

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

**Village Baseline Study:
Site Analysis Report for Segou – Cinzana,
Mali (MA0109)**

October 2012

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The tools and guidelines used for implementation of the village baseline study across all CCAFS sites, as well as the mapping outputs 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 study of Tongo village in the CCAFS benchmark site of Cinzana, Mali took place from 12 to 14 July 2011. Focus group discussions were conducted separately for men and women.

The village has an abundance of natural resources such as savannah, grassland, ponds, farmlands and several kinds of socio-economic infrastructure. Some of the natural resources, however, are in a state of progressive degradation due to increase in human population; indiscriminate felling of trees; clearing of forests and deforestation; lack of rainfall; drought; and animal pressure.

The village has great organisational capacity based on socio-familial ties. This strong organisation can provide a basis for the success of any external intervention, or of any activity within the village. There are many external organisations operating in the village, as well, but they manifest lack of concerted efforts between among them, which reduces their efficacy.

In their vision for the future, the study participants proposed some critical activities including the development of income-generating activities for the women, increased guarding of the forest to prevent indiscriminate cutting of live wood, and the involvement of state organs, research organisations and development partners in the training/ building capacities of rural farmers.

Keywords

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

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Contents

Abstract	2
Keywords	2
About the Authors	3
Contents	4
Introduction	5
Data analysis	7
Topic 1: Community resources – participatory satellite imagery interpretation	7
A. Current resources	7
B. Gender-differentiated comparison of current conditions.....	10
C. Major changes of resource conditions.....	14
D. Vision of the future.....	19
Topic 2: Organisational landscapes	20
A. Basic spheres of operation	20
B. Organisational landscape of food security	25
C. Organisational landscape of food crisis situations.....	26
D. Organisational landscape of natural resource management.....	27
Topic 3: Information networks	29
Conclusion and recommendations	31
Implications for CCAFS	31

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 organisations 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.

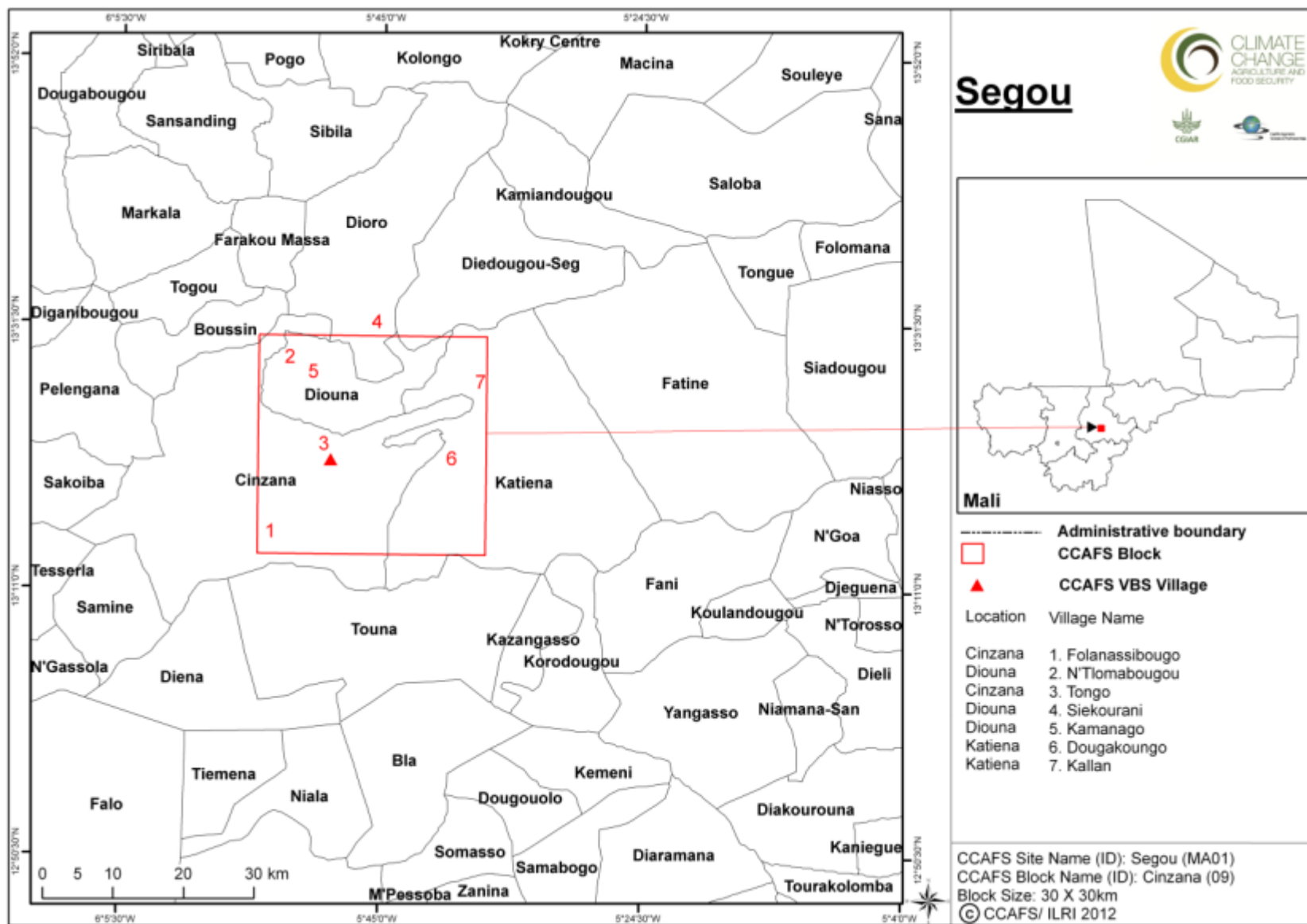
The focus of this site analysis report is the village baseline study (VBS). To date, fifteen VBS were conducted in the three CCAFS regions. The VBS aims to provide baseline information at the village level about some basic indicators of natural resource utilisation, organisational landscapes, information 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 Tongo village in the CCAFS site of Segou – Cinzana, Mali



This report presents the results of the Village Baseline Study (VBS) conducted on 12 to 14 July 2011 in the village of Tongo, in the Segou – Cinzana site, Mali (Map 1). The village geocoordinates are 13.350; -5.817. The local team leader for Mali in collaboration with resource persons from the Institut du Sahel (INSAH) identified the village following criteria defined by CCAFS. Tongo was one of the 8 villages included in the household baseline survey sample. The village is easy to access compared to other villages in the site. It is situated 17 km from the IER Cinzana centre. Two main roads – the Folanassibougou-Siekourani road and the Tongo-Kallan road – serve it. Tongo is located at the centre of the site. The village was chosen because of its proximity to the research centre but also because during the first phase of the study we noticed great enthusiasm on the part of the community towards our mission. Tongo is found in the rural authority of Cinzana, which is situated about 35 km from the town of Ségou. A significant number of actors operate in Cinzana, including technical groups of the state administration, regional and international organisations, national and international NGOs, the private sector, etc.

The local site team leader, together with two translators (male and female) chosen for the village study, conducted the pre-visit phase of the VBS. This step provided an opportunity to explain to village authorities the criteria used to select the village and to agree on the dates for the study. At this time the village authorities and the site team leader validated the sample of men and women who would participate in the VBS that had been randomly defined during the training workshop in Kisumu, from the list of all households. The groups of male and female participants received invitations to participate. About the same time, the translators were trained to ensure a better understanding of the activity, the different steps and to ensure an accurate translation of key concepts.

The actual study was conducted over a period of three days. The first day began with a public meeting held in the village public arena and facilitated by the local team leader. He covered an introduction of the regional team, the program for the three days of data collection, the participants of the male and female groups for the three days, and a brief presentation of the results of the household baseline survey. The group discussions took place inside two classrooms of the Tongo elementary school that the community had chosen for this purpose. Gender differentiated meetings covered the prescribed topics, i.e. community management of resources through interpretation of satellite images, organisational landscapes and information networks. One session bringing together men and women was held on the final day, and focused on the vision of the community. Data entry involved filling in the debriefing document. The site analysis report was based on the debriefing document.

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 bring 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

Male and female participants produced the images presented in the following pages, which highlighted the natural resources and infrastructure available in the community. They first drew on the blackboard (Photo 1) and then transferred the information onto a flipchart. Each group then overlaid the information onto satellite images prepared for this purpose.

