



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



Village Midline Study **Rupandehi, Nepal**

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Village Midline Study: Rupandehi, Nepal

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Introduction

The CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) is a strategic ten-year partnership between CGIAR and Future Earth to help the developing world overcome the threats posed by a changing climate, to achieve food security, enhance livelihoods and improve environmental management. Starting in 2011, CCAFS carried out major baseline studies at household, village and organization levels across its five target regions, namely East Africa, West Africa, South Asia, Latin America and Southeast Asia (more information about CCAFS sites is available on our website <http://ccafs.cgiar.org/where-we-work>). In 2018, CCAFS carried out a midline study in one of these sites (Lawra-Jirapa in Ghana) to determine if there was scope for conducting more midlines in other sites. CCAFS trained survey teams from partner organizations in each site to conduct the midlines.

The midline effort in Rupandehi, Nepal consisted of three components – a household survey, a village study and an organizational survey. The household midline 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 along with current risk management, mitigation and adaptation practices, was implemented by CCAFS partners in one site comprising 7 villages within which 140 households were surveyed. CCAFS partners also implemented a village midline study (VMS) and an organizational survey in one of the seven villages within the Rupandehi site where the household survey was implemented. Data from the current midline study, as well as an endline study that will take place in roughly 5 years, will be used to monitor changes occurred since the baseline study was carried out. The goal is not to attribute these changes to the program, but to be able to assess what changes have taken place and whether these changes are helping villages adapt to, and mitigate climate change.

The focus of this report is the village midline study (VMS) conducted in Madhuri village. The VMS aims to provide information on changes which have occurred since the village baseline study (VBS) at the village level surrounding natural resource uses, organizational landscapes, information networks related to weather and agricultural information, including mitigation information, which can be compared across sites and as well as with the situation at baseline.

The objectives of the village midline study are to:

- Provide an initial comparison of the situation found during the VBS and the situation reported at midline to allow us to monitor changes in the village over time. In particular, changes allowing people to:
 - Manage current climate risks,
 - Adapt to long-term changes in climate, and
 - Reduce/mitigate greenhouse gas emissions.
- Understand the enabling environment and changes affecting certain practices and behaviours, creating both constraints and opportunities (policies, institutions, infrastructure, information and services) for communities responding to changes.
- Explore social differentiation:
 - Information on perceptions of women and men will be gathered separately to be able to compare and present gender differentiated perspectives.

- Focus group participants will be disaggregated by age groups to present perceptions of different generations.

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

This report presents the results of the Village Midline Study (VMS) conducted between the 26th to the 30th of May 2019 in the Madhuri village, Nepal (Rupandehi site). Madhuri village is located in the Omsatiya rural municipality (former Basantapur Village Development Committee, VDC) in the Rupandehi district. The village is connected to roads as well as electricity and communication facilities. The survey team was composed of two facilitators and two notetakers. Each pair was composed of one man and one woman. The team did not hire translators as facilitators already had advanced knowledge of the local language and could translate all notes in English. The team consulted the village authorities concerning the time and place of the meetings. An appropriate place for the meetings was then selected.

The site team leader sent out invitations to the selected participants using random sampling. Each group was composed of 15 participants with one group of 15 men and another group composed of 15 women. Three days were selected to conduct the study. On the first day of the study, the whole community was invited to join for the introductory session where the team explained the midline village study and shared with them the results of the village baseline survey. After the introductory session, the rest of the community was released with only the invited groups of 15 men and 15 women remaining to carry on with the study. The whole community was again invited at the end of the third day to attend a debriefing session where a summary of the findings was shared.

The survey used participatory methods of data collection. Throughout the data collection process, the groups of men and women members of the community worked separately. The team used a satellite image of the block under study with sketches of the resources that were identified by the baseline participants as being important to the community. The midline participants identified any additional important resources and added these to the map. Changes in the state of the previously identified resources were also pointed out and discussed by the groups. The outputs of this exercise were maps and sketches. The work with the community to identify the resources that are important to them depended entirely on their abilities to understand and interpret the maps and the sketches made.

The task on day 2 was to work with each group to understand the organizational landscape and the links that exist in relation to food security in a normal year, in a year of crisis, and in relation to natural resource management. After mapping their organizational landscape, the groups also compared it to the ones that were created during the baseline. The outputs were diagrams showing the organizational landscape at the time of the midline. Additional information on each organization were also captured on cards.

Finally, there were two main tasks on day 3. The first task was to work with each group to understand how information networks in relation to weather issues and farming activities have changed since the baseline study. The outputs were diagrams. The second task was to bring the male and female groups together and generate a common vision of what the community would like their village to be in the future. The group was split up in two mixed groups, the first one assessing the progresses made

towards the vision that was created during the baseline, the other group creating a new vision. The output was a map/sketch showing “the vision of the community” at the time of the midline.

The information generated from the study were captured on sketches, maps, flip charts, information cards and notes. All these were combined and analysed to produce this report. A debriefing report was prepared in the field so that it could benefit from the presence of the site team. The photographed sketches and maps were inserted in the debriefing report before being replaced by proper maps and diagrams derived from the field outputs.

Data analysis

Topic 1: Community resources - participatory satellite imagery interpretation and visioning

The community infrastructure and resources along with gender-differentiated access and utilisation of those resources were analysed, based on a process of participatory visual interpretation of high-resolution satellite imagery (Airbus SPOT 6/7 imagery). The aim was to analyse how community resources and community dynamics in relation to the environment have changed since the baseline study. The participants were presented with the maps created by the baseline participants and discussed any changes and potential drivers of change in the state of those resources in terms of quality, access, or management. Later on, the two groups were reunited before being split into two mixed groups discussing either 1) a vision of the state of village resources and human well-being going towards 2030 for group one or 2) the progress made towards the future vision that was created by the baseline participants for the second group. The detailed approach to this exercise is outlined in the CCAFS Village Midline Study Implementation Manual.

A. Changes in natural resources

For this exercise, two groups, one made of men only and the other one made of women only, were formed and focus group discussions were conducted. The satellite map was used in each group and participants were told to identify any changes in natural resources and infrastructure since the baseline. These changes were inscribed on the satellite map and compared with the baseline map.

