

CCAFS SOUTH ASIA

Site: Mid-Western Terai/Rupandehi, Nepal



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



Photo: Asian Development Bank

Disclaimer

Citation:

CCAFS 2015. CCAFS Baseline Survey Indicators for Mid-Western Terai/Rupandehi, Nepal. CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). Copenhagen, Denmark. Available online at: www.ccafs.cgiar.org.

Contact:

CCAFS Coordinating Unit - Faculty of Science,
Department of Plant and Environmental Sciences,
University of Copenhagen, Rolighedsvej 21, DK-1958
Frederiksberg C, Denmark. Tel: +45 35331046; Email:
ccaafs@cgiar.org.



Creative Commons License

This document is licensed under a Creative Commons Attribution – NonCommercial–NoDerivs 3.0 Unported License.

Indicators appearing in this publication may be freely quoted and reproduced provided the source is acknowledged. No use of this publication may be made for resale or other commercial purposes.

© 2015 CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). Baseline Survey Indicators.

DISCLAIMER:

This document has been prepared as an output for the Flagship on Policies and Institutions for Climate-Resilient Food Systems, under the CCAFS program. All images remain the sole property of their source and may not be used for any purpose without written permission of the source.

Content

● Introduction	3
● Map	4
● Demography and basic site characteristics	5
● Changes in farming practices and drivers of changes in resources	6
● Livelihood diversification	7
● Food security	8
● Collective action in natural resource management (NRM)	10
● Membership of organisations and organisational agendas	11
● Household assets	12
● Networks of information	13
● Organisational priorities	16

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 Mid-Western Terai/Rupandehi in Nepal.

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

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

Get in touch:
Science Officer Wiebke Förch (w.foerch@cgiar.org)

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: Nepal

Sample Frame Name: Rupandehi



CCAFS Site Name (ID):
Rupandehi (NE03)

CCAFS Sampling Frame
Name (ID): Rupandehi (36)

City / Town



CCAFS VBS / OBS Village



CCAFS HBS Village




Coordinates of the CCAFS
Sampling frame

83.500E 27.589N

83.500E 27.500N

83.401E 27.500N

83.401E 27.589N

 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	2%		

% households of different sizes

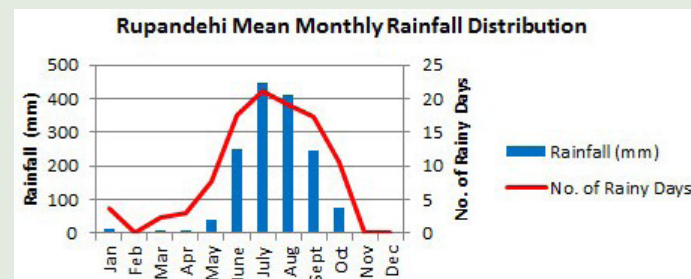
Number of people in the household	Baseline	Mid-term	Final
1	1%		
2	1%		
3	2%		
4	9%		
5	12%		
6	8%		
6+	68%		

Area of land cultivated (ha)*	78.77		
Average (mean) per household (ha)	0.57		

Highest level of education obtained by any household member

No formal education	2%		
Primary	23%		
Secondary	52%		
Post-secondary	23%		

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



Source: MarkSim¹

Ratio of local organisations to total number of organisations named*

	Baseline	Mid-term	Final
Men's group	5/14		
Women's group	7/15		

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

¹Source: 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	59%		
Water	0%		
Soil	6%		
Tree/agroforestry	72%		
Livestock	19%		

Adaptation

% households reporting changes to their agricultural practices

0-1 change	2%		
2-10 changes	50%		
11 or more changes	48%		

Mitigation

% households doing

Tree management*

Yes	72%		
No	29%		

Soil management

None	0%		
Some	100%		

Intensification

None	0%		
Low	83%		
High	18%		

Productivity

No Increase	8%		
Some increase	92%		

Drivers of changes to crop production and land management

% households reporting this driver

	Baseline	Mid-term	Final
Markets	99%		
Weather/climate	2%		
Pest and Diseases	17%		
Labour	35%		
Land	29%		
Projects	1%		

