

**CGIAR Research Program on
Climate Change, Agriculture and Food Security (CCAFS)**

**Village Baseline Study:
Site Analysis Report for Yabello – Borana,
Ethiopia (ET0106)**

December 2012

**L. Onyango, J. Mango, S. Desta, S. Tezera, Z. Kurui, B. Wamubeyi,
A. Mohammed, A. Fatuma**

Edited by: C. Perez, W. Förch, L. Cramer



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

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The detailed tools and guidelines used for the implementation of the village baseline study across all CCAFS sites, as well as the mapping outputs of topic 1 at a higher resolution can be accessed on our website (<http://ccaafs.cgiar.org/resources/baseline-surveys>).

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Abstract

The village baseline of Denbela Saden village in the CCAFS benchmark site of Yabello in Ethiopia took place from 10th to 12th August 2011. Focus group discussions were conducted separately for men and women.

Denbela Saden is a Borana pastoralist village located in a semi-arid area where the dominant vegetation is grass, scrub and acacia trees. It faces inadequate and low quality pasture due to encroachment by bushes, livestock overstocking, and human settlement, all related to a government policy of encouraging permanent settlement of the pastoralists as opposed to the former system of nomadism. The increasing population and the settlement of the community have amplified the need for crop cultivation to complement weakened pastoral production. Cultivation is dependent on often inadequate and unreliable rainfall, and takes place in the valley beds. Crop residues are not incorporated into the soil but used to feed animals. Not surprisingly, yields are very low.

Government agricultural extension services do not add much value to cultivators because they focus on livestock services in this area. Two parallel governance systems co-exist in Denbela Saden village, namely the traditional customary system and the modern government system, and the challenge is to create a win-win situation where the operations of these systems are synchronized.

The government describes the area as chronically food insecure, and it is not surprising that more than half of the 16 groups/organisations working in the region address food security issues.

Keywords

Baseline; Ethiopia; village study; participatory mapping; organisations; access to information

About the Authors

Onyango, Leah – Lecturer-Chairman-Department of Urban and Regional Planning-Maseno University, Private Bag, Maseno, Kenya

Mango, Joash – Senior Technician, ICRAF GRP 5 and East Africa region; World Agroforestry Centre, P.O. Box 2389, Kisumu, Kenya

Desta, Solomon – Director MARIL (Managing Risk For Improved Livelihood) Private consulting firm, P.O. Box 1417 code 12502, Addis Ababa, Ethiopia

Tezera, Seyoum – Field Research Supervisor, MARIL (Managing Risk For Improved Livelihood) Private consulting firm., P.O. Box 17005, Addis Ababa, Ethiopia

Kurui, Zena – Estate management officer, Ministry of Housing, P.O Box 30119-00100, Nairobi, Kenya

Wamubeyi, Brian – Freelance GIS Practitioner/Consultant. P.O. Box 3613-40100, Kisumu, Kenya

Mohammed, Ahmed – Area Office Coordinator, Save the Children U.S.A., Moyale, Ethiopia

Fatuma, Abduba – Development Facilitator, GOAL Ethiopia, Yabello field office, Yabello, Ethiopia

Perez, Carlos – Independent Consultant, 28 Wheeler Pl., West Nyack, NY 10994, USA

Förch, Wiebke – CCAFS science officer, Theme 4.2; International Livestock Research Institute (ILRI), P.O. Box 30709, Nairobi, Kenya

Cramer, Laura – CCAFS consultant, Theme 4.2 and East Africa region; International Livestock Research Institute (ILRI), P.O. Box 30709, Nairobi, Kenya

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Introduction

The CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) is a strategic ten-year partnership between the Consultative Group on International Agricultural Research (CGIAR) and the Earth System Science Partnership (ESSP) to help the developing world overcome the threats posed by a changing climate, to achieving food security, enhancing livelihoods and improving environmental management. In 2010, CCAFS embarked on a major baseline effort at household, village and organisation levels across its three target regions, namely East Africa, West Africa and South Asia (more information about CCAFS sites is available on our website <http://ccafs.cgiar.org/where-we-work>). CCAFS trained survey teams from partner organizations in the three regions to conduct the baseline.

The baseline effort consists of three components – a household survey, village study and organisational survey. The household baseline survey, a quantitative questionnaire on basic indicators of welfare, information sources, livelihood/agriculture/natural resource management strategies, needs and uses of climate and agricultural-related information and current risk management, mitigation and adaptation practices, was implemented by CCAFS partners in 35 sites (245 villages) with nearly 5,000 households in 12 countries to date. CCAFS partners are implementing village baseline studies (VBS) and organisational surveys in one out of the seven villages within each CCAFS site where the household survey was implemented. The plan is to revisit these villages in roughly 5 years, and again in 10 years, to monitor what changes have occurred since the baseline was carried out. The goal is not to attribute these changes to the program, but to be able to assess what kinds of changes have occurred and whether these changes are helping villages adapt to, and mitigate, climate change.

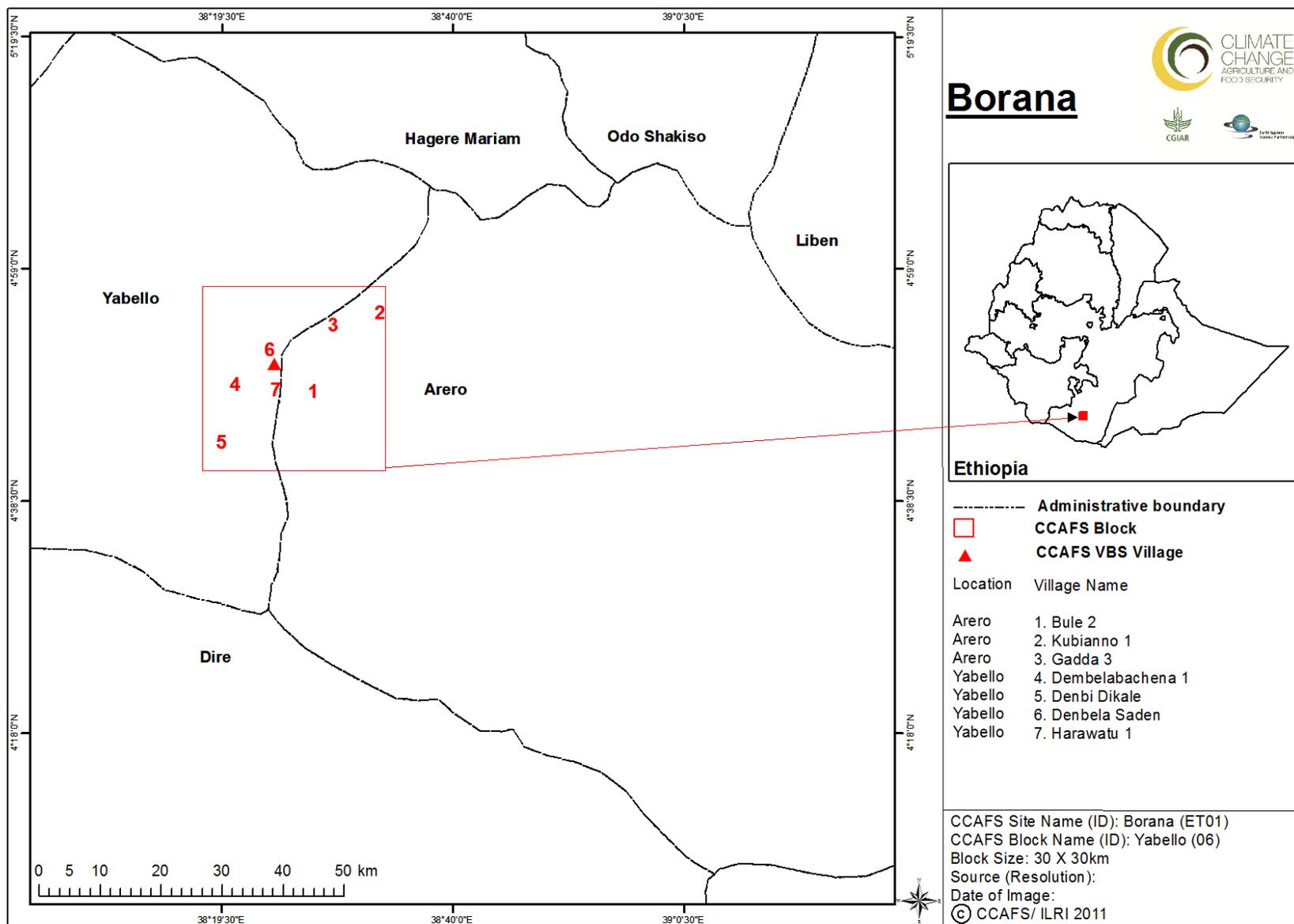
The focus of this site analysis report is the village baseline study (VBS). To date, fifteen VBS were conducted in the three CCAFS regions. The VBS aims to provide baseline information at the village level about some basic indicators of natural resource utilisation, organisational landscapes, information networks for weather and agricultural information, as well as mitigation baseline information, which can be compared across sites and monitored over time.

The objectives of the village baseline study are to:

- Provide indicators to allow us to monitor changes in these villages over time. In particular, changes that allow people to
 - Manage current climate risks,
 - Adapt to long-run climate change, and
 - Reduce/mitigate greenhouse gas emissions
- Understand the enabling environment that mediates certain practices and behaviours and creates constraints and opportunities (policies, institutions, infrastructure, information and services) for communities to respond to change
- Explore social differentiation:
 - Perceptions of women and men will be gathered separately to be able to present different gender perspectives.
 - Focus group participants will be selected to present perceptions of groups differentiated by age.

The detailed tools and guidelines used for the implementation of the village baseline study across all CCAFS sites, as well as the manuals, data and analysis reports can be accessed on our website (<http://ccafs.cgiar.org/resources/baseline-surveys>).

Map 1. Location of the Denbela Saden village in the CCAFS benchmark Yabello site, Ethiopia



This report presents the results of the VBS conducted on August 10 to 12, 2011 in the village of Denbela Saden, in the CCAFS benchmark Yabello site, Ethiopia (Map 1). The village geocoordinates are 4.797; 38.341. Denbela Saden village was chosen for the baseline survey because of its relative central location in the block. The survey team was composed of two facilitators, two note takers and two translators. Each pair was male and female. Two groups, composed respectively of 15 men and 15 women, were chosen to allow for collection of gender-differentiated information. The groups met during three consecutive days, with different participants joining each day. On the first day of the survey, the team explained the rationale and approach of the survey to the whole community, and provided a summary of the results of an earlier household survey organized by CCAFS. On the third day the team provided a summary for whole community on the findings of the survey.

On day one the team introduced the participants to a satellite image of the block and worked with each group to identify and map/sketch resources that are important to the community, their current state, their past state and what caused the changes. The groups dialogued about the resources among each other until they arrived to a consensus, and then drew diagrams on the floor using chalk, which were then transferred to paper. On day two the team worked with each group to understand the organisational landscape and the links that exist between the organisations in terms of food security in a normal year and in a year of crisis, and in relation to natural resource management. The outputs were diagrams showing the organisational landscape, again drawn on the floor and then transferred to paper as diagrams. Information on each organisation was captured in cards. The links between the organisations were shown using lines and arrows on the diagrams. On day three, the team worked with each group to understand information networks in relation to weather and farming activities, and summarized the information in tables. The team joined the two groups and facilitated their verbalization of what the community would envision their village to be like in the future. The output was a map/sketch showing “the vision of the community.”