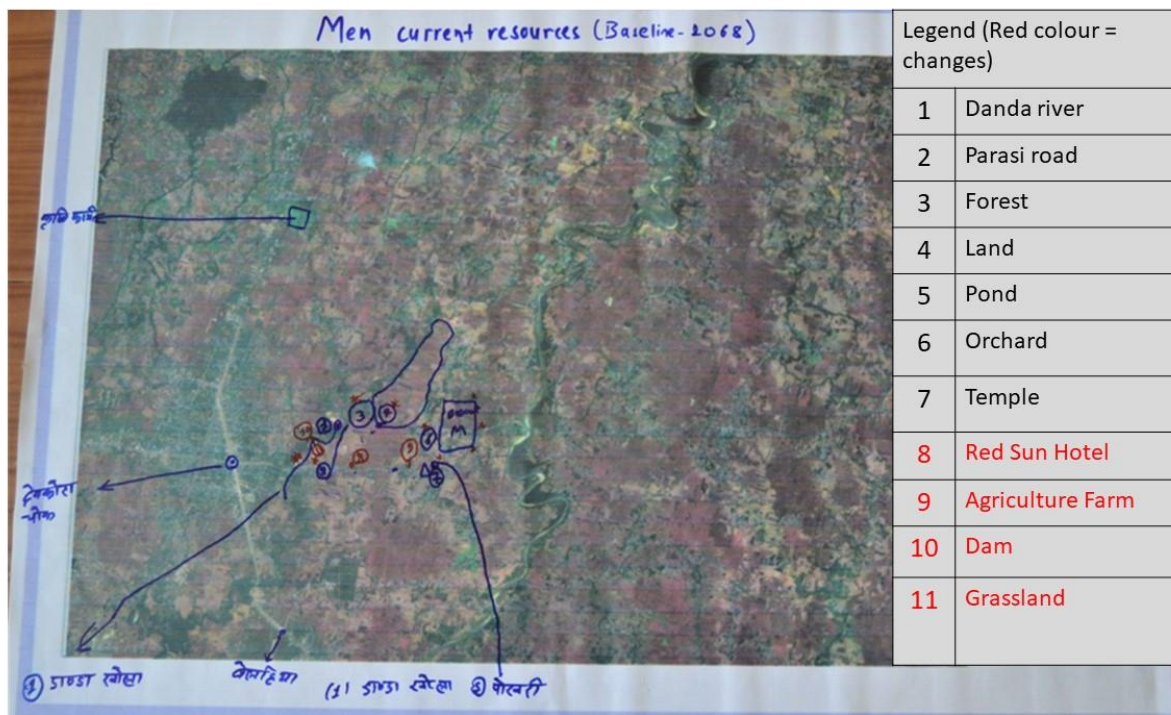
Male and female participants provided the following information on changes in their community’s resources, including infrastructure (Table 1 and 2, Maps 1 and 2).

Photo 1. Community members participating in the exercise on natural resources and infrastructure changes.



Credit: Mr. Roshan Pudasaini

Map 1. Major changes in resources (compared to baseline) according to the FGD conducted with men



Map 2. Major changes in resources (compared to baseline) according to the FGD conducted with women

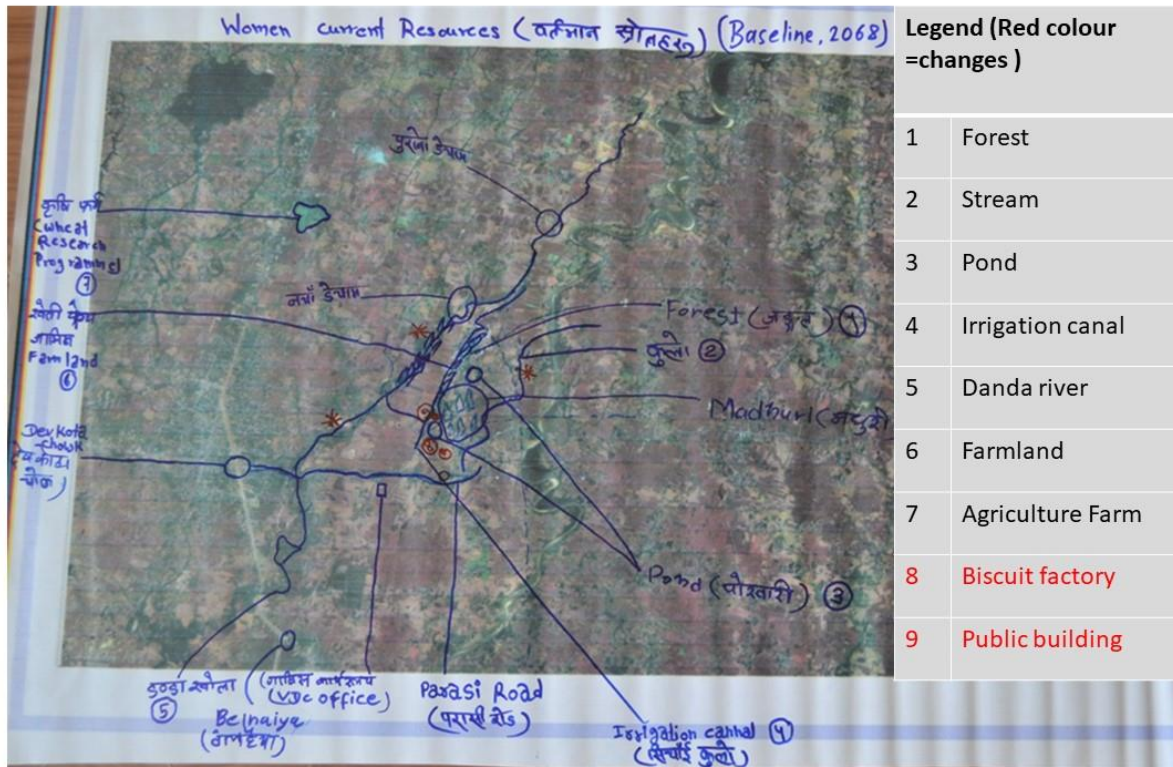


Table 1. Major changes in natural resources since the baseline study (2011), as perceived by men (M) and women (F)

Land cover class	Community determined land use	Location Names	Has there been a change since baseline?	Description of the change	Reason for change	Agents of change
River (M)	Irrigation and fishing	Danda River	Yes	Decrease in river width and volume of water	-Disposal of waste (small broken bricks) from brick kilns -Construction of Dam (more water used in the upstream locations)	Brick kiln operators Local Government
Infra-structures (M)	Road for Transport	Bhairahawa-Butwal Road Bhairahawa-Parasi Road, Bhairahawa-Sunauli Road	Yes	Better quality roads and increased traffic	Increased economic activities	-
Dam	Water for agriculture	Madhuri	Yes	Addition of a new functional dam	Demand for more water for irrigation	Government
Orchard (M)	Fruit production and shelter purpose	Madhuri Village	Yes	Decrease in Number	Storm affected the production Some trees were cut down for furniture making	Disaster Farmers
Pond (M)	Fishing and irrigation	Near Hulaki Road	Yes	Increase in number (from 2 to 5)	Opportunity for income generation Subsidies from government for fish farming	Farmers/ Entrepreneurs Government
Forest (F)	Fuel wood, Household purpose (for making windows and doors in the home)	Near the village	Yes	Decline in the number of trees Decline in the availability of forest resources	Human exploitation Conversion of some forest land to agricultural land.	Local people

Land cover class	Community determined land use	Location Names	Has there been a change since baseline?	Description of the change	Reason for change	Agents of change
Pond (F)	Fishing, wallowing livestock, irrigation	Near the village	Yes	Increase in number	Fish farming for income generation	Villagers
River (F)	Irrigation, livestock wallowing	Within the village	Yes	Reduction in the volume of water	Short duration rainfalls, increased use of water in upstream locations, Deforestation	Climate, human interference
Dam (F)	Irrigation	Hati Farsatikar	Yes	Reduction in water, structural damage	Less rainfalls in winter, lack of maintenance	Climate, Local Government

Table 2. New elements added to the map

Land cover class	Community determined land use	Location Names	Current state (quality)	Time to resource	Management and ownership issues	Environmental Benefits	Opportunities	Limitations
Infrastructure (F)	Construction of a community building	Madhuri	Under construction	5 min by foot	Managed by the community	-	Community events, shelter during disaster	Lack of finance to complete
	Biscuit Factory	On way to Madhuri village	Good	10 min by foot	Private	-	Off-farm employment	-
	Chips factory	On way to Madhuri village	Good	10 min by foot	Private	-	Off-farm employment	-

Male and female participants provided the following information on changes in their community's resources and infrastructure (see Table 1).

