency for Development and Cooperation SDC

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Climate-Smart Lushoto (Tanzania)

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900-2250 m.a.s.l

0.1-1 Ha Farm size

3315 HH

22% Headed HH
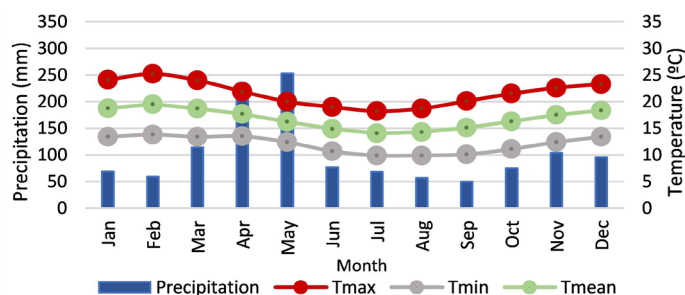

Photo: H. Dieudonne (CIP)

Main crops and livestock   +◐→ Specific

Food: beans ♀ , maize, Irish potato
Food/cash: cabbages, tomatoes, cassava ♀, cow ♀, chicken
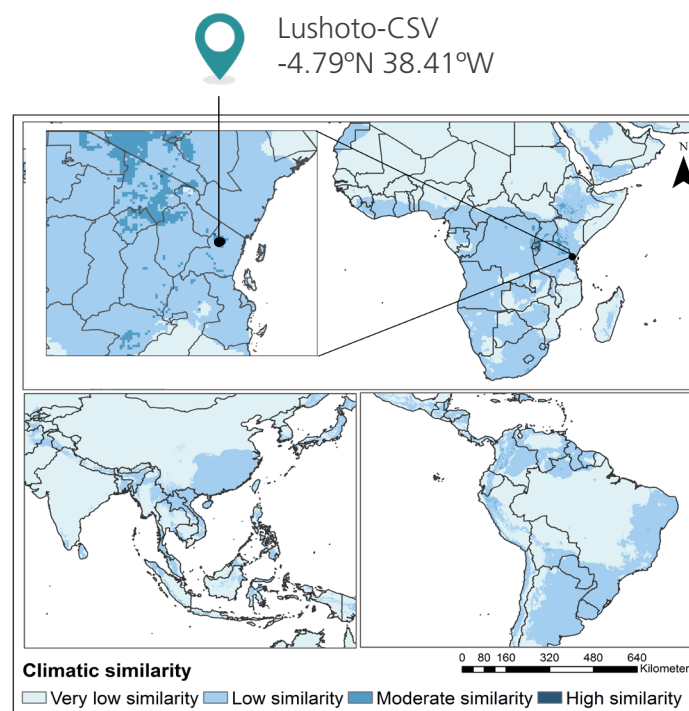**Cash:** fruits

Climatic conditions

Source: www.worldclim.org

Parameter	Amount	Narrative
Total annual P	1225 mm	Divided in two rainy season of 570 mm (Mar– May) and of 275 mm (Oct-Dec) a dry season of 380 mm.
Max # of consecutive dry months	5 months (< 100 mm)	
Max T rainy season	24.0°C	
Max T dry season	25.2°C	
Highest Tmin	13.8°C	February

CCAFS Household (2011) and Gender baselines (2014), ImpactLite (2013)

Climate-related risks

Rainfall variability, late in expected onset and early cessation, long dry spells, land degradation through erosion, and floods in lowlands. Upsurge in crop and livestock pests and diseases.

Areas of climatic similarity

Lushoto-CSV
-4.79ºN 38.41ºW

Climatic similarity
☐ Very low similarity ☐ Low similarity ☐ Moderate similarity ☐ High similarity

Areas whose future projected climate (by 2030) is similar to the current climate in this CSV

Source: www.ccafs-analogues.org

Climate-Smart Lushoto (Tanzania)

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- 900-2250 m.a.s.l
- 0.1-1 Ha Farm size
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2017: Field testing of CSA portfolio and # of households involved

- **i** Tested
- Evaluated
- Tested & Evaluated
- **U** Mitigation potential
- Households
- ▲ Available in Site, not by CCAFS
- ♀ Gender aspect assessed
- ♀ Potential gender impact

CSA Practices	Agro-climatic services	Financial services	Market incentives
♀ <u>Tree planting</u> 1210 (casuarina, grevillea, fruit trees)	♀ **i** Seasonal forecast 1980 (meteorological forecasting, indigenous knowledge)	♀ ▲ Capacity building tech.assistance 1980	♀ **i** Input subsidies
♀ Improved varieties 1980 (cassava, Irish potatoes, beans, maize)		♀ ▲ Informal group loans 1980	
♀ Water harvesting 312			
♀ Intercropping 1980 (beans, maize, vegetables)			

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Partners

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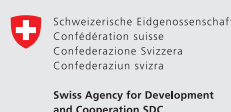
International Potato Centre (CIP), International Livestock Research Institute (ILRI), Lushoto District Council, Selian Agricultural Research Institute (SARI), Sokoine University of Agriculture, Tanzania Meteorological Agency (TMA)

