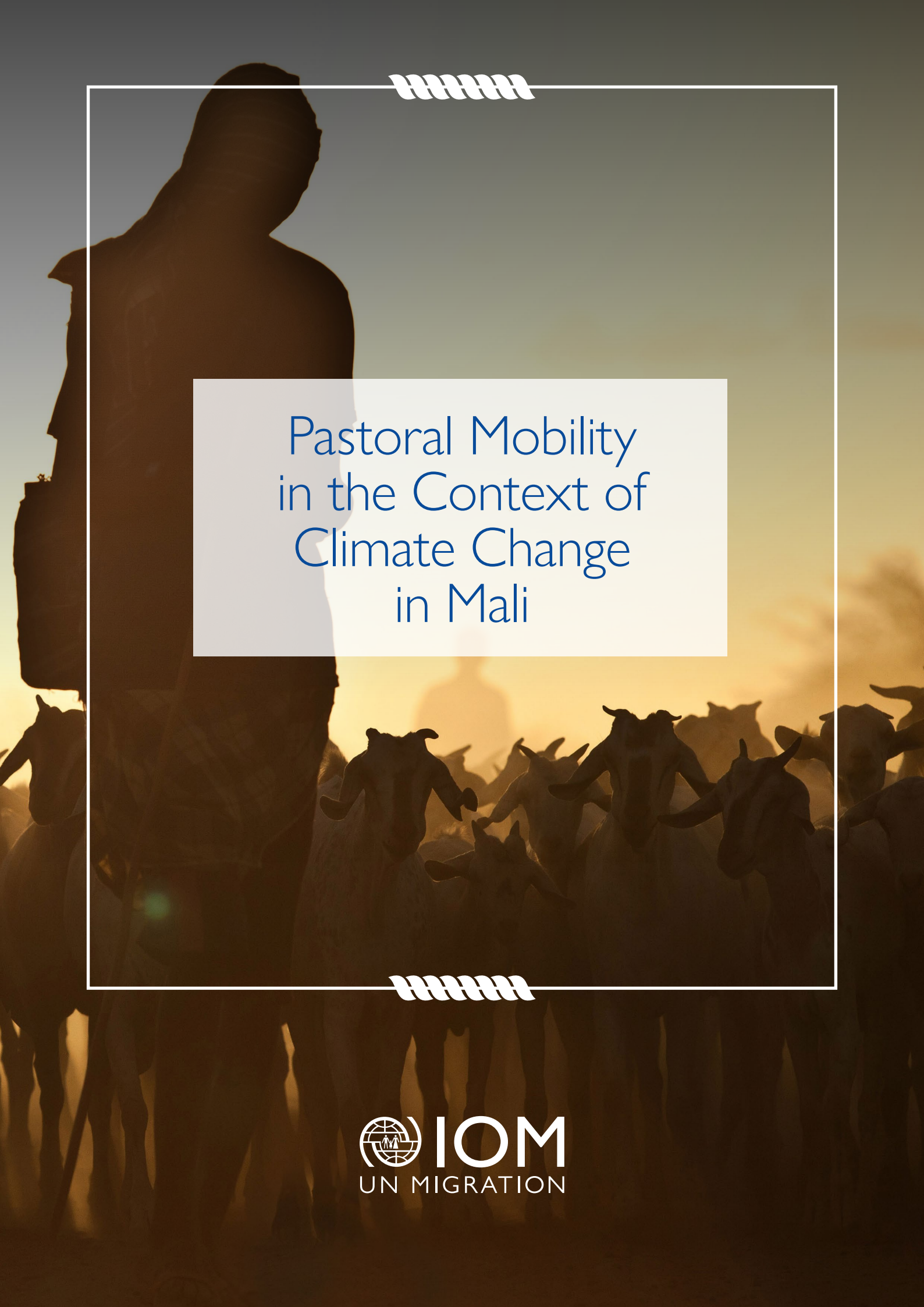

Pastoral Mobility in the Context of Climate Change in Mali

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Cover photo: A herder and her goats return to Ifo camp, Dadaab, Kenya, at dusk. © IOM 2011/Brendan BANNON

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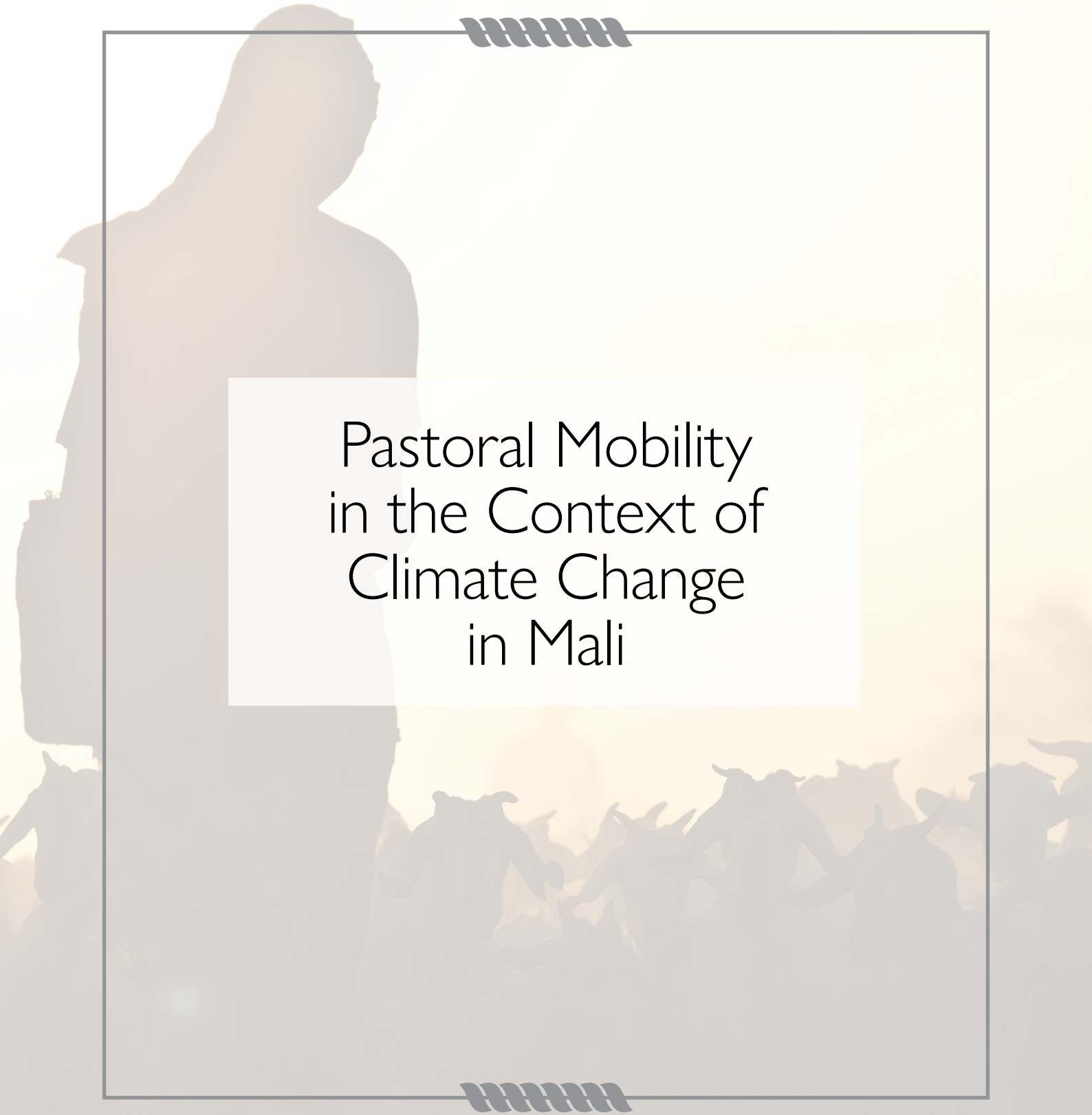

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Acronyms

ECOWAS	Economic Community of West African States
DTM	Displacement Tracking Matrix
FAO	Food and Agriculture Organization of the United Nations
IOM	International Organization for Migration
UNOWAS	United Nations Office for West Africa and the Sahel
WFP	World Food Programme

Herders and their goats returning to Ifo camp, Dadaab, Kenya, at dusk. © IOM 2011/Brendan BANNON

Executive summary

Cross-border pastoralism is practiced throughout West and Central Africa. It is observed to varying degrees in all the region's countries, where it constitutes a significant means of subsistence and ecosystem maintenance predicated on the sustainable use of vegetation and adaptive resource management. A host of factors (including insecurity, shifting environmental conditions, tighter restrictions on cross-border movements and changes in agricultural policy) has significantly altered transhumance mobility patterns, making them more unpredictable and irregular. Changing seasonalities, more frequent droughts and rising temperatures have had a negative impact on pastoral systems. Combined with other factors, they are tending to reduce the mobility of transhumant herds. In this context, tensions and violent clashes between herders and farmers have become more frequent and intense.

This study aims to make up for the lack of information about the impact of perceived environmental and climate changes on the decisions of herders and farmers in terms of timing and itineraries. The data on which it is based were collected over a specific period and in a specific location, and its conclusions cannot be extrapolated to all transhumant herders. The study focused on Mali's border area with Mauritania. The data were collected from October 2021 to January 2022 during a survey of 3,338 transhumant herders.

The study's findings can be summed up in 10 points.

- 53 per cent of the transhumant herders surveyed said that they had significantly delayed the month of departure from one year to the next over the past 20 years, to adapt to the availability of grazing land; 44 per cent said that the month of arrival was also delayed.
- 15 per cent of the transhumant herders surveyed said that they had changed their itineraries, and 8 per cent of those said that they had done so in the face of difficulties accessing water or grazing land.
- It appears difficult for the transhumant herders surveyed to be able to maintain their usual pastoral routes in a context in which environmental degradation and climate change are compounded by factors such as insecurity, restrictions on cross-border movements or changes in agricultural policy.
- Itineraries and departure dates are decided in consultation between the transhumant herders and according to their needs, either before or during the journey; itineraries are decided based on information obtained by word of mouth, from radio broadcasts and social networks/media, or from intermediaries and administrative authorities; they may also be based on the herders' observations of the land.
- The routes are becoming less predictable given the difficulty of accessing natural resources in a context of environmental degradation and uncertain rainfall.
- In host areas where there has been a considerable expansion of cropland, space is running out for the amount of livestock present, resulting in degradation and overexploitation of grazing land and water resources and in the silting up of wetlands.
- Early and prolonged movements can lead to tension or conflicts between the herders and the farmers and other communities who depend on the same resources for their survival, although the risk of conflict with agropastoralists is falling thanks to better coordination among stakeholders.
- Disputes can also be settled by the courts or resolved amicably under the supervision of local authorities, such as the village chief, depending on the transit area.
- The survival of the pastoral community and its contribution to the economy depend on its mobility; the difficulties encountered by herders in planning and maintaining an itinerary are making transhumance more complex.
- In the face of the many difficulties mentioned above, some herders have opted to lead sedentary lives.

