



**SPARC**

Supporting Pastoralism  
and Agriculture in Recurrent  
and Protracted Crises

ISSN 2977-9669

December 2025

TECHNICAL REPORT

# AGRO-PASTORALISTS' ADAPTATION TO FLOODING AND CONFLICT IN GOGRIAL EAST, WARRAP STATE, SOUTH SUDAN

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**How to cite:** Bak, C. (2025) *Agro-pastoralists' adaptation to flooding and conflict in Gogrial East, Warrap State, South Sudan*. Technical Report. London: SPARC Knowledge (<https://doi.org/10.61755/WTZI2592>).

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## About SPARC

Climate change, armed conflict, environmental fragility and weak governance and the impact these have on natural resource-based livelihoods are among the key drivers of both crisis and poverty for communities in some of the world's most vulnerable and conflict-affected countries.

Supporting Pastoralism and Agriculture in Recurrent and Protracted Crises (SPARC) aims to generate evidence and address knowledge gaps to build the resilience of millions of pastoralists, agro-pastoralists and farmers in these communities in sub-Saharan Africa and the Middle East.

We strive to create impact by using research and evidence to develop knowledge that improves how the UK Foreign, Commonwealth & Development Office (FCDO), donors, non-governmental organisations, local and national governments and civil society can empower these communities in the context of climate change.

## Acknowledgements

This report is published through the Supporting Pastoralism and Agriculture in Recurrent and Protracted Crises (SPARC) programme, which is supported by the United Kingdom's Foreign, Commonwealth & Development Office (FCDO).

The author wishes to thank the research assistants and enumerators who defied severe flooding to collect the data presented in this report. My warm appreciation also to the key informants, community leaders and households who agreed to be interviewed and to share their experience and knowledge that are central to the findings of this study.

I would also like to thank Adrian Cullis for his mentorship and support during the development of the research proposal, the fieldwork, and for his comments on the draft paper.

Finally, I extend my appreciation to the Supporting Pastoralism and Agriculture in Recurrent and Protracted Crises (SPARC) team, which supported this research project. Special thanks also go to Guy Jobbins and Pauline Njiraini, as well as to Julie Grady Thomas, along with Deborah Eade for copyediting, Steven Dickie ([squarebeasts.net](https://squarebeasts.net)) for design and Rebecca Owens for proofreading.

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# ACRONYMS

<b>BQ</b>	black quarter
<b>CBPP</b>	contagious bovine pleuro-pneumonia
<b>EWS</b>	Early Warning Systems
<b>FGD</b>	focus group discussion
<b>GoSS</b>	Government of South Sudan
<b>HS</b>	haemorrhagic septicaemia
<b>IDP</b>	internally displaced person
<b>IPC</b>	Integrated Food Security Phase Classification
<b>IRNA</b>	Inter-Agency Rapid Needs Assessment
<b>KII</b>	key informant interview
<b>NA</b>	non-applicable
<b>NGO</b>	non-government organisation
<b>PW</b>	Pathuon West
<b>RRC</b>	Rehabilitation and Relief Commission
<b>SPARC</b>	Supporting Pastoralism and Agriculture in Recurrent and Protracted Crises
<b>TE</b>	Toch East
<b>UNOCHA</b>	United Nations Office for Coordination of Humanitarian Affairs



# EXECUTIVE SUMMARY

Agro-pastoralism remains the cornerstone of livelihoods for most ethnic communities in South Sudan, a practice that long predates independence in 2011. In Gogrial East County, which is inhabited mainly by the Dinka agro-pastoralist communities, livelihoods depend on a combination of crop farming and seasonal livestock keeping. Livestock serve multiple purposes, including sustenance, payment of dowry and debts, and as a measure of wealth and social status. However, climate change and communal conflicts have significantly exacerbated the challenges these pastoral communities are facing. This study was commissioned to explore the perspectives of agro-pastoralist men and women on the nature and impacts that climate change presents – specifically floods, cattle raids, and conflicts – on families and communities in Gogrial East, particularly in Toch East and Pathuon West. The research examined how communities have adapted their crop-farming and livestock-keeping systems to cope with these challenges.

The study used a cross-sectional mixed-methods approach, including a household survey across the two *payams* (the second-lowest administrative unit in South Sudan), focus group discussions (FGDs), and key informant interviews (KIIs). Simple random sampling was used to select participants for the household survey and FGDs. For the KIIs, cattle camp leaders, *payam* and county officials and humanitarian workers were purposively selected based on their roles and positions.

Regarding climate change, participants confirmed that the frequency and severity of flood events have increased since 2018, affecting both lowland and highland villages such as Ajogo, Malial, Mayen Jur, Pinydit, Magol, and Luanyaker. These extreme weather events have led to greater livestock mortality, outbreaks of human and livestock diseases, reduced livestock productivity, destruction of farmlands and shelters, and restricted access to markets, veterinary services and humanitarian support. Pastoralists' migration to highland areas to escape floods has also caused minor conflicts with crop farmers. In response, agro-pastoralists reported using strategies such as migrating to highland areas, splitting up their herds to prevent disease, preventive vaccination and treatment of livestock, and constructing low earthen dykes around cattle camps and farmlands to mitigate the impact of floods.

Given Gogrial East's geographical location, situated between different ethnic groups such as the Nuer of Mayom County and the Dinka groups of Malual Wau, Aguok of Jur River and Gogrial East, agro-pastoralists reported exposure to ethnic conflicts. These conflicts are fuelled mainly by the desire to acquire more cattle, disputes over borders, water and grazing territories, cattle theft, marriage disputes, a culture of revenge, historical tensions and political manipulation by elites. Participants noted that these conflicts have resulted in significant loss of livestock and lives, particularly among young men, restricted access to veterinary services and markets, and a disproportionate impact on women, who are targeted in revenge killings due to their perceived value as assets. Adaptation strategies include the formation of armed youth defence forces (*Gelweng*), herd splitting to minimise the likelihood of disease, altering cattle-migration patterns, and limiting how many women travel to cattle camps.

The study established a relationship between floods and conflict, noting that cattle raids and border clashes peak during the dry season, with minimal conflict during the flood season. Floods create natural barriers, making travel across territories difficult and reducing the occurrence of conflict.

# 1. INTRODUCTION

In 2011, South Sudan became the world's youngest nation, marking the end of over 20 years of civil war with Sudan. The vast majority of South Sudan's population of 12 million depend on producing crops and rearing livestock and many are agro-pastoralists (Chekorah, 2012).

The Dinka are one of South Sudan's largest ethnic groups and live mainly in Bahr Ghazal and Upper Nile regions. They are agro-pastoralists and combine seasonal cropping with rearing mobile cattle, sheep and goat. The importance of cattle remains paramount, however, as these play a central role in family and extended networks, and are the basis of dowry payments, debts, and a measure of wealth and status (Cullis, 2021). The importance of cattle is also reflected in the richness of the Dinka's cattle-related vocabulary, which allows for the accurate identification of each animal by name, colour, sex, age, lineage and productivity. Customary livestock health specialists (*ran wal*) can also describe in considerable detail a range of livestock diseases .

Although livestock are traditionally kept for subsistence needs, status and dowry, the Dinka herders have increasingly become engaged in livestock marketing as a way to generate income (Stites, 2023). Households owning 500 to 800 cattle are classed as wealthy, those with 200 to 400 are regarded average, while households owning only two to five cattle are considered very poor (Cullis, 2021). Among the Dinka, labour is divided along gender lines with men managing cattle herding and cultivation, using tools such as hand hoes, while women are primarily responsible for growing crops (weeding), cooking and drawing water (Stites, 2023).

Since around 2018, South Sudan has experienced devastating annual flooding that has led to a continuous humanitarian crisis (Humphrey and Stites, 2023). For example, in 2022 an Inter-agency Rapid Needs Assessment (IRNA) report confirmed that floods had destroyed thousands of acres of field crops, cut off communities and disrupted markets, and resulted in the loss of thousands of livestock. In Warrap State, it was estimated that 90,000 people were affected, with many households categorised under IPC 3 (crisis) (RRC, University of Juba and UNDP, 2022). In 2024, the Government of South Sudan (GoSS) as well as international agencies warned of looming floods. This forecast proved accurate and several counties in Warrap were severely flooded (OCHA, 2024). Climate change is now a major challenge for South Sudan, as floods and drought have become more common in the last five years.

In addition to floods, agro-pastoralists also face conflict that predominantly includes the Dinka, Nuer, Murle and other pastoral tribes from Greater Equatoria region, such as the Taposa, Buya, Didinga and Mundari. These ethnic groups fight for control of seasonal grazing and water and the migratory routes that join them, fishing territories, and to accrue cattle (Catley, 2018). Historically, young men fought with spears, machetes, bows and arrows but, for many years, these have been replaced by semi-automatic weapons, and other sophisticated military-grade weaponry. Conflict in South Sudan has also been politicised by the political elites and governing class (Wild, Jok and Patel, 2018; Wunrok, 2018).

The study aimed to explore with agro-pastoralists' perspectives – women's as well as men's – on the nature and impact of flooding, cattle raiding, and conflict on family and community life in Toch East and Pathuon West *payams*, Gogrial East County, Warrap State and to hear from them about how they have adapted their cropping and livestock-production systems accordingly. The author is from Gogrial East County, and SPARC funding offered him an opportunity to explore these issues in detail.



## 2. METHODOLOGY

This section presents information on the study site, sample size and the quantitative and qualitative data-collection methods.

