



Front cover photo credit:

© Sylvain Cherkaoui / FAO.

24 July 2024, Bousra Ndawène, Senegal. A shepherdess milks a cow in the village of Bousra Ndawène.

Acknowledgements

Written by: Hannah Rae Armstrong

Coordinated by: Thibaut Girault

Data collection: Mady Camara, Hannah Rae Armstrong

Editor: Anthony Morland

Reviewed by: Aurélie Donnard (MMC), Thibaut Girault (MMC), Chloe Sydney (MMC), Jennifer Vallentine (MMC), Kerstin Tröster (SDC), Cheikh Khadim Mboup (SDC)

Layout and design: Simon Pegler

Suggested citation: Mixed Migration Centre (2024), *Weathering change: the gendered impacts of climate and environmental changes on pastoralist migration in Northern Senegal*. Available at: [mixedmigration.org](https://www.mixedmigration.org)

The project is funded by the Swiss Agency for Development and Cooperation (SDC). The information and views set out in this report are however those of the authors and the MMC and do not necessarily reflect the official opinion of the Swiss Agency for Development and Cooperation, the Danish Refugee Council (DRC), or any of the donors supporting the work of MMC. Responsibility for the content of this report lies entirely with the MMC

About MMC

MMC is a global network engaged in data collection, research, analysis, and policy and programmatic development on mixed migration, with regional hubs in Africa, Asia and the Pacific, Europe and Latin America, and a global team based across Copenhagen, Geneva and Brussels.

MMC is a leading source for independent and high-quality data, research, analysis and expertise. MMC aims to increase understanding of mixed migration, to positively impact global and regional migration policies, to inform evidence-based mixed migration responses for people on the move and to stimulate forward thinking in public and policy debates on mixed migration. MMC's overarching focus is on human rights and protection for all people on the move.

MMC is part of the Danish Refugee Council (DRC). While its institutional link to DRC ensures MMC's work is grounded in operational reality, it acts as an independent source of data, research, analysis and policy development on mixed migration for policy makers, practitioners, journalists, and the broader humanitarian sector.

For more information visit: www.mixedmigration.org and follow us at: [@Mixed_Migration](https://twitter.com/Mixed_Migration)

Contents

Acknowledgements	3
Key findings	5
1. Introduction	7
2. MMC’s conceptual framework	8
3. Methodology	9
4. Background to the Ferlo	11
4.1 The Ferlo: conservation, pastoralism, and the Fulani heritage.....	11
4.2 Inequitable resource governance and mobility disruptions in the Ferlo.....	11
4.2.1 Resource management and sedentarisation policies.....	11
4.2.2 Disparities in resource access and their impact on mobility outcomes.....	12
4.2.3 Migration as an adaptation strategy to climate and environmental change.....	12
5. Research findings	14
5.1 Mobility: migration offers new advantages but also new risks	14
5.1.1 Balancing increasing mobility needs with limited nearby seasonal migration options.....	14
5.1.2 Kédougou offers herders multiple advantages	14
5.1.3 The business of herding vs traditional lifestyle.....	16
5.1.4 Herders are met with new environmental challenges in Kédougou.....	17
5.1.5 Migrant herders in Kédougou lack established networks to provide effective representation in the face of challenges	18
5.1.6 Threats to social cohesion: a climate of suspicion and tensions with host communities.....	19
5.2. Involuntary immobility: the women herders who stay behind	20
5.2.1 Women’s exclusion from long-distance seasonal migration.....	20
5.2.2 Deciding who leaves and who stays	21
5.2.3 Children’s education as a restriction to women’s mobility.....	23
5.2.4 The costs of immobility.....	24
5.2.5 Women-led support systems	26
6. Conclusion	27
7. Annex 1 – Detailed sample description	28

Tables and figures

Figure 1. Conceptual framework for climate-induced mobility	8
Table 1. Profile of respondents	9
Table 2. List of key informant interviews	28
Table 3. List of respondents in Kédougou	28
Table 4. List of respondents in the Ferlo	29
Map 1. Data collection locations	10

Key findings

This case study explores climate and environmental change-induced mobility and immobility patterns among men and women herders from villages in the Ferlo region of northern Senegal, highlighting their extended and increasingly distant seasonal migrations toward the southeastern Kédougou region. This research is based on primary data collected via semi-structured interviews and focus group discussion with 133 herders in both the areas of origin and destination, as well as 8 key informant interviews and a review of literature.

Environmental factors, resource inequality and instability are forcing herders to shift from shorter seasonal migration to longer southward journeys.

- **Herders in the Ferlo increasingly undertake longer, more distant seasonal migration as access to local pasture and water dwindles.** While mobility has historically been their primary adaptation to environmental pressures, intensified climate change impacts and uneven resource governance in the Ferlo now force herders to make reactive mobility decisions and seek resources further afield, sometimes for as long as nine or ten months.
- **Traditional, nearby seasonal migration destinations have also become increasingly constrained by environmental stressors,** such as deforestation in Tambacounda. Additionally, **insecurity in Mali** has further restricted the viability of cross-border transhumance routes.

While herders are being forced further southward in their migration, they are also met with new opportunities to adapt...

- **Southward seasonal mobility creates new economic opportunities for herders, enhancing their adaptation capabilities.** The southeastern Kédougou Region provides abundant pasture and water resources, along with thriving local economies bolstered by gold mining and cross-border trade. The presence of livestock markets, where animals command attractive prices, enables herders to diversify their income sources. As a result, many herders are branching out into business, leveraging these opportunities to strengthen their livelihoods.
- **In response to new economic opportunities in Kédougou, some herders have opted to establish more permanent residence there.** Intra-communal networks are instrumental in facilitating the swift integration of newcomers, providing support for their economic integration. Some men herders are considering staying and investing locally, exemplifying a new form of voluntary immobility, which is changing the practice and culture of herding.

...however, they are also met with new risks.

- **Herders face new environmental challenges in Kédougou, including environmental degradation, deforestation and chemically polluted water, as well as tensions with farmers over land encroachments.** This underscores their continuous vulnerability to environmental stressors that pushed them to migrate farther in the first place.

Climate and environmental factors are shaping new and gendered mobility patterns among herder communities with increased mobility among men and involuntary immobility among women.

- **Gender roles are helping to shape mobility, with men moving for livelihood reasons and women staying behind because of their caretaking responsibilities.** Although seasonal migration decisions are often made collectively, women experience forced immobility, as their inability to move often stems from gender norms and resource limitations rather than personal choice.
- **Ensuring continuity of their children's education is a primary reason many women remain in their communities.** While many women express a desire to seasonally migrate along with their husbands, these aspirations are often overshadowed by prevailing gender roles and social expectations.
- **While men adapt by migrating in search of resources, women must cope with daily challenges related to environmental stressors, economic hardship and inequitable resource governance.** Men's mobility thus negatively impacts women's ability to generate revenue, reinforcing a cycle of forced immobility and constrained mobility aspirations for women left behind.
- **Women overcome the challenges of immobility by building communal support networks,** often formalized into associations that offer mutual aid, resources, and opportunities for political participation, highlighting their agency despite restricted mobility.

1. Introduction

The impacts of climate change in Senegal are increasingly affecting human activities in complex and varied ways.¹ Rainfall patterns are becoming less predictable, with rains intensifying over shorter periods,² increasing the risk of flooding.³ Shorter rainy seasons, and by extension longer dry seasons, are resulting in fresh water shortages and are already disrupting agricultural cycles, particularly in rural areas.⁴ A 2023 study of 400 households across six regions in Senegal revealed that 3 in 4 respondents had already observed environmental changes that were affecting their livelihoods.⁵ Into the future, average temperatures in Senegal are projected to rise by 1 to 3 degrees Celsius, while sea levels are expected to increase by up to 1 metre by 2100.⁶ In particular, climate change is anticipated to significantly affect the coastal and northern regions of Senegal, which are already characterised by a hot desert climate.⁷ Both rural and urban areas will continue to be affected, albeit in different ways,⁸ with sectors such as farming, mining, pastoralism, and fishing will be particularly impacted.⁹

Internal migration has long been a notable demographic phenomenon in Senegal, encompassing a wide range of forms and drivers, including rural-to-rural transhumance and other forms of seasonal migration,¹⁰ strategies for livelihood diversification, and the pursuit of educational and economic opportunities.¹¹ Increasingly environmental changes are interacting with existing factors in shaping internal movements between regions in Senegal. For example, the droughts of the 1970s and 1980s mark the onset of significant urbanisation in Senegal, as rural communities were displaced by harvest losses and subsequently migrated to urban centres, particularly Dakar, in search of economic opportunities.¹² As the impacts of climate change worsen in Senegal, the World Bank forecasts that by 2050, climate-induced internal migration in Senegal could affect up to 1 million people, around 3% of that year's projected population—one of the highest predicted rates in West Africa.¹³

Livestock farming is a vital sector in Senegal's economy, playing a key role in household food security, employment, and wealth creation. According to the latest available official statistics, in 2020 it was contributing an average of 28.5% to the added value in the primary sector, and 4.3% to the national GDP.¹⁴ As of 2023, about 5% of Senegalese workers, or 190,000 individuals, were involved in livestock farming.¹⁵ However, livestock farmers, and pastoralists in particular, are directly affected by climate and environmental changes in Senegal and there is increasing pressure on the fragile social cohesion between settled farmers and pastoralists, which can already be observed in land conflicts and competition over natural resources in West Africa in general¹⁶ and in Senegal in particular. These factors have intersected with other challenges such as inequitable resource access and a worsening security situation across the Mali border.