It is important to understand that these changes in timing and routes are coping strategies implemented by herders. It is therefore essential that the related policy frameworks and tools for mobility and transhumance are flexible enough to incorporate such necessary adaptations.

The study resulted in five recommendations.

- The tools and policies governing transhumance should take better account of the impact of disasters, climate change and environmental degradation on transhumant herders, and of how that impact is perceived.

- In the face of these changes, understanding of the laws and policies regulating transhumance, their consistency with local practices and their application by all stakeholders should be improved.
- Initiatives to promote consultations between the various users of pastoral and agricultural resources should be strengthened, as should coordination and mediation between transhumant herders and agropastoralists, including by mapping transhumance corridors and the location of pastoral infrastructure.
- Systems should be established, reinforced and systematically applied to monitor bushfires, and technical devices put in place for prevention, control and rapid intervention.
- Synergies and partnerships should be developed with others working in the field, particularly in order to strengthen the reliability of the information and its sources, thanks, for example, to more regular deployment of the Transhumance Tracking Tool throughout the region. The Tool can be used to generate more reliable information on transhumance that can be more quickly sent on to those involved, in particular those responsible for preventing conflicts at the community level and the herders themselves, to ensure that they have a say in any decisions affecting them.

Herders and village chiefs meet for training and to discuss problems arising from drought and dwindling rainfall, in Mali.

Following a severe drought in Mauritania in 2017, the inhabitants of the Hodh El Chargui area received humanitarian aid to vaccinate their herds. Here a herder brings one of his goats to the vaccination site. © IOM 2018/Sibylle DESJARDINS

Introduction

Cross-border pastoralism is practiced throughout West and Central Africa. It is a form of transhumance that sees pastoralists and their livestock migrate seasonally between complementary ecological zones: from areas where forage and water points are scarce to areas where they are more abundant (Meyer, 2022; SWAC/OECD, 2008). It is observed to varying degrees in all the region's countries (Corniaux et al., 2018), where it constitutes a significant means of subsistence and ecosystem maintenance predicated on the sustainable use of vegetation and adaptive resource management (McGahey et al., 2017). According to FAO (2022), transhumant pastoralism involves a very large number of individuals (20 million) and animals (70% of the region's livestock). It is the source for much of the region's meat and milk (SWAC/OECD, 2008) and is therefore a major economic activity[1] on which many populations depend for food and income. In addition, transhumant pastoralism is an essential means of adaptation ensuring the resilience of individuals to vulnerabilities and risks related to climatic and economic conditions; it is an important driver of regional integration and stronger intercommunity links (PRAPS, 2017; Corniaux et al., 2018).

1 It is thought to account for more than 15 per cent of GDP in the countries of the Sahel (see PRAPS, 2017).

Cross-border pastoralism has changed significantly in the past few decades. While previously confined essentially to countries in the Sahel,[2] severe droughts and population growth in the 1970s and 1980s led to its expansion to coastal West African countries, including Benin, Togo, Ghana and Côte d'Ivoire (Alidou, 2016). The new transhumance route that arose from this shift and which leads from the Sahelian to the coastal countries is also known as the central transhumance corridor. Over time, some herders and their livestock, forced to move south by drought and dwindling natural resources, eventually settled in the southern Sahel and in the coastal countries (Corniaux et al., 2016).

In addition, transhumance mobility patterns have been significantly altered by a host of factors (UNOWAS, 2018; Corniaux et al., 2018). Insecurity, shifting environmental conditions, tighter restrictions on cross-border movements and changes in agricultural policy (the introduction by coastal countries of protectionist policies to reduce their dependency on imports from the Sahel, for example) have forced changes in the seasonal itineraries of herders, making them more unpredictable and irregular. At the same time, climate variability, demographic pressure, increased pressure on land and natural resources, rising population densities and the reduction of grazing areas and available water have intensified competition for resources (water and land). The gradual transformation of farming systems with the development of agriculture has also called into question the usual agreements between farmers and herders (free access to fields after harvest) (ECOWAS, 2014). Pastoral systems are vulnerable to climate change and greater climate variability (Dasgupta et al., 2014; Sloat et al., 2018; Stanimirova et al., 2019). Changing seasonalities, more frequent droughts and rising temperatures have had a negative impact on pastoral systems. Combined with other factors, they have tended to reduce the mobility of transhumant herds (López-i-Gelats et al., 2016; IPCC, 2022). In this context, tensions and violent clashes between pastoralists and farmers have become more frequent and intense (ECOWAS, 2018; Nnoko-Mewanu, 2018; Brottem, 2021).

We must enhance our understanding of pastoral mobility in order to establish mechanisms, robust policies and appropriate measures able to ease tensions and prevent and mitigate conflicts in a context of climate change, disasters and environmental degradation.

This study aims to make up for the lack of information about the impact of perceived environmental and climate change on the decisions of herders and farmers in terms of timing and routes.

Based on the project entitled "Conflict management and strengthening agropastoral resilience on the Mauritania-Mali border", funded by the United Nations Secretary-General's Peacebuilding Fund and implemented by IOM and FAO, this study was financed as part of a broader IOM-led project entitled "Implementing Global Policies on Environmental Migration and Disaster Displacement in West Africa", in collaboration with the Platform on Disaster Displacement and with the support of the Government of France.

2 Burkina Faso, Cameroon, Chad, Mali, Mauritania, the Niger, Nigeria and Senegal.

The study serves to assess the implications of perceptions of climate change and environmental degradation for transhumant herders. It focuses specifically on changes in timing and routes arising from perceptions of environmental factors in the context of tensions between farmers and herders. To that end, the study was designed around the objectives set out below.

1. Research objectives

(a) Understand the perception of transhumant herders in the face of climate change and their adaptation strategies (routes, timetable, impacts).

(b) Capture the underlying drivers of tension between farmers and herders in the context of climate change and environmental degradation.

2. Programmatic objectives

(a) Identify sources of climate information and trade-offs in terms of timing and crossing points.

(b) Identify the coordination mechanisms used between farmers and herders and among herders to synchronize schedules.

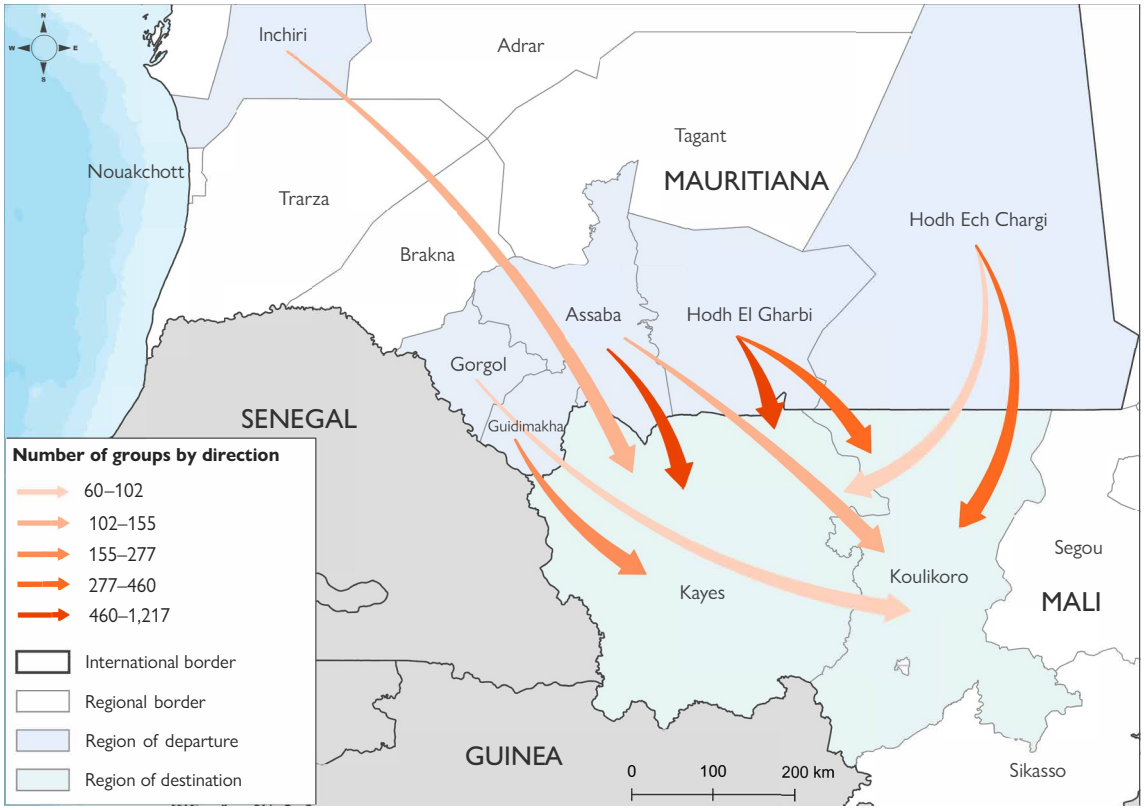
(c) Identify those mediating potential discussions/conflicts over itinerary and/or schedule changes and how they are perceived by farming and herding communities.

3. Policy objective

(a) Provide reliable data to policymakers so that they can design evidence-based policies supporting conflict prevention and mitigation in a way that is consistent with the new transhumance routes linked to the impacts and related perceptions of climate change, disasters and environmental degradation.

The study focused on Mali's border area with Mauritania, where transhumance routes have been identified and where, according to data collected by IOM in 2019 for this study in southern and south-eastern Mauritania, more than 75 per cent of transhumant herders encountered at least one, usually environmental challenge along the way, such as drought. Thanks to monitoring by the Transhumance Tracking Tool at 12 counting points on the border between Mali and Mauritania, IOM estimated that 2,435,900 animals had crossed the border from Mauritania to Mali between November 2021 and January 2022, accompanied by nearly 16,300 people. In addition, recurrent disputes broke out between farmers and herders in the region over access to natural resources: of the 94 alerts issued by the Transhumance Tracking Tool early warning mechanism set up in the region, 11 were linked to inter-community tensions over resources.

