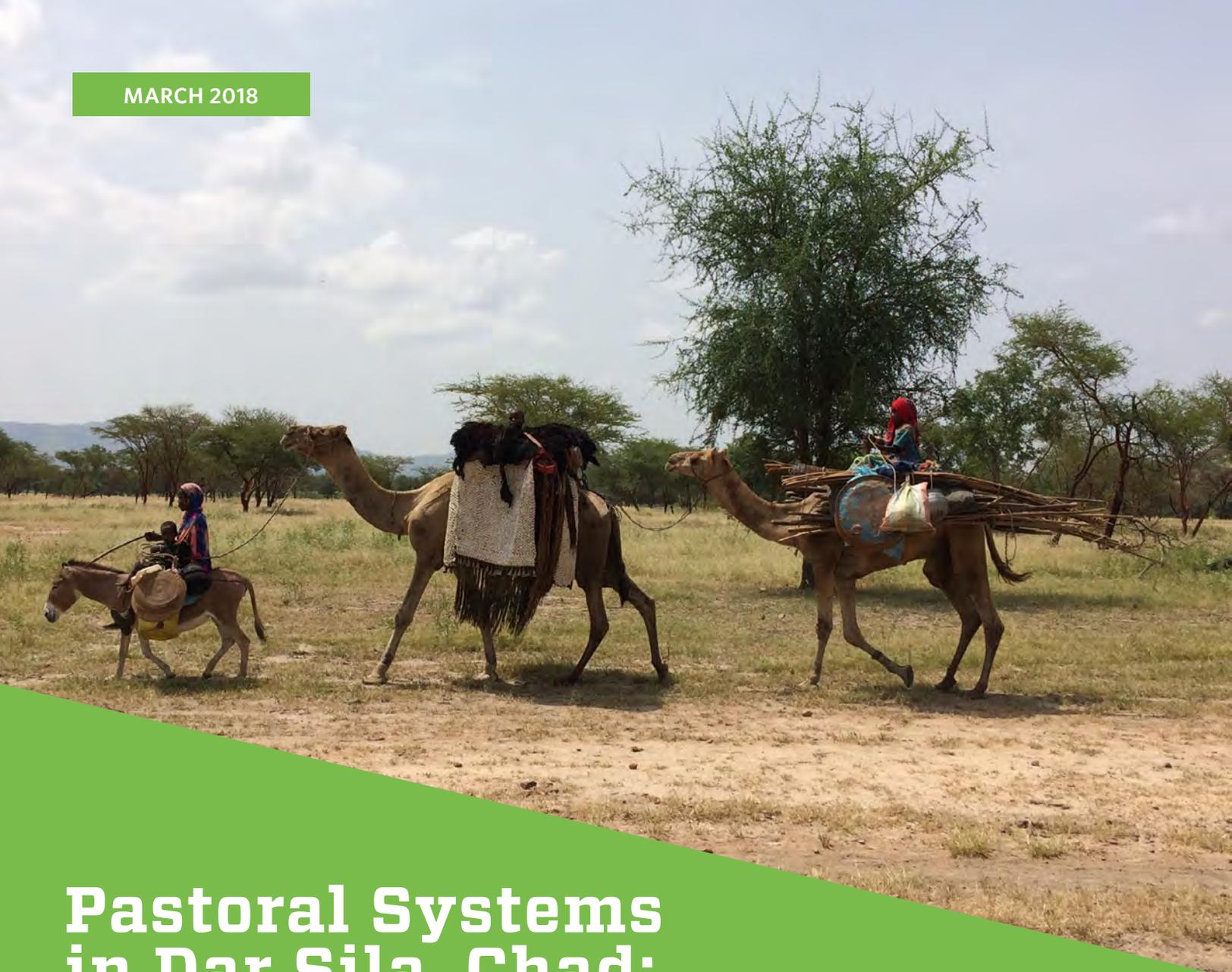


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Pastoral Systems in Dar Sila, Chad: A Background Paper for Concern Worldwide

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Acronyms

ADRB	Association pour le Développement Régional du Batha
AFD	Agence Française de Développement (French Development Agency)
AMECET	Association de Médiation entre Cultivateurs et Éleveurs au Tchad
AU	African Union
BRACED	Building Resilience and Adaptation to Climate Extremes and Disasters
BRICS	Building Resilience in Chad and Sudan
CAHW	Community animal health worker
CAR	Central African Republic
CNCPR	Conseil National de Concertation des Producteurs Ruraux du Tchad
CONFENET	Confédération Nationale des Éleveurs du Tchad
CONFIFET	Confédération Interprofessionnelle de la Filière Élevage au Tchad
CONORET	Confédération Nationale des Organisations des Éleveurs du Tchad
CRAM	Community Resilience to Acute Malnutrition Programme
FAO	Food and Agriculture Organization of the United Nations
FEWS NET	Famine Early Warning Systems Network
GAM	Global Acute Malnutrition
GDP	Gross domestic product
IDP	Internally displaced person
IIED	International Institute for Environment and Development
INGO	International non-governmental organization
INSEED	Institut National de la Statistique des Études Économiques et Démographiques (National Institute of Statistical, Economic and Demographic Studies)
IRAM	Institut de Recherches et d'Applications des Méthodes de Développement
IUCN	International Union for the Conservation of Nature
ODI	Overseas Development Institute
PAFIB	Projet d'Appui à la Filière Bovine
PAM	Programme Alimentaire Mondial
PASTOR	Programme d'Appui Structurant de Développement Pastoral
PNDE	Plan National de Développement de l'Élevage
PRAPS	Projet Régional d'Appui au Pastoralisme au Sahel
RBM	Réseau Billital Maroobe
SISAAP	Système d'Information sur La Sécurité Alimentaire et l'Alerte Précoce au Tchad (Food Security and Early Warning Information System)
SNCCBT	Syndicat National des Commerçants et Convoyeurs de Bétail du Tchad
SNECBBT	Syndicat National des Éleveurs, Commerçants et Bergers de Bétail du Tchad
UNHCR	United Nations High Commissioner for Refugees
XOF	West African CFA franc
WFP	World Food Programme

Executive Summary

This study is a contribution to the understanding of pastoralism-farming dynamics in Dar Sila, in relation to their natural, social, and economic environment. It was originally intended to inform and support the integration of pastoralism resilience building as part of the work of Concern Worldwide in the region. It is also directly relevant to a range of audiences: those who are seeking an up-to-date and informed review of pastoralism in the eastern Chad context; those with an interest in the wider policy and institutional context and how to engage effectively in related processes in order to support the development of pastoralism; and finally, those with an interest in ways of working to build resilience in contexts such as the Sahel.

In the drylands, environmental inputs for food production are highly variable in time and space. Nutrients for livestock become available in short-lived concentrations. Uneven and largely unpredictable distribution of environmental inputs happens at a variety of scales, from macro-level differences between seasons and ecological zones, to micro-level differences between plants and plant parts. Uneven distribution of nutrients also occurs over time, during a plant life-cycle (nutrient content increases, peaks, and decreases), and between day and night (nutrients accumulate through photosynthesis during the course of the day).

For the best part of its history, pastoral development has operated with the assumption that environmental variability is a disturbance for food production. Efforts therefore focused on reducing variability, and a “return” to conditions of stability and uniformity. On the other hand, pastoral systems’ specific adaptation consists even today of taking advantage of the variable distribution in environmental inputs. By interfacing the variability in the environment with variability built into the processes of production (for example, “moving with the rains”), pastoralists can create conditions of stability *relative to the experience of their herds*, lowering the variability of outputs compared with the variability in inputs.

During the colonial period and for well over a generation after independence (1920–1990), the Chadian State and its technical and financial partners have combined development programs with sedentarization policies, particularly through water development interventions meant to fix pastoralists in their rainy season grazing areas. From the 1990s, this approach has been problematized and accompanied by an alternative perspective based on the recognition of pastoralism as a well-adapted livelihood and production system, ecologically sustainable and economically viable. This perspective has emphasized the importance of supporting pastoral mobility as key to the productivity and resilience of these systems. The uncertainty of oil revenues in recent years is also contributing to granting the potential of pastoral systems new attention. For the time being though, the complicated process of reconsidering inadequate assumptions and tackling the divisive and undermining legacy of past interventions is still at its early steps.

Throughout the Sahel, nuanced and variable forms of integration of pastoral and farming systems translated for the various administrations into the rigid, and ultimately dividing, categories of “pastoralists” and “farmers.” The introduction of the concept of “agro-pastoralism” in the late 1970s could have been a move away from this tradition, towards a more systemic representation of herding-farming relationships as circular and inextricable from each other. Unfortunately, the new category was soon used to describe an additional group rather than a higher systemic order.

As far as pastoralism is concerned, Dar Sila is best understood as a crucial piece in the much bigger puzzle of the Eastern Chad complex, a system of systems stretching over some 800 km across different ecological zones. This complex developed as a form of intermittent crop-livestock integration between specialized farmers and specialized grazers. Farmers and herders have engaged in contracts of cooperation concerning the organization of

agricultural work, animal breeding, and the exchange of services, in particular for the transport of cereals. Collective agreements between owners of herds and owners of fields have regulated exchanges of manure and crop residues. The complex includes ramification into other livelihood strategies near and far, from livestock trading and urban-based business to remittances from relatives in other countries.

Operating with a blanket notion of variability as a problem, and faced with the impossible challenge of eliminating variability in environmental inputs, development generally focused on reducing process variability, starting from mobility and extending to land tenure and rangeland management, breeding, and patterns of crop-livestock integration. As this focus triggered sharp spikes in the variability of outputs (e.g., increased vulnerability to drought), the understanding of variability as a problem became self-supporting, calling for renewed efforts to introduce stability and uniformity. With a few important exceptions, the reproduction of this vicious cycle has continued to the present day. Reflected in mechanisms of appraisal for the generation of public data, this legacy continues to contribute to the exclusion and invisibility of pastoralists on technical grounds (technical exclusion).

The intended and unintended outcomes of this approach have triggered processes of social division, loss of specialization, and increased competition for the same resources. Many pastoralists have settled in Dar Sila and taken up crop farming, while crop farmers now keep significant numbers of livestock. With a focus at the household level, these trends are represented as economic diversification. When considered at the scale of the Eastern Chad complex, they are more a shift towards uniformity.

While the war against variability waged by pastoral development has not so far succeeded in stopping mobility, it has unsettled and often disrupted its well-rehearsed patterns, forcing producers out of familiar uncertainty into higher-cost and often higher-risk trial-and-error processes. Climate change adds a layer of complication. Today, migrations tend to be over longer distances but in a shorter time, with a longer period spent in dry season areas. The

arrival in Dar Sila is overall earlier and the departure north is later. There is also growing importance of absentee owners and waged herders operating in ways that often elude control from both customary mechanisms and the formal legal system.

Vulnerability within pastoral systems does not exclude the creation of economic value. Managing a breeding population estimated to represent about 1,000 billion XOF (about 1.8 billion USD), pastoral systems in Chad generated an annual value close to 140 billion XOF (about 240 million USD) in 2002. Directly or indirectly, they are an important livelihood resource for 40% of the rural population (some 3.5 million people). In 2010, pastoral systems represented 80% of the livestock sector, or about 15% of national gross domestic product (GDP); the state allocated about 1% of its budget to the livestock sector overall. Pastoral systems are the largest suppliers of livestock to urban and export markets, yet still critically “invisible” in public data, with an estimated 44% of cattle exports and 80% of domestic butchering uncaptured or missed by current monitoring mechanisms. Dar Sila’s seven livestock markets are all close to pastoral migration routes and sensitive to fluctuations in the flow of herds along these routes.

Rebuilding resilience in this context is therefore advisable but requires a fundamentally new approach, based on the understanding of variability not as a problem but as constitutive to resilience under these operating environments. In Dar Sila, as part of the Eastern Chad complex, a crucial dimension of process variability is social and economic connectivity across the different production systems, the main motor of which remains pastoral mobility.

In order to respect the “do no harm” principle, pastoral development must learn to *recognize* the functional variability pastoralists build into their processes of production, starting from mobility, and refrain from getting in its way. Beyond that, development interventions can support process variability in pastoral systems at different levels: i. by lifting existing obstacles to the process variability pastoralists are more familiar with (many of such obstacles are the legacy of development itself and

the ways different sections of pastoral societies adjusted to changing conditions, including new, more, or less, sustainable opportunities); ii. by helping producers to disentangle themselves from maladaptive practices and unsustainable distortions in their social organization, strategies of production, and relationships with other production systems; iii. by facilitating a two-way relationship with scientific research and technological innovation, for opening up new pathways of process variability in pastoral systems and across pastoralism-farming dynamics.

Recommendations for the work with pastoralists in Dar Sila

1. Build institutional capacity for working with pastoral systems. Particularly, promote a multi-donor framework to deliver training to administrative, customary, and law-enforcement authorities as well as pastoralist organizations, with a focus on conflict analysis and mediation, and post-conflict peacebuilding.
2. Develop or promote the development of strategic infrastructures to support pastoral mobility. Particularly: i. water points in the “dry forest” (northern Dar Sila); ii. a solution to the problem of crossing the seasonal rivers (Bahr Azoum, Batha, and Doué); iii. communication mechanisms for the coordination of pastoral seasonal migrations with the sedentary communities along the way; iv. fora for social dialogue among pastoral producers, and between producers and the local authorities.
3. Focus on innovation and adaptation. Particularly: i. adapt the community animal health worker (CAHW) model to animal health services needs at the level of the migration unit; ii. secure continuity of service to households moving between areas served by different health centers; iii. secure a better “pastoral fit” for polio vaccination procedures; iv. explore ways to overcome the need to settle for securing administrative visibility and recognition of land development.

Recommendations for the work with pastoralists at the national level

1. Contribute to promoting the dialogue between pastoralists and the state, including its technical and financial partners. This is a necessary condition if the long-overdue “rebalancing” of the policy and legal environments is to be started, to correct the legacy of antagonism and technical exclusion.
2. Support the Pastoral Platform (as a multi-stakeholder and multi-sector steering forum), and the effective and efficient implementation of the Plan National de Développement de l'Élevage (PNDE).
3. Strengthen the role of pastoral organizations in the ongoing process of developing the livestock sector. Particularly, strengthen the ability to: i. involve grassroots members in building vision and in advocacy; ii. secure representativity; iii. provide a set of services to members; iv. promote autonomous financing systems.
4. Engage in advocacy at the different levels of governance, respectively, to i. make operational all decentralized services at the Dar Sila level (Ministère du Développement Pastoral et des Productions Animales — MDPPA); ii. replace the 1959 “Law on Nomadism” (national government); iii. take into account, in all development policies, the need to support pastoral systems and secure pastoral strategic mobility (government and local authorities).

Following the finalization of this study in April 2017, Concern Chad has used it to develop new activities, focusing on the prevention and management of conflict (see Annex 1).

Introduction

At the start of the Concern Worldwide Community Resilience to Acute Malnutrition Programme (CRAM) in 2012, there was a general acknowledgement that little or no information or analysis was available on the large number of pastoralists and agro-pastoralists (both settled and nomadic) in the Kimiti and Dar Sila area (Harvey, 2012; Pain 2012) and that, while some are doing well, overall they represent “a significantly disadvantaged group” (Harvey 2012).