The following paragraphs provide a summary of some of the results of the CCAFS household baseline survey carried out in the Borana site in Arero and Yabello Weredas in four Pastoral Associations and 7 villages, with 140 households. This summary was shared with the Denbela Saden village on the first day.

All the respondents were from one single ethnic group called Borana Oromo. Roughly half of the household survey respondents were male. The mean household size was 7 persons. Over 70% of the households have more than 60% of their members within working age. Ninety six percent of the households produced and sold livestock and livestock products. More than half kept 3 types of animals, including cattle, sheep, goats and/or camel. Eighty percent of the households had less than 20 heads of cattle, 13% had 21-50 heads, and the remaining had 51-100 cattle. More than a third of the respondents had camels. More than half of the surveyed 140 households own one or more chicken which have become a source of cash in particular for women. About 93% of households have farmlands and half of them cultivated two main crops, maize and beans. Women and men equally share the responsibility for livestock and agricultural production. On average each household cultivated less than 2 ha. Off-farm sources of livelihood, including cash, are very limited.

For 5 months, from June to October, the households obtained food from their own farm and herd. For the 7 remaining months (November to May) the households obtained 60-90% of their food from outside sources. November to April is a period of serious food shortage when households struggle to feed their family members. According to the food security index only 6 households out of the 140 interviewed (4%) have food for 10 months and 2 households (1.4%) are food-secure all year round. The rest (132 households or about 95%) are food secure for less than 6 months. This indicates how food insecure pastoralists in this area are.

Soil and water management is not a common practice, and very few households planted trees deliberately. Use of inputs such as improved seeds is uncommon. The system is livestock dependent and 84% of the respondents have purchased veterinary medicines over the 12-month period. The pastoralists are asset poor except for livestock, but allocate their resources differently. Three households owned bicycles, and 1 owned a mechanical plough, but at the same time 26 households

owned radios, and 42 households owned cell phones. Two households had bank accounts. The households that owned resources were predominantly male-headed households.

Availability and access to modern climate and weather information was limited. Over 63% of the respondents received some kind of weather/climate related information over the year, but 75% of them received the information from an indigenous system.

Data analysis

Topic 1: Community resources - participatory satellite imagery interpretation

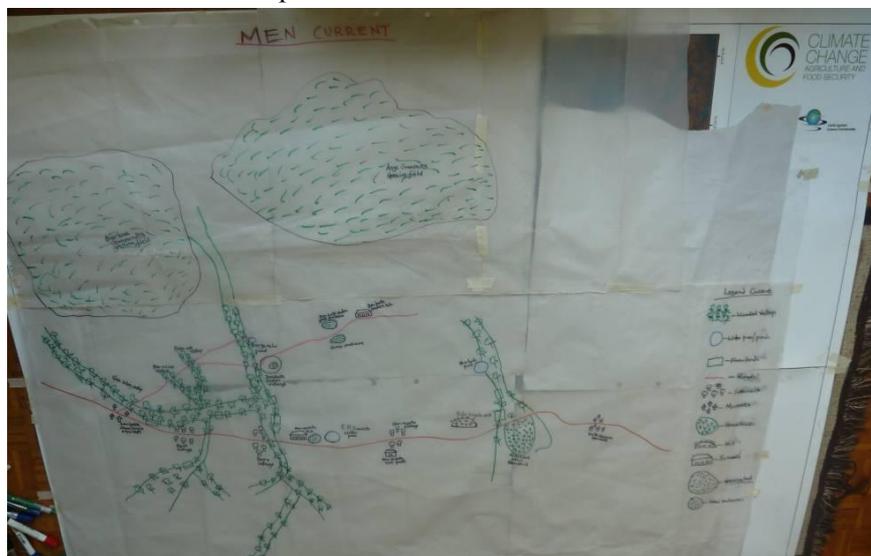
Community infrastructure and resources and gender-differentiated access and utilisation of those resources have been analysed, based on a process of participatory visual interpretation of high resolution satellite imagery (RapidEye). The aim was to create a basic understanding of existing community resources, as well as of community dynamics in relation to its environment. The participants discussed the current state of those resources, in terms of quality, access, management, history and potential drivers of change. Another group developed an image of village resources and human well-being into 2030 to understand opportunities, constraints and aspirations for the future. The detailed approach to this exercise is outlined in the CCAFS Village Baseline Study Implementation Manual (follow the link to the baseline study from our website <http://ccafs.cgiar.org/resources/baseline-surveys>).

A. Current resources

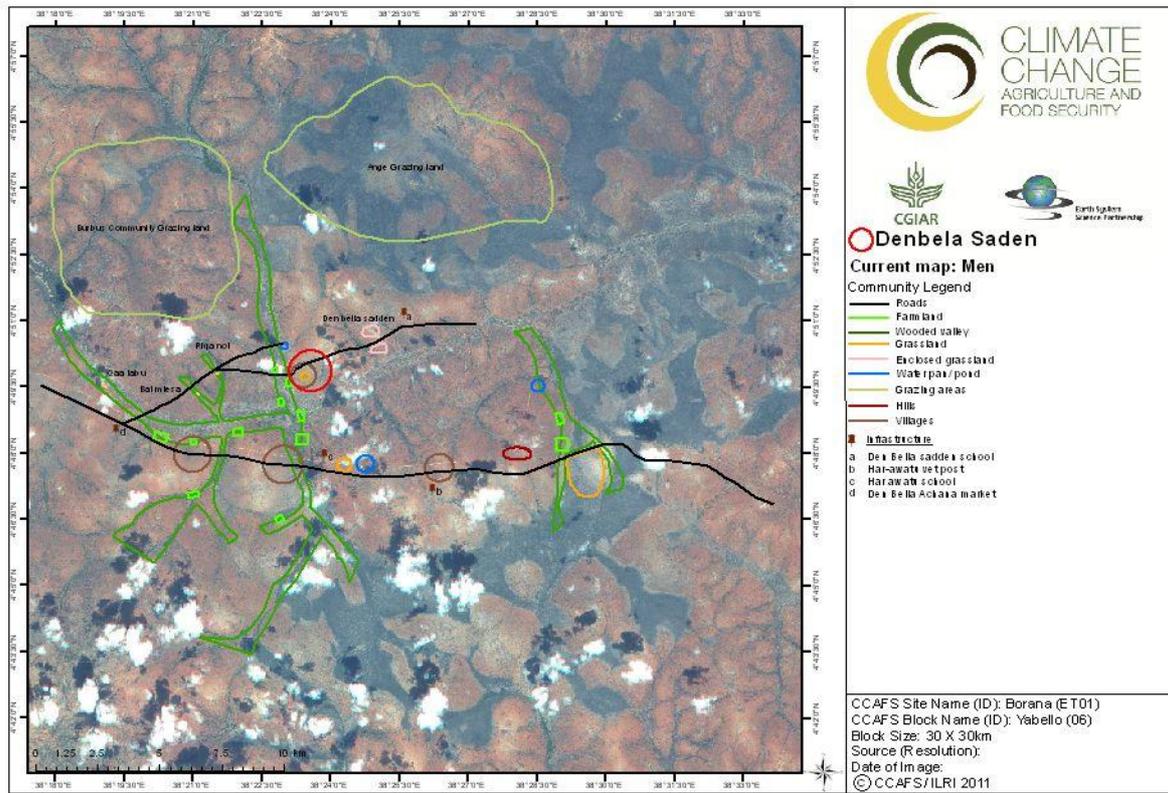
Separate groups of men and women drew maps on the ground outlining the main landmarks in the village, including the natural resources and infrastructure (road, school, etc). The resulting sketches were transferred onto flipcharts. The CCAFS team then placed the satellite image on a wall facing the participants, and asked them to point out their village and current location on the image. Once the participants established their bearings on the satellite image, the team positioned a piece of tracing paper on top of the satellite image, asked the participants to identify on the satellite image the landmarks they had previously drawn on the ground, and recorded those landmarks on the tracing paper (Photo 1). The resulting maps of current community resources are shown below (Maps 2 and 3).

The team invited the participants to discuss the main resources in the area. These included roads, schools, markets, health centres, forests, agricultural land, grazing land, natural resources, and water sources for drinking or livestock. Questions were made on the state of management of the land in the community, i.e. whether they were community-managed areas, degraded areas or protected areas. A summary of the discussion on the resources available in the community is presented in Table 1, below.

Photo 1. The men's map of current resources as traced over the satellite image



Map 2. Men's map of current community resources



Map 3. Women's map of current community resources

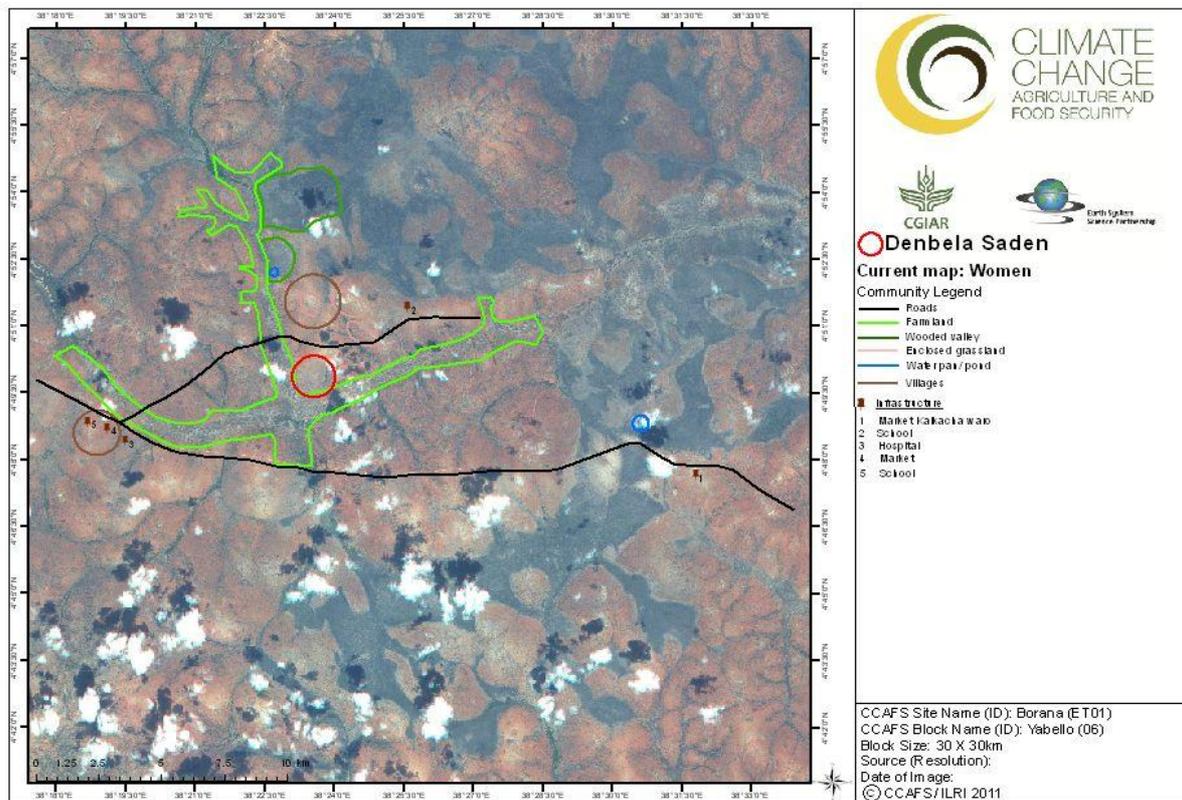


Table 1. Summary of current situation, as perceived by men (M) and women (F)