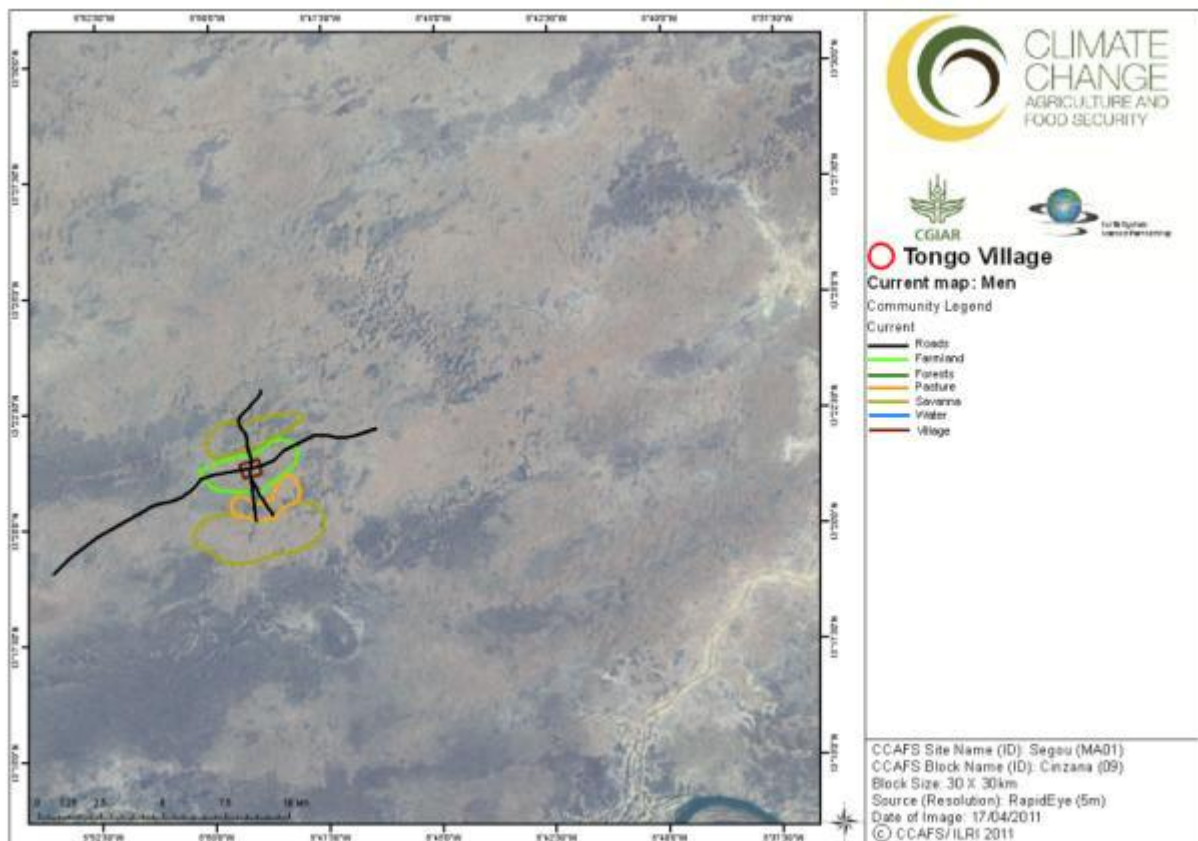
Photo 1. Village map as designed by women



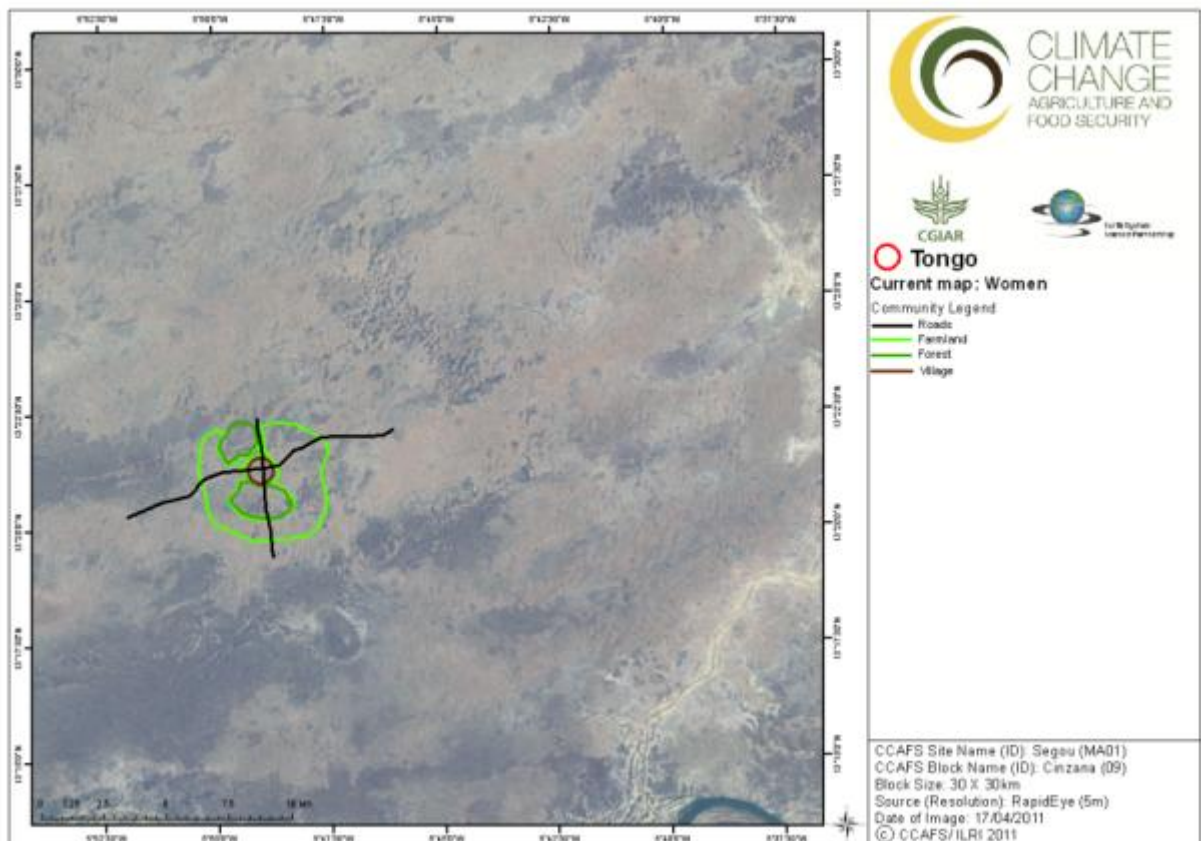
Both males and females rapidly located the natural resources and infrastructure on the map, after having identified some landmarks. At the same time, there were a number of resources that they could not locate on the satellite image. After recording the information on the maps, the participants were asked to discuss the uses they gave to the resources, where the resources were located, their current state, the benefits the resources provided, the opportunities they afforded and limitations related to the resources. Men and women found it difficult to understand the concept of “opportunity” in this context.

Maps 2 and 3 show the overlay of current resources as drawn by the men’s and women’s groups, respectively. Both groups marked the village at the intersection of two roads. The men identified the surrounding land as farmland, pasture, and savannah, while the women labelled the surrounding land as farmland with forest beyond. The women did not identify the pasture area.

Map 2. Men's map of current community resources



Map 3. Women's map of current community resources



B. Gender-differentiated comparison of current conditions

When comparing the information obtained in the male and female groups it became evident that the use of natural resources is on many occasions different depending on the group (Map 4 and Table 1). For example, the women use the sparse forest as a source of firewood while the men use it as grazing land for their sheep. Access to resources also differs according to the group. As far as farmlands are concerned, the women only have small pieces on which they grow groundnuts, cowpeas, beans, okra, millet and sorrel. Men tend to have bigger plots where they cultivate millet, sorghum, fonio, sesame, cowpeas and groundnuts. The men use the ponds for fish-farming, fishing, watering their animals and making bricks while the women mainly use them for domestic purposes (washing clothes, etc.).

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

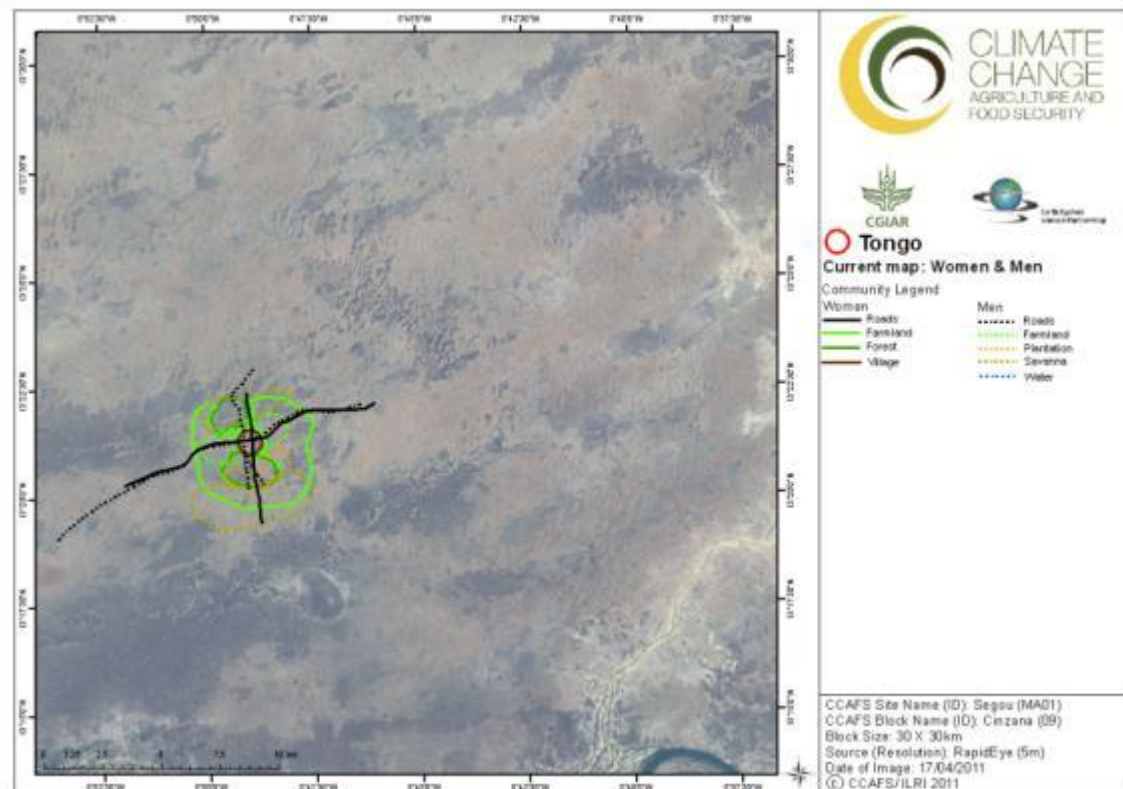


Table 1. Summary of current situation, as perceived by men (M) and women (F)

Land cover class	Community determined land use	Location names	Current state (quality)	Time to resource	Management, ownership issues	Environmental Benefits	Oppor-tunities	Limitations
Forest/ Savannah (M)	Pasture for animals (small ruminants, sheep, and goats). Previously fallow land.		Poor farmland. Has been left fallow for 15 years. Savannah scrubland.	Less than 5 min.	Community resource.	Pasture. Increase in soil fertility through droppings of grazing animals.		Arbitrary felling of trees at the site.
Sparse forest turned into bushes (F)	Collection of forest products, e.g. Sisyphus baobab. Felling of trees. Hunting of small game (rabbits, partridges, monitor lizards).	Djaban	Source of wood for Tongo and neighbours. Former forest has become sparse with low-density vegetation. Intense pressure on grass and ligneous fodder. Herdsmen prune trees to feed their animals (despite guarding by water- and forest agents and youth of Tongo). Big game has disappeared (either killed or migrated). Big snakes (e.g. boa) migrated to other areas giving room to smaller venomous and dangerous snakes.	Women say it is “far away” (distance not specified)		Rainfall is more regular around the forest, and the soil is richer.		Apart from the baobab, there are no useful trees according to the women.
Grove (M)	No use at the moment.	Djirikoro	Young eucalyptus plantations (about 3 years old).	Less than 5 min.	Community plantation.	Can enhance rainfall.	Use of wood for house building.	
Grassland/ fallow / grazing area (F)	Farmlands are left to rest and used as grazing land.		Former farmlands left fallow. Situated in the North West of the village.		Communal management. Free access for animals.	Restoration of vegetation cover and soil fertility.		People are forced to go further away to cultivate.

