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State Perspectives on Early Warning, Anticipatory Action, Emergency Response, and Social Protection in Pastoral Areas

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CONTENTS

1. INTRODUCTION

Most Sub-Saharan Africa pastoralists live in the Sudano-Sahel and Greater Horn of Africa countries (Nori, 2022). These are predominantly dryland areas, distinguished by significant fluctuations in rainfall, in terms of both timing and location, which create uncertainties in the availability of water resources and pastures for livestock (ibid.). Due to these environmental conditions, mobile pastoralism historically evolved as the central and most viable livelihood system, with the ability to transform high-variability inputs (e.g., water and pasture) into lower-variability outputs (e.g., meat and milk) (FAO, 2021b; Krätli, 2015).

Nevertheless, and despite the appropriateness of pastoral livelihoods to the ecological and climatic conditions, these regions have experienced a disproportionate share of recurrent famines and humanitarian emergencies. These crises have typically resulted from a combination of natural and man-made factors, including droughts, conflicts, displacement, and pandemics. While the specific nature and gravity of these crises have evolved over time, it is important to recognize that the crises are not isolated events. They are deeply rooted in historical and structural marginalization, and, in many cases, neglectful state development strategies (Jaspars et al., 2023).

Pastoralism as a practice has historically received more recognition and appreciation by governments in the Sahelian region than in the Greater Horn, although very few governments fully embrace pastoral regions or populations (Nori, 2022). With the exception of Somalia,[1] the relationships between pastoral groups and federal governments have been contentious in the Horn, where pastoralists have generally been seen as problematic populations for state-building projects, ones who are unable to pay taxes or respect national borders, and therefore are seen as unfit for state structures (Scoones et al., 2023). They are often considered a burden on the central state, except when they have made contributions to the overall gross domestic product (GDP): "a welfare bill and a security threat but a source of natural resources and trading profits" (De Waal, 2015, 73).

Some commentators argue that pastoralists are economically disadvantaged because "they are part of a wider class of producers with characteristics that leave them open to exploitation—numerous, small, geographically and politically marginal producers engaged in traditional, rainfed agriculture" (Behnke, 2012, 6). This, together with traditionally prejudicial viewpoints, have influenced governments' tendencies to make only negligible investments in pastoral areas, a tendency that some argue has been further exacerbated by structural adjustment programs and neoliberal development policies that encourage marketized and individualized practices over state-led policies (Scoones et al., 2023).

Therefore, historically, the state premise was that the practices of African pastoralism were backward, unscientific, inefficient, and ecologically irresponsible (Scott, 1998). Whenever substantial state investments were made, these were often done against the interests, needs, and priorities of pastoral communities and livelihoods. A substantial body of literature has provided evidence on the negative effects of these policies, particularly in dryland areas, and how they are also underlying causes of contemporary pastoralists' vulnerability (IDS, 2020; Leonard and Samantar, 2011). As a result of these and other factors—including repeated conflicts, protracted droughts, and population pressure—pastoral areas are highly susceptible to humanitarian crises.

Over the past three decades, however, countries like Kenya and Ethiopia have decentralized (or devolved) government functions to local-level structures, including in remote and marginal areas. This approach has been implemented either through counties or federal states, and it has entailed an increase in representatives from these areas serving district/county government positions, with more decision making happening at these levels. Some authors argue that this institutional approach has generated a more empathetic and

1 *The pastoral clans in Somalia are considered the "noble" clans, while the agropastoral Digil and Mirifle clans and the riverine "Somali Bantu" are the minority and marginalized groups. Interview with academic, November 29, 2023.*

inclusive governance system that better represents pastoralists' needs and priorities, engaging more with pastoral institutions and systems, including directing more resources into historically neglected areas (Rodgers and Semplici, 2023; Nori, 2022; Rodgers, 2022).

Recent state-owned policy innovations in some pastoral areas have also included the provision of responsive and flexible social protection (SP) programs (e.g., emergency cash transfers), subsidized livestock insurances, and the use of different technologies for emergencies. While there is still limited evidence on the impact of these policies and programs in pastoral areas in the Sudano-Sahel and Greater Horn of Africa countries, this desk review provides some initial findings and explores the extent to which the policies and programs are able to deliver effective emergency responses and overcome humanitarian and development silos while incorporating pastoral needs, priorities, and strategies.

This desk study reviews and discusses how the historical and lingering current reciprocal tensions between the state and pastoralist communities continue in many instances to hinder the recent transitions to state-owned policy innovations. It argues that better aligning the state and pastoral perspectives can further improve current policies and programs while providing potentially more sustainable development pathways. This desk study specifically and exclusively deals with state-level policies and programs and does not cover commercial programs.

2. METHODOLOGY

This desk study is based on both a literature review and key informant interviews. The literature review examines three types of interventions commonly used in the humanitarian sector: (1) early warning systems (EWS), (2) anticipatory actions (AA), and (3) emergency responses (ER). The desk study examines each of these interventions in pastoral areas specifically from the state perspective.

We have adapted our definitions of these three terms in light of how they relate to key state interventions. We conducted a literature review to systematically search a set of agreed search terms and "key words" such as "national," "state," "government," and "emergency" interventions in "pastoral" and "conflict-affected" areas. The literature review was then corroborated with 60 key informant interviews with academics, civil servants, and humanitarian officers, among others.

In terms of limitations, much of the available literature focuses on success stories of adequate state delivery of support for pastoralists in two countries: Ethiopia and Kenya. This is due both to the nature of these state systems vis-à-vis pastoralists and to the fact that there has been more overall research in and literature related to these two countries than many others. Whenever possible, the desk study aimed for a wider outlook by making reference to all the Sudano-Sahel and Greater Horn of Africa countries. That said, in a number of countries, such as Eritrea, where despite the relative size of the pastoral population, there is limited available information on the ways in which the state supports pastoral communities (Maxwell et al., 2021b).

3. STATE AND EARLY WARNING SYSTEMS

Over the past 30 years, the international humanitarian sector has heavily invested in better predicting future shocks through early warning systems (EWS). EWS are systems that aim to provide timely and accurate information to enable proactive decision making and responses that can mitigate or manage the impacts of shocks caused by climate events, conflict, pests, and economic crises. They can also monitor the effects of hazards to assess the degree of risks. These systems are meant to trigger both better preparedness and a timely emergency response (ER) to potentially reduce harm and losses.[2]

Globally, the EWS agenda is strongly supported by the UN Secretary-General's target, whereby everyone on Earth can be protected from "human-caused climate disruption"[3] by EWS (United Nations Climate Change, 2022). In this section, we will examine the history of national (state-owned) EWS in the Sudano-Sahel and Greater Horn of Africa, while looking at the degree to which current institutions and systems/programs incorporate the needs, priorities, and strategies of pastoral populations.

3.1 History of the Development of National Early Warning Systems in Africa

In the Sudano-Sahel and Greater Horn of Africa, the initial momentum to establish EWS came after the famines of the early 1970s, which the international community failed to recognize in time and respond to adequately (Buchanan-Smith and Davies,1995).[4] Between 1985 and 1990, more than eight new international EWS were established in the region, with the primary goal of providing information to donor organizations and UN food institutions. In some instances, such as in Ethiopia, these international efforts were parallel investments to the national development of EWS.[5] This section provides more information on and examples of these various systems.

In Sudan, there were no EWS before 1985. International donors introduced and provided EW information projects during the rehabilitation period that followed the 1984 famine (Buchanan-Smith and Davies, 1995). Similarly, in Turkana County in Kenya, international actors initially developed a local disaster preparedness and drought management system; Buchanan-Smith and Davies state that this system was in isolation from central state structures and governance (ibid.). These initiatives were mainly small pilot EWS, which were typically nongovernmental organization (NGO)-driven. Over time, they became increasingly executed in collaboration with governmental and sub-governmental institutions, though international actors continued to oversee and provided funding for the operation of national EWS in the majority of the Sudano-Sahel and Greater Horn of Africa countries.[6]

Two developments shaped the evolution of these early systems. First, the international community began to expand its EWS to have a more global reach. Established in the mid-1980s, United States Agency for International Development (USAID)'s Famine Early Warning Systems Network (FEWS NET) project currently provides early warning for over 30 countries around the world.[7] Although not an EWS per se, since the early 2000s, the

2 *To improve the efficiency and effectiveness of the ER, there has recently been an increasing reliance on new technologies such as remote sensing, satellite imagery, computational modelling, and artificial intelligence. The prediction component of the ER is generally called EWS.*

3 *https://unfccc.int/news/un-early-warning-systems-must-protect-everyone-within-five-years#:~:text=UN%20Climate%20Change%20News%2C%2023,United%20Nations%20target%20announced%20today*

4 *Ethiopia has the oldest national EWS, dating from the 1970s (Maxwell et al., 2021b).*

5 *Written comments provided by a practitioner, July 26, 2024.*

6 *Interview with academic, November 29, 2023.*

7 *https://fews.net/.*

Integrated Food Security Phase Classification (IPC)[8] initiative has used a collaborative process to make assessments of the current and anticipated food security situation in different countries, allowing comparisons across the world and providing warnings and projections of future risks, with the ultimate goal of prioritizing donors' funding.

