

Conflict and Climate Vulnerability and Capacity Analysis (CCVCA)

Ségou region, Mali



GENRE+II PROJECT

Strengthening climate resilience, social cohesion and gender equality in Ségou, Mali
Segou, Mali

CARE International in Mali
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ACRONYMS

CBA	Community-Based Adaptation
CCVCA	Climate and Conflict Vulnerability and Capacity Assessment
COFO	Land Commission
CSEGCA	Monitoring, Evaluation, Knowledge Management and Learning Advisor for Care
DRR	Disaster Risk Reduction
ES	Ecosystem Services
FCDO	Foreign and Commonwealth Office
GRN	Natural resource management
LLA	Locally-Led Adaptation
MJT	Musoka Jigiya Ton in Bambara (VSLA)
NTFP	Non-Timber Forest Products
PACA-CC	EU Adaptation Action Plans - Climate and Conflict
PDSEC	Social, economic and cultural development plans
PNCC	National Policy on Climate Change
RGA-P	Rapid gender analysis on power and participation
RGPH	General Census of Population and Housing in Mali
VSBG	Gender-based sexual violence
VSLA	Village Savings and Loan Association

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EXECUTIVE SUMMARY

The Ségou region of Mali is experiencing a steady increase in impacts from climate change, such as more erratic and reduced rainfall, increased temperatures, intensified seasonal flooding when rains do occur, and increased incidence of human and livestock diseases. These impacts interact with population pressures and natural resource management challenges to affect historical land use practices, such as agriculture and pastoralism, in the semi-urban and rural communes within the cercles of Baraouéli, Bla and Ségou. In these communes, women engage in a range of livelihood and subsistence activities related to natural resources, such as market gardening and forest product harvesting, often significantly augmenting household income. Therefore, it is important to include women in conflict resolution mechanisms over land and water, accounting for a scenario where climate impacts are predicted to intensify.

The Genre++ project, funded by the UK's Foreign, Commonwealth and Development Office (FCDO), works with communities to identify and address interrelated causes and impacts of climate vulnerability, conflict and gender inequality. A novel Climate and Conflict Vulnerability and Capacity Assessment (CCVCA) tool was used to carry out a rapid participatory analysis of vulnerabilities and adaptive capacity with representatives from 12 communes in Ségou region (144 female, 156 male) from 9 to 20 March 2023. This report summarises the results of this analysis, discussing how climate change has interacted with other economic and demographic pressures to create tensions around natural resource management. It also details the community members' current responses, as well as their recommendations for future action.

Key recommendations from the analysis:

Across governance levels in the Ségou landscape, from village councils to local and national government authorities, there is a need to build understanding and integrate adaptation to climate impacts into natural resource management and conflict mitigation mechanisms

Climatic shocks have intensified in frequency and severity across the 12 communes. The fragility of social bonds at household and village level has increased due to changing pressures, including these climatic changes and population growth. Conflicts arise over the use of scarce land resources for pastoralism and agriculture (all communes), forest resources (10 communes), and harvested Non-Timber Forest Products (NTFPs) such as shea nuts (5 communes). Decision-makers in all spaces related to the management of these resources must be empowered with climate information necessary for them to be forward-looking, with a good understanding of current and predicted risks, augmenting the adaptive capacity necessary for resilience.

Establishing more formal and recognised channels for women's input to land and water management is a precursor to overall resilience, as women are involved in many livelihoods dependant on natural resources

The participatory assessment clearly shows that women play an active role across all natural resources on the study landscape, especially agricultural production and NTFP

harvesting. Although men are traditionally viewed as the main implementers of farming (millet, sorghum and maize), in all communes women play an integral role through all stages of production. Market gardening, the production of vegetables and fruits for resale, is nearly completely carried out by women in all 12 communes. Women are also the primary harvesters of NTFPs such as shea nuts and mangoes. While cattle rearing is generally a male activity, it is women who generally raise small ruminants for sale (sheep, goats). Further, the analysis shows that women engage in these livelihoods activities while performing all household and family chores without the support of men. However, women have little influence in decision-making bodies related to NRM and related conflict resolution, often reduced to a token presence. This gap must be addressed, especially as women and girls in all communes are facing greater food insecurity, susceptibility to diseases and exposure to gender-based violence and risky livelihoods as a result of reduced yields and less income.

Existing systems and institutions for women's empowerment and inclusion provide a strong entry point for adaptation in many communes

There is at least one women's group per village within each of the 12 communes. The majority are women's empowerment groups led by committed female leaders (Village Savings and Loan Associations [VSLAs], or Musoka Jigiya Ton [MJT] in Bambara), and these are especially effective at the neighbourhood and community level, providing spaces where women seem to have collective influence. Building the capacity of proven women leaders and women's groups to understand climate risks, impacts, adaptation mechanisms and peacebuilding techniques will provide dividends beyond the project's cycle.

Careful consideration must be given to how women are facilitated to take part in adaptation efforts, as the intensification of gender-based violence is a risk

The impacts of conflict and climatic hazards, including rural-urban migration and famine, affect women, girls and children more than men in the project communes. With regard to women's participation in decision-making related to NRM, we find that they still face socio-cultural constraints and patriarchal control of resources and decision-making, which is based on the assumption that women are weak, cannot interact with men as equals, and have no rights to land. Moreover, women who are NTFP harvesters or market gardeners have reported that they could face verbal abuse or come into conflict when trying to assert usage rights over these resources, with some women even reporting household-level conflict and gender-based violence in extreme cases.

Existing locally-led adaptation actions must be recognised, and established state and communal structures for community-based adaptation should be strengthened

Men and women within communes already implement community-based solutions in response to climatic and conflict drivers, often with the support of technical and financial partners and local authorities. This demonstrates an adaptive capacity that can be further strengthened. For example, the existence of formal and informal spaces for dialogue and conflict mediation within communities, the establishment of savings associations and self-help groups by women at village level, the planting of trees to demarcate fields and reduce conflicts between farmers, the use of organic fertilisers to better improve their harvests

and reduce the costs associated with purchasing chemical fertilisers, and use of drought-resistant seed varieties, among others.

The prevention and reduction of the rapid degradation of natural ecosystems, especially forested land, is a priority, as adaptation and resilience efforts hinge on functioning ecosystems and sustained ecosystem services

Across all communes except Baraouéli and Kalake, communities are coming into conflict over forest resources, as a result of unplanned agricultural expansion, deforestation for timber trade, and degradation of natural ecosystems. For instance, loggers (community members who exploit the forests for fuelwood and by-products [charcoal] as a livelihood) come into conflict with women who practice livelihoods such as shea nut harvesting, as there are now conflicts over increasingly scarce shea trees. These activities, combined with the further impacts of climate change, could seriously erode community resilience, as ecosystem services like soil quality maintenance and barriers against natural disasters become affected. Effective land use planning and protection of forest resources in the Ségou region is critical for climate adaptation.

Traditional values that prioritise conflict resolution can be leveraged for resilience, especially where inequalities and mistrust exists

Peacebuilding is an integral part of Malian values and culture, and the idea of frank and sincere dialogue to resolve conflicts resonates with many people on an individual level. Initiatives focused on gender, climate adaptation and peacebuilding should take these cultural values into account, and frame vision, objectives and activities around the promotion of peaceful living.

Adaptation efforts should be sensitive to possible escalations in conflict in regions outside Ségou

Although communes in this study didn't identify direct impacts of the conflict in northern parts of Mali as a factor that increased their risks or vulnerabilities, and did not report the influence of militia groups in their localities, the security situation remains tense throughout the country. Any efforts towards climate adaptation and resilience must account for the possible escalation of violence in future, and intensification of conflicts in the Ségou region.

1 INTRODUCTION

In March 2023, CARE undertook a Climate and Conflict Vulnerability and Capacity Assessment (CCVCA) in twelve communes in the Ségou region of Mali, as part of the UK FCDO-funded GENRE++ project, which aims to strengthen climate change adaptive capacity and gender equality for overall social cohesion in the cercles of Baraouéli, Bla and Segou. To achieve this, this second phase of the project aims to (i) improve governance in natural resource management (NRM), making it more inclusive, consensual and collaborative, (ii) revitalise traditional conflict prevention and management mechanisms and strengthen community-based adaptation to reduce vulnerability to climatic and social shocks, and (iii)

transform negative gender norms to ensure the inclusion of women in strategic decision-making spaces related to NRM and peacebuilding. The project will consolidate the achievements of the first phase of the project in building equitable natural resource management and social cohesion, while deepening the focus on conflict prevention and management through vertical and horizontal scaling.

The aim of the CCVCA is to help communities themselves understand the problems they face due to the interrelated causes and impacts of **climate vulnerability, conflict and gender inequality**, and to identify **entry points for community-led solutions** to build inclusive and sustainable climate resilience and social cohesion.

This report presents the main findings of the CCVCA with the aims of:

- Strengthening understanding of the interrelationships between the causes and impacts of climate vulnerability, conflict and gender inequality in the intervention areas;
- Proposing community solutions and strategies to address these risks;
- Informing the development of Community Adaptation Action Plans (CAAPs) and WLiE Action Plans (WAPs) in 12 municipalities, with the aim of influencing local development plans (PSDECs) to build inclusive climate resilience and peace in the region.

Community-based climate and conflict adaptation action plans (C-CCAAPs) enable communities to make their own collective decisions on priority actions to better adapt to climate change and conflict and to develop inclusive and peaceful responses to them. C-CCAAPs contain priorities and adaptation plans agreed for and by different groups.

WLiE Action Plans (WAP): Women Lead in Emergencies is a five-step model for supporting groups of women directly affected by crisis to participate and lead in emergency preparedness, response and recovery in and beyond their communities. Women's groups collectively identify their own goals, barriers to and strategies for participation and leadership to create WLiE Action Plans. Women's groups then deliver on those action plans, using budgets under their control, to enable crisis-affected women to have control of the design and implementation of project activities and learning, with the support of CARE and partners.

1.1 Context

1.1.1 Climate data and projections

Mali can be divided into 6 major agro-ecological zones¹. Segou belongs to the Semi-arid/Sudanese Savannah agroecological zone (Figure 1, from GIZ). However, microclimates vary considerably from one zone to another. In general, the Segou region, with a population

¹ The GIZ study notes that there are different classifications of agro-ecological zones (AEZs) in Mali, and it focused on a commonly used classification of 6 AEZs.

of 2,785,676², is characterised by millet and sorghum as dominant cereal crops, often in rotation with cotton, maize, groundnuts or cowpeas. Annual rainfall varies between 450 and 700 mm in the Segou region³, and is irrigated by two rivers: the Niger and the Bani. Temperatures generally vary between 27°C and 40°C. The rainy season lasts about 3-6 months, historically May to October.

The Segou region is partly covered by the Inner Niger Delta, an inland wetland ecosystem of global importance that is the largest in West Africa. In the Inner Niger Delta, more than one million people use the floodplains for rice cultivation, fishing and livestock grazing. Segou is also rich in forest resources, and tree species are usually preserved in parklands and village forests.



Figure 1 Topographic map of Mali with existing agro-ecological zones and rainfall patterns (after GIZ) ⁱⁱⁱ

According to USAID (2018)⁴, historical climate trends for Mali are as follows:

- An increase in average annual temperatures of 0.7°C since 1960;
- Rapid decline in precipitation from the 1950s to the 1980s, with a partial recovery from the 1990s;
- Below-average precipitation for the period 2000-2009 (-12 per cent compared to the 1920-1969 average);
- Increased frequency of warm nights and decreased frequency of cold nights in all seasons except December-February;
- Increased frequency of Harmattan dust storms in central and northern Mali.

² INSTAT. 2015. ENQUETE MODULAIRE ET PERMANENTE AUPRES DES MENAGES (EMOP): Premier Passage 2014. Bamako, Mali

³ Waldman and Richardson, "Confronting Tradeoffs Between Agricultural Ecosystem Services and Adaptation to Climate Change in Mali", 2018. Available online: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5985716/>

⁴ USAID, "Climate risk profile: Mali", 2018. Available online: https://www.climatelinks.org/sites/default/files/asset/document/Mali_CRP_Final.pdf

In terms of projections for the future, climate parameters have been analysed for Mali by GIZ⁵, according to different climate scenarios called Representative Concentration Pathways (RCP) (summarised in Annex 1).

Under the medium emissions scenario, temperatures in Mali are predicted to rise by 2.2 °C in 2030, 2.8 °C in 2050 and 4.0 °C in 2080, with northern Mali experiencing even higher temperatures. Rainfall variability is difficult to predict, but in general, the models show a trend towards increased heavy rainfall and frequent extreme weather events (floods and droughts) in the south, and decreased rainfall and accelerated desertification in the north. The models also predict a decrease in the average annual river flow in the Inner Niger Delta by the 2050s, as well as a decrease in the extent of flooding during the peak months of July to September.

At present, the decline in water resources is mainly due to population growth, but it highlights the urgency of investing in water saving measures and technologies for future water consumption. Taking into account population growth according to the SSP2 projections⁶, per capita water availability in Mali is expected to decrease by 77% by 2080 compared to the year 2000 in both scenarios. As crops are predominantly rainfed, yields depend on the availability of water from rainfall and are subject to drought. However, the duration and intensity of the rainy season is becoming increasingly unpredictable, and the use of irrigation facilities remains limited.

The following sectors are vulnerable to these climate change impacts:

Agriculture - As Mali's crops (both subsistence and commercial) depend mainly on rainfall, any variability in rainfall could affect crop yields. A significant increase in temperature would further exacerbate losses, as soil moisture is reduced and desertification increases. This leads not only to the loss of arable land for agriculture, but also to the loss of pastureland. In addition, the conflict in the north could interact with higher temperatures to change access to pasture and the extent of herders' land, leading to increased conflict between herders and farmers. Adaptation strategies such as switching to improved varieties of climate-sensitive crops need to be considered, but must be carefully balanced against the negative consequences, such as the decline in agro-biodiversity and the resulting loss of local crop types.

Health - Livestock diseases, such as Rift Valley Fever, as well as disease vectors, such as mosquitoes and ticks, could change distribution and/or spread in this warmer, drier climate.

Water resources - With rising temperatures, increased evaporation and rainfall variability, inflows and the extent of flooding in the Inner Niger Delta (including Segou) are expected to decrease. The Segou region is dependent on the Bani River, and runoff in this tributary is

⁵ GIZ, "Climate Risk Profile: Mali", undated. Available online: https://www.pik-potsdam.de/en/institute/departments/climate-resilience/projects/project-pages/agrica/climate-risk-profile_mali_en

⁶ Shared socio-economic pathways (SSPs) describe potential futures at the global scale, including estimates of general characteristics such as population, GDP or urbanisation rate at the country level. Five different SSPs describe future realities based on a combination of high and low future socio-economic mitigation and adaptation challenges. SSP2 represents the "middle of the road" pathway.

expected to decrease over the course of this century. The long-term implications of water allocation decisions and climate change on water are unclear and need to be studied in more detail.