With “pastoralism,” the government of Chad means extensive livestock systems based on mobility, specialized to take advantage of spatial and temporal variability of resources (République du Tchad 2008).¹ Under the Proposal Development Phase of Building Resilience in Chad and Sudan (BRICS),² a review of national policy in Chad identified key policy, structural, and institutional barriers that must be influenced or changed to bring about greater resilience in the lives of BRICS participants, including pastoralists (Gubbels 2014).

With climate change raising the challenges of dryland farming, pastoralism is becoming increasingly relevant as a livelihood system in the Sahel. Concern and the Feinstein International Center, Friedman School of Nutrition Science and Policy at Tufts University recognize that outreach and inclusion of pastoralists as part of BRICS is essential to increasing livelihood resilience in the region, for pastoralists and settled farmers alike. An explicit focus on the economic significance of

pastoral systems and the conditions favoring their resilience in a drylands environment is an important part of such a process.

This study is meant to contribute to the understanding of the dynamics of pastoralism and farming in Dar Sila in relation to its natural, social, and economic environment, with a view to informing and supporting the integration of pastoralism resilience building as part of the Concern Worldwide BRICS program in the Dar Sila Region, in light of the Building Resilience and Adaptation to Climate Extremes and Disasters (BRACED) Knowledge Manager Guidance on the 4 Areas of Change.³ This study is directly relevant to a range of audiences: those who are seeking an up-to-date and informed review of pastoralism in the eastern Chad context; those with an interest in the wider policy and institutional context and how to engage effectively in related processes in order to support the development of pastoralism; and finally those with an interest in ways of working to build resilience in contexts such as the Sahel. The methodology adopted here represents a merging of more participatory research approaches with international non-governmental organization (INGO) interests and commitments to build resilience. This moves away from the model of using short-term consultants to a longer-term university/INGO partnership, where terms of reference and teams are jointly developed, and the work is the result of a collective effort from a range of national and international team members over several months.

¹ “La mobilité qui permet de valoriser la dispersion spatiale et les variations temporelles des ressources pastorales...Le système d'élevage pastoral au Tchad est de type extensif, valorisant les ressources dispersées et inégalement réparties dans l'espace et dans le temps...La mobilité qui est à la base de ces systèmes permet de tirer le meilleur parti des conditions de pâtures et de disponibilités en eau, variables selon la région et la saison” (République du Tchad 2008: 20, 38, 44). [“Mobility, which allows to take advantage of the spatial and temporal variability of pastoral resources... Pastoral systems in Chad are extensive, taking advantage of resources that are unevenly distributed in time and space... Mobility, at the basis of such systems, allows to make the most of pasture conditions and water availability which are variable according to the region and the seasons” (our translation)].

² BRICS is a consortium under UK Aid's BRACED program. Concern is the lead partner of this consortium that includes Concern Chad and Concern Sudan working in partnership with Al Massar Charity Organization for Nomads' Development and Environmental Conservation, ICRAF (World Agroforestry Centre), and Feinstein International Center, Friedman School of Nutrition Science and Policy at Tufts University. CRAM was amalgamated under BRICS in 2015.

³ The 4 Areas of Change are: 1. changes in knowledge and attitude in relation to resilience-building, in order to further strengthen policies and practices; 2. changes in the capacities and skills of national and local government, civil society, and private sector to manage the risks of climate extremes and disasters; 3. changes in the quality of partnerships to deliver interventions; 4. changes in decision-making processes.

This paper is organized in three parts. Part 1 is a strategic overview of the knowledge on pastoral development and the pastoral systems in Eastern Chad (with a focus on Dar Sila). Part 2 presents the relevant policy and institutional context, again at the international level, in Chad and in Dar Sila. Based on this information, Part 3 offers a set of recommendations.

Methodology

1. We began with a strategic review of the literature on pastoral systems relevant to the Concern areas of intervention in Dar Sila Region. We looked at pastoral systems in Eastern Chad with a focus on resilience and vulnerability to climate extremes and conflict-related stresses, their interconnectivity and integration with other livelihoods in the region, and their economic contribution to livelihoods in the region and to the wider economy.
2. We held consultation meetings (in December 2016 and February 2017) with government and customary authorities at relevant levels, sector technical services, livestock keepers and pastoralist organizations, and pastoralists and farmers in Dar Sila, in order to understand how they view recent trends impacting pastoralism, the remaining gaps or pressing issues in relation to implementation of recent policies, and how Concern's program can potentially build the resilience of pastoralism systems.
3. We met with key Concern Worldwide staff and its partners in N'Djaména and Goz Beida (in December 2016 and February 2017), in order to understand Concern current activity, capacity, and interest in pastoral development.

Part 1. Knowledge: Strategic Highlights

1.1 Old and new understanding in pastoral development

Patchy rainfall, unevenly distributed in time and space, makes drylands highly variable environments. The length of the growing period for any given area of farmland and rangeland can only be determined ex-post. Nutrients for livestock become available in largely unpredictable concentrations. The mainstream approach in drylands development for most of its history has been to treat such a variability as a disturbance and synonymous with risk. From the beginning, this approach represented the point of view from temperate climates, where the distribution of resources is relatively stable and uniform in time and space. Pastoral development⁴ solutions stemming from this perspective have focused on trying to secure control by avoiding or eliminating variability and introducing uniformity and stability: regulation of mobility and sedentarization, controlled stocking, rotational grazing, replacement of flexibility with exclusive ownership in land tenure, replacement of domestic animal diversity with a few standard breeds, etc.

The ranks of people working closely with pastoralists have been voicing their discontent with this approach since at least the 1960s. It took until the mid-1990s before the scientific community formally challenged the approach in its underlying assumptions, as fundamentally inappropriate for representing drylands and pastoral systems.

In the theory of pastoral/drylands development, this challenge resulted in a veritable U-turn, hingeing on the understanding of variability: from external disturbance to internal and constitutive element of

both dryland environments and pastoral systems. Several overviews of this fundamental re-thinking are available; this brief section provides just a few points of reference for a basic orientation on key characteristics of dryland pastoralism and how it should be understood and supported.⁵

“Dryland pastoralism” is distinct from livestock systems developed in temperate climates.

In the drylands, nutrients for livestock become available in short-lived concentrations over time and space, including:

- The rainy season;
- The particular areas that produce pasture in a given year (an area registering a good rainy season and an area registering a drought year can be just a few miles apart);
- The particular moment in the life-cycle of a plant when the nutrients accumulated for reproduction have not yet been used;
- Specifically in the Sahel, the quality gradient between the drier northern belt (short periods of most nutritious pasture) and the wetter southern belt (more biomass all year round, but lower concentration of nutrients).

Differences in distribution are also significant at lower scales; for example, nutrient concentration is higher at night (as plants accumulate nutrients by photosynthesis during the day), or higher depending on differences between plant species, individual plants, or even parts of a plant on the same patch. Pastoral systems' specific adaptation is to take advantage of such a variable distribution (see Box 1); this is done by *managing grazing itineraries at a variety of scales so that livestock enjoy a richer diet*

⁴ When not otherwise specified, with “pastoral development” we refer to the history of rural development interventions concerned with people and/or livestock in pastoral systems (cf. Salih 1991).

⁵ Among those more easily accessible: IIED and SOS Sahel (2009); Krätli et al. (2013, 8-16); Krätli (2015).

than they would on the same rangelands but without the herder. Different groups specialize with different sets of scales. Specific techniques include tracking concentrations of nutrients through the rangelands; exposing the livestock, through herding, to an experience of the patch/pasture that keeps their appetite high; and breeding animals capable of making good use of these opportunities even at the micro-scale, where the herders cannot intervene directly. Herd mobility introduces variability in accessing rangelands (i.e., allows change in macro-ecological conditions relative to the herd). Daily herding itineraries introduce variability in the animals' experience of the rangeland while feeding. Keeping several species (e.g., camels, goats, and sheep) and promoting diversity within the breeding population of individual species introduce variability

of feeding habits and skills within the herd (i.e., a variety of feeding patterns). In this way, variable external conditions can be matched. For example, within the same breed of camels, pastoralists will breed sub-types that are the best milkers during the wet season but are "weak" in the face of harsh conditions and others that can produce milk even during a drought but are not good milkers during the wet season.⁶ Captured in a simple formula, this logic has been described as *interfacing variability in the environment with variability in the production system* (Krätli 2015). It follows that any form of pastoral development committed to respect the "do no harm" principle needs to recognize the functional variability embedded in pastoral systems and refrain from reducing it.

Box 1. What is "pastoralism"?

The first development policy for Kenya Arid and Semi-Arid Lands distinguishes between *pastoralism as cultural identity*—which may or may not involve livestock keeping—and *pastoralism as an economic activity*—which refers to a distinct logic of production and way of using the environment but is not necessarily limited to the groups who identify culturally with pastoralism.

As an economic activity, pastoralism is a livestock-based system that takes advantage of the characteristic variability of rangeland environments, "where key resources such

as nutrients and water for livestock become available in short-lived and largely unpredictable concentrations." Other distinctive traits of pastoralist specialization are identified in "the interaction of people, animals and the environment, particularly strategic mobility of livestock and selective feeding" and in "the development of flexible resource management systems, particularly communal land management institutions and non-exclusive entitlements to water resources." (Republic of Kenya 2012, glossary).

Livestock productivity in pastoral systems depends on maximizing selectivity of feeding rather than biomass intake.

Livestock productivity is the relationship between input and output. The use of "biomass" as a proxy for "nutrients" (input) has generated confusion in

contexts like the drylands, where nutrients are not evenly distributed throughout the biomass (i.e., a lot of fodder-plant biomass may be of little or no use to the animals). In these contexts, maximizing the intake of nutrients is not the same as maximizing the intake of fodder-plant biomass. Ruminants cannot

⁶ Studies of livestock breeding in pastoral systems are rare. This example of the camels has been documented by Brigitte Kaufmann for the Rendille camel keepers in Northern Kenya. The type of camel that yields in absolute terms the highest milk production per milking session during the wet season is called "weak" (*Dabakh*). This is because high performance depends on high availability of green fodder. During the dry season, the body condition of this camel type decreases fast, affecting milk production, sometimes to the point of starving the calf. At the other extreme, the Rendille distinguish a camel type that has a lower milk production during the wet season, but is able to maintain a good body condition and adequately feed its calf during the dry season. They call this type "strong" (*Godan*) (Kaufmann 2007).

compensate for a poor diet by eating more; on the contrary, they lose appetite and stop feeding. In contexts where nutrients are unevenly distributed over the range, the herders' goal of optimizing animal nutrition is achieved by *maximizing selectivity* in feeding (i.e., picking the nutrients out of the biomass). In these contexts, feeding only on the best bites, that is reducing the intake of biomass over a given patch, is actually a way of maximizing the intake that matters—the intake of nutrients. When this strategy can be applied, the productivity of a herd increases not by consuming as much grass as possible (as assumed in the 1960s argument against communal grazing known as “the tragedy of the commons”), but by *selecting* as much as possible the most nutritious fodder, therefore leaving plenty behind. Therefore, the more the herds are managed according to the pastoralist strategy to maximize productivity, the further away a pastoral system moves from the risk of overgrazing (Breman and De Wit 1983; Behnke and Scoones 1993; Krätli and Schareika 2010). This particular adaptation gives pastoralism an advantage. When it does not happen in practice, it is usually because of obstacles, and pastoral systems are losing out.

Pastoralists can “stretch the rainy season” through mobility.

A crucial goal of herd mobility in pastoral systems is to improve animal nutrition in a context where nutrients for livestock are available in short-lived concentrations. These concentrations do not happen all at once but are distributed over time and can be tracked in a sequence. When successful, strategic mobility enables pastoralist herds to feed, over the year, on nutrient-peaking fodder for a period that is longer than the nutrient-peaking window in any of the locations they visit during their migration. This process has been described as “stretching the rainy season” (Schareika et al. 2000). This is an important lesson from pastoral systems at a time when climate change is making high levels of variability a common pattern even outside the drylands.

Much of pastoralists' vulnerability today is rooted in the history of ill-conceived interventions.

Development policies and practices framing interventions as external solutions to local problems overlook that the “local” or “traditional” context of pastoralism has been exposed to development interventions for generations, mostly with “solutions” stemming from the wrong assumptions (hence the call for a U-turn from the mid-1990s on). Any analysis of vulnerability and resilience of pastoral systems today should keep in the foreground a sound understanding of this legacy. As new phenomena associated with climate change aggravate this legacy, complications build up and eventually become manifest as vulnerability to drought: the “place” where all problems in the drylands always converge. However, it would be a terrible oversight on the part of those concerned with climate change to assume that the causes of vulnerability and the processes undermining the resilience of pastoral systems are new and of ecological origins. It would mean slipping into an old pothole in pastoral development and confusing the symptom with the cause (Baker 1975).

Pastoralists are often invisible to the administration, and therefore are excluded from services, resources, and legal entitlements.

In theory, the underlying assumptions that have driven pastoral development for most of its history have now been questioned and updated. In practice though, they continue to linger, embedded in the operational processes of development and administration, in off-the-shelf definitions and classifications, in standard indicators and scales of observation, and in methods of statistical appraisal and representation. This legacy of inadequacy and misplaced attention often contributes to the exclusion and invisibility of pastoralists on technical grounds, or *technical exclusion* (Krätli et al. 2015). Offering basic services, humanitarian aid, or administrative visibility only through processes based on the assumption that people are living in settlements is an example. Other examples are the invisibility of pastoral systems in public data despite their economic importance; the requirement of permanent and visible intervention on the soil for the recognition of land development; and the focus of

development interventions at a scale that is typically too small to comprehend the role and implications of pastoral systems.⁷

Moving beyond “risk aversion” to “risk management.”

When variability is represented as a disturbance, risk management is the same as risk aversion. Dryland development has centered on risk aversion, and most resilience models today assume that resilience is increased by reducing risk (Levine and Mosel 2014). Risk aversion, however, is not an adequate frame to explain pastoralist behavior, as variability is a constitutive element of the system and mobility involves risk-taking (Roe et al. 1998; Krätli 2016). Seeing pastoralism as a particular form of risk management within a broader risk-taking strategy is a better fit. It also makes the difference between representing pastoralism as fundamentally reactive risk-aversers (i.e., on an ultimately dooming trajectory of damage control and survivalism) or proactive and strategic risk-takers (on a trajectory of adaptation and value creation). Blanket risk aversion, driven by a notion of risk as synonymous with variability and aimed at the elimination of variability by introducing control and stability, can get in the way of pastoral risk management rather than helping it.⁸ To recall the formula introduced above, the particular adaptation of dryland food production has been interfacing the variability in the environment with variability embedded in the production system. As variability in the environment is generally impossible to eliminate, risk aversion efforts in development have historically focused on reducing variability in the production systems (e.g., by eliminating mobility).

Conflict needs to be understood against history and social context.