Second, over the past twenty years, governments such as those in Uganda, Kenya, and Ethiopia have increasingly invested in the development of meteorological stations, including in pastoral areas, enhancing weather forecasting, and collecting longitudinal rainfall data and incorporating information on temporal distribution (number of rainy days). Kenya has established a National Drought Management Authority (NDMA), while Ethiopia has its EWS housed in the Ethiopia Disaster Risk Management Committee (DRMC). As we will see, these EWS are increasingly linked to their respective national social protection programs. Governments have also increasingly taken ownership and leadership/control of the national IPC process, convening local, national, and international actors when there are emergency levels of food insecurity or threat of a famine.

As a result, in some countries in the region, the current national EWS are a critical part of a complex ecosystem of analysis whereby the local, national, and international systems are institutionally distinct but interlinked in many ways. The local and national systems are able to ground truth their predictions through assessments and surveys, while the international systems are more reliant on what secondary data are available in country and their own analyses of remote sensing data. Expert staff move between the different agencies. In Kenya, the Meteorological Department, NDMA, Climate Prediction and Applications Centre (ICPAC), National Oceanic and Atmospheric Administration (NOAA), Centre for Humanitarian Change (CHC), and FEWS NET are all in constant contact with each other, complementing and triangulating each other's information, though sometimes arriving at different conclusions, thus creating/fostering fragmentation and leaving decision makers uncertain about the appropriate course of action. However, in other countries facing more challenges, such as Somalia, governments are far more reliant on international systems. This external reliance can result in tensions, particularly concerning the ownership of a nation's information and analytical system (Maxwell et al., 2021b).

3.2 Current National Early Warning Systems

It is helpful to examine the current national EWS across the Sudano-Sahel and Greater Horn of Africa countries in more depth to better understand some of their strengths and limitations. Kenya and Ethiopia have well-established national drought EWS (Sandström et al., 2020). In Kenya, the EWS is consistently and reliably run at the national level by the NDMA, established under the Ministry of Devolution and Planning in 2011 (ibid). NDMA is at the forefront in terms of EWS national leadership and governance and is staffed and managed by government personnel. It is funded by both the state and international donors. The NDMA's responsibilities encompass coordinating drought management structures, operating the drought EWS, facilitating the development of drought-related policies, and overseeing activities focused on reducing disaster risks. This has resulted in coherent national EWS that is not fragmented by multiple and conflicting information.

Ethiopia offers another salient example. In the 1990s, under the Ministry of Rural Development, the Disaster Prevention and Preparedness Commission (DPPC) was established as the main operator of the national EW network in collaboration with donors, with additional efforts in some areas coordinated by localized EWS and operated by international NGOs. The DPPC produced monthly forecast bulletins of numbers of people in need of emergency food assistance. The forecasts of estimated people in need of food assistance are a type of information that has been labelled as "prescriptive information" that implies goals and courses of action (Buchanan-Smith and Davies, 1995, 15). Since 2006, the Disaster Prevention and Preparedness Agency (DPPA) "has been linked to the Productive Safety Net Program (PSNP) as the response mechanism" (see section three) (Maxwell and Hailey, 2020, 14).

The national EWS in the regions face three distinct challenges: (1) complex political dynamics, (2) insufficient capacities (financial, personnel, technological), and (3) fragmentation.[9] The IPC

8 EWS around food insecurity in the Sahel revolve around the use of the Cadre Harmonisé as the basis for annual international response plans: https://www.ipcinfo.org/ch/.

provides an example of the complex political dynamics. Its methodology employs a consensus-based process, led by national governments with significant technical support from Food and Agriculture Organization of the United Nations (FAO), World Food Programme (WFP), United Nations Children's Fund (UNICEF), and some international NGOs. Reaching consensus—in an acute emergency—is an especially fraught process. Recently, in Ethiopia and South Sudan, findings and forecast supplied by the IPC were not trusted by the governments.[10] According to one interviewee, "The IPC model was a little bit of a victim of its own success, as it kept talking about institutionalization of the IPC as being one of its goals, and having the national governments take ownership. But when the government is party to a conflict and is therefore reluctant to accept findings—such as [in the cases of] South Sudan and Ethiopia—do you really want national ownership of the IPC?"[11]

States, in fact, are normally extremely reluctant to publicly declare a "famine" (Howe and Devereux, 2007; Lautze and Maxwell, 2007; De Waal, 1997). An ex-NDMA officer said: "You need to negotiate with politicians and county governments to convince them to declare an emergency."[12] Broadly speaking, states and governments do not want to admit that conditions under their administration have deteriorated to the point of widespread crises that include malnutrition and death (and neither do armed-opposition groups) (Maxwell and Hailey, 2020). In order to address this issue, states, civil society, and UN agencies have often carried out food security/vulnerability joint assessments (Sandström et al., 2020). These are important efforts to try to overcome issues of trust and of different/competing political incentives, either increasing the magnitude of the crisis ("crying wolf") or minimizing it. These efforts build on and enhance interagency collaboration.

Insufficient financial, personnel, and technological capacities also hamper national EWS. Their dependency on international support is explained by the fact that current international EWS are simply too costly, especially with regards to the administrative and bureaucratic expenses associated with information dissemination. These costs make them financially out of reach for most national governments in Africa (Scoones, 1995). This situation raises pressing concerns about the long-term sustainability of existing international EWS, and the complex challenge of transitioning these international systems to the governance, finance, and accountability of national actors, especially in conflict-affected, fragile countries where governance structures are weak (Buchanan-Smith et al., 2021). For instance, even the most developed EWS, Kenya's NDMA biannual rainfall assessment, does not use observational data from the Lodwar meteorological station in Turkana County, but rather relies on satellite-based rainfall products provided by FEWS NET (Sandström et al., 2020).

National EWS also face the challenges of fragmentation. In Ethiopia, data are collected manually, often leading to delayed analysis. Critics of the Ethiopian EWS allege that it lacks transparency in data sharing and standardization of norms, resulting in the creation of parallel systems by international actors and contributing to fragmentation and confusion (Maxwell et al., 2021b). Meanwhile, since 2012 in Kenya, the NDMA has assumed full responsibility for monthly drought bulletins, but other critical threats such as locust invasions and human epidemics (e.g., COVID-19) are not under its mandate, causing confusion.[13] Moreover, the potential for conflicting data between national and international EWS can further complicate issues of data quality and validation. For example, one UN officer from northern Uganda stressed, "While I think the Karamoja District Management Committee [technically supported by the FAO as part of the Pro-Resilience Action (PRO-ACT)[14] program] is more aware of the local food security situation in the region and I trust more the district early warning bulletins, we have to rely on the IPC analysis because donors want that external validation."[15]

Despite some positive examples, both national and international EWS in the Sudano-Sahel and Greater

9 Interview with international consultant, August 14, 2023.
10 Interview with academic, November 29, 2023..
11 Interview with academic, November 29, 2023.
12 Interview with academic, July 7, 2023.
13 Interview with academic, July 7, 2023..
14 https://www.fao.org/uganda/news/detail-events/ar/c/1471838/.
15 Interview with international humanitarian actor, Moroto, Uganda, November 21, 2023.

Horn of Africa face deep criticism. Buchanan-Smith and Davies wrote about these critiques in their 1995 book, *Famine Early Warning and Response: The Missing Link*. Despite the almost 30 years since publication, several interviewees for this project suggested that some of the underlying problems remain the same.[16] Foremost among these are not the EWS per se. It is whether they trigger action—either anticipatory or responsive (see sections two and three).

3.3 National Early Warning Systems and Pastoralists

In addition to these broader challenges, the national EWS have several important limitations in specifically capturing the needs, priorities, and strategies of pastoralists. Historically, these systems included an agricultural cultivation bias, focusing on potential crop yield or food availability rather than food entitlements (Buchanan-Smith and Davies, 1995). Even today, authors point out that in Sudan and Ethiopia, predictions are more accurate for communities engaged in crop cultivation as opposed to livestock husbandry (Maxwell et al., 2021b; Choularton and Krishnamurthy, 2019). In Eritrea, where one-third of the population is made up of (agro)pastoralists,[17] "government sources suggested that the primary end user of the national EW information are farmers" (Maxwell et al., 2021b, 8).

Often, EWS information is derived from agricultural production data collected by the national Ministries of Agriculture (Simonet and Carabine 2021; Maxwell et al., 2021b; Buchanan-Smith and Davies, 1995). Furthermore, in many cases, food stress is evaluated indirectly through the utilization of proxy indicators associated with food availability, allocating comparatively fewer indicators for food access and utilization. Relying primarily on metrics related to grain availability, rainfall predictions, and biomass production forecasts, these EWS often neglect crucial data on nomadic movements within pastoral communities and the rights of pastoral groups to access natural resources.

National EWS considered various factors including market conditions and used livelihood profiles to better understand the differential impacts on various groups, but they largely prioritized climate- and agriculture-based indicators over social and individual factors.[18] According to Maxwell et al. (2021a, 16), "Most countries have [national] EW systems that monitor meteorological hazards, agricultural production and or vegetation. Information on prices, pests, conflict, health factors, and displacement is more uneven. Food security EW is well-established. EW for WASH, health, and nutrition are less common." Importantly and in contrast to single-issue early warning systems, pastoralists manage various hazards simultaneously and must respond in real time to survive.