Land cover class	Community determined land use	Location names	Current state (quality)	Time to resource	Management, ownership issues	Environmental Benefits	Opportunities	Limitations
Open fields (M)	Pasture for ploughing bulls during rainy season and for all other animals during dry season. Collection of firewood by women.	Dja	Degraded. The ground sinks during the rainy season.	15 min	Community resource. Free access	Outlet for flooded farmlands during heavy rains.		Random felling of trees by the women.
Ponds/backwater (M)	Watering of animals, traditional fishing. Brick-making	1 pond (kôlôkô). backwater (Bagodègè)		15 min walk to pond, less than 15 min to backwaters	Community resource. Traditional communal fishing, sharing of produce, and free individual fishing	Watering of animals.	Growth of rice production	Drying up of ponds. Lack of upkeep and of a modern water reservoir.
Water resources (ponds, backwaters, wells, boreholes) (F)	Collection of clay around backwater for plastering houses and making bricks. Fish farming and individual or collective fishing. Watering of animals. Washing clothes during dry season.	Backwater is south of Yakala before getting to men's maize fields. Many ponds distributed in individual farmlands. 3 wells in the village	Big backwater. Many ponds. Deep, all season wells. One borehole located within the school.	4 km from the village	Communal management of the backwater. Private and communal management of fishing resources, the pond and the farmlands.	The backwater and the ponds raise the water table and wells' output.	Some of the wells dry up during the dry season.	
Roads (M)	Means of communication with other villages, market centres (katiéna, Douna)	The Cinzane <i>bele sira</i> road (laterite) The Moussa Were road.	The laterite roads are in good condition but the dirt roads are impassable during the rainy season.		Public.	No environmental benefits explained by the men.	Communication with other villages.	Impassable state of the road during the wet season.

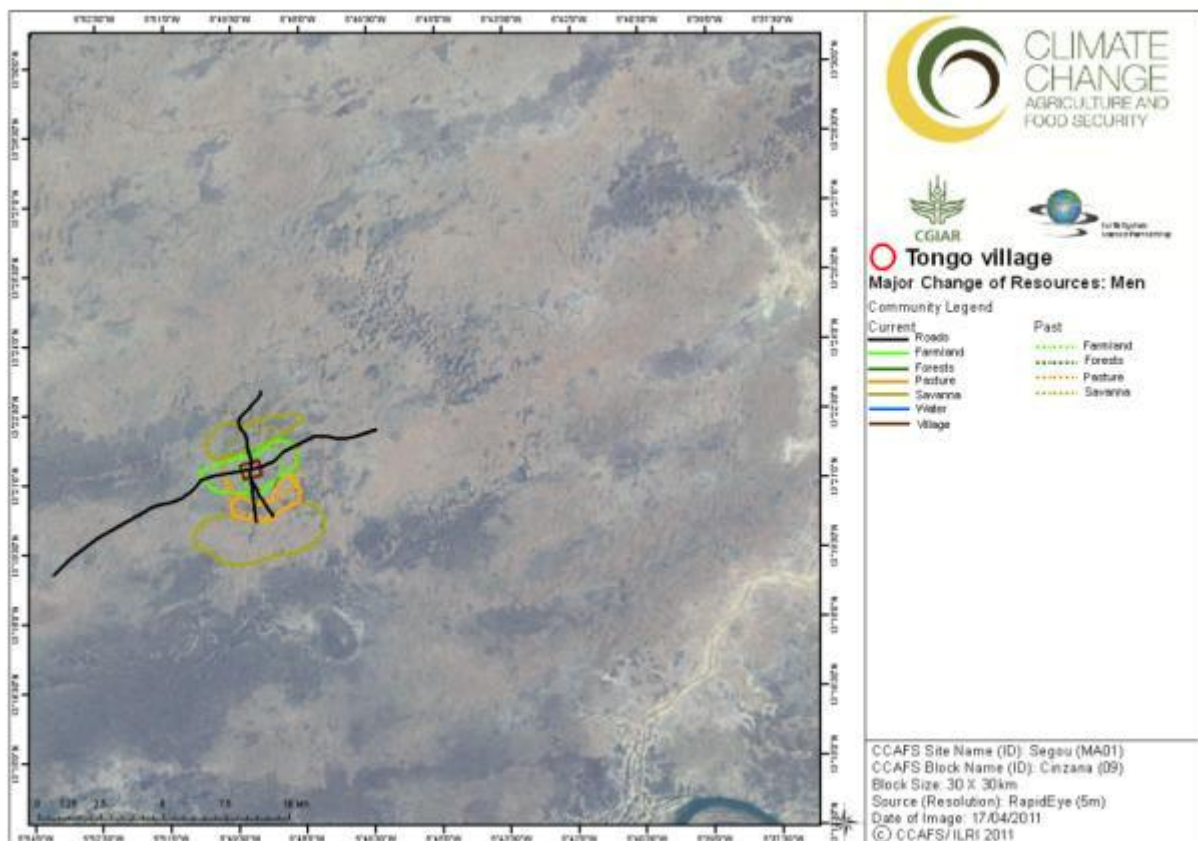
Land cover class	Community determined land use	Location names	Current state (quality)	Time to resource	Management, ownership issues	Environmental Benefits	Opportunities	Limitations
Roads (F)		Main road from N'Dinzana Were (West) to Moussawere (East). Dirt road crosses village from Kereke-were (South) towards Zaga-namoug (North). Other dirt roads in village.	Roads are in a poor state especially during the rainy season. Only the main road is usable. It was constructed around 2006.		Managed by the local authority		Trade, interaction	Accidents
Farmland (M)	Millet, sorghum, fonio, sesame, cowpeas and groundnut fields.	<i>Kiene Kongo</i> (Former village)	The soil is becoming poorer and poorer.	15 to 40 minutes on foot, 2 to 3 km from the homes.	Individual or family type farmland. There are some communal farmlands. The farmlands are acquired through inheritance.	The men were not able to identify any environmental benefits.	Their entire lives depend on the farmlands. Production of food and sale of agricultural produce.	Poverty of the soil. It is impossible to produce without using fertilizer. Reduction in rainfall. Lack of farmland.
Farmland including the women's horticultural site (F)	Cultivation of different crops such as groundnuts, beans, okra, millet, sorrel.	Located on south side of village. Previously fallow land. Women's fields are located near homes while men's fields are further away.	Farmlands are exhausted. Current farmlands used to be fallow or protected land. Women have stopped cultivating communal land. They now only cultivate individual pieces of land, allocated to them by their husbands. Men are no longer able to satisfy the needs of their families and those of women in particular. Individualization has increased.	10 min to one hour	Land acquired through inheritance by men. Each husband is required to find land for his wives. Husbands offer pieces of land to them.	Improved fertility enriches the land and vegetation. Seedlings grow well.	The sale of harvests and horticultural produce helps women to escape from poverty.	Insufficient rainfall. Lack of means to buy fertilizer. Poor access to manure by women as communal farm is given priority.

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, participants were 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 Tables 2 and 3 that include the major changes and drivers of change, as perceived by male and female participants.

The two groups described changes to the forest, farmlands and roads in the same way. In the past, the forest was dense and contained large wild animals. Now the forest is degraded and the large animals have disappeared. The farmlands previously had good quality soil but not the fertility is poor. The roads have declined in condition. Information on drivers of change is almost identical. The main drivers of change according to both the women and men are an increase in human and animal populations resulting in pressure on farmlands, forests and water sources. The drivers of change for roads are floods for the men and frequent use by vehicles for the women.