River: The village has a river, called Danda river. The water from the river is used for irrigation of various crops such as cereals. The river is also exploited for fishing purposes. There are two dams in the village. The new dams are a source of tourism. There has been a decrease of water in the dams with the width and volume of water diminishing. There is a lack of oversight of the dams which results in misutilization of the available water.

Road: The roads are well gravelled in the village. New roads have been constructed. The major roads are Bhairawaha-Butwal, Bhairawaha-Parasi and Bhairawaha-Sunauli. These roads have eased transportation within the village and provided easier access to markets.

Pond: Ponds are being constructed in the village for fish farming. Farmers are willing to invest more in fish farming as it supports their family income.

Infrastructure: New factories are being constructed in the village. This has created opportunities for off-farm employment for the villagers.

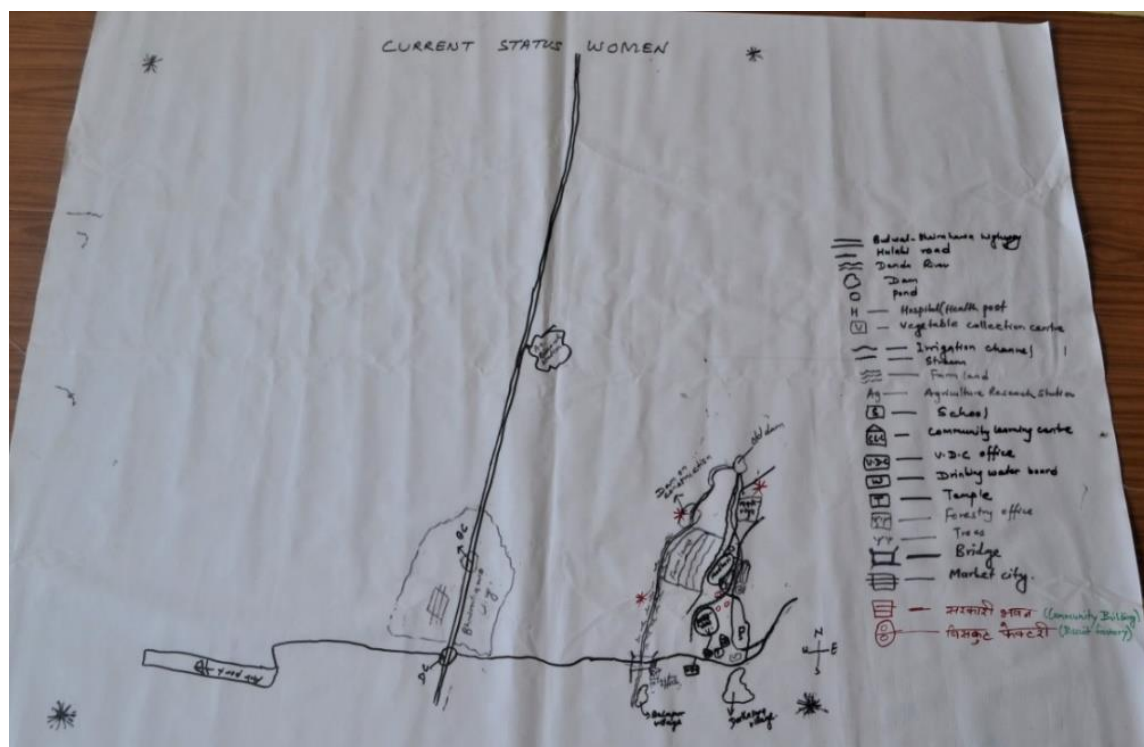
Forest: There are private forests in the village. The villagers are planting trees on their own lands.

B. Gender-differentiated comparison of changes in conditions

The perception of men and women groups were slightly different. As compared with the women's group, which noted changes in infrastructure development, the men participants identified more changes in natural resources. During the women's focus group discussion, significant changes in the development of the infrastructure, in particular buildings, were noted. Men identified the construction of dams and grasslands whereas women identified the construction of factories and buildings.

Women identified changes in forest areas with degradations being noted. More ponds were constructed for fish farming, as it allows villagers to diversify their sources of income. Men noted changes in the Danda river's width and volume, development of infrastructure, orchards and ponds. The main elements added noted by the men's group since the baseline were private forests and grassland whereas women identified the establishment of factories (biscuits and chips) which have generated opportunities for off-farm employment. Both men and women found no changes in the farmlands. Men reported important changes in the roads network, with the construction of the Bhairawaha-Butwal and Bhairawaha-Parasi roadways. These changes in roads networks have made it easier for villagers to access markets.

Map 3. Overlay of changes in conditions, comparing men’s and women’s maps



C. Eye comparison of the midline satellite image with baseline satellite image

Both men and women had different perceptions of the changes occurred since the baseline. The major changes identified by men were expansion of human settlements and improved road access. With the increase in population, the construction of houses and other buildings has increased rapidly. The local government has increased investments and work on maintenance and construction of new roads. This has eased access to markets and impacted positively the livelihoods of the villagers. Compared to the baseline, two factories (chips and biscuits) were constructed, thus providing ample off-farm employment opportunities to the villagers. Despite new opportunities of off-farm employment, increased conversion of forest areas into farmland is reported in the village.

Table 3. Changes observed when comparing the satellite images (men’s FGD)

Main changes observed	Reasons for the change
Expansion of human settlements	Growing trend of nuclear families, population growth
Improved road access due to an increase in the number of roads	Road construction by the federal as well as local governments, increased public demand for roads as it improves livelihood and market opportunities

Table 4. Changes observed when comparing the satellite images (women’s FGD)

Main changes observed	Reasons for the change
Infrastructure (factories and government offices)	Employment opportunities Community benefits and increase access to government programs
Structural deterioration of dam	Increase in the presence of the government’s forest office around the dam side to increase afforestation Lack of maintenance of dam rendering the structure very weak

D. Progress towards the vision of the future developed during the baseline study

The village representatives in the first mixed group developed a vision of their village in 2030 at the time of the baseline study. The vision centred on village resources, human wellbeing, opportunities and constraints, as well as aspirations for the future. The vision developed at baseline was discussed in a mixed group of men and women to assess the progress made. The group highlighted positive changes in agricultural lands with increased access to irrigation and the use of modern technologies. These changes were made possible thanks to the coordination and support efforts from various organizations. The school has increased its delivery of quality services and now provides education up to the Bachelor’ level (Table 5).