Land cover class	Community determined land use	Location Names	Current state (quality)	Time to resource	Management and ownership issues	Environmental Benefits	Opportunities	Limitations
Wooded valley (M)	Crop farming, underground water harvesting, and animal browsing		Affected by soil erosion	1 hour at most		Retains soil moisture for the vegetation and creates microclimate	Supplements livelihood besides pastoralism	
Bush land (F)	Fetch firewood, building materials	Along the valley	Unlimited /plenty trees		It is free and they fetch without any restrictions even on individual land.	Act as windbreak	During dry seasons, women feed acacia pods and leaves to their animals	
Grassland (M)	Community grazing area	Burbus, Hnge	Pasture area has reduced. There is a lot of encroachment and erosion	2 hours to Burbus and 3 hours to Hnge on foot	Owned by Borana community though there are government regulations in case one flouts the rules	Pasture for livestock	Grass for grazing. Stones, sand and tress for building. Gum from acacia and commiphora for sale to tanning factories	They only open specific areas for use, but there is equal chance for all to use. Only the weaker animals are given priority
Grassland (M)	Graze land/ enclosures		They have increased pastures of better quality	Between 0.5 to 1 hours	Enclosures are owned and managed by members of the village	Emergency feeds to animals during drought conditions	Pasture for livestock	
Grassland (F)	Grazing field	Qaa Rikatota (the main valley)	They are currently facing drought and the animals do not have pasture. Only the young ones have some feed from the enclosures		Managed by the community			Bushes have invaded the pastures

Land cover class	Community determined land use	Location Names	Current state (quality)	Time to resource	Management and ownership issues	Environmental Benefits	Opportunities	Limitations
Water pan/pond (M)		Haiurachapon, Har Bule	Diminishing quantity	Depends on season: 20 minutes to Haiguracha pond and 4 hours to Har Bule	Owned and managed by community	Source of water to the water pan. It “traps” rain.		
Water pan/pond (F)			Water from the source is enough and good for use	3hrs, 30 min on foot	Community manages it	The area around the water pan is covered with trees		Dries up during dry season
Farmland (M)	Crop farming		Soil condition/fertility still intact since no much farming is done	Less than 30 minutes	Owned and managed by individuals	Crop residue used to feed animals		Individual ownership
Farmland (F)	Cultivated fields	The main valley Qaa Rikatoota, along the labu	Farms yield very little and are often subject to crop failure due to inadequate rainfall		The land is administered communally but cultivated individually			Cultivation is dependent on unreliable rainfall
Enclosures (F)		Next to the village	Protected grass for the young animals and the weak animals. Enclosures are now open due to drought.		5-6 villages form a cluster, and they own one enclosure.	Grass covers the soils and protects from erosion		Management not very strict on access
Settlements/encampments (M)			Current thatched houses are better than the structures they used to live in earlier on		Houses belong to individuals while the encampment belongs to the village elder			

Land cover class	Community determined land use	Location Names	Current state (quality)	Time to resource	Management and ownership issues	Environmental Benefits	Opportunities	Limitations
Hill (M)	Graze land	Buleharsogido		2.5 hours	Owned by community but managed by local administration		Source of stones and gravel for wells, roads and house construction. Provides pasture for the animals	Restricted to only one “kabala”
Roads (M)			In bad condition especially from the village to the Denbela Abachana market		Owned and managed by community		Access to government services e.g. vet and health services	The bad conditions
Roads (F)		To Gada and Arero	Not tarmac but generally in good condition		Managed by government	Improved access to the area	Quicker access to services and goods	It is adversely affected by rain. Does not have good bridges
Schools (M)		Hawatu and Denbela Abachana	Improved with iron sheet roofing	1 hour 30 minutes on foot	Owned by community but managed by government and committee from the community	No restrictions	Children and elderly learn to read and write	Long distance
Markets (M)		Denbela, Abachana, and kelkelch waro	Limited good and service choices	3 hours to Denbela Abachana and 4 hours to Kalkelchwaro on foot	Owned by community and managed by local government and community	No restrictions		Long distance to and from the village

Denbela Saden is located in a grass and scrub habitat, lying on semi-arid area. The area is known as rangeland. Only a small portion of the rangeland is devoted to crop production and the crop lands are fragile and opportunistic. Its population is predominantly Borana engaged in pastoralism herding cattle, shoats and camel. The rainfall in the area is low and scanty and more prone to frequent drought. The land is generally subjected to soil erosion. What is termed 'forest' in the area is dense scrubland or riverine clusters of trees. Trees provide wood fuel and construction material. Trees contribute to soil moisture retention and improve the microclimate of the locality where they are found. The trees also act as a windbreak. All community members have free access to the trees. During the dry seasons, the community harvests acacia tree leaves and pods and feed them to the animals. The community realizes that some trees grow where there is water, and also uses this as a guide to locate their traditional water points.

Grasslands form the dominant vegetation type and are communally owned and managed for grazing livestock, which is the mainstay of the community. The quality of the pasture/grass is managed through enclosures that are located at selected points including Burbus, Hange, and Qaa Rikatota. Large enclosures are managed by 5 or 6 villages that form a cluster, but there are also small enclosures owned individually, especially along the cultivated fields near the encampments that are locally referred to as 'Olla.' In the past, the enclosures were used to provide pasture for the young and weak/sick livestock but today they are mainly viewed as a form of range management practises.

The quality of pastures has deteriorated over time as a result of encroachment by bushes. Hence, organisations working with livestock contribute resources towards bush clearing within the enclosures. A portion of the livestock from the village move out with a few members of the household, although movements are more restricted these days due to population pressure and proliferation of settlements. In the past the whole community moved but over time this practice is becoming less and less frequent due to increase in population, settlements and conflicts. The women of Denbela Saden indicated that they had not moved in the last 30 years. Only a few members of the household (mainly men) and the livestock moved in search of water and pasture and then came back when the conditions improved.

There are ponds (locally called "dams") near the community from which the community in Denbela Saden draws water. The ponds are Hayaguracha and Harbule. The ponds are good for livestock and human use but have low quality and are accessible at a fair distance. The water from these sources is not sufficient enough for human and livestock throughout the year. There are also water tanks that are owned and managed by wealthy individuals. There are few owned by the community. The area around the water points is covered with trees.

Crop farming is done along valley beds—locally termed "labu"—that have fertile alluvial soils that also retain moisture longer than the other parts of the landscape. Pastoralists grow maize and beans, and are currently doing trials on teff. Trees/bush are cut down for cultivation and bush control. This creates more land conducive for pasture growth. Cultivation is dependent on rainfall, and the rainfall is neither adequate nor reliable, and so the crop fields generally yield very little and are often subject to crop failure. Food production is intended primarily for home consumption, but some of it is also sold to supplement pastoral production. Crop residue is used to feed animals. The land is owned and managed communally through a traditional system but is cultivated individually. The heads of cluster (Arda) allocates individual farms.

The Borana are pastoralists who move from time to time in search of pasture. Their lifestyle is governed by a strong traditional system named "Gada". All clans are represented in the Gada system. In this system, age-based classes (partilines) succeed each other every 8 years in assuming political and ritual responsibilities. The system applies to all Borana irrespective of the nation in which they fall, and thus is found in Kenya and Ethiopia. The Abba Gada, the traditional head of the Borana, works with a council of elders who make rules on grazing and water issues, as well any other issues that pertains to the community.

The Borana live in encampments made up of homesteads. Several encampments or "Olla" make up a village, common grazing and watering which is locally called an "Arda" or "Rera". Several villages, in turn, form a "Mada"; one or more Mada forms a PA which the government recognizes as a Pastoral

Association (PA) and the lowest level of government representation. Denbela Saden, where the survey was implemented, is one “Mada.” Several Mada or PAs make up a “Woreda” such as Yabello/Arero, and several Woreda make up a ‘Zone’ such as Borana. Finally, several zones make up a ‘Region’ such as Oromia. The terms Woreda, Zone and Region are used by both the traditional system and the government system to mean the same area. The “Olla” has thatched houses, which are better than the structures they used to live in earlier. It has a perimeter protection. All the livestock sleep within the confines of the “Olla.” The calves are kept inside thatched houses to keep them warm at night. The houses belong to individuals but the village head (Abba Olla) manages the encampment. The structure of their human settlements provides them with several opportunities such as protection for their animals from wildlife and enhanced collective action for welfare and community development.

There is a hill in the area from where the community obtains stones and gravel for construction, as well as pasture for livestock. It is located at Bulehersogido and publicly owned. It takes 2.5 hours to walk to it.

There are only two significant roads to the village – one to Gada (adjacent village) and another to Arero Woreda/District – which the government manages and are in relatively good condition. The roads allow access to services and goods including veterinary and health services. The roads are not paved and thus deteriorate in the rainy season. They do not have good bridges.

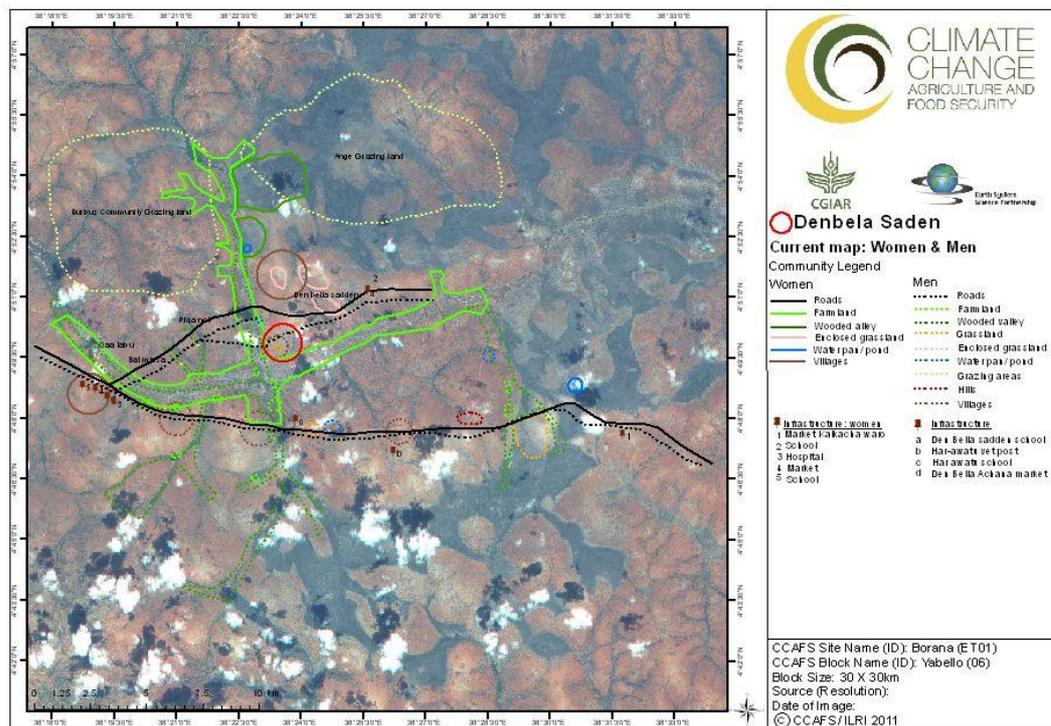
There are few schools in the area including one at Hawatu and another at Denbela Abbachana. The school at Harwatu was with mud walls and thatched roof, and is 1 hour 30 minutes on foot away from the village. The community owns it, but the government and a committee from the community manage it jointly. The school has an enclosure with grass that is cut to be sold to buy furniture. The children and the elderly use the school to learn how to read and write.