Ecosystems - The Inner Niger Delta is expected to face increased soil erosion, desertification, recurrent droughts, salinisation and desiccation due to climate change (USAID). Further, Mali's annual deforestation rate is 500,000 ha per year, and the interaction of this land degradation with climate impacts will affect soil fertility and crop production further, impacting the ecosystem service provisioning and the livelihoods of local communities⁷.

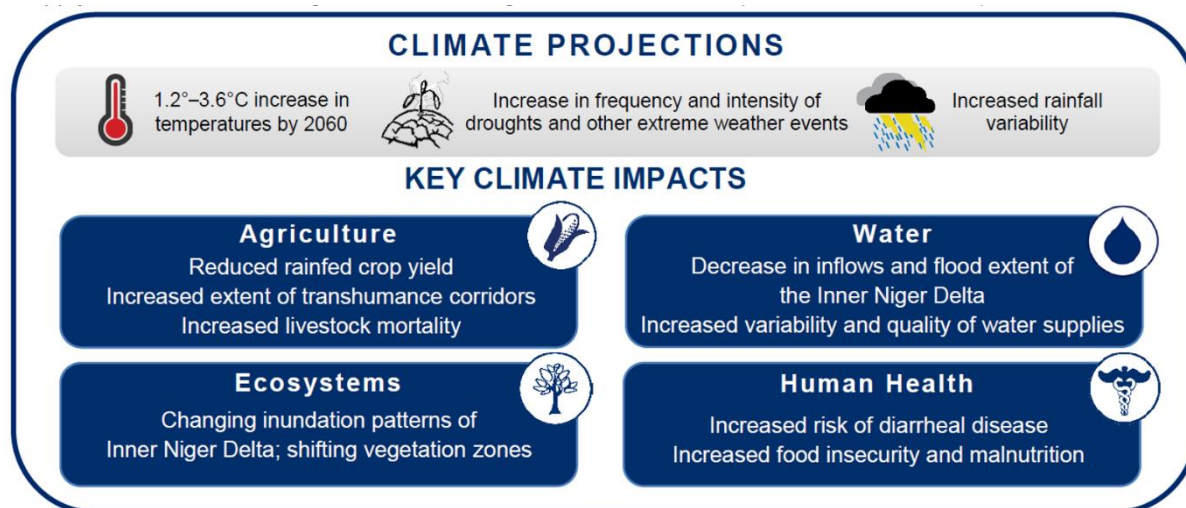


Figure 2 Summary of climate projections for Mali (from USAID, 2018)

1.1.2 Livelihoods

80% of the Malian population is engaged in small-scale agriculture, and these agricultural activities (mainly subsistence) are vital for food security⁸. Agriculture is the main means of livelihood in central and southern Mali. Most of this land is rain-fed, as only 1% of the total national cultivated area was equipped for irrigation in 2013⁹. Small-scale farmers and herders - which are generally small, informal family businesses that receive little economic support - are highly dependent on rainfall, which amplifies the shocks to livelihoods.

Many rural Malian smallholder communities are patriarchal and men make most of the agricultural decisions for the household, although women are often the food providers for the family. Nationally, women make up 40% of the agricultural workforce but own 10% of the land, although national legislation aims to protect and promote women's land ownership¹⁰. In Mali, it is common for women to manage land separate from the main

⁷ Toure et al. (2020) Land degradation along a climatic gradient in Mali: Farmers' perceptions of causes and impacts (Land Degradation and Development). <https://onlinelibrary.wiley.com/doi/full/10.1002/ldr.3683>

⁸ FAO, "Country Fact Sheet on Food and Agricultural Policy Trends: Mali", Rome, Italy, 2017. Available online: <https://www.fao.org/agrifood-economics/publications/detail/en/c/1132142/>

⁹ Ibid.

¹⁰ McOmer, C. (2020). Women and climate change in the Sahel (West African Papers 27). <https://tinyurl.com/xntk7y3x>

agricultural fields, commonly referred to as market gardens, producing small quantities of cereals or vegetables for household consumption or sale. These cereals are often combined with women's main crops, such as cowpeas or groundnuts, and the dependence on access to the local market makes women highly vulnerable to the effects of climate change and conflict¹¹.

In addition, pastoralism is another crucial economic sector in Mali, particularly in the arid north. The 2015 annual report of the Ministry of Livestock and Fisheries estimates that pastoralism and livestock trade and products account for 15.2% of Mali's GDP - behind agriculture (16.2%), but ahead of gold mining (7.2%). Widespread environmental degradation and soil erosion in Mali have also led to the loss of grazing land.

Pastoralism is strongly influenced by the topography of the country and the distribution of rainfall in its different ecological zones. The availability of water and pasture is determined by the presence of rivers, the depth of groundwater, rainfall and the topographical distribution of grasslands. The pastoral way of life was once an effective way of coping with rainfall variations and drought in Mali, but unpredictable rainfall has put this way of life into question.

1.1.3 The drivers of the conflict in Segou

There are 3 broad types of conflict identified for Mali: 1) conflict related to production systems and over natural resources, 2) conflicts over state control and governance, and 3) conflicts arising from the prevailing situation of insecurity in the country. These types are interrelated, and one can lead to the mitigation, aggravation or stabilisation of another. According to USAID, 90% of conflicts in Mali are related to land management with multiple causes¹². Here, access to and control of agro-pastoral areas and poor governance around land management (including the corrupt behaviour of some state agents in complicity with local community leaders) are the root causes of the current scale and intensity of inter-communal and inter-professional (farmer and herder) conflicts in Mali.

The local governance of natural resources takes place with the backdrop of the instability that erupted in Mali in 2012, which led to interventions by the French government, the African Union, and the United Nations (MINUSMA - The United Nations Multidimensional Integrated Stabilization Mission in Mali). There is now escalating violence in Central Mali, which officially constitutes the regions of Ségou, Koulikoro and Mopti¹³, with more violent conflict centred at present in Mopti. The crisis has led to an almost complete absence of public administration outside the regional capitals¹⁴. Competition for pasture is greatest

¹¹ Waldman and Richardson, "Confronting the trade-offs between agricultural ecosystem services and climate change adaptation in Mali", 2018. Available online: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5985716/>

¹² USAID [Conflict Analysis Study in 45 Communes](#), Draft Final Report, USAID Mali Peacebuilding, Stabilization, and Reconciliation Programme April 2019

¹³ Rupesinghe, N. & Bøås, M. (2019). Local drivers of violent extremism in Central Mali. <https://tinyurl.com/yuxxf8bv>

¹⁴ UNOWAS, "Pastoralism and Security in West Africa and the Sahel", 2018. Available online: https://unowas.unmissions.org/sites/default/files/rapport_pastoralisme_eng-april_2019_-_online.pdf

along the river Niger and in the Inner Niger Delta, and as violent conflict has slowly migrated from northern to central Mali since January 2015, there have been implications for pastoralism and agriculture, and could potentially affect many people in central and southern Mali¹⁵. Conflict-related displacement, climatic shocks and food insecurity have contributed to an estimated 8.8 million people requiring humanitarian assistance in Mali in 2023, a 17% increase over 2022 (UN Security Council, 2023)¹⁶.

The Ségou region has competition for resources between subsistence groups (farmers, herders and some fishermen). Stray animals, conflicts over grazing land, theft of livestock and a general lack of access to fertile land all contribute to conflict. Additionally, there are conflicts over increasingly scarce forest resources found in village forests and parklands, as rates of deforestation and agricultural encroachment have increased¹⁷. In a USAID study of 45 communes in Segou, climate change was the most frequently cited reason for resource conflicts, although the inability of those in power to address and manage the declining availability of productive land for farmers and herders was also a key factor¹⁸. While the state is much more present and active in Segou than in most other regions, local governance remains weak. These include problems of corruption in the way leaders are elected, widespread injustice and impunity, and conflicts between political parties.

In the past, natural resource-related conflicts between pastoralists and farmers were resolved relatively peacefully. However, in recent years, armed Islamist groups have exploited the grievances of pastoralists, leading to escalating tensions between the groups and the formation of ethnically aligned vigilante groups. These confrontations over natural resources have thus become deadly, as vigilante groups have filled the state vacuum by taking over security. These instances are still rare in the Segou region than in areas such as the Mopti region, but there are concerns over the slow migration of the conflict towards the Southern parts of the country. With two military coups since 2020, and the next (potentially delayed) polls scheduled for 2023, as part of the country's return to constitutional order by the first quarter of 2024, the political context continues to be turbulent for the Malian people.

1.1.4 Governance structures

Currently, Mali has strong policies on climate change mitigation and adaptation, namely the National Policy on Climate Change (PNCC), July 2011. The PNCC is accompanied by a strategy and an action plan.¹⁹The Malian government is responsible for natural resource management through the Ministry of Environment and Sanitation, the Ministry of Agriculture, the Office du Niger and the Service National des Eaux et Forêts.²⁰Under the supervision of the Ministry of Territorial Administration and Local Authorities, local

¹⁵ Ibid.

¹⁶ [Report of the UN Secretary-General on the situation in Mali](#), March 2023

¹⁷ Toure et al. (2020) Land degradation along a climatic gradient in Mali: Farmers' perceptions of causes and impacts (Land Degradation and Development). <https://onlinelibrary.wiley.com/doi/full/10.1002/ldr.3683>

¹⁸ USAID [Conflict Analysis Study in 45 Communes](#), Draft Final Report, USAID Mali Peacebuilding, Stabilization, and Reconciliation Programme April 2019

¹⁹ [REPUBLIC OF MALI \(un.org\)](#)

²⁰ [REPUBLIC OF MALI \(un.org\)](#)

authorities have powers in the areas of environmental protection, preparation of land use plans and development operations for communal areas, land and property management, and organisation of agricultural, forestry and pastoral activities.

The Water and Forestry Service is the service accredited by the State to support and monitor the management of natural resources. In Mali, the management and monitoring of natural resources are assigned to local authorities (at commune, cercle and regional levels). The Commune is responsible for managing its forest estate through the exercise of the following powers: conservation of water and soil and protection of forest species, conservation of the plant cover and of production forests, development and monitoring of natural resources and forests, forest development and management, management of forest exploitation, and management of the exercise of use rights. It also ensures the management of its wildlife domain through the exercise of the following powers: the conservation of wildlife and its habitat, the exploitation of wildlife and its habitat. It also controls and monitors its forestry and wildlife areas. The Communes, Cercles, Régions and District, in the exercise of their specific powers, benefit from the advisory support of the regional and sub-regional deconcentrated services of the Central Department in charge of forest and wildlife resource management.

The Social, Economic and Cultural Development Plan (PDSEC) is the instrument for harmonious planning of development actions by local authorities (Communes) and is implemented by the Communal Council headed by the Mayor. As such, it defines all the objectives, strategies and short-term actions adopted by the local authority with a view to contributing to the economic, social and cultural development of its population, in accordance with the powers devolved to it for a period of five years.

However, resources for implementation at the local government level have been limited. The state's technical services, such as water and forestry management agencies, suffer from chronic understaffing and even more practical problems for existing staff, such as lack of fuel to visit communities on motorbikes. In general, environmental governance suffers from the lack of an 'enabling environment', including the general administration of the rule of law, protection of human rights and public participation.

Currently, agricultural policies and local governance have a direct impact on interactions between farmers and herders. There is generally an overlap between customary and substantive law²¹. In addition, there are socio-cultural constraints where some people find themselves marginalised by social hierarchies and classes, where the social order is challenged by young people and women who aspire to work outside traditional and oppressive values, particularly in the north.

Natural resource governance in the Segou region, as in all regions of Mali, is an important issue given the high dependence of communities on natural resources for their livelihood and well-being. The main natural resources in the project's communes of intervention are agricultural land, pastures, forests and wildlife resources. The management of these resources is carried out by different governmental and non-governmental structures, as well as by local communities. Several NRM and conflict management governance and

²¹ FAO, "Mali - Analysis of conflicts over natural resources: Summary", 2021. Rome.

decision-making structures are active. This includes state-instituted structures such as the Land Commission (COFO) and Village Chief's Councils. Non-state structures include Conflict Prevention and Management Committees (CMCs); Waterpoint Management Committees, Forest Watch Committees, as well as the Coordination of Women's Associations and NGOs of Mali (CAFO) and Communal Youth Committees, although all these structures may not be present in every commune. However, typically set up as part of aid project activities, parallel CMCs can be established, with no official recognition, and difficult to maintain after a project has ended.

In the municipalities, the decision-making spaces consist of:

- The city hall for communal matters, these spaces are formal and attended by communal elected representatives, which are predominantly male in all communes;
- **Youth centres dealing with** various community issue, which are formally managed by the local youth councils. Positions are acquired through elections;
- **The vestibules of the village chief** for various community issues, which are considered formal and managed by the village councils. Positions are acquired by appointment or in the case of the village chief are heredity;
- **Household heads**, who act as primary decision-makers for household-related problems, which are considered informal spaces;
- **Women leaders'** houses for women's issues.
- In addition, in some communes, the **sub-prefectures** were cited for administrative decision-making (Baraouéli, Konobougou, Sanando, Bla).

Access to these spaces depends on age, marital status, community trust, gender and heredity right. Within communes, the most marginalised people are those with little access to arable land, members alienated through family conflict, and those living in disaster-prone areas such as floodplains. These people can be farmers or herders, they can be men or women, Muslims or Christians, or other ethnic groups. In all communes, age and gender are factors that can determine access to certain community places or sites, such as sacred places and forbidden sites. In most cases, these are forbidden to women and children, and on rare occasions to certain ethnic groups (Peulhs and Bambara in Bla).

In terms of infrastructure, the main services and resources available in the 12 communes are similar, with the exception of the semi-urban communes (Bla, Sakoïba, Konobougou and Baraouéli) which have police stations or gendarmeries. Apart from these cases, all the communes have the following services and resources: agricultural land, forests, pasture, road infrastructures, health centres, town hall, markets, drinking water points, mosques, churches, cellular network branches, and schools. Some of the main towns are electrified, notably Konobougou, Baraouéli, Bla, Sanando and Cinzana. Most services are accessible to all, but distance may work against the villages furthest from the main towns.

1.2 Methodology

To achieve the objectives of GENDER++, CARE developed and piloted the first rapid CCVCA in Segou, adapted from CARE's proven CVCA and RGA-P models and incorporating simple conflict analysis tools. The CCVCA provides an integrated approach to analysing the relationships between climate, conflict and gender dynamics to help communities understand, reflect and collectively consider solutions. The CCVCA has also been adapted to be carried out quickly, in two days (per commune), using simple and accessible tools for communities.

