

Wau Town Profile

February 2025

Context

Wau Town is South Sudan's second biggest city and the capital of Western Bahr el-Ghazal State. The population of Wau Town is diverse, with reportedly good relations between groups, both based on ethnicity and displacement status. While a Protection of Civilians (PoC) site was established in 2016 to host IDPs, this has now been redesignated as an IDP camp.

Objective

This assessment sought to understand the broad dynamics of urbanization in Wau Town, with a particular focus on insecurity trends, socio-economic conditions, governance, and climate change impact, in order to create data-informed urban profiles that support donor programming focused on urban development.

Topics

Specifically, this assessment aimed to reveal key information on the city structure, the population dynamics and sources of livelihood, as well as on key infrastructure and services. It also explored the dynamics of insecurity, social cohesion, and the management of governance. Finally, it explored the extent to which Wau Town is exposed to climate-related hazards.

A combination of primary and secondary data collection was used to answer these questions:



Extensive secondary data review, including a review of NGO, UN, South Sudanese government documents and academic reports, as well as South Sudanese news.



Geo-data, including remote sensing and other GIS tools.



12 Focus Group Discussions (FGDs) with community members, divided by gender, ethnicity, and displacement status, carried out 1st to 16th September 2024. Each of these had 5-8 people, with a total of 73 people.



6 Key Informant Interviews (KIIs) with aid workers, market traders, and local government officials, carried out 1st to 16th September 2024.



2 Mapping Focus Group Discussions (MFGDs) with community leaders and community experts, to roughly determine the location of facilities and infrastructure, held on 1st September 2024.








Quantitative facilities assessment, using direct observation and 686 KIIs, to accurately map facilities in Wau Town. These were carried out 2nd to 11th September 2024.

Key Findings

- Satellite imagery shows that Wau Town experienced low levels of destruction during the South Sudanese Civil War 2013-18. The year with most destruction was 2016, when the built-up area of Wau Town decreased by 10%. Since then, **Wau Town has expanded steadily, from 20.3km² in 2018 to 22.65km² in 2023.**
- Estimates of Wau County's population range from the Government of South Sudan's (GoSS) 2021 estimate of 208,487, to UN OCHA's 2022 estimate of 320,752.¹ However, there is a lack of population data below the county level in South Sudan, and thus there are **no accurate population estimates of Wau Town.** The only recent estimate found by the research team was the Kontur Population dataset for population density, which found that the **population for Wau Town in 2023 was 160,000.**²
- The quantitative facilities assessment revealed that service functionality in Wau Town is fair. There are high number of schools and health facilities, and **good levels of functionality for most services.** However, due to higher levels of non-functionality of waterpoints and public latrines, WASH needs may be most acute.

Functional Partly functional Non-functional

	Functional	Partly functional	Non-functional
 Schools	57	2	1
 Waterpoints	250	27	108
 Public latrines	141	28	26
 Health Facilities	57	2	3
 Community Centres	27	5	1

- The **economy in Wau Town reportedly revolves around, primarily, the sale of timber and forest products (e.g. firewood, charcoal) and agriculture.**³ Communities with these sources of income – as well as other livelihood means – reported struggling with: insecurity due to criminals outside Wau Town; flooding; and the economic situation.⁴

- According to REACH's JMMI (October 2024),⁵ **market functionality in Wau is good**, with robust supply chains, good availability of market commodities, adequate accessibility by all groups, and limited security concerns. Yet, FGD participants cited **concerns regarding the economic situation**, including the price of goods, transport to the market, and food security.
- In October 2024, the Integrated Phase Classification (IPC) estimated **that 45% of Wau County's population would experience severe acute food insecurity (IPC Phase-3 or worse) between November and December 2024**, including 5% of the population in IPC Phase-4 (emergency). Food security is expected to improve marginally between December 2024 and March 2025, mainly due to the harvest, but may deteriorate during the peak of the lean season, between April and July 2025, when an estimated 50% of the population will face severe acute food insecurity (IPC Phase 3 or worse).
- **Governance in Wau Town, particularly in regard to law and order, is reportedly controlled through local government actors.** In particular, the police and Chiefs are reportedly responsible for law and order, while the Chiefs and Ministry of Land play significant roles in the administration of land and justice delivery.
- While secondary sources report tensions between agricultural and pastoralist communities,⁶ **findings from FGDs suggest that relations between groups are reported to be good, at the time of data collection (September 2024).** Several community members and key informants reported that one cause of tensions may be land disputes, particularly regarding grazing land for cattle. Several FGD participants cited that Wau Town is now peaceful, and that the greater threat is from criminals who reside outside of the Town.
- Geo-data shows that **areas in Wau Town close to the Jur river are exposed to flooding**, while FGD findings indicate that flooding is a significant challenge for farming and transport. While satellite data shows high land temperatures in Wau Town during the dry season, FGD participants and KIs reported that heatwaves and drought are not serious problems in Wau Town. However, findings from the quantitative facilities assessment reveal that, of KIs who reported that a school does not function in the dry season, 41% reported that this is due to teachers and students not being able to function in the heat (N=27).

¹ Wau County, Western Bahr el-Ghazal State. (2022). *Conflict Sensitivity Resource Facility (CSRf)*. [Link](#).

² *South Sudan: Population Density for 400m H3 Hexagons* (Kontur Population). (2022). [Dataset]. [Link](#).

³ *South Sudan: The impact of conflict on food security and livelihoods—DIEM-Impact report*. (2024). Food and Agricultural Organization of the United Nations. [Link](#)

⁴ South Sudan is experiencing severe depreciation of its currency, leading significant challenges across the country including rising prices, unemployment, and food insecurity. See *South Sudan: Coping with Economic Hardships*. (2024). REACH. [Link](#).

⁵ JMMI Joint Market Monitoring Initiative Dashboard. (2024). REACH. [Link](#).

⁶ See, for example, *Addressing peace and safety concerns in Wau, South Sudan*. (February 2019). Saferworld. [Link](#). & Jok, J. M. (2021). South Sudan. *Journal of International Peacekeeping*, 24(3-4), 503-542. [Link](#).

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Acronyms

CSRF - Conflict Sensitivity Resource Facility

FGD - Focus Group Discussion

FEWS NET - Famine Early Warning Systems Network

GIS - Geographic Information Systems

GoSS - Government of South Sudan

IDP - Internally Displaced Person

IPC - Integrated Food Security Phase Classification

ISNA – Inter-Sectoral Needs Assessment

JMMI - Joint Market Monitoring Initiative

KII - Key Informant Interview

MFGD - Mapping Focus Group Discussion

NGO - Non-Governmental Organization

PoC - Protection of Civilians

RARCSS - Revitalised Agreement on the Resolution of the Conflict in the Republic of South Sudan

SPLA-IO - Sudan People's Liberation Army-In Opposition

SPLM - Sudan People's Liberation Movement

UN - United Nations

UN OCHA - United Nations Office for the Coordination of Humanitarian Affairs

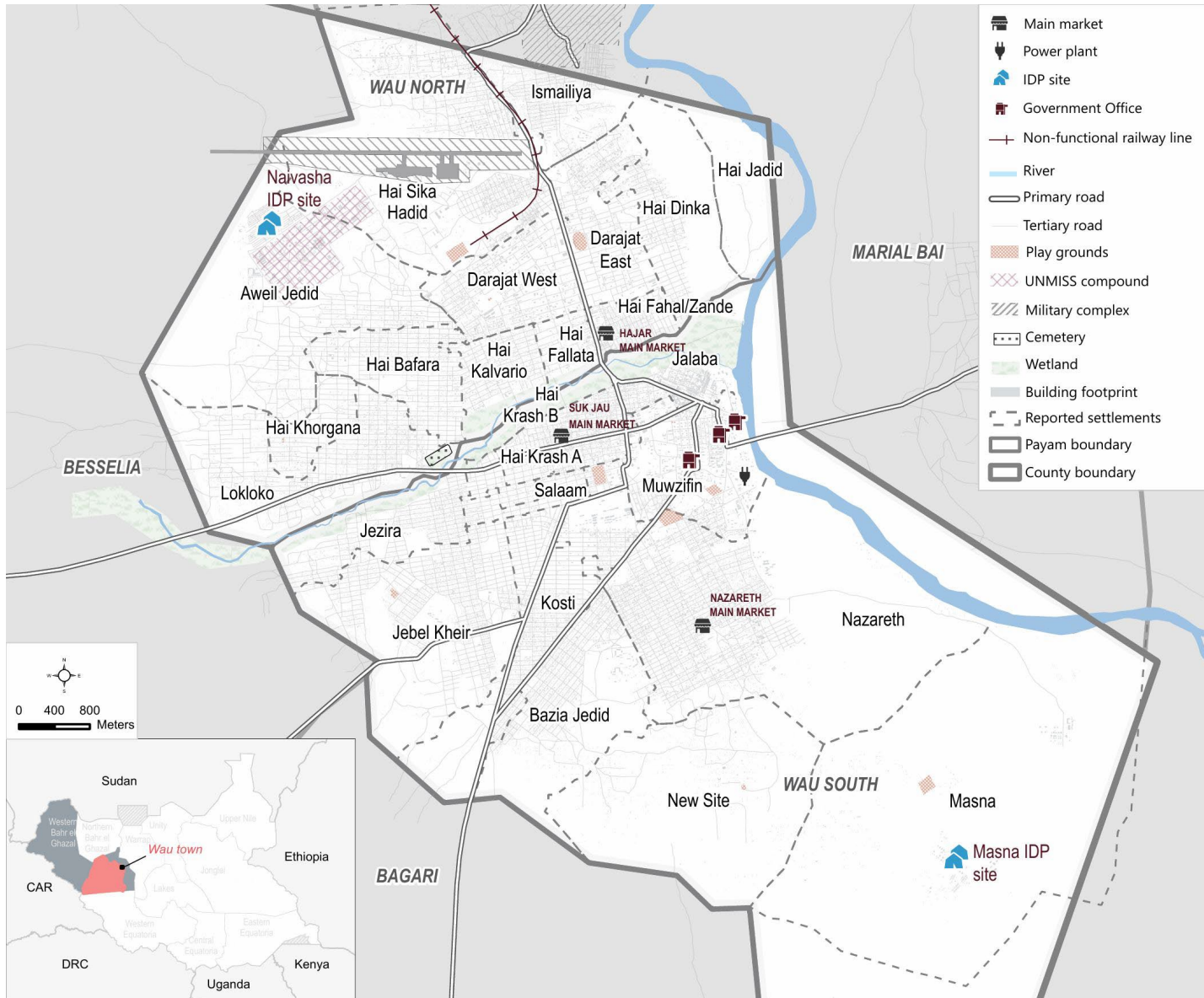
UNMISS - United Nations Mission in South Sudan

VSLA - Village Savings and Loan Association

WASH - Water, Sanitation, and Hygiene

WBeG - Western Bahr el-Ghazal

WFP - World Food Programme



Map 1: Wau Town Layout. Source: Primary data collection – MFGDs

1. Geographic Conditions

1.1 Key Characteristics

Wau Town is the capital of Western Bahr el-Ghazal (WBeG) state, though the headquarters of Wau County were moved from Wau Town to Baggari in 2014. This move has been disputed by some, meaning that Wau Town reportedly continues to operate as the de facto county headquarters.⁷ In November 2024, local news reported that a new Governor of WBeG state had been appointed.⁸

Wau Town’s territory is split across two payams: Wau South and Wau North. Findings from MFGDs suggest there are 24 neighbourhoods in Wau Town, as seen in Map 1. The city centre contains the most neighbourhoods, while the outskirts contain fewer, larger neighbourhoods. Secondary sources describe how kinship ties, usually related to tribe or ethnicity, play a pivotal role in the establishment of neighbourhoods in South Sudan.⁹ Yet, participants in MFGDs and FGDs stated that there are currently no obvious patterns of residential segregation in Wau Town, and that the population was mixed. In particular, several FGD participants and key informants emphasised that returnees had been well integrated into the community.