This case study explores internal migration decision-making among herders from northern Senegal within the context of climate and environmental changes. It focuses on herders from villages in the Ferlo Reserve,¹⁷ whose mobility to the southern Kédougou region is influenced by climate variability. It examines their migration aspirations, the climate risks faced, and adaptation strategies in both rural areas of origin and semi-urban migration destinations. Specifically

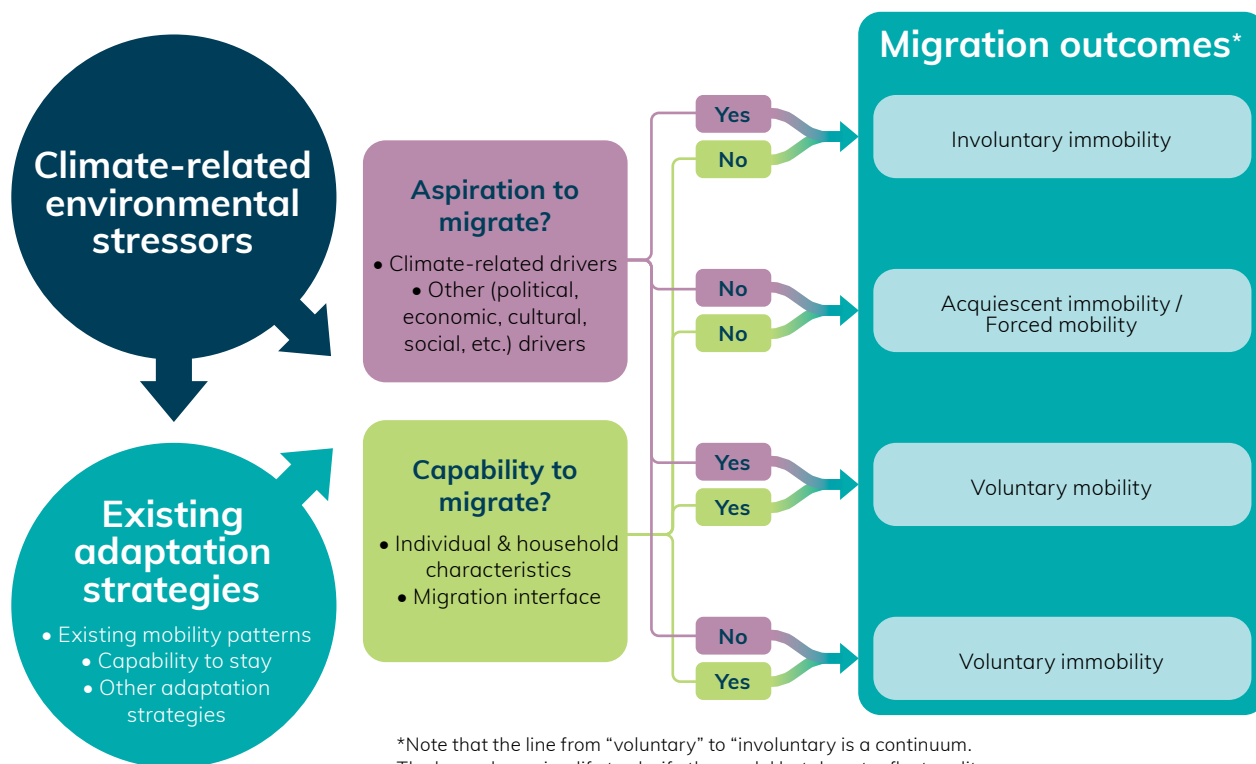
- 1 Tandian, A., Tall, S. M., Mohamadou Sall, & M Al Assana Samb (2011), [Climate change, adaptation strategies and mobility: Evidence from four settlements in Senegal](#).
- 2 Key informant interview with a demographer affiliated with an international research institution based in Senegal, April 2024
- 3 PFONGUE (2017), [Développement local et changement climatique. Parole de la société civile](#)
- 4 Intergovernmental Panel on Climate Change (2022), [Climate Change 2022: Impacts, Adaptation and Vulnerability Working Group II Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change](#), Chapter 9.
- 5 IOM (2023), [Impact de la dégradation environnementale et du changement climatique sur la mobilité humaine au Sénégal. Etude dans les secteurs de l'agriculture, des mines, de la transhumance et de la pêche au Sénégal](#)
- 6 USAID (2023), [Senegal climate change country profile / Climate](#)
- 7 World Bank Group (2021), [Deep dive into internal climate migration in Senegal](#)
- 8 Key informant interview with the president of a civil society organisation dedicated to rural development, March 2024
- 9 IOM (2023), [Op. cit.](#)
- 10 Key informant interview with a sociologist overseeing the migration portfolio at a national research institution, April 2024. Transhumance is the seasonal movement of livestock between permanent places of origin where grazing is not sustainable year-round to areas offering better pasture.
- 11 Delaunay, V., Engeli, E., Franzetti, R., Golay, G., Moullet, A., & Sauvain-Dugerdil, C. (2016), [La migration temporaire des jeunes au Sénégal. Un facteur de résilience des sociétés rurales sahéliennes ?](#)
- 12 Lalou, R., & Delaunay, V. (2015), [Migrations saisonnières et changement climatique en milieu rural sénégalais: Forme ou échec de l'adaptation ?](#)
- 13 World Bank Group (2021), [Op. cit.](#)
- 14 République du Sénégal (2020), [Programme pour la compétitivité de l'agriculture et de l'élevage. Evaluation des systèmes environnementaux et sociaux. Rapport final.](#)
- 15 République du Sénégal (2024), [Rapport provisoire, RGPH-5, 2023](#)
- 16 UNOWAS (2018), [Pastoralism and security in West Africa and the Sahel](#)
- 17 A minority of respondents interviewed in Kédougou were originally from the neighboring Fouta Toro and Tambacounda regions, which, despite sharing similar environmental conditions and mobility patterns with the Ferlo, have distinct historical and administrative contexts.

exploring through a gender lens, this case study focuses on two core themes: how men herders are using internal migration to adapt to new climate-linked constraints on their home environment, and how this adaptation impacts women herders who remain behind in their villages during their menfolk's longer migrations. The aim of this research is to contribute to a better understanding of climate mobility and immobility in the context of Senegal, with the view to inform gender-responsive and evidence-based adaptation strategies.

2. MMC's conceptual framework

This case study adds to the growing body of work conducted by the Mixed Migration Centre (MMC) on climate induced (im)mobility and is grounded in MMC's analytical framework (see Figure 1),¹⁸ which demonstrates how climate-related environmental stressors influence mobility outcomes. Climate-related environmental stressors can have both direct and indirect effects on individuals' aspirations and capabilities to migrate¹⁹ and the analytical framework explores various potential outcomes related to mobility, including the risk of involuntary immobility, as well as both forced and voluntary movement. For a comprehensive explanation of the conceptual framework, refer to [MMC's state-of-play knowledge paper on climate-induced human mobility](#).

Figure 1. Conceptual framework for climate-induced mobility



18 MMC (2022), [Climate-related events and environmental stressors' roles in driving migration in West and North Africa](#)

19 Hein de Haas (2021), [A theory of migration: the aspirations-capabilities framework](#), Comparative Migration Studies

3. Methodology

This qualitative case study draws from primary data collected in June and July 2024 from a total of 133 respondents through 23 semi-structured individual interviews and five focus group discussions (110 participants). Data collection was conducted in both areas of origin and destination. The Ferlo and Kédougou were selected for this case study as they respectively constitute a rural origin zone and an urban or semi-urban destination for migratory herders whose mobility is increasingly impacted by climate variation.

The sample included a higher number of women (82) than men (51) mainly because more focus groups (three) were held in the rural areas of origin to explore specific drivers of immobility. In contrast, a greater number of semi-structured interviews (15) were carried out in the semi-urban areas of destination, where herders—who represent a minority of the semi-urban population—were interviewed individually. The study involved two FGDs and three individual interviews with a total of 38 farmers in Kédougou, while five local officials were engaged through individual interviews. This diverse participant composition, encompassing a range of genders, occupations, and geographical backgrounds (see table 1 for a breakdown and Annex 1 for details), was designed to provide a comprehensive perspective on the challenges posed by long-distance seasonal migration across the migration spectrum, including people who hadn't move, those who moved internally, and the broader communities in climate and environmental change-affected areas of origin and destination.