Both in Ethiopia and in Kenya, EWS, insurance products, and scalable social protection (covered in sections two and three) also rely on normalized difference vegetation index (NDVI) (Taye, 2023). One key critique of the NDVI system in Ethiopia raised by Taye (2022) is that the system assumes that drought affects all households in an area equally, and that drought is the main cause of food insecurity and suffering as opposed to the more multilayered drivers, including conflict and differential access to resources. In Ethiopia, for example, factors like conflict and land use change (among others) affect how pastoralists perceive and respond to drought. Scoones et al. (2023) and Taye (2022) point out that these factors are not included in the NDVI, which is based on a single indicator that measures forage availability due to rain failure.

Over time, investments have been largely directed to rainfall predictions as opposed to other fundamental hazards. Despite huge progress in this area, particularly visible in Kenya, in several countries rainfall information is provided only at the county level; it is not downscaled to specific locations, with the assessment report often coming after the rainfall season (Sandström et al., 2020). Given the level of rainfall variability and the need to respond in real time, both in drylands and more generally for pastoralists, the reliance on these narrow and standardized measures present/show major shortcomings (Scoones and Nori, 2023; Krätli, 2015).

The national EWS incorporate limited information on conflict, which is a critical factor in pastoral decision making (Maxwell et., 2021b). The Ethiopian

16 Interview with academic, May 2, 2023.
17 https://www.penhanetwork.org/where-we-work/eritrea/.
18 Levine et al. (2021) found a similar result in Somalia, noting that early warning systems primarily focus on agriculture-related hazards.

and Kenyan systems focus almost exclusively on climatic drivers, particularly on drought, as it is the largest single hazard in pastoral areas. The Ugandan PRO-ACT program is a multi-hazards EWS, which is an important innovation more attuned to pastoral indigenous ways to understand and act on multiple hazards at the same time, but it lacks the conflict component. Conflict is a serious issue in some pastoral areas, and conflict EW[19] (both national and international) lags behind in relation to systems that focus on climate hazards.[20] This is, in part, because states are often parties to conflicts and do not want data on these conflicts to be incorporated into national EWS and/or states to be held responsible for outbreaks of acute food insecurity or famines.

Despite the above limitations, some innovations are taking place. There have been several recent initiatives to "codesign" EWS with pastoralists, drawing on indigenous knowledge and combining it with more technological approaches. These efforts aim to build trust and create products that are more grounded in pastoral understandings and useful to everyday pastoral decision making. For example, the NDMA in Kenya is trying to integrate indigenous knowledge into the formal EWS. Two interviewees explained recent innovations. "We get information from Kenya Meteorological Department, and then package this information, along with the indigenous knowledge forecasts, into action that can be taken up by specific sectors. We coordinate and ensure that plans are put into place by local governments to help counter what is coming in the next season. Increasingly our budget prioritizes preparedness over response. We are trying to employ the anticipatory scenario planning by combining the scientific and the traditional—including opening up the goats to look at the intestines. Our aim is to integrate forecast with the scientific and the indigenous forecast."[21]

Another effort has focused on the dissemination of information in formats that are more relevant to the communities. These innovations are mainly led by international NGOs, in the form of small pilots. An instance of this is CARE International work in Niger and Kenya (CARE, 2017). Based on participatory scenario planning, CARE includes multiple stakeholders to "cogenerate" knowledge in order to provide more granular and updated information and overcome, in the case of Niger, extreme rainfall variability between villages (ibid.).

3.4 Discussion Section One

Through technical and technological interventions, EWS and their proponents often operate on an underlying assumption that futures are potentially controllable and outcomes can be predicted and calculated (Scoones et al., 2023; Scoones, 2019). This approach is particularly challenging in pastoral drylands, which are characterized by high levels of unpredictable variability (Krätli, 2015). Pastoral areas are "non-equilibrium systems" and pastoralists "must avoid risks by moving herds and flocks to make best use of the heterogenous" environment. As we will see in the next section, "[t]hey must destock and restock in response to droughts; they must seek economic diversification to support their livelihoods; and they must constantly negotiate "complex rights of access to grazing" land "and water resources" (Scoones, 1995, ix).

A recent body of literature suggests a different approach that acknowledges uncertainty and unpredictability as inherent and crucial aspects of pastoral livelihoods and that pastoralists' endogenous responses are "worthy" and potentially informative to national and international EWS. Instead of striving for exhaustive information—such as elaborate, technologically intensive and comprehensive assessments/surveys—what may be more effective before taking action in pastoral contexts is to deeply understand the indigenous survival strategies and embrace the reality on the ground. These realities include changing and diversifying settlement and livelihood patterns as pastoralism evolves in various ways based on location and population. No matter the amount and the quality of information collected through careful and nuanced methods, foreseeing and preparing for every conceivable outcome is not possible. Based on this review, one suggestion that emerges is to

19 Regional institutes such as the Intergovernmental Authority on Development (IGAD) through the Conflict Early Warning and Response Units (CEWERUs) lead on this agenda.
20 Interview with academic, May 2, 2023.
21 Interview with national humanitarian actor, Lodwar, Kenya, November 15, 2023.

proceed incrementally, through a process of learning that "codesigns" and incorporates lessons learned. This approach is known as adaptive management (Caravani et al., 2022; Scoones, 1995).

Based on our analysis, few national governments in the Sudano-Sahel or Greater Horn have so far adopted an integrated approach through which to develop consensus over hazards/shocks forecast.

The literature review found one exception where the NDMA and Kenya Meteorological Department have engaged with traditional or indigenous forecasters and sought to incorporate their knowledge into regular updates and alerts.

4. STATE ENGAGEMENT IN ANTICIPATORY ACTION AND RESILIENCE

It has been argued that timely interventions before a crisis unfolds are less costly than typical humanitarian programs (Cabot-Venton et al., 2012) and help mitigate the impacts on affected populations. In this section, we will examine state engagement in two types of interventions before crises in pastoral areas: anticipatory action and resilience.[22]

Multiple definitions of anticipatory action exist, with some defining it narrowly[23] and others taking broader, more all-encompassing approaches (Levine et al., 2020). For the purposes of this paper, anticipatory action refers to "[a] set of actions taken to prevent or mitigate potential disaster impacts before a shock or before acute impacts are felt" (IFRC, 2020, 171). In our use of this term, therefore, we include state activities that take place before a shock based on a forecast *and* activities that occur after or during a shock (e.g., drought, flood, conflict) but before a humanitarian crisis materializes.[24]

We also examine state-led resilience activities in pastoral areas. In this paper, these are defined as state-implemented actions in noncrisis periods that aim to reduce communities' risks to and enhance their ability to rebound from the impacts of hazards such as drought and other recurrent shocks that may negatively affect the lives and livelihoods of pastoralists in dryland areas. These activities are different from anticipatory actions because they are undertaken based on the risk of future shocks but before the forecast or occurrence of any specific hazard.

22 We acknowledge that there are many different definitions of these terms in use. We have defined them for the purposes of this paper to clarify their meaning and usage in this context.

23 World Food Programme (WFP)'s understanding of anticipatory action is an example of a very narrow definition, in which anticipatory action is when the transfer reaches the hands of recipient 3–7 days before the shock hits, triggered by a weather forecast (https://www.wfp.org/anticipatory-actions).

24 Sometimes a distinction is made between "anticipatory action," which is based on a forecast of a shock and "early action," which takes place after a shock has occurred but before a crisis has materialized. In this paper, both are covered under the term "anticipatory action."

4.1 Anticipatory Action

This section examines some of the anticipatory action programs implemented by states in pastoral areas, including destocking and state-subsidized livestock insurance.

4.1.1 Destocking

A traditional anticipatory action implemented by pastoralists has been the selling of livestock when they are still in good shape to mitigate in advance the possible negative effects of a shock. While the aim of this action is to reduce their herd size (through destocking) to be better prepared for the crisis, the decision is usually based on several factors, such as availability of shepherds (workforce), early signs of grass and water scarcity, and security concerns.

State provision of destocking programs has been minimal, with most interventions primarily implemented and/or funded by international actors. States have been involved with two major destocking programs: commercial and slaughter destocking. Commercial destocking aims to support pastoralists by purchasing animals at higher prices before their condition deteriorates, allowing them to minimize stock losses at the onset of a drought, secure enough income for food, and invest in protecting the rest of their herd (Levine et al., 2020; FAO, 2016).[25] Slaughter destocking occurs when the drought becomes an emergency. Animals are then slaughtered, and the meat is distributed to local/food-insecure households in either fresh or dry form or is disposed of (FAO, 2016; ILRI, 2010).