A confusion on the origin of the problems often affects the understanding of conflict, where the immediate circumstances of an incident are taken as its explanation; for example, an animal damages a field, or a farmer sows land on a migration route. It helps, in this case, to see conflict as a relationship

(a way people position themselves in relation to one another) rather than as an event (the immediate circumstance of the incident). This approach leads to asking questions about the *kind* of conflict, rather than its presence or absence: why does the relationship at times precipitate violence while most of the time it does not? How can the relationship be helped towards non-violent forms? How can people be helped to reposition themselves in relation to one another in ways that are less likely to turn conflict into violence?

Pastoralists’ resilience is in transformation for managing variability.

Mechanisms can bounce back after a disturbance, but there is no such thing as “bouncing back” in life, only learning and moving forward. Resilience in a pastoral system has been described as the ability to maintain its structure and ensure its continuity not by preserving an immutable equilibrium or returning to the same state as before the disturbance but *by integrating transformations while evolving* (Huguenin 2005). Variability in the environment is managed by interfacing it with variability integrated in other dimensions of the pastoral system. Managing drylands variability and making use of it for economic purposes is what pastoral systems do—something they share with adapted dryland farming (Krätli 2015). The freedom of these adapted systems to do so is also their resilience.

The modernization of pastoral systems has not yet been tried.

One of the early goals of colonial administrators in the Sahel was the modernization or “rationalization” of the livestock sector. Their view of variability as a disturbance and of the native livestock systems as primitive and part of the same “disorder” greatly limited their options. Rather than using scientific knowledge and modern technologies to study and improve the systems familiar to the people who *already* made a living from livestock in the drylands, plans of rationalization/modernization involved shifting production to a model familiar to the

⁷ Generally, the invisibility of pastoralists in the mechanisms of appraisal and official statistics is one of the reasons why their contribution remains unclear. Mobility for example is often taxed (every time an internal “border” is crossed), but these “taxes” are mostly unofficial. The old “*contrats de fumure*,” where livestock fed on crop residues in exchange for manuring the field, have been replaced by “commercial transactions” in which crop residues are sold as a commodity, but there is no compensation for the manure.

⁸ More on this topic in Krätli et al. (2015).

administrators, based on experience in temperate environments and therefore assuming stability and uniformity.⁹ The price of taking that wrong bend in those early days is still being paid, with the work on modernization still finding it difficult to see that modernizing a system of old design, but well adapted, is not the same as replacing it with a newer system designed for a different context (like trying to modernize a canoe by replacing it with a 4WD).

1.2 The legacy of pastoral development in Chad

Colonial period (1920–1960).

Overall, the policies of this period represented pastoral mobility as an obstacle to the administration and a backward practice that clashed with the rationalization of the livestock system and the use of the rangelands. Development programs were designed around the principle that, first of all, pastoralists had to be sedentarized.

Pastoralists moved seasonally along a south-north axis following the green pasture, but spent the dry season, which is most of the year, in the southern regions like Dar Sila. Through the institution of the “*terroir d’attache*” (home territory), pastoral groups were “constructed” by the administration as “belonging” to the rainy season grazing areas in the north. Water development was introduced in those northern regions to support their use all year round. The introduction of open-access (public)

water infrastructures did attract settlements but also promoted unsustainable land management practices both in the north and in the south (e.g., permanent concentrations of livestock, breaking down of manure contracts), and undermined the customary institutions that had been in charge of regulating access to water and pasture (Barraud et al. 2001; Aubague and Grimaud 2011). Thus, efforts to settle pastoral groups actually caused profound *unsettling* at the scale of the large livestock-farming economic systems like the Eastern Chad complex.¹⁰

After independence.

The first decade following independence was a period of important land-tenure reform, especially with the Law No. 24/PR/67 of July 22, 1967. This law centered on a distinction between a crop-farming population represented as landed and productive and a population of mobile pastoralists represented as landless and unproductive (Marty 1999). In the law, pastoral territories are represented as “empty lands without masters” (*des terres vacantes et sans maître*) and declared to be free access areas; “land development” (*mise en valeur*) is identified with settlement and farming. Land without evidence of permanent occupation or crop-farming became the property of the state. Grazing land can be taken without consulting the pastoralist groups whose livelihoods depend on it. Especially in the more agricultural regions where pastoralists spend the dry season, the land-tenure bias in favor of settlement and crop-farming reduces the space accessible to pastoralists and pushes them to settle in order to secure access.

⁹ For example, colonial veterinarians trying to increase livestock productivity in Niger soon realized that investing in animal nutrition was more promising than breed selection in variable conditions: “La production laitière étant en zone tropicale sahélienne et soudanaise très nettement influencée par les conditions climatiques, il apparaît que l’utilisation de certains tests de descendance est impossible...car la comparaison de moyennes d’un faible nombre de lactations ne peut donner aucun résultat précis; les conditions climatiques variant beaucoup d’une année à l’autre...l’amélioration de la productivité du bétail par des moyens génétiques risque pendant longtemps d’être négligeable par rapport aux bénéfices que l’on pourrait obtenir d’une rationalisation de l’alimentation” (“Given that milk production in the Sahelian and Sudanese tropics is very much influenced by climatic conditions, it appears that the use of certain progeny tests is impossible...because the comparison of means calculated from a low number of lactations cannot give a single accurate result; as climatic conditions vary greatly from one year to the next...the improvement in livestock productivity by genetic means may for a long time be negligible compared to the benefits that could be obtained from the optimization of animal nutrition” (Pagot 1952, 188–190, our translation)). This was indeed the logic also followed by pastoralists as they invested in mobility and feeding selectivity. Unable to see value in local husbandry, the veterinarians tried their hands at producing improved fodder and usually failed.

¹⁰ That efforts to introduce uniformity and stability into structurally variable systems result in increased turbulence and loss of resilience has long been observed in ecology and pastoral development: “Comparison of the dynamics of various savannah and other natural systems leads to a conclusion that the resilience of the systems decreases as their stability (usually induced) increases” (Walker et al. 1981, 473); “Herd management must aim at responding to alternate periods of high and low productivity, with an emphasis on exploiting environmental heterogeneity rather than attempting to manipulate the environment to maximise stability and uniformity” (Behnke and Scoones 1993, 14–15). One step aside, the study of structurally unstable critical infrastructures like power grids or healthcare systems led to the description of a similar paradox for decision making in the face of variability: “The more mess there is, the more reliability decisionmakers want; but the more reliable we try to be, the more mess is produced. The more decisionmakers try to design their way out of a policy mess, the messier the actual policy implementation gets; but the messier the operations are at the micro level, the more decisionmakers feel solutions are needed at the macro level.” (Roe 2013, 7).

From the 1970s, interventions focused on animal health, especially vaccination campaigns and the training of paravets (Guibert et al. 2014). Livestock development policies promoted “modern” operations on the model of U.S. ranching. Pastoral water development continued along the same trajectory set during the colonial time.

The rediscovery of mobility.

Following the 1984 drought and the ecological problems triggered by the all-year-round use of northern pastures, many pastoralists returned to the strategy of long-distance migrations (Aubague and Grimaud 2011). By the late 1980s, many of those who had settled or adapted to localized forms of “circular” mobility in the north or within Dar Sila started again to move their animals throughout the full length of the Eastern Chad complex, “to fight against the dramatic process of impoverishment” (Aubague and Grimaud 2011, 169). Acknowledging this situation and the mistakes of the past, large projects funded by Agence Française de Développement (AFD) from the mid-1990s have introduced a new direction in pastoral water development, shifting the goals from per capita provision and sedentarization to integrating provision within pastoral systems and securing pastoral mobility (Krätli et al. 2014).¹¹ Water provision included measures to promote social consensus and customary management of the installations, as well as the protection of particularly threatened segments along known migration routes. This new direction was supported with technical assistance to key government institutions, pastoralist associations, and a number of high-profile initiatives aimed at promoting a better understanding of pastoral systems: a national seminar on farmer-herder conflict (1999); the proposal for a framework of regulations on pastoral systems (2002), which led to the Pastoral Code (approved by the Parliament in 2014 although blocked by the government immediately afterwards); a joint agreement between

the Ministry of Livestock and herders’ associations (2002); and a series of conferences on pastoral development (2005, 2011, 2013, 2014).¹² Since 2013, the scale of operation in pastoral development in Chad has increased substantially, with the Ministry of Livestock playing a more prominent role than in the past.

Pastoral systems represent 80% of the Chad livestock sector.

Public data on livestock are generally poor in sub-Saharan Africa (Pica-Ciamarra et al. 2014), and Chad is no exception. Even for the national level, most figures in the public domain are 5–10 years old (i.e., before oil revenues dropped in 2015). A livestock census was launched in April 2014 (the previous one was in 1976), but the data and the methodology used to generate them have not yet been published. The figures given in the 2009 Plan National de Développement de l’Élevage (PNDE) (République du Tchad 2008) are often used. The PNDE estimates the national herd to be 10–16 million tropical livestock units (TLUs) strong,¹³ 80% of which is in pastoral systems.¹⁴ Such a predominantly pastoral livestock sector is said to represent 18% of national GDP (53% of the agricultural GDP) and represents a direct or indirect livelihood resource to about 40% of the rural population (some 3.5 million people).¹⁵ Managing a breeding population estimated to represent about 1,000 billion XOF (about 1.8 billion US dollars), livestock producers generate an annual value that fifteen years ago was estimated to be close to 140 billion XOF (254 million USD) (Massuyeau 2002).

While suggestive, the data are fragmentary and rarely have significant impact on policy making. At the time when the livestock sector contribution to the GDP was 18%, state budget allocation to the sector was 1% of the GDP (Marty et al. 2010). The understanding of the economic role and importance of pastoral systems in Chad is more derived from

¹¹ This was consistent with the shift in the pastoral development paradigm also underway in those years in the Anglophone contexts.

¹² More details in Krätli et al. (2014).

¹³ 1 TLU = 1 cow or 0.7 camel or 10 shoats or 2 donkeys.

¹⁴ Defined in the PNDE as “caractérisés par des productions extensives dont la mobilité constitue une stratégie de production et de gestion de risques” (“extensive livestock systems in which mobility represents both a strategy of production and of risk management”) (République du Tchad 2008, 10; our translation).

¹⁵ See also Barraud et al. (2001), and INSEED (2004 and 2010).

its public image as backwards than built on the available data. As nicely put by one government officer interviewed in the course of our exercise: “Pastoralists’ resources have long been seen as ‘free for all.’ Pastoralism is seen as economically marginal and obsolete—yet the so-called modern livestock systems represent but a small fragment of the sector, while pastoral systems make up most of it. It is only now that exports on-the-hoof to Nigeria have been stopped by Boko Haram that we have come to realize its economic importance.”

Today, the sector includes a high proportion of the most vulnerable groups in the country, with a substantial role in production played by women and youths (Guibert et al. 2014). While not all pastoralists are poor, the pastoral systems have become more vulnerable overall, and this erosion of resilience extends to the livelihood strategies connected to them. As argued in the following pages, increasing resilience within the system as a whole is a necessary condition for helping the most vulnerable pastoralists.

1.3 Pastoral systems in Eastern Chad

Dar Sila extends over about 40,000 km² with a population around half a million.¹⁶ As far as pastoralism is concerned, Dar Sila is best understood as a crucial piece in the much bigger puzzle of the Eastern Chad pastoral complex, a complex of pastoral systems (a “system of systems”) active from Ennedi and eastern Borkou to Salamat (even into Central African Republic), including the links with crop farming, trading, and other livelihood strategies.

The ecology of Eastern Chad is characterized by a high variability of pastoral resources (in this case, nutrients for livestock and water), meaning that where and when concentrations of resources become available is quite unpredictable. This exceptional variability in the environment is reflected in the variability of production strategies and the

rich combination of pastoral systems. All of them are changing over time, each one developing its own forms of adaptations (sometimes maladaptations), adjustments, and distortions under its own configuration of pressures. Each one is connected with other livelihood systems, livestock based and not. All together, these pastoral systems form a variable complex that stretches over some 800 km across different ecological zones. There is a great number of groups and sub-groups of livestock producers,¹⁷ with economic and social ramification into other livelihood systems close by and far away, from crop-farming and livestock trading to the economies of distant countries from where family members who migrated for work are now sending remittances. Pastoral systems represent a key contribution to the income and food security not only of herding households but also of the households along the value chain that are involved in processing and marketing, and of course to the households of the staff in the technical services working with pastoralists and their livestock. Livestock produced in pastoral systems is used to work the fields and to transport the crops¹⁸ (Zakinet 2013). To an extent that is not known but is certainly high, crop farming in the region depends on manure available mostly from pastoral systems.

The Eastern Chad pastoral complex is estimated to represent about 65% of the national herd, either directly in mobile systems (over 75%) or kept mobile at least during the rainy season. Official figures for Dar Sila estimate around 980,000 head of livestock and 121,000 poultry, but these figures include only the animals recorded as “local”¹⁹ In 2015, the pastoral sector in Dar Sila had a volume of business of more than 4 billion XOF (about 6.5 million USD), contributing 1,214,600 XOF (1,900 USD) to the Livestock Fund and 77,224,410 XOF (125,000 USD) to the public treasury (MDPPA 2016).

Variability in pastoral strategies.

Production strategies in pastoral systems reflect the ways groups, large and small, adapt to particular

¹⁶ By comparison, Burundi extends over 27,000 km² with more than 11 million people. Eastern Chad (including Salamat but not East Ennedi) counted about 1.8 million in 2010 (WFP 2010).

¹⁷ A survey of longitudinal mobility in Eastern Chad by the Almy Bahaïm project counted 25 different groups (VST/Burgeap 1998).

¹⁸ According to Zakinet (2013), this is mainly an activity of youths in camel-keeping groups, where it is known as *chele*.

¹⁹ Recensement général de l'élevage 2015. Unpublished data, Ministère de l'élevage, N'Djaména.

combinations of variables. Some differences contribute to defining cultural identity (e.g., keeping a predominant species), but others can exist also within the same ethnic group, like differences in wealth and status (e.g., entitlement), household composition (e.g., labor), and competence/ experience (e.g., age). These combine with more contextual variables such as the *degree* of availability of water resources, the *kind* of water resources (e.g., wells or surface), the presence of tsetse infestation (the pressure on animal health), the presence of villages and especially of *berbéré* fields (flood-recession cultivation), and of course market opportunities.

Social organization itself is variable. During migrations, several households/camps of camel keepers (sing. *ferrik*) may gather to form a transhumant unit (*dayné*). In terms of social organization, the *dayné* is a crucial structure; not a permanent or fixed structure but one that begins and ends with each migration (Bonfiglioli 1992; Marty et al. 2009). Families and herds are also split seasonally between *ferrik* and settlement (*damre*) to allow for opportunistic cultivation and for accessing services (almost exclusively available in settlements); this too affects decisions about the strategies of migration.