The CCVCA was carried out in 12 communes from 9 to 20 March 2023 by a team of 5 junior consultants recruited and trained by CARE's teams in Mali. One team of two consultants (one woman and one man) facilitated the workshops in 6 communes and the other team of 3 consultants (2 men and one woman) facilitated the other 6 communes. During the implementation of these workshops, the Senior Project Officer and the CSEGCA carried out supervision missions to support the different teams in the proper execution of the workshops, below the distribution of participants during the workshops.

Table 1 Distribution of participants by gender, actor and municipality

N°	Circles	Communes	Number of villages	MEN LEADERS			WOMEN LEADERS			
				Elected Commune official	Village chief	Committed man	Representative of a farmers' organization	President of the VSLA or CAFO village network	A woman from VSLA	A woman farmer or rancher
1	Baraouéli	Baraouéli	4	1	4	4	4	4	4	4
2	Baraouéli	Kalake	4	1	4	4	4	4	4	4
3	Baraouéli	Konobougou	4	1	4	4	4	4	4	4
4	Baraouéli	Sanando	4	1	4	4	4	4	4	4
5	Bla	Benguene	4	1	4	4	4	4	4	4
6	Bla	Bla	4	1	4	4	4	4	4	4
7	Bla	Kemeni	4	1	4	4	4	4	4	4
8	Bla	Touna	4	1	4	4	4	4	4	4
9	Segou	Cinzana	4	1	4	4	4	4	4	4
10	Segou	Konodimini	4	1	4	4	4	4	4	4
11	Segou	Sakoiba	4	1	4	4	4	4	4	4
12	Segou	Samine	4	1	4	4	4	4	4	4
ENSEMBLE			48	12	48	48	48	48	48	48

N ^o	Circles	Communes	Number of villages	MEN LEADERS			WOMEN LEADERS		
				Elected Commune official	Village chief	Committ ed man	Representative of a farmers' organisation	President of the VSLA or CAFO village network	A woman from VSLA
				156 Men			144 Women		

In each commune, during two-day workshops, participants were encouraged to use eight tools to assess (see Annex 1): 1) climate vulnerability and trends; 2) causes and trends of conflict; 3) the role of gender in the impact of these trends on men, women, boys and girls and their capacity to respond; 4) the relationships between the causes and impacts of climate vulnerability, conflict and gender inequality; and 5) solutions to address them. These include tools such as community and climate risk mapping, seasonal calendars, historical calendars, conflict mapping, climate and conflict trees.

The workshops included a mix of working group sessions and plenary discussions, with working groups composed only of women and men to allow for different perspectives. Participants took note of issues that particularly divided (between whom) and/or created links (between whom), and of people/organisations that were seen as trustworthy and able to build bridges. Emphasis was placed on the possibilities and flexibility/adaptability to the needs and sensitivities of the different participants.

This report was also informed by two primary data assessments undertaken in early March 2023 in 8 of the 12 project communes in the cercles of Baraouéli, Bla and Ségou:

- A conflict assessment to determine why and how community tensions arise in the intervention areas, who community members rely on and what services/mechanisms they use to resolve problems (through a survey of 176 households in 16 villages within 8 communes - see Annex 3).
- A rapid gender analysis of power and participation to assess the main barriers to women's participation and leadership in public decision-making, and the entry points for addressing them in order to enhance their active participation in project outcomes (see Annex 4).

2 OBSERVATIONS OF CLIMATE CHANGE AND CONFLICT IN THE SEGOU REGION

2.1 Climate risks and trends

2) Kobakorot emeleu: Samine

Kobakorot emeleu	KESaw	KISaw			Kob/ou
		angyara	akisa Yara	adjuu yard	
Ku Filanniou	1973			X	saya
Kajabana	1989			X	Mogow sara FINEbila Dowla
Joni	1973			X	Denmiseni saya AFI hebila Dowla
Jabite kogog	1974			X	Kogon, banaw Sagaw sihorobla
Fihebile	1985			X	Mogow ni torala bagaw sara jiri dow be na
Ja	2000			X	KOKO, Fatanja, banaw
Baganbama	1984			X	Bagaw sara Kogon Banaw

Image 1 Historical chronology of the commune of Samine

Through the historical chronology activity of the CCVCA, it was observed that climatic risks have become more and more frequent over the last twenty years in the project's communes of intervention, according to the communities, due to the unpredictable nature of the climate, with sometimes heavy rain and sometimes very little rain. These risks have a negative impact on the local populations who are largely dependent on agriculture and livestock. This can also lead, according to the communities, to famine for households because of low agricultural yields due to heavy rains or low rainfall, loss of human life and livestock due to flooding and hunger, and displacement of populations due to flooding (detailed in Annex 6).

- **Drought:** The communes experience a prolonged dry season, which can last up to eight months. Rainfall is often irregular and insufficient, which jeopardises agricultural production. Drought is also understood by the communities to mean

periods of low rainfall that lead to aridity of the soil and therefore low agricultural production. All the communes have suffered from cyclical droughts: 1955, 1973, 1984, 2002 and 2022. Historical droughts have left their mark on all communities, such as the death of livestock, reduced household production and income, rural-urban migration of able-bodied people and disease.

- **Flooding:** Many communes have experienced floods with unexpected frequency (Baraouéli, Kalake, Konobougou, Sanando, Benguene, Bla, Touna, Konodimini and Sakoïba), and the floods of 2021 and 2022 have resulted in the destruction of crops, low crop yields, food insecurity, destruction of houses, and increased poverty in households. Following these floods as a climate risk, communities are struggling to recover due to insufficient capacity in preparedness and available adaptation plans. Communities also reported that the rainy season is now late to start. In the last two decades, rains have started in June and July, whereas in the 1990s and early 2000s, they would start between May and June.
- **High temperatures:** the Segou region is located in a very hot area, where temperatures can exceed 40°C. This heat leads to heat stroke and health problems for the local population.
- **Desertification:** the communes are subject to strong environmental pressure due to desertification. Soil degradation, overexploitation of land and deforestation are all factors that lead to a loss of biodiversity and aggravate climate risks.

Communities have also been affected by other major disease events that are often similar from one commune to another, including cholera, meningitis, measles, COVID 19, and animal diseases. As climate change exacerbates disease risks due to better conditions for pathogen and vector spread, some of these may be related to drier conditions or flooding.

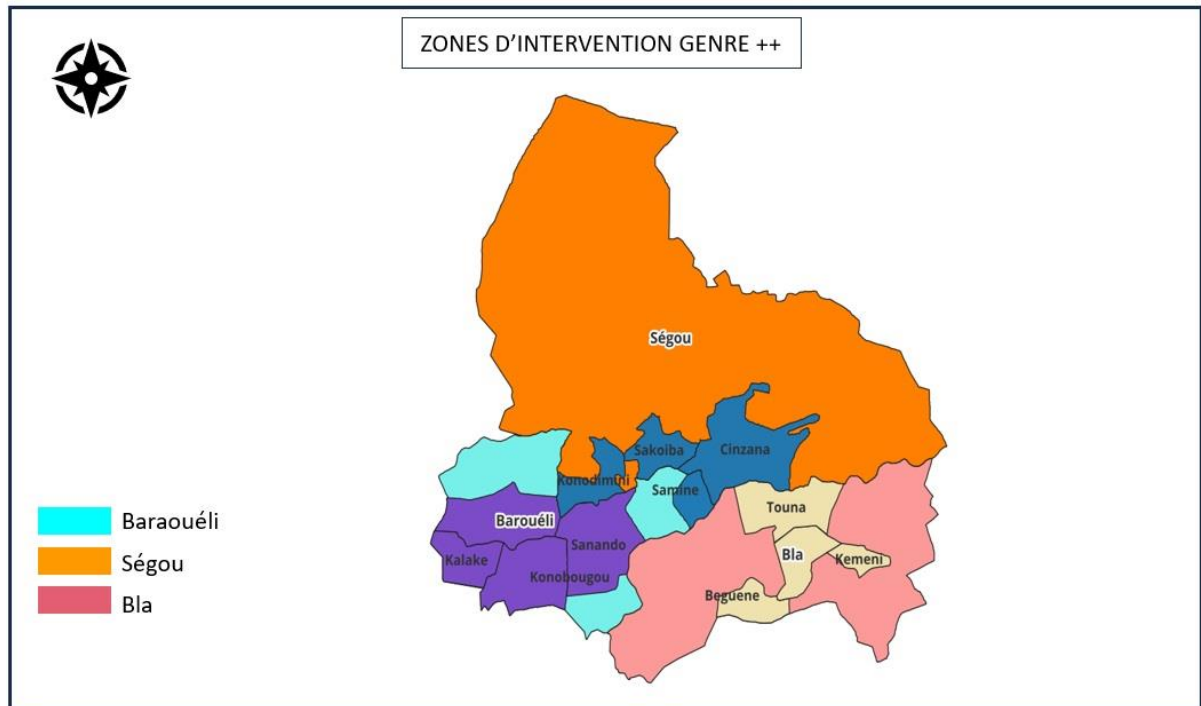
- **Cholera** is an acute intestinal infection caused by the bacterium *Vibrio cholerae*, which is spread mainly through contaminated food and water. The disease was cited by participants in the communes of Baraouéli, Konobougou, Samine and Touna, although it is likely that other communes also experienced it during the same periods (1997, 2012, 2014).
- **Meningitis** is an inflammation of the membranes surrounding the brain and spinal cord, caused by viruses, bacteria or other infectious agents. Participants from the communes of Benguene, Bla, Cinzana, Sakoïba and Samine were able to highlight this disease at different times (2015, 2018).
- **Measles** is a highly contagious viral disease that is spread by respiratory droplets and can lead to serious complications, particularly in malnourished or unvaccinated children. In this project's communes, measles has only been reported in the Baraouéli, but it remains a disease that has bereaved many people in Mali (2019, 2020).

Deforestation was mentioned as a risk by participants in the communes of Baraouéli, Kalake and Sanando, although it was also considered a human cause. Periods of severe drought remain the most common trends in the 12 project communes, and have become increasingly frequent in recent years.

Some climate impacts felt by each type of stakeholder include:

- **Herders** - a lack of passage for their animals, a lack of grazing, and the loss of animals.
- **Market gardeners (usually women)** - a drop in income due to lower yields and lack of access to a market, a lack of fencing and insufficient water
- **Farmers** - decline in yield and income that is most felt; conflicts with herders who let animals roam on their land due to lack of pasture elsewhere

Image 2: map of intervention areas



2.2 Climate-conflict dynamics

The main activities in the communes are subsistence farming (April to October), including millet, sorghum and maize; market gardening (January, March to May, October to December); cattle and sheep rearing (year-round); and food and first necessities trading (year-round).

Through the climate-conflict analysis tool, we found that the main conflicts identified by communities are related to natural resource management, namely land conflicts, forest resource conflicts and conflicts over harvested products. Data from the CCVCA and secondary research suggest that this is due to a combination of increased pressure on dwindling natural resources (due to climate risks and population pressures) as well as poor governance in land management.

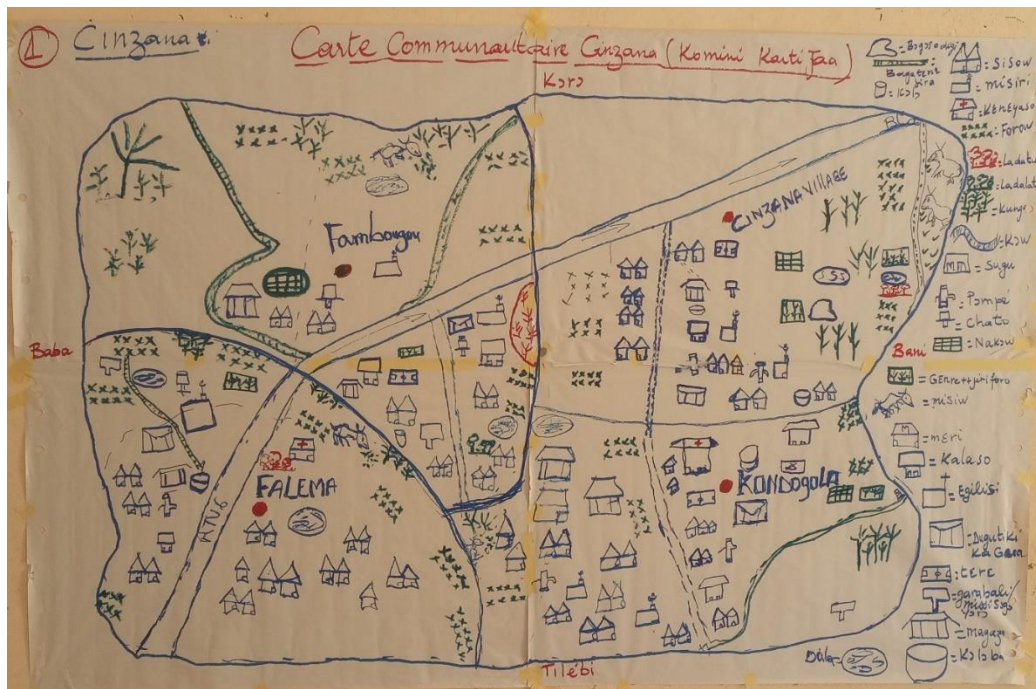


Image 2 Community map of the commune of Cinzana

Through conflict mapping, participants mapped the relationships between groups and the critical issues that define these relationships. It is important to note that the information from the different communes is very similar depending on the type of climate challenges identified. The primary types of conflict identified were:

a) **Land conflicts (all 12 communes)**

These are considered to be the most frequent and are found in all communes to varying degrees. The main actors in these conflicts are large-scale farmers, small-scale subsistence farmers, herders, village chiefs, market gardeners, women and youth. Farmers and the village chiefs tend to be the actors with the most power in these situations. Other actors involved in these conflicts, including in mediation or negotiation, are local administrative authorities, technical services, NGOs or projects. The main causes of land conflicts are population growth, climate change, pressure on land, unsustainable agricultural practices, inadequate management of natural resources and privatisation of land. We can distinguish between land conflicts related to private land and those related to communal property:

Land disputes on private land are usually related to the illegal sale or occupation of land. Disputes may arise when buyers discover that the land they have purchased has already been sold to someone else or when they lack legal ownership documents. Conflicts can also arise between illegal occupants and legitimate owners who seek to reclaim their land. In communities, the main landowners are farmers and they are the main actors in land conflicts related to private property. Their motivation is usually to protect their property and ensure that they have continued access to their land. There may also be conflicts that arise between farmers themselves over the delimitation of their fields, between herders and farmers over insufficient grazing sites or insufficient animal corridors, or animal roaming. In recent years, this shortage of grazing sites in the project's communes, like in other localities in the Segou region, is due to a combination of factors, notably population growth, land degradation, the effects of climate change (especially drought and resultant

desertification) which are reducing the amount of grazing for livestock, and the growth of agriculture.