### 2.1 Study site

The study was conducted in Toch East (TE) and Pathuon West (PW) *payams*,<sup>1</sup> and Gogrial East County, Warrap State, as the communities in these and neighbouring *payams* – Toch North, Nyang, and Pathuon East – were among the most severely affected by the 2022 and 2024 floods (OCHA, 2022; RRC, University of Juba and UNDP, 2022; OCHA, 2024). Following the 2024 floods, 47% of households in South Sudan, including Gogrial East, were classified under Integrated Phase Classification 3 or Crisis (OCHA, 2024). Furthermore, Gogrial East County borders Mayom County in neighbouring Unity State, a border that has experienced one of the highest number of large-scale cattle raids between neighbouring states in South Sudan.

Gogrial East County was therefore an opportunity to explore the impact of both flooding and conflict, whether their aggregated impacts exacerbated negative livelihood outcomes, and how agro-pastoralists were adapting their livelihood systems in response.

### 2.2 Sample size

The quantitative survey comprised a sample of 100 interviewees, with 50 interviews conducted in each of the two *payams*. Sample interviews were randomly selected using the following approach: research assistants went to four village markets, spun a bottle five times and followed their direction to select 50 households. In each case, 10 households were left between sample households, so that people living at different distances from the market were interviewed.

To ensure a gender balance, it was planned that the research assistants would interview alternate men and women from the sample households. This proved difficult, however, as the men were typically away from home in the daytime; women comprised 52% of the survey sample in Pathuon West and 52.2% in Toch East.

In addition, it was planned to conduct 10 focus group discussions (FGDs) and six key informant interviews (KIIs) in each *payam*.

TABLE 1. SAMPLE SIZE AND METHODS USED

Methods	Topics addressed	Target total
Individual surveys	Household demography, flooding, and conflict	100
FGDs	Flooding and conflict	20
KIIs	Flooding and conflict	12

Source: Author's data

<sup>1</sup> In South Sudan, a *payam* is an administrative unit, rather like districts in some neighbouring countries.

TABLE 2. TYPE AND COMPOSITION OF THE FOCUS GROUPS

Type of focus groups	Number	Number of participants	Sex of participants	
			Men	Women
Grazing managers	5	40	16	24
Cattle camp security personnel	2	16	16	0
Cattle camp leaders	4	32	32	0
Older women	2	16	0	16
Younger women	2	16	0	16
Older men	4	32	32	0
<b>Totals</b>	<b>19</b>	<b>152</b>	<b>96</b>	<b>56</b>

Source: Author's data.

The KIIs included a range of cattle camp leaders, local or *payam*-level leaders, county-level leaders and a humanitarian actor, as indicated in Table 3. Since cattle camp leaders are always men, despite the study team's commitment to gender equality, it was difficult to identify women key informants. Furthermore, the sole non-government organisation (NGO) involved in livestock development in Gogrial East had only male livestock officers and again it was not possible to interview a woman staff member.

In total, 163 people were interviewed across 19 FGDs and 11 KIIs, of whom there were 107 men and 56 women.

TABLE 3. TYPE AND COMPOSITION OF THE KEY INFORMANT INTERVIEWS

Type of KII	Number	Sex of Participants	
		Men	Women
Camp leaders (Majok-wut)	5	16	24
Local Leaders – <i>payam</i> level	2	16	0
Local leaders – county level	4	32	0
Humanitarian actors	2	0	16
<b>Total</b>	<b>11</b>	<b>11</b>	<b>0</b>

Source: Author's data.

## 2.3 Data collection

Research assistants attended a training workshop held in Luanyaker (Pathuon West) on 29 November 2024 to use the Kobo Collect digital platform and Excel (pivot tables) for the individual quantitative surveys, and Dedoose software to code and analyse the qualitative survey finding. Following the workshop, the research assistants and enumerators carried out a supervised quantitative and qualitative pilot in a non-sample area to test the methodology and to refine their data-collection skills.



### 2.3.1 Quantitative data collection

Of the planned 100 individual interviews, 96 were successfully completed: Pathuon West (50) and Toch East (46), as four surveys in the latter did not meet the quality criteria and were disregarded in the analysis.

### 2.3.2 Qualitative data collection

Of the 10 FGDs planned in each of the two *payams*, five were to focus on flooding, and five on conflict. Unfortunately, it was not possible to organise one of the planned FGDs on conflict in Pathuon West *payam* because of logistical difficulties. In contrast, all KIIs were interviewed on both flooding and conflict, although one of the KIIs was cancelled at the last moment due to illness.



Focus group discussion session with young women, Toch East. © Chol Bak

# 3. RESEARCH FINDINGS

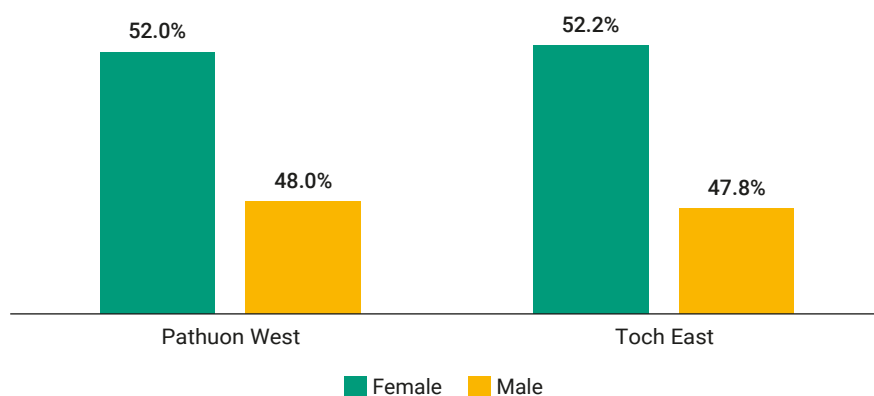
This section presents the findings of the household surveys, FGDs and KIIs. Following the presentation of basic household data, the findings are presented under two themes: flooding and conflict.

## 3.1 Household demographic data

From the successful surveys, the demographic information that was recorded was as follows:

- Sex:** Women comprised 52% and 52.2% of the sample size in Pathuon West and Toch East, respectively, compared with 48% and 47.8% who were men, as presented in Figure 1.

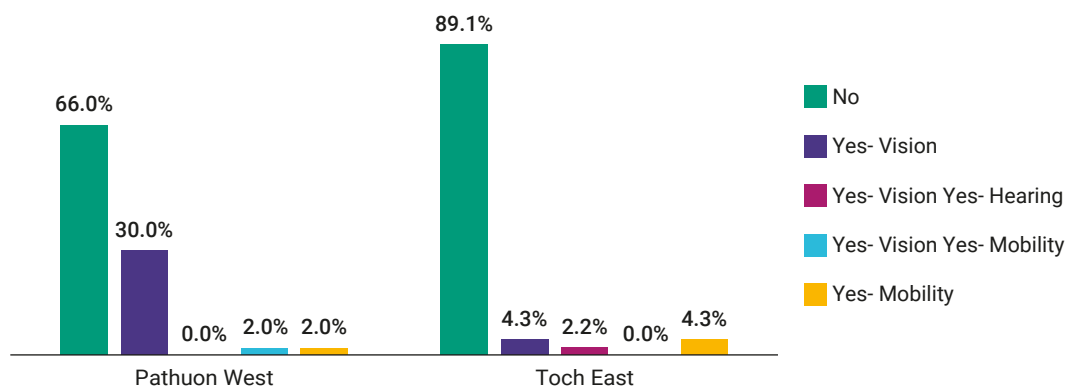
FIGURE 1. HOUSEHOLD SURVEY FINDINGS – SEX OF RESPONDENTS



Source: Author's data.

- Age:** The average age of the interviewees was 41 years in Pathuon West, and 37 years in Toch East; 43% of the survey participants were also youths (up to 35 years).
- Disability status:** Overall, 77% of the household survey respondents reported themselves as able-bodied, while 21% reported impaired vision, 4% impaired mobility and 1% impaired hearing. Some interviewees reported more than one disability. The information collected on disability is presented in Figure 2.

FIGURE 2. HOUSEHOLD SURVEY FINDINGS – DISABILITY STATUS



Source: Author's data.



## 3.2 Flooding

### 3.2.1 Frequency of flood events

The quantitative household survey confirmed that all men and women in Toch East and Pathuon West *payams* had experienced some degree of flooding, as had the participants of the 10 flood-focused FGDs. All interviewees in both the household survey and the FGDs also confirmed that the frequency and severity of flood events had increased significantly from around 2018, with all interviewees confirming that flood water no longer inundated only lowland areas, and that more highland villages were also affected, including Ajogo and Maliai (Toch East), Mayen Jur (Nyang) and Pinydit (Toch West), Luanyaker (Pathuon West) and Magol (Toch North).