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



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

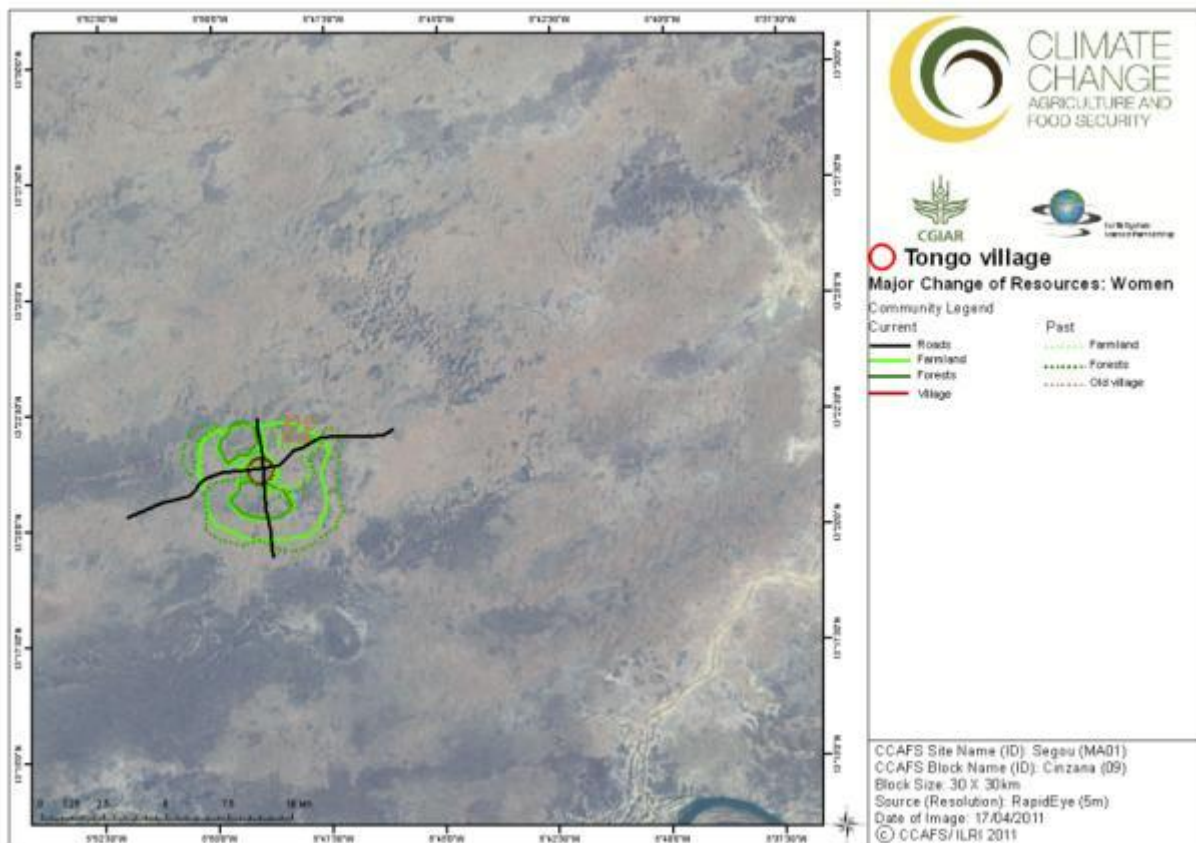


Table 2. Major changes and drivers of change in the last 10 years, as perceived by men (M) and women (F)

Land cover class	Community determined land use	Location names	Past state (quality)	Time to resource	Drivers of change	Management and ownership issues	Environmental benefits
Forest (M)	Hunting, honey gathering, collection of wood for construction	East Koungo, West Koungo etc.	Thick with a lot of species, wild animals	5 min	-Increase in population - Increase in herds - Felling of trees - Loss of big trees - Clearing for cultivation	Community resource	-Pasture for animals -Improvement of soil fertility through animal droppings.
Dense forest (F)	Collection of dead firewood cooking, baobab and Sisyphus leaves for eating. Hunting of big game. Harvesting of fodder.	The Keleke Were and Zanganamougou Bushes	Dense forest with a lot of useful trees and big game.	About 2 km from Bakala area	Human pressure. People from neighbouring villages also go to collect firewood. Herdsmen cut off branches as fodder, resulting in animal pressure.	Free access forest managed by the community living around it.	The area surrounding the forest experiences greater rainfall and has more fertile soil. Where there are forests, there are animals.
Open fields (M)	Pasture for animals. Supply of firewood for women.	Dja	Existence of small game (hare, partridge)	15 min		Free access community resource.	No environmental benefits identified.
Grassland/fallow land/ grazing land (F)	Farmers leave land fallow. Animals go there to graze.	Any farmland can be left fallow for 12 to 15 years.	Few	5 min from the homes	Population increase puts pressure on land. Intense cultivation without enrichment exhausts soil and fallows are needed.	Community management of communal farmlands	Vegetation cover on the ground.

Land cover class	Community determined land use	Location names	Past state (quality)	Time to resource	Drivers of change	Management and ownership issues	Environmental benefits
Backwater (M)	No use		Permanent water source		Deforestation. In-filling with sand	Free access community resource	No benefits
Water resources (Backwaters, ponds, wells) (F)	Watering of animals. Use of clay for construction. Washing of clothes.	Backwater is located on way to Keleke Were, towards South. One pond is near Yakala, another around Bakala.	Only 2 small ponds. The backwater was also small.	Backwater is situated around 4 km from the village	Human pressure for collection of clay.	Community type management.	No environmental benefits identified.
Roads (M)	Means of communication with nearby villages.	Tongonibougou road, and the Oumarou Were road	In a poor state. Impassable during the rainy season.			Public	No environmental benefit expressed by the men.
Roads (F)	Movement between communities and villages	One dirt road crosses village from N'Dinzana Were in West towards Moussa Were in East. Another road crosses village from Keleke Were in South towards Zanganamougou in North.	Well-constructed dirt roads.		Frequent use by vehicles and motorcycles. Heavy rains.	Managed by the community.	No environmental benefits identified.
Farmland (M)	Millet, sorghum and maize farms.	Infields and outfields. The fields are named after their owners.	Very rich soil and abundant land. Small farmlands	15 min to the outfields	Population increase. Training of farmers (intensive production, extension of farmlands). Use of plough enables cultivation of large areas). Deforestation. Low rainfall.	Individual and family farmlands. There are some communal farmlands. Farmlands are acquired through inheritance. Free access	No environmental benefits identified.

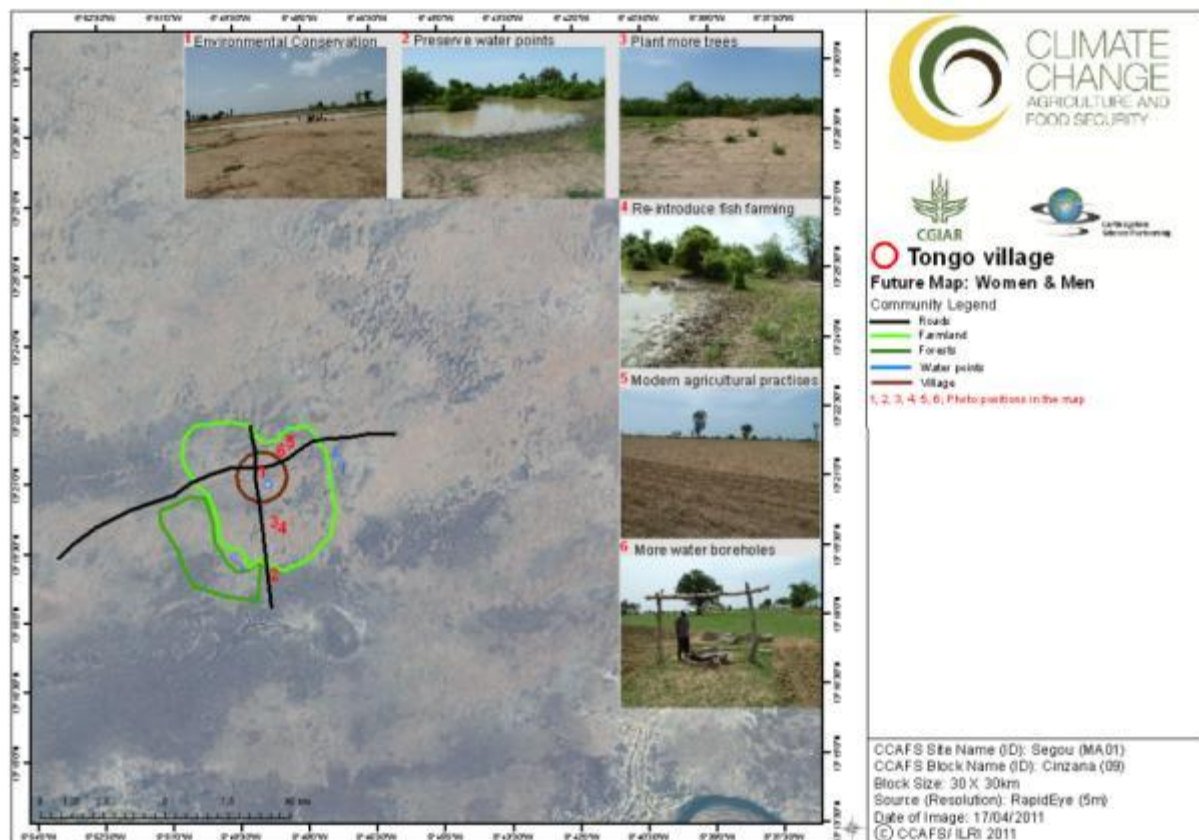
Land cover class	Community determined land use	Location names	Past state (quality)	Time to resource	Drivers of change	Management and ownership issues	Environmental benefits
Farmland (F)	Before, village was situated in Northeast. Today it moved to Southeast and old site is under cultivation. It still has an old well with good water table. Main crops are millet, beans, okra, sorrel and groundnuts	Around homes and towards Kelekwere and Zangamougou forests	Fertile land of reasonable sizes. All women have individual farmlands		Human pressure. Extension at will. Improvement of fertility not sufficient. The process of Individualization is due to the increase in the number of needs that are not met by the head of the household	Community management. The women and the youth constitute the family workforce. Only elderly women can have individual farmlands.	Increase in vegetation cover, water retention and infiltration

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 Tongo 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



The village's vision for the future is summarized in Table 3, below. It contains the resources identified by the young male and female groups, the ideal conditions that the groups wish for, what would enable the realization of those conditions, the possible limitations as well as the organisations that need to be involved for those conditions to be realized. These were discussed with the broader community group present.

The merging of the male and female groups did not affect the discussion on the future vision of the village. Likewise, mixing young and old people was beneficial for the discussion. The involvement of the elderly encouraged the participation of the youth and the women present. The women and the youth are often silent when it comes to defining their vision for the future with regard to the village's natural resources and infrastructure.

One major difficulty pertains to opportunities with regard to water resources (ponds). The community wishes to have the 2 ponds cleaned and the water supply increased in the next 20 years. Neither the men nor the women, however, were able to state opportunities that would enable the realization of this goal. Likewise, constraints pertaining to roads are too few for the men and women to express

opportunities. They all wish to have the laterite road tarmacked and the dirt roads converted into laterite roads.