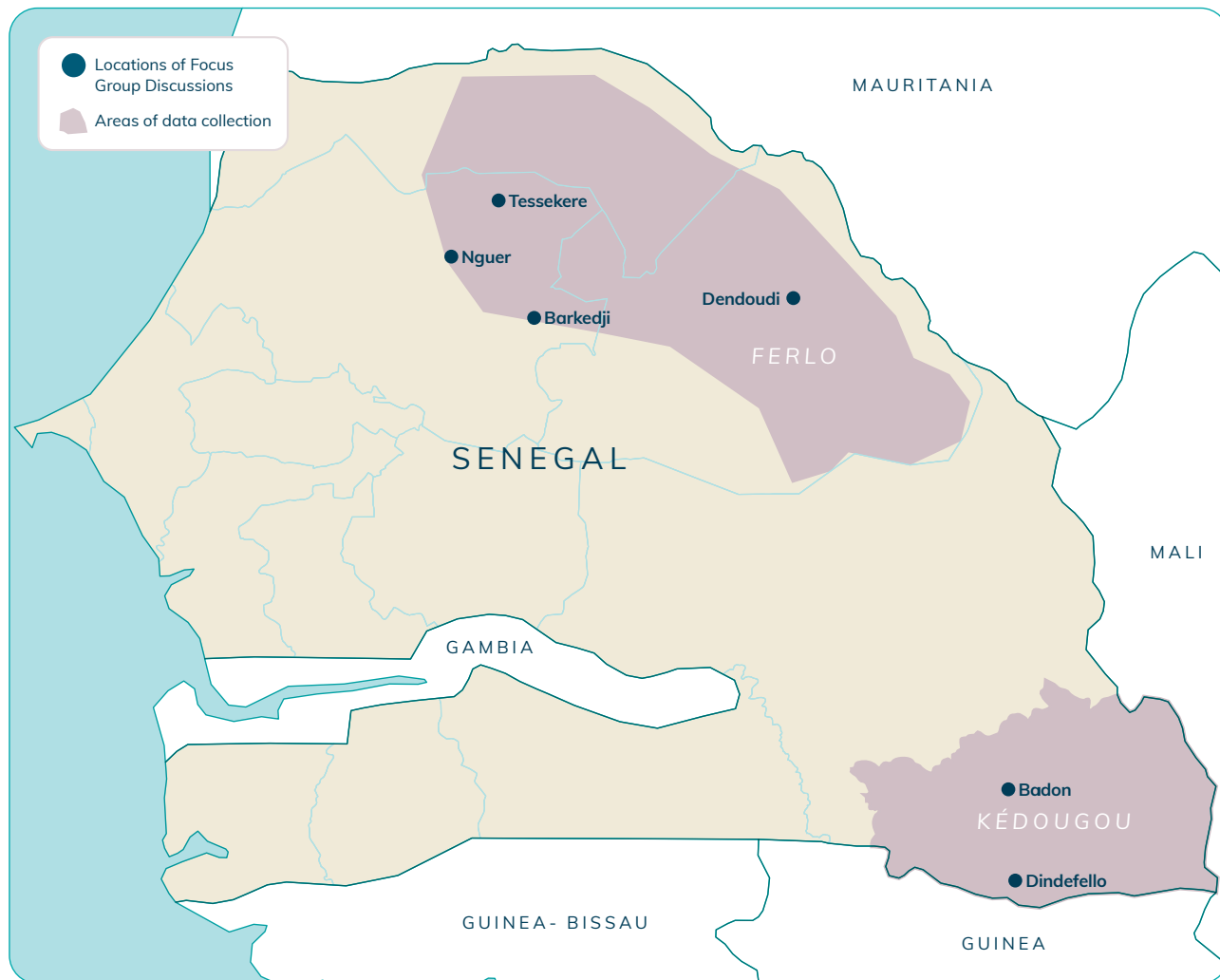
Table 1. Profile of respondents

		Ferlo		Kédougou	
		Individual interviews	FGD	Individual interviews	FGD
Gender	Women	2	70	0	10
	Men	6	5	15	25
	Total	8	75	15	35
Occupation	Herder	4	75	11	0
	Farmer	0	0	3	35
	Local official	4	0	1	0
	Total	8	75	15	35

Respondents were selected using a hybrid sampling approach that drew upon the existing relationships and contacts of the research team. This involved social network sampling to recruit initial respondents, followed by snowball sampling to obtain referrals for additional individuals. While this strategy proved particularly effective for selecting hard-to-reach locations for data collection (see below), it may have resulted in limited representation of individuals with fewer social networks, who are often more vulnerable.

The villages in the rural area of origin (the Ferlo) featuring in this study were selected with the support of local contacts to provide an overview of circumstances in different parts of the reserve, including one village that lies closer to roads and markets, another that lies in a particularly remote and resource-scarce part of the reserve, and another where a relative abundance of natural resources belies ongoing challenges with equitable access. In each village, nearly all of the herder men were away on seasonal migration, often in Kédougou or elsewhere in Senegal or the wider sub-region.

Map 1. Data collection locations



This map is provided for informational purposes only. The accuracy and completeness of the boundary data are not guaranteed and should be verified with official sources

Field research proved both rewarding and challenging. In Kédougou, a climate of suspicion surrounding herders meant they were often reluctant to speak frankly and cut interviews short. In the Ferlo, the great distances between villages resulted in long travel times and short interview times for researchers. However, women herders there were at ease speaking in a group setting in their own familiar surroundings. Unaccustomed to being approached for their views on climate and migration, they welcomed the opportunity to share their thoughts and experiences.

This report also draws from an extensive literature review of academic papers, technical reports, and policy briefs relating to climate change and human mobility, as well as interviews with eight key informants specialising in climate change in the Sahel, herding, and the Ferlo (see Annex 1 for a list of Key Informant Interviews).

4. Background to the Ferlo

4.1 The Ferlo: conservation, pastoralism, and the Fulani heritage

The Ferlo refers to a patchwork of protected spaces in northern Senegal initially established by the French colonial administration in the 1950s and subsequently by postcolonial authorities in the 1970s for conservation-style sylvo-pastoral use.²⁰ The Ferlo covers over a third of the national territory, stretching from the Senegal River valley to Touba and Tambacounda in the south, and straddles three regions of Matam, Louga, and Saint Louis. Encompassing much of the Ferlo, the Fouta Toro (commonly referred to simply as the Fouta) is a former imamate and settlement of the Fulani (aka Peul), ethnic group concentrated along the riverine Senegal-Mauritania border.²¹ Fulani herders have been active in the Ferlo since at least the 13th century, when they began cultivating crops along the Senegal River valley and practicing seasonal transhumance between the valley and the Ferlo's seasonal ponds.²²

4.2 Inequitable resource governance and mobility disruptions in the Ferlo

4.2.1 Resource management and sedentarisation policies

Land-use management in the Ferlo, a protected space for herders, has unintentionally contributed to overcrowding and inequitable resource governance, as well as to constrained mobility aspirations and capabilities. Since the 1950s, colonial and postcolonial administrations have sought to optimise the use of resources and manage mobility in the Ferlo. In response to the scarcity of water and pastureland necessary for livestock raising, the colonial administration in the 1950s attempted to sedentarise semi-nomadic herders and increase animal production by drilling wells, culling wild animals, and prohibiting for-profit agriculture.²³ These policies aimed to deter new mobility patterns towards regions designated for irrigated farming that could otherwise have resulted from the declining availability of water and grazing lands. However, this imposed sedentarisation created involuntary immobility for many semi-nomadic herders, as they became more anchored to specific areas bounded by agricultural expansion to the north and south,²⁴ limiting their ability to move in response to seasonal shifts and environmental changes as they had traditionally done. In the 1970s, a particularly severe drought prompted a new forced movement of Fulani herders from the Senegal River valley to the Ferlo, further densifying settlement within the territory.²⁵

The sedentarisation policies also damaged traditional modes of resource management, creating conditions for overcrowding and permanent settlement on a space best suited to seasonal pasture.²⁶ As the numbers of small village settlements multiplied, so did the numbers of animals, which lived longer and in better health thanks to veterinary advances. The transhumance from Mauritania to the Ferlo region also intensified due to prolonged dry seasons in Mauritania, which increased the number of livestock needing access to the grazing lands and water resources of the Ferlo.²⁷ The proliferation of animals and small-scale rural settlements intensified pressures on

20 A sylvo-pastoral system combines tree cover with grazing land, where the presence of trees provides benefits such as shade, fodder, and soil conservation, while also allowing for livestock grazing.

Vertigo (Octobre 2021), [Mieux comprendre la complexification de l'occupation de l'espace pastoral au Ferlo. Un prérequis pour une bonne gestion des ressources naturelles](#).