Map 1. Pastoral flows observed between November 2021 and January 2022 by the Transhumance Tracking Tool



Source: IOM Transhumance Tracking Tool, 2021–2022.

Note: This map is for illustration purposes only. The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the International Organization for Migration.

A mother and child outside a shed for goats provided by a livestock project in Zimbabwe. © IOM 2009/Will VAN ENGEN

Transhumance in Mali: The legal framework

Mali has a charter on pastoralism[3] that defines the fundamental principles and general rules governing the exercise of pastoral activities in the country. The charter enshrines and describes the basic rights of herders, particularly in terms of animal mobility and access to pastoral resources. It also defines the main obligations incumbent on pastoralists in the exercise of their activities, particularly with regard to preservation of the environment and respect for the property of others.

In terms of the right of access to pastoral resources, Articles 9 and 10 of the charter stipulate, "Pastoralists have the right to exploit pastoral resources to feed their animals ... They shall do so with due regard for the recognized rights of the various users of the area concerned and in accordance with the legislation on environmental protection and natural resource management."

3 Available in French only at www.plateforme-pastorale-tchad.org/classified/Mali_Law_No._01-004_on_the_Pastoral_Charter_in_the_Republic_of_Mali..pdf.

A resident of Bassikounou draws water for the livestock of transhumant herders, Mauritania. © IOM 2018/Sibylle DESJARDINS

According to Article 11 of the charter, "Pastoral communities shall contribute to environmental protection and the fight against desertification. They shall work with the competent technical services and other users to maintain the equilibrium of natural ecosystems and to enhance their productive potential." The charter also establishes the conditions for the herds' mobility. According to Article 5, "Animals may be moved at the local regional level or over the entire extent of the national territory, with due regard at all times of the year for protected or restricted areas and animal health policy. They may also be moved to the territory of neighbouring countries, in compliance with agreements relating to transhumance and subject to the specific measures that may be taken by the States concerned."

According to Article 16, "The animals shall be moved using the pastoral, local and transhumance tracks managed by the local authorities, with the assistance of pastoral organizations." Article 18 continues: "The use of pastoral tracks constitutes both a right and a duty for all pastoralists. There can be no derogation from the obligation to use pastoral tracks during periods of cultivation."

In terms of transhumance management, Article 22 of the charter stipulates, "The local communities, together with the relevant traditional authorities and farmers' organizations, shall agree, each year if necessary, on the transhumance calendar. The calendar shall specify in particular the maximum periods for the departure and return of the animals from one location to another. That information shall be communicated by all appropriate means to the pastoralists. The calendar shall be communicated as soon as possible to the local communities and administrative authorities concerned."

According to Articles 24 and 26 of the charter, "Pastoral communities engaged in international transhumance shall respect the legislation of the host countries relating to protected or restricted areas and to animal health policy. … Animals in international transhumance shall enter the host countries at the points specified for that purpose in bilateral and regional agreements. Information on those entry points shall be given to the pastoralists by the administrative authorities and the border communities concerned. The Malian State shall monitor international transhumance, in particular by promoting meetings between the administrative authorities and the border communities concerned."

In addition to the pastoral charter, which is applicable countrywide, the Government of Mali is also party to the following decisions and agreements:

- **At the continental level,** Decision CL/DEC.618 (XVIII) on the African Union Policy Framework for Pastoralism in Africa, which was adopted in 2011 and recognizes the rights of pastoralists, expresses support for pastoralism as a way of life and production, and acknowledges the importance of livestock mobility; the 2013 N'Djamena Declaration on the contribution of pastoral livestock to the security and development of Saharo-Sahelian areas; and the 2013 Nouakchott Declaration on Pastoralism;
- **At the regional level,** ECOWAS Decision A/DEC.5/10/98 of 1998, relating to the regulation of transhumance between ECOWAS Member States, which determines the conditions for the movement of livestock (obligation to possess an International Transhumance Certificate) and reception of transhumant livestock, establishes the obligation to guard the animals, and sets up an inclusive mechanism for the resolution of disputes; ECOWAS Regulation C/REG.3/01/03 of 2003 relating to the implementation of the regulations on transhumance between ECOWAS Member States and providing for (i) the formulation and implementation of subregional programmes for the development of grazing lands and the creation of cross-border infrastructures to facilitate transhumance; (ii) the conduct of pilot cross-border projects with a view to developing new joint management methods for transhumance routes and host zones; (iii) the conduct of a study projecting the future of livestock production, particularly in West and Central Africa; and (iv) the establishment by ECOWAS Member States of an information and communication system, a pastoral development programme, a ministerial committee for monitoring transhumance, a regional observatory on transhumance, and a regional pastoral resource management strategy;[4]
- **At the bilateral level,** a revised agreement on transhumance concluded between Mali and Mauritania in 2005 relating, among other things, to the conditions of animal mobility and to their driving and herding;[5]
- **At the national level,** the legislative tools governing transhumance, such as Land and Territory 2000, the Agricultural Guidance Law (2006), the Decree on the terms and conditions of transhumance (2010) and the Law on Agricultural Land (2017). Following

4 For more information on ECOWAS regional transhumance policies, see IOM, ICMPD and ECOWAS, 2019.

5 The author is unable to confirm that this revised agreement remains in force at the time of writing.

decentralization, the local communities (water and forest agents in particular) and local elected officials have been assigned a key role in the management of natural resources.

Thus, in Mali, the local communities, working with the other stakeholders involved in the management of natural resources, must help prevent disputes related to pastoral activities. Such disputes are settled through the courts. However, recourse to the competent courts must be preceded by arbitration by dispute conflict management bodies. In this sense, better understanding of the consistency between legal instruments and local practices, and of the potential sources of disputes over the management of natural resources, together with the establishment of a local early warning system such as the Transhumance Tracking Tool developed by IOM and the Réseau Billital Marrobè,[6] are essential for better governance of transhumance.

6 The Réseau Billital Maroobé is a regional pastoral network that is not-for-profit, apolitical and open. It was created in 2003 by three organizations of herders in Burkina Faso, Mali and Niger wishing to have a say in the regional debate on issues related to animal husbandry and pastoralism. Further information is available at www.maroobe.com/index.php/acceuil/a-propos (French) and https://peacenexus.org/reseau-billital-maroobe/ (English).

Following a severe drought in 2017 in Mauritania, the inhabitants of the Hodh El Chargui region received humanitarian aid, including these two goat kids. © IOM 2018/Sibylle DESJARDINS

Methodology

This study is based on a mixed analysis of individual interviews and focus group discussions.

Individual interviews

Researchers recruited and supervised by Tassaght,[7] a pastoral organization and member of the Réseau Billital Maroobè, interviewed the transhumant herders during their journey, with IOM support. The interviews were conducted in the local language while the animals were being watered, in the camps, or at animal transit and reception areas. The data were collected from October 2021 to January 2022 at several crossing points pre-identified by Tassaght and IOM Mali. In all, 3,338 transhumant herders, including two women, were surveyed. Traditionally, responsibility for the herds falls mainly to the men, which explains the low number of women surveyed. The expectation that fewer women would participate prompted the decision to target them during specific focus group discussions, to take better account of their views and opinions.

7 For further information on Tassaght, see https://tassaght.org/.

Focus groups

There were four focus groups (see Table 1): young transhumant herders, the wives of transhumant herders, chief herders, and elderly transhumant herders at the end of their working lives. The objective was to enhance understanding of the impact of environmental factors on transhumance and the implications in terms of disputes, and to learn more about existing coordination and dispute prevention/management mechanisms, and about the various sources and channels of information used by transhumant herders to decide which route to take.

Table 1. Focus groups

Number of focus group participants in transhumance areas					
No.	Community	Pastoral area	Participants	Dates	Number of participants
1	Djélébou	Oulkéïdou	Young people	02/10/21	16
2	Ségala	Kadiabaoudé	Elderly people	04/10/21	12
3	Koronga	Koronga	Women	06/10/21	7
4	Kérémisse	Goumbayel	Chief herders	08/10/21	12
	Total	**4**	**4**		**47**

Source: Authors' compilation from surveys and interviews.

Before the data were collected, the researchers were given detailed introductions to the methodology and tools, to train them in data collection and to review the key principles of data protection, protection and other relevant guidelines. Several interviews were organized with the consultant to ensure understanding of the issues and the study's objectives.

Limits

For logistical reasons, and because the respondents were on the move and therefore had limited time for the interviewers, the scope of the survey had to be greatly reduced to ensure complete answers, limiting the possibility of going into certain aspects in greater depth. In addition, the data were collected over a specific period and in a specific location; the conclusions can therefore not be extrapolated to all transhumant herders.

A herder and his goats returning to Ifo camp, Dadaab, Kenya, at dusk. © IOM 2011/Brendan BANNON

General data on the transhumant herders responding to the individual survey

Sociodemographic characteristics of the transhumant herders interviewed

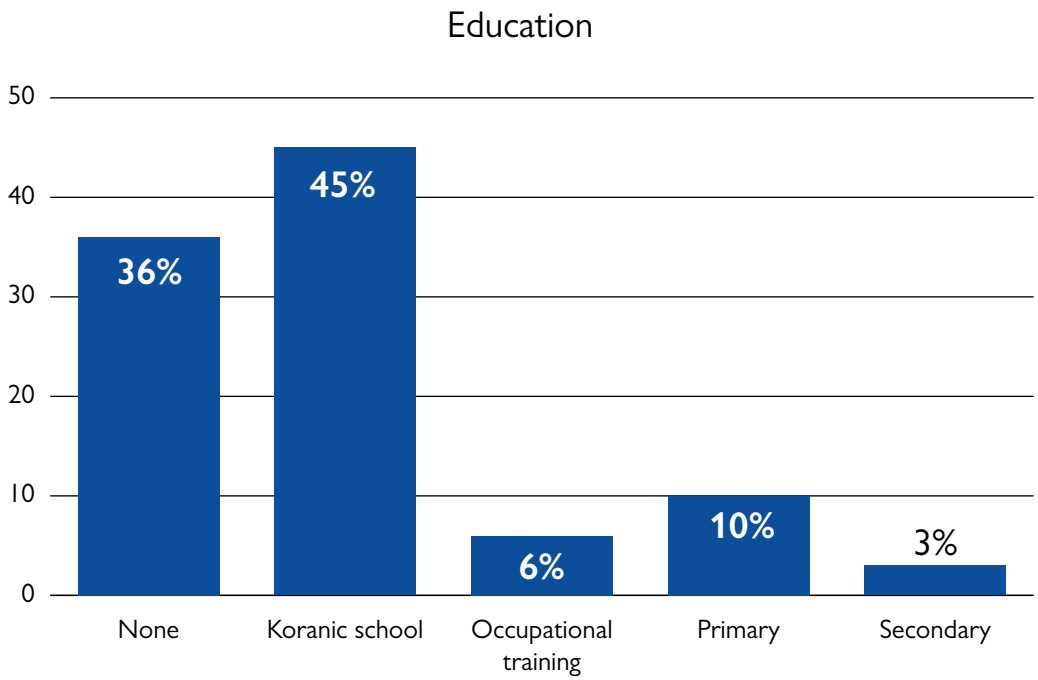
Of the respondents to the individual multiple-choice survey, 77 per cent were livestock owners, 22 per cent were seasonal workers and 1 per cent did not know their role. The owners tended to be older on average than the seasonal workers, possibly because of a hierarchical organization requiring a number of years of experience before owning and leading a herd.