Aklilu and Wekesa (2002) discuss a commercial destocking initiative funded by international donors and implemented in northern Kenya amidst the 1999–2001 drought, off-taking approximately United States dollar (USD) 2 million worth of livestock. The central aspect of the response rested with the government, which assumed a pivotal role in coordination on a national scale. It chaired crucial entities such as the Kenya Food Security Meeting (KFSM), allocated substantial resources, rallied international backing through consistent engagement with donors and embassies, and formulated appeals for aid. Remarkably, the government departed from its usual method of disbursing food relief, opting instead for the community-driven targeting system led by WFP. Additionally, it actively incorporated technical insights from the EWS, marking a departure from its traditional practices (Akilu and Wekesa, 2002). While considered successful by some at the time in part for the government involvement, local stakeholders pointed out that the total value of destocked livestock was very small in comparison to a total estimated livestock loss of USD 80 million over the course of the drought. In this instance, international EWS supplied timely data to Kenyan decision makers, but the response was not timely enough or large enough to ensure a higher value of animals purchased through the offtake program. The lack of timely offtake occurred also during the 2008–2009 drought in Kenya, when the sight of trucks transporting dead or dying livestock was common (Devereux and Tibbo, 2013).

More recently, in Turkana County and other Kenyan arid and semi-arid lands (ASAL) counties, a slaughter destocking/animal offtake program was funded by the national government and lasted for about eight months, from October 2022 until July 2023. The "Animal Offtake Programme" was implemented by the Kenya Red Cross (KRC). KRC bought the livestock from pastoralists (incentivized destocking), slaughtered the animals, and distributed the meat to the poorest or most food-insecure communities. In total, KRC bought and slaughtered 20,000 animals (cows and goats) and distributed meat to about 66,000 households. The Ministry of Livestock set a national price of 3,000 Kenyan shillings (KSH) per goat (USD 23) and 15,000 KSH (USD 116) per head of cattle. The distribution of meat was accompanied with other foodstuffs, with implementation carried out by the KRC and other international partners.

According to one key informant interviewed about the recent destocking program in Turkana:[26] "At first, pastoralists resisted, saying that the price paid by KRC was very cheap" but KRC argued that it was higher than the market rates at the time. Limited funding meant that the program was unable to reach all those in need, and the informant felt that KRC should have done more to prioritize the hardest-hit

25 To note, this desk study does not discuss commercial destocking programs that have taken place outside the programmatic realm of the state.

26 Interview with national humanitarian actor, Lodwar, Kenya, November 15, 2023.

areas. This Animal Offtake Programme should not be heralded as successful early action because the worst of the drought was well underway by the time the program began. However, a substantial number of animals were bought and a large amount of cash was injected in the local economy, potentially with valuable (but as of yet unevaluated) contributions.

The Livestock Emergency Guidelines and Standards (LEGS) detail protocols for effective destocking, as part of a wider set of potential emergency interventions, including restocking activities, livestock feed and water supplementation, veterinary services (including voucher schemes), and livestock shelter and settlement (LEGS, 2023).[27] LEGS provides a range of options as guidelines for destocking depending on context.[28] These include support through indirect grants, such as subsidies to traders and truckers who facilitate offtake, or, more commonly, direct payment to livestock owners who bring their animals to a central location. The key to effective destocking is timing to ensure adequate animal health and value, in addition to involvement by pastoralist communities in the design of the destocking intervention (LEGS, 2023; FAO, 2016). In conversations in Turkana, a national humanitarian actor stressed the importance of sensitization and engagement of pastoral community members in order for destocking campaigns to be effective and accepted locally.[29] While LEGS have been to some extent incorporated in international humanitarian interventions, it is less clear from this desk study the extent to which national governments in the Sudano-Sahel and Greater Horn of Africa countries have adopted it.

4.1.2 State-Subsidized Livestock Insurance

National anticipatory actions include state-subsidized index-based livestock insurance (IBLI). IBLI aims to protect pastoral assets by paying insurance holders before livestock is lost to drought (Simonet and Carabine, 2021). In Ethiopia, index-based livestock approaches are normally privately operated commercial endeavors, such as those supported by the Oromia Insurance Company. In Kenya, a government-funded initiative implements IBLI models in parallel to the national social protection program (FAO, 2021a). While led by the government in Kenya and the private sector in Ethiopia, both of these programs still do receive technical support from the International Livestock Research Institute (ILRI) and various other international development agencies (Johnson et al., 2023). As such, they are not strictly state-led anticipatory actions.

Since 2010, there has been a growing interest in livestock insurance products, particularly in contexts with high risks of catastrophic/covariate disasters (Johnson et al., 2023; Scoones et al., 2023; Baker and Simon, 2002). Some national governments, international organizations, NGOs, and research institutions[30] argue that low-cost index insurance offers a potential solution to the challenges of drought and the high costs of repeated and extensive relief efforts. They also argued that through livestock insurances, the state can streamline its operations, reduce costs, and increase efficiencies (Johnson, 2022; Bastagli and Harman, 2015).

As an alternative to conventional indemnity-based insurance, which relies on statistical assessments of loss probabilities, supporters of IBLI argue that index-based parametric insurance offers a more streamlined approach (Taye, 2023). Under such arrangements, policy holders receive compensation when a predefined index related to expected losses falls below an agreed-upon threshold. In the case of IBLI, the index is associated with a decline in forage levels that are anticipated to lead to livestock mortality (Bastagli and Harman, 2015). This decline can be remotely evaluated through satellite imagery of grasslands and assessments tracked via NDVI. A drop below the threshold of the projected forage level in a given area after expected rains triggers insurance payouts. By design, the distribution of insurance funds is expected to encourage

27 Several of these wider Livestock Emergency Guidelines and Standards (LEGS) interventions—such as restocking and veterinary services—are covered in other sections based on the definitions of terms used in this study. In some cases, we could not find strong examples of state-led activities that correspond to these interventions, and they are therefore not discussed extensively.

28 In addition to destocking, the most recent edition of LEGS elaborates on the importance of livestock mobility and suggests ways interventions could support mobility. Some of these are in the form of anticipatory actions, such the protection of migratory routes or feed response programs before droughts. However, we did not find any state-funded or -implemented fodder bank intervention in these regions.

29 Interview with national humanitarian actor, Lodwar, Kenya, November 15, 2023.

30 This includes World Bank, World Food Programme, and ILRI, among others.

pastoralists to sell their animals, thereby alleviating pressure on the rangelands, and to hold onto the funds to repurchase animals once the drought has subsided. The payout amounts are determined based on the expected frequency and severity of drought events according to climate models, as well as the level of participation in the insurance scheme (ibid.).

The literature highlights a number of criticisms of this type of insurance. First, the basis of IBLI comes from settled agricultural contexts, particularly from payouts tied to yields of specific crops that can be more readily assessed. There have been queries raised about whether such insurance approaches might displace or undermine local/indigenous responses to drought (Watson, 2016). Second, these programs are voluntary for individuals who have the financial capacity, meaning uptake is often low and such programs do little in the way of mitigation or prevention for the most vulnerable. The Kenya Livestock Insurance Program (KLIP), for instance, launched in 2015, requires a minimal ownership of five heads of cattle; most participants are older male herders with above-average wealth (Taye, 2022; FAO, 2021c).

Third, in regards to the satellite forage assessment, some critics have asked whether a spatially distinct assessment of drought risk is appropriate given the mobility of pastoral populations, especially in a drought period (Jensen et al., 2017a). The reliance on remote forage assessment means that individual livestock losses are not directly assessed, and the difference between the measures from the models and the actual conditions on the ground can be quite large (Johnson et al., 2023; Bastagli and Harman, 2015). This is due to the fact livestock losses may be caused by several other factors beyond vegetation, such as impossibility to move animals, insufficient access to key resources such as vaccines or animal feed, lack of accessible water, and animal disease, among others (Taye, 2022). Fourth, insurance payouts depend on a remote scientific system, which may not be readily explained or digestible to pastoral communities. This requires the investors in insurance to trust the information they are receiving and the scientific process. When payouts do not occur because the NDVI did not drop below a given threshold, concerns are raised by pastoralists who may have experienced drought conditions and associated losses (Taye, 2022). In addition, payout levels can differ depending on the location and the different insurance providers; pastoralists may perceive these differences as arbitrary. These inconsistencies can erode trust and push some pastoralists away from participation in these insurance schemes (ibid.).

Unsurprisingly, there has been relatively low uptake of IBLI among pastoral communities in both Kenya and Ethiopia. Johnson et al. (2023) blame oversimplification of the design by planners, resulting in unrealistic assumptions based on individualism and index-based single-event crisis. They posit that state or private sector actors looking to implement IBLI should revisit these assumptions and focus on programs based on principles of collective ownership and response that are more supportive of existing solidarities and social networks (ibid.). Finally, it is important to acknowledge that insurance models are based on a long-term view of anticipated futures and a framing of risk in which the probability of future events is known or can be predicted. According to a body of recent literature, this model does not align with pastoral realities, which are more accepting of uncertainty and recognize unpredictability (Scoones et al., 2023; Scoones and Stirling 2020; Stirling, 2010).

4.2 Resilience

This section reviews the literature on the resilience efforts of state actors. Appropriate resilience interventions may put in place measures that mitigate vulnerability and protect against potential shocks and promote communities' abilities to bounce back after their occurrence, especially in contexts of protracted crises that affect pastoralists in the region. Our review here focuses on direct programmatic efforts as opposed to the policy and preparedness measures around resilience put in place at multiple administrative levels over the past several decades. In our review of these programs, we found only a few examples of state efforts in restocking interventions, whereas health services and infrastructure development were more common.