Some interviewees commented on floods:

Sometimes, it rains and then we go quickly to cultivate. After planting the rain may stop for a month, or two months and the fields start to dry. Then the rain returns, but these times, the rains is frequently followed by floods, the fields are flooded and the crops are lost. Heavy flooding is now becoming common. (Elders FGD, TE)

### 3.2.2 Impact of flood events on livelihoods

The household survey respondents identified a range of flood-related impacts, including loss of livestock (98% of interviewees), an increase in livestock diseases (96%), reduced milk production (80%), slower calf growth (32%) and an increase in conflict (22%). Disaggregating livestock disease, the household survey confirmed an increase in several major diseases including: anthrax (*Joknhiak*), contagious bovine pleuro-pneumonia (CBPP) (*Abuot pou*), black quarter (BQ) (*Machou*) and haemorrhagic septicaemia<sup>2</sup> (HS) (*Abuot rol*)<sup>3</sup>

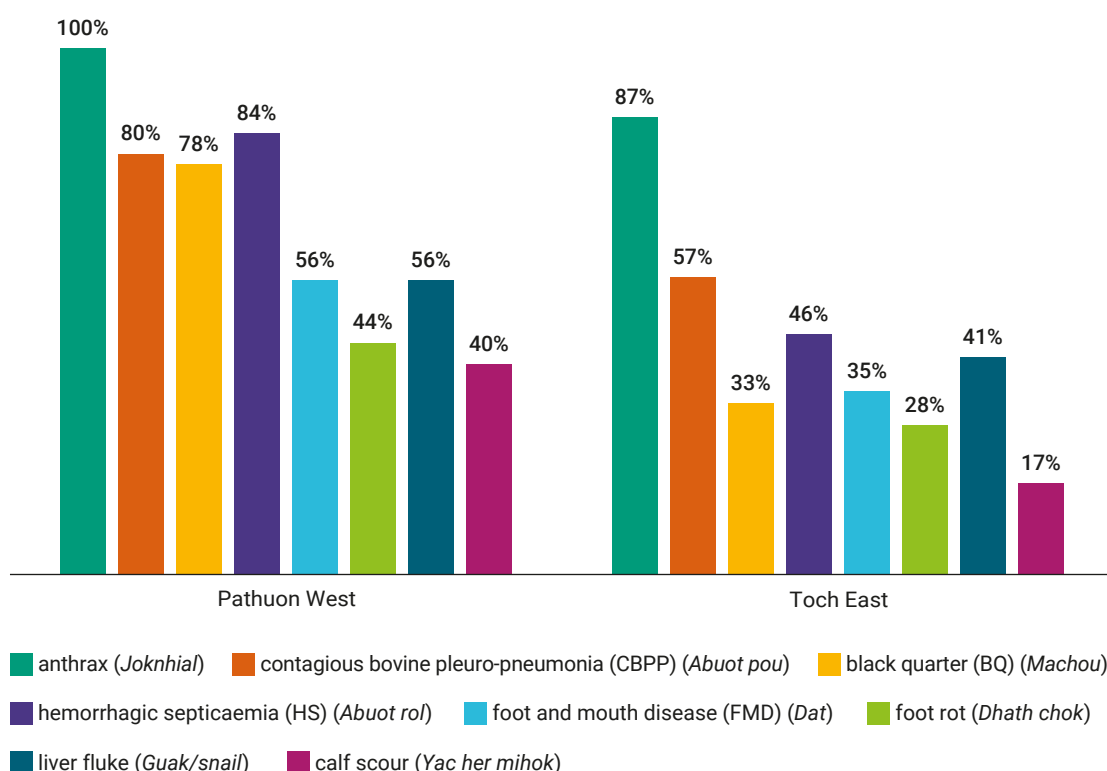
The aggregated responses to the household survey responses on the increased incidence of livestock disease are presented in Figure 3. As can be seen, 100% and 87% of respondents in the two *payams* reported an increase in the incidence of anthrax, followed by an 80% and 57% increase in CBPP, and a 78% and 33% increase in BQ. As Figure 3 shows, the increased incidence of livestock disease is generally higher in Pathuon West than in Toch East.

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2 Haemorrhagic septicaemia (HS) (*Abuot rol*) was not recorded in either *payam* before the onset of recent severe flooding.

3 A veterinary doctor checked the names and spellings of livestock diseases, although there may be some differences arising from various local Dinka dialects.

FIGURE 3. HOUSEHOLD SURVEY FINDINGS – LIVESTOCK DISEASES ATTRIBUTED TO FLOODING



Source: Author's data.

The FGDs confirmed that recent flooding was more severe than the 'lifetime' of floods that they had experienced and was associated with an increase in the outbreak of livestock diseases. The causes were attributed to animals being crowded together on higher ground away from the flood waters, and drinking contaminated flood waters. Several FGDs also stated that the crowding of livestock on higher ground had also resulted in increased conflict between pastoralists and farmers – see Section 3.3 (conflict).

The floods brought with them many livestock diseases including *Joknhial* (anthrax), *Abuot rol* (HS). Animal diseases are always worse during times of flooding, as animals are more concentrated together. (Cattle camp leaders FGD, PW)

Yes, there are a lot diseases during floods such as *Abuot rol* (HS), yellowish eye infection, *Joknhial* (anthrax), *Maliei/liai* (trypanosomiasis), *Matututun* (lumpy skin disease), *Machou* (BQ), *Cual* (brucellosis), *Guak/Abut cuei* (liver fluke), *Dhath-chok* (FMD), and *Dhath-thok* (a mouth disease). (Camp leader, KII, PW)

In addition, several FGDs and key informants said that the increase of flooding had reduced milk production as animals lost weight because of less access to good grazing.

The productivity of livestock reduces because there are a lot of diseases, but also poorer grazing that results in weight loss in cattle and reduced milk production. (Camp leader, KII, PW)



Several FGDs and KIIs also detailed the impact of flooding on farmland, homes, marketplaces, and health facilities that has resulted in greater household food insecurity and hunger in many areas.

Flooding has affected people badly – destroying many homes, and farmland. There is now not enough food to eat in many communities. (*Payam* animal extension worker, KII, TE)

Several FGDs also reported that heavy flooding had resulted in an increase in human diseases – diarrhoea, malaria, rheumatism, and skin infections – especially among the children. Several women interviewees and FGDs with women also suggested that the increase in the volume of stagnant water was a major cause of ill-health as there are more mosquitoes, and children will drink whatever water is available when they are thirsty. They also said that when the cattle are crowded on higher ground and are not moving, then the camps become very soiled and unhygienic.

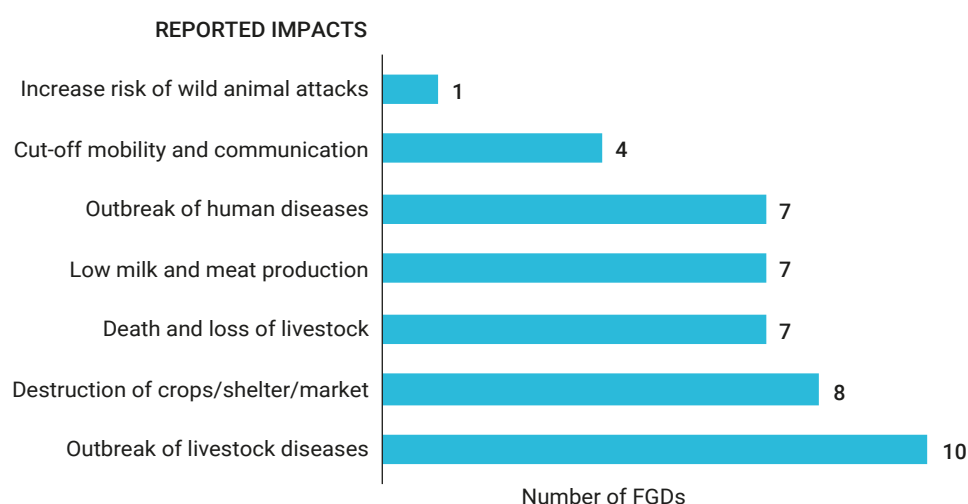
As we speak, we have two serious challenges – where we are living a child can't spend two days without getting sick. You take them to the hospital for treatment and return, and again you go back for more treatment almost every two days. Both the sickness and the cost of the medicines are serious issues. (Camp leaders FGD, TE)

Several KIIs said floods in recent years had made certain areas inaccessible and that as a result there were few if any livestock medicines available to purchase, as new supplies were difficult if not impossible to obtain.

Livestock medicines are transported from far-off places. When there are floods, traders cannot bring them and even the government cannot supply them (County Commissioner's Office, KII)

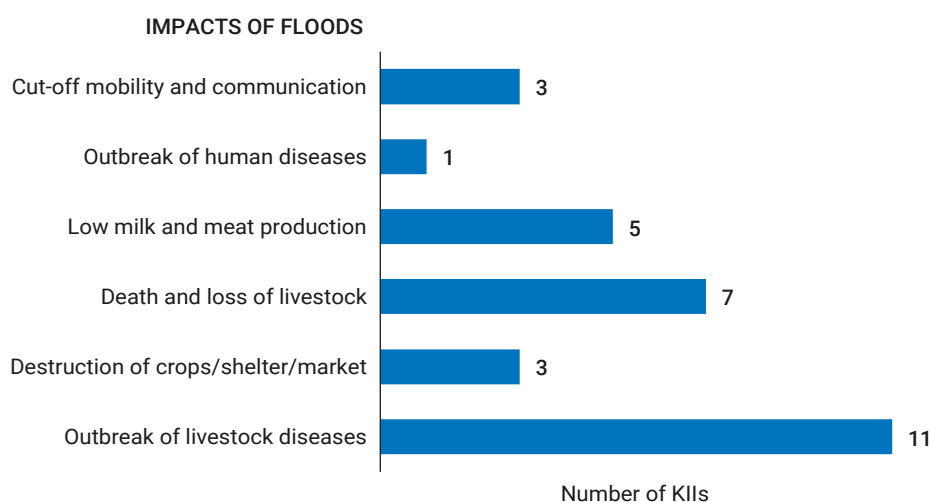
An analysis of the different impacts of floods on households and communities, based on references to these impacts in FGDs and KIIs, are presented respectively, in Figures 4 and 5.

**FIGURE 4. FOCUS GROUP DISCUSSIONS – IDENTIFIED IMPACTS OF FLOOD EVENTS**



Source: Author's data.