There are 2 markets, respectively at Denbela Abachana and Kelkelchwaro, which have a limited choice of basic goods and services. People must move to larger market centres such as Yabello to obtain higher-level goods and services. Markets supply food, household items, livestock, health services, veterinary services and employment, as well as access to transport. They are places where people go to obtain and exchange important information regarding peace conditions, market prices, weather, pasture availability, etc.

B. Gender-differentiated comparison of current conditions

Cultivation of crops in the “labu” was discussed by both groups who agreed that soils in the “labu” were very fertile. The men raised the issues of income generation and food security as reasons for continued cultivation. The women on the other hand were concerned about frequency of crop failure. Trees grow in clusters along valley bottoms and other favourable locations. Both men and women groups identified them as a source of fodder for livestock and as providing environmental benefits. The men identified water conservation as the environmental benefit while the women identified shielding them from the wind as an environmental benefit of trees. The men raised many issue linking trees to water while women discussed trees as a source of building material and wood fuel. Both groups discussed grasslands as the pastureland and the significance of the enclosures especially for the young and the ailing livestock during periods of drought. Map 4 below compares the current resources identified by male and female participants.

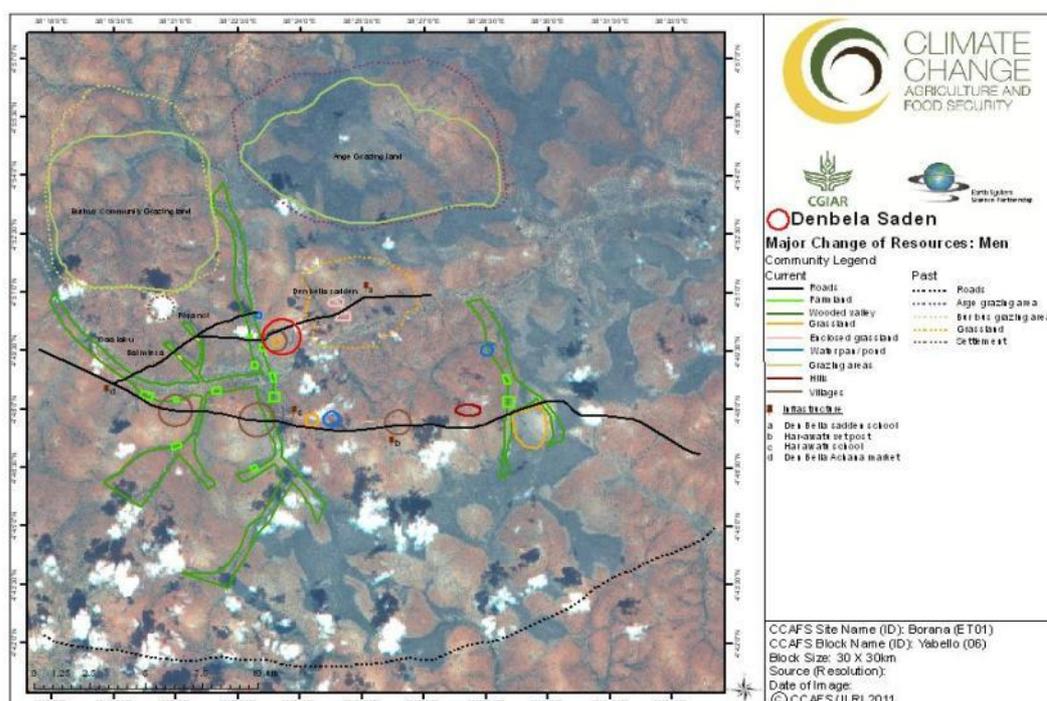
Map 4. Overlay of current conditions, comparing men's and women's maps



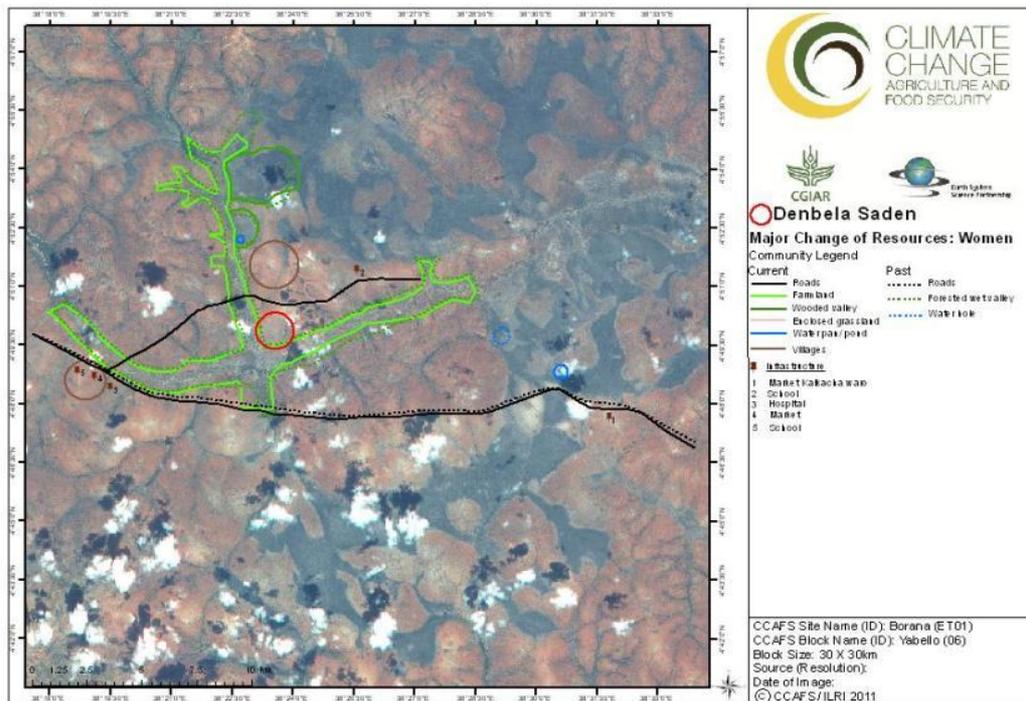
C. Major changes of resource conditions

Participants were asked to consider the resources they had in their community, to discuss the history of land use, and to identify major changes that had occurred in the landscape in the past 10 years. In addition, they were invited to examine how the resources got to the current condition and the major drivers of those changes; as well as the opportunities and constraints into the future. In the following pages the results of those discussions are summarized both on maps traced on top of the satellite images for the village (Maps 5 and 6), and Table 2 that includes the major changes and drivers of change, as perceived by male and female participants.

Map 5. Major changes in resources (comparing past and present) for men



Map 6. Major changes in resources (comparing past and present) for women



Government policy to permanently settle pastoralists and lack of agricultural extension services related to cultivation combined with population growth and drought have been the most important drivers of change in the area. Until 20 years ago, most people were mobile pastoralists who depended almost exclusively on livestock products for their livelihood security. There were very few crop farmers in the area. Then, drought made pastures scarce and people were unable to feed their livestock. Pasture was traditionally considered a critical resource because it provided feed for livestock and almost all food and income for people. To address food insecurity, the government discouraged itinerant migration, and encouraged people to settle in selected areas. At the same time, the government adopted a policy that supported the opening up of the area, and engaged in construction of new roads. All of this resulted in the creation of villages that increased the stress on pasture in the surrounding area. People started supplementing livestock products with crops as sources of food and income, and soon all households were engaged in crop production. Over time increases in population consolidated sedentary living because most areas became claimed and there was less free space to move about. More education and urbanization have led to more exposure and acceptance of change.

Today the household economy is dependent on pastoral resources and crops. The change, however, tends to be at the expense of pastures and pastoralism. Crop fields and human settlements are constantly encroaching on grazing fields. Likewise, forests in the valleys have been cleared to make way for cultivation. Bushes and thickets were restricted to some area in the past. Traditionally people used fire to control bushes. The government banned bush burning, which allowed the bush to invade the grazing fields. The government has now accepted that burning should be reintroduced but there are ecological challenges that hinder implementation. So today there are more bushes and less pasture than in the past.

The pasture area is shrinking, which is resulting in livestock overstocking and overgrazing relative to the area available, and significant soil erosion, which in turn have resulted in deterioration of the quality of pastures. Livestock production and grazing fields are still critical for livelihood security in the area. Pasture management has become more necessary than in years past, and as a result there are more enclosures today.

Tragically, bushes are sometimes not considered a critical resource. Bushes, which are of little grazing value, are perceived as a nuisance, particularly if they are located in the grazing fields.

Community resources are spent to reduce these nuisance bush and shrub populations and improve the quality of pasture.

Table 2. Major changes and drivers of change in the last 10 years, as perceived by men and women

Land cover class	Past state	Current state	Drivers of change
Grazing lands	Same size but of better quality with a lot of grass. There were enough pastures for livestock. There was no drought, and animals were more productive and healthy	Less pasture and now of poor quality. Community created enclosures because there is not enough pasture available.	Overgrazing due to overstocking, drought and population increase. The government banned the use of fire to control bush.
Settlements	Simple shelters, whole community moved	Permanent settlements. Only men move with animals	Government policy is discouraging migration of the community. Better education and urbanization
Roads	Main road—to Gada—existed on the southern part of the block. However, it was winding	There are two roads now, but there are fewer paths than in the past	Road to Arero was constructed by the government
Forest	The area was covered with bushes. There were trees in the valleys	Bushes have now grown to be trees or thick bushes, and area can no longer be used for grazing. Forests in the valleys have been cleared to make way for cultivation.	Population increase and lack of community control
Watering points	They used to get water from same place as today	Less water available than in the past	The government has intervened to provide water for the livestock keepers
School	No school existed in the community in the past	There are 2 schools	Population increase and government intervention
Farmland	Most people were pastoralists, and only a few were farmers. Cultivation started 15-20 years ago due to increased food insecurity.	All households cultivate.	Food insecurity. The crops provide food to supplement livestock products.

D. Vision of the future

With a mixed group of men and women, the goal was to develop an image of village resources and human wellbeing into 2030 to understand the opportunities and constraints, as well as aspirations for the future. This exercise built upon all the work completed in the previous sessions. In addition, the exercise took into account the photographs of the landscape, including things they are proud of and things that need to be improved upon in the future, that a group of young people had produced following instructions given on day 1.

In the section below we include the map that encapsulates Denbela Saden village's vision of the future (Map 7). We also include a few of the photographs taken by the youth. These images operationalize the collective vision of the future.