During both the baseline and the midline study, some of the participants were invited to visit and take photographs of the landscapes or sites that they feel proud of or would like to improve in the future. The main objective is to create a better perception of changes occurred in these places. The photographs captured during the baseline and those captured during midline were placed together and the changes were discussed with the group.

E. New vision of the future

The second mixed group of men and women categorized and organized resources necessary for the new vision. More focus was paid to natural resources like farmland, orchards, forest, rive or grassland as it can lead to the improved economic viability of the resources through effective management. The group set a target to increase the number of agricultural lands available and maintain soil fertility through leveraging resources from the local government. The group members’ vision of the village towards 2030 is centred on the sustainable development of its natural resources. As there is a high demand for fruits, especially mangoes, the area of the orchard remained a priority area. The newly formed dams were identified as a source of recreation which can be further enhanced and managed to make it a touristic destination.

The group vision focused on increasing areas of forests, farmlands, orchards, grasslands while supporting the economic development of the community. However, the lack of coordination and linkages among the stakeholders was identified as hindering the development of the community.

Achieving their vision will support improved food security, climate change adaptation and increase livelihood opportunities. However, to achieve their vision, strong coordination and linkages among stakeholders should be developed. Moreover, many young people in the village have migrated to foreign countries in search of work. The village’s young people should be able to use their knowledge to establish or take part in income generating activities. Education facilities and women targeted activities need to be further developed.

Table 5. Update on progress made towards the vision of the future that was created by the baseline study group (2011)

Resource discussed during baseline	Describe any progress in moving toward achieving this goal	What has helped in making progress (if any)	What has hindered progress (if any)	Who has helped and how
Forest			-Heavy use of forest resources for construction/household use/sales which leads to a decline in forest resources	Forests in Madhuri are mostly private. People value their immediate needs over the sustainable use of forests
Agri-cultural land	Increased access to facilities of irrigation and use of modern technology in the fields	Financial investments made by IDE Nepal (Creating Income and Livelihood Opportunities for the rural people), the government, Terai development forum and the community	Inadequate transfer of skills to the farmers	-Demonstrations organized by different projects of government/non-government agencies -Co-learning among farmers
School	Increased quality of education	Community effort	-Lack of competent teachers -Lack of funding	-Community's will to invest in the improvement of the school -Support from the Government
Health post	Transformation of the health post into a community hospital (more facilities, greater availability of doctors, 24 hr service)	Public interest and support from the Government of Nepal	-Weak management capacity -Lack of resources/investment	Awareness and realization among villagers of the importance of health and continuous effort to improve it.
Market	Establishment of own agricultural market near the village		-Lower production and lower level of income generated than expected leading to farmer dissatisfaction -Limited technical know-how and lack of support from government agencies on increasing skills -Weak supply of products in the market	Investment by local government

Table 6. New vision of the future developed during the midline study

Feature or resource discussed	Preferred condition for 2030	Opportunities	Constraints	Organizations to be involved
River	-Clean water in the river. -Continuous supply of water from the river round the year.	Better coordination between the local government and villagers Households increase their income generating and livelihood options	Dumping of industrial waste	Rural Municipality, Factories, Community
Farmland	-Increased farm production -Improved soil fertility -Good irrigation facility	Strengthened coordination between the local government and villagers Food security maintained	-Technical issues are less understood by Palika (local government) resulting in lower priority attributed to the issues -Lack of access to technical expertise	Rural Municipality
Road	-Wide and black topped roads around the village. -Trees planted at the roadside. -Well managed drainage canals.	Easy access to market, better access to irrigation	-People do not want to give out pieces of their land to make the road wider	Rural Municipality
Dam	-Bridge over the dam. -Establishing a green Park/garden. -Clean surrounding.	The area is developed as a recreational site to attract tourists and maintain good irrigation	People do not want to out give pieces of their land to expand the area for a park	Rural Municipality
Orchard	Mango Orchard	Increased production and sales in markets	Insufficient market demand.	Rural Municipality, Forest office
Pond	-Increased no. of water harvesting/fish ponds -Clean water in the ponds	Increased family incomes and better nutritional security	-Lack of land for ponds construction as farmers do not want to give pieces of their agricultural fields -Insufficient water sources	Rural municipality. Agriculture Development Bank/other investors
Forest	Increased forest coverage	Good availability of timber and forage	-Lack of awareness regarding sustainable use of forest resources - High deforestation -Open grazing	Forest Office, Rural Municipality, local community
Health Post	Facility comprises full time doctors and an Ambulance	-Better health services and facilities, easy access to medicines	-Lack of funding. -Lack of support from the state to the	Rural Municipality, State

			local government for such high-level investments	
Grassland	Protected grassland with higher availability of forage and fodder grasses -Improved regulations	Higher availability of forages	Idea conflicts with some farmers' desires as they want to continue open grazing.	Rural municipality, Forest Office
School	Public school offering high quality education	Quality education received, trained and skilled manpower	Lack of competent teachers. Lack of investments	Rural municipality, School Management Committee

Topic 2: Organizational landscapes

This section aims to show evidence of the existing organizational capacities that help address food security and manage resources. This will inform CCAFS on the level of preparedness of the village to respond to climate change related challenges and/or to other future challenges.

Specifically, this section presents the various formal and informal organizations involved in the community in general terms, including with respect to food security and natural resources management (NRM). It also elaborates on the types of activities the organizations are engaged in, their members' characteristics, perceptions of the organizations' usefulness, 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. The names were then written on cards and placed in the appropriate circle. Thus, the group placed in the inner circle represented the organizations that worked directly in the community, in the middle circle the organizations operating in the locality, and in the outer circle those the organizations that operated beyond the locality. See Photo 2 for an example of the activity carried out. The results are shown in the diagrams that follow. Following this structure, the men identified 15 organizations operating in the village while the women identified 11.

In Tables 7 and 8, more detailed information is provided on the five most important organizations as ranked by the men's and women's groups. Men listed the Omsatiya rural municipality/ward office as the top priority organization whereas Anucampa Agriculture Cooperative was ranked first by the women's group. The Omsatiya rural municipality/ward office provides key services for the agriculture sector from the provision of seeds, to inputs and machinery support. Anucampa provides loans for income generating activities as well as fertilizers. The Agriculture Development Bank, District Forest Office, Health Post, and Anucampa Cooperatives were ranked by the men's group. In contrast, ABC Nepal was ranked second by the women's group.