With regard to land conflicts on communal properties, conflicts often arise when different parties claim the same land for different uses such as grazing livestock, building houses, or cultivating land. Community land conflicts can be very complex and difficult to resolve as there are often historical, cultural and economic considerations at play. Land conflicts between farmers and herders are common in communities in the region, particularly when herders seek pasture for their livestock and farmers lose their cropland. Conflicts can also arise when pastoralists, who are accustomed to using common grazing lands, are excluded from these lands by farmers who claim them as their private property.

These conflicts, often **intra-community (between a few households or ethnic groups within the same locality)**, can also be **inter-community (between the communities of two or more villages)** and even between two communes. The reasons given by the various communities are diverse and include the extension of cultivable areas; the lack of animal crossings; animal roaming; the absence of pastoral tracks; the illegal appropriation of land; the impoverishment of the soil; and demographic pressure on resources. With a population that has increased significantly in recent decades, population growth has led to increased land use in rural areas, which has led to the loss of forest land and soil degradation. The expansion of agriculture has also led to increased soil degradation. Farmers have used traditional farming methods, such as land clearing, which have led to the destruction of forest areas and the conversion of fertile land into dry and unproductive land. In addition, the practice of monoculture, growing the same crop over a long period of time, can deplete the soil and make it less fertile. Additionally, higher temperatures and erratic rainfall have led to a reduction in vegetation cover, which is a key factor in maintaining soil fertility.

In the communes, land management is often synonymous with discord because the traditional and communal authorities often give themselves redistribute and determine usage of communal spaces without community consultation, and the management of conflicts between two parties by these bodies are sometimes deemed unsatisfactory or partial. As a result of these land conflicts, communities report reduced production and household income due to the non-exploitation of a given area, rural exodus of able-bodied people to better support their households in the event that the field is not exploited, and a lack of understanding and trust between the populations or parties in conflict.

a) Conflicts over forest resources (all communes except Baraouéli and Kalake)

These conflicts usually take place around the cutting of wood for timber sale or for charcoal, and are most frequent between the loggers themselves, but also between loggers, forestry officials, and other community members like farmers and women. These actors, with the exception of forestry officials, are all members of the resident or neighbouring communities. These conflicts or misunderstandings between actors are increasingly frequent in recent years within the communities because of the depletion of trees, a palpable effect of deforestation and unsustainable use of forest resources, which can lead to environmental degradation and damage to livelihoods. Another reason is the increase in the number of timber and charcoal harvesters in the communities, as this is a fairly profitable activity for the people concerned.

With the exception of the communes of Baraouéli and Kalake, all the other communes identified this type of conflict as a frequent tension in their commune. The dynamics of

conflicts related to forest resources have remained high over the last three years in some communes (Konobougou, Benguene, Bla, Kemeni, Touna, Konodimini, Sakoïba, Samine), while they have increased in other communes over the last two years (Sanando, Cinzana). The period of the year when these conflicts are highest is between March and May, depending on the commune. This is because, although exploitation of wood and wood by-products (charcoal) takes place throughout the year, it intensifies before the start of the rainy season (the rainy season in the Segou region is generally between June and September), leading to conflicts between the exploiters and also with water and forestry agents.

Regarding the problems encountered by each actor, we note a lack of trust from the village chiefs towards the water and forestry agents and often towards external actors. When herders are limited to feeding their animals with only tree and shrub leaves, some of their animals die. Therefore, herders really feel the need for more grazing space and pasture. Producers suffer from a lack of social cohesion as they are accused of land grabbing and do not accept to share land with other actors, while loggers feel a decrease in income due to deforestation, which leads them to conflict among themselves but also with other actors. Women are also confronted with a loss of income from wood exploitation, as well as facing violence and a loss of material during the implementation of these activities. Regarding the impact of forest resource exploitation, the communities point to the disappearance of plant and animal species, deforestation, drought, and misunderstandings between communities leading to violence and material damage.

b) Conflicts over NTFPs (communes of Baraouéli, Sanando, Kalake, Konodimini and Sakoïba)

The most recurrent conflicts at this level are related to the collection of mangoes and shea nuts. Communities often compete for access to these products, leading to disputes and quarrels. Women may come into conflict with other women over access to these resources, but they are also increasingly exposed to social exclusion and verbal abuse from men (farmers, loggers, herders, village councils) over harvesting practices, as shea trees have become scarce due to deforestation, and some women resort to harvesting from trees on private land. These conflicts have decreased in the last two years in these communes compared to the first year as people have become more collaborative, creating informal agreements to pick fruit only from pre-designated areas, but tensions remain.

c) Other types of conflict

Members in all communes reported on conflicts that were more personal or individual in nature, such as quarrels over women, disagreements between spouses in the home for various reasons, family conflicts, conflicts of interest, leadership conflicts and political conflicts. These types of conflicts occur throughout the year.

Through these workshops, we notice that in the communes the project is active in, conflicts related to the management of water resources were rarely mentioned by the participants. We can deduce from this that these resources could either be non-existent (because irrigation systems have not been set up) or that the communities manage to get along better on the issues related to their management. In none of the communes did the communities mention conflicts related to the management of water resources (river or

marigot). There are Water Point Management Committees (WPCs), but they are set up by the communities to manage a specific community drinking water point in the village (drinking water supply, borehole, castle, etc.).

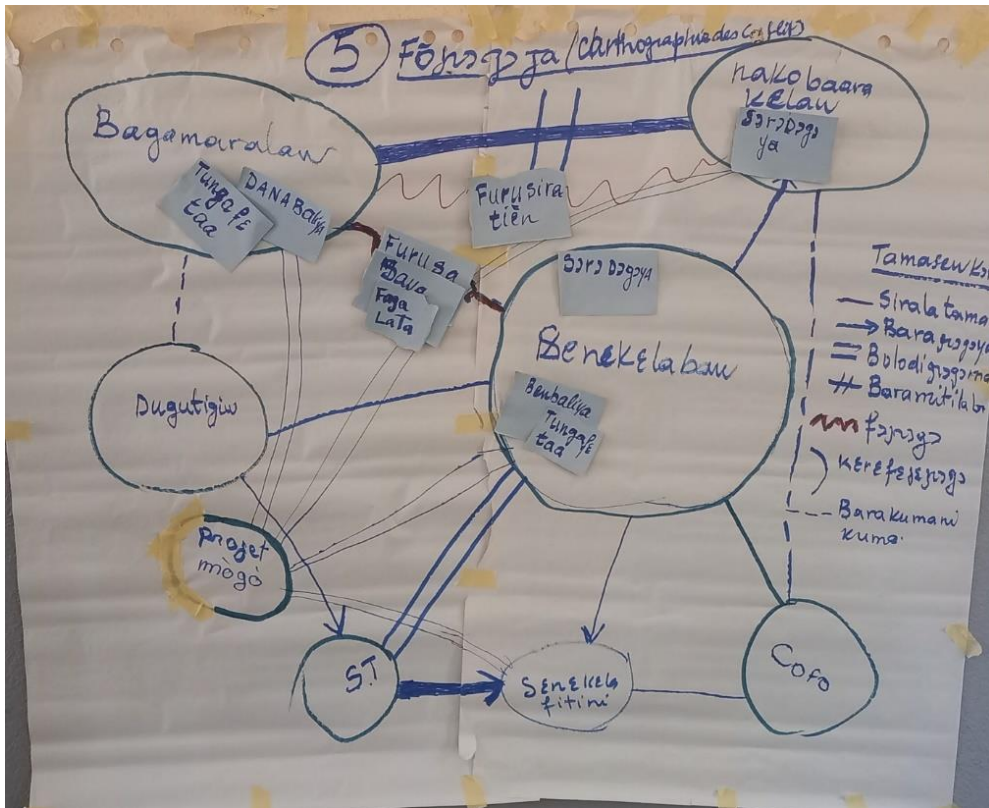


Image 3 Conflict mapping in the commune of Touna

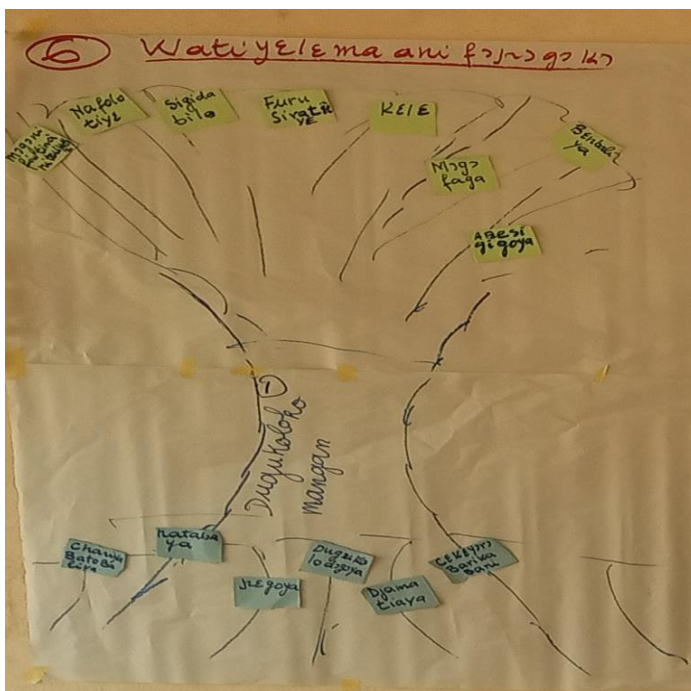


Image 4 Climate and conflict tree of the commune of Bla- Using the conflict and climate tree tool, participants from different communities were able to identify the main problems they face, their causes but also the different impacts they feel.

The following is a representative summary of conflicts and climate trees related to land conflicts, drought and floods respectively.

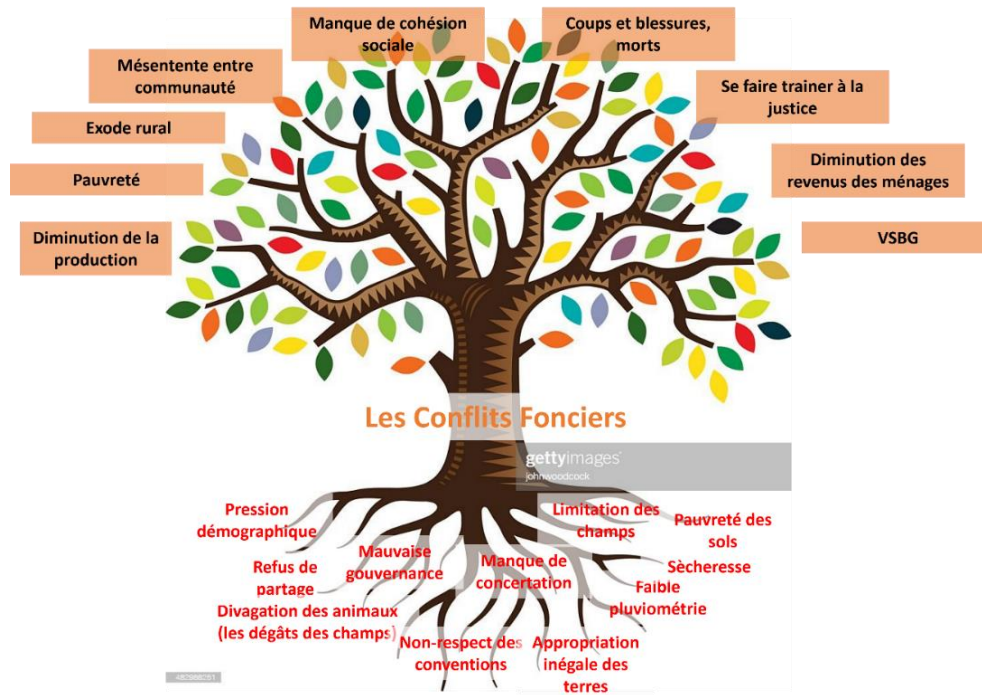


Image 5 Summary of the causes and effects mentioned by the communes in relation to land conflicts

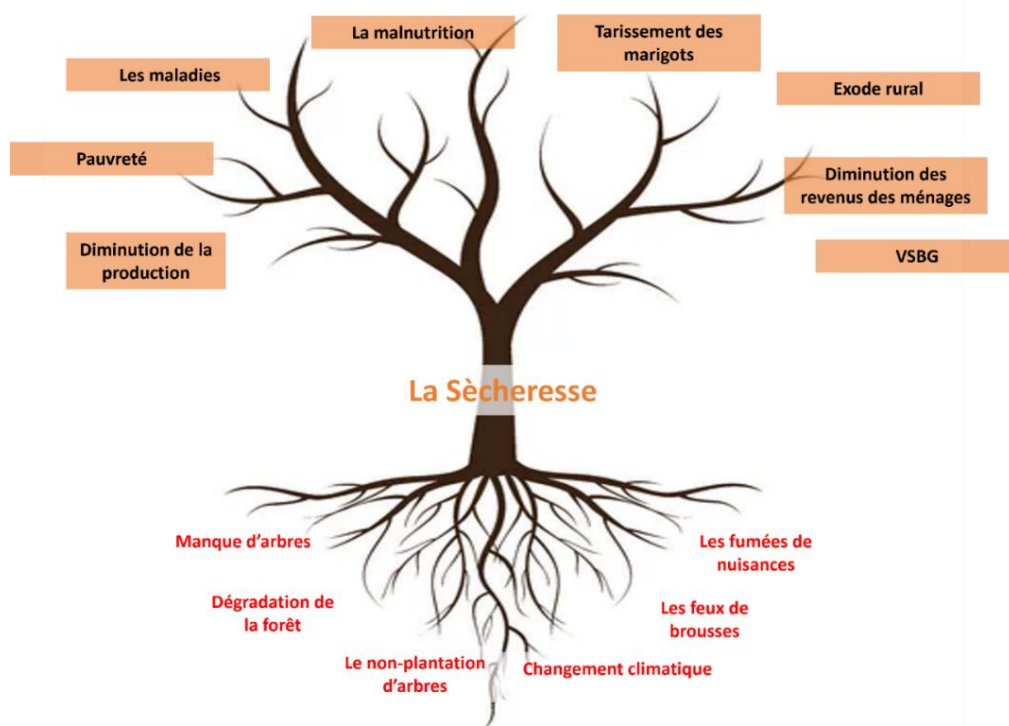


Image 6 Summary of the causes and effects mentioned by the municipalities in relation to drought