The participants do not know potential partners (state organs or donors) who could help the village to regenerate its ecosystems. In the past the community has drawn much benefit from the savannah and sparse forest. Men and women have expressed the wish to preserve this resource by placing it under protection in the future.

Table 3. Community vision of the future

Items	Preferred condition for 2030	Opportunities	Constraints	Organisations to be involved
Village/ settlements	A bigger village	Increase in population	Diseases	Health service, Peace Corps, JICA, PRECAD, FODESA
Roads	Laterite road may be tarmac and dirt road be built with laterite.	Decentralization through activities of local authority	Political will	Local council and its development partners
Farmlands	Farmlands remain so. Richer soil and better-equipped farmers.	Women: income-generating activities will enable them to quit agriculture. Men: mechanised and intensive agriculture; making organic manure.	Lack of fertilizer	JICA, PRECAD
Savannah or sparse forest	They wish that this bush might become a thick forest.	Greater guarding of forest. Harvesting of live wood should stop.	Failure of people of neighbouring villages to respect ban on harvesting wood.	Water and Forest Service, Binkadi Women's Association, Men's Group, Peace Corps
The pond	Pond should be cleaned, deeper, wider			Peace Corps. To find other partners.

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.

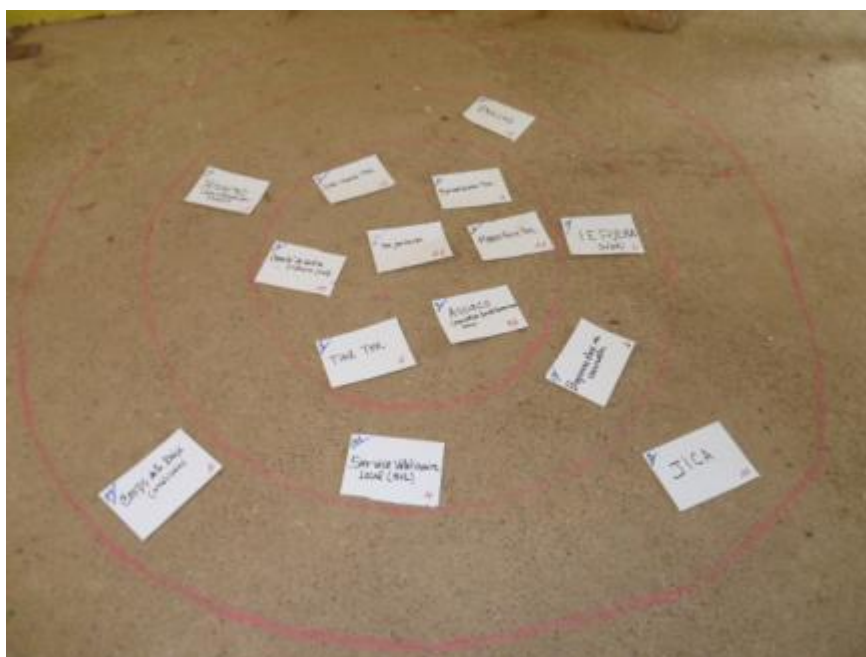
A. Basic spheres of operation

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 organisations 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 organisations 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 for an example). The results are shown in the images that follow.

The administrative structure of Mali is made up of the region, which is made up of several “cercles” (provinces) that are in turn made up of several “arrondissements” (divisions). The arrondissement is composed of “communes” (local authorities) that are made of several villages. The village represents the community level. The local or intermediary level extends from the commune to the region. Beyond these geographical spheres are the national and international levels.

The village of Tongo is part of the rural local authority of Cinzana and located about 35 kilometres from the town of Segou. This proximity to Segou explains the presence of a significant number of technical and financial partners operating in the local authority such as the technical arms of the administration, regional and international organisations, local and international NGOs, etc.

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



The men identified a total of 18 organisations (Figure 1). The most important (according to the scores given by the men) are:

- “Ton Jeunesse” which means “youth association”
- “Den Kundi Ton”, a men’s association for organizing baptism ceremonies
- School Management Committee (CGS)
- “Mouso Furu Ton” a men’s association for organizing weddings
- Capacity Building Program for Sustainable Agriculture (PRECAD)

The women identified 8 organisations. It is necessary to mention that the women experienced difficulty in identifying and naming organisations. Also, they remembered activities but were not always able to identify the partners. The most important organisations (according to the scores given) are:

- Institute of Rural Economy (IER)
- Binkadi Women’s Association (Mouso Ton)
- Peace Corps
- Men’s Association (Tie Ton)
- Environment and sanitation service

Peace Corps and JICA should have been at the third level (outer circle) but the women mentioned that these organisations have representation at the local level, hence our decision to place them there.

Tables 4 and 5 contain information pertaining to organisations. They include their main activities or areas of operation, the number of members or beneficiaries, membership terms, origin of the idea of

creation, sphere of operation, information on community organisations, notably the age, sources of funding and legal status.