21 Al Muube (19 February 2022), [Castes et stratification sociale au Fuuta Tooro \(Mauritanie/Sénégal\)](#)

22 Vertigo (Octobre 2021), [Op. cit.](#)

23 These efforts were intended to attract herders from other regions, increase animal production, and reduce conflict between farmers and herders by removing herders from zones designated for irrigated farming. Meanwhile, the expansion of peanut farming to the south and farming developments along the river to the north increased the concentration of herders in the Ferlo Reserve that was designated as a "sylvo-pastoral zone" earmarked for their protected use (cash crop farming was explicitly forbidden within the protected zone).

24 Vertigo (Octobre 2021), [Op. cit.](#)

25 CIRAD, [Etude de Cas No 2 : L'expérience des forages pastoraux au Ferlo, facteur de développement ou impasse sociotechnique et facteur de désertification ?](#)

26 CIRAD, [Op. cit.](#)

27 Oumar Sy (2010), [La transhumance transfrontalière, source de conflits au Ferlo \(Sénégal\)](#), M@ppemonde

the Ferlo's natural resources, with several species of grasses disappearing.²⁸ This degradation further constrained the mobility capabilities of pastoralists, forcing them to adapt to an increasingly fragile ecosystem. Although demographic documentation omits the precise growth rate of people and animals, the number of boreholes in the Ferlo climbed from 51 in 1957 to 320 by 2021, a sign of how sedentarisation policies, coupled with environmental pressures, have pushed the Ferlo outside safe ecological boundaries,²⁹ leading to a critical juncture where both mobility aspirations and capabilities are compromised.

4.2.2 Disparities in resource access and their impact on mobility outcomes

Efforts to increase access to water as a means of managing the use of resources in the Ferlo have continued up until the present, with authorities overseeing a significant well-drilling campaign between 2012 and 2024, and the World Bank investing in a multi-year irrigation project debuting in 2021 to dredge, extend and build new canals and install pumping stations.³⁰

Increasing available water resources, beyond further stressing the ecosystem, has not equitably benefited pastoralists. While these efforts were aimed at addressing environmental pressures on water and pasture availability, they have deepened inequalities in mobility outcomes. Although pastureland in the Ferlo is accessible free of charge, water distribution points are managed by committees whose composition and control reflect local politics.³¹ Due to complex histories of caste hierarchy and recent political subversions of these power structures, different sub-groups within the Ferlo have varying levels of access to power and representation, and some are completely marginalised from water management and distribution systems.³² The privatization of rural water management in Senegal is gradually replacing community-run associations with private companies subcontracted for operation. Initially aimed at professionalizing and improving service delivery, this reform has faced substantial criticism due to significant price hikes beyond official tariffs, declining water quality, and frequent shortages. As a result, certain groups experience forced immobility, trapped in areas where they have limited access to resources, while others are pushed into forced migration. Some groups, by contrast, control particular water sources are thus able to impose usage charges on or deny access to other groups, forcing the latter to migrate to far-flung areas where they can access water more easily.³³

4.2.3 Migration as an adaptation strategy to climate and environmental change

In recent decades, environmental stressors, exacerbated by climate change, have intensified pressures on the Ferlo's fragile environment and hindered access to resources. This is evident in shorter rainy seasons with lower rainfall levels and decreasing biomass levels linked to aridity and desertification. Data collected from satellites and observation centres lends statistical evidence to herders' accounts of a recent rise in environmental pressures.³⁴ Following a decade of decent pasture growth between 2002 and 2012, satellite imagery shows that in 2012, biomass production linked to rainfall patterns in the Ferlo declined steadily, causing serious damage to grasslands.³⁵ Atmospheric readings in the Ferlo indicate that climate change has led to decreasing humidity and rain across the semi-arid savanna over the past 13 years. This has stunted the growth of plants unused to such aridity.³⁶

Insufficient access to pasture and water began pushing herders to take their livestock on seasonal migrations of longer duration and distance. Mobility has long been herders' leading strategy for adapting to environmental pressures linked to climate change.³⁷ But recent intensified climate change impacts, compounded by the underlying patchwork of inequitable resource governance (see Section 4.2.1 above), have led many supposedly sedentarised communities in the Ferlo to face increasing pressure to seek out more abundant or more easily accessible water

28 Vertigo (Octobre 2021), [Op.cit.](#)

29 Land (July 2021), [Unpacking Decades of Multi-Scale Events and Environment-Based Development in the Senegalese Sahel: Lessons and Perspectives for the Future](#)

30 Office des Lacs et Cours d'Eau (June 2021), [Projet de renforcement de la résilience des écosystèmes du Ferlo \(PREFERLO\)](#)

31 Key informant interview with civil society leader, July 2024.

32 Key informant interview with civil society leader, July 2024. The primary caste breakdown is between nobles (Dimo/Rimbe) and a former slave caste known as Mathioudo or Maccube. Al Muube (19 February 2022), [Op.cit.](#)

33 Key informant interview with herder association leader, July 2024.

34 Centre de ressources virtuel des Rivières du Sud (2020), [Variabilité et changement hydro-climatiques dans le bassin versant du Ferlo \(Sénégal\)](#)

35 Key informant interview with data scientist specializing in satellite imagery of Sahel climate, August 2024.

36 Key informant interview with scientist at regional climate observation station, August 2024.

37 MMC (2023), [Climate and mobility case study. Western Sahel: Tatki, Senegal](#)

and pasture outside of the reserve. One herder explained that while tree and pasture cover in his Ferlo village were well-protected, in recent years they had been affected by overcrowding to the point where “there are more animals than space”. Another man herder interviewed in Kédougou recalled:

“I noticed the rains becoming scarcer ten years ago. The animals weren’t getting enough to eat, and in the Ferlo, we had to pay for water access.”

Women herders in Ferlo villages similarly reported that over the last decade or so a severe decline in rain and related biomass production led all men in their community to depart with the animals for longer periods and to travel farther away. Each village reported that whereas it used to be common for men to leave for a two-to-three-month transhumance, they are now gone for nine months or longer. A participant at a focus group discussion in Nguer, (a small, remote village in the Yang-Yang Commune of the Louga Region’s Linguere Department), explained:

“So much has changed in the past decade. Before, it rained and there were grasses everywhere. Now, there is no rain, no grass, and the animals are unstable. Only women and little children remain here. The men all left with the animals looking for pastures and water.”

As herders navigate these complexities, their decision-making processes become increasingly critical: they must balance the risks of migrating for longer durations and distances—increasingly, to as far away as Kédougou, more than 400 kilometres to the south—against the need to secure resources for their animals.³⁸ Another herder who had migrated from Matam said:

“My village lies near the river, but our animals cannot drink the water because cultivated fields are in their way. So they come back to drink in the village, where we have to pay for water. I came to Kédougou because I heard it was better here and it is: we can care for the animals and they have access to much more pasture.”

This transition from shorter, seasonal migration to prolonged absences signifies a forced alteration of traditional mobility practices in which environmental degradation thwarts short-distance mobility aspirations. Climate change-induced resource scarcity thus forces men and women into reactive decision-making: mobility becomes a livelihood necessity for men but (as detailed in Section 4.2. below) but becomes impossible for women.

³⁸ For a look at how restricted seasonal migrations in the Ferlo used to be in the 1950s, before sedentarisation, see p. 45 of “Déplacements saisonniers des éleveurs au Sénégal”, from “Cartes de l’élevage pour le Sénégal et la Mauritanie”, Office de la Recherche Scientifique Outre-Mer, 1951.

5. Research findings

5.1 Mobility: migration offers new advantages but also new risks

5.1.1 Balancing increasing mobility needs with limited nearby seasonal migration options

Just as herders' need for mobility is growing, they report facing increasingly limited options in traditional, nearby seasonal migration destinations. New security and natural resource obstacles across the eastern border with Mali and in the neighbouring forested Tambacounda Region are rendering these traditional migration destinations unviable, prompting herders to travel greater distances to destinations like Kédougou. These variables have a direct impact on the capabilities of herders and their existing mobility habits, and influence how they approach decisions concerning climate mobility.

Between 1990 and 2015, Senegal's forest coverage shrank from 9.3 million to 8.2 million hectares.³⁹ Forests in Tambacounda were among the fastest to disappear, losing more tree cover than any other Senegalese region between 2001 and 2023.⁴⁰ One small-scale herder respondent explained that information about richer forests and better opportunities led him to take his few sheep to a new destination:

"I began coming to Kédougou because it was no longer possible to feed the herds in Tambacounda. The forests there are now completely devastated. In Kédougou, although we do see trees getting cut, the forest still exists for now. We're very happy about that."