Photo 2. The organizational landscape activity in progress



Figure 1. Organizational landscape (according to the FGD conducted with men)

Legend	
1	Baijanath Community
2	ABC Nepal
3	Madhuri Multipurpose Agriculture Cooperative
4	Om satiya rural municipality
5	Redcross
6	Paurakhi Women Saving and Credit
7	Anucampa Cooperative Ltd
8	Mothers' Group
9	Basantapur Health Post
10	Forest Office
11	Drinking Water office
12	Small Farmers
13	Agriculture Development Bank
14	Muktinath Bank
15	Adolescence Group

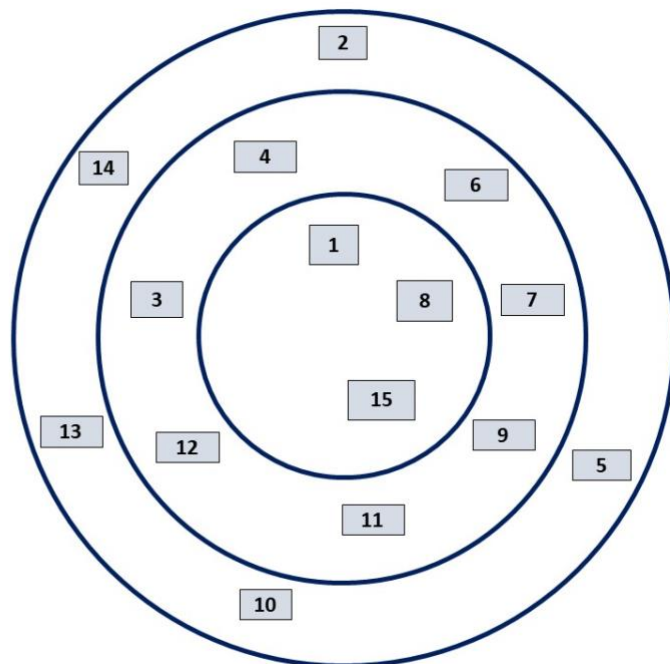
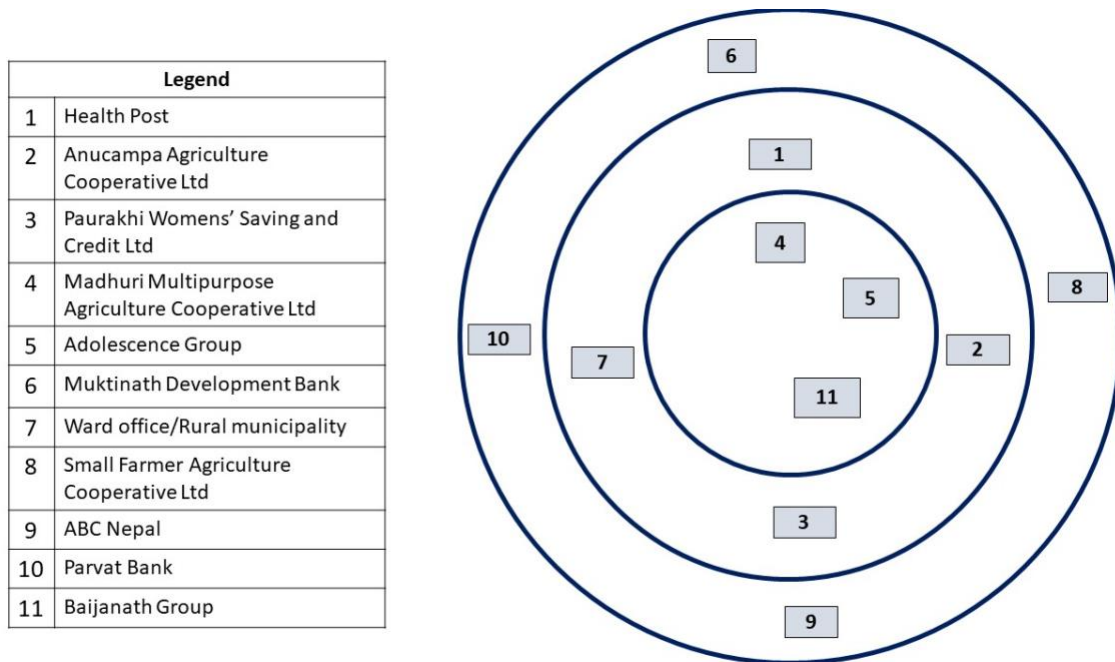


Figure 2. Organizational landscape (according to the FGD conducted with women)



Due to changes in the federal government structure, there have been significant changes in the structure of the organization in the midline. The district offices which were highlighted during baseline were not mentioned in the village midline study due to the change in federal structure and elimination of those offices. Cooperatives were noted as playing a key role during the midline study with community members benefitting from their services. The cooperatives provide access to subsidized seeds and fertilizers to the farmers. These cooperatives were formed 3-4 years ago and are now fully functioning in the village. A small number of cooperatives provide loans as well as saving and credit facilities to the villagers which have made investments in income generation activities easier.

Table 7. The five most important organizations (according to the men FGD)

Organization name	Main activities	Number of members (estimate)	Access (open or restricted to...)	Origin (indigenous, state, NGO, project)	Sphere of operation: community, local, beyond local	Sources of funding (members, external, both)	Existed how long (less than 1 yr, 1-5, longer)	Formal or informal
Omsatiya Rural Municipality/ Ward Office	Designs and implements the government's local development plans, including in sectors such as agriculture, infrastructure, health, education, employment etc. For farmers, it facilitates access to seeds, tools/equipment, training, market development opportunities etc.	NA	Open	Government	Beyond local	External (Govt of Nepal)	Longer	Formal
Agriculture Development Bank	Provides easy and soft loans to farmers especially agri-entrepreneurs	NA	Open	State	Beyond local	External	5 yrs	Formal
District Forest Office	Organizes events of afforestation/planting and sometimes provides fruit saplings	NA	Open	State	Beyond local	External (Government of Nepal)	Longer	Formal
Health Post	Provides medical services almost free of costs, such as childbirth, mini operations, treatment of numerous common health issues	NA	Open	Government	Beyond local	Government of Nepal	Longer	Formal
Anukampa Cooperatives	-Provides loans to farmers for agricultural and household purposes -Distributes subsidized	41	Restricted	Indigenous	Local	Members	Longer	Formal

	fertilizers and manure to farmers -Supports poorer families with higher subsidies, sometimes free of cost							
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Table 8. Information on the first five organizations ranked by the women

Organization name	Main activities	Number of members (estimate)	Access (open or restricted to...)	Origin (indigenous, state, NGO, project)	Sphere of operation: community, local, beyond local	Sources of funding (members, external, both)	Existed how long (less than 1 yr, 1-5, longer)	Formal or informal
Anucampa Agriculture Cooperative	-Provides loans to farmers for agricultural and household purposes -Distributes subsidized fertilizers and manure to farmers -Supports poorer families with higher subsidies, sometimes free of cost	41	Restricted	Indigenous	Local	Members	longer	Formal
ABC Nepal	-Provides loans for income generating activities -Supports poorer families in sending children to school -Helps community in various social events and utilities (organizing community events, constructing community taps, temples etc.)	27	Restricted	Indigenous	Beyond local	External	5 yrs	Formal
Health post	Provides medical services free	NA	Open	Government	Beyond local	Government	longer	Formal

	of costs, such as childbirth, mini operation, treatment of numerous common health problems					of Nepal	(20 yrs)	
Ward office/ rural municipality	-Coordinates all the development work of the Government of Nepal (agriculture, infrastructure, health, education, employment etc.) -Specifically for agriculture, the ward office support farmers with training, improved technologies, marketing supports etc.)	NA	Open	Government	Local	Government of Nepal	Longer (in the form of VDC)	Formal
Muktinath Development Bank	Provides collateral free loans to villagers (groups of farmers) whenever needed.	NA	Open	State	Beyond local	both	4 yrs	Formal

B. Organizational landscape of food security

The goal of this exercise was to improve the understanding of how the organizational landscape contributes to food security. Food security is mostly measured at the household level. Nonetheless, community-level organizations and social 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 organization they had previously identified by asking which of them had activities that fell under these categories.