‘There is integration with different ethnic groups, such as youths and elders and women. We integrate by helping each other with farming, doing cultivation together. There is no quarrelling with each other’ – FGD participant (female, host community)

‘The returnees aren’t in any IDP camp, they are integrated among the families within the communities as well as refugees from Sudanese’ – Key informant (Local government official)

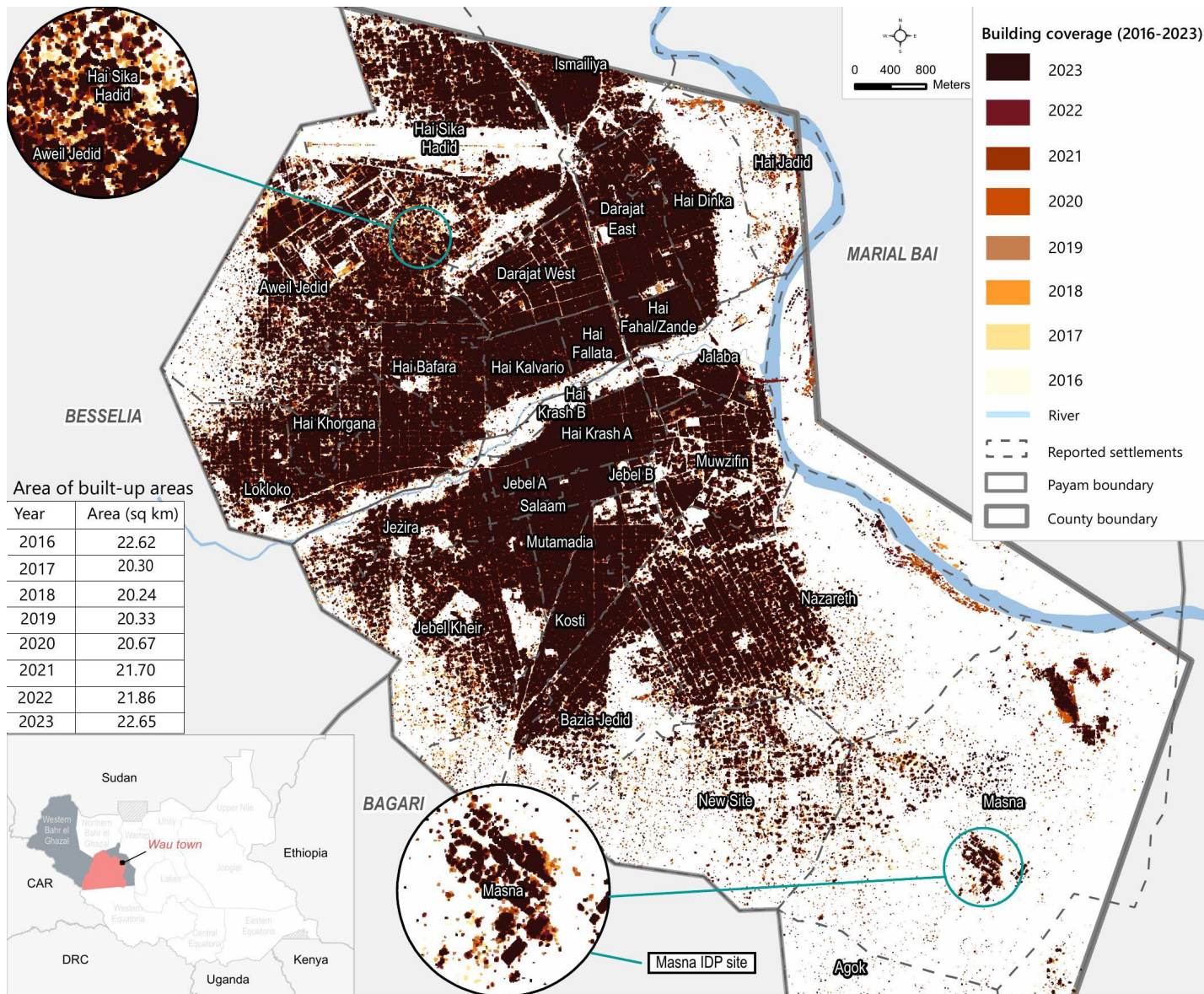
Wau Town contains a former Protection of Civilians (PoC) site in the northwest, which was redesignated in 2020 by the UN Mission in South Sudan (UNMISS) as Naivasha IDP camp under the jurisdiction of the Government of South Sudan (GoSS).¹⁰ It also contains an IDP camp in Masna. During the South Sudanese Civil War 2013-18, there are records of several other

⁷ Wau County commissioner unable to discharge duties over dispute. (2023, July 28). *Radio Tamazuj*. [Link](#). & Ninrew, C. (2022, July 28). Political row forces Wau commissioner to rule county remotely. *Eye Radio*. [Link](#).

⁸ Tension as section of SPLA-IO forces in WBeG rejects new governor. (2024, November 18). *Radio Tamazuj*. [Link](#).

⁹ Kindersley, N. (2019). *Rule of whose law? The geography of authority in Juba, South Sudan*. *The Journal of Modern African Studies*, 57(1), 61–83. [Link](#).

¹⁰ UNMISS protection site in Juba redesignated as conventional displacement camp. (2020, November 17). UNMISS. [Link](#).



Map 2: Reduced building coverage in Wau Town, shown by mapping the last year that a building was seen on satellite imagery (2016-2023). Source: Sirko et al. (2023). Google Research: High Resolution Building and Road Detection from Sentinel-2.

IDP camps within Wau Town, such as in the neighbourhoods of Lokloko, Nazareth, Darajat West, as well as an informal site in St Mary's Cathedral in Darajat West (in Hai Muwzifin), though these are reportedly no longer functioning.

According to the 2023 Inter-Sectoral Needs Assessment report focusing on Wau County,¹¹ 52% of households reside in either a tukul or rakooba (like a tukul but often made of weaker materials), 36% live in a concrete building, while 11% live in a shelter made of plastic sheets and poles.

The research team observed only one road in Wau Town as tarmacked. Plans for 60km of internal tarmacked road within Wau Town were reportedly shelved in November 2024 due to economic challenges.¹² Wau Town is accessible by both air and land from Juba. According to IOM, it is surrounded by 'well-maintained maram roads' (maram being a type of heavy red clay that withstands water, thus is less likely to become sticky mud).¹³ These include major highways which link it to neighbouring regions and states.

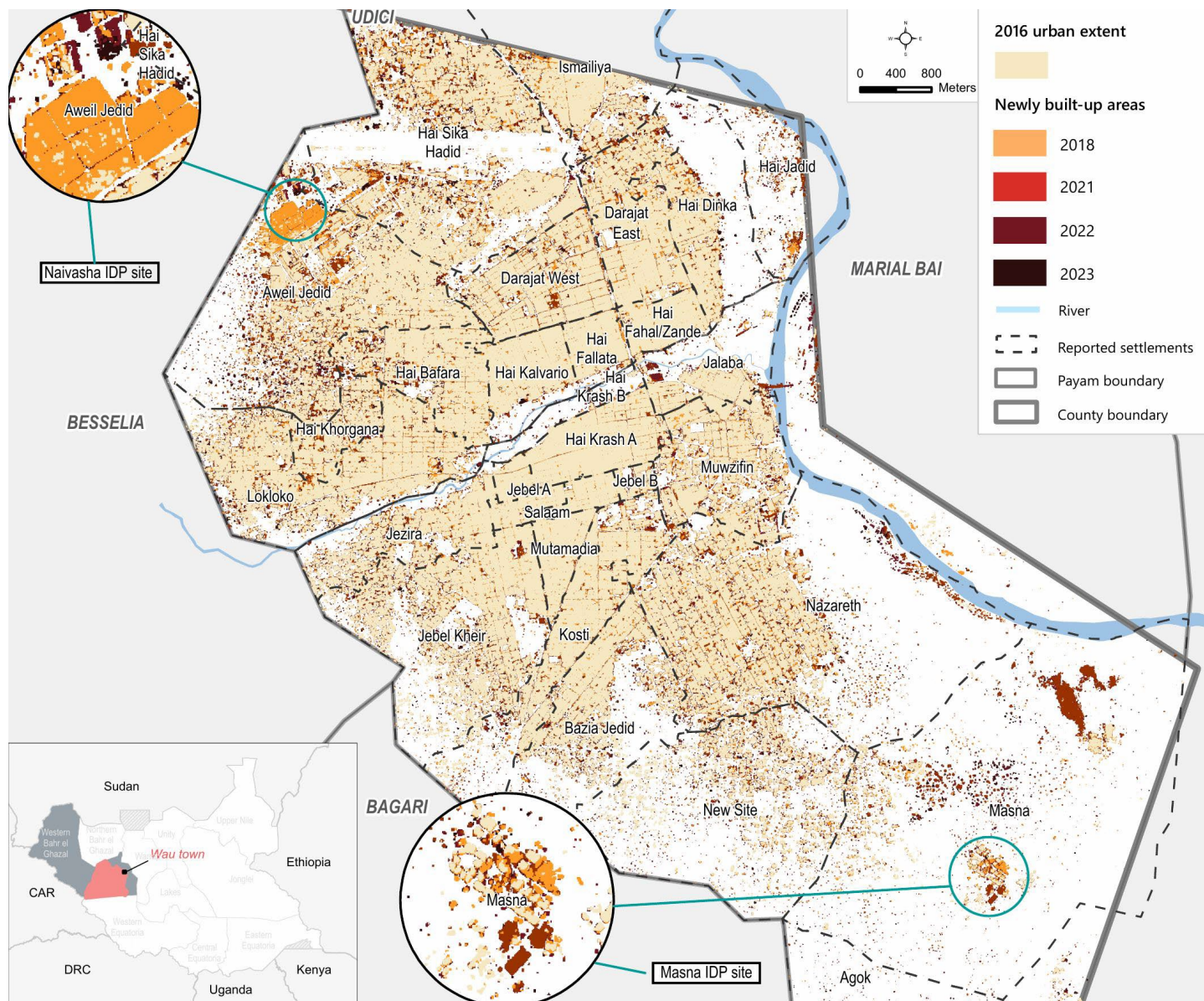
1.2 Trajectories of Settlement Growth

Map 2 shows the last year a building was seen on satellite imagery, thus is helpful to show building destruction in different years. There has been **little building destruction in Wau Town during the time period assessed (2016-2023)**. The primary exceptions are the destruction of small buildings on the outskirts of the city (such as close to the border with Bagari), as well as some limited destruction in Hai Sika Hadid and Aweil Jedid in the northwest of Wau town. The map appears to show small settlements along the river to the east of Wau Town, particularly in Nazareth and Hai Jadid, which look to have been destroyed between 2018 and 2022. In Nazareth, the settlements may correspond to reports of a training centre for soldiers, with simple tukuls made of grass. These tukuls are likely to have deteriorated quickly after training at the centre halted, likely in 2022. In Hai Jadid, these 'settlements' may in fact correspond to piles of bricks from a brick factory that reportedly exists there.

¹¹ Inter Sectoral Needs Assessment (ISNA) 2023. Urban Component's Quantitative Assessment Report: Wau County. (2022). International Organization for Migration. [Link](#).

¹² Construction of Wau roads stall due to lack of funds. (2024, Nov.1). *Radio Tamazuj*. [Link](#).

¹³ *Wau: Service Mapping*. (2023, October). IOM DTM. [Link](#).



Indeed, as shown in the table on the left of Map 2, the **built-up area in Wau town appears to have stayed relatively stable since 2016**, with most years showing a small increase. The exception to this is 2016 to 2017, when 10% of the built-up areas of Wau Town were destroyed. This corresponds to reports in secondary sources of significant fighting in Wau Town in 2016, during an escalation of the South Sudanese Civil War (2013-18).¹⁴