Forty-one per cent of respondents had been active for more than 10 years, 27 per cent between 5 and 10 years, 19 per cent between 3 and 5 years, 9 per cent between 2 and under 3 years, and 4 per cent for fewer than 2 years.

Most of the transhumant herders surveyed were Malian (78%), but 19 per cent were Mauritanian and 3 per cent were Senegalese.

The majority had had no access to formal education: 36 per cent said that they had never gone to school, 45 per cent that they had attended Koranic school and 6 per cent that they had some form of occupational training. Ten per cent of respondents had had a primary school education and 3 per cent had attended secondary school (Graph 1).

Graph 1. Level of education of the transhumant herders interviewed



Source: Authors' compilation from surveys and interviews.

In terms of animal health, 87 per cent of respondents indicated that their herd had been vaccinated, a prerequisite for obtaining the International Transhumance Certificate needed to cross borders in ECOWAS member countries. Sixty-three per cent of respondents indicated that their herds were in very good health and 37 per cent that they were in fair health. Only 0.35 per cent said that their herds were in poor health.

Eighty-three per cent of respondents indicated that they themselves were in very good health and 14 per cent that their health was fair; 2 per cent said that they were in poor health.

Itineraries of the transhumant herders surveyed

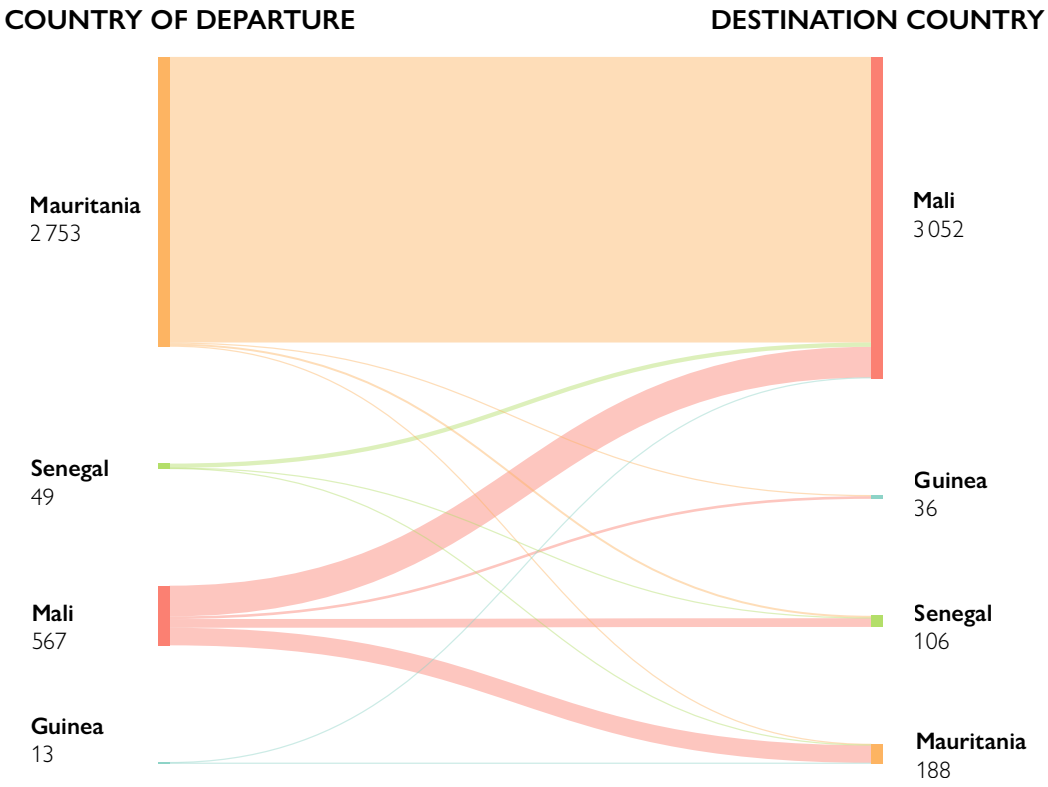
According to the interviews, the herders took two main routes (see Graph 2). During the rainy season (July to October), the herds moved from Mali to the northern Mauritanian border regions located on the cross-border strip, in particular for the *cure salée*[8]. During the dry season (November to June), many Malian and Mauritanian transhumant herds leave these northern areas to return to prime areas in southern Mali, where they have access to pastoral resources, in particular crop residues and easy-to-access watering points (wells, dams, ponds and rivers).

With regard specifically to the itineraries taken during the data-collection period, the respondents were mainly en route from Mauritania to Mali (81%). Thus, 82 per cent of the respondents had started in Mauritania and 90 per cent were trying to reach Mali.

Photos 1 and 2: A young Fulani herder driving his herd of goats in Fallou, Mali. © IOM 2021/Hamet DOUCOURE. Bottom photo: A transhumant herd in Aoujeft, Mauritania. © IOM 2021/Moustapha Diouf FALL

8 The *cure salée*, or salt cure, refers to the livestock's consumption of salt or natron to obtain the minerals they need to remain healthy.

Graph 2. Itineraries of the 3,338 transhumant herders surveyed from October 2021 to January 2022



Source: Authors' compilation from surveys and interviews.

A young boy watches over his cattle as they drink after the severe drought in the Hodh El Chargui area, Mauritania, in 2017. © IOM 2018/Sibylle DESJARDINS

Environmental factors and tension between farmers and herders

The aim of this section is to obtain a better understanding of the links between environmental and climatic factors, on the one hand, and transhumance, on the other, in a context in which disputes arise between transhumant herders and the sedentary agricultural communities through which they travel.

Changes in itinerary and timing

Fifteen per cent of the transhumant herders surveyed said that they had changed destination since their departure, for various reasons (see Table 2): difficulties in obtaining access to water points (26%); lack of forage (22%); dangers encountered en route (17%); administrative constraints (13%)[9]; floods (11%); or to avoid conflict (11%).

9 Administrative constraints comprise all the administrative measures regulating transhumance (proper identification papers for the herders and their herds, transhumance certificate, mandatory vaccination, etc.) and experienced as constraints by herders owing to the difficulty of compliance, to modifications to the rules, to ignorance of the rules, etc. In addition, abuse of authority and corruption at border posts can also be considered as administrative constraints by the herders.

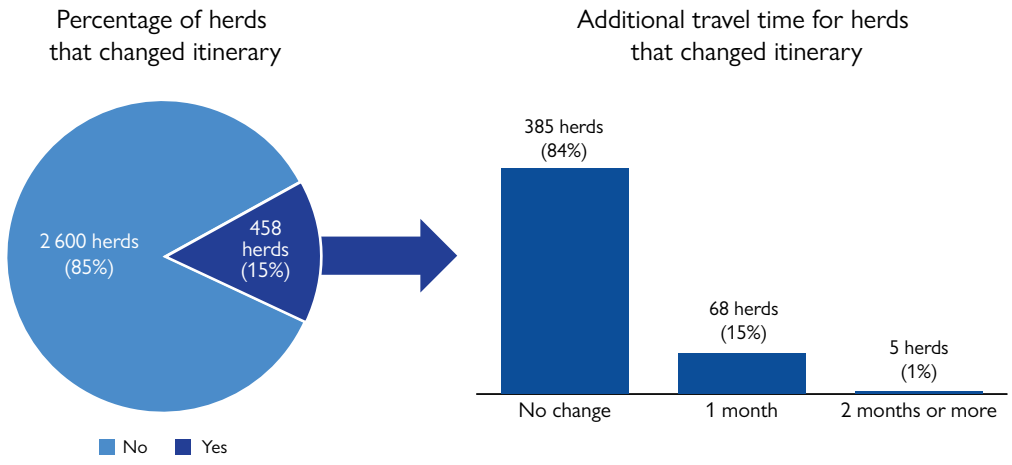
Table 2. Main reasons for changing itinerary during transhumance

Reasons	Respondents
Floods	11.40%
Administrative constraints	12.50%
Dangers encountered en route	16.67%
Impeded access to water points	26.10%
Availability of forage	21.93%
Avoid conflicts	11.40%
Total	**100.00%**

Source: Authors' compilation from surveys and interviews.

For the 15 per cent of herds that changed itinerary, the journey was lengthened by an average of 6.2 days and 231.6 km. However, most (84%) of the transhumant herders who said that they had changed itinerary reported no change in travel time. Of those (16%) who changed itinerary and also reported a longer journey, the journey took an additional 33 days (Graph 3).