Drivers of changes to livestock production*

% households reporting this driver

Markets	55%		
Weather/climate	9%		
Pest and Diseases	16%		
Labour	52%		
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	1			1		
Deforestation	2			0		
Pest and Diseases	0			0		
Information/Knowledge	0			0		
Land Demarcation/fragmentation	0			0		
Soil degradation/Erosion	1			0		
Rainfall Changes	1			0		
Charcoal Burning/Fuel	0			0		
Government	0			0		
Forest Fire/Bush burning	0			0		
Overuse	1			0		
Spiritual/Cultural/Religious	0			0		
Invasive tree species	0			0		
Increase in wealth	0			0		
Increase in livestock	0			0		
Social/Community conflicts	1			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	26%		
Other off-farm employment	44%		
Business	11%		
Remittances/gifts	27%		
Payments for environmental services	0%		
Payments from government or other projects/programs	12%		
Loan or credit from a formal institution	14%		
Informal loan or credit	7%		
Renting out farm machinery	18%		
Renting out your own land	7%		
No off-farm cash source	19%		
Product diversification			
% of households			
1-4 products (low)	7%		
5-8 products (intermediate)	40%		
9 or more products (high)	53%		
Selling/Commercialization Diversification:			
% of households			
No products sold	17%		
1-2 products sold (low)	46%		
3-5 products sold (intermediate)	27%		
6 or more products sold (high)	10%		

Food security

Food Security Index

% households	Baseline	Mid-term	Final
More than 6 hunger months/year	3%		
5-6 hunger months/	3%		
3-4 hunger months/	13%		
1-2 hunger months/	7%		
Food all year round/No hungry period	75%		

Food security organisational linkages

Men groups		Baseline	Mid-term	Final
Organisation receives	Funding	4		
	Capacity Building	1		
	Food	0		
Organisation provides	Funding	1		
	Capacity Building	1		
	Food	0		

Women groups		Baseline	Mid-term	Final
Organisation receives	Funding	6		
	Capacity Building	1		
	Food	0		
Organisation provides	Funding	3		
	Capacity Building	1		
	Food	0		

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	79%		
% households mainly consuming from own farm in the month of lowest shortage	99%		

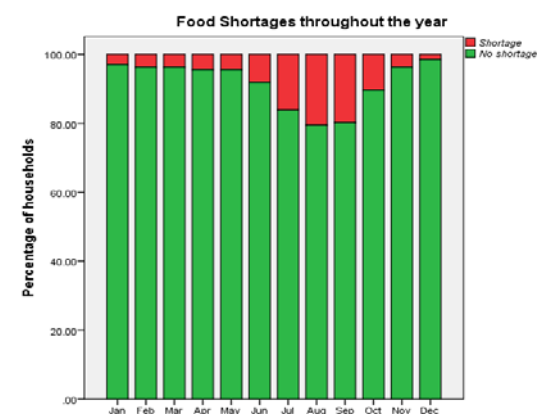
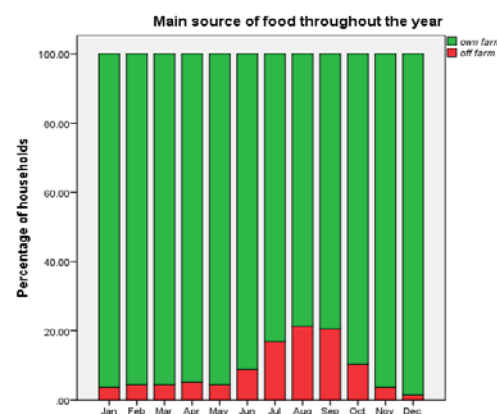
Ratio of local organisations to total number of organisations named in each area of food security work*

Men's group	Baseline	Mid-term	Final
Availability	3/7		
Access	0/2		
Utilisation	0/1		

Women's group	Baseline	Mid-term	Final
Availability	6/11		
Access	6/9		
Utilisation	1/1		

* 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	Canals are in poor condition and costly to maintain, dams lack of maintenance		
	F	Yes	Canals dry during dry season otherwise useful		
Farmland	M	Yes	Soil fertility in decline		
	F	Yes	Poor soil fertility and low productivity		
Forest	M	Yes			
	F	Yes			
Pasture	M	No			
	F	Yes	No grassland or grazing land as such. Cattle fed by grazing in fields during on and off cropping seasons		
Markets	M	Yes	Little income opportunities for the community		
	F	No			
Is there a problem of access to the resource?					
Irrigation	M	Yes			
	F	Yes	canals are owned by government		
Farmland	M	Yes	privately owned and managed		
	F	Yes	Government owned and managed		
Forest	M	Yes	Private, no community forest, owner restrictions		
	F	Yes	Government owned and managed		
Pasture	M	No			
	F	Yes	privately owned		
Markets	M	Yes	Owned by villagers, Not under the local authority		
	F	No			
Is there any local action in place to address the problem?					
Irrigation	M	No			
	F	Yes	One dam is under construction		
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	1%		
Water catchment/management	0%		
Soil improvement related	0%		
Crop improvement related	0%		
Irrigation	2%		
Savings/credit related	85%		
Agricultural product marketing	2%		
Agricultural productivity enhancement related	0%		
Seed production	1%		
Vegetable production	6%		
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	0/6		
Women's group	1/1		

