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Transhumance and Livestock Development in the Context of Climate Change in West Africa: Impact on the Mobility of Pastoralists and Adaptation Strategies

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BACKGROUND

Pastoralism is a livestock-raising practice based on the movement of people and herds, enabling herders to move their animals according to the seasonal availability of pasture and water. This transhumance can take place within a country or in the large livestock rearing areas, requiring agreements between bordering countries. Pastoralism is a key economic and cultural factor in West Africa and the Sahel, where it is the dominant livestock production system. It contributes to food security, climate resilience and ecosystem conservation through sustainable land use. Indeed, Sahelian pastoralists emphasise the complementary nature of grazing between the Saharan and Sahelian zones, the north and south of the Sahelian zone, the Sahelian and Sudanese zones, and between dry and humid zones.

Livestock plays an essential role in the Economic Community of West African States (ECOWAS), contributing 44% of the region's agricultural GDP.¹ West and Central Africa have around 60 million head of cattle and 160 million small ruminants.² Pastoral systems provide 50% of meat production and 70% of milk production in these regions, thus occupying a very large proportion of the rural population (>50% in Sahelian countries). Pastoralism ensures the livelihoods of millions of people involved in production, processing, marketing and service activities in the livestock chain. Despite this importance, investment and support for the livestock sector have been relatively low in recent years. In fact, some countries do not systematically take into account the aspirations of pastoralists.

At the heart of pastoralism, human mobility is also often confronted with challenges that require special attention from political decision-makers. Indeed, the region is facing a security crisis exacerbated by climate change, disasters and environmental degradation. As a result, this issue is receiving increasing attention from national and regional players, as well as development partners. Indeed, progress was made following the action plan adopted in 2011 for the transformation of livestock farming. This action plan supports the implementation of the first generation of the regional agricultural investment plan of the ECOWAS agricultural

Transhumance – with mobility at its heart – is a crucial element in overcoming crises, whether environmental or security-related, and also maintaining animal productivity. It is an effective way of reducing the risks incurred by farmers and their animals in the event of major constraints. In the context of climate change, the mobility of livestock farmers must be seen as an adaptation strategy.

¹ OCDE, 'Élevage et marché régional au Sahel et en Afrique de l'Ouest Potentialités et défis' (2008) <https://www.oecd.org/fr/csao/publications/40279092.pdf>

² Guillaume Duteurtre, 'Afrique de l'Ouest : la révolution de l'élevage aura-t-elle lieu?' (2009) https://www.inter-reseaux.org/wp-content/uploads/pdf_p12_15_Cadrage_dossier.pdf.

policy. Through the Nouakchott 2012 and Ndjamena 2013 declarations, they agreed on the main orientation for the development of this livestock farming system.³

ISSUES

CLIMATE CHANGE: CURRENT SITUATION AND IMPACT ON PASTORAL ACTIVITIES AND MOBILITY

Overall, the average temperature in Africa has risen by around 1.4°C since pre-industrial times, with an acceleration in recent decades. In the event of high global greenhouse gas emissions, some regions could experience a significant decline in the primary productivity of vegetation, with a 42% to 46% drop in the availability and quality of boreholes in western sub-Saharan Africa.⁴ In addition, animals will face conditions of heat stress for up to several months a year in West Africa, if global temperatures rise by 4°C. Climate change is therefore a major challenge for Africa, with impacts on natural capital including agrosilvopastoral resources. Even if these impacts continue to have different manifestations in different regions and on different territorial scales, we can expect an increased frequency of unpredictable and difficult-to-control extreme phenomena (droughts, heat waves, floods, intense rainfall, etc), with high risks of loss and damage. On February 28, 2022, the IPCC published its sixth report, 'Impacts, Adaptation and Vulnerability', which describes the consequences of climate change on societies and ecosystems worldwide while outlining adaptation options and their limitations. A reading of this document reveals that climate change has significant negative consequences for people and the environment in every region of the world, and particularly affects vulnerable individuals and communities. In West and Central Africa, nearly 1.2 million people are estimated to have been displaced by disasters in 2022.⁵ In the same year, heavy rains and flooding killed 379 people and affected around 1.2 million. The people affected lost their homes, crops and animals, increasing pre-existing vulnerabilities and multiplying humanitarian needs. The IPCC report estimates that recent climate change in Africa has already led to a transition to a 'moderate' level of risk for agricultural production systems. Local human activities such as agriculture and pastoralism also exert significant pressures on the environment (deforestation, changes in the frequency of bush fires), which can mask or exacerbate those linked to climate change. For example, the decline in biomass observed in the southern Sahara is mainly due to deforestation linked to agriculture, and not to climate change.