The majority of the organizations identified by the groups in baseline were not listed during the midline study due to change in the federal government structure. Some of the organizations listed at the time of the baseline but not in the midline were organizations that had been dissolved due to lack of memberships. Some stopped functioning a long time ago. However, the majority of the organizations identified during the first part of the exercise were supporting food security. Organizations such as Madhuri Multipurpose Cooperative, the rural municipality, Paurakhi Women's saving and Credit, Division Forest Office, Anucampa Cooperative Ltd, Agriculture Development Bank, Health post etc. are all involved in food security. Among all listed organization, a large number of organizations were involved in ensuring food availability, followed by those working on access to food and food utilization. These organizations were involved in activities such as production and promotion of high yielding varieties, increasing the availability of inputs (seeds, tools, fertilizers), and several food programmes. Besides this, according to female participants, ABC Nepal was also one of the organizations working actively in food security. Both men and women reported that the health post has supported community people.

Figure 3. Organizational landscape surrounding food security in Madhuri (according to the FGD conducted with men)

- Food Availability
- Food Access
- Food utilization

Legend	
1	Madhuri Multipurpose Agriculture Ltd
2	Om satiya rural municipality
3	Paurakhi Womens' Saving and Credit Ltd
4	Forest Office
5	Anucampa Cooperative Ltd
6	Small Farmer Agriculture Cooperative
7	Agriculture Development Bank
8	Muktinath Bank
9	Health Post

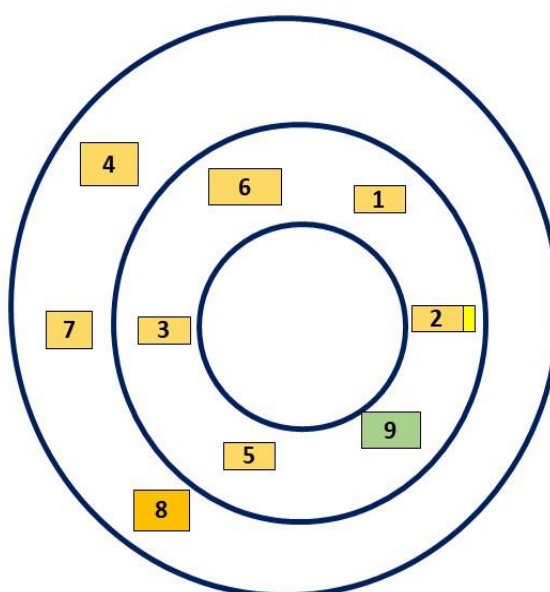


Figure 4. Organizational landscape surrounding food security in Madhuri - (according to the FGD conducted with women)

- Food Availability
- Food Access
- Food utilization

Legend	
1	Anucampa Agriculture Cooperative Ltd
2	Paurakhi Womens' Saving and Credit Ltd
3	Muktinath Development Bank
4	Ward office/rural municipality
5	Small Farmer Agriculture Cooperative
6	ABC Nepal
7	Health Post

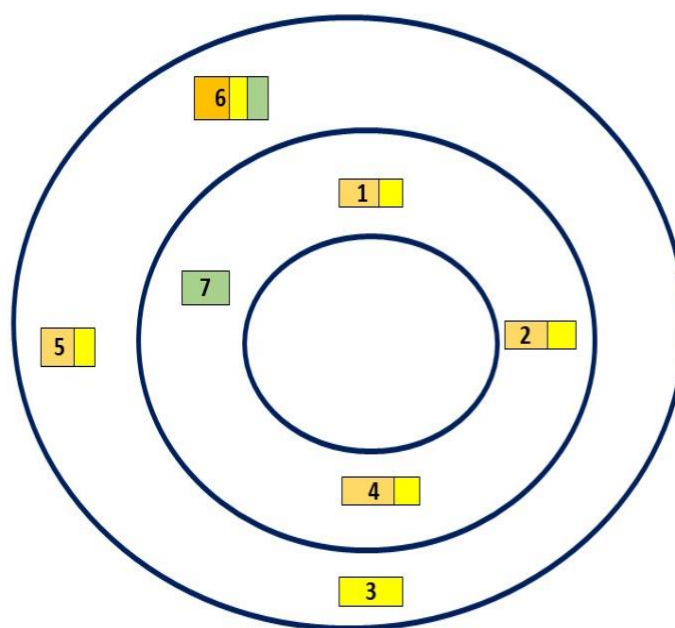


Table 9. Organizations that were not mentioned as part of the food security landscape during the midline study

Men	
Name of organization	Why were they not included in the midline organizational landscape
District Agriculture Development Office	Not included in the new federal government structure
Community Development Organization	Remained inactive for an extended period of time before being dissolved a few years ago
District Soil Conservation Office	Not included in the new federal government structure
District irrigation Office	Not included in the new federal government structure

Women	
Name of organization	Why were they not included in the midline organizational landscape
Bajjnath agriculture community centre	This organization has been dissolved due to members deformation
Durga community centre	This organization has been dissolved due to members deformation
Madhuri multipurpose farmer	Dissolved due to lack of members' time and engagement

group	
VDC	Not included in the new federal government structure
Livestock service centre	Not included in the new federal government structure
District agriculture development office	Not included in the new federal government structure

Table 10. Organizations that appeared in the food security landscape during the midline but not during the baseline

Men	
Name of organization	Why did they not appear in the baseline study
Rural Municipality/Ward office	The Ward office and the Rural Municipality offices were implemented recently as part of the new federal government structure in Nepal. Previously there was the Village Development Committee (VDC) but it did not work on resource management. These were handled previously by the district level government offices (soil conservation, agriculture office etc.).
Nepal Red Cross Society	The work done in recent years by the Nepal Red Cross Society to increase flood resilience through land management techniques has been noticed by villagers.
Drinking Water Office	The work done by the drinking water office in managing water sources has been noticed by villagers in recent years.
Agriculture Development Bank	The Agriculture Development Bank has started working in this area only four years ago.

Women	
Name of organization	Why did they not appear in the baseline study
ABC, Nepal	ABC Nepal was not very active in the past with most of the people not aware of its existence.
Ward office/ Rural Municipality	The offices were implemented recently as part of the new federal government structure in Nepal.
Muktinath Development Bank	The bank started working in this region only five years ago.
Paurakhi saving and credit group	It was established recently. The women's district development office facilitated the establishment.
Small Farmers agriculture cooperative organization	Saving funds in a cooperative or a Bank was not so relevant in the past. Now, an increasing number of people are involved, which is why Small Farmers and other cooperatives have emerged.

C. Organizational landscape of natural resource management

In this section, the organizational landscape in relation to natural resource management (NRM) is discussed. Specifically, the organizations that were actively working to protect the environment or manage natural resources. The process entailed asking the groups to first highlight the organizations involved in natural resource management in the community, then developing a list of natural resources important to the livelihoods of the community, and finally asking the groups to decide on a symbol for each type of natural resource listed.