Map 7. Future map of the community

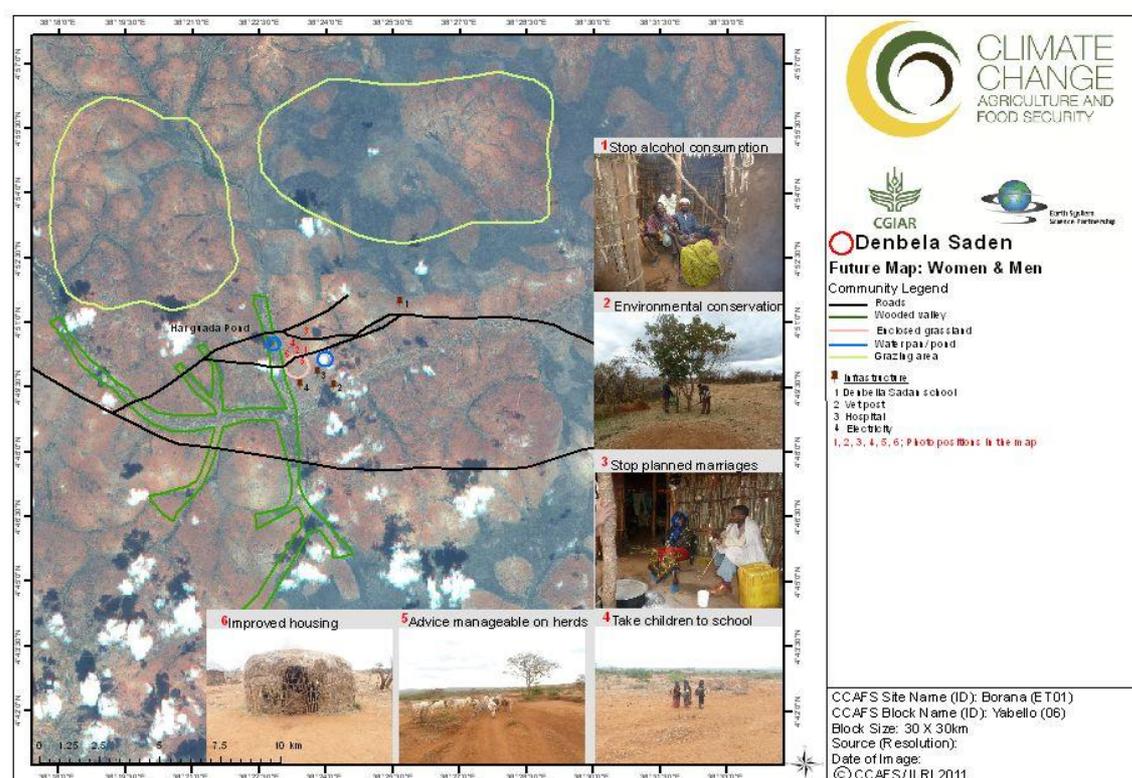


Table 3. Vision of the future

Resources	Preferred condition for 2030	Opportunities	Constraints	Organisations to be involved
Rangelands	Grasslands are strong, protected and available to all	Livestock production	Control of grazing is lacking. Pasture is encroached by bushes.	Community and government
Roads	There is a tarmac main road. There is a bridge at the valley beds ("labu")	"Labu" represents an opportunity for cultivation and grazing. It has plenty of water and vegetation		Central government
Water pan	There is another water pan in the village, and the existing ones are enlarged	Opportunities for irrigated crop production	Inadequate and unreliable rainfall result in low crop yields	Community
Woody valleys	Harbour vegetation is protected and dense	During dry seasons livestock is feed on acacia tree leaves. Water would be sufficient for crop production		Community
Settlements	Stronger settlements that include trading centres	Settlements afford better access to goods and services, protection for livestock and community collective action		Community and government
Hospital	There is one hospital in the village	Improved human health		Central government
Vet post	There is one vet post in the village	Improved animal health		Central government
School	School has been expanded to standard 8			Central government
Water supply	Water supply has been fixed in the village			Central government

Both men and women established that the valley beds (“labu”) presented an opportunity because it allowed cultivation of crops to supplement pastoralism. The “labu” is an area where the water table is high and shallow wells are often dug within it. It also has more vegetation, which the livestock browse on. The men identified opportunities for irrigation using the water pans. The women established that during dry seasons the forests /bushes are an opportunity because animals feed on acacia trees.

Both men and women identified the opportunities presented by the expanded infrastructure, which improved access to goods and services especially human and animal health services. Markets and trading centres facilitate exchange of goods and services close to the community. The men identified an opportunity in the settlements/encampments design, which provides protection for their animals and promotes collective action by the community members.

Both men and women identified as a limitation the fact that the grasslands were under stress by the lack of control of grazing. All community members had open access to the grazing fields. They also identified the invasion of the rangeland by woody species as a limitation.

Both the men and women identified the rudimentary state of infrastructural development as a major limitation. The men identified the low productivity of the land and the low numbers of water pans/dams as limitations. The women identified as a limitation the fact that cultivation is dependent on rainfall and the rainfall is neither adequate nor reliable.

Topic 2: Organisational landscapes

This topic aims to show evidence of organisational capacities that help address food security and manage resources. This will inform CCAFS about how prepared the village is to respond to the challenges envisaged as a consequence of climate change or other future challenges and to engage with CCAFS partners at a collective level.

Specifically, this section presents the different formal and informal organisations involved in the community in general terms, as well as with respect to food security in different situations (i.e. average and crisis conditions), and natural resources management (NRM). It also elaborates on what types of activities the organisations are engaged in, who their members are, whether the organisations are useful, etc.

A. Basic spheres of operation

Participants were asked to draw three large concentric circles on the ground. The inner circle would represent the community, the middle circle the locality and the outer circle beyond the locality.

Participants were then asked to name organizations working in the area, whose names were written on cards, and place the cards in the appropriate circle. Thus, the group placed in the inner circle the cards of organizations that worked in the community, in the middle circle the cards of organisations operating in the locality, and in the outer circle those that operated beyond the locality (see Photo 2). The results are shown in the images that are displayed in the following pages.

Results from the survey indicate that there are a total of 16 organizations working in the

Photo 2. Organisational landscape as created by the men’s group



village. The men identified 12 organizations while the women identified 9 organizations. The men and women discussion groups identified five organisations in common. There were 10 (62.5%) organisations operating beyond the locality, 2 (12.5%) organisations operating within the locality and 4 (25%) organisations operating within the community. In Tables 4 and 5, more detailed information is provided on the five organisations that the men’s and women’s groups ranked as “most important”.