Pastoralists build homes and settle. Under the long push for sedentarization from the colonial period, although only marginally successful, many households did build permanent homes for part of the family and part of the year, especially from the 1970s onwards, following severe losses during the drought but also responding to the 1967 land-tenure reform and the opportunities it created for farming- and settlement-based groups. Some settled in the north. Many settled in Dar Sila, combining livestock keeping with crop farming. Many of the pastoralists

who settled in Dar Sila in the 1970s did so as it had happened in the past:²⁰ because they had lost their livestock. But this time many herding households, especially cattle keepers, were also settling to secure access to the dry season pastureland in the south, as customary agreements had been undermined by the changes brought about by the 1967 land-tenure reform. This process contributed to a merging of specializations among farmers and herders at the scale of the Eastern Chad complex, and an overall move to trial-and-error forms of crop-livestock integration at the farm.

"This village was created in order to mark our presence, as strategy to secure land. We had livestock but started also to farm. The price of cereals was very high at the time. Now it has dropped dramatically, and so has the productivity of the land...now crops do not even suffice for subsistence. Most people have to buy cereals... we would very much like to have transhumants staying on our fields with their livestock, but the village is too far away from the river, and we do not have enough water for the animals here."

"When we settle in order to get our children into schools, our animals' productivity drops."

(men and women interviewed in a damre in Dar Sila, February 2017)

Changes to the cycle of migration.

A survey across the Dar Sila, covering a latitudinal stretch of 300 km, counted 47 migration routes (*mourhals*) of different size (one every 6 km on average) for livestock production and trade. Some groups travel 1,400 km per year (VST/Burgeap 1998). While seasonal migrations along the full

²⁰ For example, contractions and expansions of pastoral mobility, as well as major and sudden changes in the distribution of people throughout the Eastern Chad complex, are recalled in Barraud et al. (2001, 40): "Dès 1911, des villageois migrent vers le fleuve Batha, les nomades Bideyat et Goranes migrent de l'Ennedi pour se réfugier au nord du Ouaddaï (Mortcha). La subdivision d'Arada [voit] sa population passer de 29.000 à 100.000...Les années suivantes, les migrations sont massives vers le sud. Au total, le Ouaddaï [voit] le départ de la moitié de sa population...Les transhumants se déplacent beaucoup plus au sud que d'habitude. Ils se seraient alors frottés à des populations sédentaires avec lesquelles ils n'avaient pas de relations préalables, et elles-mêmes en crise grave. La Mission Pégourier (1921-22) évoque 'les rixes sanglantes entre nomades et sédentaires en 1914.'" ("Since 1911, villagers have migrated to the Batha River, Bideyat and Goranes nomads have migrated from Ennedi to take refuge north of Waddai (Mortcha). The subdivision of Arada [saw] its population increase from 29,000 to 100,000...In the following years, the migrations were significant towards the south. In total, the Ouaddaï region [saw] the departure of half of its population...Transhumants moved much further south than usual. They then rubbed shoulders with sedentary populations with whom they had no previous relations, themselves in a serious crisis. The Pégourier Mission (1921-22) recalls 'the bloody brawls between nomads and sedentaries in 1914'" (our translation)).

length of the Eastern Chad complex have been reestablished since the 1990s, there are significant differences with the past. In particular, there is a general impression that the period mobile herds spend in Dar Sila has increased by several weeks, with earlier arrivals and later departures,²¹ and that the breadth of the migration has reduced to the north but stretches now further south (see Figure 1). Early arrivals increase the risk of finding the crops still unharvested. Late departures increase the risk of being trapped by one of the three seasonal rivers in the region (Bahr Azoum, Doué, and Batha), or increase the risk involved in crossing. Some analysts reason that the sure costs of taking the herd to the north for the rainy season are now carefully balanced against the uncertain benefits of the northern rangelands, damaged by the decades of all-year-round use (Aubague and Grimaud 2011. By March/April, pasture is hard to find in Dar Sila. Herders are forced to sell some of the animals to buy feed supplement. The supply of feed supplement is itself inadequate in the face of the demand.

Early arrival in the south (including Dar Sila).

In principle, it would be in the herders' interest to keep their livestock for as long as possible on the better-quality northern pasture, but how this might be best achieved for particular migration groups depends on contextual variables (wealth/status, labor, competence, presence of water resources, villages and cultivations, or market opportunities—see “Variability in pastoral strategies” above). Some herders head south early but travel slowly, switching to “itinerant grazing mode” along the way for weeks at a time in order to make use of good opportunities. Others just stay on the northern pasture for as long as they can, then travel south as quickly as possible (VST/Burgeap 1998). Neither of these strategies, however, affects necessarily the time of the arrival. Early arrival in the south can be attributed to a number of different reasons or combinations of them: fear of having to make a long stretch of the journey without access to water because it has already been used by those who passed before them;

for camel keepers, a desire to arrive in time to secure business in the transport of *berbéré* crops (flood-recession crops); fear of not finding a good-enough spot in the south; possibly a lack of the experience and knowledge (in people and livestock) necessary to take advantage of the northern pasture even after the dry season has started; and possibly not enough herders with the livestock to water them from wells; or—for those who have settled in Dar Sila—not enough labor left at the farm to harvest the crops without help from the household members who normally take care of the livestock.²²

Two sections of the southern migration have been identified as particularly difficult: the region known as “the dry forest” (“*la forêt sèche*”) between Am Dam and the Bahr Azoum, and between Mangalmé and Abou Déïa; and, south of the Bahr Azoum, the areas between Am Timan and Haraze or Mangeigne, and west of the Zakouma estuary (VST/Burgeap 1998; Guibert et al. 2014).

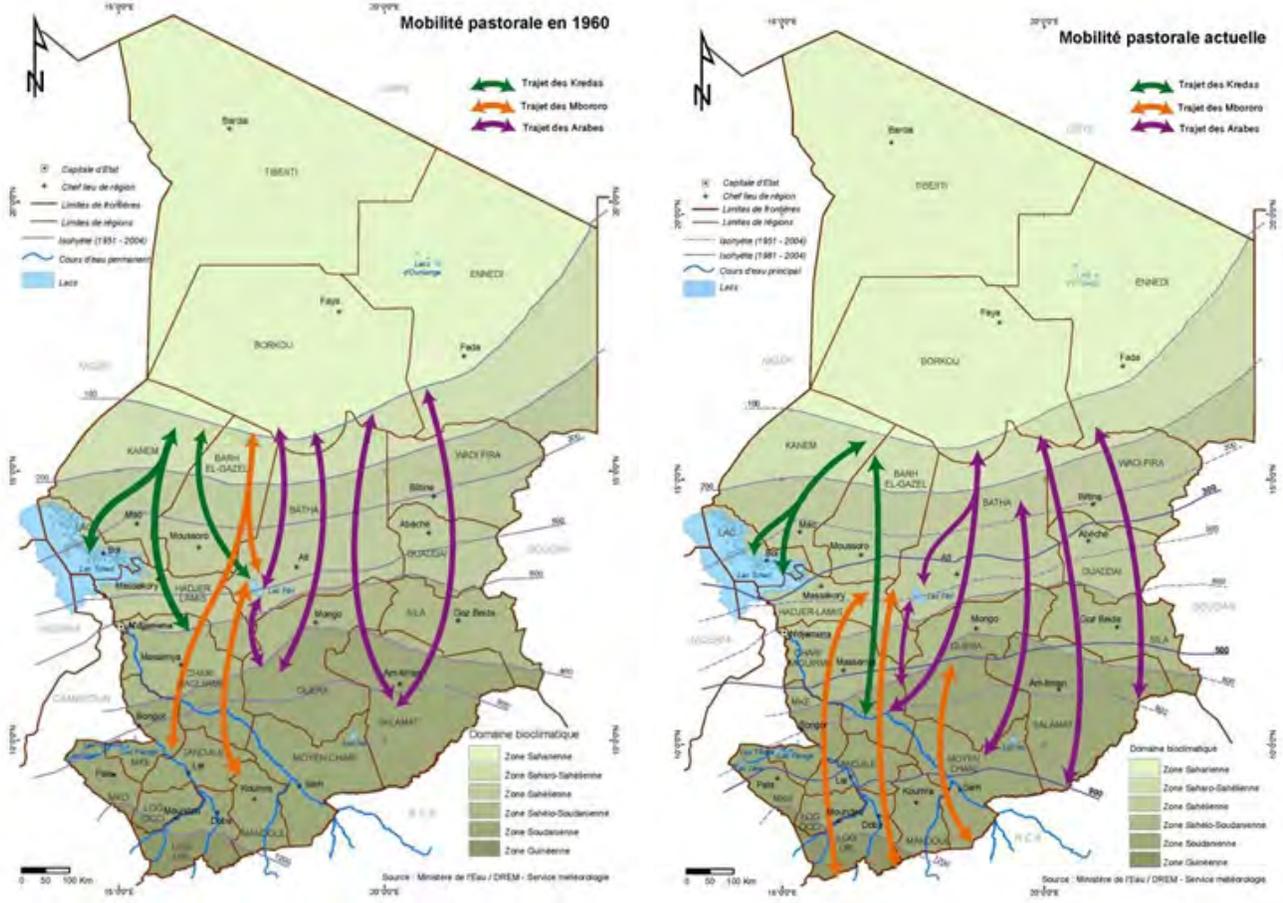
Late departure to the north.

The northwards migration at the beginning of the rainy season is the most difficult time of the year for pastoralists in the Eastern Chad complex, especially cattle keepers (VST/Burgeap 1998), because of the risk of being blocked by the flowing of the seasonal rivers, especially the Bahr Azoum and the Batha. Reaching further south during the dry season, it takes these herders longer to arrive on the rainy season rangelands in the north. They are also slowed by the weakness of the animals at this time. Additionally, since the herders follow the front of randomly scattered tropical showers, if they go too fast they risk being “trapped by the whims of the rains” in isolated areas of pasture and surface water before more rains follow, or indeed where no rains will pass again that year.

²¹ As differences in the strategies of migration have always existed, one would need to determine whether the current overall changes are general or concern certain groups in particular—and if so, why.

²² The last three reasons are based on observation among Peul in the south of Niger, who both farm and keep significant numbers of livestock. Although they are all keeping the same breed of cattle and living in the same village, some of them returned from migration (some 300 km north) in October and some returned as late as January (Krätli 2008).

Figure 1. Changes in the patterns of mobility (1960–2010).



Source: Système d'Information pour le Développement Rural et l'Aménagement du Territoire - SIDRAT (in Guibert et al. 2014)

1.4 Livestock trading and marketing

Pastoral systems are the largest suppliers of livestock to urban markets in Chad (PAFIB 2013, (Aubague and Hesse 2008, quoting Koussou and Liagre 2003).²³ Livestock prices have been observed to peak during the cold dry season (*darat*) (November to February) and remain high through the hot dry season (*seyf*) (February to May). They drop in correspondence with the passage of livestock during the seasonal migrations beginning with

the early rains (*rushash*) in April or May (Barraud et al. 2001). In Dar Sila, camels have been selling for 600,000 XOF (about 1,000 USD), cattle for 300,000 XOF (500 USD), sheep for 50,000 XOF (90 USD), and goats for 30,000 XOF.²⁴

The largest supplier of export markets.

Chad exports cattle to the large urban centers of Nigeria, Cameroon, Central African Republic, and Sudan, and exports camels to Libya and Egypt via Sudan. The most dynamic routes are those to Nigeria

²³ The livestock butchered in Dar Sila is sold in three forms: fresh, grilled, and dried (*charmoutte*). According to a butcher who grills in the market of Goz Beida, 60–70% of his meat is sold in the form of grilling on the market, 20–30% as fresh meat for family consumption, and approximately 10% as *charmoutte* sold both locally and as far away as Abéché and N'Djamena.

²⁴ With exports to Nigeria stopped by Boko Haram, prices have dropped. As a rough estimate, current prices are: 300,000 XOF for camels, 200,000 XOF for cattle, 30,000 XOF for sheep, and 20,000 XOF for goats.

(Liagre et al. 2004; Koussou and Aubague 2010; Koussou 2013). From Dar Sila, the animals travel on the hoof to Nigeria through N'Djaména and Bongor. Livestock exports, estimated to be predominantly from pastoral systems, represent 54% of Chad exports, excluding oil.²⁵

A critical invisibility.

An estimated 44% of cattle exports and 80% of domestic butchering (cattle, sheep, and goats) remain invisible to monitoring mechanisms, and are therefore unaccounted for as part of the local formal economy (Koussou and Duteurtre 2002; MDPPA 2010).

Dar Sila livestock trade is linked to pastoral mobility.

Dar Sila has four major livestock markets (Tcharaw, Kerfi, Magran, and Aradip) and three important terminal markets for exports (Modeina, Dogdoré, and Addé), all close to pastoral migration routes. In all these markets, the volume of business increases or decreases according to the flow of livestock along the migration routes (i.e., pastoral systems determine the supply). There are also indicators that livestock trade to Sudan, Nigeria, and Cameroon occupy a significant number of people from the stockless and returnee households living in the villages around Goz Beida, both as drovers and traders (Harvey 2012).

Unfavorable terms of trade.

Whether or not producers in pastoral systems also invest in crop farming, the vast majority depend on the purchase of cereals by selling livestock. The purchase of agricultural products may represent up to 35% of a pastoral household's annual expenditure (Duteurtre et al. 2002). Negative changes in the terms of trade between livestock and cereals are therefore a critical source of vulnerability. The insecurity along the border with Nigeria has slowed down exports and caused the plummeting of livestock prices. In March 2014, a sheep exchanged

for less than 100 kg of millet in the Biltine Market, while it fetched 400 kg in 2010 (FEWS NET 2014). In 2014, cattle producers faced a worsening of their terms of trade by 30–45% (BCIMT 2014).

Pastoralists prefer to purchase cereals just after the harvest, when prices are relatively low. Arrangements with farmers allow pastoralists to store purchased cereals in collective or individual granaries in villages, sometimes for a fee (Duteurtre et al. 2002).²⁶ In recent years, however, the price of cereals is said to have remained high even immediately after the harvest. Millet (not dehulled) currently sells at 650 XOF (about 1 USD) the “coro” as compared to 500 XOF in other regions such as Abéché and Amdam (the “coro” is a local measure; it is said to take 40 coro to fill a 100-kg sac).

1.5 Interconnectivity, specialization, and integration

Throughout the Sahel, complex, nuanced, and variable forms of integration of pastoral and farming systems were crudely represented by the colonial administrations through rigid and ultimately dividing categories of “nomads” and “farmers” (Marty 1999; Toulmin 1983).

The concept of agro-pastoralism, introduced in the late 1970s, could have come to help in representing the inextricable and circular nature of these relationships. Unfortunately, instead of overcoming the colonial legacy of division in administrative classifications, the new category of “agro-pastoralism” simply created an additional group (another division). Instead of helping drylands development to take a systemic approach and pitch the analysis at a higher order—e.g., the Eastern Chad complex as a system of systems²⁷ rather than focusing on household or ethnic-group specialization—“agro-pastoralism” has been used

²⁵ A proportion that is likely to be significantly bigger given that data collection on exports is estimated to capture only about 35% of actual transactions.

²⁶ In 2016–2017, storing 1 sac of cereals (100 kg) for up to 3 months in this way cost 1,000 XOF; 4 to 6 months cost 2,000 XOF. At the same time, the price of a sack of millet (100 kg) was about 25,000 XOF.