Due to change in the federal government structure, many organizations mentioned in the baseline have either stopped functioning or have been dissolved. The men's group identified five different

organizations working in natural resource management, namely Omsatiya rural municipality, Red cross, Forest office, Drinking water office, and Agriculture Development Bank. In contrast, the women’s FGD group identified only one organization working in natural resource management, namely the rural municipality (Figure 5 & 6). The main activities implemented by these organizations included canal and dam construction and maintenance for irrigation purposes, training on integrated agricultural practices, raising awareness on tree plantation, training on home gardens and organic farming etc. The organization mentioned by the women’s group at the time of the baseline (Jyoti Youth Club) has been dissolved because of the limited number of youths in the village so it was not mentioned during the midline study. However, the villagers noted a lack the coordination between the organizations working in natural resource management and the villagers and they stressed their inability to benefit from these organizations.

Figure 5. Organizational landscape of natural resource management (according to the men’s FGD)

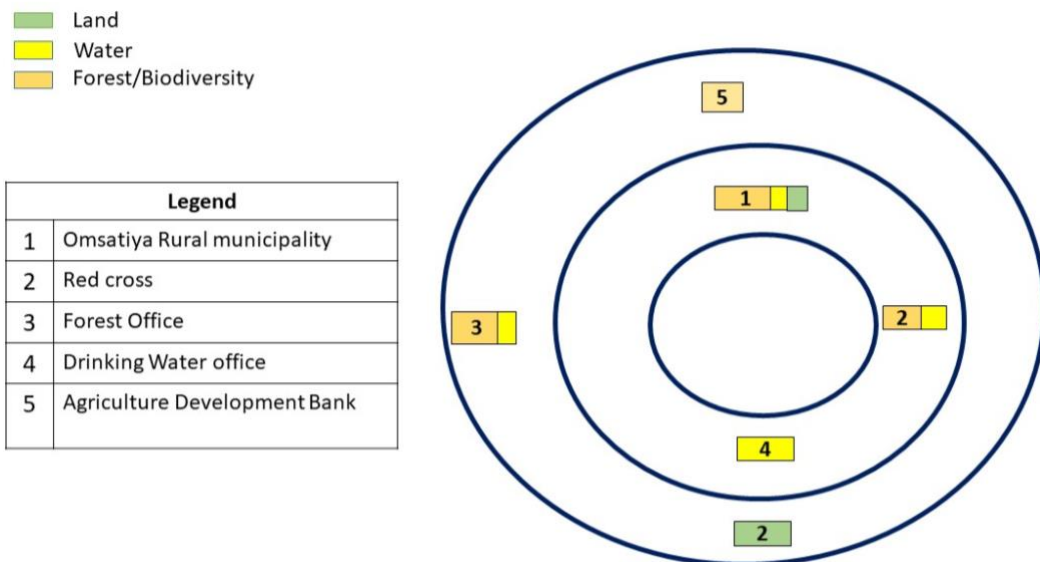


Figure 6. Organizational landscape of natural resource management - (according to the women’s FGD)

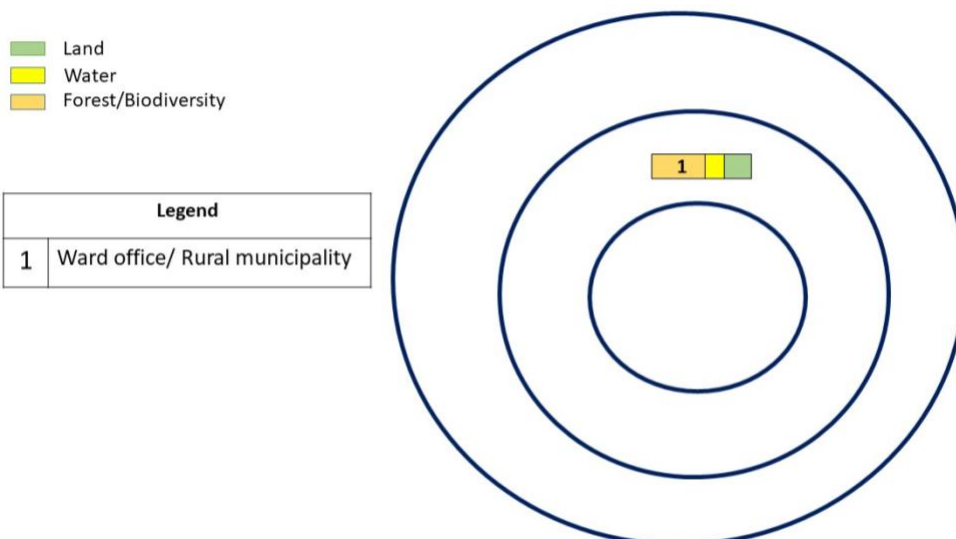


Table 11. Organizations that did not appear in the NRM landscape during the midline study

Men	
Name of organization	Why were they not included in the midline organizational landscape
District Agriculture Development Office	Not included in the new federal government structure of Nepal
District Development Committee	Not included in the new federal government structure of Nepal
District Office of Water Hazards and Control	Not included in the new federal government structure of Nepal
District Soil Conservation office	Not included in the new federal government structure of Nepal
District Irrigation Office	Not included in the new federal government structure of Nepal

Women	
Name of organization	Why were they not included in the midline organizational landscape
Jyoti youth club	The club has been dissolved due to the limited number of young people in the community.

Table 12. Organizations that appeared in the NRM landscape during the midline but not during the baseline

Men	
Name of organization	Why did they not appear in the baseline study
Rural Municipality/Ward office	The Ward office and the Rural Municipality offices were created with the new federal government structure. Previously, there was the Village Development Committee but it was not very involved in issues of resource management. All those sectoral works were previously handled by the district level offices (soil conservation, agriculture office etc.).
Nepal Red Cross Society	The work done in recent years by the Nepal Red Cross Society to increase flood resilience through land management techniques has been noticed by villagers
Drinking Water Office	The work done by the drinking water office in managing water resources has been noticed by villagers in recent years.

Agriculture Development Bank	The Agriculture Development Bank has started working in this area only four years ago.
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Women	
Name of organization	Why did they not appear in the baseline study
Rural Municipality	The Rural Municipality office was created with the changed federal government structure. There used to be the Village Development Committee instead. Yet, it was not listed as part of the NRM institutions, probably due to a lack of engagement in such activities and limited funding and plans.

D. Gender differences between the organizational landscapes identified

Table 13 below summarizes information on all the organizations identified separately by male and female participants. The organizations are classified according to their role in supporting food availability, access and/or utilization and the management of natural resources.