Figure 1. Organizational landscape of the men’s group

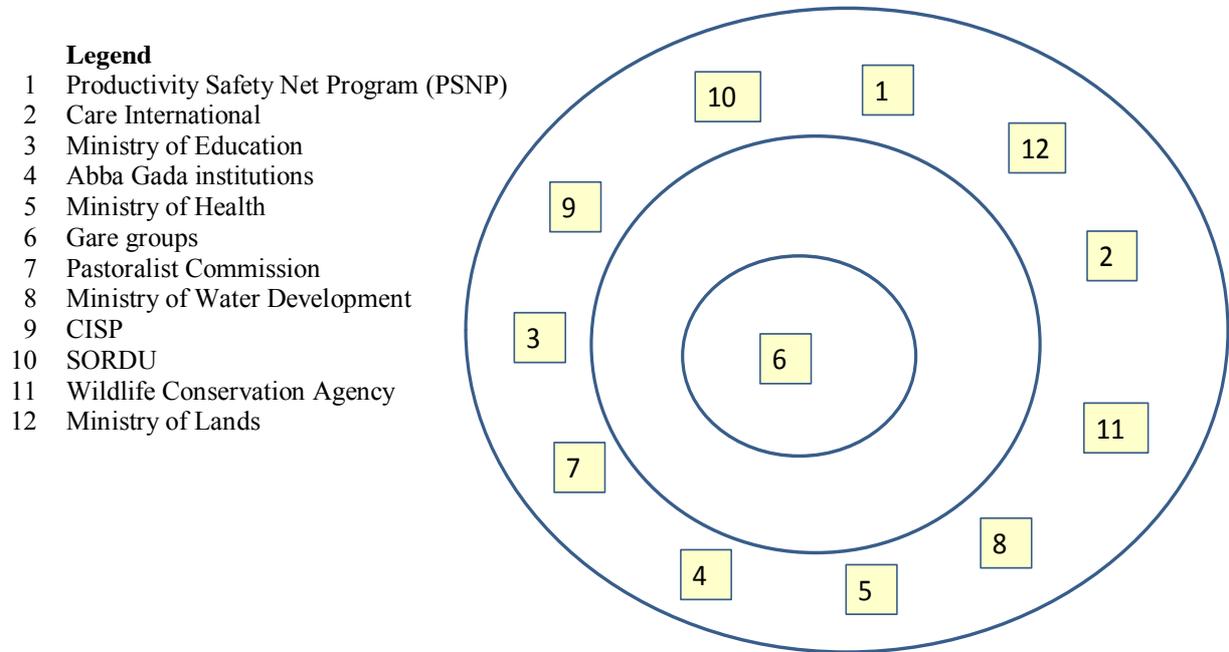


Figure 2. Organizational landscape of the women’s group

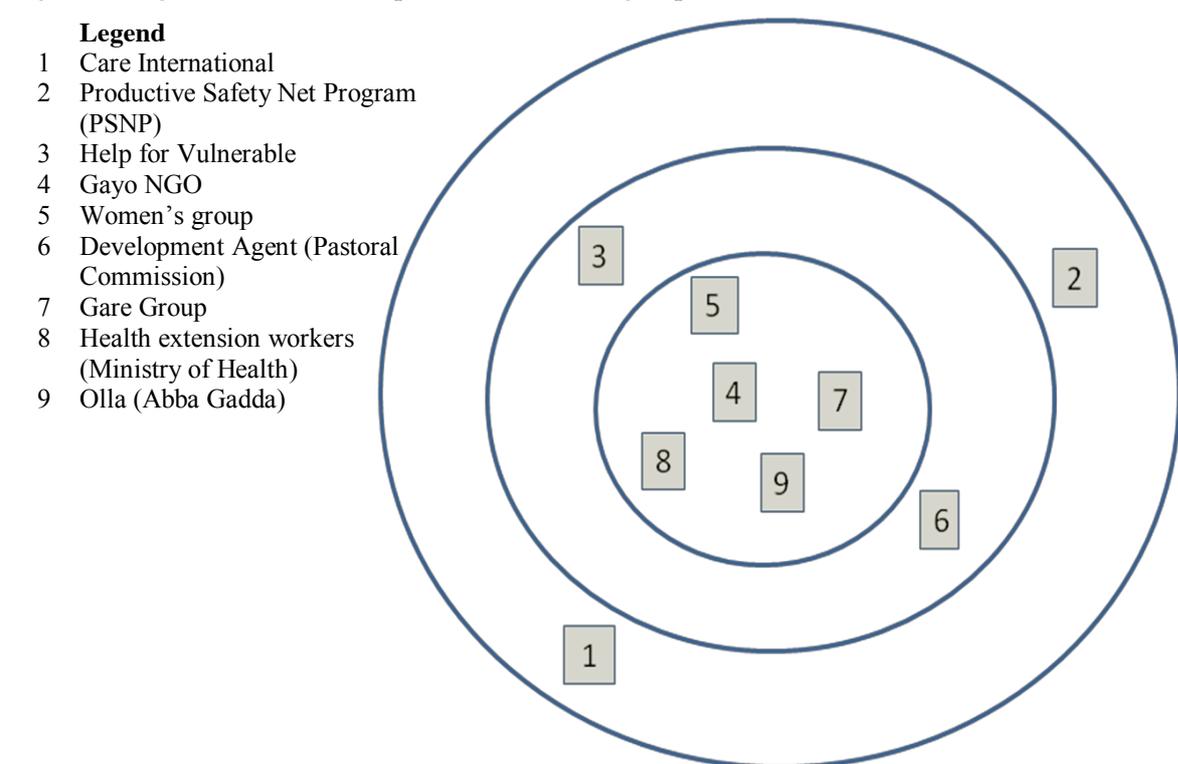


Table 4. Information on the first five organisations ranked by the men

Organisation name	Main activities	Number of members (estimate)	Access (open or restricted to...)	Origin (indigenous, state, NGO, project)	Sphere of operation: community, local, beyond local	For community groups		
						Sources of funding (members, external, both)	Existed how long (less than 1 yr., 1-5, longer)	Formal or informal
1 Productivity Safety Net Program (PSNP)	Helped community in trimming of bushes, making grass enclosures, and soil conservation. Makes paths and access roads, maintains and excavates ponds. Provides labour for the construction of schools. Restocks the community, and provides short term loans.	500	Restricted to the poor	State	Beyond local	External	Longer	Formal
2 Care International	Provides tools and cash work incentives to for collective interventions. Gives loans to cooperative groups. Teaches on harmful traditional practices e.g. Female Genital Mutilation. Trains community traditional birth attendants. Supports HIV awareness and women access better treatment in hospital after birth	2500-3000	Open	NGO	Beyond local	External	Longer	Formal
3 Abba Gadda	Custodians of the traditional laws. It is a higher level of consultation that helps in conflict resolution. Teaches traditional skills.	30	Restricted	Indigenous	Local	Members	Longer	Informal
4 Ministry of Education	School construction, teachers' employment, and selection of children to join school. Motivates / encourages female enrolment in schools.	300	Open	State	Beyond local	External	1-5	Formal
5 Ministry of Health	Vaccination campaigns for children. Mass treatment for malaria. Latrine construction and awareness on sanitation. Services to delivering mothers. Water treatment e.g. use of water guard. Treating and giving nutritional supplements to malnourished children. Provision of mosquito nets.	300	Open	State	Beyond local	External	More than 5 years	Formal

Table 5. Information on the first five organisations ranked by the women

Organisation name	Main activities	Number of members (estimate)	Access (open or restricted to...)	Origin (indigenous, state, NGO, project)	Sphere of operation: community, local, beyond local	For community groups		
						Sources of funding (members, external, both)	Existed how long (less than 1 yr, 1-5, longer)	Formal or informal
1 Care International	Facilitates bush clearing. Provided machine to cut grass and tools for digging the well. Has taught community how to keep pasture for livestock to prepare for drought. Assists the community in fencing the cleared land for livestock. Care has also filled the valleys erosion		Open	NGO	Beyond locality	External		Formal
2 Help for Vulnerable	Gives food and money to the poor people in the village. The village elder selects the poor individuals from the village who receive assistance.		Restricted to the poor people		Locality			
3 Gare Group	Representatives from each encampment form a group that does the bush clearing and fences the enclosures. They clear the unwanted bushes that prevent grass from growing. A leader in each "olla" brings together his group to work; and they do it rotationally.		Open	Indigenous	Village			Informal
4 Productive Safety Net Program	Selects the poor and gives them work to do for pay. The villagers clear bushes, fence school compound in exchange of food.		Selected poor		Beyond locality			
5 Development Agent (Pastoral Commission)	Organize the people and works with safety net. Facilitates bush clearing.		Open to both men and women	State	Locality			

B. Organisational landscape of food security

The goal of this exercise was to get an improved understanding of how the organisational landscape contributes to the food security of the group. Food security is mostly measured at the household level. Nonetheless, community-level organisations and interactions influence the food security of different groups within the community differently. Male and female participants were asked to discuss the concepts of food availability, access and utilization, and then review each organisation they had previously identified by asking which of them had activities that fell under these categories.

The women's group identified 8 groups/organisations that addressed food security in one way or another while the men identified 6. In total 69% of the groups (11) were involved in food security. Of the groups identified by women, 4 operated within the community, 2 within the locality and 2 beyond the locality. Among the groups identified by the men only one operated within the community, none within the locality and 5 beyond the locality. The pattern created by women is the ideal one with more actors at the community level and fewer beyond the locality. The pattern created by men is the inverse and is not appropriate. However what emerges after the combination of the two groups is the reality on the landscape: 4 groups within the community, 2 in the locality and 5 beyond the locality. Different aspects of food security were addressed at different levels. Out of the 16 groups identified, 8 addressed food availability, 6 focused on food access and only one dealt with food utilisation. The area has been described by its government as a chronically food insecure area therefore it is logical that more than half the groups /organisations in the area be engaged in addressing food security.

Figure 3. Organizational landscape of food security – men

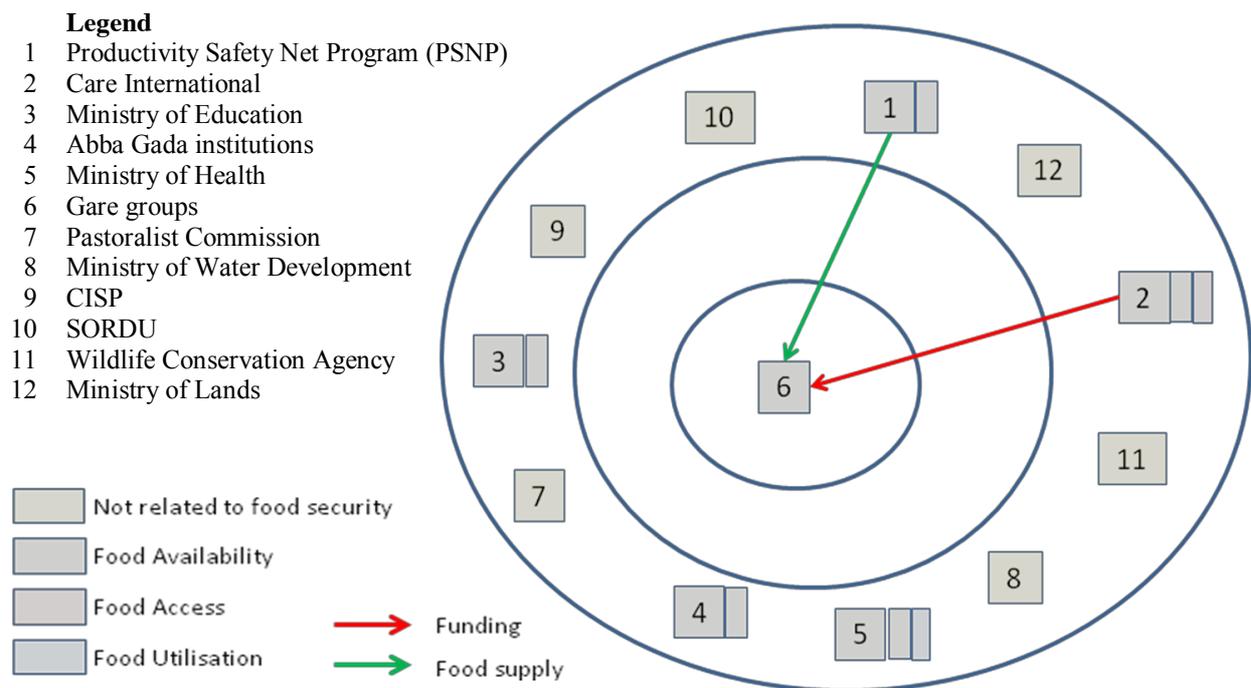
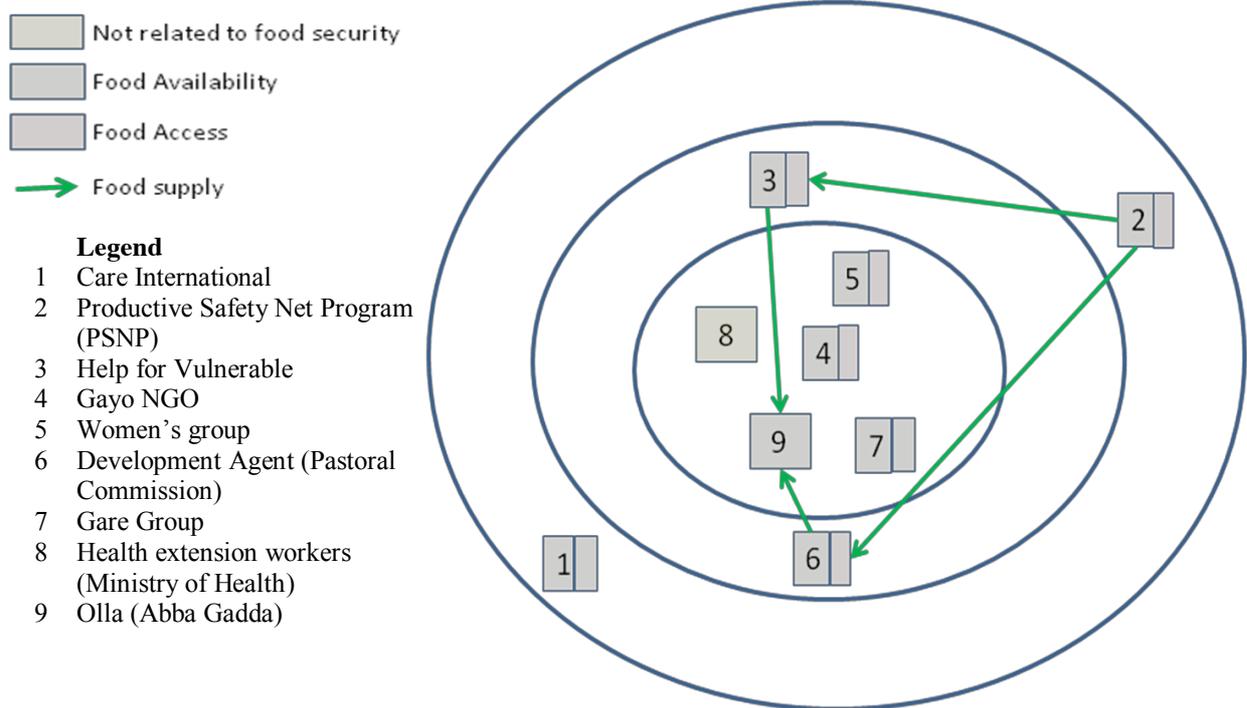