²⁷ Policy makers address “system of systems” all the time: any market or any “value chain,” for example, is a system of systems; virtually any system includes other systems. It is simply a matter of taking into consideration that specialized crop farming and specialized livestock keeping are more resilient when they exist in relation to one another (i.e., as a system of systems) rather than in isolation. Addressing them with policies and interventions as if they existed in isolation brings about isolation (decreasing resilience); addressing them as a system of systems brings about relationship and resilience.

within the old divisive logic (reductionist²⁸) as belonging to the same order of analysis as “farming” and “pastoralism.” The increased fragmentation has contributed to making “pastoralists” an even less tangible, and administratively less significant, group.

At odds with its own analytical and classificatory tradition, the specialist literature on pastoral development from the 1990s onwards, particularly on Chad, largely agrees that specialist crop farming and livestock keeping in the Sahel developed as integrated parts of broad economic and livelihood complexes, made more resilient by such integration (Barraud et al. 2001). Some aspects of such interconnectivity, specialization, and integration deemed relevant to the context of Chad, and Dar Sila in particular, are considered below.

Crop-livestock integration beyond the farm.

In development, crop-livestock integration is usually assumed to be *at the scale of the farm*, but that is just one of many paths (Scoones and Wolmer 2002). In environments driven by variability, livestock mobility allows for crop-livestock integration *at a variety of scales*, often discontinuous over time and space (e.g., with integration becoming effective and manifest only during the dry season). In these cases, “specialized crop farmers can form mixed systems with specialized grazers at regional levels” (Schiere et al. 2006, 10). When crop-livestock integration takes place within the same household, division of labor still allows for distinct specializations,²⁹ each one of the two operating at its own scale and only sharing the same space at certain times of the year. Even among farming communities, most grazing circuits in dryland regions extend beyond farmland and often beyond village lands (Landais and Lhoste 1990; Bonfiglioli 1990; van den Brink et al. 1995; Mortimore and Adams 1999). The Eastern Chad pastoral complex developed as a form of crop-livestock integration beyond the scale of the farm, between specialized farmers and specialized grazers at regional level (see Figure 2). Long-

distance livestock trade too, domestic and exports, is often part of such “high-scale,” or “regional-level,” integration. On their way to terminal markets, drovers move animals along deliberately slow itineraries through pastoral regions during the rainy season to improve their condition and reduce the costs of feedlot operations at arrival (Corniaux et al. 2012).

From complementarity to competition.

Since the 1970s, most farmers have moved into animal husbandry, and a substantial number of transhumant pastoralists have settled and taken up farming. This diversification at the level of the household is often represented in the development arena as a step forward. When considered at the scale of the Eastern Chad complex however, this is not diversification but a shift towards uniformity, by which once-specialized and complementary groups now attempt the same strategies and therefore end up competing for the same resources. This seems exactly the opposite of the diversification recommended as key to the successful and sustainable use of the drylands: diversification at the scale of the population as a whole, while maintaining specialization at the level of the individual household (Sandford 2011). Interventions with a systemic approach should focus on promoting this latter kind of diversification while correcting the former.

Agreements between farmers and herders.

In Eastern Chad, these are often contracts of cooperation concerning the organization of agricultural work, animal breeding, and the exchange of services, in particular for the transport of cereals (a practice locally known as *chele*). For example, camel drivers of the Salamat Sifera community in Batha Region travel to the Guéra during the dry season, transporting the harvest to town, to their homes, or to markets, and receiving in exchange part of the harvest transported. In Abéché, in the middle of the twentieth century, farmers referred

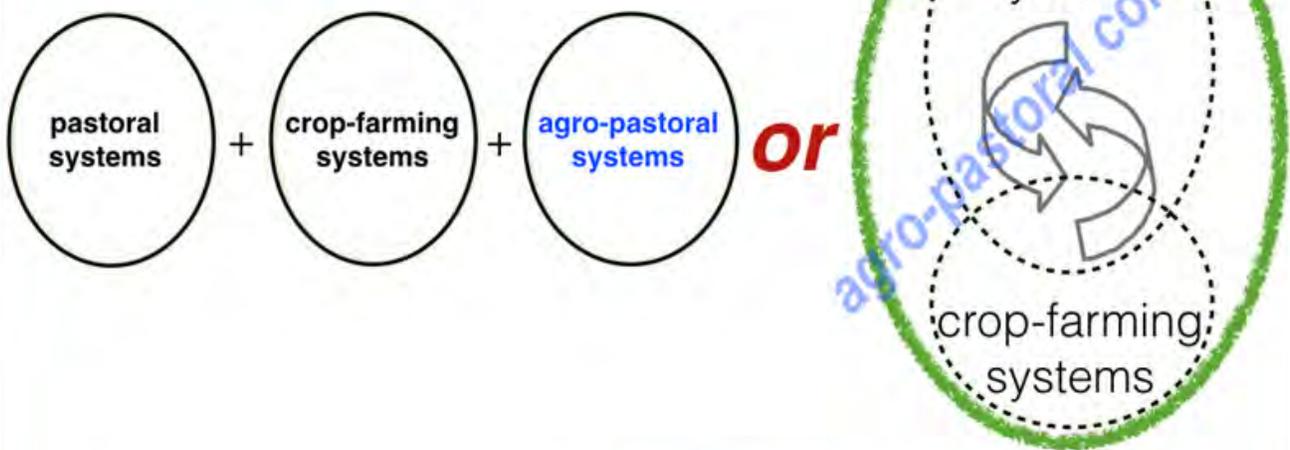
²⁸ In science, “reductionism” refers to methodological assumption that a complex phenomenon can be represented by the combined analysis of its parts. A systemic (or holistic) approach, on the contrary, assumes that a system (a “whole”) is more than the sum of its parts and therefore requires the analysis to be pitched (or *also* pitched) at a level that can capture the system *as a whole*, not simply as a sum of parts. Neither approach is fundamentally right or wrong: it depends on the object and goal of the analysis. Results though can be substantially different depending upon which approach is taken.

²⁹ Within the same family, one brother might specialize in crop farming and one in herding. The herders go in migration and use substantially the same production strategy used in pastoral systems where crop farming is not present. Among the Peulh, sometimes a son of the brother specialized in farming helps herding, while a son of the herder helps the uncle to farm (Krätli 2008).

Figure 2. Regional-scale integration between specialized grazers and specialized crop-farmers.

Crop-livestock integration in the drylands

just an additional system...



... or rather a “system of systems”?

to the number of camels mobilized for the occasion as proxy for the size of the harvest (Aubague and Grimaud 2011).

Crop residues and manure.

Livestock manure a field while grazing on it. Good crop residues for this use include millet, sorghum, corn, rice, beans, and groundnuts. Crop residues are consumed for about three months after the harvest. There are collective agreements between owners of herds and owners of fields to regulate these exchanges, and alliances between farmers and herders can even go as far as intergroup marriages (Aubague and Grimaud 2011).

Now that farmers own significant numbers of livestock, they need crop residues for their own animals. Following the surge in demand, herders now pay to access the residues, either in cash or in kind. There are also cases, however, where the farmers lack sufficient livestock to keep up soil productivity and would welcome transhumant herds to graze on their harvested fields (we found such a situation in one of the *damre* we visited).

Land tenure.

Customary land-tenure rules were developed with a focus on resources (multiple, overlapping, often transient/seasonal) rather than on land surface (one, permanent); this allowed for more than one right of access on the same land; for example, a right

for cereal products and a right for fruits products (Bonfiglioli 1992). Although not without faults, this system did a good job of representing the multiple and variable layers of use found in the Eastern Chad complex (for example, the discontinuous use of key pastoral resources such as grazing reserves or water points; or the ambivalent nature of migration routes, which are turning into hyper-fertile land that attracts farmers; or cultivated fields turning into dry season grazing areas for pastoralists). By breaking with this logic— perhaps out of habit more than out of necessity—the formal land-tenure system introduced an inconsistency between the administrative representation of land use and the actual use in practice through customary institutions. Today, this legacy is a source of confusion and often of conflict, as well as an obstacle to understanding and representing the land-use patterns that in the Eastern Chad complex have historically proved more sustainable and resilient.

Bypassing customary institutions.

In some areas, pastoralists adjust to the formal land-tenure framework by adopting land-marking strategies in order to limit the expansion of agricultural fields. They do this either by cultivating themselves or by reducing the amplitude of their mobility (Aubague and Grimaud 2011). In Kimiti, the most frequent violent conflicts are between people in settlements, the so-called “autochthones,” on one hand and pastoralists who settled from the 1970s onwards on the other. In most cases, these are groups that both farm and keep livestock. The shift from intermittent and high-scale forms of integration between specialist herders and specialist farmers

“Securing a consensual management of spaces and natural resources begins with establishing a new climate of trust and solidarity between the various stakeholders. This should be done around authorities situated at the interface of the parties, and basing their legitimacy on both customary and formal ground, both moral and technical ground”

(interview with staff from a civil society organization, January 2017).

to continuous crop-livestock integration at the scale of the farm has gotten in the way of mobility, therefore reducing productivity. It has also forced all groups of producers (whether nominally “farmers” or “pastoralists”) into relationships of competition for the same resources, therefore reducing resilience of the Eastern Chad complex as a whole (Sougnabé 2011). When conflict rises, there is an increasing tendency to go straight to the government authorities to complain if local agreements are ineffective, while previously local leaders (e.g., village elders, pastoral camp leaders, the Canton chief) were called upon to mediate conflict (Aubague and Hesse 2008).

Waged herders and new absentee owners.

Traders employ, as daily labor, herders from pastoralist families who have lost all or part of their livestock. This practice represents an opportunity, but in the present context also exposes these already vulnerable herders to the risks of conflict with farmers, as it is up to these herders to negotiate access to water points and pasture for the trader’s herd along the way to the market (PAFIB 2013). Hired herders working for new, powerful livestock keepers (businessmen, military, politicians) may feel protected by the social status of their employers and do not hesitate to graze animals on other farmers’ fields, as has been observed in the area around Maro and Sarh in Moyen-Chari (Whittle 2014).

Refugees and internally displaced people (IDPs), from temporary to permanent.

Chad is home to some 400,000 refugees, 310,000 from Darfur (Sudan) and 70,000 from the Central African Republic (CAR). Those from CAR have been displaced for more than 10 years, while those from Sudan have been arriving since 2002. Over 70% (about 291,000) of the refugees recorded in Chad are in the Eastern regions of Wadi Fira, Ennedi Est, Ouaddaï, and Dar Sila, which alone hosts some 50,000 in the two camps of Djabal and Goz Amir (UNHCR/PAM 2016; WFP 2010). Almost 200,000 IDPs and returnees are to be added to these figures at the national scale. From 2010 estimates, the number of people in refugee and IDP camps in Eastern Chad represented about 26% of the population (WFP 2010).

Although most refugees have been in Eastern Chad for more than a decade, their situation has not improved (UNHCR/PAM 2016), and there is no sign of imminent change. In recent years, the official approach has shifted in favor of a long-term integration of refugee populations. In 2012, the government discussed reclassifying IDPs in Eastern Chad as “residents” (Harvey 2012). In 2014, the United Nations High Commissioner for Refugees (UNHCR) introduced a “self-reliance approach” for Sudanese refugees, encouraging them to settle and start crop farming in hosting areas, and offering “quick-impact projects” as incentive for the host community (in Dar Sila, this was the case of a site in Kerfi). Among the Sudanese refugees, many were involved in pastoralism before displacement (WFP 2010). Today, although largely stockless, most of these people derive a substantial proportion of their income from livestock-related work, such as in butchery, the processing of livestock products, and trade. The best gains are associated with livestock trade. Women are involved in drying meat, which is often sold in local markets. Other sources of income include the sale of dried fish and firewood.

“The main sources of insecurity are not bandits or herder-farmer conflict, but the town, the military, and law enforcement itself. Transhumants are ‘ambushed’ with predatory ‘law-enforcement’ practices as they pass by, inventing rules and fines, making up offences to squeeze money out of them, counting on the fact that, pressed by time, herders will pay in order to go on as quickly as possible”

(interview with the staff of a civil society organization, N’Djaména, February 2017).

No blueprint solution to “conflict.”

The general term “conflict” is used to describe a great variety of situations (often with different names in vernacular). Frequency, intensity, and severity of conflict vary according to the area and the time of the year. Conflicts peak at sowing and harvesting times, and in years of drought, when herders arrive in the south before the harvest. The

development of dry season cultivation in the *ouadies* (seasonal rivers), *berbéré* (flood-recession crops), and *marâchage* (market vegetables) contributes to increasing the incidence of violent conflict (Marty et al. 2010). There is no blueprint solution: each situation of conflict needs its own analysis.

Indirect conflict.

Transhumant pastoralists may be indirectly affected by land-related conflicts between sedentary communities and forced to move away due to precarious security situations. This phenomenon has so far been studied at a regional level only (Bonnet and Guibert 2014; Zakinet 2013).

Significant levels of malnutrition.

The prevalence of acute and chronic malnutrition appears to be very high in Dar Sila Region. More than one-third of children under the age of five suffer from chronic malnutrition. Even during the post-harvest period, about 15% of children suffer from acute malnutrition (they are slimming and/or have nutritional edema), and more than 3% suffer from severe acute malnutrition (Marshak et al. 2016). Based on data collected shortly after the harvest, between December 2010 and December 2011 the prevalence of food insecurity increased from 25.9% to 64.7% in Dar Sila, compared to Ouaddaï (40% to 61%) and Wadi-Fira (23.9% to 44.8%) (WFP 2012). We could not find recent data on the nutritional situation of mobile pastoralists in particular.

Data from the BRICS annual survey of Concern program villages in Sila Region show a correlation between pastoralism and better nutritional status in children. Comparing child malnutrition rates in agro-pastoral settlements (sing. *damre*) and in settlements of farming communities (with smaller livestock holdings), Feinstein researchers found lower prevalence of GAM (Global Acute Malnutrition) in *damres* at the baseline and endline, with the difference significant at the endline (see Table 1). While significant for guiding future research, this finding is not, however, conclusive evidence, as the sample size for the *damre* population is relatively small, and the original survey was not designed to establish differences by livelihood strategy.

Table 1. GAM by *damre* from BRICS survey of Concern program villages in Sila

	Baseline (2012)		Midline (2014)		Endline (2015)	
	non- <i>damre</i>	<i>damre</i>	non- <i>damre</i>	<i>damre</i>	non- <i>damre</i>	<i>damre</i>
%	16%	11%	15%	16%	18%	11%
95% confidence interval	(13-18%)	(6-17%)	(11-18%)	(0-32%)	(15-22%)	(7-15%)
Diff. (p-value)	0.228		0.881		0.024	
n	1,153	125	1022	105	928	102

A twisted pattern of diversification.

Farmers have moved into animal husbandry, and transhumant pastoralists have settled and started to farm. This diversification at the level of the household is often represented in the development arena as a step forward. When considered at the scale of the Eastern Chad complex, however, these changes do not introduce diversity but uniformity, a process by which once specialized and complementary groups now attempt the same strategies and therefore end up competing for the same resources. This “diversification” seems exactly the opposite of the diversification recommended as key to the successful and sustainable use of the drylands: diversification at the scale of the population as a whole, while maintaining specialization at the level of the individual household (Sandford 2011). Interventions with a systemic approach should focus on promoting this latter kind of diversification while correcting the former.