Figure 1. Organisational landscape for the men's group

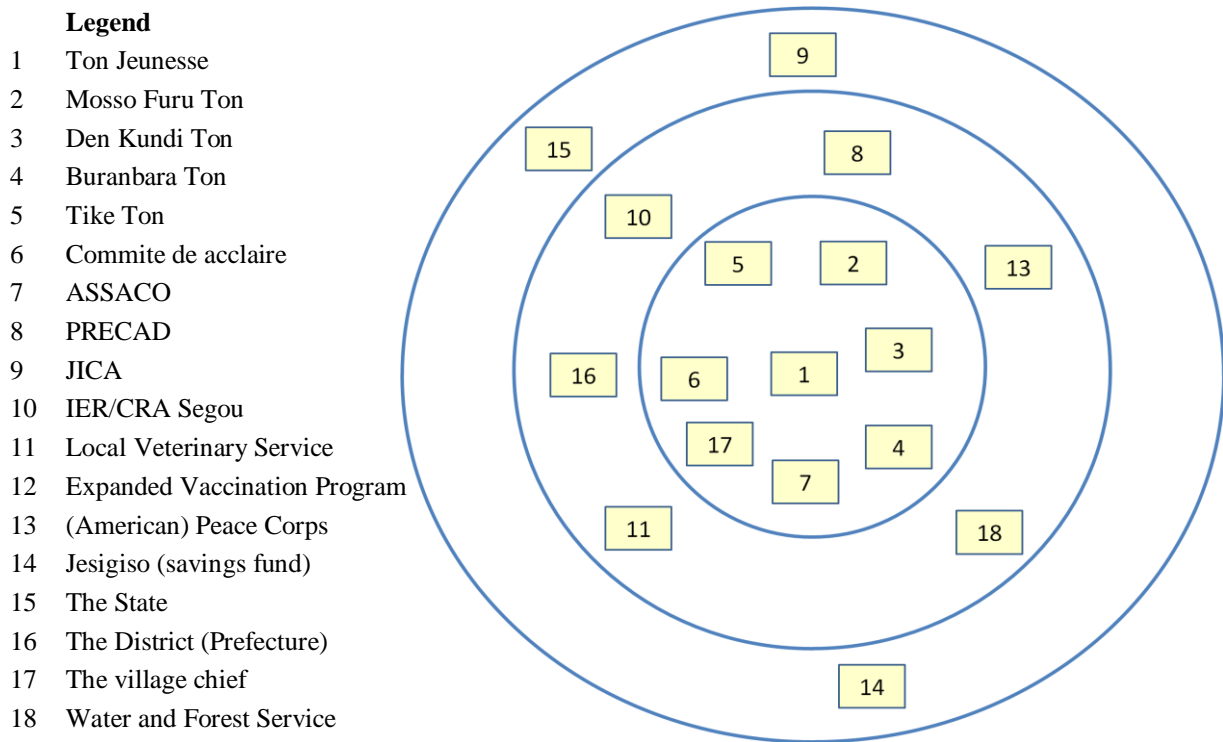


Figure 2. Organisational landscape for the women's group

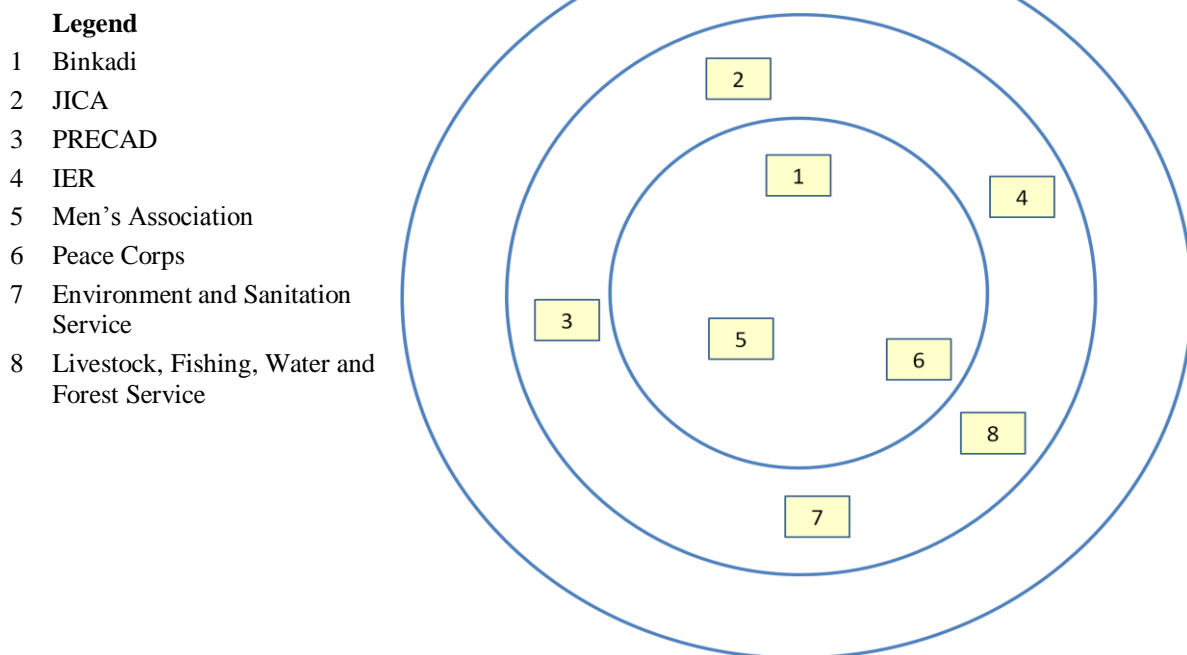


Table 4. Information on the first six organisations ranked by the men

									For community groups
Organisation name	Main activities	Number of members (estimate)	Access (open or restricted to...)	Origin	Sphere of operation:	Sources of funding	Existed how long	Formal or informal	
1 Ton Jeunesse	Communal work through labour and contributions (construction of buildings, repair of dirt roads). Ploughing and harvesting of communal farms. Mutual help in farm work.	150 members maximum	From 13 to 45 years. No fee or donations but penalties in case of non-participation in communal work	Indigenous	Community	Earnings from members' work and penalties.	Longer (in existence for a long time)	Informal	
2 Assaco Association for Community Sanitation	Sanitation association just established in village. Premises are available but activities have not yet begun. Decentralized health organisation.	The community	Anybody can be a member by getting a membership card at 500 CFA	State	Local (covers 11 villages)	Both	Less than one month (since June)		
3 Den Kundi Ton	Mutual help among men during baptism. Contributions and help for baptism ceremonies.	2 groups of 30 to 40 men per neighbourhood	No fee but donations according to members' means (min 250 CFA)	Indigenous	Community	Members	For a long time (traditional)	Informal	
4 Education management committee (CGS)	Supervision of education committee and pupils	Parents of pupils (4 from village)							
5 Mouso Furu Ton	Association for mutual help among men for weddings. Helps in courting women. Work at future in-laws home. Contributions towards wedding ceremony cover part of costs, as wedding ceremonies are expensive.	Between 100 and 200 members	One must be at least 20 years old. Access is open. No fee. Contribution during times of weddings.	Indigenous	Community	Members	Traditional It has existed for a long time	Informal	
6 PRECAD	Support in the form of seeds and fertilizer for agricultural production. Training and support for seed producers.			Project	Local	External	3 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	for community groups		
						Sources of funding	Existed how long	Formal or informal
1 Institute of Rural Economy (IER)	Research and extension of seeds, support and advice to farmers, fertilizer trials, provision of seeds to men			State	Beyond local			
2 Binkadi Women's Association	Paid mutual help, management of a mutual fund, cultivation of a communal field whose harvest is sold to boost the fund. They provide farm labour for which they are paid.	All married women in village are automatically members.	Actual participation is almost mandatory as soon as one is married	Community	Community (the whole village)	Contribution of 100 F/month. Provision of paid labour to men's and women's fields.	Traditional group. A very old practice.	Formal
3 Peace Corps	Repair and fencing of horticultural site. Support to women's horticultural production through provision of seeds for new horticultural crops (cabbage, lettuce, tomatoes, and onions). Served as a link with a project that constructed the village school.	38 women currently work at the site.	Volunteer members of the Binkadi group	The US government	Peace corps is beyond local but emphasis on actions by staff who live in Tongo			
4 Men's association for mutual help	Cultivation of a communal farm. Sale of part of the harvest to boost the fund. Sharing of part of the harvest among families. Mutual help in paid cultivation.	160 active members (elderly are exempted from work).	Compulsory for all men from the age of 15 or 16 years.	Indigenous	Community	Contribution, Salaries from labour. Income from sale of part of harvest.	Customary organisation from very old practices	Informal
5 Environment and Sanitation Service	Information-education-advice on how to avoid diarrhoeal diseases, hygienic behaviour: household garbage, bathing in the ponds, etc.	The entire village is a beneficiary		State	Beyond local			

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 male participants indicated that they only feel food secure when their produce is enough to feed the family and there is a surplus that they can sell to obtain money for the purchase of animals, clothes etc. This definition highlights food availability through production. The women's definition of food security has two dimensions: Sufficient production and/or availability of income to supplement production. Utilization was not seen as an aspect of food security.

Figures 3 and 4 show the organisational landscapes of the men and women as they relate to food security interventions. Women identified 7 organisations active in food security in Tongo, in comparison to men who identified 10 such organisations. According to the men, two types of linkages between organisations that are active in food security: linkages of shared membership among Tike Ton, Buranbara Ton and Ton Jeunesse; and a partnership linkage for the implementation of the activities of PRECAD. These organisations provide funding, capacity building services, food supply and other service delivery services.

Figure 3. Organisational landscape for food security (men)

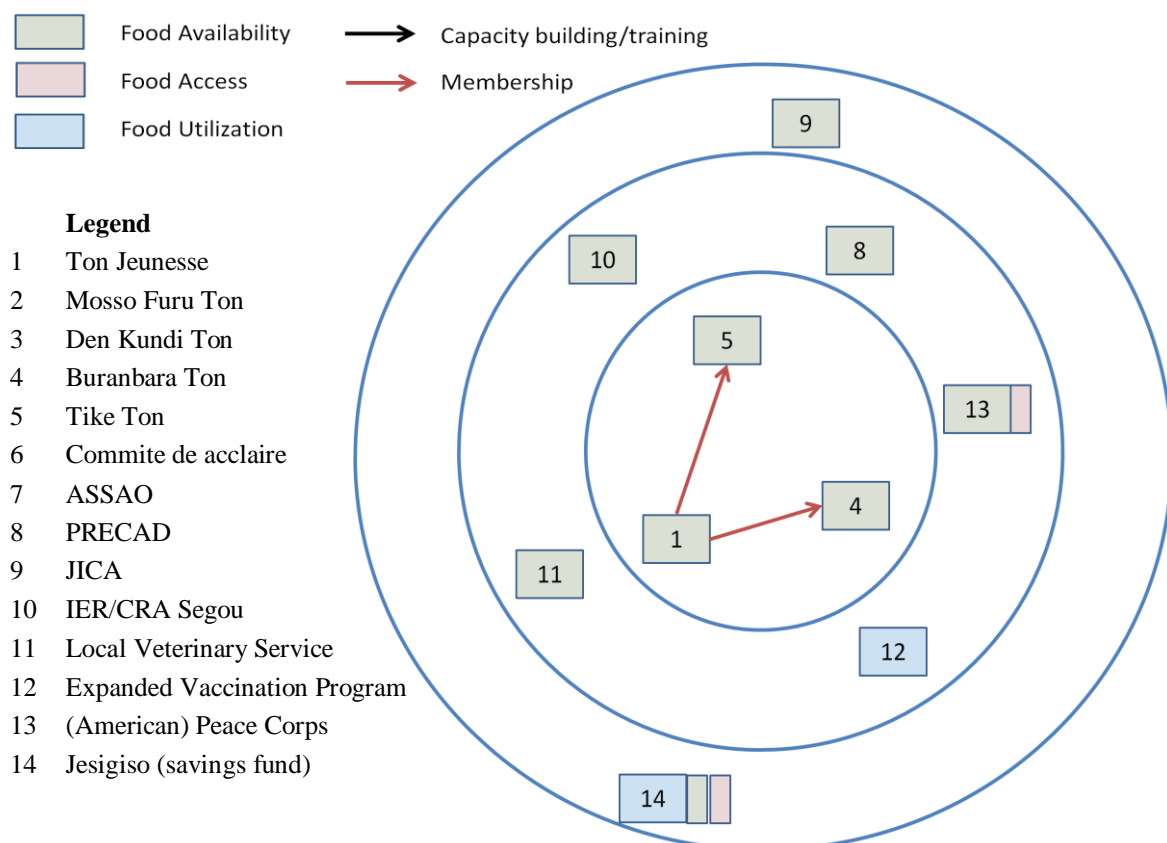
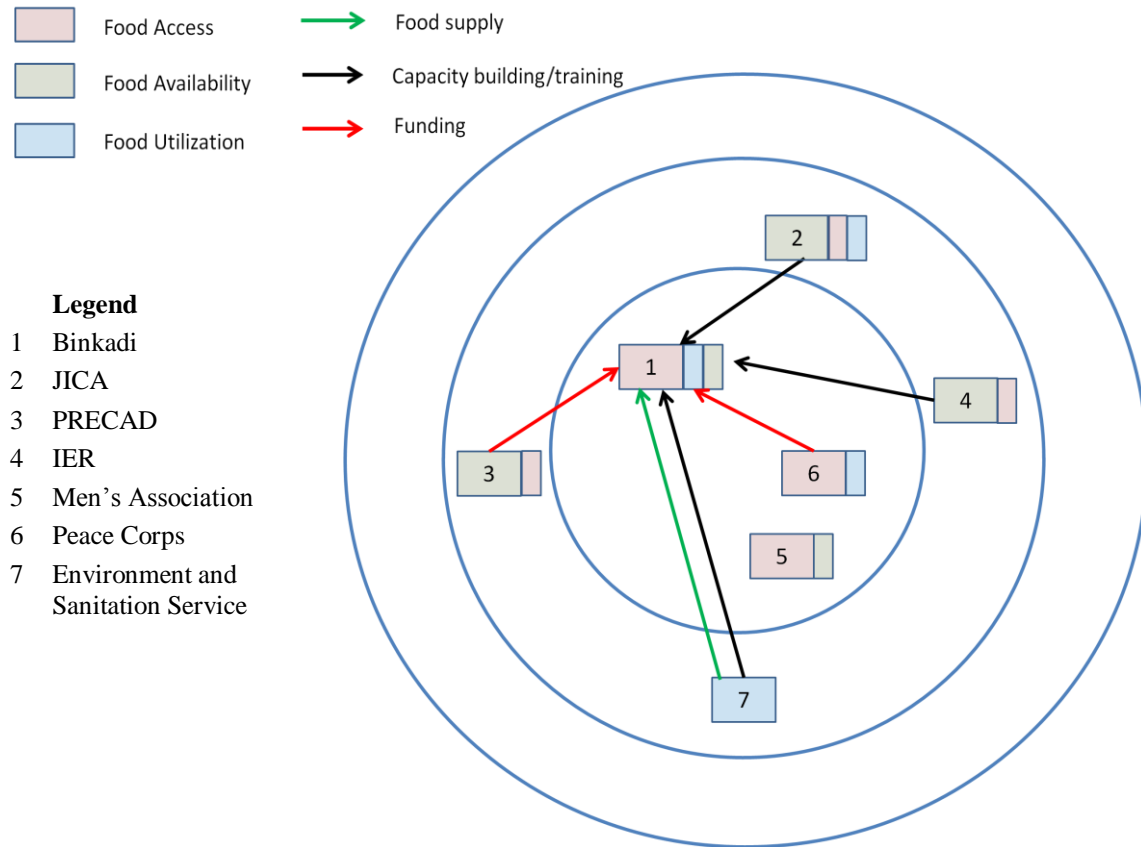