Similarly, herders used to travel east to Mali for transhumance and trade opportunities.⁴¹ But over the past decade, Mali's multi-layered conflict has often pitted state security forces and farming communities against herders,⁴² with Fulani herders in particular targeted. Threats they now face range from heightened harassment from border authorities and militias, to violent, indiscriminate attacks against rural communities.⁴³ Senegalese herders often report that the risks and inconveniences of traveling in Mali outweigh any potential rewards. For example, one Ferlo herder from the Ranerou Department (in the Matam Region), near the Senegal River valley, used to supplement his income by traveling to Mali to purchase animal varieties that are rarer and sell for more profit in the Ferlo, but said he no longer takes the risk:

"We have too many problems there. The Malian border guards are too hard on us."

5.1.2 Kédougou offers herders multiple advantages

With deforestation in Tambacounda and war in Mali ruling out nearer sites that until recently were viable options for northern herders' seasonal migration, Kédougou is increasingly hosting those seeking new migratory destinations. Kédougou is a forested region bordering Mali and Guinea, bisected by rivers in southern Senegal with a mostly sedentary population numbering around a quarter of a million.⁴⁴ The region of Kédougou serves as an arrival hub for young individuals seeking economic opportunities, and as a migration hub for individuals hailing from Guinea and Mali.⁴⁵ The Kédougou Region offers numerous environmental and commercial advantages to herders, who have rapidly spread the message within their own networks.

39 Ministère de l'environnement et du développement durable, Centre de Suivi Ecologique (2015), Rapport sur l'état de l'environnement

40 Global Forest Watch, Forest Change in Senegal, <https://acesse.dev/AICPI>.

41 Respondent interviews, Kédougou and Ferlo, June and July 2024.

42 GI-TOC (2023), [Locked horns. Cattle rustling and Mali's war economy](#)

43 International Crisis Group (2019), [Central Mali: Putting a Stop to Ethnic Cleansing](#)

44 Agence Nationale de la Statistique et de la Demographie, [2023 census](#)

45 Key informant interview with a demographer affiliated with an international research institution based in Senegal, April 2024

Kédougou's natural environment offers herders rich resources in terms of water and pasture. One respondent, a man of modest means who aspires to graduate from caring for other people's livestock to owning his own, shared that about ten years ago, he began traveling further afield from his village in Kidira, just west of the Malian border. He noticed the increasingly insufficient rains and the gradual privatization of rural water management in northern Senegal. At first, he would look for work in Mali, but then he started traveling south to Kédougou:

"In the north, we have to pay for access to water for the animals, while in Kédougou, the river is free for everyone. I deal with climate change by living with it, like everyone else. We do what we can; we move around a lot."

In addition to environmental incentives, respondents explained that Kédougou's regional economy, nourished by cross-border trade and a thriving artisanal gold mining industry, offers commercial opportunities that herders lack back home.⁴⁶ Gold miners and cross-border traders have cash to spend, while village markets in Kédougou Region are more vibrant and the animals fetch better prices. Herders say it is easier to borrow and pay back small loans and make investments. One respondent explained:

"I have been coming to this village in Kédougou for a decade. If I need a small loan, for myself or to send my family back in the village, I can get it from someone here and pay it back little by little."

Thanks to these conditions, some herders report branching out into business, buying and selling animals, and investing in local real estate or shops. Several respondents described following such a path: they first travelled to Kédougou with a small group of animals, perhaps selling one or two, and then returning north for the rainy season. Within a few years, they became more anchored—or voluntarily immobile—in Kédougou, with access to capital they could send home to their families or reinvest in businesses.

Intra-communal support also plays a role in shaping herders' decisions to move to Kédougou. Although the Fulani who arrive in Kédougou hail from dispersed locations scattered across Senegal's north and east—and sometimes deep inside Mali—on arrival they quickly form links based on their shared language, traditions, and occupation. Social networks and communal bonds help mitigate the isolation and uncertainty of mobility, allowing newcomers to integrate and find economic opportunities more easily, as two of this study's respondents explained:

"I didn't know anyone when I first came to Kédougou, but people helped me. Today my business is good. We Ferlo herders and Malian herders help one another. It's the same metier."

"We are all herders and we are all Peuls [Fulani], all related. We share the same problems and the same metier. Whether we're Malian or Senegalese, seasonal migrants or permanent residents, we support and help one another as best we can."

This gradual anchoring in Kédougou illustrates how mobility aspirations often evolve as individuals respond to changing conditions, balancing forced movements triggered by environmental pressures with voluntary choices enabled by economic gains. The men's extended seasonal migration to Kédougou can be seen as a mix of forced and voluntary mobility. While herders are choosing to migrate in search of pasture and to adapt to climate and environmental changes,⁴⁷ the underlying drivers related to limited access to resources and environmental pressures make this migration a necessity for sustaining their livelihoods rather than a truly voluntary choice. They are also moving further afield due to the unviability of closer seasonal migration options, highlighting the involuntary nature of this movement. However, voluntary immobility may also arise, as some herders become more rooted in Kédougou,

46 ISS (2022), [Going for gold leaves Senegal's artisanal mining communities poorer](#)

47 IDMC (2014), [On the margin: Kenya's pastoralists. From displacement to solutions, a conceptual study on the internal displacement of pastoralists](#)

preferring to stay and invest locally rather than continuing to migrate. Thus, environmental pressures initially limit choices, but economic adaptation can open new pathways for both mobility and immobility, a phenomenon detailed by another small-scale herder from the Ferlo who now spends most of each year in a village in Kédougou Region:

"I first came here just to feed my animals because it was too hard to find trees and other grasses for them back home. Here, I can feed my animals, [but] over there, [in the Ferlo] there is nothing for them to eat right now. Now, I am a herder and a trader. Trade is better here: there are many markets and more opportunities for selling animals. With the income, my family back home can eat. The point of the work is always to put food on your family's table. In the Ferlo, we struggle to sell. It's also very difficult to find work in the Ferlo. We have a herd there, but there's no way to sell because no one has money."

In 2016, a wealthier herder from the Ferlo started bringing animals to the Kédougou bush. He has done so well that he now runs a business in the town of Kédougou and brings his brothers south to look after his multiplying herds:

"We herders are very affected by climate change. It doesn't rain like it used to. Now we live off the sale of our animals, and in the north, we're often forced to sell at a loss. We're tired of all this, that's why some of us are migrating to large towns like Kédougou."

5.1.3 The business of herding vs traditional lifestyle

The growing tendency to branch out into trade is fundamentally changing the way herders practice pastoralism.

Traditionally, herders invested everything into maintaining their animals and enlarging their herds, cultivating small subsistence gardens to feed their families, and selling animals only when absolutely necessary. Through economic diversification, herders are now transforming their mobility patterns and way of life, for example by selling their animals for meat consumption. Economic diversification also fosters new capabilities to adapt to environmental and resource pressures through voluntary mobility and immobility. A respondent herder from the commune of Bakel (in Tambacounda Region) spoke of how trading had helped him achieve more financial security:

"Before, we only looked after the animals, always moving them around to feed them. We did not sell, and it was not possible to stay home if you had herds. We had to leave to take care of them. But now, so much has changed. We can make money from our herds by selling them. We can buy food, make money and spend it. We can mix our herds with other species. We can sell our sheep for money to build a house or open a store. All these things, especially trade, are sources of wealth, which directly feeds us and our herds."

Another respondent, from Dahra Djolof, a town in the Louga Region part of the Ferlo, who has been bringing animals to Kédougou since 2017, said:

"I am a herder but now I am also a seller. Herding used to be different. Before, you could raise animals nearer to home, without having to travel too far. Resources were abundant and animals were well fed. Now it hardly rains, resources are scarce, and animal feed has become very expensive. I bring goats and sheep from different villages and sell them in weekly markets in Kédougou. Herding has become a business for many people. Some buy good species of goats and sheep in Chad and Mali and bring them here to resell. Some even go to Holland to bring back cow species⁴⁸ that didn't exist here yet, and in the future, I plan on doing that too. Many herders are now also shopkeepers or big traders. I think herding will be more and more valuable because the herders of today have more vision and are more awake. They have a few different businesses and if one doesn't work, they can count on another."

48 Senegal imported almost \$8m worth of animals from the Netherlands in 2022. World Integrated Trade Solution, [Senegal Products Imports from Netherlands 2022](#), consulted in Octobre 2024

The transition from traditional herding practice to a more profit-oriented one elicits enthusiasm but also some nostalgia among herders. The same herder from Dahra Djolof mourned the loss of his previous lifestyle:

"In our tradition, people used to herd out of love. They would only kill an animal to consume it. Now it's a business. People raise sheep for a few years, trade them for cows or sell half and invest in another business and continue to raise the rest."

5.1.4 Herders are met with new environmental challenges in Kédougou

Although Kédougou appears lush and fertile, especially to seasonal migrants from the semi-arid north, it too is undergoing significant environmental degradation. While pastoralism is an adaptable and resilient lifestyle, herders expressed deep concerns over what lies ahead. There was a broad, unsettling consensus among respondents that finite resources are rapidly being exhausted. Gold miners' chemicals are polluting rivers and other water sources, charcoal producers and loggers are agents of deforestation, and brush fires are also destroying woodlands.⁴⁹ The livestock practices introduced by herders also contribute to these increasing pressures on the fragile environmental balance of Kédougou, mainly by cutting trees and setting brush fires.