1.6 A synthesis of constraints

Based on both the literature review and the consultation exercise carried out as part of this study, this section briefly identifies major constraints to the functioning of the Eastern Chad complex, as relevant to carrying out development interventions in Dar Sila.

Legacy of past interventions.

This legacy includes: ill-advised development; ideological framing of pastoralism as unproductive and an obstacle to development and modernization; push for sedentarization; marginalization and technical exclusion (e.g., bias in the definition of “land development/*mise en valeur*”); lack of an adequate regulatory framework; lack of public investment in pastoral systems (18% of GDP but allocated only 1% of public budget in 2010).

Lack of access to pasture.

There is an increased frequency in the *experience* of vulnerability to drought³⁰ and extreme climate. As the experience of vulnerability to drought in pastoral systems depends on the management strategy (e.g., strategic mobility can considerably reduce its intensity), this new impression of “frequency of drought” should be investigated first of all in light of changes in the management strategy. Reduced mobility; undesirably high concentrations of livestock; inadequate access to water; agricultural encroachment and depletion of grazing areas; obstruction, destruction, or reduction of migration itineraries; conversion to crop farming of grazing points along the itineraries of migration, or reduction in size to the point of loss from overuse: these are all likely to increase the experience of vulnerability to drought and extreme climate.

³⁰ Drought here is intended as “pastoral” drought, i.e., drought from the point of view of pastoralists, understood as inaccessibility of pasture (cf. Krätli 2016).

Violent conflicts.

These occur especially around harvest time and around off-season cultivation (*marâchage*, flood agriculture). They are more frequently between old and new settlers with livestock. Conflicts are generally linked to the vacuum of land-tenure regulations or their inadequacy, and the lack of clarity around their governance (see Box 2).

A shortfall of basic services.

Existing animal health services fall short of reaching mobile livestock that are outside the proximity of settlements. Community animal health workers (CAHWs) are too few, and are poorly supported and coordinated. Above all, they are *not* pastoralists. In the words of herders interviewed, “there would be need for one CAHW in each migration unit,” meaning that there is a need for many more CAHWs, training herders *already* embedded in the pastoral system. Concerning human health, service is only provided within settlements. The current administrative system in health centers makes it difficult to secure continuity even for households that simply move to an area served by a different health center. There is no strategy to reach people in pastoral systems with routine immunizations and to control poliomyelitis.

Technical exclusion embedded in early warning systems.

Chad has a Food Security and Early Warning Information System (SISAAP), based at the Ministry of Agriculture and Irrigation. By design, SISAAP is particularly sensitive to variations in crop production. On the other hand, SISAAP is poorly adapted to capture growing vulnerability within pastoral systems, where relevant indicators would need to be more “real time” (at the moment, the information published in the SISAAP bulletin is 1-2 months old) and include variations in the possibility of strategic mobility, as well as in the access to pasture and markets. The collaboration between SISAAP and the Information Provider Services (SPI) based at the Ministry of Livestock and Animal Production is weak (the information on pastoral systems in the SISAAP bulletin are more likely to come from FEWS NET

or humanitarian non-governmental organizations (NGOs)). There is awareness of these issues, and possible solutions are being considered through partnerships in the framework of new programs such as Projet Régional d’Appui au Pastoralisme au Sahel (PRAPS) and Programme d’Appui Structurant de Développement Pastoral (PASTOR).³¹

New patterns of migration.

Migration today tends to be over longer distances but in a shorter time, with a longer period spent in dry season areas. The arrival in Dar Sila is overall earlier and the departure north is later. The reasons for these changes are complex and most likely different for different groups. On the way up, herders risk getting trapped by seasonal rivers; on the way down, they have to rush through the dry forest because of lack of water along the way, or in order to secure dry season pasture or seasonal work down south.

³¹ The World Bank Regional Sahel Pastoralism Support Project (in French: Projet Régional d’Appui au Pastoralisme au Sahel—PRAPS) is a six-year undertaking in Burkina Faso, Chad, Mali, Mauritania, Niger, and Senegal. PASTOR (Programme d’Appui Structurant de Développement Pastoral) is a program funded by the European Union, the French Development Agency (AFD), and the Government of Chad.

Box 2. Institutional constraints to conflict management

- Livestock is the second source of revenue for Chad, after oil, but accounts for only 1% of the national budget.
- Pastoral systems based on mobility represent over two-thirds of the national herd and probably close to 80% of the livestock sector, but the understanding of pastoralism remains contradictory, with some finding it outdated and others recognizing its relevance and effectiveness.
- The way authorities handle disputes or conflicts related to pastoral mobility is often seen [by pastoralists] as biased and exploitative [a source of income], therefore sustaining suspicion and aggravating tensions.
- Ultimately, the conflicting parties (farmers and livestock keepers, livestock keepers among themselves) aspire to a state that truly guarantees law and social peace.
- Legal texts on pastoralism often appear to be limited, lacking harmonization and remaining largely unknown. The Law on Nomadism of 1959 appears insufficient today. Its application is difficult. It is for this reason that a draft pastoral code is being drawn up.
- Customary leaders, who are expected to play an important role in the management of conflicts, are often left out or marginalized for the benefit of other state actors.

(Source: Marty et al. 2010)

Part 2. Policy And Institutional Context

2.1 Highlights from the international context

The African Union (AU) Policy Framework on Pastoralism.

In 2010, the AU produced the first pan-African policy framework on pastoralism. The policy intends to “address the root causes of pastoral vulnerability on the continent” (AU 2010, 3). It recognizes the problematic legacy: “Many past attempts to support pastoral development failed to recognize the strengths of pastoralism, and did not balance the need for greater pastoral representation and good governance, with appropriate technical approaches. Pastoral development efforts must go beyond single-sector technical approaches, and embrace indigenous knowledge, innovations for sustainable natural resources management, effective governance, and further integration of pastoral livelihoods with expanding market opportunities” (§ 1.2). The framework supports pastoralism as a way of life and as a production system (§ 4.1.3), and emphasizes the importance of pastoralists’ “strategic mobility” for value creation and sustainable resource use (§ 4.1.4). There is recognition that “pastoralist ecosystems often transcend national borders, that movement within these systems is economically and ecologically rational” (§ 1.1.2) and that improved understanding of the economics of pastoralism among policy makers is central to policy process (§ 4.1.2).

Pastoral codes.

In West Africa, the pastoral codes of Mauritania (2000), Mali (2001), and Niger (2010)³² are centered on the formal recognition of: pastoral mobility as an asset; pastoralists’ customary access rights and communal management systems;

and “pastoral resources” and the importance of protecting them.

Minimum standards for pastoral development.

Between 2010 and 2012, a worldwide review coordinated by the International Union for the Conservation of Nature (IUCN) resulted in a document of guidelines and “minimum standards” for engaging with pastoral development (IUCN 2012). The global network of pastoralism specialists and pastoral development practitioners associated with the IUCN World Initiative for Sustainable Pastoralism (WISP) was mobilized to identify examples of good practice and the principles underpinning them. The resulting document underlines that solutions to the challenges of pastoral development can and should be found *in ways that do not compromise the basic operating logic of pastoral systems*. Minimum standards for pastoral development are defined by a balanced combination of four principles:

1. Develop country strategies that recognize and support pastoral system;
2. Avoid investments and policies that undermine pastoral systems;
3. Place governance and rights, including those of minorities, at the center of pastoral development;
4. Promote investments and policies that support pastoral systems.

Recognizing pastoral systems (principle 1) means to recognize pastoralism’s specific logic of production: how these systems work in relation to their environment and the wider economy, and their characteristic form of adaptation as well as their economic contribution. Without this recognition, “supporting pastoralism” becomes an empty category that can be filled with virtually anything,

³² République Islamique de Mauritanie (2000); République du Mali (2001); République du Niger (2010).

including interventions that effectively make pastoralism less viable and less sustainable.

The Mera Declaration.

In 2011, some 160 pastoralist women delegates from 31 countries met in Mera (Gujarat, India) for six days, in their words “to strengthen alliances and

forward practical solutions to issues that affect us.” The discussion resulted in a set of recommendations published as the “Mera Declaration.” So far one of its kind, the Mera Declaration is unequivocal in asserting pastoralist women’s frontline role as livestock professionals (see Box 3).

Box 3. Excerpts from the Mera Declaration (2011)

“We, the women pastoralists gathered in Mera, India, from November 21–26, 2010, representing 31 countries...call on governments, governing agencies of the United Nations, other relevant international and regional organizations, research institutes and our own customary leaders to support us and to: RECOGNIZE pastoralist mobility as a fundamental right ...ENSURE the equal rights of pastoralist women and recognize their key role in society. This includes the recognition of the work of women pastoralists as a valid profession and as a fundamental component of pastoralism...ADAPT existing legislation to take into account the specificities of pastoralist ways of life and differentiate nomadic and transhumant pastoralism from intensive livestock production...

PROMOTE regional policies and treaties that take into account trans-border pastoralism and respect traditional grazing territories and migratory patterns. These are to be negotiated in consultation with pastoralist women...DEVELOP legislation that restricts development that harms or threatens pastoralist livelihoods...DEVELOP mobile facilities that respect pastoralist realities and are in line with the needs of pastoralist women...SUPPORT and fund research into new technologies that further improve the efficiency and environmental sustainability of pastoralist ways of life. These technologies should be attuned to the needs and realities of pastoralism and should take advantage of renewable and easily accessible natural resources.”

2.2 The national context in Chad

During the colonial period and for well over a generation after independence (1920–1990), the Chadian State and its technical and financial partners have combined development programs with sedentarization policies, particularly through water development interventions meant to fix pastoralists in their rainy season grazing areas. From the 1990s, this approach has been problematized and accompanied by an alternative perspective based on the recognition of pastoralism as a well-adapted livelihood and production system, ecologically sustainable and economically viable. This perspective has emphasized the importance of supporting pastoral mobility as key to the productivity and resilience of these systems. The

uncertainty of oil revenues in recent years is also contributing to granting the potential of pastoral systems a new attention. For the time being though, the complicated process of reconsidering inadequate assumptions and tackling the divisive and undermining legacy of past interventions is still at its early steps.

2.2.1 Policies

*National Plan for the Development of the Livestock Sector 2009–2016 (PNDE)*³³.

This document defines the axes of the national strategy for the development of the livestock sector. The PNDE (République du Tchad 2008) describes Chad as a “pastoral country” (*un pays à vocation pastorale*), describes pastoralism as constitutive of the ecosystem, and includes among its objectives the

³³ Plan National de Développement de l'Élevage 2009–2016 (PNDE).

recognition of pastoralism as “a practice of land use and development (*mise en valeur*) on the same basis as crop-farming and forestry.”³⁴ Overall, the plan “aims at ensuring the sustainable growth of animal production” as a way to “improve and increase the contribution of the livestock sector to the growth of the national economy, poverty reduction and food security.” Analysts (e.g., Gubbels 2014) have described the PNDE as a desk exercise by technicians, concerned with expanding sector-level production more than with reducing vulnerability of producers, lacking an overall vision and coherence of interventions as well as adequate consultation with the main stakeholders (starting from pastoralists themselves).

National Pastoral Development Strategy (SNDP³⁵).

The SNDP is an initiative of the Plateforme Pastorale du Tchad (see below), with a strong collaboration with the Ministère de l'Élevage et des Productions Animales, the Ministère de l'Hydraulique et de l'Assainissement, and the Ministère de l'Aménagement du Territoire.³⁶ The SNDP consists of five strategic axes on interventions (see Annex 2), developed through regional consultation workshops (in Moundou, Abéché, and Fada) with professional organizations of pastoralists and farmers, administrative and customary authorities, and the regional representatives (*Délégués*) of the relevant ministries. The strategy was then validated during a national meeting in N'Djaména and is being localized by the Plateforme in collaboration with PASTOR.³⁷ Finally, it will be up to the Ministère de l'Élevage to take the legal steps for the recognition of the SNDP by the government.

Pastoral Code.

The Pastoral Code is a framework to replace Law No. 4 of October 31, 1959 aimed at regulating the use of pastoral resources, defining the rights and obligations of pastoralists and livestock owners,

defining the mission of pastoralist organizations, and suggesting mechanisms for managing and preventing conflicts over resources. Drafted in 2010–2011 with funding from the Food and Agriculture Organization (FAO), the Code was approved by the National Assembly in 2014. A few weeks later, the Pastoral Code was blocked on political grounds. Currently, the relevant ministries (Agriculture, Livestock, and Environment and fisheries) are preparing a “*Loi d’Orientation Agro-sylvo-pastorale et Halieutique*.” A review of the rural sector has been carried out and validated at national level, and a team of experts under the auspices of the FAO is working on the draft.

Declaration de N'Djaména.

This declaration was produced at the end of the 2013 colloque régional and conférence ministérielle, on “Élevage pastoral. Une contribution durable au développement et la sécurité des espaces saharosahéliens.”³⁸ The signatories of the Declaration found that “as pastoral livestock and trade constitute one of the main legal and peaceful activities in the areas concerned, they form a crucial line of defence against insecurity across the region”. They recommended the promotion of transhumant livestock pastoralism and invited states to: i. “put the pastoral livestock sector at the heart of stabilisation and development strategies for the Saharo-Sahelian areas in the short-, medium- and long-term;” and ii. “establish and implement proactive and coherent policies to improve governance, strengthen resilience and enhance the economic and social viability of activity systems in the Saharo-Sahelian areas.” (Declaration de N'Djaména 2013, 4).

2.2.2 Legal framework

Law on Nomadism (Law No. 4 of October 31, 1959).

Law No. 4 is a colonial law consistent with the goal of controlling the movement of pastoralists and

³⁴ “Reconnaître le pastoralisme comme une activité de mise en valeur au même titre que les activités agricoles et forestières.” (Republique du Tchad 2008, 20, 43, 69).

³⁵ Our translation. The original statements in French are: “L’activité pastorale fait partie intégrante de l’environnement. L’élevage a sa place dans les mécanismes de l’écologie et est assujéti aux mêmes lois biologiques...le pastoralisme ne dégrade pas nécessairement l’environnement et peut fournir des avantages environnementaux notables.” Objective:

³⁶ La Stratégie Nationale de Développement Pastoral (SNDP).

³⁷ Ministry of Livestock and Animal Production, Ministry of Water and Sanitation, and the “Ministry of Territory and Planning” (the closest equivalent in English for “*aménagement du territoire*”).

³⁸ Programme d’Appui Structurant de Développement Pastoral.

³⁹ N’Djaména Declaration on the Contribution of Pastoral Livestock to the Security and Development of the Saharo-Sahelian Areas.

promoting their sedentarization. According to this law, pastoral mobility is to be authorized every year by regional authorities who also decide the date people can move (Article 6); while the movement must follow a fixed itinerary agreed on in advance by a special commission (Article 7). With the Pastoral Code being blocked, this law remains in force despite its obsolete foundations and the numerous problems associated with its application.

Water Code.