4.2.1 Restocking

Restocking is normally labelled as a rehabilitation or recovery program after shocks (FAO, 2016). However, in contexts of protracted crises and given

the increased frequency of shocks, they also fall within our broader definition of resilience programs implemented in in-between periods to strengthen a community's ability to absorb and rebound from the next shock.[31]

While most of the restocking programs have been implemented by NGOs, during the 1980s, states in the Sahel and East Africa initiated some restocking programs in response to severe droughts, disease outbreaks, or other shocks. Such programs are generally expensive and pose implementation challenges, including around cost and timing. Procuring animals during the dry season would be the most cost effective, but this timing coincides with unfavorable environmental conditions for distributing the restocked animals (Anderson and Broch-Due, 1999). Restocking programs should be conducted when there is enough fodder to sustain livestock if they are to have a chance of success (Toulmin, 1995).

As evidenced in Hassan et al. (2024), endogenous restocking programs are usually the most successful because pastoralists know when is the most appropriate time to restock. The authors show that locally managed and collective initiatives for restocking generally follow moral economy guidelines and can minimize livestock losses and enable pastoralists to bounce back more quickly, thus building resilience. Conversely, state and internationally implemented restocking programs can experience failures due to the high rigidity of their programs. According to an evaluation conducted by Heffernan and Rushton (2000), there is need for a more participatory approach to enhance restocking programs. For example, "Allowing pastoralists greater access to both regional and national markets could aid in counteracting the falling terms of trade during drought. Therefore, it is suggested that restocking strategies would be best put into practice by local communities themselves, with the facilitation of outside agencies" (116). Catley et al. (2013, 10), argue that restocking programs are "difficult to design and implement well," but, when put in place after droughts, "can help to shift pastoralists away from food aid, especially when drawing on traditional restocking systems."

Below we look at other resilience activities implemented by the state in pastoral areas, including livestock health services and infrastructure development, which are particularly important in crisis-prone areas (Levine et al., 2020).

4.2.2 Livestock Health Services

Since colonial times, in the Sudano-Sahel and Greater Horn of Africa countries, the central state has been deeply concerned about the impact of livestock diseases on meat and dairy production in pastoral regions. Past and present authorities have also worried about the transmission of animal diseases across international borders due to herd migration. Local communities at times express similar concerns about infection from animals moving into their areas. In Turkana (Kenya), for instance, pastoralists expressed concerns about unvaccinated Toposa animals coming in from South Sudan (Longoli and Iyer, 2023). Concerns about the spread of animal diseases may emerge in pastoral border regions not only from local communities but also in political rhetoric by leaders seeking to minimize cross-border migration of pastoral populations (Rodgers and Semplici, 2023).

Privatization of veterinary services has occurred in many countries with sizeable pastoral populations. Differences in the literature and in the views of experts highlight different motivations behind this shift. Nori (2022), for instance, argues that insufficient state supply of livestock health services led to the privatization of animal health and veterinary services, while another academic states that "the privatization of veterinary services aimed to rationalize service provision with the state handling public goods and the private sector handling private goods."[32] Despite the private sector engagement, "addressing livestock diseases has been an ongoing struggle, primarily because of the under-resourcing of state services and a lack of availability of private alternatives" (Tasker and Scoones, 2022, 973). This predicament is particularly pronounced in areas (both pastoral and otherwise) affected by recurrent emergencies and conflicts, where neither the government nor the private sector can consistently deliver adequate livestock health services (LEGS, 2023). On the other hand, there are examples of notable successes, including

31 This is an instance in which there are not clear/fixed boundaries between activities implemented before or after shocks or crises, blurring the definitional distinctions between terms.

32 Written comments provided by an academic, July 26, 2024.

the eradication of rinderpest in pastoral areas (e.g., Ethiopia, Kenya, and Eritrea, among others) through the work—in large part—of state veterinary services (Taylor et al., 2022). As another academic points out, this successful campaign brought not only improved animal health, but also an expansion of trade opportunities in pastoral areas by allowing for livestock exports.[33]

Unsurprisingly, pastoralists have many of their own strategies for managing pests and diseases among their animals, especially in regions where transhumance practices are common and herds are often found in remote places (Hassan et al., 2024; Longoli and Iyer, 2023). Over time, pastoralists have merged various knowledge sources, combining scientific (both through state and international support) and indigenous knowledge systems around disease management and treatment. This has led to the development of diverse hybrid knowledge networks that engage multiple mediators and intermediaries of knowledge (Tasker and Scoones, 2022).

Historically, state veterinary services were often designed around sedentary lifestyles or unchanging annual transhumant routes (Scoones, 1995). Where the state provides veterinary services in fixed locations, Waller (2012) points to the danger of these delivery models directly or indirectly encouraging sedentarization. To overcome this issue, in Turkana, for example, current veterinary services are mainly mobile (Griffith et al., 2020). Regardless of the delivery model, there are inadequacies and gaps in coverage in both state and private sector veterinary coverage, meaning that the impacts upon building resilience to shocks or crises have been relatively minimal, prompting all actors to seek for new options for the provision of animal health services (Tasker and Scoones, 2022).

One drought recovery program in Ethiopia, for example, provided vouchers for veterinary services in remote areas where private veterinarians were scarce. Government veterinarians played a supervisory role and collaborated with private veterinary pharmacies, community animal health workers (CAHWs), and local communities (FAO, 2011). CAHWs are often regarded as crucial actors connecting pastoralists to services, but they have experienced obstacles in some countries, including Uganda and Kenya, either because they are not fully recognized by the state, thereby potentially limiting their impact (Aklilu, 2016), or because the state veterinary services resist local or indigenous animal healthcare (Tasker and Scoones, 2022). Some practitioners, however, point that many veterinarians in pastoral areas privately run networks for CAHWs. While not state-supported and hence not investigated here, this implies the existence of a variety of national and market responses to meet needs, including for mobile herders.[34]

There are examples of cross-sectoral efforts in pastoral areas to take into account the embedded nature of animal health in the broader livelihoods systems. For instance, in Kenya, the NDMA plays a role in disease control, even though it is not the official authority on livestock or human diseases. The NDMA recognizes the interconnectedness of drought, livestock disease, and human health, often worsened by shared water sources, contamination, and rangeland degradation. The recent One Health program stands out as an integrated approach that emphasizes collaboration and considers the holistic health of people, animals, plants, and the environment, which is a key feature as livestock migration increases transboundary disease and pest risks (Longoli and Iyer, 2023). Although livestock health outputs have not yet been evaluated, One Health has been regarded successfully in Tanzania and Uganda in terms of communities' acceptance and efficiency, and on the overall increasing vaccination coverage among children (Griffith et al., 2020).

4.2.3 State Infrastructure Development

The failures of international aid in pastoral areas have been the focus of academic research and policy debates for the past 30 years (IDS, 2020; Catley et al., 2013; de Haan, 1994). At various points in the past, several donors (including USAID) expressed a desire to "give up" supporting development efforts in drylands (Catley et al., 2013; Anderson and Broch-Due, 1999; Scoones, 1995). According to Scoones (1995), repeated livestock development failures were in essence "equilibrium solutions for non-equilibrium environments" (ibid., 4), i.e., the (mis)application of projects designed for other

33 Ibid
34 Written comments provided by a practitioner, July 26, 2024.

contexts. More recently, however, the presence of ongoing large-scale and multiyear programmatic and research grants provided by USAID and other donors in pastoral areas (including in Uganda and Kenya) illustrates a desire to better understand and focus on the needs of populations in dryland areas.[35]

Modernization approaches based on technology transfer and infrastructural development such as ranch models, water dams, and irrigation schemes formed a major part of past and present national development policies and programs in many rural areas, including pastoral zones (Nori, 2022). Since colonial times, the rationale for these state interventions was the fear of famine and the costs associated with it in terms of relief and recovery operations (Caravani, 2017). The thinking was that increasing local food production (or achieving food self-sufficiency through cultivation) in pastoral areas would allow people to better cope with the impacts of droughts and associated food scarcity. Another state policy with a vision of "modernization" in pastoral areas was the settled ranch model. Although now mostly out of favor,[36] the group ranch efforts would have required careful management of the quantity and species of animals and grasses available within a confined area to achieve an equilibrium of these factors of production (Scoones, 1995). Range management interventions through fencing, rotational grazing, and introduction of new livestock species in highly unstable ecosystems such as drylands have consistently failed (Catley et al., 2013) due to the high degree of variability of water and vegetation from one season or year to the next. Although unsuccessful due to prevailing conditions, such efforts were (in some areas) one part of the drive towards the individualization of land tenure, with largely negative impacts on pastoral mobility schemes that rely on systems of collective tenure and shared resource management (Lind et al., 2020; Tache, 2013).

The Ugandan National Development Plan II (2015–2020) envisaged a water dam in almost every subcounty to mitigate drought impacts and potentially improve livestock health and the quality of livestock production in the long run (Nicol et al., 2021). However, most of the water dams funded under this initiative either dried up quickly due to overexploitation or collapsed because of a lack of maintenance by local communities and district offices (Egeru et al., 2023). The dams also resulted in high levels of overgrazing because herders were incentivized to stay in fixed locations (ibid.; Lind et al., 2020). In some instances, the presence of dams can contribute to conflicts between different ethnic groups; this has occurred among some groups in Karamoja due to Turkana migration to dams,[37] while others have maintained a peaceful coexistence around water sources. The ranch model and water dams typically do not boost livestock production, but they do offer the state greater control over the local population and indirectly encourage sedentarization.