Figure 4. Organisational landscape for food security (women)



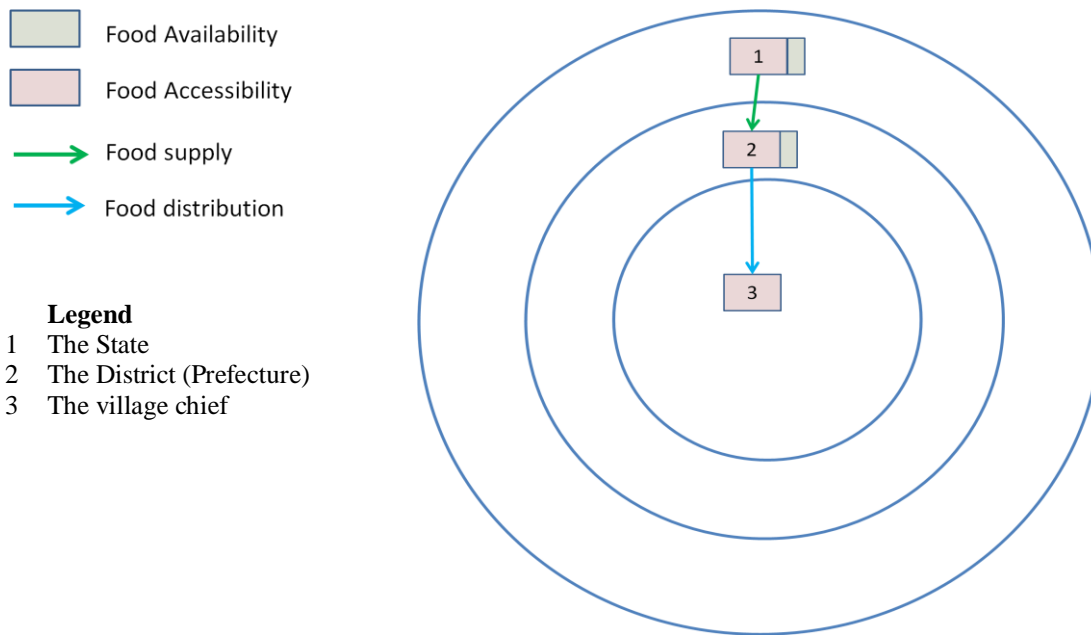
C. Organisational landscape of food crisis situations

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 participants were asked to define a time when there was a food crisis in the community, identify the organisations that were involved in providing supporting during that period, and indicate their role in a graph. The men remembered having experienced two food crisis situations: one in 1974 and more recently in 1984.

The male participants opted to discuss the food crisis of 1984, which again came after a period of drought. The rains had stopped early in August during the flowering season of cereals and cowpeas, leading to loss of harvest. According to the men, 20 out of 30 households had nothing to eat. For the men, there were no other actors involved in the food crisis of 1984 except for the State (see Figure 5 below). The state and its organs, the local authority and the village chief were in charge of supplying and distributing food to the community.

Figure 5. Organisational landscape for food crisis situations (men)



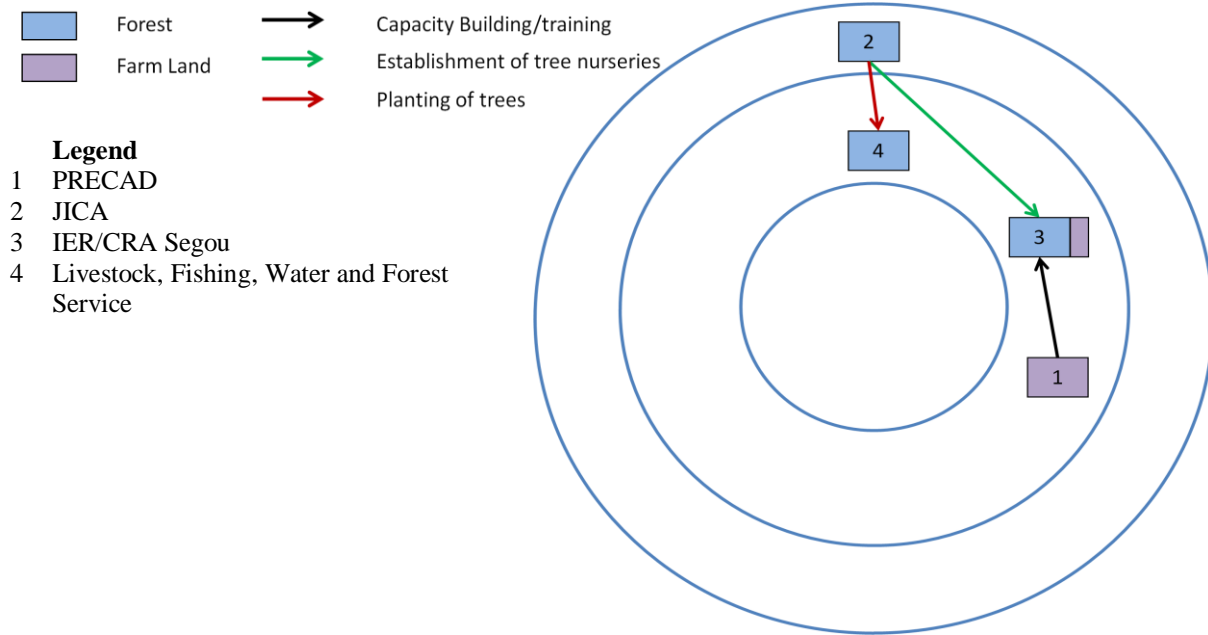
The women recalled two food crisis situations, the more recent one being in 2005. The women stated that there had not been any intervention during the food crisis, and therefore did not create a graph on food crisis. According to the women, the food crisis of 2005 was caused by insufficient rainfall, and more precisely lack of rain during the flowering season. At that time, people lost their crops and did not have any other alternative than eating cereal bran that is normally reserved for consumption by animals. Neither the State nor organisations involved in food security were active in the food crisis of 2005. The women asserted that each household managed the crisis, and those who had more food and means expressed solidarity with those with less.

D. Organisational landscape of natural resource management

In this section, the organisational landscape in relation to natural resource management (NRM) is discussed. Specifically, what organisations were actively working to protect the environment, manage natural resources, etc.? 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. The group placed cards with the names of organisations on the ground. The information was then transferred to the flipchart, including linkages.

The organisations active in NRM according to the men are: PRECAD, JICA, IER/CRA-Segou and Water and Forest Service (Figure 6). The natural resources they are concerned about are primarily the forest resources and trees (action by JICA, IER/CRA-Segou and Water and Forest Service). The linkages between organisations are the establishment of tree nurseries, tree planting and capacity building. The Water and Forest Service does not work sufficiently with the community at the grass roots and yet the community would wish to be more involved in the management of the forest.

Figure 6. Organisational landscape for NRM (men)



According to the women, the organisations that are active in natural resource management are Binkadi, IER/CRA Segou, the men’s association, Peace Corps, the Environment and Sanitation Service and Water and Forest Service (Figure 7). IER/CRA-Segou is active in the sector of farmlands; the Binkadi Association and Environment and Sanitation Service are active in the supply of drinking water; The Binkadi Association, the men’s association, Peace Corps and Water and Forest Service are active in afforestation. There are three types of linkages in natural resource management; these are tax collection linkages, capacity building and exploration linkages done by the current representatives of Peace Corps and whose future area of intervention is still unknown to the community.