** 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	0%		
Intermediate level	17%		
High level	83%		

% households ownership

Transport

Bicycle	96%		
Motorcycle	14%		
Car or Truck	2%		

Production

Tractor	16%		
Mechanical Plough	57%		
Mill	2%		
Water pump/Treadle pump	30%		
Thresher	12%		
Boat	0%		
Fishing Nets	31%		

Energy

Solar Panel	0%		
Generator	2%		
Battery	1%		
Biogas Digester	4%		
LPG	13%		

Information

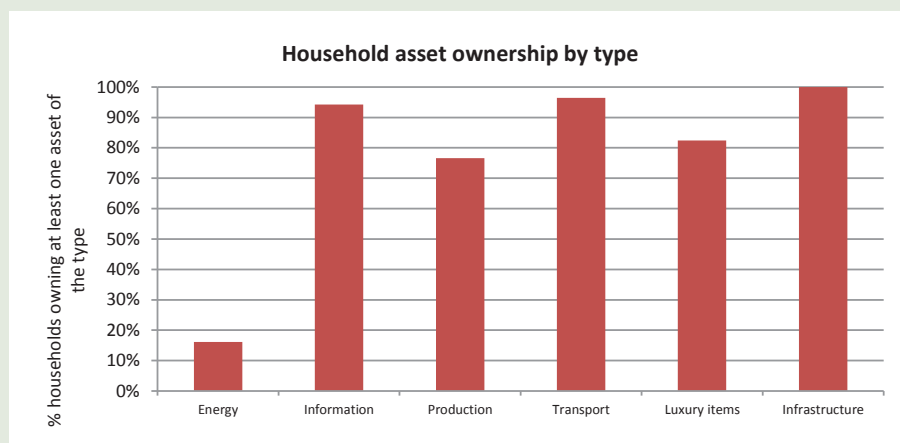
Radio	77%		
Television	68%		
Cell Phone	86%		
Computer	0%		
Internet Access	1%		

Luxury

Refrigerator	5%		
Air Conditioning	0%		
Electric Fan	80%		
Bank Account	54%		

Infrastructure

	Baseline	Mid-term	Final
Improved storage facility for crops	17%		
Water storage tank	3%		
Well/borehole	85%		
Running/tap water in dwelling	4%		
Electricity from a grid	88%		
Improved housing	78%		
Improved roofing	77%		
Separate housing for farm animals	82%		



Networks of information

Networks of information - Men Group

	Baseline	Mid-term	Final
Weather			
Friends/relatives	Yes		
Neighbours	No		
Atrologist/priest	No		
Agri. Dev. Office	No		
Animal health service centre	No		
Radio/TV	Yes		
Observation	No		
Agro-vet	Yes		
Trainings	No		
Field visit/tour	No		

Networks of information - Men Group

	Baseline	Mid-term	Final
Livestock			
Friends/relatives	No		
Neighbours	No		
Atrologist/priest	No		
Agri. Dev. Office	No		
Animal health service centre	No		
Radio/TV	No		
Observation	No		
Agro-vet	No		
Trainings	No		
Field visit/tour	No		

Networks of information - Men Group

	Baseline	Mid-term	Final
Fertiliser			
Friends/relatives	Yes		
Neighbours	Yes		
Atrologist/priest	No		
Agri. Dev. Office	Yes		
Animal health service centre	No		
Radio/TV	Yes		
Observation	Yes		
Agro-vet	Yes		
Trainings	Yes		
Field visit/tour	Yes		

Networks of information - Men Group

	Baseline	Mid-term	Final
Seed			
Friends/relatives	Yes		
Neighbours	Yes		
Atrologist/priest	No		
Agri. Dev. Office	Yes		
Animal health service centre	No		
Radio/TV	Yes		
Observation	No		
Agro-vet	Yes		
Trainings	Yes		
Field visit/tour	Yes		

Networks of information

Networks of information - Women Group

	Baseline	Mid-term	Final
Weather			
Friends/relatives	Yes		
Neighbours	No		
Atrologist/priest	Yes		
Agri. Dev. Office	No		
Animal health service centre	No		
Radio/TV	Yes		
Observation	No		
Agro-vet	No		
Trainings	No		
Field visit/tour	No		

Networks of information - Women Group

	Baseline	Mid-term	Final
Livestock			
Friends/relatives	No		
Neighbours	Yes		
Atrologist/priest	No		
Agri. Dev. Office	No		
Animal health service centre	Yes		
Radio/TV	No		
Observation	Yes		
Agro-vet	No		
Trainings	Yes		
Field visit/tour	No		