The pollution of water sources is the most serious environmental setback herders reported facing in Kédougou. The respondent from Ranerou Department explained how herders' worst problems in Kédougou related to gold mining activities:

"Every few kilometres in the bush you find miners dumping toxic products into nature. I lost five cows this year alone, they drank toxic water and died - one just a week ago."

Similarly, other forms of local industry such as logging, charcoal production, and setting brush fires to clear land for agriculture, are taking a heavy toll on the environment in Kédougou.⁵⁰ Several respondents said they were being unfairly scapegoated for such damage:

"Everyone says we herders are destroying nature. But the trees we cut grow back when the rains come. It is other people who are destroying the rivers and the nature."

"The population often accuses us of cutting trees, but we only cut branches, never trunks. The charcoal producers and loggers are numerous in this region. The population themselves often set fire to the brush and burn the grasses. This is not good for us".

"A herder only cuts the trees his animals eat, and with moderation so that they will regrow tomorrow as he may be back. But we see people with machines cutting the tree trunks, so that they cannot grow back. Others cut them down to make charcoal or sell them. This is destroying the forests and preventing the rains. But most people say that it's the herders who are destroying the forests."

49 In a sign of how bad pollution levels have become, the government recently suspended artisanal mining along the Faleme river. RFI (2024), [Sénégal: le gouvernement suspend l'orpaillage le long de la rivière Falémé](#)

50 See "Management Matter? Effects of Charcoal Production Management on Woodland Regeneration in Senegal" (2010), VivAfrik (1 February 2024), [Sénégal : 16 cas de feux de brousse enregistrés dans le département de Kédougou depuis octobre 2023, selon le service des Eaux-et-Forêts](#)

Those accusing the herders of causing damage included a Kédougou mayor who was among this study's respondents:

"When herders come, their herds multiply because they easily find enough to eat. And we don't bother them, as for now, they don't bother us. But it needs to be recognised that they are cutting trees in the forests. Often, they spend six months in the bush and cut trees. And when they come, there are brush fires. We have often noted brush fires they have started."

While migrant herders in Kédougou deny responsibility for such damage, they are equally concerned about the region's rapid environmental decline. The slow onset of environmental deterioration marked by pollution and deforestation in Kédougou could force herders to move farther again. One such respondent warned:

"If this continues we will have nothing to feed our animals here. The same problems that forced us to leave the Ferlo will force us to leave Kédougou in search of other pastures."

5.1.5 Migrant herders in Kédougou lack established networks to provide effective representation in the face of challenges

Whereas herders in the Ferlo use community groups and local politicians to advocate for interventions in cases like this, migrant herders in Kédougou say they lack organisation and effective representation. There are hardly any herder associations in the southern region, and local authorities tend to be more accountable to settled farmers or gold miners, and less responsive to herders' complaints, according to several respondents. One respondent said he had repeatedly notified numerous officials in Bandafassi (a village in Kédougou Region) about problems arising from the chemical pollution of the water supply there, but that nothing had been done to resolve the situation. Another respondent who reported problems with pollution from gold mines remarked:

"It is challenging for us to confront challenges together, because we are not organised."

One respondent noted that while herder organisations are rare in Kédougou, those that do exist can be very helpful especially in resolving problems that arise from alleged harassment by agents of Corps des Eaux, Forêts et Chasses du Sénégal.⁵¹ Herders reported that such agents sometimes extract harsh and unjustified fines from them. One of them noted:

"It's difficult to be a herder in Kedegou. The Eaux et Forets agents stop us all the time and make us pay fines without giving us any receipts. If you belong to a herder association, it will intervene on your behalf, but you'll still pay something. Sometimes, the Eaux et Forets agents make us pay 100 to 150,000 FCFA per infraction."

⁵¹ This is a state entity responsible for managing water resources, forests, wildlife, and protected areas, as well as enforcing environmental laws and regulations related to forestry and conservation.

5.1.6 Threats to social cohesion: a climate of suspicion and tensions with host communities

As noted above, perceptions that migrant herders are to blame for deforestation in Kédougou are common among the region's inhabitants. This creates a climate of suspicion that colours locals' relations with herders. One of this study's key informants, an agronomist working with a local NGO in Kédougou, shared his perspective:

"Herders' presence does take a toll on the environment. They cut the few trees that are starting to regenerate during the dry period, especially protected species like ebony. It is true that they cut the branches, not the trunks, but the branches stay around the tree, and with the heat when a brush fire arrives, that accelerates the death of the tree. And those leaves are important - they absorb oxygen during the day and release CO2 at night. These trees contribute to the balance of the ecosystem of our environment. If we lose them, its certain we won't have enough rain."

The climate of suspicion surrounding herders has meant they are often wary of sharing their stories and origins and reveals tensions with locals whose cooperation over communal resources is essential. Although most of this study's herder respondents said they enjoyed harmonious relationships with farmers in Kédougou, farmers at two villages painted a different picture.

Photo credit:

© Sylvain Cherkaoui / FAO.

23 July 2024, Bousra Ndawène, Senegal.

A shepherd leads his livestock to an artificial lake to make them drink.



Fulani farmers who attended a focus group discussion in the village of Dindéfello said crop production had declined significantly over the past ten years, citing rising heat, sterile soil, and destruction by herders' cows as the primary reasons.⁵² They also blamed their migrating kinfolk herders for deforestation since they began arriving in the village in 2006. One such participant said:

“Brush fires are [contributing to] climate change, and herders are cutting the trees down. They completely cut large trees. Without these, people are directly affected by the sun. They cut and they don't plant. It's hotter because we lack rain. The lack of water is because of the cutting of trees and the trees dying. Even some mango trees are dying from the heat. We've heard of climate change on the television and the radio. We have never known heat like the heat this year in our country. Herders come here to cut trees and they leave branches near the trees and when the fires arrive, everything burns. Kédougou is starting to look like the Sahara!”

Farmers from the Malinke (aka Mandika aka Mandingo) community— long-established in the Kédougou Region—who attended a focus group discussion in the village of Badon were similarly critical of the northern herders who first appeared in their village in 2000 and began coming in greater numbers starting in 2006. Although their soil and crops benefitted from herders' manure, they said formal arrangements were rare and that herders mostly stuck to encampments in the nearby bush. These villagers also accused migrating herders of cutting trees and said livestock ate their crops at a time when degraded soil quality and the proliferation of mining activities were increasingly adding to the challenges of cultivation. One said:

“It rains far less these days because herders cut down the biggest trees that attract the rains. So it gets hotter and hotter”.

Another echoed this view:

“For over ten years, we have received less and less rain because of these migrant herders. They are to blame for the climate change here. [...] Now that there are no trees left in their region, they want to strip all of ours.”

5.2 Involuntary immobility: the women herders who stay behind

As detailed above, herders from the Ferlo—like other pastoralists in the world—are accustomed to adapting their seasonal migration routes according to environmental variables.⁵³ However, the longer distances and durations of today's seasonal migrations have serious consequences for the women obliged to remain in Ferlo villages of origin.

5.2.1 Women's exclusion from long-distance seasonal migration

While women once joined their husbands on seasonal migrations, the shift to longer journeys has made their participation less feasible. Women who took part in a focus group in Dendoudji, a village in in Ranerou Department of Matam Region explained:

“In the past, we used to go around with our husbands, they did not have to travel too far, sometimes just 10 kilometres away to a neighbouring village. But today, we can't go far from our village [to accompany them] because moving with kids and belongings to go live in the bush is difficult. And we don't have a donkey and a cart.”

52 In recent years, these farmers added market gardens (where they grow carrots, peas, potatoes, and mint) to the traditional crops grown by their grandparents (such as rice, maize, and millet), and while these helped with food sufficiency, they were still struggling.

53 Anthony Morland (2017), [Pastoralism and its future](#), The New Humanitarian

Similarly, men now stay away for longer periods. The participants in the same focus group noted:

“They used to spend just three months away and now they spend nine to ten months away.”

The same dynamics were recounted by a focus group participant in the village of Nguer explained the demographic impact of changing rainfall patterns:

“Since 2015, the men stay away longer to pasture the animals in other areas like Tambacounda, Kédougou, and Kaolack. Because it doesn’t rain like it used to here. And no rain means no grass for the animals. Before, they would leave for five or six months, but these last few years, they stay away longer. This year, it will be nine months that they’re away.”

5.2.2 Deciding who leaves and who stays

Almost all of the women in the Ferlo who participated in this study said they would have preferred to accompany their menfolk on their migration but had bowed to gendered obligations to stay in their village. These obligations centred on keeping their children in schools (see below), pregnancy, caring for small children and elderly relatives, maintaining land claims, and looking after some animals. One man herder said:

“If my mother could travel, I would have brought my family to join me years ago.”