Graph 3. Change of itinerary and additional travel time

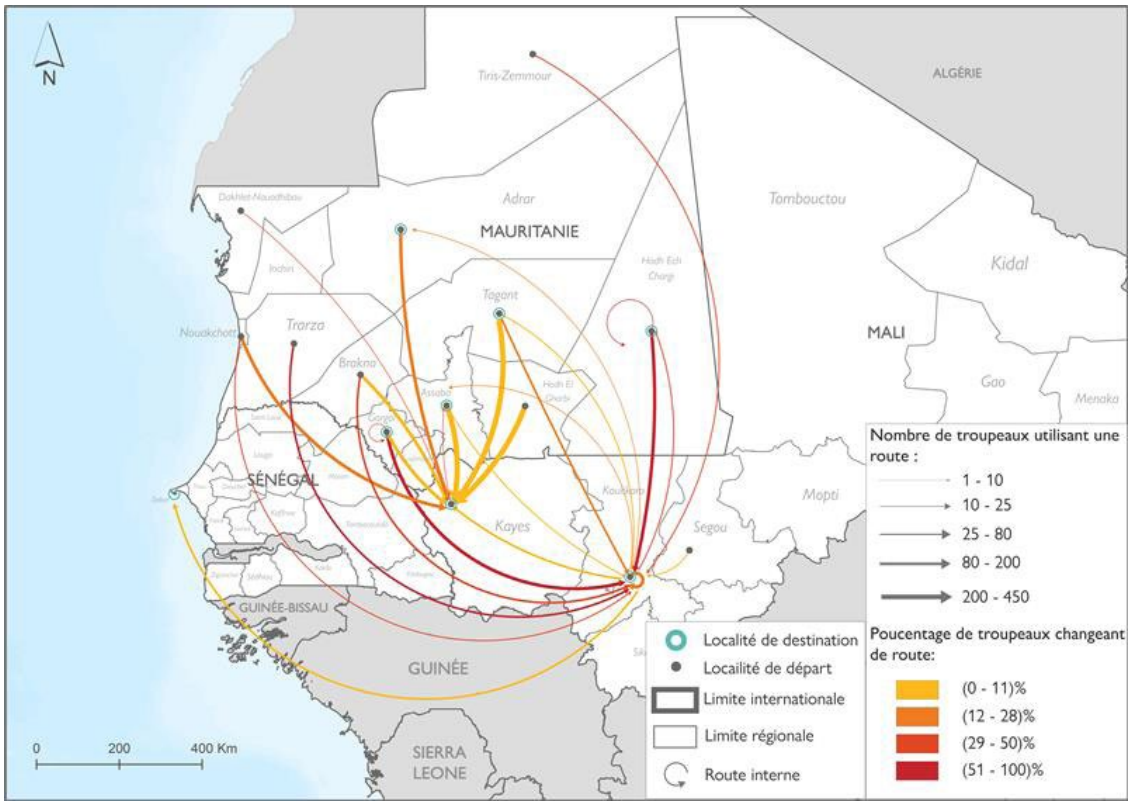


Source: Authors' compilation from surveys and interviews.

Chief herders were much more likely than seasonal workers to say that their itinerary had changed. It is probably easier for them to make such a decision. Similarly, herders with more than 10 years of experience were much more likely to report that they had changed their itinerary than those with less experience.

Map 2 shows the routes taken by the herds and the extent to which they were affected by changes in itinerary. Most of the herds having changed itinerary had planned to move from Hodh El Chargi to Koulikoro (155 herds, representing 80% of the herds planning to take this route) or from Gorgol to Koulikoro (101 herds, representing 69% of the herds planning to take this route).

Map 2. Main routes taken by herds crossing the Mali–Mauritania border and affected by changes in itinerary between November 2021 and January 2022

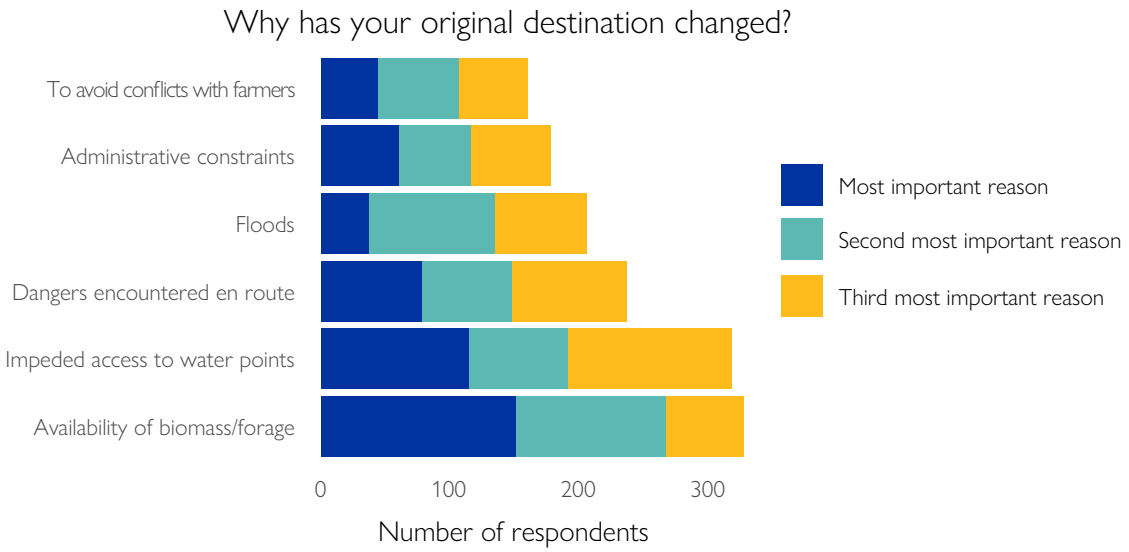


Source: IOM Transhumance Tracking Tool, 2021–2022.

Note: This map is for illustration purposes only. The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the International Organization for Migration.

More than 60 per cent of pastoralists from Mali said that they had changed their destination because of lack of forage. That number dropped to 20 per cent for herders from Mauritania. Unfortunately, it is not possible to explain this difference for the same route with the data collected.

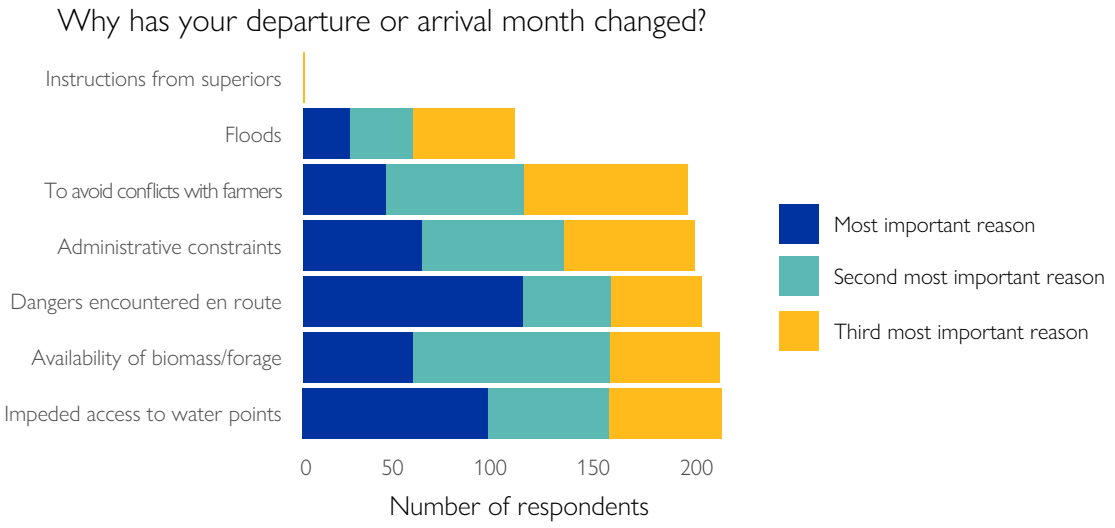
Graph 4. Reasons for changing itinerary, by importance



Source: Authors' compilation from surveys and interviews.

Difficulties in accessing water and biomass were among the main reasons for changes in itinerary. However, the lack of access to biomass was most often the most important reason for rerouting. Dangers (e.g. roadblocks) encountered en route were the third most important reason (Graph 4).

Graph 5. Reasons for changing departure date, by importance



Source: Authors' compilation from surveys and interviews.

Dangers encountered en route were the main and most frequently cited reason for changing the departure date, followed by access to water points (Graph 5).

That being said, the current route is not necessarily representative of the route typically taken by the herders. To capture the effect of the perception of environmental factors and gradual developments on their activity, it appeared more relevant to consider the historical route, in other words, the route over the long term. We were therefore interested in what the transhumant herders considered their usual route over the past 20 years, a period long enough to capture subjective perceptions of environmental changes and their effects on the herders' activity. In the event that the respondents were too young to refer to such a long period, they were asked to take as a reference the routes taken by their fathers/predecessors. Fifty-three per cent of respondents said that the month of departure had changed significantly from year to year over the past 20 years, mainly in response to the availability of forage (61%) (Table 3).

Table 3. Main reasons for changing the transhumance calendar over the past 20 years

Reasons	Respondents
Availability of biomass/forage	61%
Impeded access to water points	12%
Avoid disputes with farmers	10%
Dangers encountered en route	8%
Administrative constraints	6%
Floods	3%
Total	**100%**

Source: Authors' compilation from surveys and interviews.

Cattle on the banks of a lake near Gorgol, Mauritania. © IOM 2021/Moustapha Diouf FALL

Similarly, 44 per cent of respondents said that their month of arrival had changed significantly year over year during the past 20 years.

Table 4. Main factors determining changes in itinerary, by destination (routes taken by more than 20 herds)

Destination	Point of origin	To avoid disputes with farmers	Administrative constraints	Impeded access to water points; shrinking routes (infrastructure-related reasons)	Availability of biomass/ forage, drought, desertification	Floods	Dangers encountered en route
Kayes	Adrar	5%	0%	14%	82%	0%	0%
	Assaba	15%	5%	10%	70%	0%	0%
	Koulikoro	0%	0%	0%	50%	0%	50%
Kayes total		9%	2%	11%	76%	0%	2%
Koulikoro	Assaba	0%	0%	50%	50%	0%	0%
	Gorgol	12%	19%	28%	9%	11%	22%
	Hodh El Chargi	8%	11%	30%	12%	15%	23%
	Koulikoro	14%	7%	21%	14%	24%	21%
	Trarza	16%	11%	24%	16%	21%	13%
Koulikoro total		**11%**	**13%**	**28%**	**12%**	**15%**	**21%**
Grand total		**11%**	**12%**	**26%**	**20%**	**13%**	**19%**

Source: Authors' compilation from surveys and interviews.

Access to water, access to biomass and dangers encountered en route were the three most common reasons for changing destination. For herds initially planning to go to Koulikoro, access to water points was the most important factor, while for herds going to Kayes, access to biomass was by far the most important factor (76% of herds).

During the focus group discussions, young transhumant herders from Djélébou pointed out that transhumance had become complicated for herders and their livestock and spoke about recurring bushfires. For this group, the survival of their livestock and of the pastoral community lies in the practice of mobility.

With regard to host areas with considerably expanded agricultural fields (on floodplains and vegetable gardens), the transhumant herders explained that the space available was too limited for the number of animals present, resulting in degradation of the area, the overexploitation of pastures and water resources, and the silting up of wetlands.