Another common program used by state actors to enhance resilience to shocks in pastoral areas involves promoting cultivated agriculture through irrigation schemes. In Sudan, the Gezira irrigation project, established in former rangelands that were once home to the Beja herders, is the largest centrally managed irrigation scheme in the world and covers over 2 million hectares (Babiker, 2013). Mechanized/industrial agriculture has been promoted in other parts of Sudan and South Sudan, including Darfur (ibid.). While most of these schemes have failed to increase food production and prevent food crises, they have also been detrimental to pastoral livelihoods, causing deep vulnerabilities. A clear example of these man-made vulnerabilities is the dispossession or encroachment of dry season grazing land to facilitate the expansion of irrigation schemes, which, in drylands, frequently encompass some of the most fertile areas (Caravani, 2019; Fratkin, 1997). In Sudan, some scholars have argued that the government's creation of large-scale farms on land that once served as communal rangelands is a key driver of conflict.

4.3 Discussion Section Two

The literature illustrates how standardized or blueprint models implemented from the top that aim at increasing productivity and resilience to shocks are unlikely to work in highly variable and uncertain

35 These include, among others, the Growth, Health and Governance (GHG) program and the APOLOU activity (both USAID-funded five+ year interventions in Karamoja, Uganda), multi-donor support to the Karamoja Resilience Support Unit (KRSU), and Nawiri, funded by USAID in four northern Kenya arid and semi-arid lands (ASAL) counties.

36 Written comments provided by a practitioner, July 26, 2024.

37 Interview with national civil society officer, Lodwar, Kenya, November 14, 2023.

pastoral settings (Scoones et al., 2023; Krätli, 2015). The investment of time it takes to understand pastoralists' everyday practices may lead state and other stakeholders to overlook or misrepresent this local knowledge (Scoones, 1995) and adopt standardized and simplified solutions based on a modernization paradigm (Nori, 2022). In policy terms, this approach has often resulted in state investments being directed at intensive forms of pastoral production systems that require veterinary support in fixed locations, water dams, range management, and marketing infrastructures (Magnani and Ancey, 2022; Scoones and Graham, 1994).

However, the literature also demonstrates that there are some potentially appropriate anticipatory and resilience initiatives, such as destocking/restocking programs and livestock health services. When correctly implemented, destocking/restocking programs have the potential to be effective in supporting the strategies of pastoralists and in mitigating shocks. Similarly, national livestock health services are vital to enhance pastoralists' resilience. Unfortunately, due to insufficient funding and limited CAHW presence in some areas, these services are often ill equipped and thus reach few pastoralists. At the same time, livestock insurances so far have been struggling in terms of their capacity to be financially self-sustainable. Part of the reason is that triggers are largely defined by NDVI, which does not accurately predict risk of livestock death, causing low uptake among livestock owners. These challenges and limitations need to be overcome before these efforts can constitute truly appropriate and effective actions.

5. STATE EMERGENCY RESPONSES AND SOCIAL PROTECTION

State emergency response in pastoral regions has historically been lacking or implemented with major delays, mainly due to chronic underfunding, weak technical capacities, and complex political dynamics (Maxwell et al., 2021b; Buchanan-Smith and Davies, 1995). However, more recent investments and innovations have started to transform state responses in several countries in the Sudano-Sahel and the Greater Horn by incorporating many of the anticipatory and resilience learnings discussed in the previous section into more structured and systematic shock-responsive social protection programs.[38] This section briefly explores the history of national emergency response, from its initial focus on national food reserves to some of its more recent modalities, before turning to these newer developments related to social protection.

5.1 History of National Food Reserves

National emergency responses in pastoral areas in the Sudano-Sahel and Greater Horn of Africa countries emerged in the 1980s following major events such as famines, droughts, and floods. While international actors have historically been the primary implementers and funders, there are several cases in which national leadership played prominent roles. One such role was through the establishment of national food reserves.

In Darfur, a significant step in nationalizing emergency responses occurred after the 1985 famine and continued throughout the 1990s through the creation of a regional food reserve. In 2001, the food reserve was established at the national level; however, it became victim to complex political dynamics (Jaspars, 2018). Managed by Sudan's agricultural bank, the national reserve aimed to stabilize prizes while also catering to emergency food needs in the Darfur, Kordofan, and Blue Nile regions. However, the practical outcome fell short of stabilizing prices. Instead of buying grain at lower prices and selling it higher, the reserve did the opposite. Delayed purchases allowed middlemen to exploit lower prices at harvest, selling at higher rates to the reserve later. In addition, the reserve prioritized food aid to potential militia members, government employees, and urban populations. Overall, the government largely wielded the reserve for political motives, using food aid to secure or garner political support (ibid.).

In Ethiopia in 1992, the DPPC established a national food security reserve and other institutional measures aimed at expediting national emergency responses. However, the food reserve often did not have adequate food stocks or confirmed pledges to be able to lend out food. The DPPC was also in charge of coordination of humanitarian fund raising and response but the food requirements were often not met due to national constraints (Hammond and Maxwell, 2002). Ethiopia continues to operate strategic grain reserves at a reduced capacity.[39]

The Chadian government still maintains grain reserves under the National Office for Food Security (ONASA), buying millet when it is cheapest after the harvest and storing it, including maintaining storage depots in areas vulnerable to food insecurity. In times of difficulty, the government will release some of the grain at subsidized prices on the grain market. ONASA built storage facilities for fodder as well, with the plan to pre-position fodder to respond to crises in pastoral areas, but a national policy actor reported that many of these storage sites were in locations that were ill-suited to the pastoral populations. Recognizing this problem, as well as an overall failure to take into account mobile populations, the Ministry

38 It could be argued that shock-responsive social protection contains elements of both anticipatory action and resilience. However, since it also represents an evolution of state emergency responses to more systematically incorporate these approaches, we have discussed it here, while acknowledging its relevance to earlier sections.

39 Written comments provided by a practitioner, July 26, 2024.

of Livestock is pushing for more consideration of mobility in Chadian public services.[40]

Over the past twenty years, state responses have evolved from this principal focus on food reserves. Currently, most Sudano-Sahel and Greater Horn countries have a combination of traditional state emergency responses and social protection. We look at each of these in turn.

5.2 State Emergency Response

In the past in Sudano-Sahel and Greater Horn of Africa countries, the nation-state was distant and largely disconnected from the daily lives of many people residing in pastoral areas. In the past two decades, many of these countries have undergone political processes of decentralization and devolution. These institutional innovations have been central to improving state emergency responses such as the NDMA in Kenya (Maxwell et al., 2020). Besides Kenya and Ethiopia, there is still a high degree of fragmentation in the national governance of disasters in the whole region.

Devolution began in Kenya after the adoption of the 2010 constitution and led to an increase in resources for many historically marginalized counties in dryland regions. Key functions such as disaster management and livelihood supports were decentralized. Kenya established the NDMA in 2011, and key informants credit the agency with increasing the pace of drought responses. For example, in responding to the 2016–17 drought, the NDMA was able to act independently from line ministries or politicians because it had independent control of the drought contingency fund and direct access to donor funds. However, as we have seen earlier, a shortcoming of the NDMA is its focus on a single hazard (drought). Other government bodies handle other hazards, including climate hazards, resulting in some confusion and lack of coordination with regard to anything other than drought.[41]

Ethiopia is well-placed in its ability to systematically assess drought risks and protect people from the loss of lives, livelihoods, and income. National efforts to manage drought risks date back to 1974, when the Relief and Rehabilitation Commission (RRC) was established in the aftermath of the severe 1973 drought. In 1995, the RRC was transformed into the DPPC[42] (Ralston et al., 2017). Through the leadership of the DPPC, the government of Ethiopia provided emergency responses to remote pastoral areas affected by malnutrition and livestock losses by deploying trucks to transport water, fodder, and food relief (Hammond and Maxwell, 2002). Since 2000, the government of Ethiopia and NGOs have been transporting dry hay from the highlands to pastoralist areas as emergency relief during major drought episodes. This relief largely targeted nucleus herd protection (Tache, 2013).

But these efforts are often not tailored to the needs of pastoralists. When emergency assistance is provided by the Ethiopian state in pastoral regions, distribution points are normally set in fixed locations and among settled communities in order to reach more people in areas with low population density. Pastoral communities must move to these locations to gain access to relief services. Alternatively, they may choose to divide their families and adopt partially settled lifestyles in order to utilize the services available in more permanent settlements, such as trading centers or urban and peri-urban centers (IDS, 2020; Hammond and Maxwell, 2002). However, as an academic points out, many pastoralists in Ethiopia have already lost large numbers of livestock and are relying on non-livestock and/or more sedentary income streams.[43] The fixed location model of delivery may thus be less of a disadvantage to those in this category.