However, the increasing frequency and intensity of extreme weather events is causing severe damage to crops, degrading arable land and jeopardising livestock production. Pastoralism is also subject to numerous constraints in this context of disasters, climate change and environmental degradation, all of which make livestock production precarious. Against this backdrop, livestock will face an increase in several risks: malnutrition, difficult access to water and exposure to heat stress, particularly in tropical regions. Repeated droughts over the last few decades and high rainfall variability have led, among other things, to a considerable reduction in vegetation cover, pastures and forage production, resulting in high prices for industrial livestock feed, lower productivity for sheep and cattle, major food risks for rural populations and negative impacts on all economic and social sectors. Yet demand for

³ See 'Projet Elevages et pastoralisme intégrés et sécurisés en Afrique de l'Ouest (PEPISAO)' (2022) <https://www.araa.org/fr/programme/projet-elevages-et-pastoralisme-int%C3%A9gr%C3%A9s-et-s%C3%A9curis%C3%A9s-en-afrique-de-l%E2%80%99ouest-pepisa0>.

⁴ IPCC: Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (2022).

⁵ IDMC, Global Report on Internal Displacement (2023) <https://www.internal-displacement.org/global-report/grid2023>

animal products is rising sharply as a result of sustained population growth and rapid urbanisation in the Sahel and coastal countries.

Despite the constraints associated with mobility, pastoralism provides populations with numerous goods and services, including products of high commercial and nutritional value (milk, meat, hides, skins), a source of energy (traction, animal transport, fuel), manure for crops, a support for socio-economic relations (employment, social mutual aid, etc.), a savings instrument, etc. It also contributes to food security in many countries south of the Sahara. It enables the development of vast areas of land in these regions, which have few other possibilities for economic development.

Moreover, the organisation of pastoral societies is an element of social stabilisation and peace in dry regions. With climate change exacerbating a sometimes tense political, economic and social context, conflicts over natural resources between nomadic herders and farmers are likely to multiply. Cattle and sheep flows are on a massive scale, and the distances covered are considerable. Despite their excellent knowledge of the grazing areas, cross-border pastoralists face enormous difficulties, particularly in terms of access to water and pasture in zero grazing areas. Pastoralists also report problems of hospitality in the camps they pass through, mistrust on the part of local populations (frequent thefts), and restrictions on grazing due to the presence of crops in agro-pastoral zones with sedentary populations. The scarcity of grazing areas and constraints on forage crops exert even greater pressure on land suitable for agriculture and livestock farming. Conflicts, sometimes deadly, between nomadic and indigenous herders therefore appear to be linked to the reduction in grazing areas and access to watering points, as well as to competition for residual resources. Indeed, while pastoral mobility is at the root of the development of vast territories, it is, at the same time, a source of conflict between transhumant herders and other users of natural resources, particularly farmers.

Increasingly, transhumance is marked by serious incidents in transit and reception areas, due to a number of factors: (i) transhumants' failure to comply with legislation in force in host countries; (ii) damage caused by animals to crops and agricultural harvests; (iii) the penetration of protected areas by transhumant herds; (iv) the introduction by several communes in host countries of a tax payment system for cross-border transhumants (entry tax, grazing tax etc), and v) the extension of the process of agricultural colonization of sylvo-pastoral areas, which constitute fall-back zones for livestock. With regard to the latter, worsening climatic conditions are effectively changing the geography of agro-pastoral activities, with farmers moving (or spreading out) their agricultural activities to previously uncultivated land, while herders with their families and herds are moving to new areas, creating unrest when it comes to sharing out the land. In Mali, for example, livestock breeders are migrating to the south of the country, a humid region with an agricultural vocation and a source of fodder. These herders are finding it extremely difficult to settle in, due to the lack of grazing land, the expansion of farmland and land speculation. Native populations perceive breeders as invaders and enemies of crops, which explains the frequency of land conflicts between the two fronts. In Senegal, transhumance also leads to conflicts with farmers, whose harvesting period no longer ends in October, but sometimes continues into December. Conflicts also seem to be exacerbated by ethnic and nationalist connotations of identity.

Pastoral activities are also affected by geopolitical and security issues. In fact, part of West Africa (the Sahel) is at the epicentre of a rapidly developing crisis, with unprecedented levels of armed violence, aggravated by frequent climatic shocks, which have led to a drop in agricultural production and notably altered transhumance and trade corridors between states.