The Law No. 016/PR/99 of August 18, 1999 “*Portant Code de l’Eau*”³⁹ defines the legal framework for the water sector in Chad. Based on the principle of national equity, the Code defines water as a public and collective good and establishes the rules for its use, exploitation, and protection. Only a handful of articles include remarks of relevance to pastoral systems. Water usage is defined assuming stability of location and uniformity of need. Mobile or transiting users like pastoralists, who need relatively high volumes of water in a discontinuous or intermittent way, are not taken into consideration. By this law, someone setting up a farming operation along a water course or around a well is recognized as a user with rights and duties; the pastoralists whose discontinuous access to the water is blocked by such an operation are not recognized as users by the defining criteria.⁴⁰

Land tenure and customary rights.

Land tenure in Chad continues to be regulated by Law No. 24/PR/67 of July 22, 1967 “on land tenure and customary rights,” which effectively classifies all pastoral land as wasteland (*terre vacante et sans maître*). Article 13 rules that “all untitled land is considered wasteland unless proved otherwise.” Article 14 rules that land titling may be based on evidence of land development (*mise en valeur*). Article 15 gives the state the right to title “in its name” any wasteland; where customary rights do not lead to land development, the state may abolish them. Article 17 rules that “land development” must

involve, as the minimum necessary condition, “a permanent and visible intervention on the soil.”

Forestry.

Forestry is ruled by the Law Nos. 23, 24, and 25 of July 22, 1967 (and successive decrees) and Law No. 014/PR/98 of August 17, 1998 on the protection of the environment. Due to the presence of shade and the rich diversity of fodder plants, forests are an important part of the pastoral ecosystem. Unfortunately, the present legislation on forestry is rather silent about pastoral systems.

Trade and marketing.

The livestock sector is subject to the same legislation common to all commercial activities. Specific aspects are addressed in the texts regulating internal trade: Decree No. 64 of December 21, 1974 and No. 21 of January 31, 1995 (concerning non-tax formalities), and Decree No. 138bis/PR/MEHP/88 (export of livestock and livestock products). Overall, in Chad there is no legal text specifically addressing livestock marketing.

2.2.3 Institutional framework

*Public institutions*⁴¹

National level. The institutions in charge of implementing government policies on pastoral development are the Ministry of Livestock and Animal Productions, and the Ministry of Water and Sanitation. Other ministries involved are the Ministry of Agriculture, the Ministry of the Environment and Fisheries, the Ministry of Basic Education, through the Directorate of Nomadic Schools, and the Ministry of Health, through the program on health in the nomadic context.

Local level. Pastoral water development is a shared responsibility between the Ministry of Livestock (in charge for assessing need and organizing users), and the Ministry of Water (in charge of constructing and rehabilitating the infrastructures). Since 2009, government ministries are represented at the local

³⁹ The Water Code was updated by the Ordonnance n° 018/PR/2011 of March 1, 2011.

⁴⁰ In practice, these laws are hardly ever applied. In rural Chad it is the traditional practice that prevails. In Islamic law (Sharia), water is a gift from God and no one has the right to deny it to the other; doing so will attract punishment from God. This also applies to private water sources such as sumps or wells. However, there are rules of access, often explicit, that everyone must respect.

⁴¹ A list of key local and national pastoralist institutions is provided in Annex 3.

level by their regional “delegations” (*délégations régionales*), which are the ground level of policy implementation. However, the Ministry of Water has no delegation in Dar Sila at the moment. The regional representation of the Ministry of Livestock is also relatively weak, with two veterinary sectors (Goz Beida and An-Dam), and only five veterinary posts active out of eleven. At the local level, public technical services lack the resources to operate in the pastoral context. They lack basic equipment and are dependent on external funding. Over the past two years, the government has been unable to meet its budgetary commitments.⁴²

Professional organizations of livestock keepers

There are some 15 organizations at national and regional level, generally with limited involvement of members, except those directly responsible.

National level. The most visible organizations are CONFENET, CONFIFET, CONORET, SNCCBT, and SNECBBT,⁴³ as well as the customary institutions through the Traditional Chiefs Association or ACTT (Association de la Chefferie Traditionnelle du Tchad). The “*commissions mixtes*” such as the committees for the management and prevention of conflicts are also active in the context of pastoralism.

Local level. National organizations are represented at the local level by “*fédérations*,” “*unions*,” and “*groupements*.” Dar Sila has three *fédérations*, all recently created: the Fédération des Éleveurs (livestock keepers federation); the Fédération des Commerçants du Bétail (livestock traders federation); and the Fédération des Bouchers (butchers federation); as well as over 850 *groupements d'intérêt pastoral* or GIPs (pastoralist interest groups). While numerous and promising overall, these organizations are still battling with

loose structures, poor capacity, and the process of defining a clear vision.

Civil society organizations active in pastoral development

Association de Médiation entre Cultivateurs et Éleveurs au Tchad (AMECET). AMECET has developed important initiatives aimed at reducing conflict between farmers and herders in the agricultural regions through the creation of “*comités d'entente*.” AMECET also promotes “peace education” in rural areas.

Association pour le Développement Régional du Batha (ADRB). ADRB is a national NGO active in projects of basic education in nomadic contexts.

Conseil National de Concertation des Producteurs Ruraux du Tchad (CNCPR). CNCPR supports the dialogue on the definition of agricultural policies. It includes a sound representation of professional organizations of pastoralists and farmers.

Plateforme Sous-régionale Agropastorale KAWTAL.⁴⁴ Created in 2014, KAWTAL is an organization of Peuhl pastoralists in Chad, Cameroon, and Central African Republic. It works on conflict management and improving dialogue between farmers and herders, with successful experience in reducing conflict associated with early return south of transhumant herds.⁴⁵

Réseau Billital Maroobe (RBM). RBM is a regional network of pastoral organizations created in 2002–2003 in Niger, Mali, and Burkina Faso with the goal of defending the interests of mobile pastoralists. Now active also in Benin, Chad, Mauritania, Nigeria, Senegal, and Togo, RBM is the largest pastoral network in Africa.

transhumant herders inform their KAWTAL regional representative of their position during the migration. The regional representative informs the village chiefs along the transhumant route, and information is passed to the village authorities so that they can prepare for the arrival of the herds. Communication is by mobile phone, simply saying, “We are x number in location x and expect to arrive at village x in x days.”

⁴² Besides staff salaries, some ministries like Ministry of Education and Health received about 50% of their budget. The Ministry of Livestock and Agriculture received as little as 5%.

⁴³ Confédération Nationale des Éleveurs du Tchad (CONFENET); Confédération Interprofessionnelle de la Filière Élevage au Tchad (CONFIFET); Confédération Nationale des Organisations des Éleveurs du Tchad (CONORET); Syndicat National des Commerçants et Convoyeurs de Bétail du Tchad (SNCCBT); Syndicat National des Éleveurs, Commerçants et Bergers de Bétail du Tchad (SNECBBT).

⁴⁴ A Fulfulde word that means “union/reunion.”

⁴⁵ The incidence of conflict associated with the early return south of the transhumant herds is increased by the fact that farmers are taken by surprise. KAWTAL set up a system to reduce surprise. KAWTAL's members in the ranks of

The Plateforme Pastorale du Tchad⁴⁶

The 2011 “Colloque national sur la politique sectorielle du pastoralisme au Tchad,” including a round table with the main pastoralist organizations and eight ministries involved in pastoral development, produced a document of 29 recommendations. The Plateforme Pastorale des Acteurs du Développement Pastoral au Tchad was created following Recommendation 27: “Set up a permanent forum (government, partners and pastoralists) for the follow up on the recommendations of the colloque and the design and implementation of a program of activities relevant to pastoralism.”⁴⁷ Technical and financial partners to date include World Bank, PNUD-FAO-FIDA, BAD, European Union, French Cooperation, Swiss Cooperation, Sudan Fund, Kuwait Fund, BID, BADEA, and OPEP Fund.

The Plateforme is intended to provide a space of dialogue between the different actors in pastoral development, beyond the sectoral approach of each of the parties. The Plateforme has been the driving force behind major projects such as the Projet Régional d’Appui au Pastoralisme au Sahel (PRAPS), the Projet de Renforcement de l’Élevage Pastoral dans les Régions du Batha, de l’Ennedi et du Waadi Fira au Tchad (PREPAS), and the Programme d’Appui Structurant de Développement Pastoral (PASTOR).

⁴⁶ <http://www.platforme-pastorale-tchad.org>.

⁴⁷ In the original French: “Mettre en place une plateforme permanente (Gouvernement, partenaires, pasteurs) pour le suivi de la matérialisation des recommandations du colloque et l’élaboration et la mise en œuvre d’un planning d’activités relatives au pastoralisme.”

Part 3. Conclusions And Recommendations

Like pastoral systems everywhere else in the country, the Eastern Chad pastoral complex⁴⁸ has been driven into the current vicious cycles of maladaptation and vulnerability by a long history of misunderstanding, and consequently ill-conceived development interventions. Such interventions were largely built on the assumption that variability in the environment, or in grazing patterns, needed to be replaced with stability and uniformity. This assumption triggered processes of social division, and a loss of complementary specialization of pastoralist and farming livelihoods, consequently increasing competition within overlapping livelihood strategies. While the misinformed interventions have (fortunately) not succeeded in stopping mobility, they have unsettled and often disrupted its well-tested patterns, and forced producers into higher-cost and often higher-risk trial-and-error processes. At the level of the Eastern Chad complex, these processes have increased social friction and undermined crucial elements of social and economic connectivity, and the customary institutional basis for connectivity and reciprocity. The result has been pastoralists and farmers who are overall less productive and more at risk in the face of shocks, and a general increase in the incidence of conflict.

Rebuilding resilience in this context requires a fundamentally new approach based on the understanding that variability is a constitutive part of the complex. Preserving and fostering the variability people embed into their production and livelihood system—starting from pastoral strategic mobility, both as variability of grazing patterns and as a vector of social and economic connectivity—are essential to securing resilience and, with it, social peace, reliable production, and economic growth. Resilience of the Eastern Chad pastoral complex, and Dar Sila by implication, including all livelihood systems in

the region, not just pastoralists, rests on social and economic connectivity between specialist groups as the basis for complementarity and reciprocity. The motor of such connectivity is pastoral mobility and behind it, the logic of interfacing environmental variability with variability in the processes of production. Respecting this logic, and working with it, is essential for any resilience-building program in this context.

What follows is a set of strategic recommendations to the BRICS project, based on our understanding of Concern’s activities and comparative advantage in Dar Sila. The recommendations are organized by level of intervention, on the principle that even specifically focused interventions at the grassroots level should be designed and carried out in connection with the wider context of the Eastern Chad complex and the national pastoral development arena. These recommendations are also directly relevant to a wider audience of international and national stakeholders. We recognize that achieving the recommendations will require a collaborative effort across multiple organizations and levels.

3.1 In Dar Sila

1. Build institutional capacity for working with pastoral systems.

- Promote the creation of a multi-donor capacity-building framework for understanding and working with pastoral systems in Chad. Offer training to the relevant authorities in the administration and law enforcement, and to pastoralist organizations, with a special focus on conflict analysis and mediation, as well as post-conflict peacebuilding.

⁴⁸ In this report, the “Eastern Chad complex” refers to the complex of pastoral systems active in Eastern Chad from Ennedi and eastern Borkou to Salamat, including their links with crop farming, trading, and other livelihood strategies.

- Take a lead in the creation of a capacity-building approach and plan to help key actors work more effectively with pastoral systems in the Dar Sila Region, in particular to offer training to the relevant authorities in the administration and law enforcement, and the Fédération Régionale des Éleveurs du Dar Sila, with a special focus on conflict analysis and mediation in the context of the Eastern Chad pastoral complex.

2. Develop strategic infrastructures to support pastoral mobility.

- Create pastoral water points in the “dry forest” (the area in northern Dar Sila that most lacks pastoral water), with the specific goal of supporting mobility, opening new pastures, and allowing a slower pace of southwards migration at the end of the rainy season, so as to reduce the risk of overlapping with the pre-harvest period. These actions should be carried out in conjunction with all stakeholders (pastoralists, farmers, administrative and customary authorities, etc.), and should be sanctioned by formal agreements to protect against the risk of perverse outcomes (e.g., hijacking of the infrastructure by individuals or for non-pastoral uses; involving ecologically unsustainable practices). The exact locations would need to be decided through a participatory process with all the stakeholders, starting from the herders who would be the potential users.
- Support the Fédération Régionale des Éleveurs du Dar Sila, in particular with finding a solution to the problem pastoralists face at present when crossing the seasonal rivers (Bahr Azoum, Batha, and Doué) with the herds (e.g., by helping with the construction of light bridges for people on foot and livestock).
- Support the creation of functional communication mechanisms aimed at facilitating pastoral mobility and decreasing the

risk of violent conflicts; for example, explore the possibility of replicating and adapting the experience of the Plateforme with improving communication between migration units and villages authorities before arrival (see above in Section 2.2.3 and footnote 45).⁴⁹

- Promote fora for dialogue among groups of producers, and between groups of producers and the local authorities, in Dar Sila and at the level of the Eastern Chad complex. The number of producers in the region asking for a climate of peace to carry out their business appears to be increasing, offering a valuable momentum.

3. Focus on innovation and adaptation.

- Explore ways of adapting the CAHW model to secure a better fit with the need for animal health services at the level of the migration unit and when livestock are not in the proximity of settlements. In particular, explore ways of training, supporting, and coordinating large numbers of CAHWs within the pastoral systems (i.e., actually training mobile herders, rather than the current practice of training village-based CAHWs who are not pastoralists themselves).
- Explore ways of securing continuity of health service to households moving between areas served by different health centers. For example, take advantage of the opportunities given by the spread of mobile phones in pastoral communities to replace paperwork (easily lost or deteriorated), or even to set up innovative ways of identifying service users and “accompany” them with the necessary information from a centralized data base (as already done in mobile banking).⁵⁰ There are many examples of innovative use of mobile technology to improve patient care,⁵¹ and any such initiatives in Chad should give particular attention to the needs of pastoralists.
- Explore ways to ensure coverage of children and adults with systematic polio vaccinations considering the particular conditions of mobile

⁴⁹ There is also relevant experience in Darfur by SOS Sahel and with negotiations in South Sudan—pre-migration conferences that have been very successful (Helen Young).

⁵⁰ In 2013, a mobile network operator in Chad (Tigo) was exploring options for introducing a distance health service (interview with Paul Langlois Meurinne, Tigo Cash Project Manager, March 8, 2013, Mission of Evaluation IED–AFD/Hydraulique Pastorale TCHAD, Annexes du Rapport Final).

⁵¹ According to the Africa Health Observatory of WHO, mobile health (or “mHealth”) services have been available since 2015 in Ghana, Kenya, Mozambique, Nigeria, South Africa, and Rwanda (AHO 2015). See also WHO (2017).

pastoral households; explore ways to better monitor this coverage.