Some countries have specific protocols and systems for delivering aid to pastoral populations. A policy maker in Chad explained that there are two strains of emergency assistance provided by the government, one that supports humans in stationary sedentary settings and the other specifically targeting pastoral livestock.[44] However, according to this respondent, the Chadian government normally intervenes only when a crisis has already occurred and only provides

40 Interview with national civil servant, N'Djamena, Chad, September 5, 2023.
41 Interview with academic, May 2, 2023
42 The national disaster risk management (DRM) governance system changed dramatically. In 2004, DPPC was renamed the Disaster Prevention and Preparedness Agency (DPPA), and later in 2007 key responsibilities were passed to the Ministry of Agriculture and Rural Development and currently to the National Disaster Risk Management Commission (Ralston et al., 2017).
43 Written comments provided by an academic, July 26, 2024.
44 Interview with national civil servant, N'Djamena, Chad, September 5, 2023.

pastoralists with support for their animals (but not for their family members). In 2022, for instance, in a bad dry season, the government distributed animal feed but not emergency food relief. However, despite there being a specific track of assistance for pastoral assets, the policy maker felt that emergency responses in Chad do not generally factor in pastoral mobility. Resources are often offered in places where pastoralists are not located at that time of the year when assistance is supplied, and the timing does not always meet pastoralists' needs. Such mis-designed interventions can force pastoralists to choose between good management of their herd and access to emergency assistance, which effectively reduces the net positive impacts of the response. In turn, these contradictions and perverse incentives can cause further vulnerability to shocks.

5.3 Shock-Responsive Social Protection and Pastoralism

Social protection programs have become the new development paradigm in Africa, with a proliferation of schemes that are mainly funded by international financial institutions in combination with bilateral donors, designed to reach the most poor and vulnerable (Devereux, 2020; Hickey et al., 2020), especially where recurrent crises and persistent conflicts prevail (Caravani et al., 2022). In pastoral areas, the type of external assistance provided has gradually evolved from emergency relief protecting pastoralists against the risk of drought to workfare and feeding programs, and later to linking EWS to cash transfers programs through social protection (Hickey et al., 2020).

There is a general agreement in the literature that social protection programs in pastoral areas can maintain or save livelihoods, avert destitution, and potentially support those who wish to resume livestock keeping after a crisis (Devereux and Tibbo, 2013; Scoones, 1995). However, while an increasing number of pastoralists have benefitted from social protection programs, pastoral communities have been largely left out of national discussions on the design of social protection programs, and consequently they are in danger of having inappropriate mechanisms imposed on them (Ali and Hobson, 2009).

Over the past ten years in the Sudano-Sahel and Horn of Africa, there have been several attempts to make social protection programs more flexible and timelier in response to shocks. These are often referred to as shock-responsive social protection programs (SRSP). This programmatic shift attempts to bridge the gap (or nexus) between humanitarian and development interventions by, for instance, channeling humanitarian resources into existing national social protection systems.[45] The SRSP are widely known for their so-called vertical and horizontal mechanisms, whereby transfer values are either increased to existing recipients or extended to additional recipients who, for example, suffer from increased food insecurity as a result of drought (OPM, 2017). Potentially, SRSP may be able to respond considerably earlier than any international humanitarian actor.

Kenya and Ethiopia have the best SRSP programs in the Sudano-Sahel and Horn of Africa countries, with flexible social protection programs. These two countries' programs have adopted drought contingency planning to systematically manage drought risks in pastoral areas (Maxwell et al., 2021b). Ethiopia's PSNP is the largest social protection program in Africa. Designed in 2005 for the settled agricultural population of the highlands, it was expanded after 2010[46] to also cover the agropastoral and pastoral lowlands, including the Afar and Somali Regions. However, as is often the case when dealing with pastoralists, central planners transferred the same PSNP delivery model designed for farmers in the highlands to the pastoralists in the lowlands (Lind et al., 2022; Sabates-Wheeler et al., 2013).

The PSNP holds 20 percent of its budget as a contingency fund, 15 percent at regional level, and 5 percent at *woreda* (district) level (OPM, 2017; WB, 2013). In 2008, when the *belg* rains (short rains)

45 The Social Protection Interagency Cooperation Board (SPIAC-B) Working Group on Linking Humanitarian (Cash) Assistance and Social Protection is co-led by the International Federation of the Red Cross (IFRC), United Nations Children Fund (UNICEF), and Foreign, Commonwealth & Development Office (FCDO). It was formerly known as the Grand Bargain Cash Workstream Subgroup on Linking Humanitarian Cash with Social Protection. In November 2021, through a consultative process, the group became a SPIAC-B working group in order to enhance strategic alignments between humanitarian and development goals (www.socialprotection.org)..

46 The Productive Safety Net Program (PSNP) has been the first national social protection program in eastern Africa to expand into pastoral areas (Lind et al., 2022).

failed, the *woreda* contingency fund was released to extend the period of transfer payments from six to nine months and to register additional drought-affected recipients. This stands as an innovative and early example whereby social protection and emergency programming are working synergistically rather than in separate silos (Devereux and Tibbo, 2013). The literature here provides mix findings about the capacity of the PSNP to respond to severe droughts, whereby in 2011 it successfully scaled up (Ralston et al., 2017) and cost-efficient (OPM, 2017) but in 2021–22 it was not able to effectively respond (Maxwell et al., 2023). Beyond yearly response to droughts, the PSNP has being criticized firstly for being chronically late to respond to crises despite sufficient early warning signals (Maxwell et al., 2021b), and secondly for consistently underperforming in pastoral areas when compared to agricultural regions (Lind et al., 2022).

Lind et al (2022) argued that the PSNP could be more efficient and contextually appropriate by customizing targeting strategies in lowland areas through community-oriented approaches that take into account practices such as sharing and polygamy. Eventually, this adaptability could have the potential to increase the PSNP reliability when dealing with multiple and compounding uncertainties in pastoral regions (Caravani et al., 2022). However, a practitioner pointed out that the PSNP has focused on rural poverty for many years, but that some poor pastoralists reside in towns after having lost their animals and hence are left out of the recipient lists. Some recalibrations by the PSNP have taken place, "but targeting is still poorly done in pastoral areas."[47]

In Turkana County in Kenya, the national Hunger Safety Net Program (HSNP) is locally known as *Lopetun* (in abundance) (Akall, 2021). Since 2011, the HSNP has replaced state-provided food relief with unconditional cash transfers paid directly into recipients' bank accounts every other month to about 100,000 recipient households. More recently, the HSNP evolved to include a shock-responsive feature, with a capability to both extend transfers to more recipients and increase payment levels during severe droughts or other weather-related shocks. If activated, the HSNP emergency drought scalable component can cover up to 75 percent of the population in severe or extreme drought-affected areas (Merttens et al., 2017b). Despite this potential, most key informants interviewed in Turkana in November 2023 described the HSNP as having minimal reach,[48] beset by problems of coordination and communication, and primarily benefitting the elderly and extremely vulnerable. On the other hand, some evaluations of the HSNP revealed beneficial impacts for recipients, such as enhanced breastmilk production, improved child nutritional status as indicated by mid-upper arm circumference, and a positive association with sustaining mobile herding practices for those who are pastoralists (Jensen et al., 2017b). A similar finding is confirmed by a different HSNP evaluation (Merttens et al., 2017b), whereby regular recipients show a 4.5 percent increase in livestock ownership.

Telecommunications technologies such as digital payments have huge innovation potential on social protection delivery mechanisms (Devereux and Tibbo, 2013). While, in Ethiopia, the PSNP recipients are predominantly paid at government municipal offices (Donovan, 2013), digital payments could potentially benefit mobile pastoralists, provided they own/access mobile phones. Both Ethiopia and Kenya are at the forefront in the Sudano-Sahel and Greater Horn of Africa countries in terms of national state-owned systems, potentially capable of delivering timely and flexible emergency responses through their respective social protection programs. However, lack of funds, conflict (e.g., in Tigray[49]), and political will limited the functionality of these SRSPs, including during the 2020–2022 drought (Maxwell et al., 2023).

Beyond these issues, previous sections have highlighted the limitations of national EWS and use of the NDVI to monitor drought in pastoral areas. To enhance responsiveness and accountability, the HSNP uses the Vegetation Condition Index (VCI)[50] to

47 Written comments provided by a practitioner, July 26, 2024. 46 The Productive Safety Net Program (PSNP) has been the first national social protection program in eastern Africa to expand into pastoral areas (Lind et al., 2022).

48 According to Ouma (2020), the low coverage of the HSNP stems from the government's refusal to adopt a poverty-targeting model, which would have directed a larger share of resources to Turkana County. The government opposed this approach, arguing that distributing resources equally among all targeted counties was essential for promoting national cohesion.

49 The PSNP was discontinued in Tigray as the relationship between the regional government and the federal state deteriorated, before the war in the region started.

50 VCI is a remote sensing indicator to measure the status of grazing resources (Sandford et al., 2016).

trigger emergency responses (WB, 2020; Sandford et al., 2016).[51] While use of the VCI may improve responsiveness, the HSNP is designed to respond to single hazards, especially drought, and at times fails to reach the response threshold for even these single hazard events.[52] Various authors raise concerns as to whether it can reliably respond to more complex and multifaceted hazards, shaped by increasingly complex weather phenomena, conflict, and political issues (Maxwell et al., 2021b).