FIGURE 5. KEY INFORMANT INTERVIEWS – IMPACT OF FLOOD EVENTS



Source: Author's data.

As can be seen, the outbreaks of livestock disease and the destruction of crops, shelter and markets, death and loss of livestock, low milk and meat production, and the outbreak of human diseases were referred to by seven or more FGDs. The KIs referred most often to the outbreak of livestock disease and the death and loss of livestock.

### 3.2.3 Impact of flood events on roles and responsibilities in cattle camps

The different roles and responsibilities required to manage a cattle camp have traditionally been assigned by age and gender, with elders, men, women and children each performing set tasks. For example, male and female elders were responsible for making tethers for the livestock and offering advice. However, as reported in the FGDs, because of the increased incidence of flooding, these roles and responsibilities are changing as fewer older people – men and women – travel with the cattle camps. For those who do, they are required to do more work, as there are now fewer children in cattle camps because more go to school. For example, some FGDs noted that elders are now tasked with carrying household items between old and new camps and caring for the calves.

Elders help guide the middle-aged and the young ones. They also make tethers for the livestock. They are however also doing new work – they remain in the camps to protect the calves from attack by vultures, and they even look after household items when the herders are away. (Young herdsman's FGD, PW)

Camp leaders or *Majok-wut* decide on camp roles and responsibilities, including the delegation of new roles and responsibilities. They also settle any disputes – including marital problems – among the herding community and decide when to start seasonal migrations. The process of decision-making on seasonal migrations has, however, been made considerably more difficult in recent years as a result of flooding, especially gaining access to high ground that might already be partially occupied by others.

The *Majok-wut* resolves all issues – he is the law-keeper and the law-maker. He also brokers peace with neighbours and presides over cattle theft courts. He might even intervene to ensure that everyone gets fed when food is scarce. (Young herdsman's FGD, PW)

The women's FGD confirmed that they and younger women and girls were responsible for milking the cattle, fetching water, cleaning the living area and kraals, cleaning the calf shelters, childcare and repairing spoiled tethers if there were no elders to perform this task. They were also responsible for all food preparation.

In the camp, women clean the camp, milk the cows and also cook for young men who go for grazing of the cattle, while the children take care of the calves and old men look after everyone. (Male elders FGD, TE)

In short, young women take care of all of our needs in the camp. (Young herdsmen's FGD, PW)

### 3.2.4 Adaptation to flood events

To reduce the threat of flooding, more than 80% of the respondents in the household survey noted that the main response was to migrate in search of more accessible pasture. Other reported actions include preventive livestock vaccination and treatment (66% of respondents), and herd splitting (44%) with animals separated and moved in different directions to reduce the threat of losses to floods and flood-related livestock diseases. Finally, 16% of household survey respondents reported that they had constructed low earthen dykes to protect their homes and grazing areas.

The findings of the household survey were confirmed by participants' contributions in the FGDs. Some are presented here:

Migration is no longer the same, as the floods are different every year. One year we are delaying because of heavy flooding, the next we can move. Our camp was often quite slow to migrate, but this year we are still surrounded by other camps that are not able to migrate because of the severity of the flooding. (Camp leader, KII, TE)

We have built dykes to protect our gardens from the floods, but then it rains heavily and the floods break through the dykes and we are left helpless. We also tried to build bigger dykes along the river to stop water from reaching homes, but these broke too and we were again defeated. (Camp leaders FGD, TE)

The research confirmed that flood events are more severe in Toch East than in Pathuon West due to its closer proximity to the Nile's swampy areas, locally referred to as *toch* areas. This necessitates residents to work together to construct higher and larger dykes than in Pathuon to circumvent both rain and river floods. Toch East residents also experience greater risks of displacement and destruction of their homes, and thus more of them adapt to seasonal migration than in Pathuon West.

As reported by several women in the FGDs some of the adaptations are extreme when, as in some cases, floods destroy homes and food stores. For example, they said that they eat fewer meals a day and sometimes none, in order to feed their children. They also reported that sometimes they do not seek medical assistance for themselves but only for their children, as they cannot afford health care.

There is nothing left in some houses. The flood has taken everything – mosquito nets, blankets and bedsheets, among others. The only option left for some of us was to sell the remaining goats to buy these lost materials for our children. Some are only just surviving on wild fruits, vegetables and leaves. (Women's FGD, TE)

One of the FGDs with women elders reported that they also seek divine intervention, and that they may slaughter an animal as a sacrifice as they pray for the floods to end.

Adaptation strategies referred to in the FGDs are presented in Figure 6.

**FIGURE 6. FOCUS GROUP DISCUSSIONS – LOCAL ADAPTATION STRATEGIES TO FLOOD EVENTS**



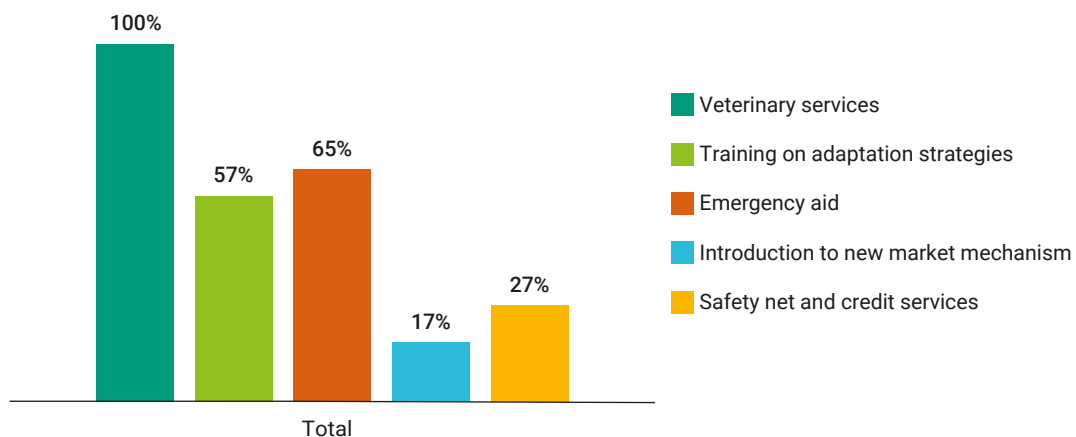
Source: Author's data.

### 3.2.5 Resource and knowledge gaps in addressing flood risks

The household survey respondents identified knowledge and resource gaps in managing flood risks – lack of resources (mentioned by 86% of respondents), conflict (63%), the need to delineate ethnic grazing boundaries (60%), the lack of training (27%) and rangeland degradation requiring access to different rangeland (25%).

The household survey also explored local interest in external support to help overcome the impacts of flooding. All the household surveys, including all men and women, recognised the urgency of additional veterinary service support, 65% requested emergency aid, while 57% sought training on modern flood-related adaptation strategies. The full results of the question on priority additional support are presented in Figure 7.

**FIGURE 7. HOUSEHOLD SURVEY FINDINGS – IDENTIFIED EXTERNAL SUPPORT NEEDED TO MITIGATE FLOOD EFFECTS**



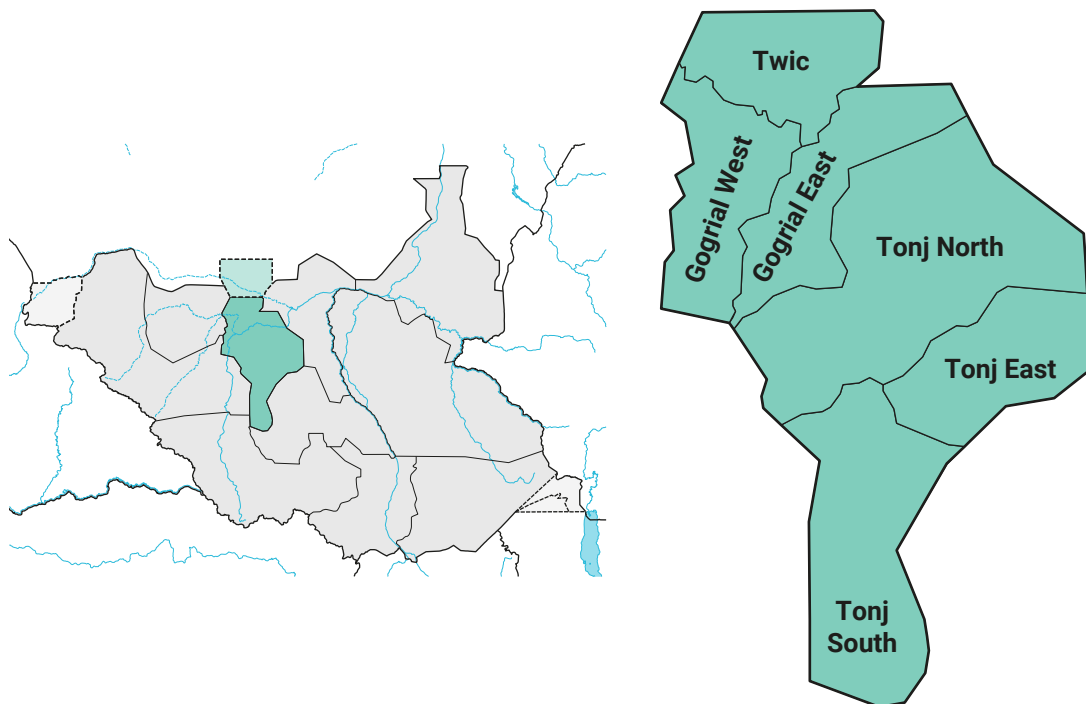
Source: Author's data.