- Support the exploration of innovative approaches to overcome the need to settle for securing administrative visibility and recognition of land development (e.g., using the opportunities offered by new technologies). This issue should be formally addressed in conversation with the Plateforme Pastorale.
- Use survey methods appropriate for mobile populations. An approach recently tested with mobile pastoralist populations in Afar, Ethiopia uses random geographic cluster sampling based on proxy indicators for population density to stratify, weigh, and sample a region based on the probability of finding pastoralist populations.⁵² Another methodology (tested in Mali and Ethiopia) uses the internal organizational structure of the pastoralist groups. First, key informants are used to identify groups of households that move together with their livestock (the methodology calls them “troupes”) and how they are socially or geographically organized. Once the troupes are identified, a traditional two-stage cluster survey is employed.⁵³ Any programs working in areas that include pastoralist populations need to adapt appropriate methodologies to include and capture information on these populations.

3.2 At the national level

1. Contribute to promoting the dialogue between pastoralists on one side and the state with its technical and financial partners on the other.

Accessing basic services, securing administrative visibility, and securing access to key livelihood resources should not be conditional on settling, and consequently come at the cost of reduced productivity and increased risk of impoverishment and conflict. As mobile pastoral systems are finally recognized as an important sector of the national economy and a potential asset against insecurity across the Sahel (Declaration de N’Djaména 2013; Déclaration de Nouakchott 2013), a “rebalancing”

of the relevant policy and legal environments is needed to correct the legacy of antagonism and technical exclusion. This process is a difficult and delicate one that can only succeed through an open dialogue between all the parties involved. Promoting, supporting, and monitoring such a dialogue at the national and regional level is a crucial contribution to the long-term goal of increasing the resilience of pastoral systems in Eastern Chad and by implication in Dar Sila. Integrate pastoralist-relevant indicators in the early warning system in real time (e.g., things that affect mobility).

2. Support the Pastoral Platform and the implementation of the Plan National de Développement de l’Élevage (PNDE) consistently with the National Pastoral Development Strategy (SNDP).

The effective and efficient implementation of the PNDE consistently with the SNDP requires a multi-stakeholder and multi-sector steering forum. The National Platform of Actors in Pastoral Development is such a forum: it already provides the interface between state and non-state actors concerned with public policies affecting the pastoral sector; it is ideally placed to build on the dynamics generated by the stakeholder meetings in N’Djaména (2013), Nouakchott (2013), and Niamey (2013⁵⁴). These consultations must be effective both in the formulation of public policies and in the level of direct interventions on the ground.

3. Strengthen the role of pastoral organizations in the ongoing process of developing the livestock sector.

Effective and sustainable development of the livestock sector can only take place in dialogue with the producers. The possibility and success of such dialogue depend on the existence of capable and dynamic pastoralist organizations. It is therefore in the interest of the state and its technical and financial partners to contribute to their strength. Technical assistance and financial support to capacity building of pastoral organizations are particularly needed with regard to the following dimensions: i. the ability to involve grassroots members in building their own vision and advocacy

⁵² Himelein et al. (2013).

⁵³ <https://www.alnap.org/system/files/content/resource/files/main/psm-innovations-case-study.pdf>.

⁵⁴ Conference de haut niveau “Sur la problématique de l’éducation en milieu nomade dans l’espace sahélo-saharien,” Niamey, December 2-5, 2013.

activity; ii. representation, especially in terms of their structure and the ability to combine and manage “unity and diversity;” iii. their ability to provide a set of services to their members; iv. their capacity to promote sufficiently autonomous financing systems.

4. Engage in advocacy.

Key themes for advocacy:

- With the Ministère du Développement Pastoral et des Productions Animales (MDPPA): to make operational and pastoralist-relevant *all* their decentralized technical services at the Dar Sila level (delegation, sector, and posts);
- With national government: to replace the 1959 Law on Nomadism. The pastoral sector (80% of the livestock sector) needs an updated legal framework, centered on the principle of securing strategic mobility and interconnectivity with other livelihood systems;
- With national government and local authorities in Dar Sila: to take into account, in all development policies, the need to support pastoral systems and secure pastoral strategic mobility—including looking at ways to adapt health information systems and health services to effectively reach mobile pastoralist communities;
- With the national government and its technical and financial partners, as well as with other relevant development actors: to generate consensus on the need to secure pastoral systems as a key step in a strategy to combat food insecurity, not only among pastoralists but at the scale of large socioeconomic networks like the Eastern Chad pastoral complex, therefore including groups not directly involved in livestock keeping, such as farmers and refugees.

Following the finalization of this study in April 2017, Concern Chad has used it to develop new activities, focusing on the prevention and management of conflict (see Annex 1).

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Annexes

ANNEX 1. After the study: What Concern did next

The study was originally completed and reviewed with Concern Chad in April 2017. This research helped the Concern team in Chad to more clearly understand pastoralist dynamics in the program area of Eastern Chad and identify several ways to better ensure that vulnerable pastoral and agro-pastoral communities are appropriately included in both Concern's resilience and, as required, emergency programming, in line with Concern's mandate.

One of the study's main findings was in relation to conflict between agro-pastoral and pastoral communities and farmers. There are strong traditional conflict resolution mechanisms in place to react to conflict incidents. However, to date traditional leadership structures, local state services, and NGOs often have not had time to analyze the conflict dynamics and to develop and implement measures to prevent conflicts from starting. Concern decided to address this finding first, because conflict between pastoralists and farmers threatens the sustainability of both their respective livelihoods. Pastoralists' mobility is disrupted by farmland encroaching on their migration routes. Farmers' production is disrupted by livestock damaging their crops. There are frequent tensions around the use of water points by both communities.

To begin to develop measures for the prevention and management of conflict, it is important that all those involved are able to assess its root causes. Based on recommendations from the research, Concern facilitated a two-day workshop on conflict analysis. Concern has borrowed and adapted simple participatory rural appraisal (PRA) tools for conflict analyses that Christian Aid developed for northern Kenya. The framework was tested in Chad during the two-day workshop, just prior to the September pastoralist migrations. Participants were diverse, including the Sultan of Sila, traditional chiefs and local authorities, NGOs, UNHCR and other United Nations (UN) agencies, and representatives of the federations of livestock breeders and of farmers. During the workshop, randomly mixed groups discussed the following:

- **Profile of the area:** Groups started by discussing the context in which they live and work to understand the agricultural and pastoralist systems in the region, what communities need to sustain pastoral and agricultural livelihoods, and the main locations of conflict incidents. To do this, they:
 - Mapped the area, including main conflict sites;
 - Created seasonal calendars that describe the rainy and dry seasons, agricultural production periods, and migration periods;
 - Described the economic profile of pastoralist and farmers.
- **Actors in the area and their implications in the conflict:** The groups then identified the types of communities and ethnic groups, leaders, authorities, organizations, and institutions, and their roles and influence in the conflict. Then the groups mapped out the power structures and relationships between each of the actors. We conducted this activity to understand who the conflicting groups are, who has the potential to influence the outcomes of conflicts, and how each of the actors can play a role in conflict resolution.
- **Conflict causes:** The groups then analyzed the conflict causes using tools such as problem trees. They identified root causes of conflict and the impacts of these causes. Then the groups returned to their maps of the area and identified where these root causes are located.

Through this process, the groups were able to:

- Suggest potential conflict reduction measures;
- Identify who could play a role in implementing these actions;
- Determine which actions are feasible based on resources.

Most recommendations focused on developing infrastructures that would satisfy the needs of farmers and pastoralists; for example, water points, livestock corridors, and livestock parking points. Participants noted that the key would be finding ways to ensure the pastoral and farming livelihood activities do not impede each other but rather work together again in a complementary manner.

During the group work, participants familiarized themselves with PRA⁵⁵ tools that they can use to conduct similar exercises within their organizations or their communities. A follow-up workshop focusing on conflict reduction measures will be held in January 2018.

“I have never had these meetings before with farmers and livestock herders together to discuss problems...This workshop has opened a spirit of reflection in me to see the possibility of having mixed committees to resolve our problems”

Souleymane Abdoulaye Issa, President of the Fédération d'Éleveurs de Sila (Livestock Breeders Federation of Sila)

“My hope is that this workshop is not the first nor the last. It is necessary that Concern considers enlarging this working to include both livestock breeders and farmers...in my opinion these exchanges are important...”

Marioma Mahamat Abdelkerim, representative from the Concertation des Producteurs Ruraux du Tchad (Rural Producers Federation of Chad) and president of Alboustan market gardening group

December 7, 2017
David Traynor, Concern Worldwide Chad

⁵⁵ Participatory Rural Appraisal.

ANNEX 2. Stratégie Nationale de Développement Pastoral (SNDP)

Axes généraux applicables au niveau national

Axes	Composantes
1. Garantir l'eau destinée à l'abreuvement des troupeaux	<ul style="list-style-type: none"> a) Mobilisation des eaux de surface (mares naturelles et artificielles). b) Mobilisation des eaux souterraines (puits, forages et stations, etc.). c) Sécurisation de la mobilité pastorale et l'accès à l'eau. d) Promotion de la gestion concertée des acteurs autour des points d'eau. e) Développement des mécanismes de suivi-entretien des ouvrages hydrauliques.
2. Améliorer le service de soins aux animaux et de conseils aux éleveurs	<ul style="list-style-type: none"> a) Opérationnalisation des services déconcentrés du Ministère de l'Élevage. b) Promotion de l'installation des opérateurs privés (santé, conseil, formations, etc.). c) Développement des pharmacies vétérinaires au niveau des communautés.
3. Faciliter l'accès aux services sociaux de base: eau potable, éducation et santé	<ul style="list-style-type: none"> a) Facilitation de l'accès à l'eau potable. b) Développement des approches adaptées pour l'éducation et formation des pasteurs. c) Facilitation de l'accès des pasteurs aux services de santé.
4. Développer la production animale et valoriser les produits de l'élevage	<ul style="list-style-type: none"> a) Promotion de l'installation des usines de production des aliments du bétail (État, privés, etc.). b) Développement des investissements en infrastructures publiques (marchés à bétail, aires d'abattage, abattoirs, infrastructures de transformation des produits animaux). c) Facilitation de l'accès aux financements des initiatives de production et de valorisation des produits d'élevage (activités génératrices de revenus, etc.).
5. Améliorer la gouvernance de l'exercice du pastoralisme	<ul style="list-style-type: none"> a) Amélioration et diffusion des textes régissant le secteur pastoral. b) Amélioration des systèmes d'informations et d'alerte sur le secteur pastoral. c) Renforcement des capacités techniques et organisationnelles des éleveurs.

General axes applicable at national level⁵⁶

Axes	Composantes
1. Secure the availability of water for the watering of herds	<ul style="list-style-type: none"> a) Harnessing of surface water (natural and artificial ponds). b) Harnessing of groundwater (wells, boreholes and stations, etc.) c) Securing pastoral mobility and access to water. d) Promoting the concerted management of water points by stakeholders. e) Development of monitoring and maintenance mechanisms for water infrastructures.
2. Improve animal care service and advice to breeders	<ul style="list-style-type: none"> a) Operationalizing Ministry of Livestock decentralized services. b) Promoting the shift to private operators (health, advice, training, etc.). c) Developing community-based veterinary pharmacies.
3. Facilitate access to basic services: drinking water, education and health	<ul style="list-style-type: none"> a) Facilitating access to drinking water. b) Developing appropriate approaches to pastoral education and training. c) Facilitating pastoralists' access to health services.
4. Develop animal production and marketing of livestock products	<ul style="list-style-type: none"> a) Promoting the creation of animal-feed production plants (State, private, etc.). b) Investing in public infrastructures (livestock markets, slaughtering areas, slaughterhouses, animal-products processing). c) Facilitating access to finance services for animal production and marketing (income-generating activities, etc.).
5. Improve the governance of pastoralism	<ul style="list-style-type: none"> a) Improving and disseminating the legislation governing the pastoral sector. b) Improving information and early warning systems for the pastoral sector. c) Strengthening the technical and organizational capacities of pastoralists.

⁵⁶ Unofficial translation made for this report.

ANNEX 3. Key local and national pastoralist institutions

Institution	Service/Directorate	Reference person	Position
Ministère de l'Élevage et des Productions Animales	<i>Direction Général du Pastoralisme et des Productions Animales</i>	Mbaidingatoloum Fidèle Molélé	Directeur Général
	<i>Direction d'Aménagement et de la Sécurisation des systèmes Pastoraux</i>	Abdellatif Fizzani Awad	Directeur
	<i>Direction des Organisation des professionnels de l'élevage et de la Formation des éleveurs</i>	Yousseuf Ali Djokordei	Directeur
	<i>Programme d'Appui Structurant de Développement Pastoral (PASTOR)</i>	Haroun Moussa	Coordonnateur
Ministère de l'Eau et de l'Assainissement	<i>Direction de l'Hydraulique Pastorale</i>	Koré Allafouza	Directeur
		Kanabé Bianbo	Directeur Adjoint
	PROHYPA	Brahim Taha	Coordonnateur
Ministère de l'Agriculture et de l'Irrigation	PAF	Djamal Al-Farouk	Directeur Général
	<i>Système d'Information sur La Sécurité Alimentaire et l'Alerte Précoce au Tchad (SISAAP)</i>	Allamine Allahbo	Base de données
Ministère de l'Enseignement de Base	<i>Direction de la Promotion des Écoles Nomades, Insulaires et Enseignements Spécialisés (DPENIES)</i>	Yousseuf Abdelkérîm	Directeur
Ministère de la Santé Publique	<i>Programme National pour la Santé des Populations Nomades, Insulaires et des Zones d'Accès Difficile</i>	Yousseuf Abdelkérîm	Coordonnateur
	CNC	Sana Doumgo Seveia	Point focal au MEPA

Institution (cont.)	Service/Directorate (cont.)	Reference person (cont.)	Position (cont.)
Professional organizations of producers	CONFIFET	Bichara Drep	Président
	<i>Confédération Nationale des Organisations des Éleveurs du Tchad (CONORET)</i>	Bichara Drep	Président
	<i>Confédération Nationale des Éleveurs Nomades du Tchad (CONFENET)</i>	Mahamat Nour Abdallah	SG
	<i>Conseil National de Concertation des Producteurs Ruraux du Tchad (CNCPRRT)</i>	Koliang Palebélé	Président
		Justin Amaktréo	Directeur des programmes
	<i>Association des Femmes Peules et Autochtones du Tchad (AFPAT)</i>	Hindou Oumarou	Présidente
		Aïssatou Oumarou	SG
APESS/RBM	Ahmat Aboulfathi Djibrine	Point focal au Tchad	
Civil society	APRODAIT	Madjioudou Louadam Louamaï	Président
	<i>Association de Médiation entre Cultivateur et Éleveurs au Tchad (AMECET)</i>	Nassinda Beldigam	Président
	<i>Association des Éleveurs Nomades du Tchad (AEN)</i>	Kadjidja Guirsimi	SGA
	<i>Association des Chefs Coutumiers et Traditionnels du Tchad (ACCT)</i>	Ali Mht Mahamoudi	SG
Plateforme Pastorale du Tchad	<i>Agence Française de Développement (AFD)</i>	Anne-Sixtine Vialle	CP
	<i>Délégation de la Coopération -Suisse (DDC)</i>	Mahamat Guihini	CP
	<i>Délégation Union Européenne (UE)</i>	Mahamat Hissein Tchéré	CP

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