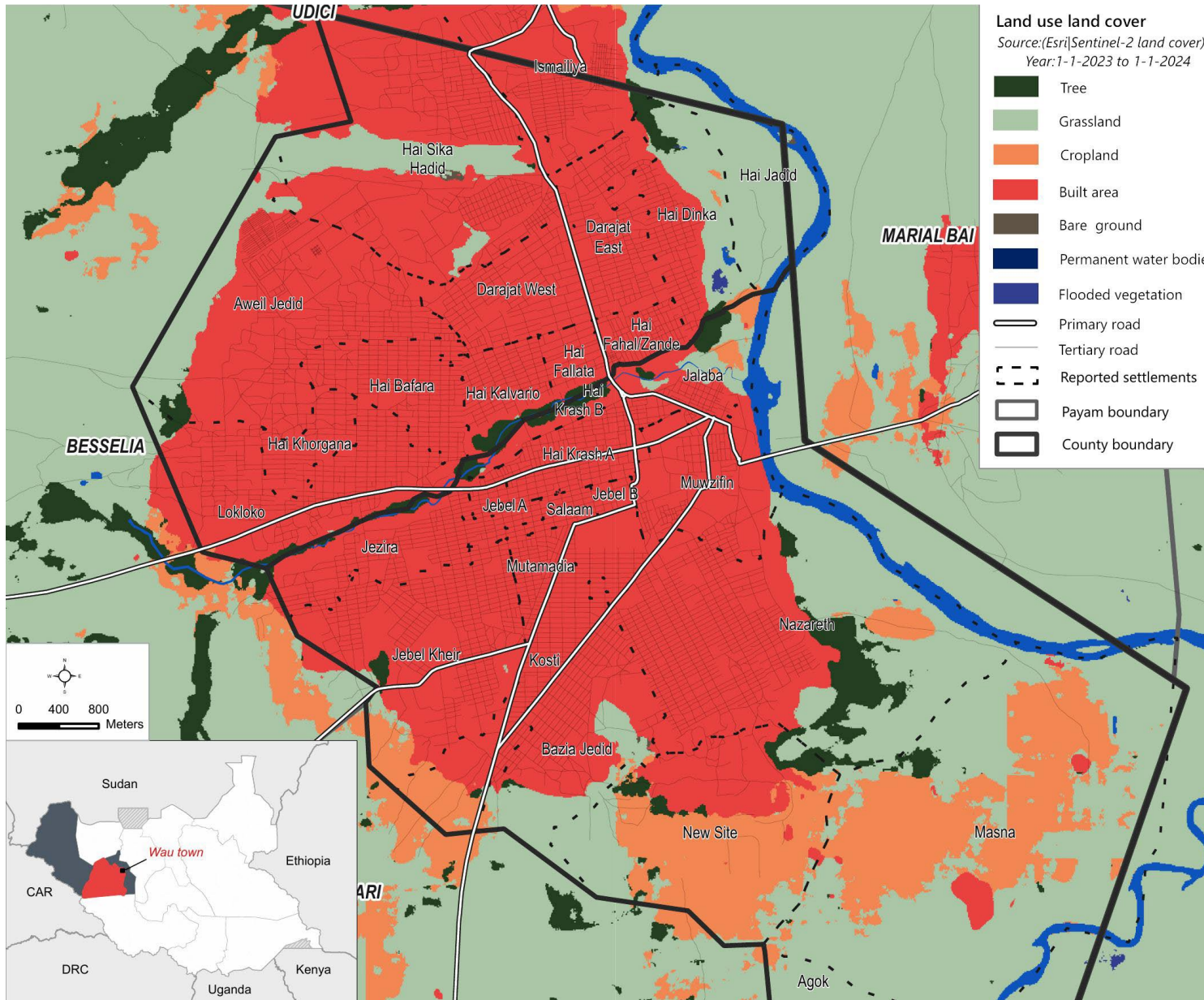
Map 3 shows areas which have been newly built in Wau Town since 2016, and the year this building occurred. The majority of Wau Town had already been built by 2016, with only a small number of new buildings and compounds scattered around the city built since then, mostly in 2022. This is corroborated by Map 2, which shows that the area of Wau Town's built-up areas has remained relatively stable since 2016.

Also seen in Map 3 is the establishment of the UNMISS Compound (likely sometime in 2016), as well as Naivasha IDP camp (formerly the PoC site) and the Masna IDP site in June 2016.¹⁵ The map also shows that there has been gradual expansion of Masna IDP Camp. While parts were built by 2016, there were new additions in the period 2016 to 2018, and 2021 to 2022.

Map 3: Newly built-up areas in Wau Town (2016-2023). Source: Sirko et al. (2023). Google Research: High Resolution Building and Road Detection from Sentinel-2.

¹⁴ Addressing peace and safety concerns in Wau, South Sudan. (February 2019). Saferworld. [Link](#).

¹⁵ Wau Protection of Civilians Site Update. (2017. February). IOM DTM. [Link](#). & Wau: Masna Biira IDPs return home. (2024, Jan. 4). Radio Tamazuj. [Link](#).

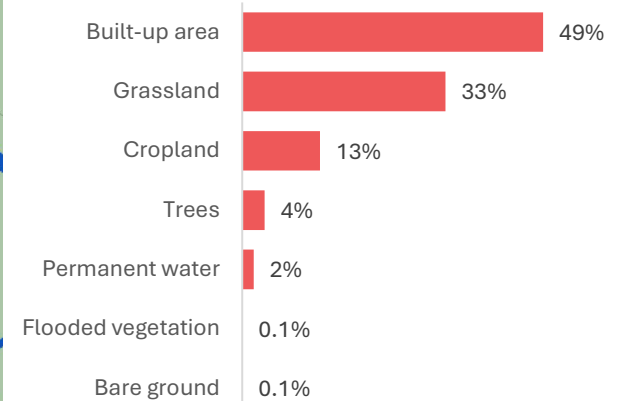


1.3 Land Use and Land Cover

As shown in Map 4, the majority of buildings in Wau Town are concentrated in the centre, alongside the payam boundary. The outskirts of Wau Town are mostly grassland and cropland, with low numbers of trees. Grassland makes up 33% of Wau Town, While a large proportion of cropland is located in the southern neighbourhoods of New Site and Masna, there is cropland surrounding most sides of Wau Town, such as in Jalaba, Nazareth, Jebel Kheir and Bazia Jedid (see Chart 1).

Trees make up 4% of Wau Town, primarily along the payam boundary between Wau South and Wau North, along which runs a river.

CHART 1: LAND COVER IN WAU TOWN



Source: ESA WorldCover 2021

Map 4: Land Use and Land Cover. Source: ESA WorldCover 2021/Contains modified Copernicus Sentinel data [2021] processed by ESA WorldCover consortium

2. Population and Displacement

2.1 Population Estimates

Population data below the county level in South Sudan is rare, and even county-level figures can be unreliable. Estimates of Wau County, for example, range from 134,558 in 2015 (the European Commission's Joint Research Centre's estimate (JRC))¹⁶, 208,487 in 2021 (the Government of South Sudan's National Bureau of Statistics' estimate)¹⁷ to 320,752 in 2022 (UN OCHA population estimate).¹⁸ The large discrepancy in these figures is unlikely to be caused by large-scale population movement, and instead by different methods used to collect the data.¹⁹

However, given the JRC has produced several figures using the same data collection methods, it is possible to show that the population of Wau County – and therefore likely of Wau Town itself – has grown steadily over time (see Chart 2).

In terms of the population of Wau Town, few estimates exist. According to the Kontur Population dataset for population density, the population of Wau Town in 2023 was approximately 160,000.²⁰

The number of returnees in Wau Town is unclear. Findings from the 2023 Inter-Sectoral Needs Assessment (ISNA) report focusing on Wau County (the data for which was collected in September-October 2022) indicate that 62% of households identify as host community members (see Chart 3), while 36% of households identifying as returnees.²¹ Only 3% of households identify as IDPs. In this context, returnee is likely to refer to an individual who has been displaced (either within South Sudan or to another county) and who has returned home.

However, since the Sudan War began in April 2023, UNHCR and IOM have recorded 872,563 individuals, both Sudanese refugees and South Sudanese returnees, who have crossed into South Sudan from Sudan, of whom 15,636 reported their intention to go to Wau County.²² The proportion of returnees has therefore likely altered since the data for the ISNA focusing on Wau County was collected in 2022, both due to Sudanese refugees and South Sudanese returnees arriving from Sudan, as well as due to existing returnees fully integrating into the community, and no longer considering themselves as returnees.

As of January 2023, IOM found that there were 6,713 individuals in the Naivasha IDP Camp (formerly Wau PoC site), and 2,909 individuals in the Masna Collective Centre.²³

CHART 2: POPULATION OF WAU COUNTY (1975-2015)

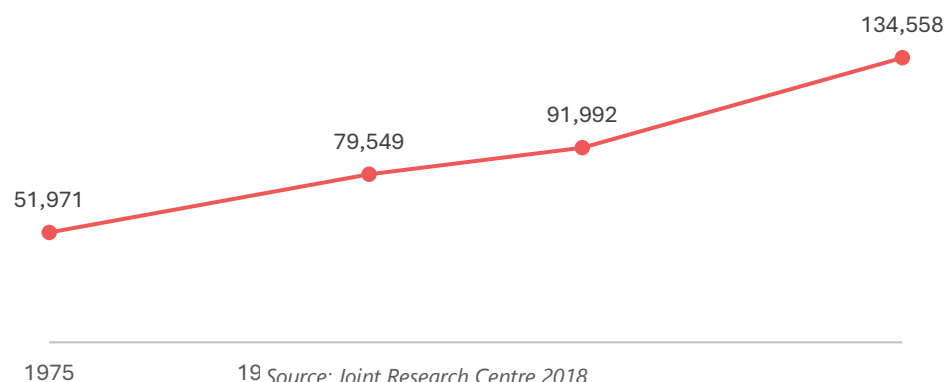
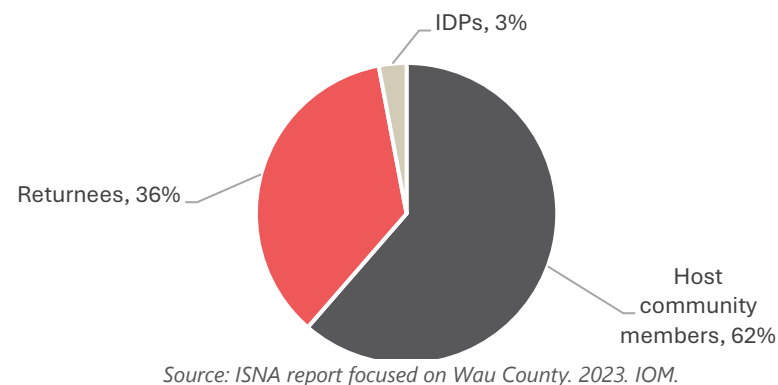


CHART 3: DISPLACEMENT STATUS OF HOUSEHOLDS IN WAU TOWN IN OCTOBER 2022



¹⁶ Corbane, C., et al. (2018). *GHS-BUILT R2018A - GHS built-up grid, derived from Landsat, multitemporal (1975-1990-2000-2014)* [Dataset]. European Commission, Joint Research Centre (JRC). [Link](#).

¹⁷ *South Sudan: Subnational Population Estimates* (National Bureau of Statistics & UNFPA). (2023). [Dataset]. [Link](#).

¹⁸ *Population Estimates* (UN Office for the Coordination of Humanitarian Affairs). (2022). [Dataset]. [Link](#).

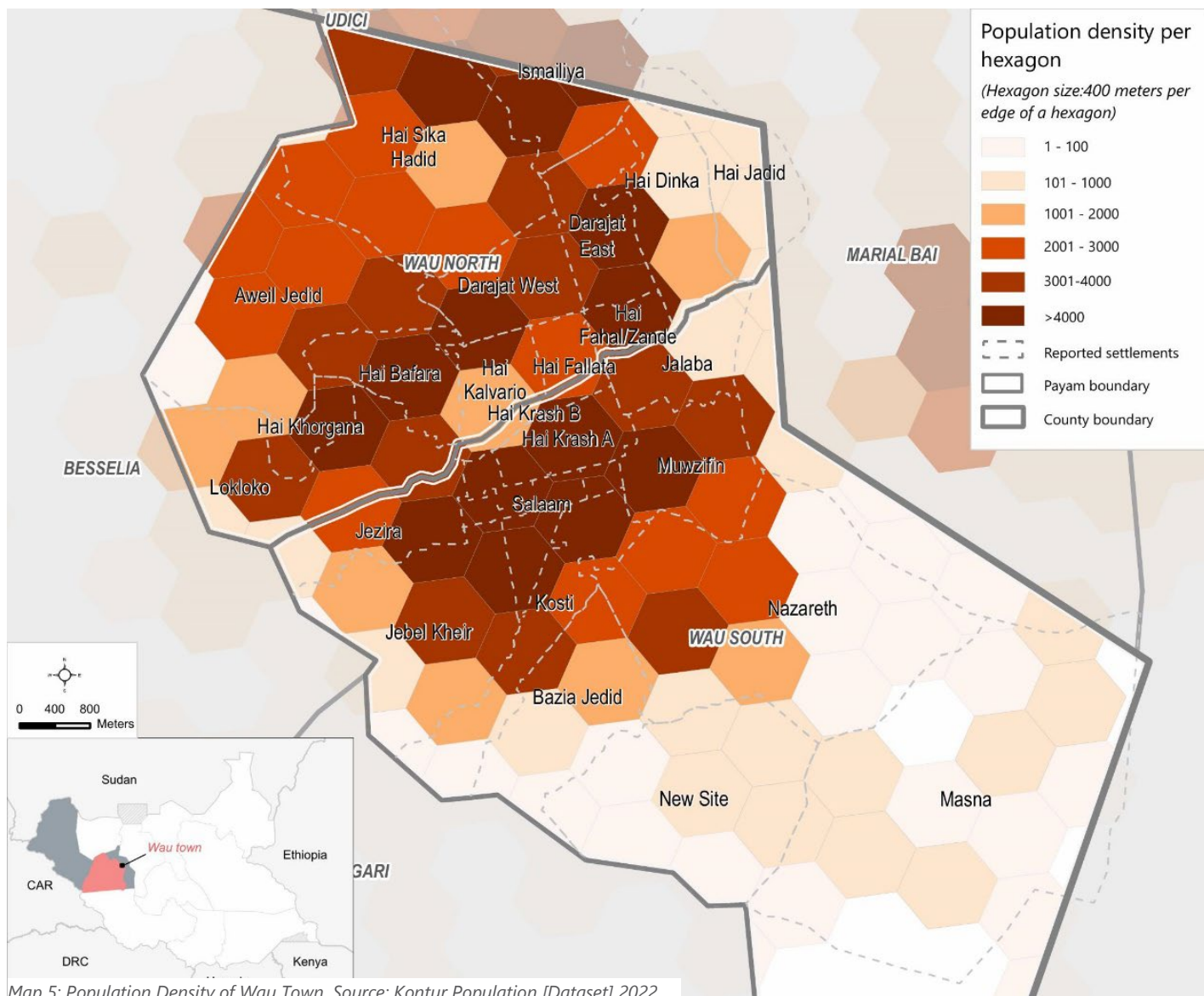
¹⁹ Wau County, Western Bahr el-Ghazal State. (2022). *Conflict Sensitivity Resource Facility (CSRF)*. [Link](#).