The FGD participants also expressed their need for extra support to adapt to increased and more severe flooding, with the following resource and knowledge requests to government and international donor agencies.

- **Veterinary services:** increased provision of veterinary medicines for important local livestock diseases. There was specific reference to tailoring the supply to different diseases that were common in the different pastoral areas, rather than standard packages.
- **Emergency food aid:** during times of severe flooding when it is impossible to produce local or crops are flooded and ruined, and hunger threatens.
- **Other emergency assistance:** when flooding has destroyed households including mosquito nets, agro-pastoralists need tents, plastic sheeting, buckets and hygiene kits to enable them to cope in times of floods. A special request was made in some FGDs for more boats.
- **Road construction:** on elevated levees with bridges and culverts to allow water flows, to improve access to remote areas in times of flood.
- **Early Warning Systems (EWS):** these should be run and provided by government and humanitarian agencies. Early updating of expected rainfall could help pastoralists take measures to curb flood effects. Advanced preparation will probably also foster the success of traditional adaptation strategies.

### 3.3 Conflict

FIGURE 8. MAP OF GOGRIAL EAST COUNTY HIGHLIGHTING BORDERS WITH DINKA MALUAL WAU (WESTERN BHAR GHAZAL), AGUOK (GOGRIAL WEST) AND MAYOM NUER OF UNITY

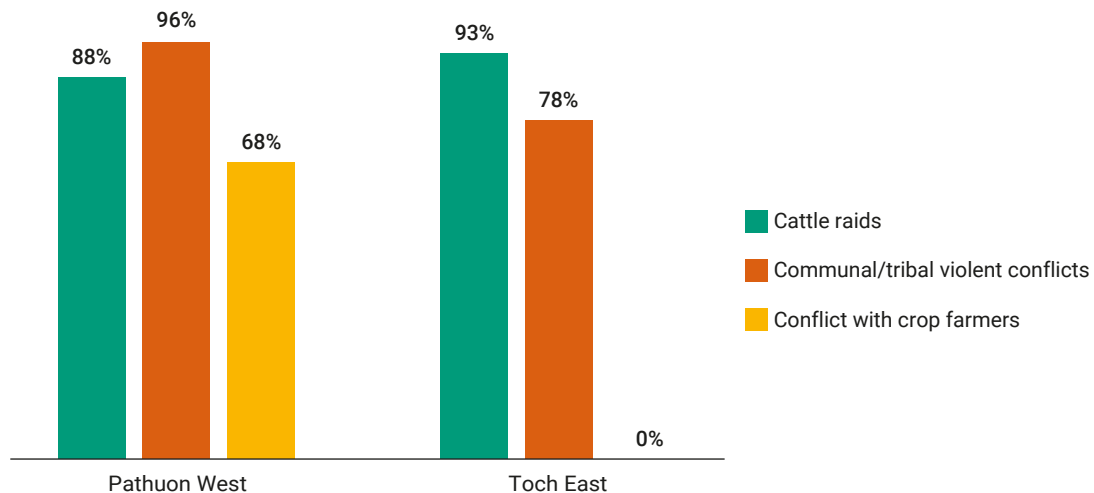


Source: (left) Map of Warrap State [https://en.wikipedia.org/wiki/Warrap\\_\(state\)](https://en.wikipedia.org/wiki/Warrap_(state)); (right) Map of Gogrial East County [https://en.wikipedia.org/wiki/Gogrial\\_East\\_County](https://en.wikipedia.org/wiki/Gogrial_East_County)

### 3.3.1 Cattle raiding and inter-ethnic conflict

The household survey respondents confirmed that cattle raiding continues to be hugely problematic to life and livelihoods, and the number of household-level respondents that had personally experienced raiding or inter-ethnic conflict since 2020 is presented in Figure 9.

FIGURE 9. HOUSEHOLD SURVEY FINDINGS – WHO HAD PERSONALLY EXPERIENCED CONFLICT (N=96)



Source: Author's data.

As can be seen, the survey confirmed that 88% of respondents in Pathuon West and 93% of respondents in Toch East – located in the immediate border area with Western Bahr Ghazal State and Upper Nile State, respectively – had personally experienced cattle raiding in the last five years, including many who had experienced cattle raiding or conflict in the last year.

A large number of those interviewed in the household survey also confirmed that they had personally experienced inter-ethnic conflict, where the focus is on murdering people rather than simply raiding cattle. Participants from Pathuon West also reported and detailed conflicts with neighbouring crop farmers, which had intensified during times of flooding as livestock keepers were forced to move their livestock to higher ground. Consequently, some agro-pastoralists were entering into new conflicts with farmers that had not occurred previously.

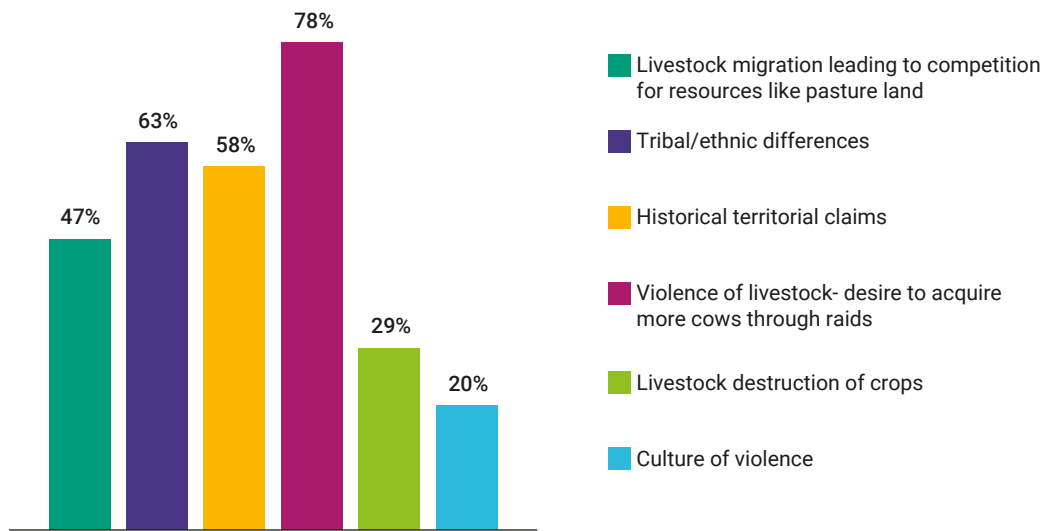
All nine conflict-focused FGDs confirmed high levels of cattle raiding between themselves and their Nuer neighbours and recognised that both retaliated against earlier raids and had also initiated their own unprovoked cattle raids. Respondents who confirmed that both sides had initiated raiding made clear they did not want to be quoted by name in the report. Some also confirmed that different Dinka communities had raided each other. All FGDs agreed that cattle raiding peaked at the end of the dry season when rain is anticipated, as it was assumed that the raided cattle would have ample forage.

### 3.3.2 Causes of conflict

The household survey respondents identified multiple drivers of conflict that included: accruing cattle (78%), tribal differences (63%), long-standing border and grazing disputes (58%), and livestock migrations and resulting clashes over access to grazing and water in the dry season (47%). Other causes of conflict included livestock damage to crops, and the longstanding culture of violence. These findings are presented in Figure 10.



FIGURE 10. HOUSEHOLD SURVEY FINDINGS – DRIVERS OF CATTLE RAIDING AND INTER-ETHNIC CONFLICT (N=96)



Source: Author's data.

While the FGDs confirmed some of these factors, they also added others.

- **Pasture and water:** the need to control the access to and use of pasture and water resources to be able to maintain healthy and productive livestock.
- **Theft:** young men from neighbouring communities stealing cattle for their dowry payments.
- **Longstanding border disputes:** the need for different pastoral groups to control access to resources in border areas.
- **Marriage disputes:** including the delayed payment of the full dowry, refusal/denial of pregnancy and other fines.
- **Local politics:** politicians inciting youth to violence to gain political influence, including intra-ethnic group conflict such as that between the Apul and Aguok Dinka clans.
- **Poverty:** many people are very poor and are forced to steal to survive.
- **Culture:** the longstanding enmity between the Dinka and the Nuer to own 'all cows'.
- **Revenge:** for the loss of loved ones in earlier conflicts.
- **Crop destruction by livestock:** conflict arises when livestock wander off and graze in farmlands in highland areas.