The final issue for SRSPs is targeting, which involves assessing either nationwide socioeconomic data or specific risk and vulnerability factors to identify individuals, households, or communities at risk or currently experiencing poverty or food insecurity. Several reasons have been identified in the literature to explain the challenges facing effective SRSP targeting in pastoral areas. The evidence indicates that targeting in these areas is particularly difficult for SRSPs due to: (1) the need for constant updates to recipient lists; (2) poverty lines not always aligning with vulnerability; and (3) the challenge of targeting either individuals or households.

Firstly, in order to supply assistance efficiently and in a timely manner, SRSPs must continuously update their household registries (Levine et al., 2020). However, maintaining updated registries of the most vulnerable in a context of high variability and uncertainty is a complicated and costly exercise (Caravani et al., 2022; Merttens et al., 2017a; OPM, 2017). As a result, increasingly sophisticated (or technocratic) targeting mechanisms have been implemented to allegedly identify the so-called "deserving poor" (Caravani, 2024). According to O'Brien (2020) and Secades and Solorzano (2023), the residual and technocratic approach embedded in SRSP models hides the fact that more regular and predictable transfers to all those in need may be a preferable policy option given the regular demand for assistance in pastoral areas. To date, states and international donors in the region have opted for limited/time-bound coverage.

Secondly, another challenge with targeting is that poverty and vulnerability are not necessarily the same. According to Jaspars and Shoham (1999), the poorest cannot be assumed to be the most vulnerable. Vulnerability implies insecurity in the face of risks, but the types of risks people face depend on the livelihoods, gender, age, race, class of the affected people, and the alternative strategies that they have. War strategies are often aimed at particular social, ethnic, or political groups, and it maybe they, not the poorest, who are most vulnerable. For example, the livestock assets on which pastoralist livelihoods are based can become life- and livelihood-threatening liabilities during conflict (Lautze and Raven-Roberts, 2006). Problems thus occur when targeting criteria are based on assumptions derived from stable contexts, and when criteria are unable to incorporate the political and uncertain dimensions of crisis into assessments of food insecurity (Jaspars and Shoham, 1999).

Thirdly, as demonstrated by Guyer and Peters (1987), the concept of households among pastoral communities is a western notion not applicable to a setting in which people exist in large family alliances much larger than a nuclear family. These alliances determine how livelihoods and resources—including assistance and transfers—are owned, exchanged, and shared collectively as opposed to individually (Caravani, 2017; O'Laughlin, 2014). Targeting at the household level therefore can result in an incorrect unit of analysis. In addition, neither individual nor household targeting fits well in contexts of communal, collective moral economies (Scott, 1977). As evidenced by Watson (2016) and Maxwell et al. (2011), relief meant for specific individuals or households is generally shared with a wider network of neighbors, friends, and relatives.

These challenges can lead to major inclusion and exclusion targeting errors in pastoral areas. For instance, there is consensus in the literature (see, for example, Caravani, 2024; Lind et al., 2022; Caravani, 2017; Silva-Leander and Merttens, 2016) that in Uganda, Kenya, and Ethiopia, national social protection programs include both the poorest and the better off, "targeting poor and non-poor individuals in roughly equal proportions" (Silva-Leander and Merttens, 2016, 15). In Ethiopia, this may have been because traditional leaders in the lowlands were involved in targeting processes and

51 NUSAF also employs NDVI for the Karamoja region (Fava and Vrieling, 2021).
52 Written comments provided by an academic, July 26, 2024.

in many cases determined who was included in the program, irrespective of targeting principles (Lind et al., 2022). These actions might not align with technocratic codes or the program's objectives to assist the most vulnerable. However, they have facilitated the program's expansion into regions with limited government presence such as in pastoral areas (ibid.). Similarly, in Karamoja in northeast Uganda, marginally better-off families are often included under the national social protection program—the Second Northern Uganda Social Action Fund (NUSAF2). This is because by playing a brokering role between the state and the recipients, they improve the acceptance and legitimacy of the intervention and create the assumptions for a successful program (Caravani, 2024).

The mainstream assumption of functioning SRSP is that state-controlled structures are in place to oversee the delivery of assistance, even at the subnational level, with the goal of minimizing the potential risk of bias and favoritism. However, the expansion of national and other large state-operated social protection programs into marginal regions (including most pastoral areas) that have historically had limited state services challenges this assumption.

5.4 Discussion Section Three

The expansion of SRSP in the Sudano-Sahel and Greater Horn of Africa countries is a systematic attempt to bridge the gap between humanitarian and development interventions and overcome issues of policy and program fragmentation and incoherence. SRSPs have the potential to enhance the responsiveness and flexibility of both emergency and social protection interventions in contexts of high variability and uncertainty such as pastoral areas. Particularly, national and local contingency funds are fundamental elements to enable timely and effective adaptations of standard national social protection programs to unexpected or sudden shocks. Additionally, offering more digital payment options better meets the needs and priorities of pastoralists, who are constantly on the move. In many ways, these programs represent a step towards governments adopting a more responsive, flexible pastoral perspective in an uncertain environment.

One critique highlights how social protection programs were originally designed for sedentary populations (Bastagli and Harman, 2015) and do not recognize some of the unique elements of pastoral livelihoods, especially the importance of mobility (Nori, 2022). This mis-design has generated a number of issues in pastoral areas; for instance, inappropriate and noncontextualized formal social protection delivery structures, which have replaced or at best undermined everyday pastoral practices, thereby weakening the social fabric and cohesion of pastoral communities, which have responded to extended members' needs and priorities for a long time (Watson, 2016).

This review of social protection programs illustrates the general lack of adaptation to local conditions and practices by such programs. There are tensions such as standardized definitions of sedentary households, fixed/static registry and payment modalities, and system incentives for individual forms of support (Scoones and Nori, 2023). Many of these are maladapted and detrimental features when dealing with pastoral institutions and livelihoods in drylands that depend on informal, moral institutions of mutual aid and communal management of resources (Hassan et al., 2024). Targeting relies on certain assumptions. Local perceptions of need and vulnerability might significantly differ from the standard criteria used by the ministry planners, which could be based on specific measures like poverty thresholds, asset ownership, or gaps in food production (Caravani et al., 2022).

In sum, in order to design and implement pastoral-sensitive social protection programs, there is a need to improve our understanding of the impact of social protection programs in pastoral areas, for which there is currently limited evidence (what exists is mainly from Ethiopia on the PSNP and from Kenya on the HSNP).

6. CONCLUSION

TABLE 1. Broad Contrasts Between State Intervention and Pastoral Practices. Adapted from PASTRES Workshop in Addis Ababa in March 2023.

THEMES	STATE EWS/AA/ER/SP PRACTICE	PASTORALIST PRACTICE
PROPERTY RIGHTS	Individual	Collectively owned across family/ larger groups
RESIDENCY	Static fixed-place delivery	Mobile beyond states
KNOWLEDGE	Top-down (scientific) and centralized information aiming for standardization	Rely on and mobilize multiple knowledges for variability
NATIONAL IDENTITY	Stable through ID cards/biometrics information	Contested and unstable
TRANSFERS	Individual/household	Collective between extended groups
CRISIS	Single crisis, event, e.g., "drought" risk	Multiple threats and unfolding compound uncertainty
IMPLEMENTATION	Coordination, simplification (stability), and managerial control	Navigating competing, unstable, and complex systems

The typical historical western characterization of the state in pastoral areas is often associated with fragility, weakness, collapse or failure, absence, and distance (Catley et al., 2012; Lind et al., 2022). The state lies in the background and almost disappears from the analysis as a key actor, especially among pastoral communities. The analysis of the state is paramount, however. As we have seen, through their centralized bureaucracies (structures and procedures), states tend to rely upon top-down knowledge and programs and prefer to simplify and standardize approaches to early warning, anticipatory action, emergency response, and social protection, in part due to underlying biases and to efforts to deliver complex services with limited resources. In contrast, the unpredictable situations and environments that define pastoral areas require fine-tuning and adaptation. As a result, state policies, strategies, and approaches have generally been biased towards sedentarized and cultivated agricultural contexts (Ali and Hobson, 2009), creating disconnects with pastoral practices (see Table 1 for a simplified summary of the contrasting approaches).

But this desk study also identifies some promising developments. Devolution has made states more aware of and responsive to local pastoral needs and perspectives. The partnerships between Kenya's NDMA and pastoral communities to codesign early warning provides a model for a different mindset. Similarly, destocking/restocking programs, sufficiently funded and hybrid livestock health services have the potential to address the needs and priorities of pastoralists in a more timely and appropriate manner. Also contingency funds for SRSP schemes begins to mimic the flexible, responsive approach to uncertainty that pastoralists have used for centuries.

Through the analysis of state-delivered early warning, anticipatory action, emergency response, and social protection, this desk study found that most interventions in pastoral areas are affected by misconceptions and disconnects. It follows that in order to address repeated failures, early warning, anticipatory action, emergency response, and social protection interventions need to be more attuned to pastoral settings. This requires a deep rethinking of world views and approaches, but some of the recent innovations provide hope that such a change in mindset is possible.

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