Figure 7. Organisational landscape for NRM (women)

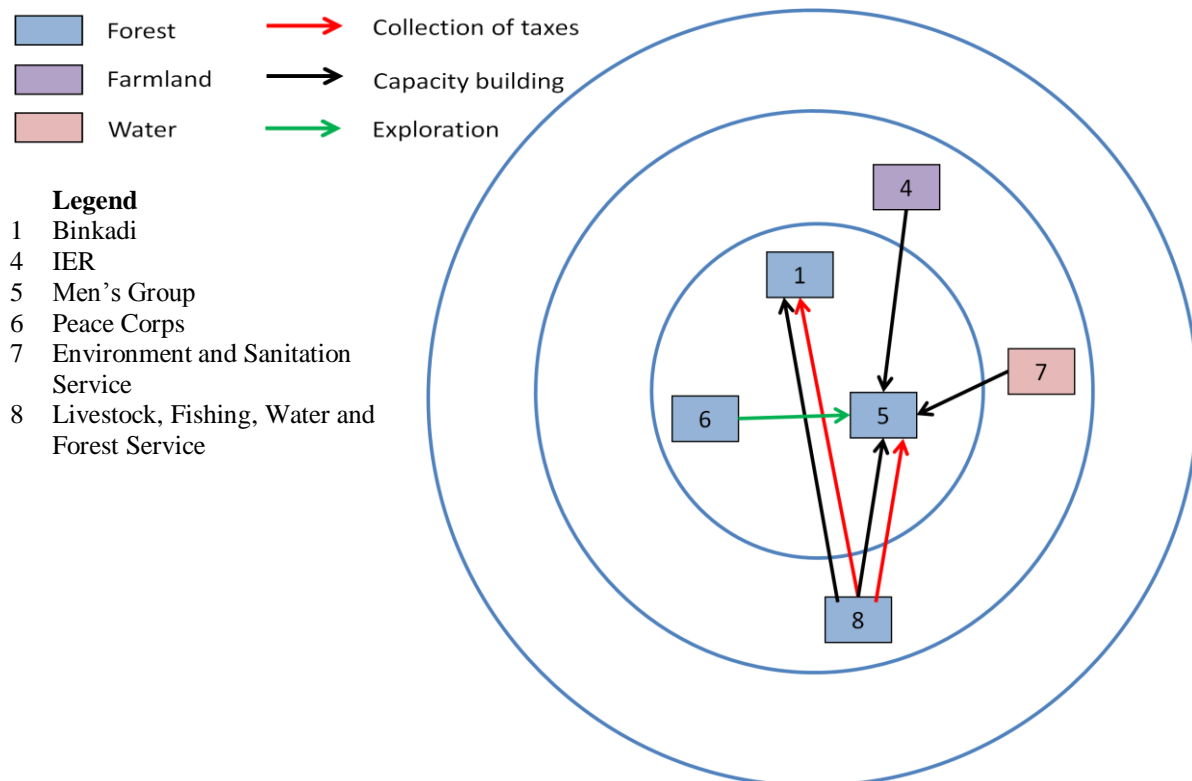


Table 6 below summarizes information on all the organisations identified separately by male and female participants. The organisations are classified according to their role in supporting food availability, access and/or utilization, as well as the provision of relief in times of food crisis, and the management of natural resources.

Table 6. Information on highlighted organisations of men and women (1=yes/0=no)

		Organisation	Food avail-ability	Food access	Food utiliza-tion	Food crisis	NRM	Total
Men	1	Ton Jeunesse	1	0	0	0	0	1
	2	Association for Community Sanitation (Assaco)	0	0	0	0	0	0
	3	Den Kundi Ton	0	0	0	0	0	0
	4	School Management Committee (CGS)	0	0	0	0	0	0
	5	Mouso Furu Ton	0	0	0	0	0	0
	6	PRECAD	1	0	0	0	1	2
	7	JICA	1	0	0	0	1	2
	8	Tikè Ton	1	0	0	0	0	1
	9	Buranbara Ton	1	0	0	0	0	1
	10	Local Veterinary Service	1	0	0	0	0	1
	11	IER/ CRA-Segou (Cinzana Centre)	1	0	0	0	1	2
	12	Extended Vaccination Program	0	0	1	0	0	1
	13	Peace Corps (American)	1	1	1	0	0	3
	14	Jesigiso (Savings Fund)	1	1	0	0	0	2
	15	State	0	0	0	1	0	1
	16	Rural authority	0	0	0	1	0	1
	17	Village Chief	0	0	0	1	0	1
	18	Water and Forest Service	0	0	0	0	1	1
Total			9	2	2	3	4	
Women	1	IER	1	1	0	0	1	2
	2	Binkadi Women's Association	1	1	1	0	1	3
	3	Peace Corps	0	1	1	0	1	3
	4	Men's Association	1	1	0	0	1	2
	5	Environment and Sanitation Service	0	0	1	0	1	1
	6	PRECAD	1	1	0	0	0	2
	7	JICA	1	1	0	0	0	2
	8	Livestock, Fishing, Water and Forest Service	0	0	0	0	1	1
Total			6	7	3	0	6	

Topic 3: Information networks

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 want to describe networks of how people access and share information within the community.

The topics about which the men seek information are: new varieties, the beginning of the planting season and national food security stocks. The women seek information on: the right seeds, the price of seeds, the price of ploughs, the use of fertilizer, and rainfall forecasts. Clearly, the information both groups seek is generally related to agricultural production. The two groups were also interested in information on climate, albeit with slightly different foci: for the men it was the beginning of planting, while for the women it was the beginning of rains and rainfall forecasts.

Table 7, below, presents a summary of information networks. Men tended to use all sources of information while the women only used three. “People” as a source was used 9 times by the women and 5 times by the men for their topics. “Organisations” as a source was used 10 times by the women and 3 times by the men for their topics. Finally, “others” as a source was used only once by the men. The “others” category includes the village chief as an entity that goes beyond the tangible person.

People as a source includes the youth, adults and the elderly, people from the village, employed as labourers and workers at the Cinzana centre (IER/CRA), seed producers, traders, the chief’s envoy and by name Youssouf Coulibaly, Sidi Kourouma, Cheikh Keita and Boureima Keita. Organisations as a source of information includes JICA, the meteorological service, the Peace Corps, the agricultural extension service, IER, PRECAD as well as decentralized State organs such as the local authority and the district. Some organisations that could not be identified by name were placed under the name “projects.” The media as a source of information refers to the radio (national and regional) followed by television.

As a whole, the women sought information 23 times whereas the men did so 12 times. Women seem to consult with organisations and people, and to a lesser extent obtain information from the media. Women may be more open to ask for assistance from others than men. The women seek information on the right seeds but unlike the men, do not turn to seed producers for that information.

Table 7. Information Networks of men and women (1=yes/0=no)

Sources/ categories	Topics (women)			Topics (men)			Total
	Right seeds	Use of fertilizer	Rainfall forecasts	Information on new varieties	Beginning of planting season	National food security stocks	
<i>PEOPLE</i>							
Elders	0	0	1	0	1	0	2
Youth	0	0	1	0	0	0	1
Youssouf Coulibaly	0	1	1	0	0	0	2
Sidi Kourouma	1	1	0	0	0	0	2
The men	0	1	0	0	0	0	1
Cheikh Keita	1	0	0	0	0	0	1
Boureima Keita	1	0	0	0	0	0	1
People from village, laborers and workers at Cinzana research centre (IER/CRA)	0	0	0	1	0	0	1
Seed producers	0	0	0	1	0	0	1
Village chief’s envoy	0	0	0	1	0	0	1
Trader	0	0	0	0	0	1	1
<i>ORGANISATIONS</i>							
“Projects”	0	1	1	0	0	0	2
JICA	0	0	1	0	0	0	1
Meteorological service	0	0	1	0	0	0	1
Agricultural extension service	0	1	1	0	0	0	2
IER	1	1	0	1	0	0	3
Peace Corps	1	1	0	0	0	0	2
PRECAD	0	0	0	1	0	0	1
Local authority, district (Préfecture)	0	0	0	0	0	1	1
<i>MEDIA</i>							
Radio	0	1	1	0	1	1	4
Television	0	1	1	0	0	0	2
<i>OTHER</i>							
The village chief	0	0	0	0	0	1	1
TOTAL	5	9	9	5	3	4	

Conclusion and recommendations

The village of Tongo has a diversity of socio-economic infrastructure (school, literacy centre, health centre, public shop, mosque, wells, boreholes etc.) and an abundance of natural resources (savannah, grassland, ponds and farmland). It possesses farmlands, fallow land used for grazing, and ponds and backwaters used for fish farming, fishing, watering animals, as well as for domestic use, i.e. from cooking to washing clothes. Hence, in comparison to other sites in West Africa, it is relatively well endowed. However, the natural resources, including forests, farmlands and fallow land, are in a state of progressive degradation due to population increase and reduction in rainfall and drought over the last decades. Population pressure is manifested in an increase in the number of inhabitants and the appearance of hamlets, but also in growth in the number of livestock, which leads to pressure on pasture. Soil fertility has deteriorated to the point that farmland is left to fallow, and forests are cleaned for cultivation. Forests have been replaced by what can be described as savannah shrub.

Due to its proximity to Ségou, there are many organisations in the village (the men identified 18). Most of these organisations are involved in food security support, 9 of them being involved in the sector of food availability, 2 in access to food and 2 in utilization of food. In contrast, there are fewer organisations involved in natural resource management. These include PRECAD, JICA, IER/CRA-Ségou, Livestock, Fishing, Water and Forest Service, and the Binkadi association. They are involved in the establishment of tree nurseries, planting of trees and building of the community's technical capacities.

The village has a great organisational capacity based on socio-familial relations. On the other hand, despite the large number of external organisations in the village, their impact is reduced because of a lack of coordination and synergy among them. Also, it seems that the external organisations tend to work mostly with men. Women appear less informed than the men on the functioning of groups active in Tongo village, and identified only 8 organisations against 18 identified by men.

In their vision for the future, the community considered some strategic responses (opportunities) for fighting against the degradation of natural resources. Some of the most important strategies presented include decentralization, the development of income-generating activities for the women, increased guarding of the forest to prevent indiscriminate cutting of live wood, and the involvement of state organs, research organisations and development partners in the training/building capacities of rural farmers.

Implications for CCAFS

In response to the main concerns of the people of Tongo village, CCAFS research actions should be on several fronts. These include the selection and creation of varieties so that farmers can have access to fast maturing (short cycle) varieties; production of seeds; and development of new, low-cost ways of improving soil fertility to improve productivity of farmlands. In all these research activities, CCAFS can work with IER, INSAH and ICRISAT.

Action research should be on the distribution of improved varieties (fast maturing) through participative selection of varieties and distribution of new, low-cost types and techniques of fertilization (use of organic manure) and building the capacities of farmers through training. The practice of community fallowing undertaken by the community should be encouraged and supported by CCAFS in liaison with the agriculture, livestock, water and forest service. This strategy enables the regeneration of vegetation cover and restoration of farmlands. These actions can be undertaken in partnership with IER, PRECAD and the Ministry of Agriculture, and in coordination with grass root organisations in the village ("Ton Jeunesse", the men's association, etc.).

Currently, there are no actions in managing the forest reserve where the women collect their firewood. CCAFS could undertake reforestation actions in the forest reserve in collaboration with IER and the Water and Forest Service.