Figure 4. Organizational landscape of food security – women

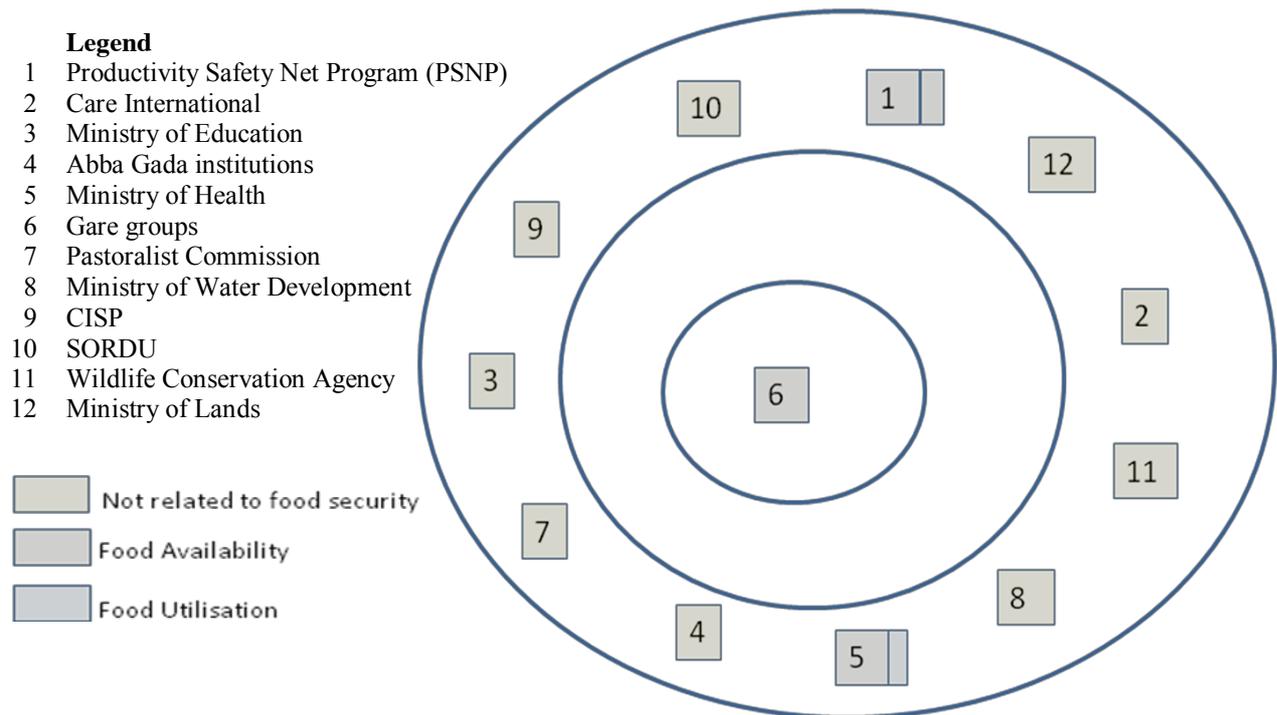


C. Organisational landscape of food crisis situations

The purpose of this exercise was to understand how organisations help people to cope in times of food crisis. Participants identified a food crisis situation that they all remembered (e.g. a bad year or the lean season), and discussed how the organisational landscape of food security operated in that situation.

The men identified a change in the organisational landscape during food crisis while the women did not. The men identified 3 groups/organisations that engaged with the community during food crisis. One operated in the community while 2 operated beyond the locality. They addressed food availability by bringing in food, food access by providing the community with money and food utilisation by providing the community with nutritional supplements especially for the young. No links were identified among those organisations (Figure 5).

Figure 5. Organizational landscape for food crisis – men



D. Organisational landscape of natural resource management

In this section, the organisational landscape in relation to natural resource management (NRM) was discussed. The process entailed asking the group to highlight what organisations are involved in the management of natural resources in the community; developing a list of natural resources important to the livelihoods of the community; and asking the group to decide on a symbol for each type of natural resource listed.

In total 10 out of the 16 groups were involved in natural resource management. The men identified 4 organisations engaged in natural resource management. Three of them operated beyond the locality and one within the community. The groups that men identified engaged respectively in protection of endangered tree species, protection of wild animals from hunting for bush meat, water conservation and management, soil and water conservation, and rehabilitation of degraded lands for grazing.

The women identified 7 groups involved in natural resource management. Four of those groups operated within the community, 2 beyond the locality and 1 within the locality. Groups identified by women engaged in two broad types of foci: provision of pasture for animals and water access for humans and livestock. Activities pertaining to livestock feed included management and grass growth promotion (2 groups), provision of machines to cut and store grass to give animals during draught seasons; provision of relief grass (hay) to feed animals; facilitate clearing of unwanted bushes that inhibit growth of grass (2 groups), and fence enclosures. Activities related to water access included management of dams/ponds and digging ponds to provide the community with water.

There is a high level of community participation in natural resource management as evidenced by the many groups active on the subject within the community. This improves the chance of adoption and sustainability of interventions. Groups beyond the locality are often organisations with significant financial and technical capacity that can therefore contribute to building the capacity of local groups/organisations and contributing to resources mobilisation.

Figure 6. Organisational landscape of NRM – men

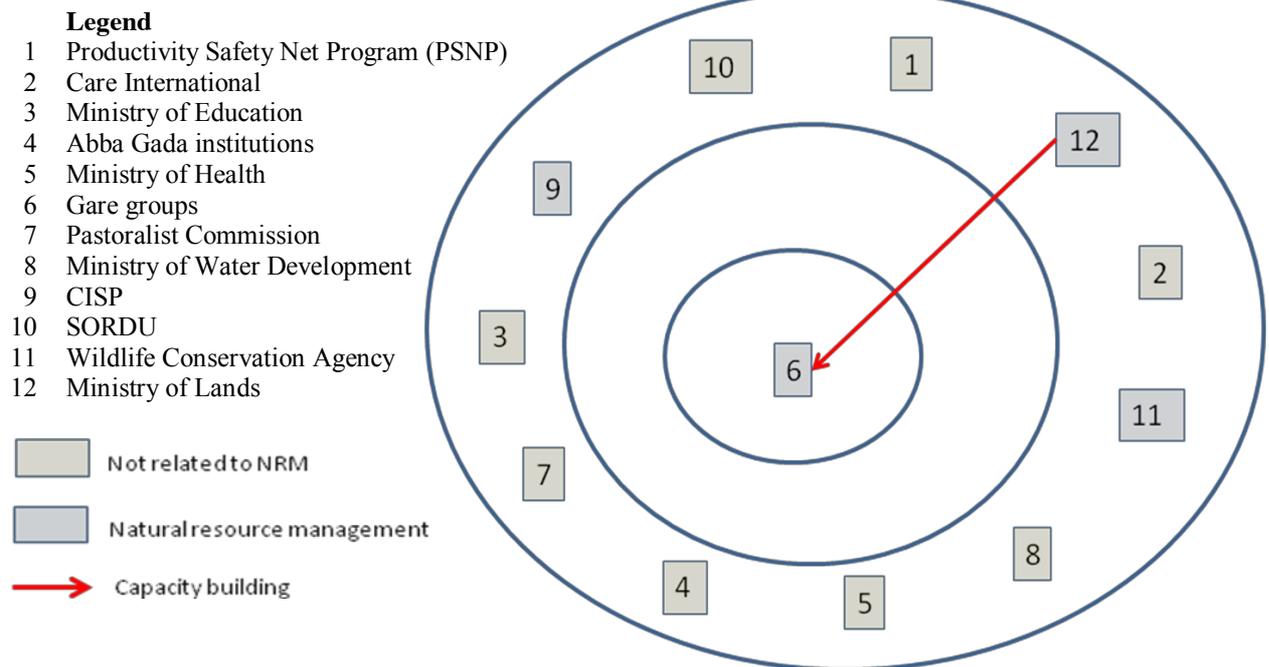
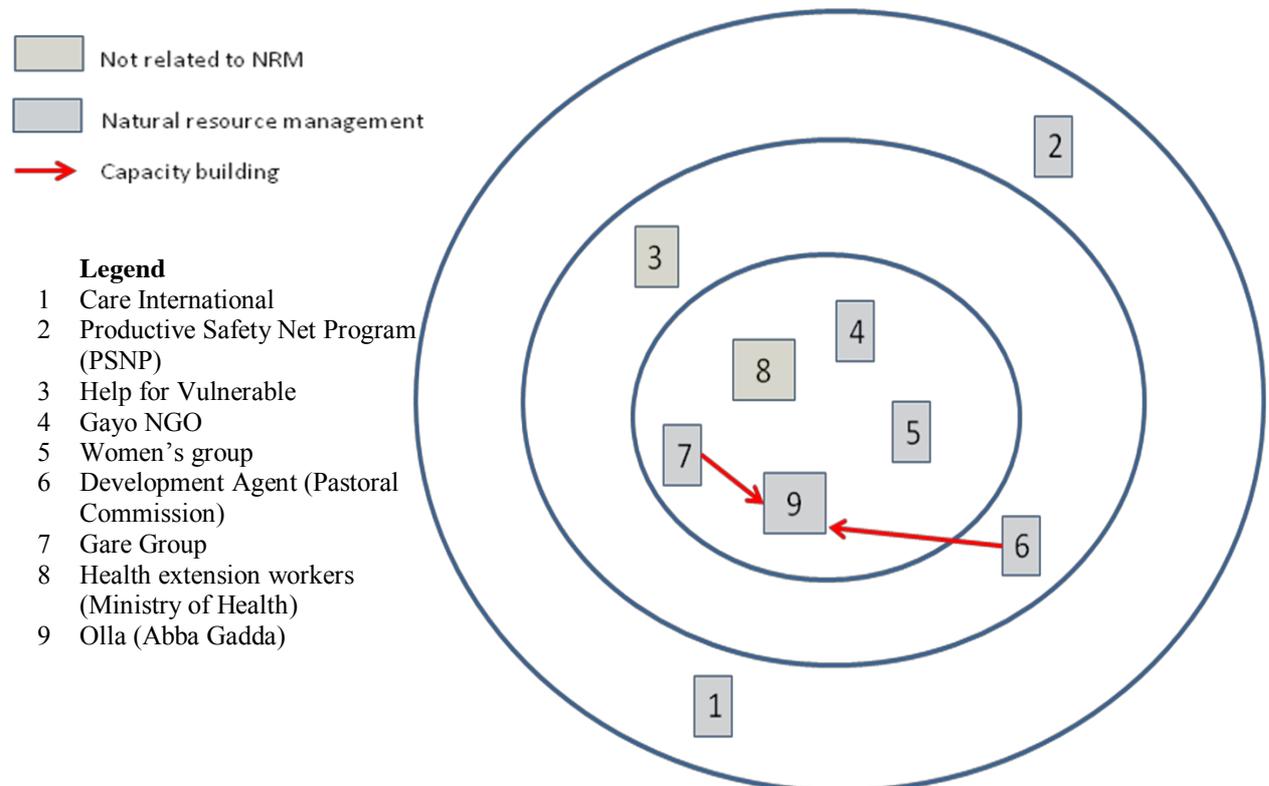


Figure 7. Organisational landscape of NRM – women



Overall, the study identified 4 organisations that operated within Denbela Saden village, 2 within the locality and 10 beyond the locality constituting 25%, 12.5% and 62.5%, respectively. The emerging pattern is not appropriate for driving rural development. In the ideal situation there should be more actors in the community and fewer actors beyond the locality, forming a bottom heavy structure. This pattern points to the fact that organisations operating beyond the locality have not succeeded in building local capacity in relation to collective action/group formation. It can also be an indication that this community is vulnerable and relies heavily on external aid.