Table 13. Information on mentioned organizations by the men's and women's group (unless otherwise noted, 1=yes, 0=no)

Organizational Landscape	Men					Women				
Name of organization	Org. ID by men	Sphere. 1=village 2=locality 3=Beyond locality	Food security	Food crisis	NRM	Org. ID by women	Sphere. 1=village 2=locality 3=Beyond locality	Food security	Food crisis	NRM
Omsatiya Rural Municipality/Ward Office	1	2	1	0	1	1	2	1	0	1
Agriculture Development Bank	1	3	1	0	1					
District Forest Office	1	3	1	0	1					
Health Post	1	3	1	0	1	1	2	1	1	
Anukampa Cooperatives	1	2	1	0	0	1	2	1	0	
Paurakhi Women Saving Group	1	2	1	0	0	1	2	1	0	
Madhuri Multipurpose Agriculture Group	1	2	1	0	0	1	1	0		
ABC Nepal	1	3	0	0	0	1	3	1	1	
Nepal Red Cross	1	3	0	0	0					
Mukthinath Development Bank	1	3	1	0	0	1	3	1	0	
Small Farmers	1	2	1	0	0	1	3	1	0	

Agriculture Cooperatives										
BaijanathSamudayikSanstha	1	1	0	0	0	1	1	0	0	
Mothers Group	1	1	0	0	0					
Office of Drinking Water	1	2	0	0	1					
Kishori Samuha (Group of Adolescent Girls)	1	1	0	0	0	1	1	0	0	
Parvat Bank						1	3	0	0	

Topic 3: Information networks

The aim of this exercise was to understand the various mediums through which people access agriculture and weather-related information; how people act vis a vis of these information sources, and if some sources are not used and why. The baseline report described the networks through which people access and share information within the community. The current midline study investigated whether these networks have changed.

Various sources of information were identified by the men's and the women's groups. Women identified relatives and agro-vets as the most common sources of information whereas cooperatives, internet and other information and communication technologies were the most frequently used sources of information for men. The information and knowledge on markets, weather, seed selection and spacing were prioritized by the men. Both groups know that they can receive information from the rural municipality but they do not visit the municipality and hardly ever receive information through that medium.

Table 14. Networks of information as identified during the baseline study (1=yes , 0=no)

Information source	Topic (men)				Topic (women)				Total
	Weather	Fertilizer	Seed	Livestock	Weather	Fertilizer	Seed	Livestock	
Friends/ Relatives	1	1	1	0	1	1	1	0	6
Neighbour	0	1	1	1	0	1	1	0	5
Astrologist/ priest	1	0	0	0	0	0	0	0	1
Animal Dev Office	0	1	1	0	0	1	1	0	4
Animal health service centre	0	0	0	1	0	0	0	0	1
Radio/TV	1	1	1	0	1	1	1	0	6
Observation	0	1	1	1	0	1	0	0	4
Agro-vet	0	1	1	0	1	1	1	0	5
Trainings	0	1	1	1	0	1	1	0	5
Field visit/tour	0	1	1	0	0	1	1	0	4
Total	3	8	8	4	3	8	7	0	

Table 15. Changes in the sources of information for different types of information as mentioned in the men's group.

Type of information	New sources of information that have become available	Sources of information that are no longer used
Improved Seed selection	Internet, newspaper	Radio
Fertilizer use	Anucampa Cooperative	Radio
Soil and crop selection	Rural Municipality, Newspaper	NGOs

Table 16. Changes in the sources of information for different types of information as mentioned in the women's group.

Type of information	New sources of information that have become available	Sources of information that are no longer used
Fertilizer	Mobile phones	Radio
Improved seed	Rural municipality	District Agriculture Development Office
Livestock raising	Rural municipality	Livestock Service Centre

Table 17. New types of information mentioned by men and women

Type of information	Mentioned by men / women
Weather	Men
Market	Men
New Technology	Both Men & Women
Insect and disease management	Men

Conclusion and recommendations

Madhuri village is located in the Omsatiya rural municipality (former Basantapur Village Development Committee) in the Rupandehi district. This district is well developed with roads, electricity, communication and health facilities. The availability of water resources has significantly increased in the village. Danda river is the main source of irrigation for the villagers. Dams have been constructed since the baseline. The main cropping pattern in Madhuri village are Rice-Wheat, Rice-Mustard followed by vegetable cultivation. The villagers have adopted few agricultural practices such as drip irrigation, solar irrigation, zero tillage in wheat with support from different organizations. The farmers in the village are moving towards commercial vegetables cultivation. They are planning to construct vegetables collection centre with the support of the local government. The number of private

forests, that is owned by an individual, has increased compared to the time of the baseline. Irrigation is no longer a big problem as sufficient irrigation is provided through the canals and underground borings systems have been established. The problem of grazing livestock has been minimized. The development of gravelled roads within the village has improved transportation systems and eased access to markets for the villagers.

Madhuri village's vision for the future comports an improved health facility and education system. In the agricultural sector, the villagers envision closer coordination among the different stakeholders including in the sectors of agriculture, irrigation, forest and so on which would work to make the village self-sustained and improve livelihoods.

There are several organizations working in Madhuri village. Through the focus group discussion, the men's group identified 15 while the women's group identified 11 organizations working in the village. All of the organizations listed are working in the fields of agriculture, finance, saving and credits, health, water resource management, livestock etc. Cooperatives are supporting people mainly for saving and credits purposes. They also provide loans to people to carry out agricultural activities. Similarly, people are provided with fertilizers, improved seeds and some capacity building training which has enhanced the farming systems in the village. However, the groups often lack information on new innovations and technologies and have felt a need for support from the rural municipality in the agriculture and livestock sector. Lack of technical manpower in the rural municipality is also a major challenge. Coordination of groups among the stakeholders is weak.

Due to the federal government structure, the villagers are not able to receive proper crops and livestock related information. They rely mainly on agro-vets and newspaper. Some young members received information on improved seeds, timing of plantation of seeds, new technologies, insect and disease management techniques through the internet. People have realized the value of accessing markets as the villagers are moving towards commercialization. In this case, they are planning to establish collection centres within the village.

Implications for CCAFS and recommendations of major opportunities

Various organizations were working at the community level. Women benefitted more from the services provided by these organizations. The level of information and knowledge on technology is lacking and there is an urgent need for more information related to the agricultural and livestock development sector. CCAFS work should focus on climate change adaptation practices, conservation

of the natural resource management, sustainable agriculture and improvement of the livelihoods of the Madhuri people.

This area has a high potential for commercial vegetable production. People are facing common markets related issues. CCAFS could work on developing effective market strategies. The young people carry a huge potential for agricultural development. Youth related work can bring about transformational change in the agricultural sector. The young people are well aware of the negative impacts of climate change, so effective activities can be developed to make the village climate smart.

During the past years, the villagers have benefitted from different organizations, however, strategies to link these groups with government agencies viz; Nepal Agriculture Research Council, rural municipality, division forest office, etc. and institutions can strengthen their capacity. More training on improved seeds of cereals, legumes, oil seeds, integrated plant nutrient management system, integrated pest management, organic farming can play a vital role for the villagers. Awareness programmes on climate change, climate smart agriculture and climate smart villages need to be strengthened.

Vegetable farming within the village is an activity that can be scaled up. However, focus on climate change adaptation activities including training and sensitization need to be prioritized among the group members. The problem of the conservation of the forest area needs urgent consideration. The community possess d strong social cohesion among its members with villagers having a positive attitude towards new initiatives.