These responses were expanded on by observations made by FGD participants and KIIs as follows:

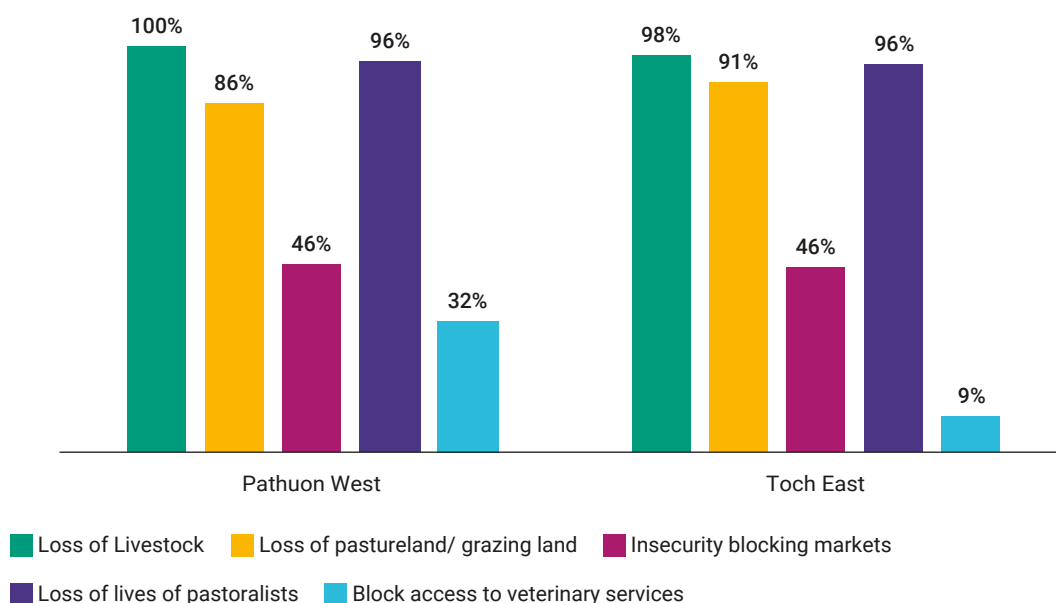
Okay, you ask a good question. Between us and the Nuer, we fight over cattle and grazing land, while the conflict with our Dinka Wau brothers is solely over land. This is because during the Civil War the Dinka Wau were displaced and we welcomed them to our land. Now, after Independence, they have started claiming that this is also their land. Since conflicting with the Dinka Wau, we have also fallen into conflict with the Kuac and Abiem Mayar. We keep repeating that we have no problem with them, but they did not listen, and we continue to fight among ourselves. (FGD participant, *Gelweng*, PW)

The raiding of cows started a long time ago when Nuer and Jieng [Dinka] were given a female cow. The cow gave birth to a calf and then they were supposed to divide. The mother was given to Dinka and the calf to Nuer. However, the Dinka took the calf and replaced it with an older cow. This caused the Nuer to try to take back the calf, and the fighting began. The Nuer continue to come back to take what is theirs. (Elders' FGD, TE)

### 3.3.3 Impact of cattle raiding and conflict

The household survey and participants of the FGDs listed different impacts of raiding and conflict with the majority mentioning loss of livestock and lives. Other impacts are presented in Figures 11 and 12, respectively.

FIGURE 11. HOUSEHOLD SURVEY – IMPACT OF CATTLE RAIDING AND CONFLICT (N=96)

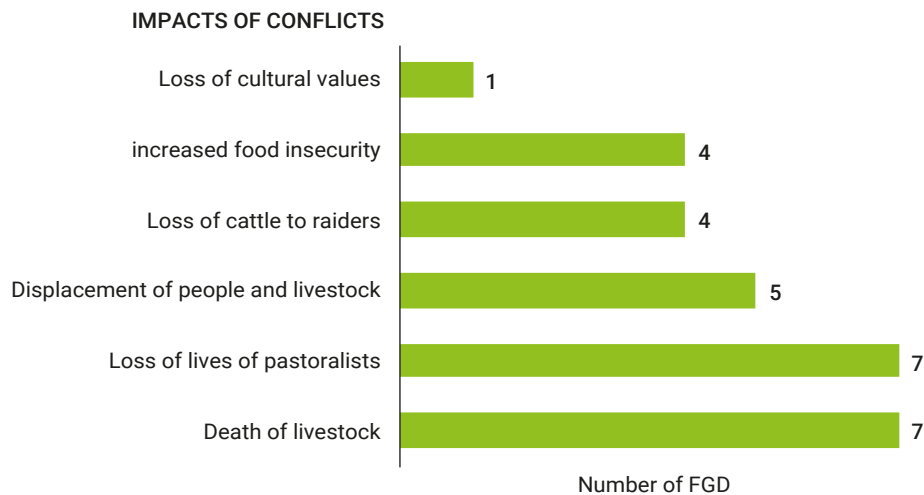


Source: Author's data.

As indicated, 100% and 98% of the two household surveys reported that conflicts resulted in the loss of livestock, 96% in the loss of human life in both *payams*, and 86% and 91% in the loss of grazing land in Pathuon West and Toch East, respectively. Other impacts that were mentioned included reduced access to markets (46%) and veterinary services (32% and 9%, respectively).

In the FGDs, the loss of livestock – death and loss of livestock to raiders – were together (referenced in 11 FGDs) the main impact of cattle raiding and conflict, while loss of life was highlighted in seven groups. Other impacts including the displacement of people referred to in five FGDs and food insecurity in four FGDs. The full results of the different impacts of cattle raiding and conflict are presented in Figure 12.

**FIGURE 12. FOCUS GROUP DISCUSSIONS – IDENTIFIED IMPACTS OF CATTLE RAIDING AND CONFLICT (N=9)**



Source: Author's data.

During the discussions on the impact of cattle raiding and conflict, individuals offered the following additional insights.

In one day in 2023, we lost 39 youth. (Women's FGD, TE)

The safest cattle camps are very remote and large numbers of animals are kept there in the dry season. The problem is that these areas become overgrazed, and some cattle even die from hunger. Other cattle will die from diseases as these areas are used by cattle from different households and animals are mixed. If the herders leave these safer areas, then the cattle will be raided. (Women's FGD, TE)

### Impact of conflict on gender roles

The FGDs revealed several ways in which conflict had affected roles across age and gender. All FGDs reported that young men and boys are responsible for the herding and grazing of livestock, including providing security and finding and returning lost cattle during grazing. The increase in raiding and conflict, however, has resulted in a change in their roles and responsibilities as they are now responsible for security and are formed into 'youth armies' of *Gelweng*. These young men form a defensive line that patrol the grasslands where cattle will be grazed, before the cattle are released in the morning. Some also patrol at night. Some FGDs noted that not all boys and young men welcome these changing roles and responsibilities, and many have left the cattle camps to go to school.

Being a young man now takes courage as they protect the animals and the people in the camps. They must fight raiders and thieves and protect the cattle from lions and hyenas. (Young women in cattle camps' FGD,, TE)

This loss of young men to conflict and education means that young women and girls are increasingly involved in the management of calves, and for moving children and livestock to safety during cattle raids, as well as caring for any of the wounded. These roles were typically carried out by young men and older women, and the passing of these roles and responsibilities to young women and girls has significantly added to their workload.

Yes, in the cattle camp, girls now take care of calves because they graze nearby. They also help during cattle raids to move the calves and any cows close by, while the men fight the enemy. (Male elders FGD, PW)

### 3.3.4 Adaptation strategies to cattle raiding and conflict

The household survey confirmed a range of adaptation strategies that included the migration of people and livestock far from the border areas, and arming the youth (*Gelweng/Titweng*) to protect people and their livestock. There were, however, differences between the two sample *payams* regarding the effectiveness of these adaptation strategies; 98% of the household survey respondents were positive about these strategies in Pathuon West, compared with only 34% in Toch East – an immediate border area and therefore at a higher risk of conflict.

In the FGDs, participants also reported the importance of migration as an adaptation strategy, with references to migration to remote and safe places and avoiding areas that are exposed and where raids are more likely to occur. Detail of some of the adaptations to conflict are presented in the comments made by participants in the different FGDs:

There are a lot of changes in the way that we migrate with our cattle. We have even moved our main camps far away so that they cannot be easily reached, while we ourselves do not visit the sites of our former camps, as they are in insecure areas. For example, we no longer reach Wakic. (Women's FGD, TE)

Some FGDs also referred to the importance of inter-communal meetings – these are attended mainly by senior men – which try to find ways of mitigating cattle theft and to end this source of intra-ethnic conflict within the Dinka community. As a result of some of these meetings, it has been agreed that persistent cattle thieves will be killed. When this happens, and it does, it was said that other thieves stop stealing cattle at least for a time.

There are many ways that we can and have to adapt. When we release the cows for grazing in the morning, I send out some *Gelweng* in front as a form of protection, while others remain so that they can protect the camp. I also deploy some *Gelweng* in different locations both day and night to ensure that we are not ambushed. (Camp leader, KII, PW)

### 3.3.5 Participant recommendations to mitigate cattle raiding and conflict

FDG participants offered recommendations that they felt that the government and development and humanitarian agencies could adopt to help communities manage conflict and bring about peace and stability in South Sudan.

- **Capacity-building:** invest in capacity-building and training of pastoral elders, cattle camp leaders, armed youth and women in the rule of law and practical ways to build peace with neighbours.



- **Disarmament:** the government and its development and humanitarian partners should help pastoralists to disarm – starting with the deadliest weapons – and the national army should be deployed along ethnic borders.
- **Finding and returning stolen cattle:** the government should develop a force to locate and return raided cattle to prevent the need for revenge raids.
- **The provision of services:** humanitarian agencies could assist agro-pastoralists affected by floods and food shortages with food and non-food aid to reduce the need for people to steal in times of need, as theft leads to conflicts.

Individuals and participants in different FGDs also offered the following interesting comments:

When we talk of mitigating cattle raiding and conflict, it is important to recognise that this cannot now be done by the communities themselves as some of the politicians are also drivers of conflict. No, what it needed is for the government to take a lead and for them to work with community leaders and civil society to bring about peace. The government will take ideas from the community leaders and be responsible for operationalising them. If this is done with all sides at the same time, then peace is possible and there will be no more conflict. (Camp leader, KII, TE)

We need more support in the border areas – these are often in remote areas and if the government deploys the army, it will take them a long time to get there and so they will not be able to help us. (Gelweng FGD, PW)



Focus group discussion session with elderly women, Tochi East, @ Chol Bak

### 3.4 Floods, conflict and gender-based violence

The study also briefly explored the relationship between floods, cattle raiding and conflict, and gender roles and responsibilities.