²⁰ *South Sudan: Population Density for 400m H3 Hexagons* (Kontur Population). (2022). [Dataset]. [Link](#).

²¹ *Inter Sectoral Needs Assessment (ISNA) 2023. Urban Component's Quantitative Assessment Report: Wau County*. (2023). International Organization for Migration. [Link](#).

²² *Population Movement from Sudan to South Sudan. Dashboard*. (2024) UN-IOM and UNHCR. [Link](#).

²³ *Population Count: Naivasha IDP Camp and Masna Collective Centre*. (2023). International Organization for Migration Displacement Tracking Matrix. [Link](#).



Map 5: Population Density of Wau Town. Source: Kontur Population [Dataset] 2022

2.2 Population Density

As shown in Map 5, the population for Wau Town is concentrated in the north of the reported city boundaries. The area of Hai Fahal/Zande has a particularly high population density, with 5,474 people estimated to live in the area covered by the hexagon. This equates to a population density of 7,589 people per km². In contrast, the southern neighbourhoods of Masna and New Site have very low population densities, with most hexagons estimated to have below 500 people living within them, potentially due to a perception of better access to services or infrastructure within the town centre. From Masna to the town centre, for example, is around 5 km or a 45-90 minute walk.

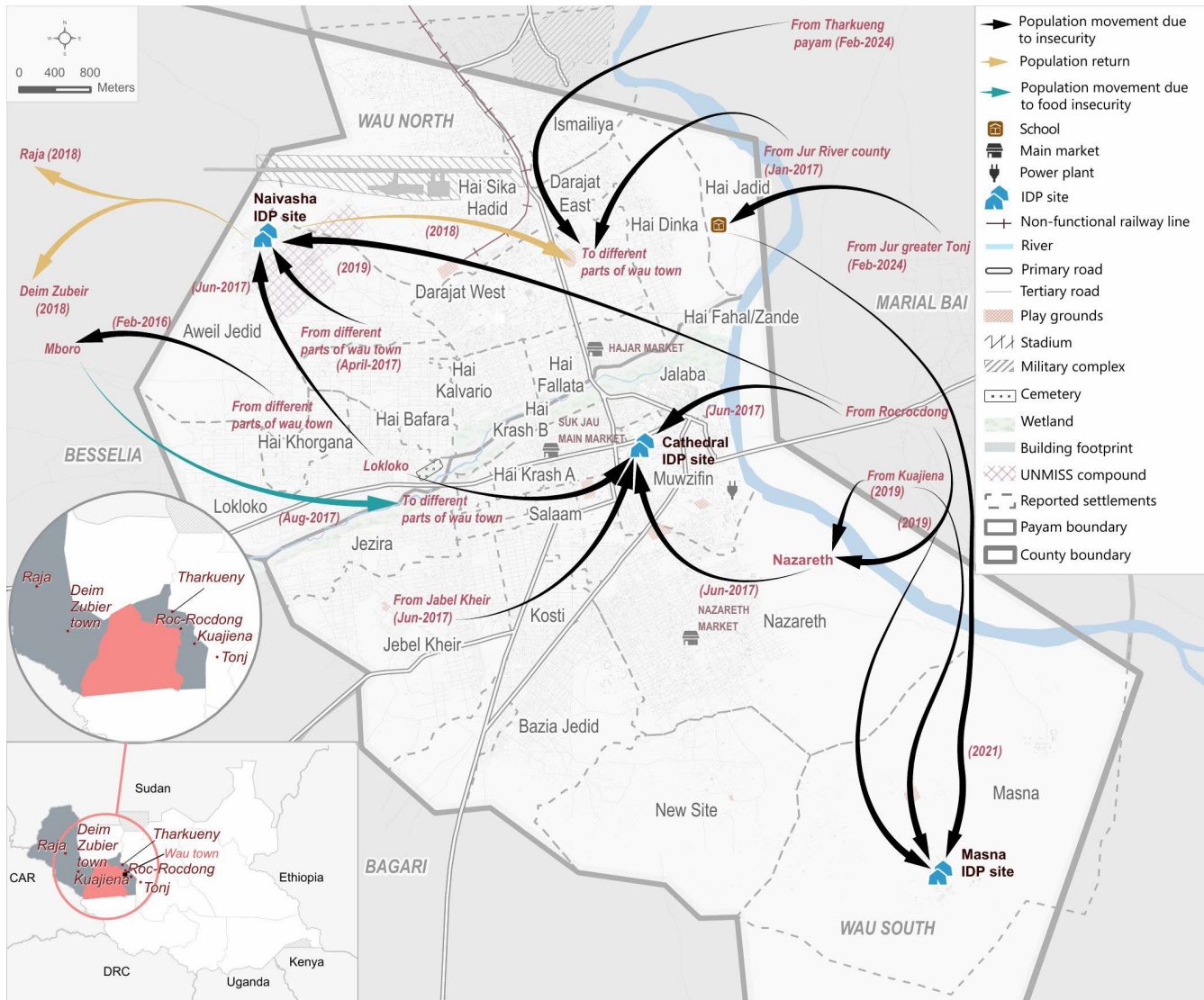
2.3 Population Movement

Findings suggest that **insecurity has been the primary driver of displacement from and to Wau Town in the last 10 years**, as displayed in Map 6. Fighting within Wau Town during the War displaced 8,000 people in February 2016, while in January 2017, Wau Town received 12,000 new arrivals, displaced from fighting in Jur River, the latter of which can be seen on Map 7. Between April and June 2017, 27,000 people were recorded fleeing renewed fighting in Wau Town, many of whom sought shelter in the Wau PoC site, as well as other IDP sites in Wau Town including Cathedral.²⁴

Despite the Civil War ending in September 2018 with the signing of the Revitalised Agreement on the Resolution of the Conflict in the Republic of South Sudan (R-ARCSS), insecurity continued, resulting in further displacement in and around Wau Town. IDP sites continued to increase over 2019, with IOM recording that the population of displacement sites rose by 53% from March to May 2019, from 24,112 to 36,925.²⁵

²⁴ South Sudan Food Security Outlook: June 2016 to January 2017. (2017). Famine Early Warning Systems Network (FEWS NET). [Link](#).

²⁵ Population Count: Wau PoC AA Site & Collective Centres. (2019). IOM Displacement Tracking Matrix. [Link](#).



Map 6: Population movement into and out of Wau Town 2016-2024. Source: REACH Population Movement Database (2024)

Findings suggest that displacement reduced after 2019, with the only recorded waves of people being 4,000 IDPs arriving to Wau Town in March 2021 due to fighting in the Greater Tonj area²⁶ and 2,000 IDPs arriving to Wau Town in August 2021 due to insecurity in Ezo County.²⁷

More recently, in February 2024, FEWS NET reported that 17,000 people had been displaced from Jur River to Wau Town due to insecurity. FEWS NET emphasised that newly displaced households would likely face 'extreme difficulty' in accessing adequate food, due to losing access to typical income sources, and their inability to harvest their fields.²⁸

Western Bahr el-Ghazal also **experiences significant seasonal migration of cattle herders** (pastoralists) during the dry season from Tonj and Gogrial in Warrup State to Wau County. Further explanation of the conflict that has resulted from these movements is detailed in Section 5.1 Conflict on pg. 31.

Since the Sudan War began in April 2023, UNHR and IOM have recorded 15,636 individuals who have crossed into South Sudan who stated their intended destination as Wau County.²⁹ The most common point of entry into South Sudan was Wunthow (Juda), in Upper Nile State.

3. Socioeconomic Conditions

3.1 Livelihoods

Secondary sources suggest that the economy in Wau County primarily revolves around agriculture and the sale of forest products (including firewood, charcoal, stones).³⁰ Findings from FGDs and KIs corroborate this in regard to Wau Town. In particular, farming, or casual labour on farms, appears to be a crucial livelihood source for many different communities in Wau Town. Though, FGD participants cited a wide variety of challenges they encounter in cultivation, such as insecurity due to criminals, as well as flooding destroying their crops, insufficient training in cultivation, and a lack of equipment. Moreover, returnees reportedly face challenges in acquiring land to cultivate, and may therefore only be able to access casual labour on farms, for which the payment is low.

²⁶ UN OCHA. (email dissemination). South Sudan: Key Context Update. March 2021. (2021, March). See also: *South Sudan: Humanitarian Snapshot*. (2021, April 9). OCHA. [Link](#).

²⁷ UN OCHA. (email dissemination). South Sudan – A Summary of the Ezo Inter-Agency Humanitarian Mission. (2021, November) See also: South Sudan - Yangiri Payam, Ezo County: Fact Finding Inter-Agency Assessment. (2021, October 21). UN OCHA. [Link](#).

²⁸ *South Sudan Food Security Outlook: June 2016 to January 2017*. (2017). Famine Early Warning Systems Network (FEWS NET). [Link](#).

²⁹ *Population Movement from Sudan to South Sudan. Dashboard*. (2024) UN-IOM and UNHCR. [Link](#).

³⁰ *South Sudan: The impact of conflict on food security and livelihoods—DIEM-Impact report*. (2024). FAO. [Link](#).

'There is a lot of insecurity from criminals and unknown gun people outside town which means we cannot move outside Wau town to cultivate' – FGD participant (male, returnee)

Moreover, several FGD participants indicated that farming productivity and profit had recently declined due to increasing prices of farming equipment.

Farming has changed because in the past you can cultivate and the weather was good, and the ox plough for cultivation was cheaper, it was just a small amount of money. But now, currently, the plough is more than \$150' – FGD participant (male, IDP)

According to FGD participants, sales of timber and firewood products also appear to be common livelihood in Wau Town. Challenges associated with this livelihood reportedly include increased risk of attacks on women who collect firewood from out of the town, as well as a lack of transportation to return to the town with the produce.

		May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Seasons	Rainy season												
Crop harvest	Sorghum												
	Groundnuts												
	Cassava												
	Sesame												
	Cowpeas												
	Okra												
	Pumpkin												
Sweet potatoes													
Livestock	Cattle sales peak												
	Goat sales peak												
High Expenditure Periods	High staple prices												
	Lean season												
Livelihoods	Agricultural labour peak												
	Firewood sales peak												
	Petty trade peak												
	Fishing peak												

Table 1: Seasonality of livelihoods in Wau County. Source: Famine Early Warning System Network (FEWS NET) 2018

'The only challenge [for collecting firewood and charcoal] is transportation. The charcoal maker doesn't have a vehicle or tuktuk to transport them from village where they make them to town' – FGD participant (male, host community)

In general, several FGD participants stated that income from livelihood sources has declined in recent years, with many citing the economic crisis and the rising rate of the dollar.

'Over the last 10 years, all was good. Only since this year, when the rate of USD went high, all went bad. Charcoal is now 30k SSP, so if you buy and sell small-small things, it will not bring money for you' – FGD participant (female, IDP)

As seen in Table 1 from Famine Early Warning System Network (FEWS NET), agricultural labour peaks in the rainy season, between June and September, when the land is being prepared and crops are being planted. This is supported by statements from FGD participants.

3.2 Seasonality of Livelihoods

Several FGD participants reported that firewood collecting and making charcoal is done throughout the year, though data in Table 1 indicates the peak is in the dry season. Findings from FGDs also suggest that collecting rock and sand can only be done during the dry season, when a vehicle can be used without getting stuck in mud.

Table 1 and findings from FGDs both indicate that the dry season is more productive for those engaging in petty trade at the market.

'In the rainy season, everything is very expensive because of the road, people who supply from the outside have trouble them. But during dry season, everything is much cheaper in the market so you can make a profit. But in the rainy season, you cannot make a profit' - FGD participant (female, host community)

Selling honey and lulu oil is reportedly one example of an activity that is only done in some months of a year, from May to June, according to findings from FGDs.