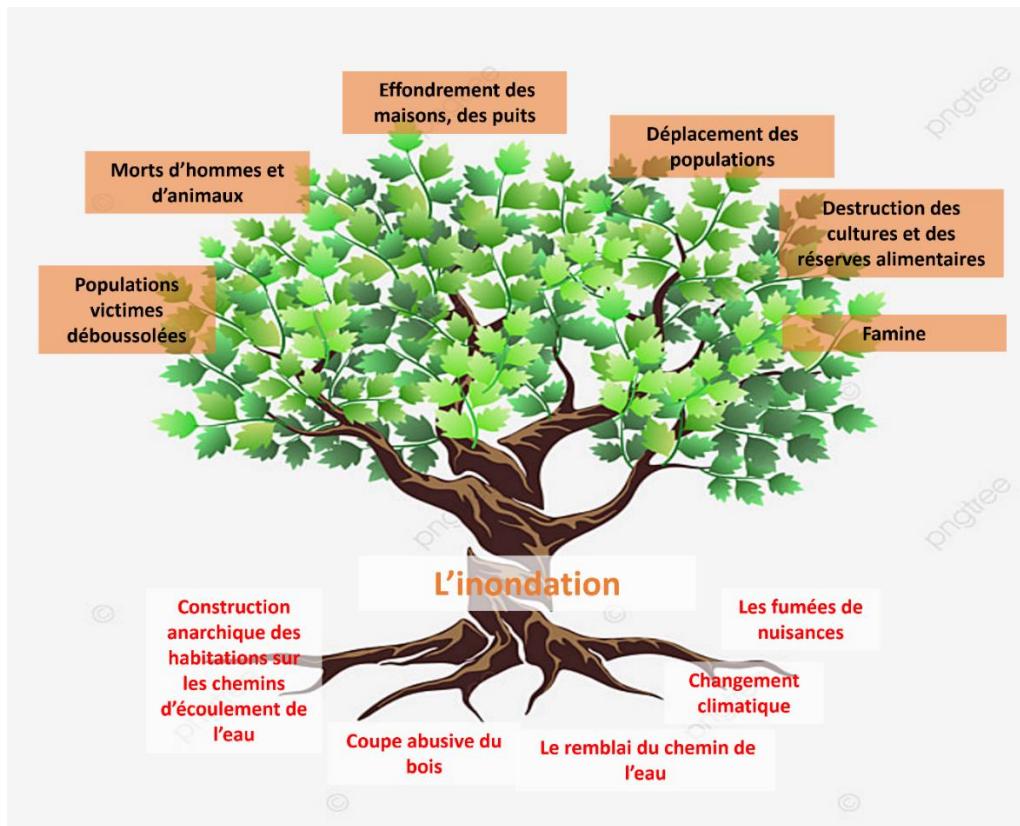


Image 7 Summary of the causes and effects mentioned by the municipalities in relation to floods

We also propose in Annex 8, the causes and effects identified by the municipality.

3 GENDER DYNAMICS OF VULNERABILITY TO CLIMATE CHANGE AND CONFLICT

According to the baseline study of the Genre++ project (Annex 3), 95% of households in the study area are headed by men, and gender roles between men and women are defined by cultural and religious norms, especially Islamic traditions and teaching. Some insights into the gender-climate-conflict nexus that emerged from the CCVCA as well the RGA-P include:

a) Increased participation of women in primary agricultural activities, above and beyond market gardens and domestic tasks

The seasonal calendar exercise of the CCVCA showed that although men are considered the main implementers of agricultural activities, women in all communes play an active part in all stages of agricultural production. In fact, in the Benguene commune, women start the process of preparing the fields alone. Men obtain this support from women to increase labour for agriculture, whilst retaining control of household assets. In some cases, widowed women may cultivate lands on their own.

Market gardening is an activity that is fairly dedicated to the women of the 12 communities, they are the main actors in this activity, some men are involved, but they remain a minority. Trade is practised by both men and women, depending on the community. While cattle rearing is generally a male activity, it is women who generally raise small ruminants for sale (*sheep, goats*). As the communities are strongly affected by the rural exodus due to the scarcity of resources, young men and women try this activity in urban areas to be able to provide for their families or prepare their wedding trousseaux.

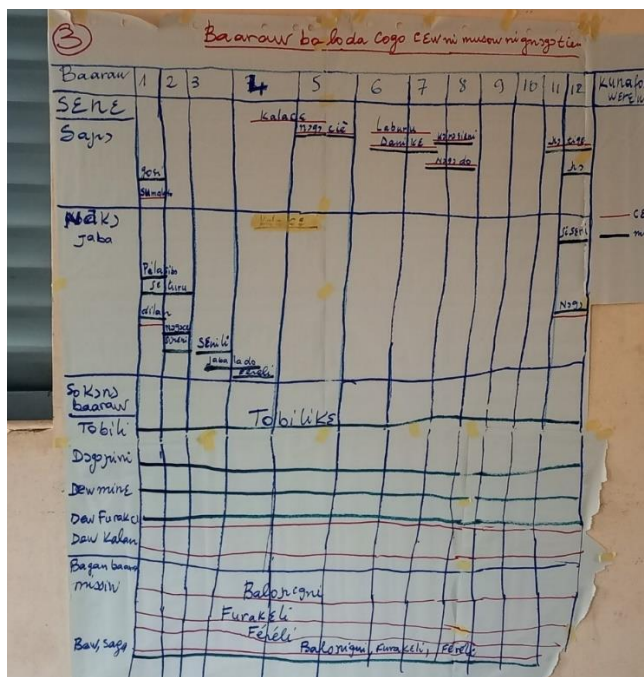


Image 8 Seasonal calendar of the Kemeni commune

Within the households, women are responsible for all domestic tasks throughout the year, including cooking, fetching firewood, collecting water, washing clothes, and childcare (babysitting, breastfeeding). Men, according to some, only intervene on rare occasions and are limited to looking after the children when the woman is busy or ill. In all communes, without exception, women are busier than men. During the 12 months of the year, it is the women who take care of household and family tasks in addition to agricultural, market gardening and livestock activities. Men are considered less busy, with their busiest period generally being between March and October or December, depending on the commune. In none of the communes did the workshops report any recent changes in the distribution of roles and responsibilities between men and women, but it should be noted that women have become more prominent actors in the practice of agricultural and livestock activities, which used to be mainly carried out by men. However, in the execution of household and family tasks, women remain isolated and receive very little support from men. For more information, see Annex 7.

b) Women and girls are more vulnerable than men and boys to the compounded effects of population growth, climate change and dispersed impacts of conflict elsewhere in the country

The project's communes, like other regions of Mali, are affected by a double crisis: the armed conflict that broke out in the north of the country in 2012 and the climatic risks that threaten the region's food security. This has a devastating impact on the lives of women, children and other vulnerable people. Given the conflicts and climatic hazards, from the perspective of different communities, women and girls are much more affected than men and boys by famine or food shortages and rural-urban migration.

- **Famine or food insufficiency:** Participants identified this impact in all communes except Sakoïba and Konodimini. According to them, it affects women and girls more than men and boys, as they are generally less mobile than men and do not benefit from sufficient resources within the different communities. Women are often the most affected because they are in charge of domestic tasks such as collecting water and gathering wood for cooking. In addition, environmental degradation leads to a decrease in agricultural productivity, which exacerbates malnutrition among women and children. This situation of hunger can aggravate poverty and lead to the rural exodus of the people concerned, but it is also a source of disease as the people concerned will be weakened and less immune. Children are often more exposed to environment-related diseases such as diarrhoea, respiratory infections and malaria. School drop-out of children can also occur depending on the community, especially girls, as they are the main helpers in household tasks. The women concerned become more vulnerable to sexual violence, which can lead to unwanted pregnancies and even abortions. As caretakers of children, women may go so far as to beg for food or resort to prostitution to feed their children in extreme conditions.
- **Rural exodus:** this phenomenon, which is the consequence of both conflict and climatic hazards, leads many people, especially youth, to leave their locality in

search of income. Communities tend to be subsistence farmers, with low yields and little opportunity to diversify. Climate variability, such as drought and floods, has a negative impact on agricultural yields and food production, forcing farmers to migrate to seek alternative sources of income. Young people in particular often seek economic opportunities in urban areas where they can find better-paid jobs. Violent community conflicts, although very rare in the project's communes of intervention, can lead people to flee their villages in search of more peaceful host areas. This phenomenon of rural exodus has been identified in all communes with the exception of Baraouéli. All strata (men, women, girls, boys) are affected but when the man is absent, women and girls are at risk of violence, and married women may abandon their homes or divorce. During the exodus, women may be victims of sexual violence and are most at risk of adultery or prostitution. Also, when men leave the village to look for work in the city, it often leads to the separation of the family and the loss of the family unit. The women who remain in the village have to manage the care of the children alone, which places an additional burden on them, who often have to work harder to survive. Girls may be forced to marry at a young age due to the departure of men and lack of resources.

- **Decrease in production and loss of livestock:** this effect is cited by participants in the communes of Baraouéli, Kalake, Konobougou, Konodimini and Sakoïba. The reasons given by participants to explain the different ailments of women and men resemble the effect of famine;
- **Breakdown of social cohesion:** during the workshops, communities (across all communes) spoke a lot about this effect and cited conflict as the main cause. When social cohesion is broken down in a community, it can have serious consequences for its inhabitants. When there is no longer solidarity and collaboration between the members of a community, violence can increase, differences or conflicts between social groups can also increase and lead to increased tensions. Stigma, discrimination and continued stress can seriously affect individuals and whole communities. All strata are affected by this phenomenon and it can lead to divorce in some households. Women may be abandoned and the most disadvantaged strata suffer the consequences due to the lack of mutual support.

c) In all communes, without exception, there is patriarchal control of natural resources and decision-making, and women are hardly consulted or involved, often only offered token representation, if at all

Within the household, according to participants in all workshops, the head of the household (usually a man) has control over the active resources of the household and makes decisions within the household. Women are hardly consulted in public, but women are sometimes consulted within the home. Within the communities of the 12 communes, decisions are made by community leaders (the village council, the commune's elected

representatives). The characteristics of a decision maker or leader are determined by age, gender, heredity rights, community trust and commitment to the village.

In the communes where the project intervenes, as in other localities in Mali, access to land is often limited by social and cultural norms that discriminate against women and young people. Women often face difficulties in accessing land, as it is mainly controlled by men, especially heads of households. Young people may face similar barriers due to their lack of experience and low social status. Agricultural land is usually inherited patrilineally, which means that girls and women may be excluded from inheritance because of their gender. In some cases women can lease land, but this can be a difficult process, as they often need approval from male relatives or the community. It emerges from the information that within the communities, women and men are expected to have a certain number of characteristics to be able to take part in decision-making, and these are fairly similar in the communes: proactivity, commitment, education or literacy, knowledge of community issues, availability of means and resources, and permission from husbands for married women.

During the RGA/P, the following barriers to women's participation and leadership in NRM and community conflict resolution were identified (most of these were suggested by women):

- Lack of information for women in the setting up or running of organisations;
- Women's lack of self-confidence;
- Low literacy rate amongst women;
- The low involvement of women in decision-making bodies (non-consideration);
- The categorical opposition of some men;
- Fear of speaking out amongst men;
- The burden of household chores;
- Women's lack of awareness of their role and responsibilities within the organisation;
- The social pressure that requires the husband's approval for any undertaking by the married woman.

These obstacles remain the same during the exchanges in the CVCA workshops, so that during the discussions, participants from the 12 municipalities proposed similar actions, the most important of which are the following:

- Establish a dialogue between women and men in order to raise awareness of women's full participation in decision-making in general and in NRM. The actors to be involved according to the communities are the village chiefs and councillors, the communal elected officials, the community leaders and the members of the community. The parties to the conflict need peace, understanding and social cohesion because peace is a value that is part of their culture and Malian tradition. A frank and sincere dialogue must be conducted between the populations. Participants generally felt that village chiefs and their advisors are best placed to

manage these conflicts, given the role they play and the place they occupy in their respective villages, and this before the winter season, when tensions intensify. To do this, these actors must inform their population beforehand and set up or strengthen commissions for the prevention and resolution of this type of conflict.

- Strengthen the capacity of women's organisations (roles and responsibilities in decision-making spaces, and their rights). The actors to be involved in this action are women leaders, NGOs and communal authorities.
- Create income generating activities (IGAs) for women's empowerment. The actors to be involved at this level are mainly the partners (NGOs) and the state. In some communes, participants mentioned the existence of new activities, namely the communes of Baraouéli, Kalake, Konobougou, Sanando, Konodimini and Sakoïba. These activities include market gardening, petty trade, the establishment of IGAs (e.g. soap making), women's groups for savings and credit, and the sale of NTFPs. IGAs must be carefully set up and governed so as not to escalate deforestation, such as exploitation of forests for wood and charcoal.
- Sensitise community leaders (village chiefs, religious leaders) to the involvement of women in decision making. The actors to be involved in this action are village chiefs and councillors, elected officials, community leaders, NGOs, communal and administrative authorities.
- Organise dialogue sessions to sensitise communities, particularly men and community leaders. The actors to be involved according to the communities are the village chiefs and councillors, elected officials, community leaders and community members.

4 CLIMATE, CONFLICT AND GENDER: ADAPTIVE CAPACITY IN THE SEGOU REGION

In all 12 communes, the CCVCA identified community capacity to anticipate risks, absorb shocks, and adapt as necessary. Special attention was given to existing governance mechanisms for climate adaptation, conflict resolution and women's empowerment, and complementary enabling factors. Using the Climate and Conflict Adaptation Tree Tool, workshop participants described what they are doing or have already done (with the support of technical and financial partners) to address the challenges:

- ❖ There are existing spaces for dialogue and mediation within the community (vestibule of the village chief) for conflicts related to resource management or of any other nature;
- ❖ Women in the communities have formed groups called "MJTs" (VSLAs) to cope with poverty and declining incomes;
- ❖ Communities have set up market gardens with the support of NGO partners to support the economy of households, especially women;

- ❖ Communities have set up land commissions (COFOs) governed by legislation to facilitate the management of land conflicts;
- ❖ Communities have started to plant trees to demarcate fields and reduce conflicts between farmers;
- ❖ Communities use organic fertilisers to improve their crops and reduce the cost of buying chemical fertilisers;
- ❖ Communities have agreed to mark the passage of animals in order to reduce conflicts between herders and farmers;
- ❖ Communities have set up systems of punishment by sending animals to the pound and punishing the owners of animals who trespass on the fields;
- ❖ Communities, through farmers' organisations, have set up grain banks with the support of NGO partners to cope with periods of crop failure and to strengthen community self-help;
- ❖ With the support of partners, communities are using improved seeds to cope with the effects of climate change, particularly low rainfall and drought;
- ❖ Communities, especially women, engage in fattening sheep or small ruminants to improve their economic status and be more resilient in the community.