Due to the delay in the onset of the rains in the usual areas where the livestock congregate, the focus groups of young and old herders – respectively in Djélébou and Ségala – declared that each year, as the overwintering period ended, movements became urgent and unusual, and the trip south accelerated.

It is in the cold dry season that the herds return to their points of origin to take advantage of the newly freed-up rainfed crop fields, where they graze while waiting for their departure to the territories to the south, which are more favourable to livestock in the hot dry season. Consequently, the phenomena of drought, bushfires or land degradation due to overgrazing linked to the massive presence of livestock in the usual areas of grazing/congregation are all factors of fragility that help push transhumant herders to reconsider the duration of their stays – to reduce them – in the north. On the other hand, the movements of Malian and Mauritanian transhumant herds are accelerating and becoming more extensive, take place earlier and last longer in the different areas of congregation to the south of the following regions:

(1) Kayes, Bafoulabé, Kita and Guinée-fallou, Didiéni and Kolokani-Yélimané, Sandaré and Bafoulabé;
(2) Nioro, Nara, Yélimané, Diéma, Kita, Bafoulabé and Kayes.

The focus group participants attributed their difficulties to recurring rainfall deficits. Successive poor rainy seasons had heightened the risks of drought, of the livestock ponds and watering points drying up earlier, of higher day and night temperatures and of bushfires in rangelands, or that sump pits would silt up and palatable or endangered herbaceous fodder species would become more scarce. This is true for the areas around Kayes, Yélimané and Nara, and particularly in the villages and territories of the municipalities (Aourou, Segal, Koronga and Goumbayel) recognized as transit and collection zones. The participants also connected climate change and difficulties of access – between late January and late June – to pastoral resources: they demonstrated that their herds regularly faced significant shortages of water and forage, and considered that the early departure of the herds was linked to the degradation of wetlands, to the distance from the watering point to the grazing area outside the wetlands and farmland, to disputes over access to water or the corridor, or to the failure to consult on the management of grazing land during the different seasons.

Despite the quality of forage in the rainy season, the transhumant herds were thus subject to numerous constraints linked to the irregularity of access to fodder and water in sufficient quantities and of adequate quality (insufficient drinking water supplies in the dry season, premature travel south leading to community conflicts when fodder and water were scarce, etc.). To this can be added difficulties of access to food supplements and veterinary care, which rendered the transhumance precarious.

Another consequence of unpredictable rainfall and drought was that, according to the various interviews, livestock from Goumbayel in the areas around Yélimané, Ségala and Djélébou now travelled as far as Guinea, which is considered a humid area that is not really suitable for animals from zones in the Sahel.

Choice of itinerary and schedule

Making the decision

According to the interviews conducted with the various focus groups, the transhumant herders agreed on their route and the timetable for departure to the specific host areas while still in the village of departure. Each herder proposed a moment of departure, choosing his itinerary in the light of the information at his disposal on weather and environmental conditions (drought, forage production, rainfall, etc.). The choice was therefore made according to the different "avoidable disasters" and "the conditions for the onset of the rains". With regard to the transhumance corridors south of Kayes (Ségala, Diamou, Bafoulabé Sadiola, Kéniéba and from Yélimané towards Dialaka-Sandaré and Yélimané-Dialaka-Ségala-Mahina), a drop in rainfall had negative repercussions on the transhumant herds moving towards sites in the south – a major area of agriculture and water facilities – since the herds remained there during the dry season in order to benefit from the crop residues in the fields and the possibilities to drink, then returned to their points of departure in the north, around Kayes, Nara and Yélimané (Ségala, Djélébou, Goumbayel and Koronga) at the start of the rainy season when pasture conditions were deemed to be satisfactory. This return marked an immediate fresh departure by several herds to zones in the north, to regions of Mauritania (Kiffa, Aïoun and Néma), for the salt cure. Without water, their stay became more problematic, pushing herders to leave the area prematurely or potentially causing tensions with local communities over the use of water.

The area around Hodh El Chargui, in Mauritania, suffered a severe drought in 2017. © IOM 2018/Sibylle DESJARDINS

Transhumant herders, especially goatherds, might decide to shorten their stay in an unfavourable place in consultation with the other men (adult owners or co-owners) in their family, with whom they were in regular contact by telephone to obtain the information needed to adapt their itineraries and choose host areas. During transhumance in the rainy season (July to October), one or two people (men) from the family clan might travel to their host site in the north, near the Mauritanian border, in order to find out how the goatherds and their flocks were doing. This usually happened in the case of transhumant herders in the Djélébou area, who visited their transhumant herds in the north on the pastoral strip bordering Mauritania.

Sources of information

It is important to understand at what stage of the transhumance episode potential policy interventions are likely to be most effective. This section therefore assesses what types of information are used to plan and change itineraries. Most of the respondents said that they got their information by word of mouth, from radio broadcasts, from intermediaries or via social media (Table 5).

Table 5. Sources of information

	What was your source of information for:		
Source	Market prices	Grazing areas	Water points
Word of mouth	96%	98%	97%
Intermediaries	68%	43%	50%
Radio broadcasts	42%	43%	58%
Social networks/media	42%	42%	56%
Scouts	44%	37%	38%
Newspapers	6%	9%	13%
Other	4%	4%	3%

Source: Authors' compilation from surveys and interviews.

Transhumant herders obtain information while on the move. According to the different groups interviewed, they sought information on the state of pastures and water points, forest patrols, veterinary services, local markets, the location of newly cultivated areas and agricultural fields.

Young transhumant herders tended to obtain information from administrative authorities and livestock services, and from rural radio stations. They nevertheless believed that a change in itinerary was not always linked to information but rather to their own observations of the state of degradation of pastoral resources. For them, the most important information was that transmitted

through official channels. They looked for information on diseases, vaccinations and the documents necessary for transhumance, but also on the weather, bushfires and notices of loss or theft of livestock. They also listened to awareness-raising radio programmes on conflict prevention and management.

Elderly transhumant herders tended to obtain information from retail merchants, administrative authorities and livestock services, and listened to rural radio stations. They sought information on livestock feed markets and price variations regularly provided by merchants. They also listened to the weather forecast, the immunization schedule and awareness-raising programmes on conflict prevention and management or on techniques to prevent bushfires and protect the environment through reforestation.

The transhumant women said that they obtained information essentially from other transhumant herders from their community who were in Mauritania, by what they termed word of mouth. Their husbands used the telephone to obtain information and made use of WhatsApp groups. The women also said that information could be obtained from community and national radio stations. They sought information mainly on the weather forecast and weekly information on the livestock feed market, animal health and vaccination, and the stage of pasture development by site in the region, which was announced in a radio programme from Mali every Friday. They were also interested in search notices for cattle broadcast over the Yéliné rural community radio station.

All the groups interviewed confirmed that it was not always easy to obtain reliable information to decide on their route. More specifically, they stressed the absence of a system allowing them to schedule correctly (date of departure and return) and to obtain the information needed on the itinerary, water points and places of passage.

Perception of the importance of environmental and climate factors for transhumance compared to other factors

In this section, we analyse the herders' perceptions in terms of environmental and climate factors and their impact on the practice of transhumance (Table 6). It is important to note that these perceptions do not necessarily reflect the reality of the factors and impacts.

When asked to share their views, most of the herders said that temperatures were rising during the months of transhumance and that the risk of conflict with farmers was falling. The latter perception was confirmed during the focus group discussions, the herders stating that it had become easier to coordinate schedules between agricultural and pastoral communities, limiting conflicts.

The strongest opinion expressed by the respondents (with a score furthest from 5, or neutral) was strong disagreement that they would be able to continue taking their usual routes. The highest scores demonstrate that the herders saw certain climatic phenomena, such as rising temperatures or irregular rainfall, as affecting their routes in the future.

Table 6. Perceptions of the transhumant herders interviewed

Statement	Score
Temperatures are rising; it is getting hotter and hotter during the months of transhumance.	6.93
The risks of conflict with agropastoralists are falling; it has become easier to coordinate the transhumance and agricultural calendars.	6.25
There are fewer administrative constraints; it is becoming easier to cross borders.	5.97
In the past 20 years the amount of grazing land has increased.	5.51
The routes are increasingly dangerous; conditions are less and less safe.	5.04
The amount of rain is increasingly predictable; it is becoming easier to plan itineraries and transhumance timelines.	4.48
The rains are increasingly favourable; there is abundant rainfall during the months of transhumance,	4.24
I'll be taking my usual routes in the coming years.	1.63

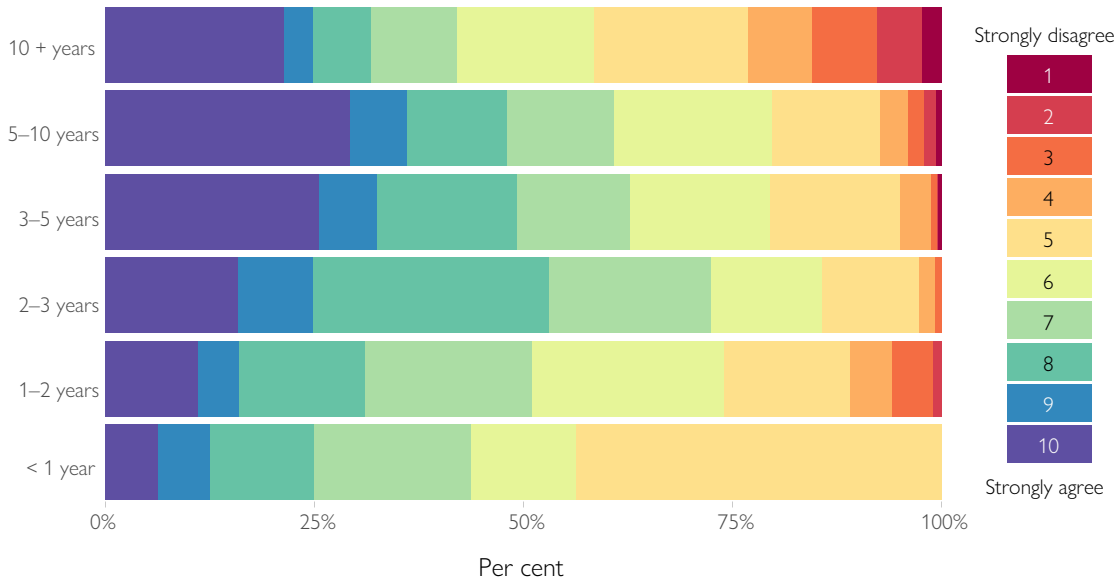
Source: Authors' compilation from surveys and interviews.