However, climate change is already negatively impacting livelihoods. Several FGD participants stated that late arrival of the rainy season is a challenge for cultivation. Secondary sources show that as global warming increases, extreme weather is becoming more likely, and once-predictable timings of dry and rainy seasons are changing.³¹ Dry seasons are predicted to become drier, with rainy seasons becoming wetter.³² Further information on this can be found in Section 3.2 'Climate'.

3.3 Differences in Livelihood Sources Between Groups

Findings suggest that livelihood sources may also differ between communities, based on ethnic and displacement status, as well as gender.

'The Dinka keep cattle so they can sell them to get money or sell milk. Faratit do other things, like growing cassava to sell at the market. Hunting is done by both Faratit and Luo. For Luo, they make charcoal and sell that. And collect other wild foods to sell at market. Lulu oil is also made by Luo and sold at market. Honey is done by all communities, but mostly by Luo' – FGD participant (male, IDP)

At the national level, livelihood sources are reported to differ substantially between groups. Secondary sources have shown that returnees are up to three times more likely to rely on casual labour than the

³¹ Guo, J., Hu, S., & Guan, Y. (2022). Regime shifts of the wet and dry seasons in the tropics under global warming. *Environmental Research Letters*, 17(10). [Link](#).

³² Climate change will cause more extreme wet and dry seasons. (2020). *Clemson University*. [Link](#).

general population.³³ This is confirmed by findings from FGDs in Wau Town, where participants stated that returnees/refugees from Sudan 'usually rely' on casual labour due to having no access to land. Additionally, another FGD participant reported that IDPs struggle to access farming land, given many of them live in the former-PoC site, Naivasha IDP camp.

In terms of discrepancy in livelihoods between groups based on income, one FGD participant reported that those with savings in the bank find it easier to get help from others, likely referring to loans.

'It depends on your income. For some of the community, they maybe have income in the bank. Someone may help them. For me, I have no one to help me to start business or to make income' – FGD participant (female, host community)

3.3 Food Insecurity and Reliance on Food Aid

In October 2024, the Integrated Phase Classification (IPC) estimated that 45% of the population in Wau County would experience at least crisis-level food insecurity (IPC Phase-3 or worse) between November and December 2024.³⁴ This includes 5% of the population (16,519 people) in IPC Phase-4 (Emergency), who will likely face large food consumption gaps and severe health outcomes. Between September and November 2024, Wau County has been classified in area-level Phase-3 (Crisis).

According to IPC predictions, the food security situation in Wau County is expected to improve marginally between December 2024 and March 2025, mainly because of the harvest. During this period, 35% of the population are expected to continue to face severe acute food insecurity, and Wau County will still be classified in area-level Phase-3 during this period. Food security in Wau County is expected to deteriorate during the peak of the lean season – the period between April and July 2025 – as harvested food stocks exhaust and financial access barriers reach their seasonal peak. In this period, 50% of the population are expected to experience at least crisis-level food insecurity (IPC Phase-3 or worse). This includes 5% of the population (16,519 people) in emergency-level food insecurity (IPC Phase-4). Wau County is expected to remain in area-level Phase-3 between April and July 2025.

Findings from primary data collection in September 2024 corroborate these predictions. Several FGD participants described that they had nothing or little to eat and could not afford food at the market.

'The food situation is very bad. Sometimes we go 5 days without getting a good meal. Otherwise we ask our neighbours for something small to feed the kids' – FGD participant (Female, IDP)

'The food situation is very bad, because everything needs money. If you want to buy half kg of meat that's 6,000 SSP. if you want to buy other ingredients, it will go to 10,000 SSP. So any profit you make from business all goes to food' – FGD participant (female, host community)

In explaining the challenges they face accessing food, FGD participants focused primarily on the current economic crisis and on insecurity. Indeed, as shown in Chart 4 'Wau Town Market Functionality Score May 2023-October 2024' on page 14, the price of goods has increased significantly since May 2023, just after the Sudan War began in April 2023.

'The biggest issue is the dollar and fluctuations of commodities in the markets. The prices of food items increase daily' – FGD participant (male, returnee)

'Some of us here have never seen how a dollar looks like, but every day we are hearing it is increasing and that it makes everything in the market increase. Since 2023 it shot up but it was still okay. But currently, it is something that cannot be described' – FGD participant (male, IDP)

Additionally, several FGD participants, both male and female, described how the risk of encountering criminals had prevented them from cultivating outside Wau Town, thus hindering their access to food. This impacts not only those who use cultivation as a means for food and income, but also those who rely on casual labour as a livelihood.

'In February, a lot of people used to go outside in bush and clean for cultivation. But around March and April, incidents happened. People were robbed. That's why people left everything there and came back to town without cultivating again' – FGD participant (female, host community)

According to the IPC, while 57% of the population of South Sudan will be acutely food insecure in the 2025 lean season (IPC Phase 3 or above), this figures rises to 85% for returnees.³⁵ This finding is likely to be echoed in Wau Town, where returnees face additional challenges accessing both food and income.

While some FGD participants said that food aid used to be available in the past, none said any was currently being distributed. Indeed, data shared with the assessment team by a humanitarian partner confirms that Wau County has not been prioritised for food aid in 2023, nor will be prioritised in 2024.³⁶

However, many participants expressed a desire for food aid to return due to the current food insecurity.

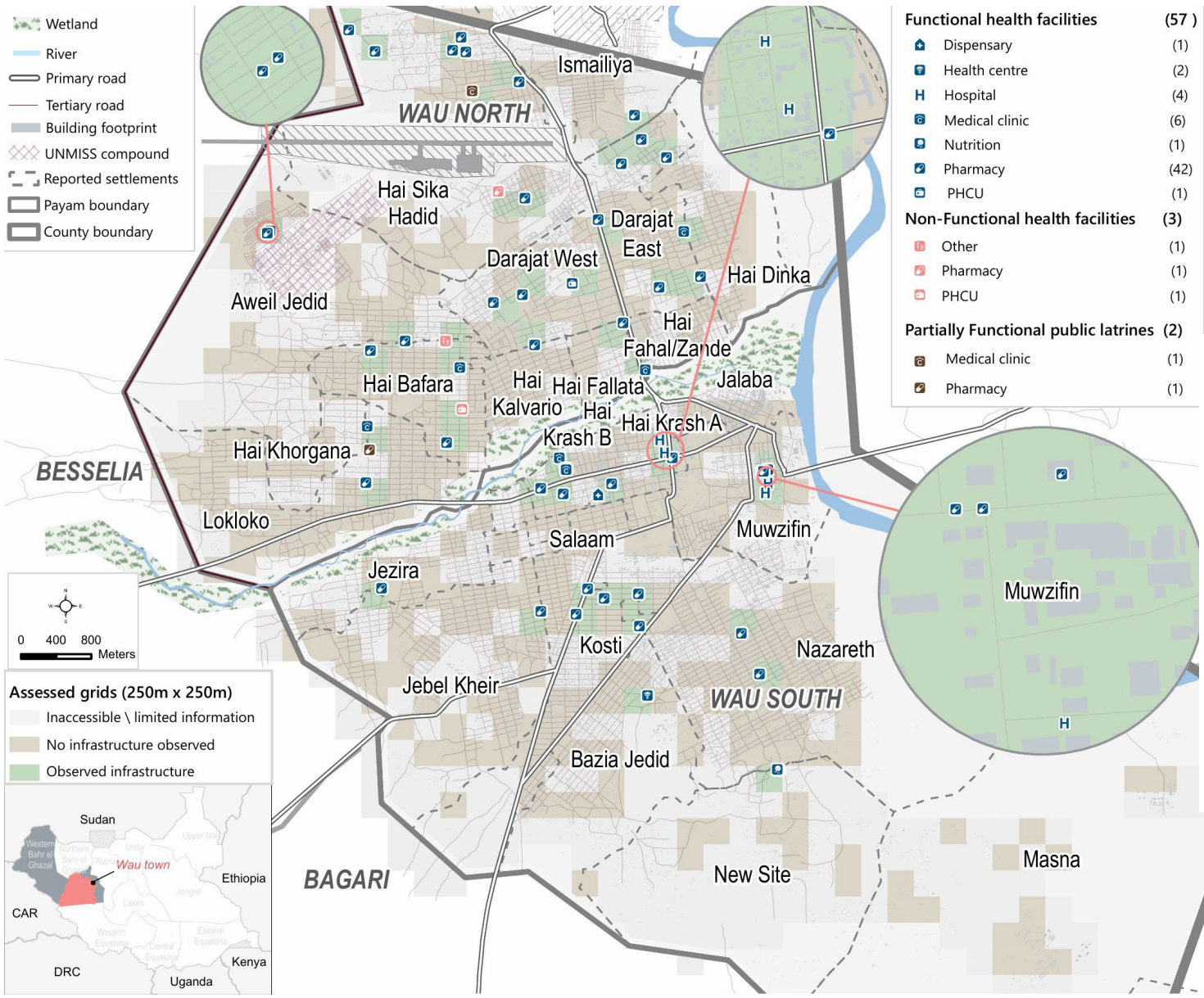
'Next year we pray that the Government and NGOs in South Sudan work together to provide food aid to the vulnerable population' – FGD participant (male, returnee)

³³ *Return and Reintegration Endline Survey in South Sudan's Former Breadbasket*. (November 2023). IOM DTM. [Link](#).

³⁴ *South Sudan: Acute Food Insecurity Situation for September - November 2024 and Projections for December 2024 - March 2025 and April - July 2025*. (2024). Integrated Food Security Phase Classification (IPC). [Link](#).

³⁵ *Ibid*.

³⁶ *Food Aid County Prioritizations* (2024 September 18). [Personal communication].

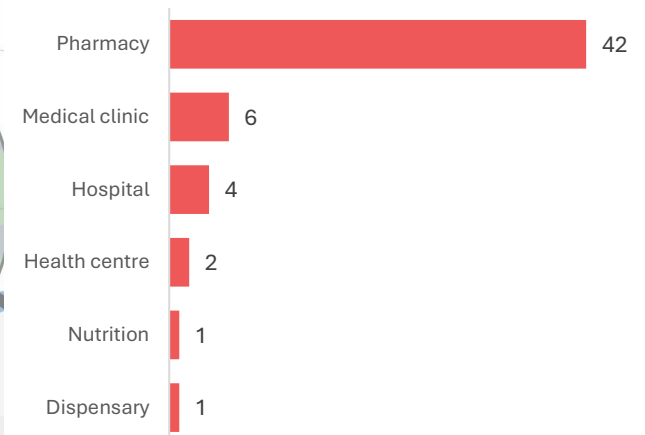


4 Infrastructure and Services

4.1 Health

Through the quantitative facilities assessment, the research team identified 62 health facilities in Wau Town, and interviewed 1 KI for each facility. Of these, 57 were functioning, 2 were partially functioning, and 3 not functioning. The most common health facility was pharmacy, while there were 4 hospitals and 6 mobile clinics (see Chart 4). The locations of these are seen in Map 7.