Building on the graphical representation of conflict trees related to land conflict, drought and flooding (annex 9), the community provides further solutions that would help to increase climate resilience and social cohesion:

- ❖ Build the capacity of communities, especially women, on the laws relating to the use of harvested products;
- ❖ Raise awareness of communities to respect the conventions put in place in the framework of natural resource management;
- ❖ Planting and maintaining fruit trees to ensure the sustainability of the forest product harvest;
- ❖ Supporting women in the processing of local market garden produce;
- ❖ Support communities in setting up and training community-based conflict prevention and management committees if they do not exist;
- ❖ Strengthen dialogue between community actors to prevent conflicts;
- ❖ Promote women's access to decision-making spaces related to natural resource management;
- ❖ Strengthen the capacity of land commissions or create conflict prevention and resolution commissions for each type of conflict identified;
- ❖ Strengthen the capacity of actors to know and respect NRM texts/conventions;

- ❖ Train women in public speaking so that they can fully participate in NRM-related decision-making and raise their awareness so that they are free from socio-cultural constraints;
- ❖ Raise awareness among men of the role women can play in NRM in the context of climate change and conflict, in order to reduce women's vulnerability to these issues;
- ❖ Support existing water tower market gardens to reduce women's suffering;
- ❖ Raise awareness of the reservation and respect of animal crossings;
- ❖ Establish pastoral sites within communes to reduce conflicts between farmers and herders;
- ❖ Supporting communities in expanding fodder crops for animals;
- ❖ Intensify reforestation in the localities of the commune in order to stop the advance of the desert and therefore of the drought;
- ❖ The establishment of community forest monitoring committees;
- ❖ Raising awareness among farmers and livestock breeders of the need to respect agricultural calendars;
- ❖ Raising community awareness of the use of weather information;
- ❖ Raising awareness of communities to increase composting activities;
- ❖ Facilitate community access to improved seeds.

4.1 Knowledge gaps

The results of the CVCA study are encouraging, although they are very similar in the project municipalities, but there are some areas where we need to continue our research and improve in order to gather even richer information:

- Increase the duration of the different workshops to allow participants to better exchange on each tool and to provide richer and more reliable information (3 to 4 days);
- Conduct the workshops at the village level rather than the commune level, which may involve taking a sample of villages in which the study will be conducted. The current strategy is to take into account the information per village but favouring those of the chief town of the commune. There is a risk that the results from one commune may not be representative of all the villages in that commune;
- Facilitators responsible for supporting the implementation of CVCA in communities should be provided with a large number of capacity building days to ensure that everyone has a correct and identical understanding of the tools;
- Reduce the number of tools to be used in workshops to make them less boring for communities by focusing on the most important tools.

5 CONCLUSION AND RECOMMENDATIONS

The Genre++ project is led by CARE International Mali and funded by the UK's Foreign, Commonwealth and Development Office (FCDO), with the objective of strengthening climate change adaptive capacity and gender equality for overall social cohesion in the cercles of Baraouéli, Bla and Segou in Mali's Segou Region.

As a pathway to achieving this impact, this novel Climate and Conflict Vulnerability and Capacity Assessment (CCVCA) tool was used to carry out a rapid participatory analysis of vulnerabilities and adaptive capacity with representatives from 12 communes in Ségou region. Consultants from CARE Mali were trained to carry out workshops in each commune, lasting 2 days, where community representatives shared past and present climate and conflict interactions in their interpersonal relations and livelihoods, with a special focus on impacts felt by women. Combined with the secondary literature review carried out as a part of the CCVCA, we present the following key findings from this participatory study:

- 1. Across governance levels in the Ségou landscape, from village councils to local and national government authorities, there is a need to build understanding and integrate adaptation to climate impacts into natural resource management and conflict mitigation mechanisms**

Climatic shocks have intensified in frequency and severity across the 12 communes. Drought and low rainfall conditions are increasingly common, and when rains do occur, they are more intense and affect built areas and agricultural lands more severely, as the landscape has become more degraded over time due to clearing for settlements, agriculture and timber trade. The fragility of social bonds at household and village level has increased due to changing pressures, including these climatic changes and population growth. Conflicts arise over the use of scarce land resources for pastoralism and agriculture (all communes), forest resources (10 communes), and harvested Non-Timber Forest Products (NTFPs) such as shea nuts (5 communes). There are state-instituted structures such as the Land Commission (COFO) and Village Chief's Councils to resolve disputes connected to these land uses. Non-state structures include Conflict Prevention and Management Committees; Waterpoint Management Committees, Forest Watch Committees, as well as the Coordination of Women's Associations and NGOs of Mali (CAFO) and Communal Youth Committees. Some disputes between women can also be mediated by female leaders in the communities. Forestry officials from the Water and Forest technical services intervene for conflicts related to forest resource use. Decision-makers in all these spaces must be empowered with climate information necessary for them to be forward-looking, with a good understanding current and predicted risks, augmenting the adaptive capacity necessary for resilience.

- 2. Establishing more formal and recognised channels for women's input to land and water management is a precursor to overall resilience, as women are involved in many natural resource dependent livelihoods**

The participatory assessment clearly shows that women play an active role across all natural resources on the study landscape, especially agricultural production and NTFP

harvesting. Although men are traditionally viewed as the main implementers of farming (millet, sorghum and maize), women play an integral role at all stages of production in all communes. In the Benguene commune, women start the process of preparing the fields alone. Market gardening, the production of vegetables and fruits for resale, is nearly completely carried out by women in all 12 communes. Trade in various commodities is practised by both men and women, depending on the community. Women are also the primary harvesters of NTFPs such as shea nuts and mangoes. While cattle rearing is generally a male activity, it is women who generally raise small ruminants for sale (sheep, goats). Further, the analysis shows that women do these livelihoods activities while performing all household and family chores without the support of men, keeping them working throughout the year (in comparison, men are less occupied overall, with the busiest working period generally being between March and October or December, depending on the commune). Despite this active contribution to household income through livelihoods related to natural resources, women's voices have little influence in decision-making bodies related to NRM and related conflict resolution, often reduced to a token presence. This gap must be addressed, as women should have greater agency to actively contribute towards achieving resilience, and they must receive the capacity and resources that they need. This is especially critical given that women and girls in all communes are facing greater food insecurity, susceptibility to diseases and exposure to gender-based violence and risky livelihoods as a result of reduced yields and less income.

3. Existing systems and institutions for women's empowerment and inclusion provide a strong entry point for adaptation in many communes

There is at least one women's group per village within each of the 12 communes. The majority are women's empowerment groups led by committed female leaders (village savings and loans associations [VSLAs], or Musoka Jigiya Ton [MJT] in Bambara), and these usually operate at the neighbourhood and community level, providing spaces where women seem to have collective influence. Building the capacity of proven women leaders and women's groups to understand climate risks, impacts, adaptation mechanisms and peacebuilding techniques will provide dividends beyond the project's cycle.

4. Careful consideration must be given to how women are facilitated to take part in adaptation efforts, as the intensification of gender-based violence is a risk

The impacts of conflict and climatic hazards, including rural-urban migration and famine, affect women, girls and children more than men in the project communes. With regard to women's participation in decision-making related to NRM, we find that they still face socio-cultural constraints and patriarchal control of resources and decision-making, which is based on the assumption that women are weak, cannot interact with men as equals, and have no rights to land. Moreover, women who are NTFP harvesters or market gardeners have reported that they could face verbal abuse or come into conflict when trying to assert usage rights over these resources, with some women even reporting household-level conflict and gender-based violence in extreme cases.

5. Existing locally-led adaptation actions must be recognised, and established state and communal structures for community-based adaptation should be strengthened

Men and women within communes already implement community-based solutions in response to climatic and conflict drivers, often with the support of technical and financial partners and local authorities. This demonstrates an adaptive capacity that can be further strengthened. For example, the existence of formal and informal spaces for dialogue and conflict mediation within communities, the establishment of savings associations and self-help groups by women at village level, the planting of trees to demarcate fields and reduce conflicts between farmers, the use of organic fertilisers to better improve their harvests and reduce the costs associated with purchasing chemical fertilisers, and use of drought-resistant seed varieties, among others.

6. The prevention and reduction of the rapid degradation of natural ecosystems, especially forested land, is a priority, as adaptation and resilience efforts hinge on functioning ecosystems and sustained ecosystem services

Across all communes except Baraouéli and Kalake, communities are coming into conflict over forest resources, as a result of unplanned agricultural expansion, deforestation for timber trade, and degradation of natural ecosystems. These conflicts occur between loggers, village chiefs, farmers, herders, women, water and forestry agents and youth. For instance, loggers (community members who exploit the forests for fuelwood and by-products [charcoal] as a livelihood) come into conflict with women who practice livelihoods such as shea nut harvesting, as there are now conflicts over increasingly scarce shea trees. These activities, combined with the further impacts of climate change, could seriously erode community resilience, as ecosystem services like soil quality maintenance and barriers against natural disasters become affected. Effective land use planning and protection of forest resources in the Ségou region is critical for climate adaptation.

7. Traditional values that prioritise conflict resolution can be leveraged for resilience, especially where inequalities and mistrust exists

Peacebuilding is an integral part of Malian values and culture, and the idea of frank and sincere dialogue to resolve conflicts resonates with many people on an individual level. Initiatives focused on gender, climate adaptation and peacebuilding should take these cultural values into account, and frame vision, objectives and activities around the promotion of peaceful living.

8. Adaptation efforts should be sensitive to possible escalations in conflict in regions outside Ségou

Although communes in this study didn't identify direct impacts of the conflict in northern parts of Mali as a factor that increased their risks or vulnerabilities, and did not report the influence of militia groups in their localities, the security situation remains tense throughout the country. Any efforts towards climate adaptation and resilience must account for the possible escalation of violence in future, and intensification of conflicts in the Ségou region.

ANNEXES

Annex 1 Scenarios relating to various climate parameters in Mali

(According to GIZ, “Climate Risk Profile: Mali”, undated. Available online: https://www.pik-potsdam.de/en/institute/departments/climate-resilience/projects/project-pages/agrica/climate-risk-profile_mali_en)

Climatic parameters	Low emission scenario (RCP2.6)	Medium to high emission scenario (RCP6.0)
Temperature - air temperature in Mali is projected to increase by 2.0-4.6°C (very likely range) by 2080.	Approximate increases of 2.2°C in 2030, 2.6°C in 2050 and 2.7°C in 2080	Approximate increases of 2.2°C in 2030, 2.8°C in 2050 and 4.0°C in 2080
Very hot days - the annual number of very hot days (days with daily maximum temperature above 35°C) is expected to increase dramatically and with a high degree of certainty across Mali.		23 more hot days per year in 2030 than in 2000, 34 more in 2050 and 59 more in 2080. In some regions, particularly in central Mali, this represents about 300 days per year in 2080.
Precipitation and heavy precipitation - The models do not predict a clear trend for precipitation, which is due to high uncertainty and natural variability from year to year.	In general, the models show a trend towards increased heavy rainfall and frequent extreme weather events (floods and droughts) in the south, and decreased rainfall and accelerated desertification in the north. The models also predict a decrease in the average annual river flow in the Inner Niger Delta by the 2050s, as well as a decrease in the extent of flooding during the peak months of July to September.	
Soil moisture - Soil moisture is an important indicator of drought conditions. In addition to soil parameters and management, it depends on both precipitation and evapotranspiration, and therefore also on temperature, as higher temperatures result in higher potential evapotranspiration.	Projections of mean annual soil moisture at 1 m for, no change in Mali under RCP2.6	A decrease of 3.7% by 2080 compared to the year 2000 (although it is difficult to identify trends).
Potential evapotranspiration - Potential evapotranspiration is the amount of water that would be evaporated and transpired if there was sufficient water available at and below the soil surface. Since warmer air can hold more water vapour, it is expected that global warming will increase potential evapotranspiration in most parts of the world.		Under RCP6.0, potential evapotranspiration is projected to increase by 2.4% in 2030, 3.7% in 2050 and 7.0% in 2080 compared to year 2000 levels.

Climatic parameters	Low emission scenario (RCP2.6)	Medium to high emission scenario (RCP6.0)
<p>Water resources - The decline is mainly due to population growth, rather than climate change, but it highlights the urgency of investing in water saving measures and technologies for future water consumption.</p>	<p>Taking into account population growth according to the SSP2 projections²², per capita water availability in Mali is expected to decrease by 77% by 2080 compared to the year 2000 in both scenarios.</p>	
<p>Agriculture/drought - As crops are predominantly rainfed, yields depend on the availability of water from rainfall and are subject to drought. However, the duration and intensity of the rainy season is becoming increasingly unpredictable, and the use of irrigation facilities remains limited despite Mali's considerable irrigation potential of about 566,000 ha (1.4% of the country's national cropland area).</p>	<p>Some models predict up to a threefold increase in drought exposure over this period, while others predict no change.</p>	<p>The likely range of exposure to drought of the national crop area per year increases from 0.2 to 4.5% in 2000 to 0.03 to 15.0% in 2080.</p>
<p>Agriculture/crop yields - adaptation strategies such as switching to improved varieties of climate-sensitive crops need to be considered, but must be carefully balanced against the negative consequences, such as the decline in agro-biodiversity and the resulting loss of local crop types.</p>	<p>Yields are forecast at 8% for maize, 8% for millet and sorghum, and 1.5% for maize and sorghum, 14% for groundnuts.</p>	<p>Rice yields are expected to increase by 29% by 2080 compared to the year 2000. Compared to the year 2000, yields are expected to decline by 13% for maize, 12% for millet and sorghum and 7% for groundnuts by 2080.</p>

Annex 2 The 8 collection tools used in the CCVCA

Annex 3 Interim report on the baseline situation

Annex 4 RGA-P report

Annex 5 All data from CCVCA workshops in the 12 municipalities

²² Shared socio-economic pathways (SSPs) describe potential futures at the global scale, including estimates of general characteristics such as population, GDP or urbanisation rate at the country level. Five different SSPs describe future realities based on a combination of high and low future socio-economic mitigation and adaptation challenges. SSP2 represents the "middle of the road" pathway.