Still, these respondents had no illusions about the adversities that herders routinely faced on the seasonal migration, as a woman in Tessekere explained:

“In reality, our husbands don’t want to tire us out too much. There are a lot of hardships there.”

Levels of influence over the decision to travel or stay put varied by respondents’ location. In some cases, women had more say and could find ways to accompany the migration. In other cases, their requests were simply ignored.

Women leaders in Barkedji, a small Ferlo town in the Louga Region, indicated that women play an active role in deciding who embarks on seasonal migration, a decision that stands to significantly impact their economic and social wellbeing (see Section 5.2.4. below). Explaining the choice of which family members joined the migration journey, one community leader said:

“[It is a decision] made by women and men together, including children and grandparents. Everyone discusses.”

The head of an association of women herders in Barkedji described how women’s role in herding had become more “emancipated”, noting:

“We make decisions, we weigh in on our husbands’ decisions, and we keep fighting to become more autonomous.”

This inclusive form of decision-making suggests that mobility aspirations are shaped by a shared vision of family and community needs. This community involvement stands in stark contrast to how young men decide to depart for international migration, according to one respondent who had returned from abroad to run a business in Barkedji. He emphasized that family members often try to persuade young men against migrating abroad:

"There is no one who was aware of [my migration plans] because, if you explain it to the parents, they will come forward and offer help. Someone might say, 'I will give you two cows, or I will give you three.' They will emphasize that what we have here are cows. One person might say they will give you three, another might say four, and then you feel compelled to stay. So, if you share this with others, they will say, 'No, you cannot leave.'"

Similarly, the association leader in Barkedji said men who decide to migrate northwards towards North Africa intending to reach Europe do not discuss the decision with any family members or friends and simply leave.

At a focus group discussion in Nguer, some women spoke of their preferences and aspirations being ignored:

"The men decide who comes. In my family, a few weeks before they leave, they might tell a wife to prepare to come with them."

"My husband asked me to stay here. I can't say no. I would have really liked to go with him."

Such gender dynamics were echoed in Tessekere:

"Our husbands do not allow us to come with them."

"Our husbands leave us all here. We would have liked to go with them, but they refused."

In some cases, polygamy offers women increased agency and mobility, introducing a level of flexibility in decision-making related to mobility. Women's mobility is possible because co-wives can share domestic responsibilities, while decisions about who migrates and who stays are more collaborative and involve negotiations between co-wives. In Barkedji and Nguer, women described how co-wives joined forces to take turns accompanying the men on their travels, with the one who stays behind covering the other's responsibilities in the village. The practice of women alternating between rural and urban areas in Senegal, particularly in the context of polygamous households, is not unique to pastoralists but extends to urban migration patterns as well. In rural communities, it is common for co-wives to take turns living with their husbands in urban settings, with the remaining wives covering the responsibilities in the village. This practice is linked to broader migration dynamics, where women support each other and manage household duties in the absence of their husbands, who often migrate for work or better opportunities.⁵⁴ According to a Barkedji respondent:

"If the first wife leaves with the husband, the second wife stays and the children go to school. After one year, the wife who left comes back to the village, and the wife who stayed with the children gets to leave. But if a husband only has one wife, she must stay the whole time,"

54 Carlotta Dotto (2020), [The energy to stay: Senegal's village of women](#), Al Jazeera

However, this was not the case in all Ferlo locations. In Ganinayel Bisnabe, a small remote village in the Linguere Department's Tessekere Commune, one woman noted that men with several wives would still unilaterally decide to leave them all behind when they migrated with their livestock:

"Our husbands have all left us here. Some have two wives, others three, and even up to four, but they leave us behind. We would like to go with them, but they have not allowed it."

Furthermore, there are no schools in Ganinayel Bisnabe and, according to respondents, most children, mostly boys but also girls, leave with their fathers to assist with the transhumance. In cases of extreme need, herder men count on assistance from their children, while having no choice but to trim the costs associated with supporting women on the trip. The women of Ganinayel Bisnabe were made to stay behind despite not having schools to send their children to, due to the prohibitive costs of bringing them. This reflects the extremely dire circumstances in Tessekere commune, where authorities have had to close five elementary schools over the past three years due to entire villages leaving in search of more water and pasture..

"Most of our children have left with their fathers. Those who stay behind are very little and not in school. It's hard to find enough for them to eat."

5.2.3 Children's education as a restriction to women's mobility

In all the villages under review, communities' decision to prioritise schooling for their children, influenced by strong gender and social expectations, contributed to situations of immobility. This suggests that the aspirations women might have for wider mobility and economic independence are subordinated to the goal of educating their children. With the exception of Ganinayel Bisnabe, which has no school, women respondents in all Ferlo villages ranked educating children above all other interests, including making money for themselves and enjoying the social and economic benefits of wider mobility. Although Senegalese children are legally entitled to enrol in schools across the country, it is very complicated for herder children to transfer schools when they travel with migrating family members. For one thing, respondents noted, it can be costly and difficult to prepare the papers and secure the authorisations required to re-enrol, especially in a context where more than 25% of children are not registered at birth.⁵⁵

Mothers in Nguer expressed satisfaction with their access to education, saying they sent their children to two primary schools in their own village and a secondary school nearby. In Barkedji, the head of the women herders' association welcomed recent changes in educational practices:

"In the past, when herders left with the animals, children had to leave school and go with them. Now, that is rarely the case."

Another member of the association concurred, noting:

"Staying in the village for your children's education is in everyone's interest. We have made a lot of progress now, nearly all of the children go to school."

⁵⁵ According to the [national agency of statistics in 2013](#), 16.6% of the population stated that they had no birth certificate. This population is concentrated more in rural areas (26.9%). The results reveal that 25.6% of 1-year-old births were not registered with the Civil Registry.

One of the Ferlo herders interviewed in Kédougou also spoke of the benefits of education to explain why he had migrated without his own children:

“If we bring our families here, the children can’t go to school. We want them to, because we no longer want to be incapable of reading anything but numbers [...] We didn’t have opportunities to study, so we don’t want our children to miss out on these. That’s why I left my children there, so they can study and learn new things.”

In some cases, he added, once children are older and have finished school, wives are able to join their husbands on seasonal migrations.

5.2.4 The costs of immobility

5.2.4.1 Coping with environmental pressures while men migrate

Women herders who remain in their villages while the men leave with their livestock in search of resources elsewhere are on the frontline of rising environmental pressures. As discussed above, these pressures relate to climate and environmental changes as well as to problems with managing resources that while present—and in some cases even abundant—are inaccessible due to inequitable access between groups, their cost or other constraints. Environmental pressures thus increase women’s vulnerability while their forced immobility makes it difficult for them to address these challenges.

In Nguer, thanks to nearby wells, access to drinking water is relatively secure for women herders. However, the decline in rain-fed biomass production poses a serious problem: their livelihoods depend upon raising a few goats, yet they struggle to sustain even these. One respondent explained the difficult choices she now faced:

“You can see there are no cows or sheep here because there’s nothing for them to eat. I used to buy animal feed to keep them going but now I can’t because the price is too high. [...] These are the animals we used to sell if we needed some cash for our own needs or to send to our husbands and sons. But today, even buying goods is more difficult. Sometimes, I have to choose between buying rice for my family or buying animal feed.”

The women of Ganinayel Bisnabe face a paradox that is not uncommon in the Ferlo. Although their village abuts extensive state-built water infrastructure, including a water tower, four drinking-troughs for livestock, and a cistern, respondents reported that another sub-ethnic group restricts access to these facilities, and that the wells are increasingly depleted by villagers from surrounding areas who get there first:

“There is water here, thanks to the water tower, but we don’t have access to it. We have to travel 10 kilometres to fetch water from wells and these are sometimes empty by the time we get there.”

“A decade ago, we could take jerricans and go looking for water and it was ok. But since the new water infrastructure opened, the situation has become more difficult. [...] Add to that the poor rains, and you know, no rains means no grasses for the animals. The little grass that grows doesn’t last very long.”

Of all the villages under his watch, a local official in Yang-Yang Commune described a particularly dire situation for herders in the commune of Tessekere:

“There is no water, the grass cover is completely finished, and other herders from central Senegal are coming all the way here from Kaolack and Kafferine regions [in the rainy season] to avoid bringing their herds through farmers’ fields.”

In the past two-to-three years, he said, many of the villagers had simply packed up and left.

Respondents in Dendoudji reported similar problems with access to water infrastructure and competition for pasture as those in Ganinayel Bisnabe. They also expressed frustration that their men had to leave the village to seek water and pasture as far away as Kédougou while better-off herders from neighbouring areas came to make use of these facilities. The overcrowding of pastureland and water sources by external herders further limits the community’s capacity to leverage its natural resources effectively, reinforcing the vulnerability of women who stay behind.