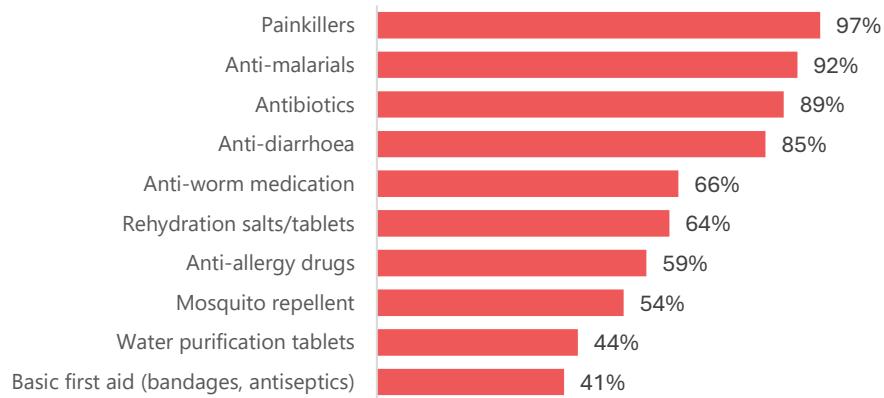
CHART 4: NUMBER OF HEALTH FACILITIES IN WAU TOWN



Source: Primary data – quantitative facilities assessment

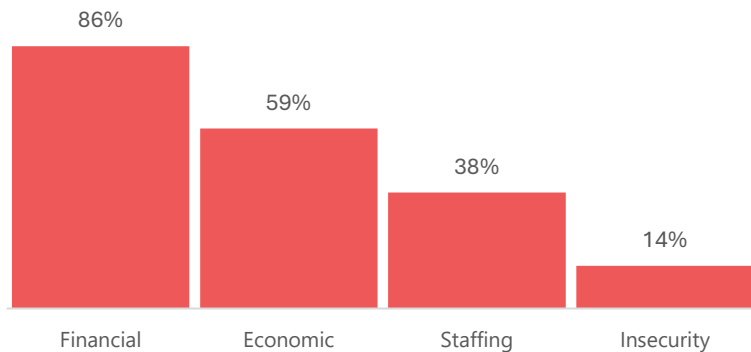
Map 7: Location of health facilities in Wau Town. Source: Primary data collection – quantitative facilities assessment

CHART 5: % OF HEALTH FACILITIES IN WAU TOWN WITH MAIN MEDICINES (N=57)



Source: Primary data – quantitative facilities assessment

CHART 6: % OF FULLY FUNCTIONAL HEALTH FACILITIES FACING MAIN MANAGEMENT CHALLENGES (N=29)



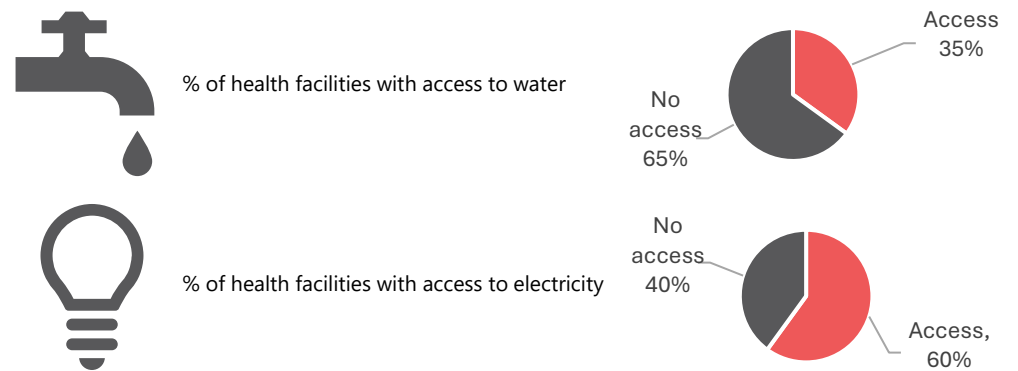
Source: Primary data – quantitative facilities assessment

Chart 5 shows the proportion of health facilities in Wau Town stocking key medicines, and shows that there are good levels of antibiotics and antimalarials, with 92% and 89% of health facility key informants, respectively, reporting that they are available at their health facility. However, only 41% of key informants reported the presence of basic first aid kits.

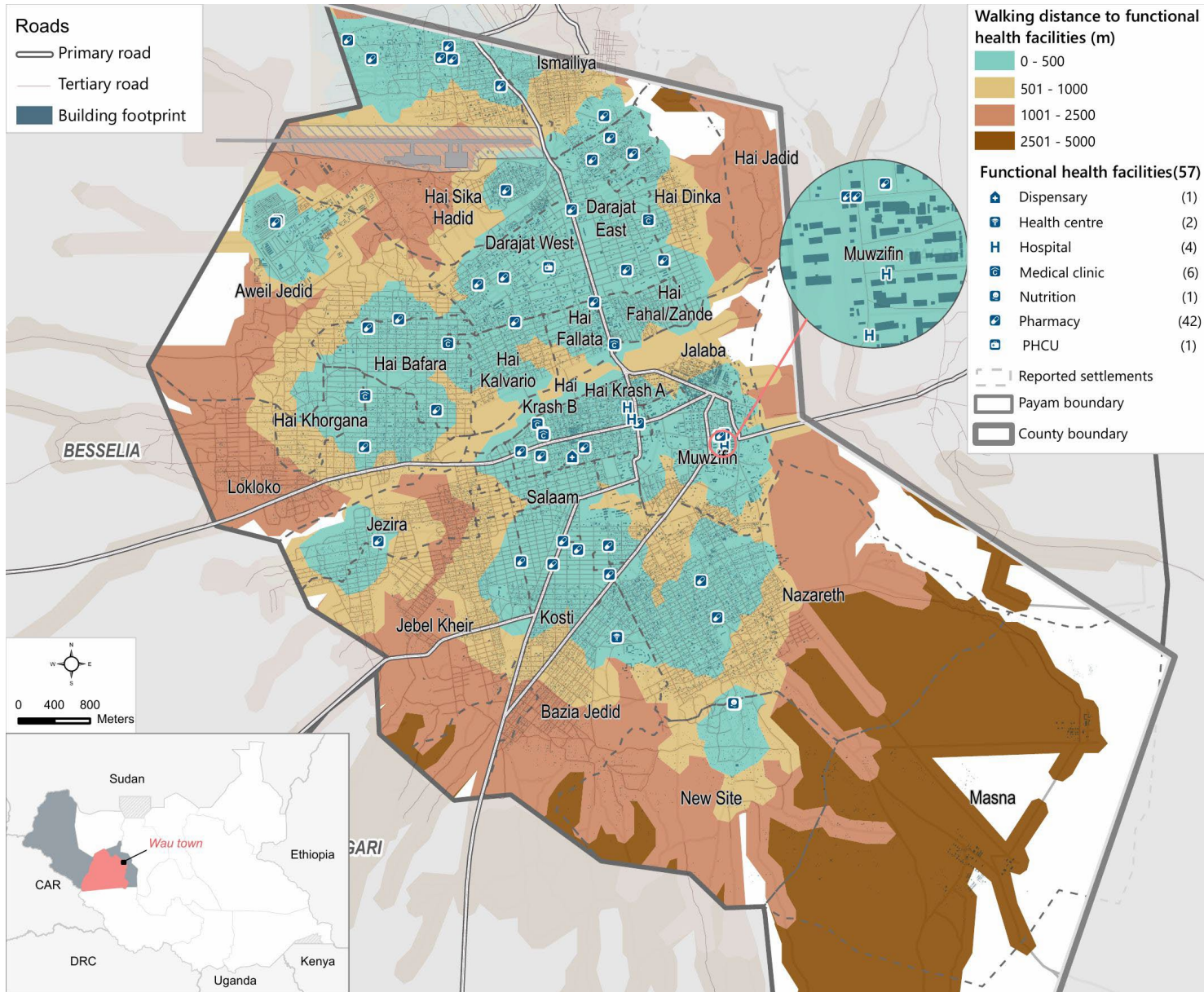
Staff at health facilities reportedly suffer from significant challenges in providing services (see Chart 6). Primarily, 86% of key informants at health facilities reported struggling with financial challenges. Meanwhile, only 14% reported that insecurity was an issue. Furthermore, 40% of key informants reported their health facility as not having electricity, while 65% reported there was no water supply (see Chart 7).

All KIs (100%) reported that the health facility functions in both dry and rainy seasons.

CHART 7: % OF FULLY FUNCTIONAL HEALTH FACILITIES WITH ACCESS TO WATER AND ELECTRICITY (N=57)

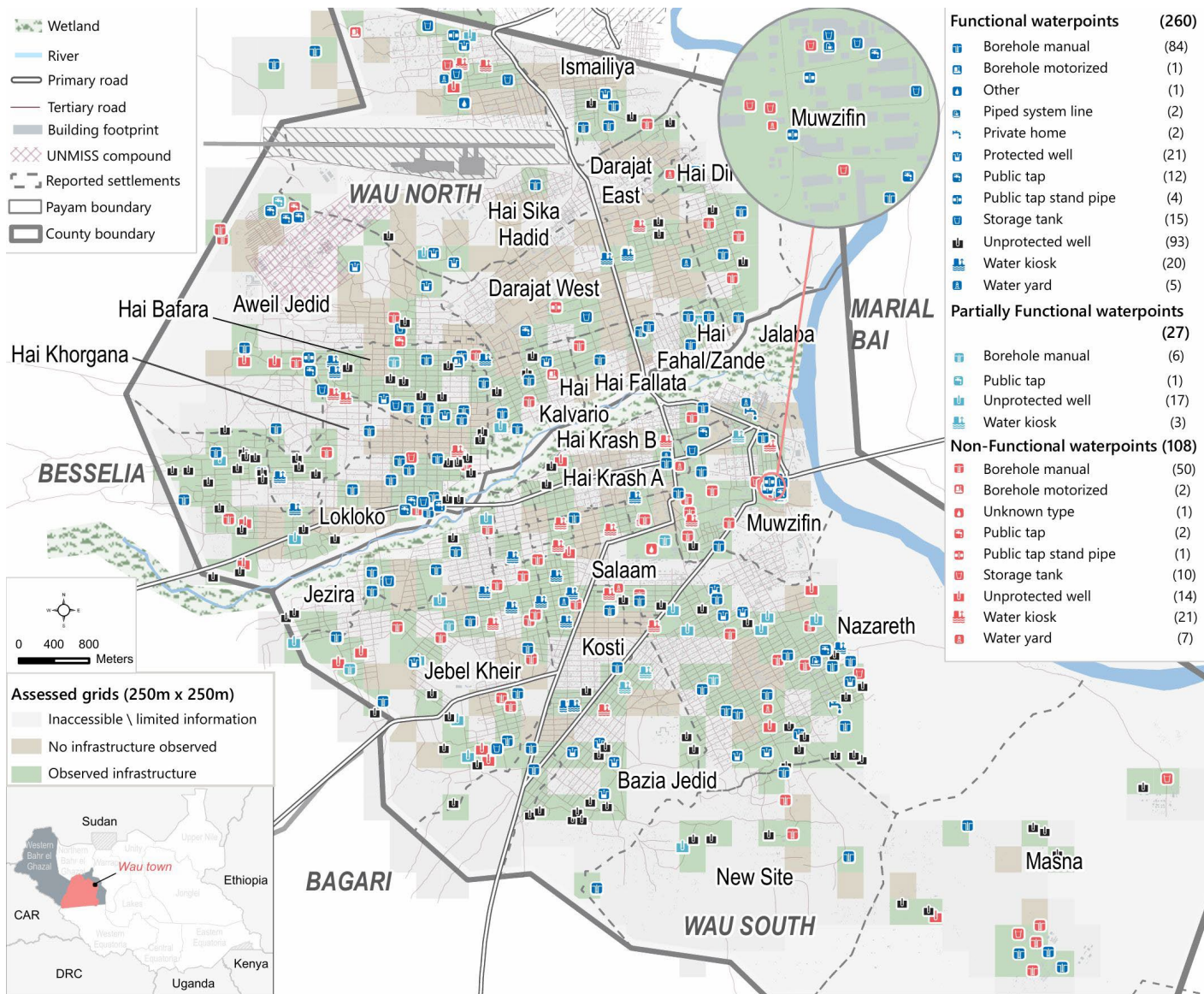


Source: Primary data – quantitative facilities assessment



Map 8 shows the walking distance to functional health facilities in Wau Town. Large parts of the town, such as Lokloko, Jebel Kheir, and Baziza Jedid, are over 2,500m away from a health facility (20-45 minutes walking), which may prove a significant challenge for vulnerable populations. While there are 4 hospitals, they are clustered in the centre on the eastern part of the city, in Hai Krash A and Muwzifin. This means that communities in the west, north, and south, must travel long distances to reach a hospital. Notably, there are no reported health facilities close to the Masna IDP site.

Map 8: Distances to functional health facilities in Wau Town. Source: Primary data – quantitative facilities assessment

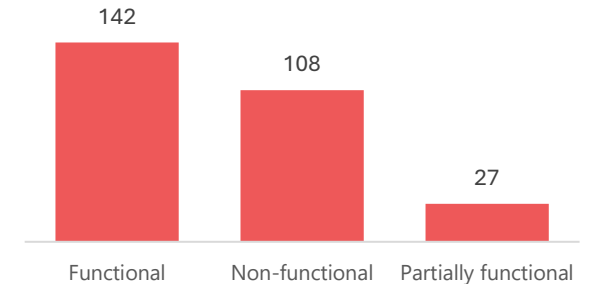


Map 9: Locations of waterpoints in Wau Town. Source: Primary data – quantitative facilities assessment

4.2 Waterpoints

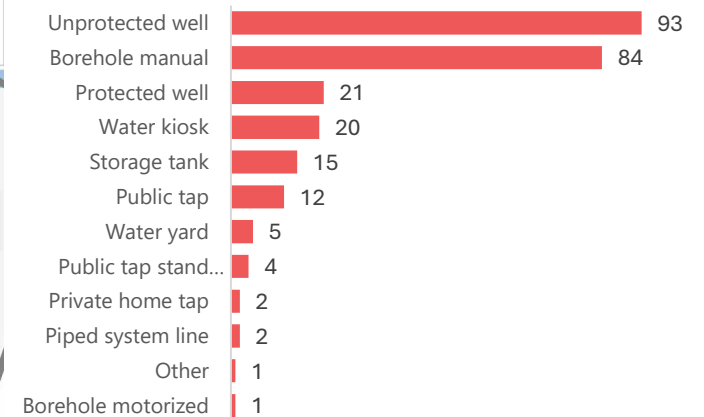
As shown in Map 9, the research team found 260 functional waterpoints in Wau Town, the most common being unprotected wells (93), manual boreholes (84), and protected wells (21). A further 27 waterpoints were partly functional, while 108 were non-functional, as shown in Chart 8.