Annex 6 Climate risks and trends in the 12 municipalities

N°	Municipalities	Main climate risks identified	Severity and impact of the main climate risks	Other major events that had an impact
1	Baraouéli	<ul style="list-style-type: none"> - Drought periods (1973, 1984,); - Flooding (2022); - High winds (1988 and 2007); - Deforestation (1992) 	<ul style="list-style-type: none"> - Famine ; - Diseases ; - Loss of life ; - Loss of livestock ; - The rise of the rural exodus. 	<ul style="list-style-type: none"> - Diseases (COVID19, measles, cholera) ;
2	Kalake	<ul style="list-style-type: none"> - Drought periods (1973, 1984,); - Flooding (2022); - High winds (1988 and 2007); - Deforestation (1992) 	<ul style="list-style-type: none"> - Famine ; - Diseases ; - Loss of life ; - Loss of livestock ; - The rise of the rural exodus. 	
3	Konobougou	<ul style="list-style-type: none"> - Drought periods (1973, 1984, 2002, 2021); - Flooding (2007 and 2018); - The high winds of 2020 	<ul style="list-style-type: none"> - Famine ; - Diseases ; - Loss of life ; - Loss of livestock ; - The rise of the rural exodus. 	<ul style="list-style-type: none"> - Cholera in 1997; - COVID 19 of 2020 ;
4	Sanando	<ul style="list-style-type: none"> - Drought periods (1973, 1984); - Flooding ; - Deforestation. 	<ul style="list-style-type: none"> - Famine ; - Diseases ; - The sharp increase in divorce within couples; - Loss of life ; - Loss of livestock ; - The rise of the rural exodus ; - The disappearance of wild animals ; - The decline of plant species 	No
5	Benguene	<ul style="list-style-type: none"> - Drought periods (1998, 2003, 2021); - Floods (2022). 	<ul style="list-style-type: none"> - Famine ; - Low agricultural yields ; - Diseases ; - Population displacement ; - Loss of life ; - Loss of livestock ; - The rural exodus of able-bodied people. 	<ul style="list-style-type: none"> - Meningitis (1996)
6	Bla	<ul style="list-style-type: none"> - Drought periods (1973, 2021); - Floods (1984); - Heavy rains (2022); 	<ul style="list-style-type: none"> - Famine ; - Low agricultural yields ; - Diseases ; - Population displacement ; - Loss of life ; - Loss of livestock ; - The rural exodus of able-bodied people. 	<ul style="list-style-type: none"> - Meningitis (1996) ; - COVID 19 (2020); - Terrorism by extremist groups.
7	Kemeni	<ul style="list-style-type: none"> - Drought periods (1955, 1973, 1984, 2002); - Floods (1963); - Heavy rains (2022); 	<ul style="list-style-type: none"> - Famine ; - Low agricultural yields ; - Poverty ; - Population displacement ; - Loss of life, especially among children; - Loss of livestock. 	<ul style="list-style-type: none"> - COVID 19 (2020);
8	Touna	<ul style="list-style-type: none"> - Drought periods (1973, 1984); - Floods (1966, 2007). 	<ul style="list-style-type: none"> - Famine ; - Low agricultural yields ; - Population displacement ; - Loss of life ; 	<ul style="list-style-type: none"> - Cholera (1969); - High frequency of land conflicts (2020).

N°	Municipalities	Main climate risks identified	Severity and impact of the main climate risks	Other major events that had an impact
			- Loss of livestock.	
9	Cinzana	- Drought periods (1973, 1984, 2021); - Heavy rains (1966, 2022);	- Famine ; - Low agricultural yields ; - Population displacement ; - Loss of life ; - Loss of livestock.	- Meningitis (1968)
10	Konodimini	- Drought periods (1973, 1984, 2021); - The high winds of 1976 ; - Floods (1983, 2022).	- Famine ; - Low agricultural yields ; - Diseases ; - Loss of life ; - Loss of livestock.	- COVID 19 (2020)
11	Sakoiba	- Drought periods (1973, 1984, 2021); - The high winds of 1976 ; - Floods (1983, 2022).	- Famine ; - Low agricultural yields ; - Diseases ; - Loss of life ; - Loss of livestock.	- Meningitis (1996)
12	Samine	- Drought periods (1973, 2000); - The high winds of 1985 ;	- Famine ; - Low agricultural yields ; - Loss of life ; - Loss of livestock.	- Meningitis (1989) ; - Cholera (1973) ; - Animal diseases (1984)

Annex 7 Seasonal and gender roles and responsibilities in the 12 communes

N°	Municipalities	Main agricultural activities and production	The main people responsible for these agricultural activities are	Main household and family tasks	The main people responsible for these domestic and family activities are
1	Baraouéli, Kalake	<ul style="list-style-type: none"> - Agriculture (millet, sorghum, maize) ; - Market gardening ; - Trade - Small ruminant livestock ; - The rural exodus. 	<ul style="list-style-type: none"> - Men are the main people responsible for the different agricultural crops, from the beginning to the end of the process. They are assisted by women who also participate fully in the process; - Market gardening is an activity reserved for women; only a few men do it; - Men and women are involved in trade and livestock; - The exodus affects both men and women. 	<ul style="list-style-type: none"> - The kitchen; - Search for firewood ; - Water collection ; - Laundry ; - Looking after children (baby-sitting, breast-feeding) 	<ul style="list-style-type: none"> - Women are mainly responsible for the tasks mentioned
2	Kalake	<ul style="list-style-type: none"> - Agriculture (millet, sorghum, maize) ; - Vegetable growing ; - Trade - Small ruminant livestock ; - The rural exodus. 	<ul style="list-style-type: none"> - Men are the main people responsible for the different agricultural crops, from the beginning to the end of the process. They are assisted by women who also participate fully in the process; - Market gardening is an activity reserved for women; only a few men do it; - Men and women are involved in trade and livestock. 	<ul style="list-style-type: none"> - The kitchen; - Search for firewood ; - Water collection ; - Laundry ; - Looking after children (baby-sitting, breast-feeding) 	<ul style="list-style-type: none"> - Women are mainly responsible for the tasks mentioned
3	Konobougou	<ul style="list-style-type: none"> - Agriculture (millet, sorghum, maize) ; - Market gardening ; - Small ruminant livestock ; - The rural exodus. 	<ul style="list-style-type: none"> - Men are the main people responsible for the different agricultural crops, from the beginning to the end of the process. They are assisted by women who also participate fully in the process; - Market gardening is an activity reserved for women; only a few men do it; - Livestock farming is practised by both men and women. 	<ul style="list-style-type: none"> - The kitchen; - Search for firewood ; - Water collection ; - Looking after children (baby-sitting, breast-feeding) 	<ul style="list-style-type: none"> - Women are mainly responsible for the tasks mentioned
4	Sanando	<ul style="list-style-type: none"> - Agriculture (millet, sorghum, maize) ; - Market gardening ; - Small ruminant livestock ; - The rural exodus. 	<ul style="list-style-type: none"> - Men are the main people responsible for the different agricultural crops, from the beginning to the end of the process. They are assisted by women who also participate fully in the process; - Market gardening is an activity reserved for women; only a few men do it; - Small ruminant farming is for women. 	<ul style="list-style-type: none"> - The kitchen; - Search for firewood ; - Water collection ; - Looking after children (baby-sitting, breast-feeding) 	<ul style="list-style-type: none"> - Women are mainly responsible for the tasks mentioned

N°	Municipalities	Main agricultural activities and production	The main people responsible for these agricultural activities are	Main household and family tasks	The main people responsible for these domestic and family activities are
5	Benguene	<ul style="list-style-type: none"> - Agriculture (millet cultivation); - Cotton growing ; - Small ruminant livestock ; - The rural exodus. 	<ul style="list-style-type: none"> - In different cultures, women are as responsible as men, from the beginning to the end of the process; - Small ruminant farming is for women. 	<ul style="list-style-type: none"> - The kitchen; - Search for firewood ; - Water collection ; - Looking after children (baby-sitting, breast-feeding) 	<ul style="list-style-type: none"> - Women are mainly responsible for the tasks mentioned
6	Bla	<ul style="list-style-type: none"> - Agriculture (millet cultivation); - Market gardening ; - Small ruminant livestock ; - The rural exodus. 	<ul style="list-style-type: none"> - Men are the main cultivators and women are very supportive throughout the process; - Men and women are primarily responsible for fattening small ruminants; - Market gardening is for women. 	<ul style="list-style-type: none"> - The kitchen; - Search for firewood ; - Water collection ; - Looking after children (baby-sitting, breast-feeding) 	<ul style="list-style-type: none"> - Women are mainly responsible for the tasks mentioned
7	Kemeni	<ul style="list-style-type: none"> - Agriculture (millet); - Market gardening ; - Large and small ruminant livestock ; - The rural exodus. 	<ul style="list-style-type: none"> - Men are the main cultivators and women are very supportive throughout the process; - It is the men who take care of the breeding in general; - Men and women are primarily responsible for fattening small ruminants; - Market gardening is for women. 	<ul style="list-style-type: none"> - The kitchen; - Search for firewood ; - Water collection ; - Scanning ; - Laundry ; - Looking after children (baby-sitting, breast-feeding) 	<ul style="list-style-type: none"> - Women are mainly responsible for the tasks mentioned
8	Touna	<ul style="list-style-type: none"> - Agriculture (millet); - Market gardening ; - Large and small ruminant livestock ; - The rural exodus. 	<ul style="list-style-type: none"> - Men are the main cultivators and women are very supportive throughout the process; - It is the men who take care of the breeding in general; - Men and women are primarily responsible for fattening small ruminants; - Market gardening is for women. 	<ul style="list-style-type: none"> - The kitchen; - Search for firewood ; - Water collection ; - Scanning ; - Laundry ; - Looking after children (baby-sitting, breast-feeding) 	<ul style="list-style-type: none"> - Women are mainly responsible for the tasks mentioned
9	Cinzana	<ul style="list-style-type: none"> - Agriculture (millet); - Market gardening ; - Large and small ruminant livestock ; - The rural exodus. 	<ul style="list-style-type: none"> - Men are the main cultivators and women are very supportive throughout the process; - It is the men who take care of the breeding in general; - Men and women are primarily responsible for fattening small ruminants; - Market gardening is for women. 	<ul style="list-style-type: none"> - The kitchen; - Search for firewood ; - Water collection ; - Scanning ; - Laundry ; - Looking after children (baby-sitting, breast-feeding) 	<ul style="list-style-type: none"> - Women are mainly responsible for the tasks mentioned
10	Konodimini	<ul style="list-style-type: none"> - Agriculture ; - Market gardening ; - Small ruminant livestock ; - The rural exodus. 	<ul style="list-style-type: none"> - Men are the main cultivators and women are very supportive throughout the process; - Men and women are primarily responsible for fattening small ruminants; 	<ul style="list-style-type: none"> - The kitchen; - Search for firewood ; - Water collection ; - Scanning ; - Laundry 	<ul style="list-style-type: none"> - Women are mainly responsible for the tasks mentioned

N°	Municipalities	Main agricultural activities and production	The main people responsible for these agricultural activities are	Main household and family tasks	The main people responsible for these domestic and family activities are
			<ul style="list-style-type: none"> - Market gardening is for women. 	<ul style="list-style-type: none"> - Looking after children (baby-sitting, breast-feeding) 	
11	Sakoiba	<ul style="list-style-type: none"> - Agriculture ; - Market gardening ; - Small ruminant livestock ; - The rural exodus. 	<ul style="list-style-type: none"> - Men are the main cultivators and women are very supportive throughout the process; - Men and women are primarily responsible for fattening small ruminants; - Market gardening is for women. 	<ul style="list-style-type: none"> - The kitchen; - Search for firewood ; - Water collection ; - Scanning ; - Laundry - Looking after children (baby-sitting, breast-feeding) 	<ul style="list-style-type: none"> - Women are mainly responsible for the tasks mentioned
12	Samine	<ul style="list-style-type: none"> - Agriculture (millet) ; - Market gardening ; - Large and small ruminant livestock ; - The rural exodus. 	<ul style="list-style-type: none"> - Men are the main cultivators and women are very supportive throughout the process; - It is the men who take care of the breeding in general; - Men and women are primarily responsible for fattening small ruminants; - Market gardening is for women. 	<ul style="list-style-type: none"> - The kitchen; - Search for firewood ; - Water collection ; - Scanning ; - Laundry ; Looking after children (baby-sitting, breast-feeding) 	<ul style="list-style-type: none"> - Women are mainly responsible for the tasks mentioned

Annex 8 Causes and impacts of climate and conflict vulnerability in the 12 communes

N°	Municipal ities	Central issues identified	Impacts or effects (direct and indirect) of problems	Structural causes of problems and effects
1	Baraouéli	- Conflicts over harvested products;	- Food-related conflicts: reduced income, poverty, misunderstanding, violence, insecurity, social exclusion, rural- urban migration, sexual and gender-based violence, abortion, injuries, property damage;	- Conflicts related to harvested products: population pressure, poor governance, animal rambling (damage to harvested products), lack of consultation, high winds, floods, lack of trees;
		- Land conflicts	- Land conflicts: decline in production, income, poverty, rural exodus, insecurity, misunderstanding, lack of trust, lack of social cohesion, social exclusion, sexual and gender-based violence.	- Land conflicts: drought, soil poverty, population pressure, floods, poor governance, field boundaries, animal roaming (damage to fields), lack of consultation.
2	Kalake	- Conflicts over harvested products;	- Foraging conflicts: reduced income, poverty, misunderstanding, violence, insecurity, social exclusion, rural-urban migration, sexual and gender-based violence, abortion, injuries, property damage;	- Conflicts related to harvested products: population pressure, poor governance, animal rambling (damage to harvested products), lack of consultation, high winds, floods, lack of trees;
		- Land conflicts	- Land conflicts: decline in production, income, poverty, rural exodus, insecurity, misunderstanding, lack of trust, lack of social cohesion, social exclusion, sexual and gender-based violence.	- Land conflicts: drought, soil poverty, population pressure, floods, poor governance, field boundaries, animal roaming (damage to fields), lack of consultation.
3	Konobougou	- Conflicts over forest resources ;	- Conflicts related to forest resources: misunderstanding, violence, material damage, lack of social cohesion, social exclusion, disappearance of plant and animal species, divorce;	- Conflicts related to forest resources: refusal to share resources, demographic pressure, over-exploitation, competition, lack of consultation, poor governance;
		- Land conflicts	- Land conflicts: decline in production, income, poverty, rural exodus, insecurity, misunderstanding, lack of trust, lack of social cohesion, social exclusion, sexual and gender-based violence.	- Land conflicts: drought, soil poverty, population pressure, floods, poor governance, field boundaries, animal roaming (damage to fields), lack of consultation.
4	Sanando	- Conflicts over harvested products;	- Foraging conflicts: reduced income, poverty, misunderstanding, violence, insecurity, social exclusion, rural-urban migration, sexual and gender-based violence, abortion, injuries, property damage;	- Conflicts related to harvested products: population pressure, poor governance, animal rambling (damage to harvested products), lack of consultation, high winds, floods, lack of trees;