5.2.4.2 Economic hardship and vulnerability

For women who remain in the villages while the men accompany animals on their seasonal migration, the greatest cost of immobility is loss of income. A respondent in Tessekere, a commune in the Linguere Department of Louga Region, spelled out the effects of menfolk’s absences, saying these had extended from a traditional two months to as many as ten every year. Women are reliant on their husband’s income that is generated through their migration, which tends to be insufficient for the women to meet their needs:

“We often only live off what our husbands send us. We might go 15 days without enough water.”

Respondents explained that women who did take part in the seasonal migrations were able to sell dairy products in markets along the way but that those left behind lack animals, lack transportation to bring goods to markets, and experience little demand in a region where communities tend to produce just enough for their own needs. The Barkedji women herders’ association said:

“Women’s economic interest lies in the production, transformation, and sale of milk. When the herds leave, they have nothing to do for income.”

A local official echoed this view:

“The woman who follows the herds is better off than the one who stays behind. Economically, and socially. The milk is important for her.”

Men’s mobility thus negatively impacts women’s ability to generate revenue, as a respondent in Nguer explained:

“Women who go [on migrations] make more money than those who stay, because they can sell milk from sheep and goats and do other activities there. But we can’t make money without selling animals. Apart from selling animals, we have nothing to do to make money.”

5.2.4.3 Disrupted family cohesion

Along with this economic strain, separation carries a social and familial cost. Respondents lamented the increasingly long absences of their menfolk and worried about the potential effect on their marriages and families.

In Barkedji, one said:

“It’s very difficult for a married woman to stay here in the village for 11 or 12 months without seeing her husband. It’s hard.”

Similar views about the marital effect of scarce local resources emerged in Ganinayel Bisnabe, where one respondent half-joked:

“We want to go with them so they don’t marry other women there who are younger! These men, as soon as they see a younger woman, they forget about the older ones.”

5.2.5 Women-led support systems

Women’s forced immobility during men’s seasonal migrations compels them to adapt and rely on each other for support. *“Our husbands are all away looking for pastures. This is my husband now!”* laughed a respondent in Ganinayel Bisnabe, pointing to a woman seated next to her. This communal reliance transforms their circumstances, enabling them to navigate challenges together, highlighting agency in the face of limited mobility.

In the village of Barkedji, less remote than the other villages where data collection for this study was conducted thanks to its proximity to a main road and to the regional livestock hub of Dahra Djolof, women are able to effectively organise to help one another weather difficult times. Barkedji Commune, in which Barkedji village lies, boasts a politically well-connected association of women herders with nearly 1,000 members scattered across dozens of villages. The association provides women with small grants and training for activities such as subsistence gardening, has invested in a mutual aid fund, helps buy animals for its members, and offers them health insurance. It has also served as a platform for integrating women into local politics, with one senior member elected assistant mayor of Barkedji commune in early 2024. The relationships formed among women such as these exemplify a voluntary response to their shared experiences of immobility, relying upon one another more in the absence of their fathers and husbands. By supporting one another, they create a network that mitigates the negative impacts of their situation.

6. Conclusion

This case study has highlighted the gender dynamics linked to the varying (im)mobility outcomes arising from the changing seasonal migration patterns of herders in northern Senegal's Ferlo region. Limited access to resources, exacerbated by the intensifying impacts of climate change and inequitable resource governance, is driving herders to undertake more distant seasonal migrations. While men herders are forced to travel farther afield for longer periods, women are increasingly excluded from participating in seasonal migrations and remain behind. In Kédougou, men herders are accessing new economic opportunities that enhance their livelihoods and allow them to adapt to these changes, with some even considering permanent settlement in the region. However, they still face significant environmental challenges there, including deforestation, polluted water, and land disputes with farmers, highlighting their continuous vulnerability to environmental stressors. On the other hand, reasons for women's involuntary immobility in the Ferlo range from a lack of influence over decision-making, to a powerful overriding cultural imperative to keep children in schools. The costs for women who stay behind are steep and include a loss of income and the family strain of separation. Women's forced immobility during their husbands' seasonal migrations fosters communal reliance and support, exemplified by the organization of women herders in Barkedji.

Comprehensive climate change adaptation strategies must acknowledge these diverse impacts of climate and environmental changes on herders' mobility patterns to effectively support individuals across the mobility spectrum, from those who remain in place to those who migrate. In the Ferlo, more inclusive resource governance mechanisms can promote equitable access to existing water management systems, particularly for women, and address the costs of immobility by diversifying women's livelihoods. Additionally, these strategies should support herders as they confront new environmental challenges during long distant seasonal migrations and facilitate their integration into host communities.

7. Annex 1 – Detailed sample description

Key Informant Interviews

Table 2. List of key informant interviews

#	Gender	Designation	Date of interview
1	M	Economist who completed his thesis on climate-induced mobility in Senegal	March 2024
2	W	Demographer affiliated with an international research institution based in Senegal	April 2024
3	M	President of a civil society organization dedicated to rural development	March 2024
4	W	Sociologist overseeing the migration portfolio at a national research institution	April 2024
5	M	Herder association leader in the Ferlo	July 2024
6	W	Civil society leader in the Ferlo	July 2024
7	M	Data scientist specialist in satellite imagery of Sahel climate	August 2024
8	M	Scientist at regional climate observation station	August 2024

Primary data collection

Stage 1 - Urban/suburban area of destination (Kédougou)

Period: mid-June 2024

Semi-structured interviews: 15 respondents

Sex: 15 men

Age: [31; 44] years

Occupations: 11 herders, 3 farmers, 1 local official

Table 3. List of respondents in Kédougou

#	Gender	Age	Occupation	Location
1	M	37	Mayor	Madina Baffe
2	M	34	Farmer	Tomboronkoto
3	M	38	Farmer/agronomist	Kédougou city
4	M	38	Farmer	Kédougou city
5	M	40	Herder	Bantaco (in Tomboronkoto village)
6	M	34	Herder	Bantaco (in Tomboronkoto village)
7	M	42	Herder	Daloto (in Missirah Sirimana village)
8	M	41	Herder	Tambanoumouya (in Tomboronkoto village)
9	M	42	Herder	Mako (in Tomboronkoto village)
10	M	39	Herder	Kédougou city
11	M	31	Herder	Bantaco (in Tomboronkoto village)
12	M	31	Herder	Bandafassy
13	M	44	Herder	Bagnomba (in Tomboronkoto village)
14	M	~40	Herder	Noumoufoukha (in Madina Baffe village)
15	M	~30	Herder	Kédougou city

Focus Group Discussions: 35 participants

FGD.1: Dindello

Participants: 18 (14 men; 4 women)

Age: [25 to 50] years

Occupation: Farmers

FGD.2: Badon

Participants: 17 (11 men; 6 women)

Age: [30 to 50] years

Occupation: Farmers

Stage 2 - Rural area of origin (Ferlo)

Period: mid-June 2024

Semi-structured interviews: 8 respondents

Sex: 6 men and 2 women

Age: [33; 54] years

Occupations: 4 herders, 4 local officials

Table 4. List of respondents in the Ferlo

#	Gender	Age	Occupation	Location
16	F	52	Herder	Barkedji
17	M	54	Herder	Barkedji
18	F	~50	Deputy Mayor	Barkedji
19	M	~50	Secretary	Barkedji
20	M	43	Deputy sub-prefect	Yang-Yang
21	M	54	Herder	Daara Djolof
22	M	33	Herder	Daara Djolof
23	M	52	Mayor	Tessekere

Focus Group Discussions: 75 participants

FGD.3: Nguer

Participants: 20 women

Age: [~20; ~60 years]

Occupations: Herders

FGD.4: Tessekere

Participants: ~25 women

Age: [~20 ; ~60 years]

Occupations: Herders

FGD.5: Dendoudji

Participants: ~30 (25 women; 5 men)

Age: [~20 ; ~60 years]

Occupations: Herders

Total: 133 Participants:

- 110 in FGDs; 23 semi-structured interviews
- 51 men; 82 women
- 90 herders; 38 farmers; 5 local officials



MMC is a global network engaged in data collection, research, analysis, and policy and programmatic development on mixed migration, with regional hubs in Africa, Asia and the Pacific, Europe and Latin America, and a global team based across Copenhagen, Geneva and Brussels.

MMC is a leading source for independent and high-quality data, research, analysis and expertise. MMC aims to increase understanding of mixed migration, to positively impact global and regional migration policies, to inform evidence-based mixed migration responses for people on the move and to stimulate forward thinking in public and policy debates on mixed migration. MMC's overarching focus is on human rights and protection for all people on the move.

MMC is part of the Danish Refugee Council (DRC).

For more information visit:

mixedmigration.org and follow us at [@Mixed_Migration](https://twitter.com/Mixed_Migration)