CHART 8: FUNCTIONALITY OF WATERPOINTS IN WAU TOWN



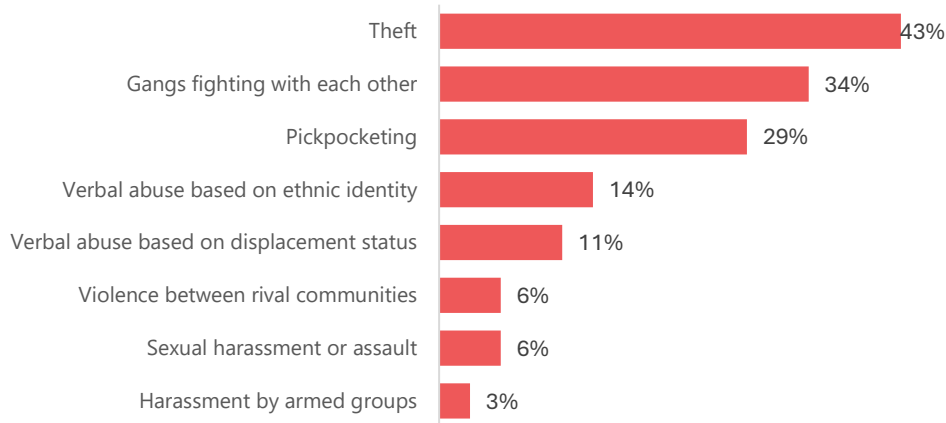
Source: Primary data – quantitative facilities assessment

CHART 9: TYPES OF FUNCTIONAL WATERPOINTS



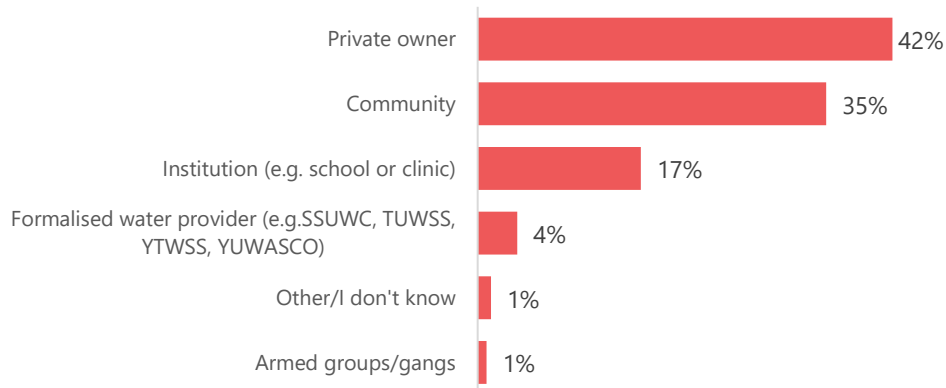
Source: Primary data – quantitative facilities assessment

CHART 10: % OF FULLY FUNCTIONAL WATERPOINTS WITH DIFFERENT TYPES OF SECURITY CONCERNS (N=35)



Source: Primary data – quantitative facilities assessment

CHART 11: NUMBER OF WATERPOINTS WITH DIFFERENT OWNERS (N=224)



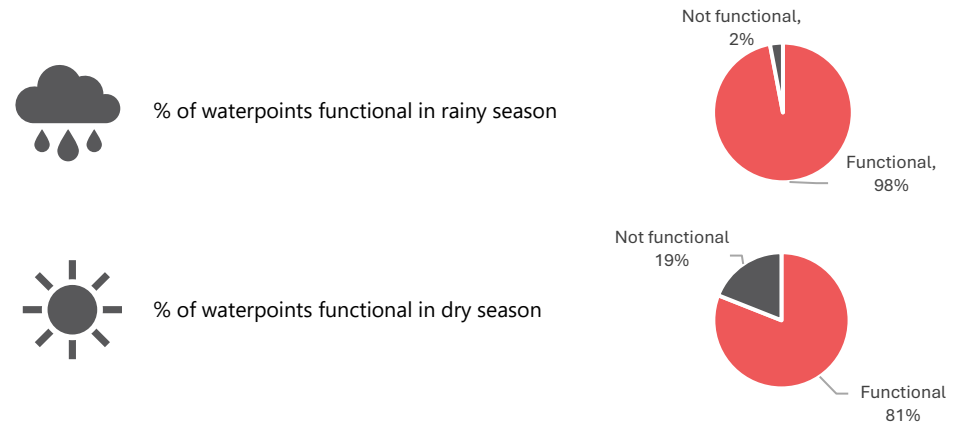
Source: Primary data – quantitative facilities assessment

KI participants in the quantitative facilities assessment identified security concerns related to fetching water in 35, or 14%, of fully functional waterpoints (see Chart 10). Theft and pickpocketing were concerns for 43% and 29% of KIs, while criminals fighting with each other was a concern for 34% of KIs, likely due to fear of being caught in the fighting, or fear of meeting criminals in the streets. Harassment based on ethnicity or displacement status were reported less frequently.

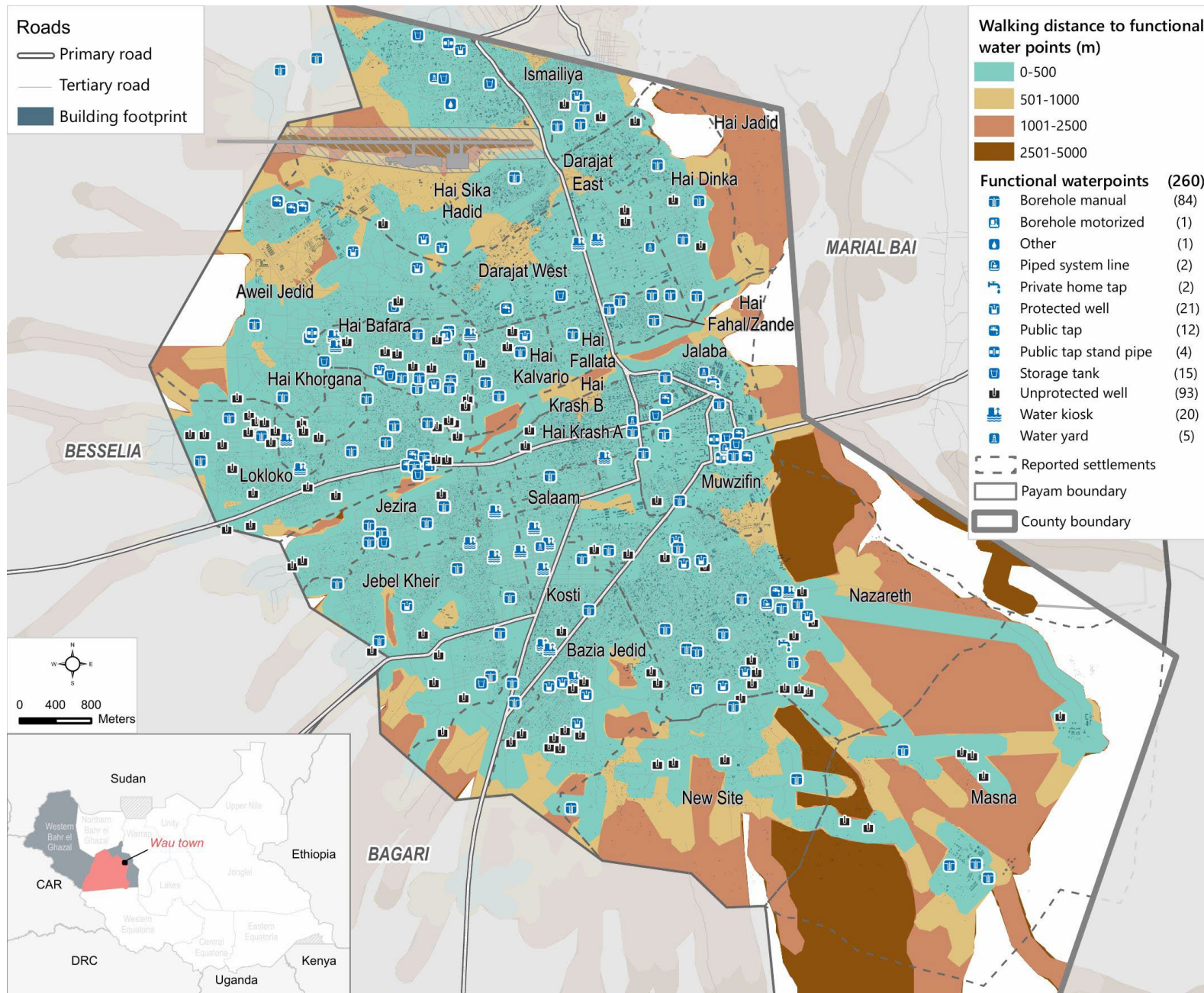
The most common ownership of waterpoints was reported to be by private owners, who owned 94 or 42% of waterpoints, while the community owns 79 waterpoints or 35% (see Chart 11).

Out of the functional or partly functional waterpoints, the majority (89%) are reportedly functional during the rainy season, though only 81% are functional during dry season. The vast majority of KIs who reported that the waterpoint was not functional in dry season attributed this to there being insufficient water available.

CHART 12: SEASONALITY OF FUNCTIONAL WATERPOINTS (N=260)



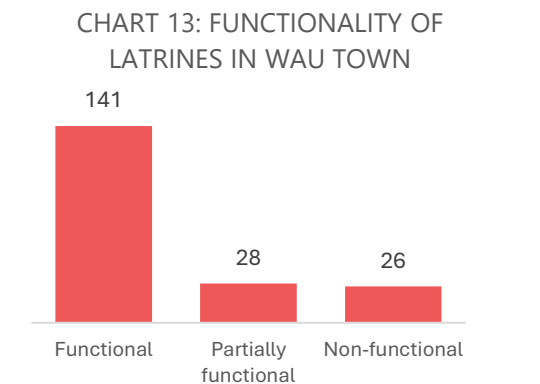
Source: Primary data – quantitative facilities assessment



As shown in Map 10, there is good coverage of functional waterpoints in Wau Town, with the vast majority of buildings within 500m (5-10 minute walk) of a functional waterpoint. There are, however, several settlements that are located only within 1000m-2500m of a waterpoint (20-45 minute walk), such as areas of Hai Jadid, New Side, Nazareth, and Masna (including Masna IDP camp). Parts of New Site and Masna are over 5000m away from a waterpoint, though when comparing this to Map 5 'Population Density in Wau Town' on pg. 10, very few people reside in this area.