Beyond the context of climate change, pastoral systems are also threatened by large-scale land acquisitions by private-sector players (notably the extractive, mining and oil industries), which are increasing and thus modifying transhumance corridors. If not properly managed, this could have devastating long-term consequences, with the risk of shrinking grazing areas, generating conflicts between farmers and pastoralists, and undermining the livelihoods of the continent's poorest populations. This situation is particularly evident in the sylvo-pastoral zone of Senegal (Le Ferlo).

WHAT STRATEGIES EXIST FOR ADAPTING PASTORALISM IN THE CONTEXT OF CLIMATE CHANGE AND SECURITY AND GEOPOLITICAL CRISES?

The various forms of crisis (geopolitical, health, climatic, economic and structural) affecting pastoralism are not new phenomena. Thus far, livestock farming has survived the various constraints that have affected it. Nevertheless, the forms of resistance and adaptation shown by livestock breeders' organisations are constantly renewed, and deserve the attention of all stakeholders.

Transhumance as such – with mobility at its heart – is a crucial element in overcoming crises, whether environmental or security-related, and also maintaining animal productivity. It is an effective way of reducing the risks incurred by farmers and their animals in the event of major constraints. In the context of climate change, the mobility of livestock farmers must be seen as an adaptation strategy. In fact, the significant variations in forage availability at a given location and over time in dry regions require livestock to be permanently mobile, so as to be able to seek out resources wherever they are. Similarly, families and livestock move according to the availability of pasture and access to water, and sometimes the availability to other factors such as markets. The degree of a group's mobility is flexible and fluctuates according to conjectural variables, as well as the obstacles and opportunities that appear along the way. Generally some of the policies implemented do not take into account this complementarity between the zones of a region and the major trends linked to demographics and climate change, whereas they should on the contrary reinforce and build on these existing strategies.

Pastoral mobility is therefore a form of adaptation to climate change, and must be considered as such in policy-making. Due to the constraints imposed by climate change, and in order to escape the scarcity of grazing areas, the inadequacy of land legislation and the numerous social conflicts, transhumance is today increasingly directed towards protected areas.

Faced with the multiple constraints affecting pastoral activities, several strategies are underway, some of which need to be capitalised on. These include opportunities to implement participatory management of pastoral rangelands in the Great Green Wall,⁶ that work towards: (i) raising awareness through the media and leaders; (ii) marking out transhumance routes and providing amenities (rest areas, for example); (iii) increasing social mobilisation against bush fires; (iv) strengthening the role of community radio stations in raising awareness; (v) informing the population.⁷

In Senegal, another initiative is the Unités Pastorales (UP) approach, introduced almost forty years ago. The government and its partners have implemented projects and support programs to improve

⁶ The Great Green Wall (GGW) initiative was conceived in 2007 by the African Union (AU) as a reforestation project to create a shield of trees to push back the desert in the Sahel region, from Senegal in the west to Djibouti in the east of Africa. It aims to promote sustainable development and climate change mitigation. The 11 countries selected as intervention areas for the initiative are: Burkina Faso, Chad, Djibouti, Eritrea, Ethiopia, Mali, Mauritania, Niger, Nigeria, Senegal and Sudan. The GGW aims to restore 100 million hectares of degraded ecosystems and capture 250 million tonnes of carbon in these 11 countries by 2030.

⁷ <https://www.ipar.sn/Analyse-des-possibilites-de-mise-en-oeuvre-de-la-gestion-participative-des.html>

natural resource management in this area, through the development of pastoral units. In addition to mobilizing local players around natural resources, the UPs also represent frameworks for implementing various local development activities. In setting up the UPs, the operators were therefore banking on securing livestock production by providing access to water (construction of several boreholes), protecting livestock (vaccination support), improving the environment, building local capacity and developing income-generating activities, with the idea of 'securing traditional livestock production but not modernising it.'⁸ Today, however, the key question is how to sustain the UP approach in the face of a number of challenges. While acknowledging the major role played by UP in improving the resilience of pastoral livestock farming, the question of how to sustain it looms. UP continues to be supported and implemented for almost forty years by the State and its technical and financial partners.