Networks of information - Women Group

	Baseline	Mid-term	Final
Fertiliser			
Friends/relatives	Yes		
Neighbours	Yes		
Atrologist/priest	No		
Agri. Dev. Office	Yes		
Animal health service centre	No		
Radio/TV	Yes		
Observation	Yes		
Agro-vet	Yes		
Trainings	Yes		
Field visit/tour	Yes		

Networks of information - Women Group

	Baseline	Mid-term	Final
Seed			
Friends/relatives	Yes		
Neighbours	Yes		
Atrologist/priest	No		
Agri. Dev. Office	Yes		
Animal health service centre	No		
Radio/TV	Yes		
Observation	Yes		
Agro-vet	Yes		
Trainings	Yes		
Field visit/tour	Yes		

Networks of information

% of households receiving weather-related information			
	Baseline	Mid-term	Final
Start of the rains	0%		
Forecast of extreme events	0%		
Forecast of pest or disease outbreak	0%		
2-3 month weather forecast	0%		
2-3 day weather forecast	71%		

Of households receiving information, who in the family receives it			
	Baseline	Mid-term	Final
Start of the rains			
Men	N/A		
Women	N/A		
Both	N/A		

Forecast of extreme events			
Men	N/A		
Women	N/A		
Both	N/A		

	Baseline	Mid-term	Final
2-3 month weather forecast			
Men	N/A		
Women	N/A		
Both	N/A		

2-3 day weather forecast			
Men	22%		
Women	1%		
Both	77%		

	Baseline	Mid-term	Final
Forecast of pest or disease outbreak			
Men	N/A		
Women	N/A		
Both	N/A		

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	33%		
Medium	25%		
Low	17%		
None	1/6		
Allocation of staff			
Very high	0%		
High	25%		
Medium	25%		
Low	17%		
None	25%		
Allocation of budget			
Very high	0%		
High	33%		
Medium	17%		
Low	17%		
None	25%		

Organisational priorities

Match of organisational activities to perceived needs of communities			
Community issues about natural resources and infrastructure	Organisation activities		
	Baseline	Mid-term	Final
Forest: Privately owned with farm owner restrictions	Promotion of conservation and afforestation; control of soil erosion and forest fires; forest protection through people's participation; vegetation restoration and monitoring of forest harvesting; tree planting; training in forest development; tree nurseries establishment and free distribution of tree seedlings; promotion of non-timber forest products		
Orchards: Poor soil fertility and low productivity	Promotion of commercial orchards;		
Farmland: Poor soil fertility and low productivity	Promotion of soil conservation and fertility; micro-irrigation projects; promotion of direct seeded rice in dry soil; technology transfer to farmers; promotion of integrated pest management; inclusion of legumes in crop cultivation ; promotion of organic fertilizers and pesticides, green mulching and mixed cropping; Maize and wheat production improvement; direct seeded rice in dry soil		
Grasslands: No grassland or grazing land as such. Cattle fed by grazing in fields during on and off cropping seasons.	Promotion of over grazing control, plantation of fodder crops;		
Degraded Land: Barren land around the river	Management of degraded land (including cropping patterns and methods of use)		
River: Encroaches farmland during rainy season; River is rain fed and volume decreases during dry season	Watershed conservation and management, training in river works; monitoring of groundwater level. Try to limit flood damage by flood proofing, flood fighting, protecting farm lands so that farmers have full insurance of crops and limiting the extent of damage by flooding; Riverbed farming		
Canals: Dry during dry season otherwise useful; Poor condition; costly to maintain	Water management; maintenance and improvement of irrigation canals;		
Ponds: Pond is good, however the government managed pond is dry	Management of public ponds; promotion of pond irrigation; promotion of fish farming in ponds; Public pond management for ground water table increment; Construction and maintenance of ponds		
Dams: normal to poor, not a priority by the Irrigation Office for its maintenance	Water management		
Roads: Good	Rehabilitation and protection of roads;		
Bridge: operational			
Market: Not under the local authority. Little income opportunities for the community	Agricultural market regulation; market information (market price); collection and dissemination; workshops about marketing delivery; Construction of marketing sheds and vegetable collection centres		
Health post: New and in very good condition. However, No big hospital and many services are not available	First aid as well as blood transfusion services are provided; Child, Women health Service		
Schools: New and in very good condition. However, No high school or higher education options	No mention of schools or education in activities of the organisations		



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



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.

For more information, visit www.ccafs.cgiar.org



Photo: Asian Development Bank