#### 3.4.1 Floods and conflict

Almost 80% of the household survey respondents reported that there was more conflict during the dry season than in the rainy season, especially during flood events. Indeed, respondents reported that there had never been an outbreak of inter-ethnic conflict during a period of severe flooding, as travel was simply too difficult. Rather, respondents spoke of a close association between conflict and the dry season, as explained by a young herder:

When the floods ease then everyone wants to take their cattle to the green pastures that are left as the floods retreat. This is when the different communities of the Dinka and Nuer start to move closer together. As the dry season intensifies, more cattle are herded towards the same swampy and riverine areas, and this is when people start fighting to protect grazing and water for their cattle. Even if young men lose their lives, they will do everything possible to ensure that their cattle receive the best grazing available so that they survive and are productive. (Young herders' FGD, PW)

In addition, almost all household survey respondents, women and men, agreed that there was typically less gender-based violence during flooding events, as people were too busy trying to protect themselves and their livestock and household assets.

#### 3.4.2 Dry seasons, conflict, and gender-based violence

In the household survey, almost 80% of the respondents in Toch East expressed the view that extended dry seasons – which result in different ethnic groups competing for access to and control over grazing – and more violent inter-ethnic conflict had significantly reduced women's presence in cattle camps. It was noted, for example, that there were few if any women in cattle camps during periods of extended dry seasons and drought, when inter-ethnic conflict peaked.

The issue of safety of women and girls in cattle camps was underlined in three of the FGDs, through references to targeted abductions and killing during times of inter- and intra-ethnic clashes. The FGDs went on to confirm that when a young woman is abducted or killed, this becomes a motive for revenge killings – even more so than when a young girl is killed – as the potential for a bride price is lost.

When fighting erupts and the girls remain with children, they may either be killed or abducted by *Gelweng* from the other side. Beautiful girls are more often abducted than killed and they are married by the man who takes them. (*Gelweng* FGD, TE)

While older and younger women are increasingly withdrawn from cattle camps through extended dry seasons and in times of drought for reasons of security (with the final decision typically taken by the male head of the household), several FGDs commented that this did not mean that they were safe. This was because when women are separated for long periods from their menfolk, they are exposed to greater levels of gender-based violence – rape, and abduction, – from men in rival communities who see attacks on women as a more hurtful revenge.



## 4. DISCUSSION

The study gave the author an opportunity to explore and better understand how Dinka agro-pastoralists in Gogrial East County are adapting to flooding and conflicts, especially the successes and challenges that they are experiencing in the adaptation process. This section considers the key findings in the light of the reviewed literature.

On floods, this study confirms what was documented in Jonglei, Northern Bahr Ghazal, Western and Eastern Equatoria states (ACAPS, 2022) that the incidence of flooding and its impacts have increased significantly since around 2018 and that heavy flooding is now an annual event, with as many as one million displaced by flooding at any one time (Herrero et al., 2016). The increased frequency of flooding is also confirmed by other research conducted in another state in South Sudan – Unity State (Humphrey and Stites, 2023).

When discussing the impact of flooding, the respondents mentioned that because of the floods they were experiencing more aggressive combinations of livestock diseases – both commonly occurring and new to the area – for some of which there is no effective treatment. This finding is confirmed by research carried out in Aweil East, Northern Bahr el-Ghazal State (Mbira, 2018), and also in Bangladesh (Amin et al., 2019). In both cases, the researchers confirm a high correlation between flooding events and an increase in the outbreak of livestock diseases.

In addition to an increase in livestock diseases, the study confirmed a correlation between floods and increased household food insecurity, owing to the destruction of field crops, food stores and the reduced access to markets. This finding is confirmed by a literature review carried out in other areas of South Sudan (Iffat, 2018).

In the FGDs on adaptation to increasing flood events, respondents confirmed that they stock modern and traditional livestock drugs before the onset of the rains and floods. Other adaptations include migrating to highland areas, changing livestock migration routes and patterns and adopting food consumption coping strategies in anticipation of food shortages. Importantly, the study confirmed that respondents in FGDs in both Toch East and Pathuon West constructed dykes to try to protect their farmland and their homes. This finding was quite different from the research carried out in Aweil East County, Northern Bahr Ghazal State in 2018 (Mbira, 2018) that suggested that no such efforts were made. This appears to confirm that since 2018 – one of the early years of severe flooding events – communities are making greater efforts to protect their assets.

Respondents in the FDGs also referred to a lack of effective EWS that they associated with inadequate preparation and disproportional impact. The lack of appropriate EWS is not specific to South Sudan, as work conducted in Bangladesh found that livestock keepers also reported the lack of adequate flood warning that, in turn, resulted in the loss of more livestock to floods (Amin et al., 2019).

The study findings on conflict are confirmed by other research carried out in South Sudan, including that much of the conflict is along inter-ethnic lines, and primarily involves conflict between the Dinka and Nuer communities (Blanchard, 2016). These conflicts usually take the shape of cattle raids, grazing-area disputes and between more settled crop farmers and more mobile agro-pastoralists. These findings are corroborated by conflict study between farmers and agro-pastoralists in northern Nigeria (Genger, 2018).

The FGDs and KIs confirmed that the primary causes of conflict are access to and control over grazing and water for their livestock. Other contributing factors include the wish to own more cattle fuelling raids, historical grazing-area disputes between neighbouring communities, poverty encouraging<sup>4</sup> theft for survival, and marriage disputes, including increased bride wealth. This cause of raiding and conflict is confirmed in a wider study of transhumant pastoralism, climate change and conflict in sub-Saharan Africa (McGuirk and Nunn, 2023). Another review paper on South Sudan agro-pastoralists also found that cattle raiding was spurred by rising bride wealth and the need to quickly accrue cattle (Iffat, 2018). This was also true where only partial payment for the bride price is made, the young woman becomes pregnant, and failure to complete the payment results in violent clashes.

The study finds that existing traditional conflict along cattle migratory routes and in grazing border areas has also been fuelled by political actors who have taken advantage of fragile communal relationships to escalate conflict, in the hope of advancing their political careers. This finding is confirmed by the results of another study of conflict and natural resources in South Sudan, which points to historical conflict between tribal political elites who then use the tribal militants to fight their cause (Wunrok, 2018).

Besides the loss of livestock and lives, conflicts were also found to disproportionately affect women with cases such as murder, abductions, rape and domestic violence reportedly rising during extended dry seasons and drought. A similar study in South Sudan also found the same to be true, that women experience greater violence in times of conflict (Humphrey and Stites, 2023).

On conflict adaptation, FGD participants recognised that communities seek to prevent or mitigate the impacts of conflicts by changing their livestock migration patterns. For example, in contrast to earlier times, livestock migration now stops at the nearer cattle camps with farthest camps such as Wakic not reached. Importantly, when cattle camps move shorter distances and remain in safer areas, more women are likely to stay with the cattle and therefore have greater access to milk and dairy products. Other adaptation strategies involve migrating in large groups, splitting herds between different large cattle camps, engaging in peace talks, encouraging women to stay in the home camp, and forming heavily armed youth groups (*Titweng/Gelweng*). A study in Turkana District in northern Kenya also found that local pastoralists used similar adaptation strategies in order to survive the conflicts (Schilling et al., 2011).

Participants in the FGDs recognised traditional and changing gender roles and responsibilities: traditionally, men handled the grazing livestock, providing security in the camp and treating sick animals, whereas the women took charge of milking, preparing food, collecting water and caring for children in the cattle camps. However, as a result of more frequent conflict, participants confirmed new emerging roles as women who are married or of marriageable age no longer travel with the cattle camps in the dry season as it is simply too dangerous. Consequently, men are now involved in nursing sick livestock while younger women and girls help with grazing calves and treating those who have been wounded in conflict. These changes in gender roles were similarly noted and recorded in the Turkana cattle-camp study (Schilling et al., 2011).

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<sup>4</sup> Including by women family members.



Finally, the study confirms that while the frequency of flood and conflict events have increased since 2018, there is little direct correlation between floods and conflict and indeed that in times of severe flooding there may be little if any cattle raiding or ethnic clashes. There may, however, be some conflict between agro-pastoralists and crop farmers as livestock are moved to higher land areas when livestock destroy crops. Overall however, conflict is much reduced in times of flooding and is more linked to the end of the dry season and times of drought, as agro-pastoralists clash for control over grazing and water. This finding is confirmed by a global review of agro-pastoralist conflict studies which confirmed that there are more cattle-related clashes during the dry season than in the rainy season (Koubi, 2019).



KII session with Majok-wut, Toch East. @ Chol Bak

# 5. CONCLUSIONS AND RECOMMENDATIONS

## 5.1 Conclusions

This section summarises the key conclusions of the study, including the research findings and the literature review.

### Flooding

- Floods have become more frequent in the last five years in Gogrial East County, both from heavy rains and from riverine floods.
- Key impacts of severe flooding include: livestock disease (including the occurrence of new diseases); food insecurity due to destruction of farmlands and restricted access to markets and service routes; slow growth of calves; low milk production; and restricted communications and transport.
- Flood-adaptation strategies include: dyke construction; storing drugs and vaccines before the flood season; migration to highland areas; dividing the herd to control the spread of disease; and seeking divine intervention to ensure floods do not occur. However, these strategies remain inadequate because of limited resources, lack of knowledge and ethnic boundaries that limit movements to safer areas in times of floods.
- The need for improved EWS and strengthened veterinary services was identified, alongside the need for increased food aid and non-food aid in times of flooding, and the construction of more climate-resilient roads.