Table 6 summarises information on 4 organisations that CCAFS should consider as potential partners, considering their capacities to contribute to food security.

It is important to keep in mind that two parallel governance systems co-exist in Denbela Saden village, namely the traditional Gada system and the Federal Government system. The links between the government and the traditional system are still fuzzy. The Gada system has enormous capacity to mobilise the community while the Pastoral Association—the lowest unit/institution of Regional government—has capacity to tap into Government resources. At the local level, the challenge is therefore to create a win–win situation where the operations of the Pastoral Association and the Olla are synchronized. Olla is the lowest unit/institution of the traditional Gada system. It coordinates community-level activities and plays a critical role in the management of natural resources. Coordination between the two systems is important, especially if there are instances where the Pastoral Association is more powerful than the Olla.

The Oromia Regional Government established the Pastoral Development Department to coordinate development in the pastoral areas of Oromia. It was represented by the Oromia Pastoral Area Development Commission. It works with the cooperative Promotion Commission which is also a regional body charged with matters related to the marketing of livestock. The creation of relevant memoranda of understanding (MOUs) is one way to go in terms of creating a working synergy. Also, the federal government has established a 15-year Pastoral Community Development Programme (PCDP) that supports livelihoods, cooperatives and diversification. This can be a good partner for CCAFS at the Federal level.

Table 6. Potential CCAFS partners

Organisation	Sphere of operation	Activities	Strength
Abba Gada (Gada system)	Beyond locality	Establishing rules and regulations	Community and resource mobilisation
Pastoral Community Development Programme	Beyond locality-National	NRM and food security	Resource Mobilisation
Pastoral Association	Locality	Food security	Resource mobilisation
Abba Olla (Head of the village)	Community	Food security and NRM	Community mobilisation
Oromia Pastoral Area Development Commission	Beyond locality	Food security and NRM	Resource Mobilization

Table 7 below recapitulates information on all the organizations identified by male and female participants. The organizations are classified according to their role in supporting food availability, access and/or utilization, as well as the provision of relief in times of food crisis, and the management of natural resources.

Table 7. Information on all the organizations identified by male and female participants (unless otherwise noted, 1=yes, 0=no)

Organisation name	Identified by men	Sphere of operation: 1=community 2=local 3=beyond local	Food security	Food crisis	NRM	Identified by women	Sphere of operation: 1=community 2=local 3=beyond local	Food security	Food crisis	NRM
1. PSNP	1	3	1	1	0	1	3	1	0	1
2. Care International	1	3	1	0	0	1	3	1	0	1
3. Abba Gada	1	3	1	0	0	0				
4. Ministry of Education	1	3	1	0	0	0				
5. Ministry of Health/ Health extension workers	1	3	1	1	0	1	1	0	0	0
6. Gare Groups (Agriculture et al.)	1	1	1	1	1	1	1	1	0	1
7. Pastoral Commission/ Development Agent	1	3	0	0	0	1	2	1	0	1
8. CISP	1	3	0	0	0	0				
9. Ministry of Water and Development	1	3	0	0	1	0				
10. SORDU Project	1	3	0	0	0	0				
11. Wildlife Conservation Agency	1	3	0	0	1	0				
12. Ministry of Lands	1	3	0	0	1	0				
13. Help for Vulnerable	0					1	2	1	0	0
14. Kayo	0					1	1	1	0	1
15. Women's group	0					1	1	1	0	1
16. Olla	0					1	1	1	0	1
Totals	12	1=1 2=0 3=11	6	3	4	9	1=5 2=2 3=2	8	0	7

Topic 3: Networks of information

The aim of this exercise was to understand the diversity of options people use for accessing information on agriculture and weather, how people take advantage of sources of information available, and if some sources are not used, and why. We wanted to describe networks of how people access and share information within the community.

The men's discussion group identified the following topics about which people seek information to help them make production decisions: the start/end of rainfall; prospect of pasture areas; market prices for livestock and other farm produce; where to access drugs for livestock; drought information; and status of peace.

The women participants highlighted some specific times when men seek information to make production decisions. These times pertained to livestock and crop production, as it could be expected from a community that depends on both approaches. It is significant that the group provided more examples of information on livestock management than on crop management.

Critical times for livestock management decisions as mentioned by the women's discussion group included the following:

- Grazing. They seek information from their fellow herdsmen on the best area to graze the animal.
- Tick control. They consult from those who have the spraying machine on the best acaricide available before buying it. They need to decide whether to use acaricide or the traditional method of tick control.
- Watering. They get information from fellow herdsmen regarding availability of water from different water points.
- Deworming. They seek information on the amount of drugs to give to the animal from those who have used the medicine in the past, and from veterinary agents and pharmacists.
- Making enclosures. They consult among themselves in the village before making the enclosures.
- Livestock migration. They inquire from their fellow herdsmen on the condition of pasture on other areas before moving out. If they are not sure of the status of pasture, they can even send one of them to scout the areas.
- Purchasing fodder. They seek information on sources and price of fodder. If satisfied, they normally sell an animal to get money to purchase the fodder.

Critical times for crop management decisions as mentioned by the women's discussion group included the following:

- Cutting trees for land preparation. They generally use their own judgment before clearing the land but sometimes they seek other persons' opinions.
- Planting. They seek information on the best seed available. They also need to know on short season varieties.
- Looking after the animals. Inquire from neighbours if there are traces of animals that can destroy their crops or farm.
- Harvesting. Before harvesting the crops, they prepare the traditional stores.

Critical times for both livestock and crop management decisions as mentioned by the women's discussion group included the following:

- Marketing- They ask people from the market on the prevailing market prices for the commodities. They also get the same information from the radio.

Table 8 shows the most important sources of information in Denbela Saden village. Results of this study indicate that individuals are the most significant source of information on agriculture in the village. The individuals include friends, family and the elderly. Other sources of information in order

of importance are radio, observation and public meetings. The print media was not identified as an option by any of the discussions groups because all the participants had not received formal education and could therefore neither read nor write. There appears to be a lot of consultation at the local level because the Gada system creates an extensive network that crosses even national boundaries.

The Gada system presents an efficient communication network that can be expanded by modern innovations such as the mobile phones. Mobile phone use is on the increase but due to the absence of electricity there is a challenge in recharging the batteries given that the cost of charging is high. The local availability of solar chargers operating at a cost-effective price can be a useful innovation to the community who have no shortage of sunshine.

Table 8. Sources of information for men and women

Source	Topic (men)							Topic (women)		Total
	Start of rainfall	Prevailing peace	Livelihoods options	Pasture prospect	Market information	Veterinary information	Drought information	Marketing	Weather information	
<i>Individuals</i>										
Family	1	1	0	0	0	0	1	0	0	3
Friends	0	1	0	1	1	0	0	1	0	4
Neighbour	0	0	0	0	0	0	0	0	1	1
Elderly people	0	0	0	0	0	1	0	0	0	1
Organisations	0	0	0	0	0	0	0	0	0	0
<i>Media</i>										
Radio	1	0	0	0	0	0	0	1	1	3
TV	0	0	0	0	0	0	0	0	0	0
Newspaper	0	0	0	0	0	0	0	0	0	0
<i>Other</i>										
Observation	1	0	0	0	0	0	0	0	1	2
Functions/meetings	0	0	1	0	0	0	0	0	1	2

Conclusion and recommendations

Denbela Saden village is located at center of Didhara in a semi-arid area where the dominant vegetation is grass and scrub. The people in the area are Borana. They are semi settled pastoralists for whom pasture is obviously a critical resource. The challenge for the pastoralists is to ensure that their calves survive to reach a marketable age so that they can be converted to money in the market. The community, however, is facing serious problems of inadequate and low quality pasture as a result of the grazing fields' encroachment by bushes land fragmentation and livestock overstocking. Shrubs are valued as source of wood fuel, construction material and fodder for the browsers, but they can turn into a problem because if the invasive species are left unchecked they have the tendency to invade pasture and compromise the quality. The traditional method of pasture control was using bush fire but the government outlawed this practice, and now the government and NGOs have to spend lots of money to clear the bush.

The government also adopted a policy to encourage the settlement of the pastoral communities. It constructed water points for livestock to support the sedentary way of life, and established the

Pastoral Commission which works with the Cooperative Commission to help the pastoralists build assets. The relocation to permanent villages, however, resulted in an increased stress on the pastures near the settled areas. Enclosures have become a way of pasture improvement. In the past they were used to provide pasture for the young and weak/sick livestock but today they are viewed as a form of good range management practises.

Today the Borana live in encampments that are locally referred to as “Olla” and are made up of several homesteads. The Olla has a perimeter protection and all the livestock sleep within its confines. In the past the whole community tended to move seasonally but over time this practice is becoming less and less frequent. Nonetheless, a small part of the community continues to migrate during very dry seasons to look for pasture for the animals.

The increasing population and the settlement of the community in one area have amplified the need for food production via cultivation of crops that takes place in the valley beds (“labu”). Cultivation is dependent on rainfall, which is often inadequate and unreliable, and crop residues are not incorporated into the soil but used to feed animals. Not surprisingly, yields are very low.

Government agricultural extension services are ineffective and inadequate. They are more focused on livestock production and do not add much value to the dry land cultivators. At the same time, as the grazing fields continue to be invaded by woody plants the community are adapting on their own by moving from cattle keeping to camel keeping, but the change is not supported by any extension service, and there are no veterinarians who specialise in camel ailments.

Results from the study indicate that there are 16 organizations working in the community. The government describes the area as a chronically food insecure area, and it is not surprising that more than half the groups/organisations working in the region address food security issues. Also about half of the groups are involved in natural resource management. Half of the organisations operate beyond the locality, and only one-third of them operate within the community. Eighty-eight percent of the linkages among organizations in the community were vertical. Vertical links are associated with high levels of dependency where the organisation at the receiving ends has less capacity than the one at the giving end. Interestingly, most of the vertical links in food security and natural resources management radiated from the Abba Olla, which is an indication that the traditional system plays an important role.

Table 9 summarizes major gaps in knowledge and other current constraints that could provide opportunities/niches for CCAFS partners in terms of research, action/research and development interventions.

Table 9. Gaps in knowledge or other current constraints that could provide opportunities/niches for CCAFS and its partners

Gaps in knowledge/ current constraints that could provide opportunities/niches for CCAFS and partners	Opportunities for research (CCAFS)	Opportunities for action research (CCAFS partners)	Development interventions (Development partners)
Action research-to build the capacity of traditional institutions and link their priorities to the formal system		X	
Multi stakeholder platform to feed into reform of extension services to make them more relevant to the community needs.	X	X	X
Extension services realign their thinking on what are the missing priorities.	X	X	X
Research on how to engage the pastoralist in the carbon market/carbon credits from the enclosure.	X	X	X
Livelihood and income generating diversification/skills	X	X	X
Organisational capacity building for pastoralist to engage productively and collectively in the economy. Identify options and document the process		X	X
Assess the economic benefits and ecological risks of crop production in the valley beds (“labu”)	X	X	