N°	Municipalities	Central issues identified	Impacts or effects (direct and indirect) of problems	Structural causes of problems and effects
		- Conflicts over forest resources ;	- Conflicts related to forest resources: misunderstanding, violence, material damage, lack of social cohesion, social exclusion, disappearance of plant and animal species, divorce;	- Conflicts related to forest resources: refusal to share resources, demographic pressure, over-exploitation, competition, lack of consultation, poor governance;
		- Land conflicts	- Land conflicts: decline in production, income, poverty, rural exodus, insecurity, misunderstanding, lack of trust, lack of social cohesion, social exclusion, sexual and gender-based violence.	- Land conflicts: drought, soil poverty, population pressure, floods, poor governance, field boundaries, animal roaming (damage to fields), lack of consultation.
5	Bengouene	- Land conflicts	- Land disputes: divorce, court cases, injuries, famine, destruction of property, death of men, disagreement between men;	- Land conflicts: demographic pressure, refusal to share, delimitation of fields, animal rambling (damage to fields), non-respect of conventions, unequal appropriation of land, low rainfall;
		- Drought	- Drought: drop in production, income, poverty, rural exodus, insecurity, misunderstanding, lack of social cohesion, social exclusion, sexual and gender-based violence, divorce, disease, malnutrition, drying up of marigots.	- Drought: lack of forests, forest degradation, climate change, non-planting of trees, bushfires, moral damage, smoke nuisance.
6	Bla	- Land conflicts	- Land disputes: divorce, court cases, injuries, famine, destruction of property, death of men, disagreement between men;	- Land conflicts: demographic pressure, refusal to share, delimitation of fields, animal rambling (damage to fields), non-respect of conventions, unequal appropriation of land, low rainfall;
		- Drought	- Drought: drop in production, income, poverty, rural exodus, insecurity, misunderstanding, lack of social cohesion, social exclusion, sexual and gender-based violence, divorce, disease, malnutrition, drying up of marigots.	- Drought: lack of forests, forest degradation, climate change, non-planting of trees, bushfires, moral damage, smoke nuisance.
7	Kemeni	- Land conflicts	- Land disputes: divorce, court cases, injuries, famine, destruction of property, death of men, disagreement between men;	- Land conflicts: demographic pressure, refusal to share, delimitation of fields, animal rambling (damage to fields), non-respect of conventions, unequal appropriation of land, low rainfall;
		- Drought	- Drought: drop in production, income, poverty, rural exodus, insecurity, misunderstanding, lack of social cohesion, social exclusion, sexual and gender-based violence, divorce, disease, malnutrition, drying up of marigots.	- Drought: lack of forests, forest degradation, climate change, non-planting of trees, bushfires, moral damage, smoke nuisance.
8	Touna	- Land conflicts	- Land disputes: divorce, court cases, injuries, famine,	- Land conflicts: demographic pressure, refusal to share, delimitation of fields,

N°	Municipalities	Central issues identified	Impacts or effects (direct and indirect) of problems	Structural causes of problems and effects
			destruction of property, death of men, disagreement between men;	animal rambling (damage to fields), non-respect of conventions, unequal appropriation of land, low rainfall;
		- Flooding	- Floods: disoriented victims, human and animal deaths, collapse of houses and wells, displacement of populations, destruction of crops and food supplies, famine.	- Flooding: uncontrolled construction of houses on waterways, excessive logging, filling in of the waterway, climate change.
9	Cinzana	- Land conflicts	- Land disputes: divorce, court cases, injuries, famine, destruction of property, death of men, disagreement between men;	- Land conflicts: demographic pressure, refusal to share, delimitation of fields, animal rambling (damage to fields), non-respect of conventions, unequal appropriation of land, low rainfall;
		- Drought	- Drought: drop in production, income, poverty, rural exodus, insecurity, misunderstanding, lack of social cohesion, social exclusion, sexual and gender-based violence, divorce, disease, malnutrition, drying up of marigots.	- Drought: lack of forests, forest degradation, climate change, non-planting of trees, bushfires, moral damage, smoke nuisance.
10	Konodimini	- Conflicts over harvested products;	- Foraging conflicts: reduced income, poverty, misunderstanding, violence, insecurity, social exclusion, rural-urban migration, sexual and gender-based violence, abortion, injuries, property damage;	- Conflicts related to harvested products: population pressure, poor governance, animal rambling (damage to harvested products), lack of consultation, high winds, floods, lack of trees;
		- Conflicts over forest resources ;	- Conflicts related to forest resources: misunderstanding, violence, material damage, lack of social cohesion, social exclusion, disappearance of plant and animal species, divorce;	- Conflicts related to forest resources: refusal to share resources, demographic pressure, over-exploitation, competition, lack of consultation, poor governance;
		- Land conflicts	- Land conflicts: decline in production, income, poverty, rural exodus, insecurity, misunderstanding, lack of trust, lack of social cohesion, social exclusion, sexual and gender-based violence.	- Land conflicts: drought, soil poverty, population pressure, floods, poor governance, field boundaries, animal roaming (damage to fields), lack of consultation.
11	Sakoiba	- Conflicts over harvested products;	- Foraging conflicts: reduced income, poverty, misunderstanding, violence, insecurity, social exclusion, rural-urban migration, sexual and gender-based violence, abortion, injuries, property damage;	- Conflicts related to harvested products: population pressure, poor governance, animal rambling (damage to harvested products), lack of consultation, high winds, floods, lack of trees;
		- Conflicts over forest resources ;	- Conflicts related to forest resources: misunderstanding, violence, material damage, lack	- Conflicts related to forest resources: refusal to share resources, demographic

N°	Municipalities	Central issues identified	Impacts or effects (direct and indirect) of problems	Structural causes of problems and effects
			of social cohesion, social exclusion, disappearance of plant and animal species, divorce;	pressure, over-exploitation, competition, lack of consultation, poor governance;
		- Land conflicts	- Land conflicts: decline in production, income, poverty, rural exodus, insecurity, misunderstanding, lack of trust, lack of social cohesion, social exclusion, sexual and gender-based violence.	- Land conflicts: drought, soil poverty, population pressure, floods, poor governance, field boundaries, animal roaming (damage to fields), lack of consultation.
12	Samine	- Land conflicts	- Land disputes: divorce, court cases, injuries, famine, destruction of property, death of men, disagreement between men;	- Land conflicts: demographic pressure, refusal to share, delimitation of fields, animal rambling (damage to fields), non-respect of conventions, unequal appropriation of land, low rainfall;
		- Drought	- Drought: drop in production, income, poverty, rural exodus, insecurity, misunderstanding, lack of social cohesion, social exclusion, sexual and gender-based violence, divorce, disease, malnutrition, drying up of marigots.	Drought: lack of forests, forest degradation, climate change, non-planting of trees, bushfires, moral damage, smoke nuisance.

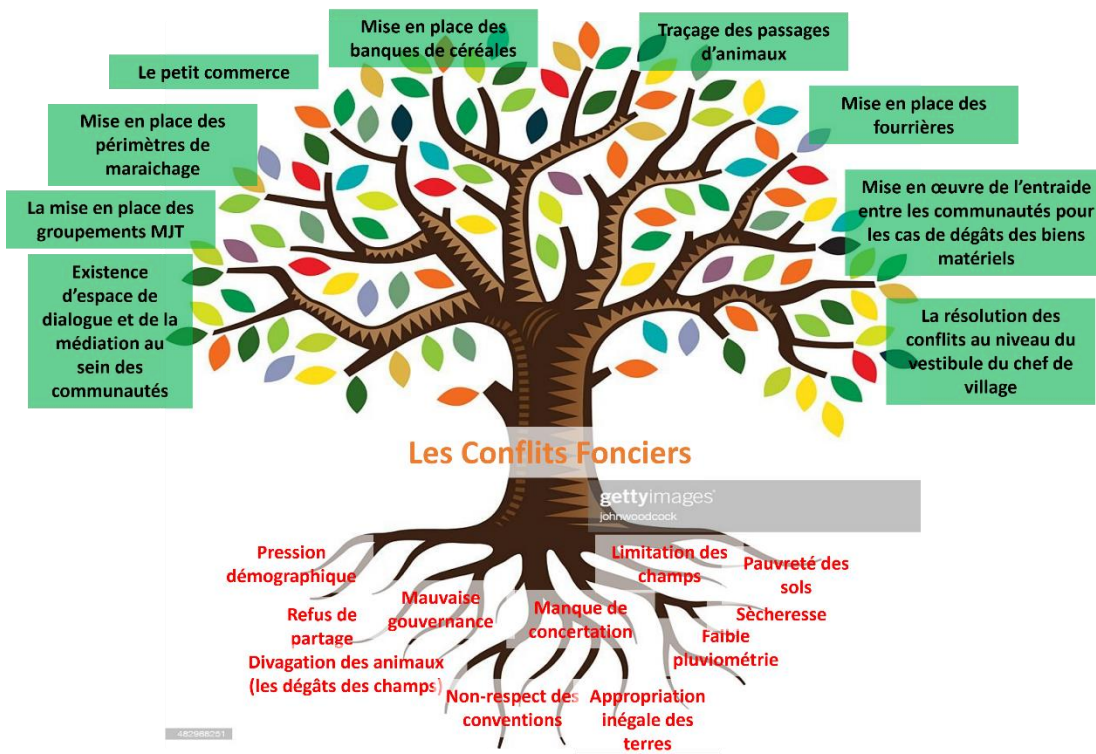


Image 9 Summary of community-based solutions to land conflicts in the communes

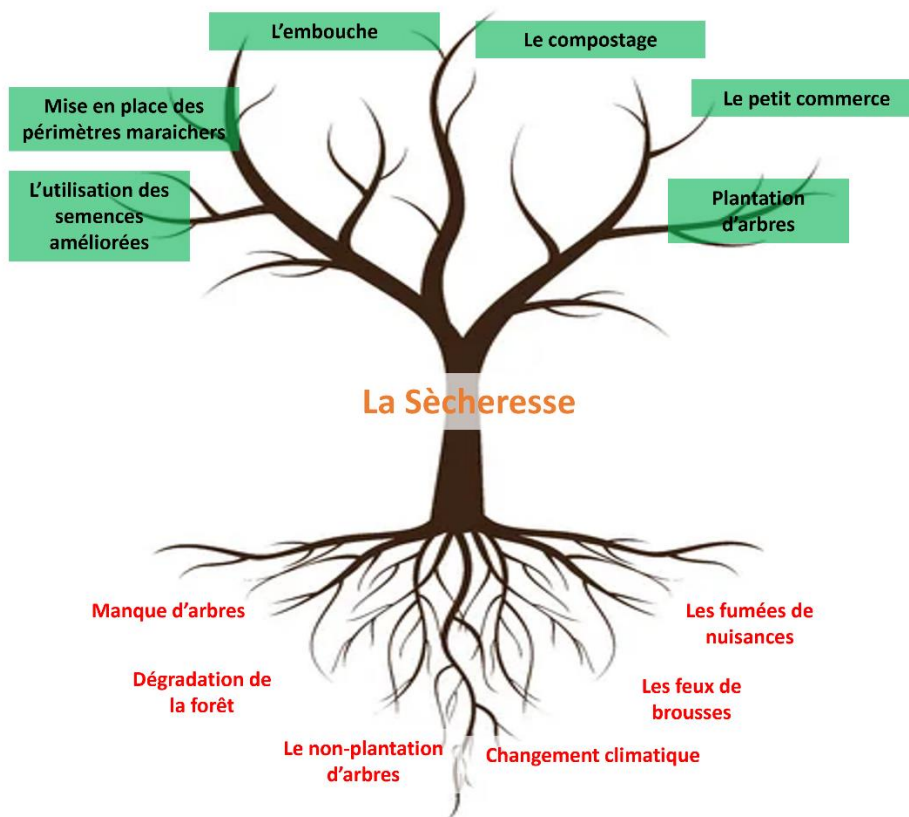


Image 10 Summary of community-based drought solutions in municipalities

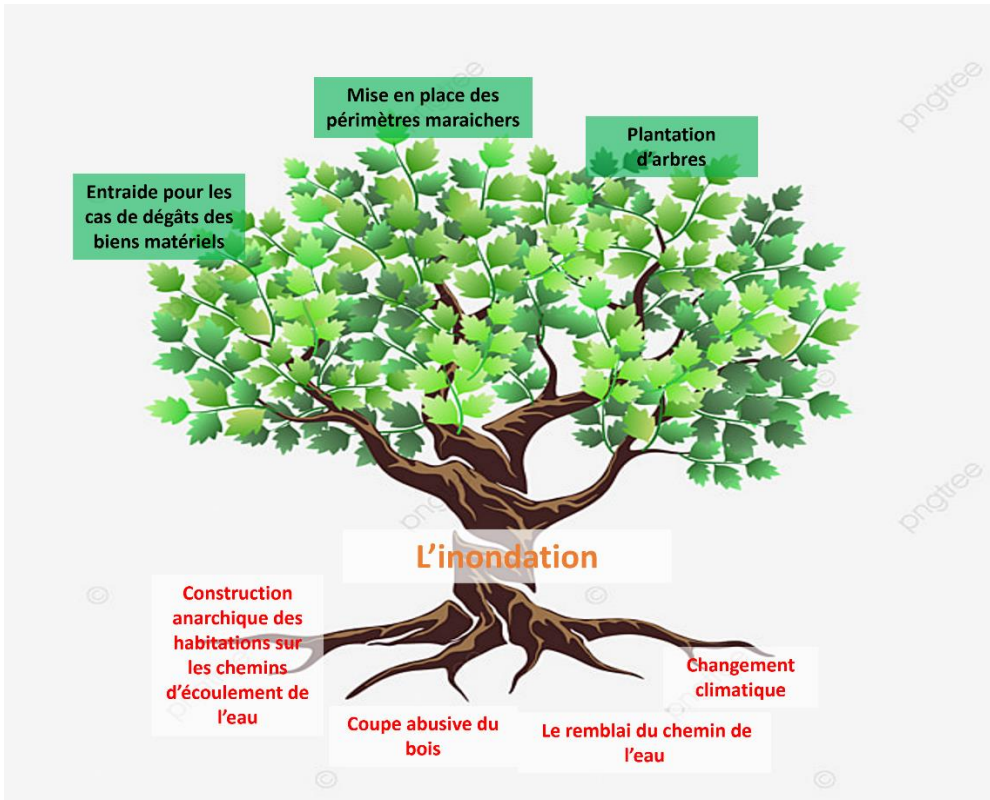


Image 11 Summary of community-based flood solutions in municipalities