Also, to better assist governments in their support of displaced and vulnerable people affected by communal conflict and violence, another notable strategy is being implemented by the International Organization for Migration (IOM) as part of the Transhumance Tracking Tool (TTT) since 2018. Using these components, the TTT maps (in)formal transhumance corridors, monitors transhumance flows and captures real-time information on livestock mobility events and conflicts across the region, which is immediately shared with local governance systems to prevent or mitigate tensions before they escalate into violent conflict. To achieve this, IOM has developed a strong partnership with Réseau Bilital Maroubé (RBM), a regional transhumant network of local herders' associations, representing herders from 11 countries in West and Central Africa. The data collected informs and supports inclusive transhumance policies and decision-making. Complementing the data component, IOM uses its extensive networks of local actors and experience in community stabilization to strengthen local governance structures by mobilizing local actors around TTT data reports. IOM achieves this via inclusive and participatory dialogue platforms that help strengthen social cohesion through environmentally adapted initiatives promoting more sustainable management of shared resources, environmental rehabilitation, inclusive job creation and improved access to basic services.

RECOMMENDATIONS

1. Climate change affects natural and human capital, governance frameworks and value chains. However, taking the effects of climate change into account also creates new financing opportunities, access to which will enable states and herders' networks to strengthen existing adaptation strategies, which are often innovative but rarely capitalised on, valorised and scaled up for lack of resources and an appropriate institutional framework. To better cope with the adverse effects of climate change on pastoralists' mobility, it is recommended that the various stakeholders: (i) take advantage of green investment opportunities in the private sector, so as to engage in more socially responsible and environmentally-friendly business models; (ii) work with local stakeholders to improve financing mechanisms in favour of adaptation, with greater involvement of pastoralist communities, who are often highly mobile, as well as working towards better consideration of their main concerns in the short to medium term.
2. In the case of cross-border transhumance, shared pastoral resources include: pastoral areas, transhumance tracks and corridors, agro-pastoral areas, vaccination parks, water points and

⁸ Cheikh Tidiane Wade, 'Développement de l'élevage dans la zone sylvopastorale : l'apport des unités pastorales' (2016) <https://www.iedafrique.org/Developpement-de-l-elevage-dans-la-zone-sylvopastorale-l-apport-des-Unites.html>

bodies, hydraulic infrastructures and livestock markets. Thus, at the level of the major transhumance areas, governments and livestock stakeholders, as well as their partners in livestock development, need to work across sectors to ensure a community-based and cross-border resource management strategy based on coherent adaptation and mitigation measures, but above all to avoid actions taken in one sector generating risks in other sectors.

3. Local agreements should be established to reduce and eliminate potential inter-communal conflicts linked to increased land pressure exacerbated by climate change. The aim is to promote a social dialogue based on ongoing communication between the various transhumance stakeholders, with a view to maintaining a climate of peaceful coexistence between transhumants and the populations of host areas, through: (i) training, informing and awareness-raising for the various stakeholders involved in the legislative and regulatory mechanisms governing cross-border transhumance; (ii) strengthening herders' and pastoralists' organisations and involving them in participatory dialogue forums; and (iii) supporting the creation and/or operation of frameworks for consultation, participatory dialogue and mediation between member states and stakeholders on cross-border transhumance and livestock issues in the major areas affected by the effects of climate change.
4. In a shifting political context, where the success of projects and programs, and above all institutional reform processes, often depend on the existence of local leadership that is sometimes unstable with little power to mobilise, it is crucial to build the capacities of stakeholders at different levels of intervention to enable them to address livestock issues and secure pastoralism from all angles and at appropriate territorial scales by: (i) a sound policy, organisation of stakeholders, mobilisation of local knowledge and a good pastoral mobility strategy to promote the resilience of territories and communities. The aim is to see how pastoral mobility enables adaptation to climate change and helps preserve ecosystems, and how pastoral populations adapt to demographic pressures and economic liberalization, as well as to facilitate the strategies they initiate; (ii) seeking funding to support pastoral livestock production in a context of climate change, capitalizing on experience and collectively building innovations to strengthen the resilience of pastoral systems; and (iii) integrating gender dimensions into sustainable livestock production activities, with greater involvement of women, young people and vulnerable groups in livestock production, while reducing discrimination in access to resources, rights and services.
5. Work with stakeholders in each country to leverage the legal frameworks (laws, decrees, local conventions etc) in force in terms of pastoral management and the state institutions responsible for applying the laws, as well as national and regional development policies in areas relating to pastoral livestock in a context of climate change. Ultimately, all stakeholders involved in implementing projects and programs to adapt and secure livestock production in a context of climate change, insecurity and human rights could use this mapping of the legal and institutional framework as working material.