### Conflict

- Conflict in Gogrial East is usually in the form of cattle raids and attacks on crop fields and transport routes along the borders and is largely based along ethnic lines, mostly involving the Dinka of Gogrial East County in Warrap State, Malual Wau Dinka of Western Bahr Ghazal State and Nuer of Mayom County in Unity State.
- The drivers of conflict include: access to and control over grazing land and water; the cultural desire for more livestock (through cattle theft and raids); bride-price disputes; border disputes; historical tribal differences; political divides pushed by the elites; poverty – and the need to raid cattle to secure a bride price; and revenge.
- This frequent and intense conflict has led to huge loss of life, as well as hundreds of livestock lost annually. People in border areas have been displaced, access to markets and veterinary services is blocked, and destruction and the loss of farm labour have increased food insecurity.
- Conflict-mitigation measures include: the formation of armed youth groups (*Titweng/ Gelweng*) by each community; changing cattle camp locations; livestock migration in large groups; splitting the herd to different camps; engaging in peace talks with neighbours; and leaving women behind for their safety.



- The importance of community capacity-building – of both men and women – on upholding the rule of law and peace-building initiatives to have sustainable peace was identified, as well as the need for government-led disarmament.

### Gender and social equity

- Flood events and conflict create disproportionate impacts on various groups such as women, persons with disabilities and younger men.
- In times of floods, women's roles in crop production and household management become more intense.
- Conflict presents a greater risk of abductions and revenge killings for girls and young women due to their perceived greater bride price. Young men who form the *Gelweng* community defence forces are also exposed to greater risk of death during cattle raids and border clashes.

## 5.2 Recommendations

From the study findings it is possible to draw together a priority list of recommendations for the GoSS and donor agencies, based on local expressed needs.

### 5.2.1 Mitigating the impact of flood events

#### Recommendations for government/policy-makers

- **Provision of veterinary services:** This should be tailored to the different cattle camps and their prevailing common livestock diseases. There should also be efforts to train agro-pastoralists – men and women – on diagnosing cattle diseases and administering treatments, as well as providing drugs to cattle camp leaders via a mobile veterinary pharmacy before the onset of seasonal floods. Humanitarian agencies should also be involved in providing veterinary services especially in the short run.
- **Construction of climate-resilient roads:** Along elevated levees with bridges and culverts to enable water flow and to ensure mobility and access to services even in times of floods.
- **Early warning systems (EWS):** The GoSS and donor agencies should invest in improved weather-related EWS to help increase the preparation and adaptation time, and which should be tailored to cater for all audiences in the rural areas.

#### Recommendations for implementers (civil and humanitarian organisations)

- **Provision of emergency food aid:** Especially to those households affected by the destruction of their food stores, gardens and fields and hence at risk of high levels of food insecurity and hunger.
- **Non-food aid:** It is important that the GoSS and humanitarian agencies also provide non-food aid, including mosquito nets, tents, plastic sheeting for temporary shelter, buckets, hygiene kits and boats to support agro-pastoralists affected by severe flooding.

## 5.2.2 Recommendations for conflict

### Recommendations for government/policy-makers

- **Nationwide disarmament:** While not currently practical, almost all respondents in the study recognised the dangers of civilians being armed. If disarmament were possible, all study respondents believe there would be fewer cattle raids and certainly there would be fewer casualties and loss of life. Policy-makers are encouraged, therefore, to review successful disarmament campaigns in neighbouring countries such as Kenya and Uganda and adapt lessons to South Sudan's context.

Policy-makers might also consider phased disarmament, starting with the removal of heavier weapons as a first step towards wider disarmament. In this case, it will be important to ensure that phased disarmament does not expose participating communities to raiding from other communities that have not disarmed.

- **Location and returning of stolen livestock:** There are high levels of support for the creation of an army unit to recover and return raided cattle.
- **Problematic politicians:** There is support for these being brought to justice for fomenting hate and conflict.
- **Revenge killings:** The GoSS should take firm steps to ensure justice for women targeted in revenge killings, as well as long-term education programmes aiming to achieve changes to the social and traditional practice of bride price.

### Recommendations for implementers (civil and humanitarian organisations)

- **Training:** Civil and humanitarian organisations should provide training for leaders and communities (men and women) in the rule of law, peaceful co-existence and peace-building initiatives, ensuring that this is done in a gender-responsive way, given the disproportionate impacts that conflicts have on women.
- **Humanitarian assistance:** Civil and humanitarian organisations should provide assistance to those who have lost all their livestock in raids and conflict – treatment for the wounded, food aid and livelihood support, including veterinary services.
- **Trauma-healing services and support for survivors:** Civil and humanitarian organisations should implement programmes that support the survivors of domestic violence, rape and abduction with trauma-healing and counselling services. Cattle camp leaders and herders in general should also be trained in protecting women and respecting their rights, even in times of conflict.



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# APPENDIX 1. ADDITIONAL QUOTES FROM THE QUALITATIVE INTERVIEWS

## Livestock diseases

If you have let's say 100 cows, and during the flooding season 60% get sick. If there is not enough medicine to treat those cows then this becomes a disaster, as the mortality rate may be as high as 12%-15% and this is a lot of cows to lose. (Camp leaders FGD, TE)

The flood kills cows because there is a lot of water, but there is no grass. When the cows try to look for grass, they will not move because there is so much water and if the cows move to higher land there is only dry grass which is bad for them and can kill some cows, especially the older ones. (Camp leader, KII, TE)

When we left our home area because of very bad floods, some cows and goats were lost because the location is new to them. (Male elders FGD, PW)

## Impact of floods on property

In my house there is not even a single stalk from our crops. The floods came before we had cultivated, killed all my goats and destroyed the house. We have no shelter, and we have now shifted to the market for survival. We don't have money so we cannot buy food there. (Elderly women's FGD, TE)

## Role of *Majok-wut*

The *Majok-wut* in the cattle camp is responsible for the distribution of food during dry season as food is always very limited. Hence it requires the *Majok-wut* to be in charge so that food reach everyone. (Camp leader, KII, PW)

## Adaptation strategies to floods

We get veterinary medicines ahead of the floods and keep them with us just in case. We sometimes use whatever medicine we must to treat a sick animal, even if it is the wrong one for that disease. When the modern veterinary medicines are finished, we go to the bushes to look for herbs. (Herdsman's FGD, PW)

For some, with relatives nearby, they may move some livestock to a relative to care for, while they take the other animals far away to search for good pasture. With fewer animals it is easier to protect them and to bring them safely home, as fewer animals attract less interest from cattle thieves. (Herdsman's FGD, PW)

We look for higher lands to move to. If there is nowhere left for people and cattle to stay then we migrate far away to the highlands. (Young herdsman's FGD, TE)

## Causes of conflict

There are only two factors that fuel conflict between communities: cows, as not everyone has cows and those who don't try to take other people's cows, and that when cows are stolen instead of the police following up and returning the cows, the owners organise to take them back and hence there is conflict. (KII, *Payam* livestock supervisor, PW)

## Impact of cattle raids

Keeping cattle hungry but safe has other problems - when they come back home during rainy season, some will die from eating too much good grass too quickly. (Women's FGD, TE)

This year we have lost more than 1,200 cattle to raiding. [All participants]: Yes. (Women's FGD, TE)

We lost so many cattle this year (2024) in Abuok that I don't remember the number. Perhaps they may reach 1,000 or 1,500 head.

What are you saying, we lost 9,800 head of cattle in Abouk and in Golkou we lost 1,500 heads of cattle alone. (Armed Youth, FGD, TE)

When you are displaced by cattle raiding so many things can happen to you including hunger as you may run without food to a place that has no food. Also, your cows are stressed, and they will not milk well. This is made worse as you don't know the best grazing areas and your cattle will not eat well. (Camp leaders FGD, PW)

## Migration as a strategy to overcome conflict and raids

Today, you will see few if any women in some cattle camps in areas where there is conflict. The women move to safer areas and stay there. This was different some years back when women lived in all cattle camps. (Women's FGD, PW)

We now split our cows into different groups. One group of cows and people will go ahead, and other groups will follow later. In case there is conflict, and we are defeated and lose one group of cows we will remain with some. This plan has been used old times, but nowadays everyone has adapted to use it because it so helpful. (Camp leaders FGD, PW)

## Strategies to seek peace and self-defence approaches

To improve our chances of protecting our cattle, we now herd with pastoralists from different communities of Gogrial East so that we have a numerical advantage. Everyone in the camp is also given a weapon to fight with. Other camps also gather in the same area, so we are very many. (Elders FGD, PW)

As we know that we will experience disease and that we may be in conflict, we purchase veterinary livestock medicines before migrating, so that we don't need to go to buy them when we are fighting. (Camp leaders FGD, PW)

Our commissioner has also initiated peace talks with the Nuer, but these aren't always followed up on and typically the peace lasts for about three months and then the conflict starts again. It often starts with one or two thieves who steal one or two cows. Thieves are the only ones who benefit from cattle raiding. (Camp leaders FGD, PW)

Our *Gelweng* need modern weapons as they are only using sticks and those that are raiding us have guns. This makes protecting our animals impossible. (Women's FGD, TE)

### **Impact of conflict**

Some of the abductions get complicated. A girl from the Buoyar sub-clan of the Apuk, Dinka eloped with her fiancé on a motorbike. The girl was, however, shot on the way before reaching the Amuk community. There is now a cattle theft between members of the Apuk clan as the abductor has yet to pay the abduction fine of around 70 cows to her family. (Male elders FGD, TE)



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Cover: Focus group discussion session with  
Gelweng, Toch East. @ Chol Bak

Funded by



This material has been funded by UK aid from the UK government; however the views expressed do not necessarily reflect the UK government's official policies.