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CGIAR | Australian Government - Australian Centre for International Agricultural Research | Irish Aid - An Roinn Gnóthaí Eachtracha agus Trádála Department of Foreign Affairs and Trade | Ministry of Foreign Affairs of the Netherlands | Schweizerische Eidgenossenschaft Confédération suisse Confederazione Svizzera Confederaziun svizra - Swiss Agency for Development and Cooperation SDC

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Climate-Smart Hoima (Uganda)

620-1600 m.a.s.l

1-5Ha Farm size

989 HH

22% Headed HH

Photo: [Cecilia]

Photo: P. Casier (CGIAR)

Main crops and livestock   +◯→ Specific

Food: maize, beans ♀, cassava ♀, sweet potatoes ♀
Food/cash: finger millet ♀, sorghum ♀, banana, cows sheep, goats, pigs, poultry♀
Cash: coffee ♂

Climate-related risks

Rainfall variability, late in expected onset, long dry spells and floods in lowlands. Widespread soil erosion affecting 20% of the landscape, and declining soil fertility.

Climatic conditions
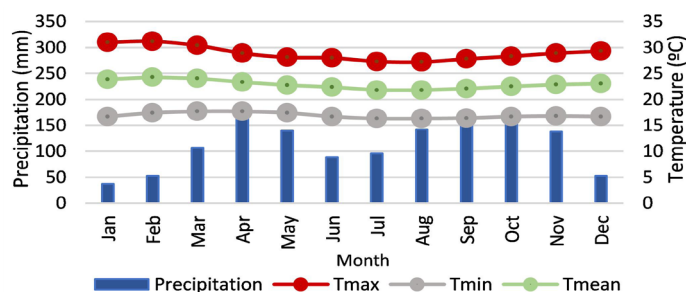
Source: www.worldclim.org

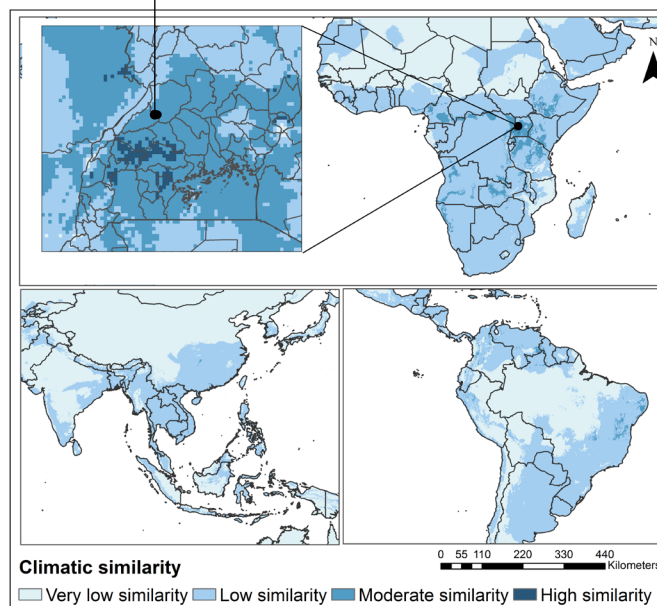| Parameter	Amount	Narrative
Total annual P	1400 mm	Divided in two rainy season of 800 mm (Mar-May) and of 550 mm (Aug-Nov) and a dry season of 50 mm.
Max # of consecutive dry months	3 months (< 100 mm)	
Max T rainy season	30.4°C	
Max T dry season	31.2°C	
Highest Tmin	17.7°C	March, April

*CCAFS Household (2011) and Gender baselines (2014), ImpactLite (2013)

Areas of climatic similarity

Hoima-CSV
-1.53°N 31.54°W

Climatic similarity
☐ Very low similarity ☐ Low similarity ☐ Moderate similarity ☐ High similarity

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Source: www.ccafs-analogues.org

Climate-Smart Hoima (Uganda)

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620-1600 m.a.s.l | 1-5Ha Farm size | 989 HH | 22% Headed HH

2017: Field testing of CSA portfolio and # of households involved

i Tested | Evaluated | Tested & Evaluated | **U** Mitigation potential | Households
▲ Available in Site, not by CCAFS | ♀ Gender aspect assessed | ♀ Potential gender impact

CSA Practices	Agro-climatic services	Financial services	Market incentives
♀ Tree planting — 1390 (casuarina, grevillea, fruit trees)	♀ **i** Seasonal forecast — 2700 (meteorological forecasting, indigenous knowledge)	♀ **i** Capacity building tech. assistance — 2700	♀ **i** Input subsidies
♀ Improved varieties — 2700 (maize, sorghum, finger millet, beans, cassava, sweet potatoes)		♀ **i** Informal group loans — 2700	
♀ Water harvesting — 133			
♀ Intercropping — 2700 (beans-maize, cassava)			

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Partners

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Hoima District Government, Hoima District Farmers Association (HODFA), International Center for Tropical Agriculture (CIAT), International Institute of Tropical Agriculture (IITA), Makerere University, National Agricultural Research Organization (NARO) Bulindi

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