Note: The scores represent responses on the Likert scale, with 10 indicating the strongest level of agreement and 1 the strongest level of disagreement.

Regarding the statement, "Temperatures are rising; it is getting hotter and hotter during the months of transhumance":

- Farmers with a Koranic education were least likely to agree, followed by those with a vocational (as opposed to academic) education;
- For all levels of education, the oldest respondents were most in agreement;
- Interestingly, agreement increased with years of experience, with the exception of respondents with more than 10 years of experience, who, while they agreed, agreed less strongly than less experienced groups (Graph 6).

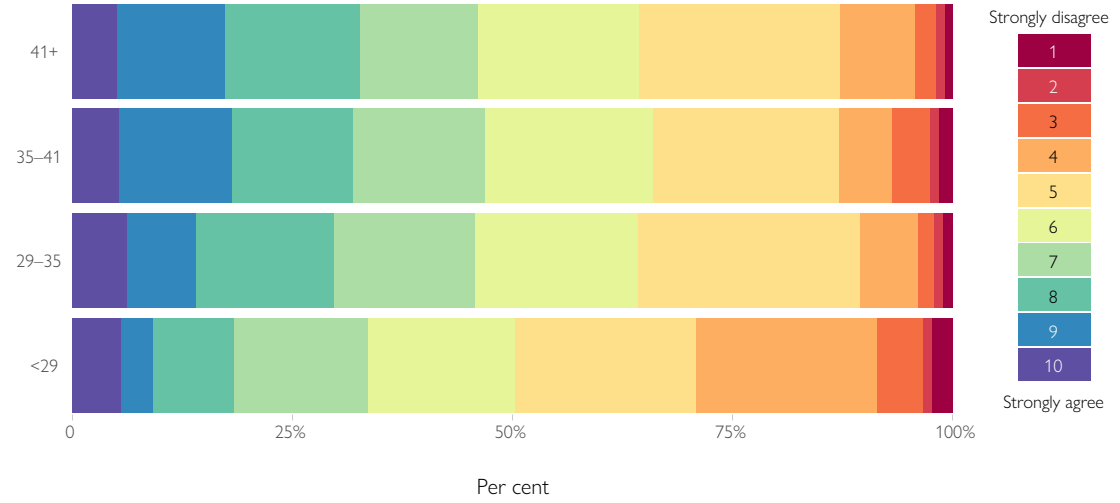
Graph 6. Perception of the transhumant herders surveyed of the statement that temperatures were rising, by years of experience



Source: Authors' compilation from surveys and interviews.

The youngest herders disagreed most strongly with the statement, "The risks of conflict with agropastoralists are falling; it is becoming easier to coordinate the transhumance and agricultural calendars" (Graph 7).

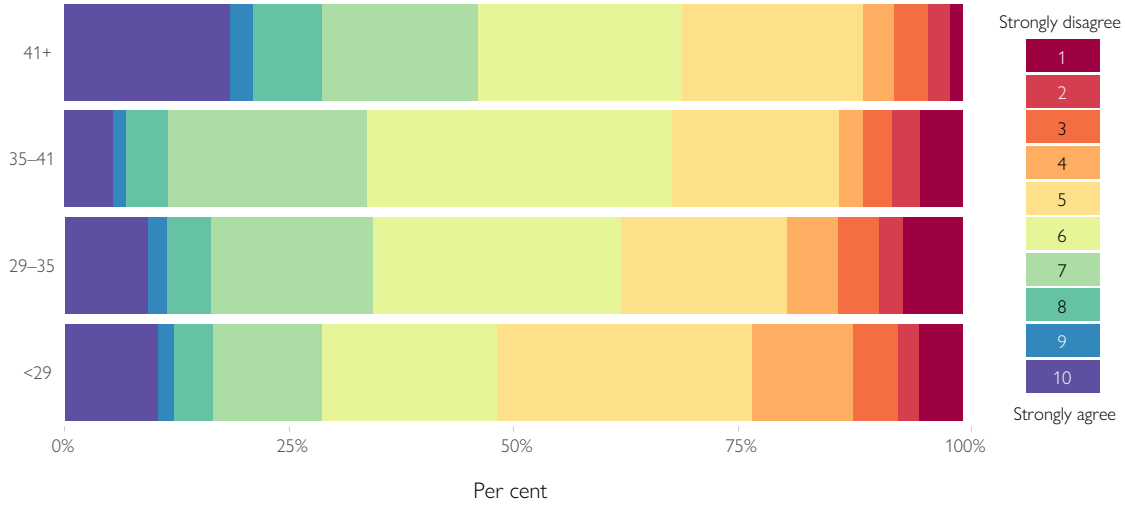
Graph 7. Perception of the transhumant herders surveyed of the statement on fewer conflicts with farmers, by age



Source: Authors' compilation from surveys and interviews.

The oldest respondents were the most in agreement with the statement, "There are fewer administrative constraints; it is becoming easier to cross borders" (Graph 8).

Graph 8. Perception of the transhumant herders surveyed of the statement that there were fewer administrative constraints, by age



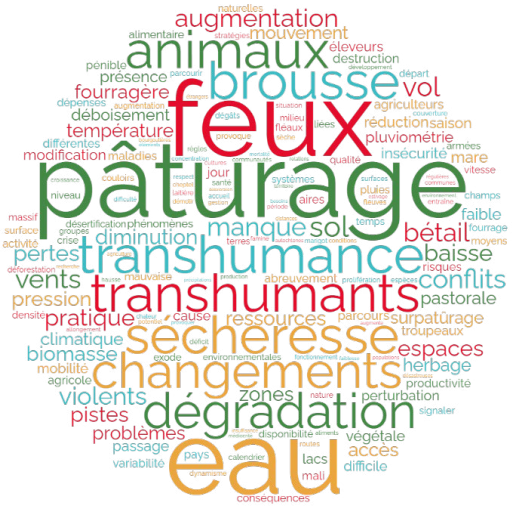
Source: Authors' compilation from surveys and interviews.

Compared to respondents whose itineraries had not changed, those whose itineraries had changed were much more likely to disagree with the statement about rising temperatures. They were also much more likely to agree with the statement that the level of rainfall had improved and more likely to disagree that the risk of conflict with herders had decreased.

A herd of goats crosses the Dawa riverbed in search of water. The river had been overflowing two months earlier and served as a natural border between Somalia and Ethiopia. © IOM 2017 Muse MOHAMMED

What are the implications of disasters, climate change and environmental degradation for the practice of transhumance?

Figure 1. Word cloud of the answers by the herders surveyed to the question: "In your opinion, what are the implications/impacts of climate change and environmental degradation on your practice of transhumance?"



Source: Authors' compilation from surveys and interviews.

The respondents complained about recurrent bushfires, the reduced space for transhumance, difficulties in locating water points, the number of unnecessary trips (lack of water or pasture on arrival, tensions with local communities, etc., requiring unplanned movements), difficulties in obtaining reliable information, and the transhumance-related hardships, vexations and worries that were making it more difficult to engage in pastoral activities. The only other option was to adopt a sedentary lifestyle and abandon transhumance, which was truly a way of life for the populations concerned and a practice that contributed both to the region's economy and to preservation of the ecosystem to which it belongs.

According to the transhumant herders interviewed, the journey from north to south was increasingly undertaken too early, leading to conflicts with communities along the way, in particular over the damages caused by the animals to the fields. The different groups asserted that the main cause of conflict and tension between transhumant herders and sedentary farmers during transhumance was the obstruction by new cropland of the corridors taken by the animals to reach watering holes. The group of young transhumant people from Djélébou particularly insisted that the practice of transhumance was very difficult during the rainy season due to the presence of fields "everywhere", forcing the herders to keep a constant watch on their herds.

Early and prolonged movements towards southern pastoral areas and in several villages, and the consequent presence of transhumant animals when winter crops had been sown and during the off-season, generated tension and disputes between herders and farmers.

> The changed surroundings [environmental conditions] delay everything, the departure and arrival dates are not respected at all and even the destination is often changed halfway through because information is misinterpreted or misunderstood. Degradation of the ecosystem leads to other phenomena (backwater, sea, wetland, river, etc.) and encourages bushfires, exodus, deforestation, etc. Those two headaches make the practice of transhumance laborious! Variations in the weather, in particular rainfall, and conflicts rooted in terrorism – rebel groups control the main grazing routes – hamper livestock mobility and give rise to more theft and animal losses. (Group interview of young herders, Djélébou)

Young transhumant herders said that disputes most often arose in relation to the damages done to the fields by their animals, but also to the fact that they were not allowed to use the paths leading to ponds and other water points during the growing season.

According to older transhumant herders, conflicts over access to water points were frequent; some herders did not always respect the rules governing access to pastoral wells[10]. Very often, farmers planted fields next to ponds during the rainy season, thus preventing animals from drinking and causing tension and conflict.

> There are currently too many fields along the routes and around the herds' access points to the pond. Because of the fields, the animals can't use the access points, or the farmer will think that his field will be damaged immediately. We can't get too close to the water point and the only way to avoid or prevent tension is to move away from the village fields. (Group interview of elderly and former transhumant herders, Diakabaoudé, Ségala)

The herders added that, around Ségala, there were tensions between their community and water and forestry agents because the villagers accused the herders in the area of being the cause of bushfires.

The transhumant women said that they ran into opposition from water and forestry agents when they collected wood for shelters.

10 Often, in order to limit disputes between herders over access to water from a pastoral well, rules of priority are established and agreed by the herders, who designate someone to be in charge of ensuring that the rules are followed and that the animals have access to the water in the right order.

> The public authorities consider transhumant herders in the Koronga area, along with their wives, as agents of environmental degradation. (Group interview of transhumant women, Koronga)

Like the other groups, the chief herders believed that the presence of fields next to the ponds made it complicated to water the animals and was a source of tension. In addition, the behaviour of certain State technical agents gave rise to mistrust towards them and tension with agricultural communities.

During the same period, the early warning mechanism of the Transhumance Tracking Tool[11] developed by IOM and the Réseau Billital Maroobè was introduced by the pastoral organizations Tassaght and Gnap. The mechanism, which seeks to prevent or mitigate conflicts thanks to the rapid transmission of information to local stakeholders, had been used to raise 94 alerts, including 49 to prevent bushfires (30 in Mauritania and 19 in Mali), 11 related to community tensions, mainly in Mauritania, and one route obstruction in Mali. At the same time, 50 alerts warning of mainly early movements were issued in Mauritania (IOM, 2022). These events and movements, which often result from climatic hazards and poor governance of natural resources, are all risk factors for the conflict and tension that the early warning mechanism seeks to prevent or mitigate.

11 More information about the Transhumance Tracking Tool: https://dtm.iom.int/sites/g/files/tmzbdl1461/files/reports/Data%20Hub%20Infosheet_TTT_DRAFT%201_sy_V2.pdf.

Transhumant herders and their livestock at a water point in Mauritania. © IOM Mauritania 2020

Mechanisms for attenuating the impact of climate factors in terms of tension between farmers and herders

Issues of access to water and grazing land are strongly linked to environmental degradation and climate change; they are central to the debate on the governance of transhumance, particularly in terms of conflicts between transhumant herders and farmers. Competition between farmers and herders over access to resources reflects the absence or weakness of dialogue between all those involved in the management of pastoral resources, but also the absence, ignorance or non-application of tools to prevent and resolve such conflicts, such as Mali's charter on pastoralism, the transhumance agreement between Mali and Mauritania, and official corridors and calendars for the passage of livestock.

Conflict management and mediation mechanisms used by transhumant herders

The young transhumant herders described several conflict scenarios and modes of mediation. They cited unilateral interventions on the part of local populations without real authority and lacking the will to mediate as problematic. For example, they considered it alarming, even inconceivable, that their animals should be impounded, on the pretext that they were strays, by a farmer from a host village who should know to whom the animals belonged thanks to their brands. They believed that it was difficult to mediate in such cases, with no talks or negotiations possible between the two parties. It was the manager of the pound who ruled in each case, the animals being released on payment of damages in the form of a fine.

Disputes between a transhumant herder and a farmer in his field were sometimes mediated by a formally recognized group made up of several locals, with or without a specific status, pre-existing or convened for the occasion, that ascertained the damages and decreed a fine to be paid to the person who had suffered the damages. Such groups did not always include the same people, but the village chief (or a higher administrative authority if the context lent itself to this), representatives of local farmers, representatives of herders and the people affected by the dispute could take part. In some places, such groups had official status and did not necessarily deal only with issues relating to transhumance.

In some cases, the dispute was settled by consensus or amicably. Mediation was organized by the village chief and his advisers, who choose people from the community to ascertain the damage caused by the animals to the field. The two parties were then invited to agree but no fine was decided. In such cases, the parties forgave each other and the village chief and his advisers provided advice to ensure that a similar situation did not arise again.

A borehole built to bring water to people in the area around Hodh El Chargui, in Mauritania. © IOM 2018/Sibylle DESJARDINS

The older transhumant herders explained that, when disputes over the use of natural or other resources resulted in physical injury or death, the various stakeholders were summoned to appear before the authorities (mayor, sub-prefect, gendarmerie) and brought before a judge charged with enforcing the law vis-à-vis the culprits. According to them, disputes between transhumant herders and other stakeholders tended to be resolved by the law. They added that, unlike other places, in Ségala, to their knowledge, no conflict between transhumant herders and farmers had been settled amicably or thanks to the intervention of village chiefs. To their dismay, they had not been not consulted on key decisions affecting their pastoral activities, such as the establishment of routes.

> The corridor through which we pass is decided without first consulting the transhumant herders, they marked off the corridor without taking into account the places where there are surface water points. (Group interview of elderly and former transhumant herders, Diakabaoudé, Ségala)

According to the older herders, this inevitably led to tension. According to the transhumant women, disputes were resolved between men and the women were not involved in the discussions. As for the chief herders, they affirmed that, when a dispute arose over damage to a field, the case was brought before the village chief, whose mediation was generally positive and decisive for the two opposing parties.

Mechanisms of adaptation ensuring the security of transhumant herders

According to the young transhumant herders, there was a tendency to fewer conflicts with farmers because "the fields are increasingly monitored, the herders have understood where to go, in Mauritania and Mali the routes are increasingly marked". They added that "transhumant herding will suffer less when there are sustainable water points in pastoral areas". They explained that, in the dry season, by driving their herds further south, they could make arrangements with farmers in the host area around Sadiola, south of Kayes, who agreed to allow the herders to stay in their fields and take charge of watering the herds at the village dam at a cost of CFA francs 3,000 per herd. Other field owners also made a sump available to herders staying in their fields.

The elderly transhumant herders believed that multi-party consultation frameworks for the management of transhumance should be set up at municipal level and include transhumant herders and farmers. They also observed that only a few villages engaged in bushfire control. The communities did not mobilize to extinguish fires when they occurred. There was no system for monitoring the bush and bushfires, and existing technical devices for preventing and fighting bushfires (such as firewalls) were not in place.

The chief herders also believed that greater consultation between stakeholders (authorities, farmers and herders) was needed to regulate access to pastures and transit routes.

The transhumant women said that they were tending to adopt sedentary lifestyles (the livestock departed with the transhumant men, but the families stayed in the camp). Their wish was for modern water points and economic activities.

The focus group participants had adapted their practices in the face of these different environmental vulnerabilities and risks of tension. In particular, as a result of the degradation of and impeded access to pastoral resources, they had opted to accelerate the mobility of transhumant livestock watched over by herders (advance the dates of departure or shorten the duration of transhumance).

In the area around Diakabaoudé (Ségala) and Koronga, one participant, describing multiple disputes between transhumant herders and farmers resulting from cropland on the access routes to pastoral resources, explained that "the only way to avoid or prevent tension is to move us away from the village fields". The herders thus promised to move away from the village fields, which resulted in longer stays in the area.

A herd of goats in search of water gets ready to cross the Dawa River, between Somalia and Ethiopia. © IOM 2017/ Muse MOHAMMED

Conclusion and recommendations

This study served to estimate that 15 per cent of the transhumant herders surveyed had changed itineraries, 8 per cent of them mainly in response to difficulties in accessing water or pasture. Transhumant herders mentioned those difficulties, which are related to environmental and climatic changes, in respect of both current transhumance and activities in the previous 20 years.

The study also clearly found that the survival of the pastoral community and its economic contribution depends on its mobility. The practice of transhumance is essential to economic adaptation in the context of disasters, climate change and environmental degradation in the region.

Impeded access to natural resources, environmental degradation and unpredictable rainfall (including delayed rains) have made the routes taken by transhumant herders less predictable and thus given rise to heightened tensions with other communities depending on the same resources to survive.

The study also confirms that routes and departure dates are decided in consultation among transhumant herders before they set out or on the road in the light of needs. The decisions are based on information obtained by word of mouth, over the radio or via intermediaries, from official sources and thanks to the herders' observations of the land.

Interestingly, the transhumant herders stated that the risk of conflict with agropastoralists was falling, as it was becoming easier to coordinate. This is indicative of the importance of multiplying and reinforcing coordination tools and frameworks for the sharing of reliable information.

Another striking finding is the respondents' strong disagreement with the statement that they will be able to maintain their usual transhumance routes in the future. This suggests that transhumance will become increasingly unpredictable, with the risk of conflict or tension over the resources available in new areas should coordination or conflict prevention measures not be implemented.

In terms of the implications of climate change and environmental degradation on transhumance, combined with other factors, the data collected are indicative of a deep-seated pessimism about the practice of transhumance in such a context. The respondents complained that recurrent bushfires, reduced areas for transhumance, difficulties in locating water points and the number of additional movements made transhumance particularly difficult. Some said that the practice was disappearing, as the herders adopted a sedentary lifestyle, while others referred to the difficulties they encountered in planning and sticking to an itinerary, with the resultant risks to coordination of use of resources with the communities through which they transited.

Lastly, the transhumant herders explained that conflicts and tension were resolved by the law or amicably, under the supervision of local authorities such as the village chief, depending on the area. These mechanisms appear to be tools and initiatives worth strengthening.

Based on the study, we offer several remarks and recommendations.

- The projects implemented by IOM and members of the Réseau Billital Maroobè meet some of the concerns raised by the transhumant herders surveyed thanks to implementation of the Transhumance Tracking Tool. The Tool serves to generate reliable information on transhumance (routes, flows, risk areas, alerts to conflicts and movements that could lead to conflicts). That information is then quickly passed on to the various transhumance stakeholders, in particular those in charge of conflict prevention at community level and to the herders themselves, to ensure that they can have a say in any decisions affecting them. Ideally, the Tool should be used throughout the entire region and deployed on a more regular basis, to allow for comparisons of data between countries and over time.
- Since IOM is not the only organization working in this field – for example, it has worked with WFP and FAO on transhumance projects in several countries in the region – it would be interesting to reflect on the establishment of synergies and partnerships, particularly

with a view to meeting demands for more reliable information and sources of information. The projects implemented in West Africa by the SNV (Netherlands Development Organization) appear promising in this regard.

- Consultation between the various users of pastoral and agricultural resources, along with coordination and mediation between transhumant herders and agropastoralists, appear to be the key to conflict resolution and sustainable management of the natural resources they all need to survive. It is essential to strengthen such initiatives. It is also vital to consult and include all stakeholders in all transhumance-related decisions on, for example, the marking off of transhumance corridors and the location of pastoral infrastructure.
- Heightened bushfire surveillance, technical prevention and control systems, and rapid intervention mechanisms should be put in place or strengthened and systematized.
- Existing texts and laws on transhumance should be better understood and applied by all transhumants, so that they benefit to the full and avoid potential infringements. In this regard, a better understanding of the coherence between legal instruments and local practices is essential for better governance of transhumance.
- The impact of climate change and environmental degradation on transhumant herders, together with the perception thereof by the various stakeholders, must be better taken into account in the tools and policies governing transhumance.

More generally, it is important to understand changes in schedules and itineraries as adaptation strategies implemented by herders. It is therefore essential that the related mobility and transhumance policy frameworks and tools are sufficiently flexible to allow for these necessary adjustments.

A researcher tasked with monitoring transhumance in Burkina Faso, using the Transhumance Tracking Tool. © IOM Burkina Faso 2020

Next steps

IOM's continued deployment of the Transhumance Tracking Tool in several regions is generating reliable data that it shares with all stakeholders wishing to use them to implement programmes or policies aimed at facilitating the mobility of transhumant herders.

As the study is very localized, it would be interesting to replicate it in other areas of the region, to ascertain the existence of similar or other issues.

IOM constantly seeks opportunities for synergy with local, national and regional partners in order to support peaceful transhumance.

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