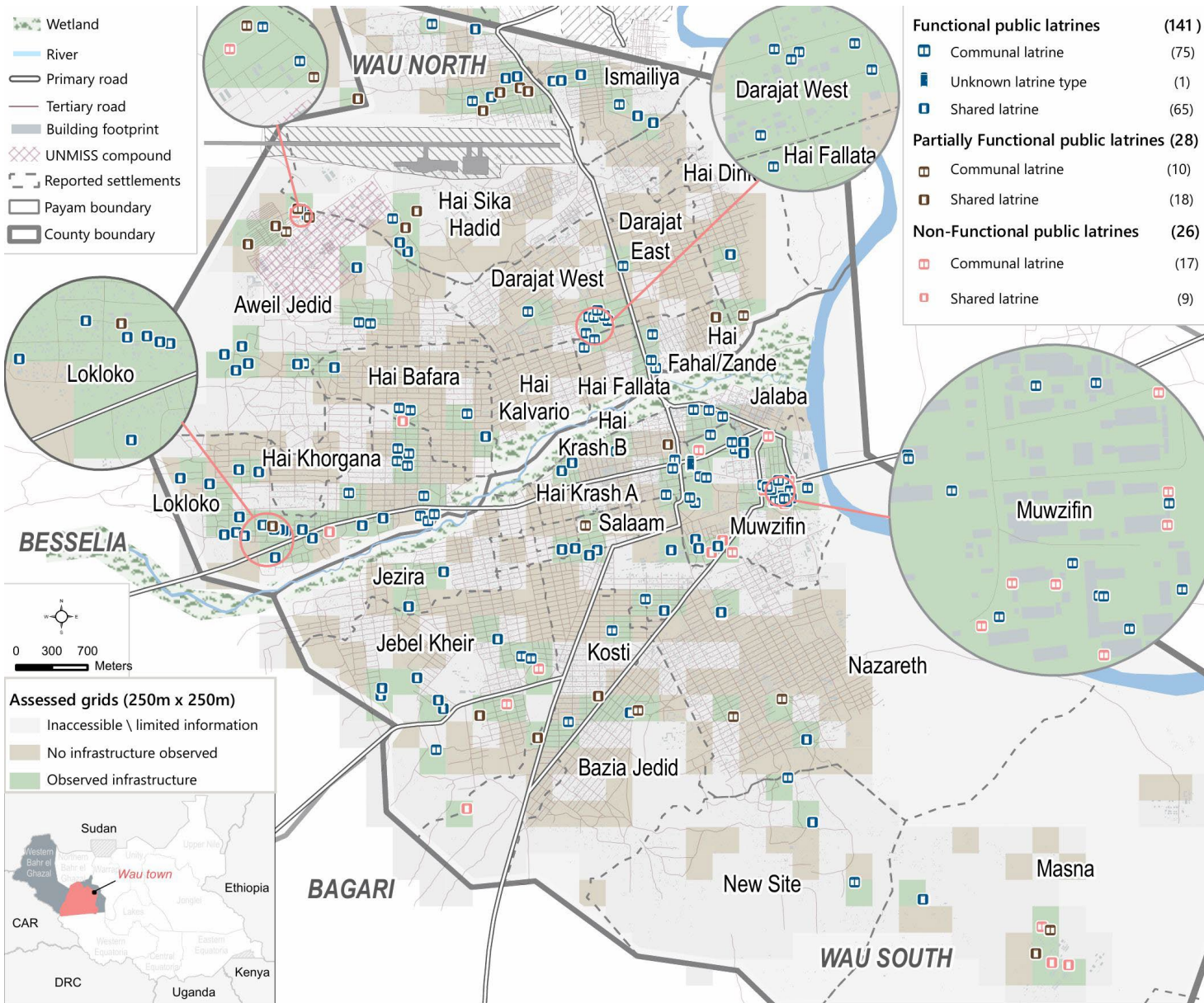
4.3 Public Latrines

Through the quantitative facilities assessment, the research team found 195 public latrines in Wau Town, of which 73% (141) were functional, 14% (28) were partially functional, and 13% (26) were non-functional (see Chart 13) – a relatively high proportion of non-functionality.



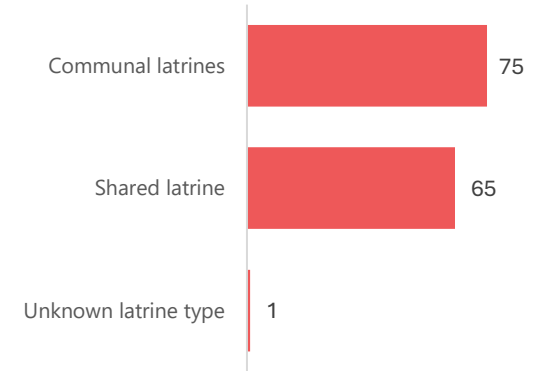
Source: Primary data – quantitative facilities assessment

Map 10: Distance to functional waterpoints. Source: Primary data – quantitative facilities assessment



The majority of fully functional latrines (75) were communal (i.e. public), while almost all the rest (65) were shared (i.e. shared with neighbours, or in a compound). As seen in Map 11, there are higher proportions of functional latrines in the town centre, and lower in southern outskirts areas such as Nazareth, New Site, and Masna, corresponding to the distribution of buildings in Wau Town. The non-functional latrines are scattered around the city. There is a high concentration of both functional and non-functional latrines in Muwzifin. There are also several non-functional and partially functional latrines close to Masna IDP camp, with no fully functional latrines reported within 1000m.

CHART 14: TYPE OF FULLY FUNCTIONAL LATRINE

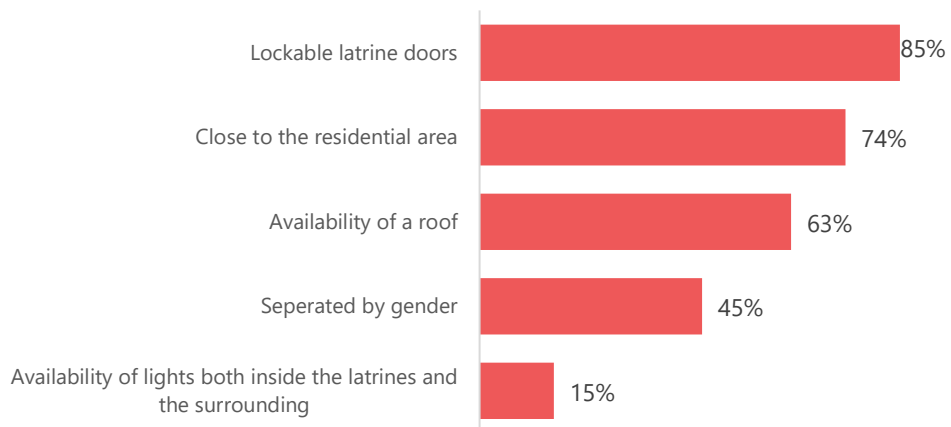


Source: Primary data – quantitative facilities assessment

Map 11: Locations of public latrines in Wau Town. Source: Primary data – quantitative facilities assessment

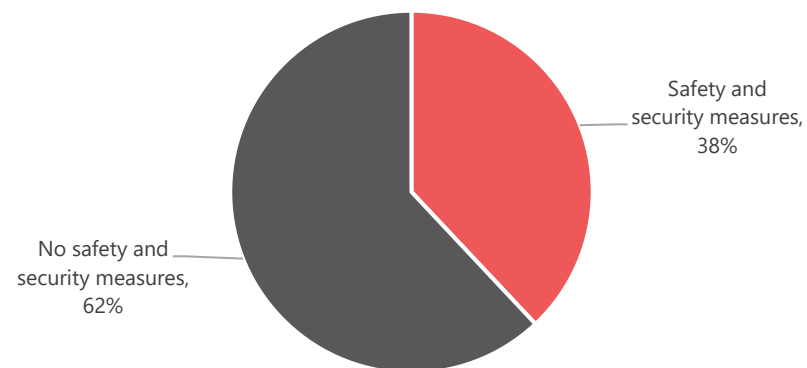
A significant proportion of KIs (38%) reported that there were no security and safety measures in public latrines in the area. Of those who said there were security and safety measures, the most common measures were lockable latrine doors, and being close to a residential area (see Chart 15). Only 15% of KIs who said there were safety and security measures reported that there was availability of lights around the latrine. As shown in Chart 17, the majority of KIs (59%) identified police as providing security and safety measures, while community groups also appear to play a role, with 21% of KIs reporting them as providing security and safety measures. While it is unlikely these actors guard the latrines, they may play a role should there be a security issue related to the latrine. No KIs reported that armed groups/criminals or criminals are responsible for the safety and security measures of public latrines in Wau Town.

CHART 15: % OF PUBLIC LATRINES IN WAU TOWN WITH MAIN SAFETY AND SECURITY MEASURES (N=65)



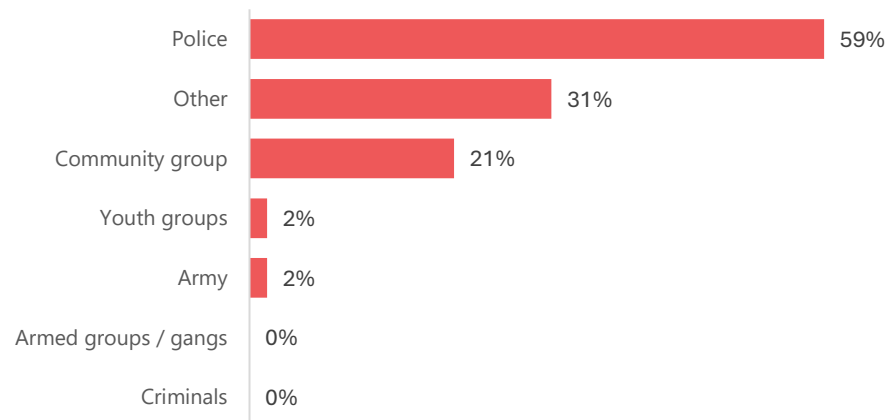
Source: Primary data collection – quantitative facilities assessment

CHART 16: % OF FULLY FUNCTIONAL LATRINES WITH SECURITY AND SAFETY MEASURES IN WAU TOWN (N=169)

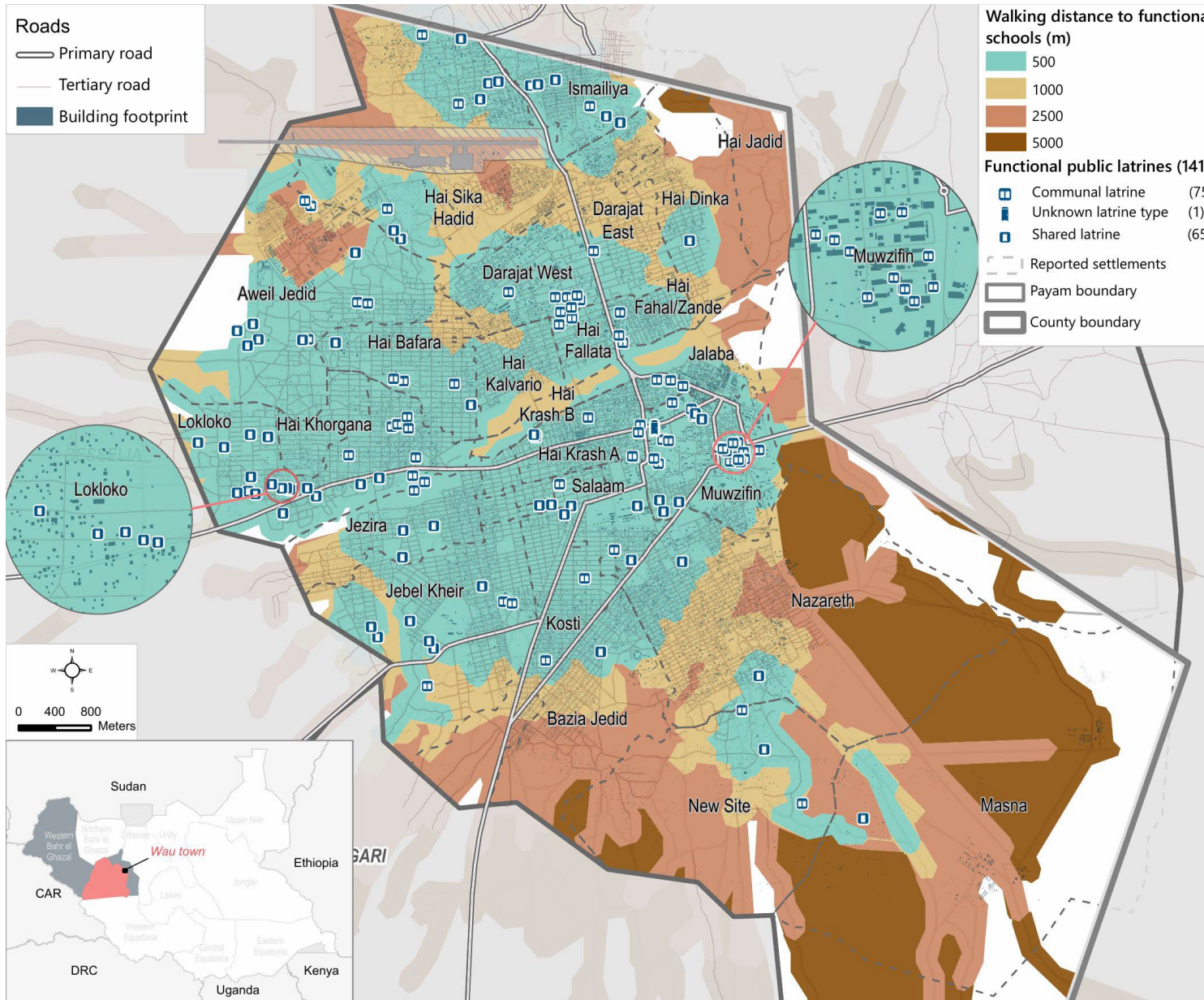


Source: Primary data collection – quantitative facilities assessment

CHART 17: % OF PUBLIC LATRINES IN WAU TOWN BY ACTOR RESPONSIBLE FOR SAFETY AND SECURITY MEASURES (N=148)



Source: Primary data collection – quantitative facilities assessment

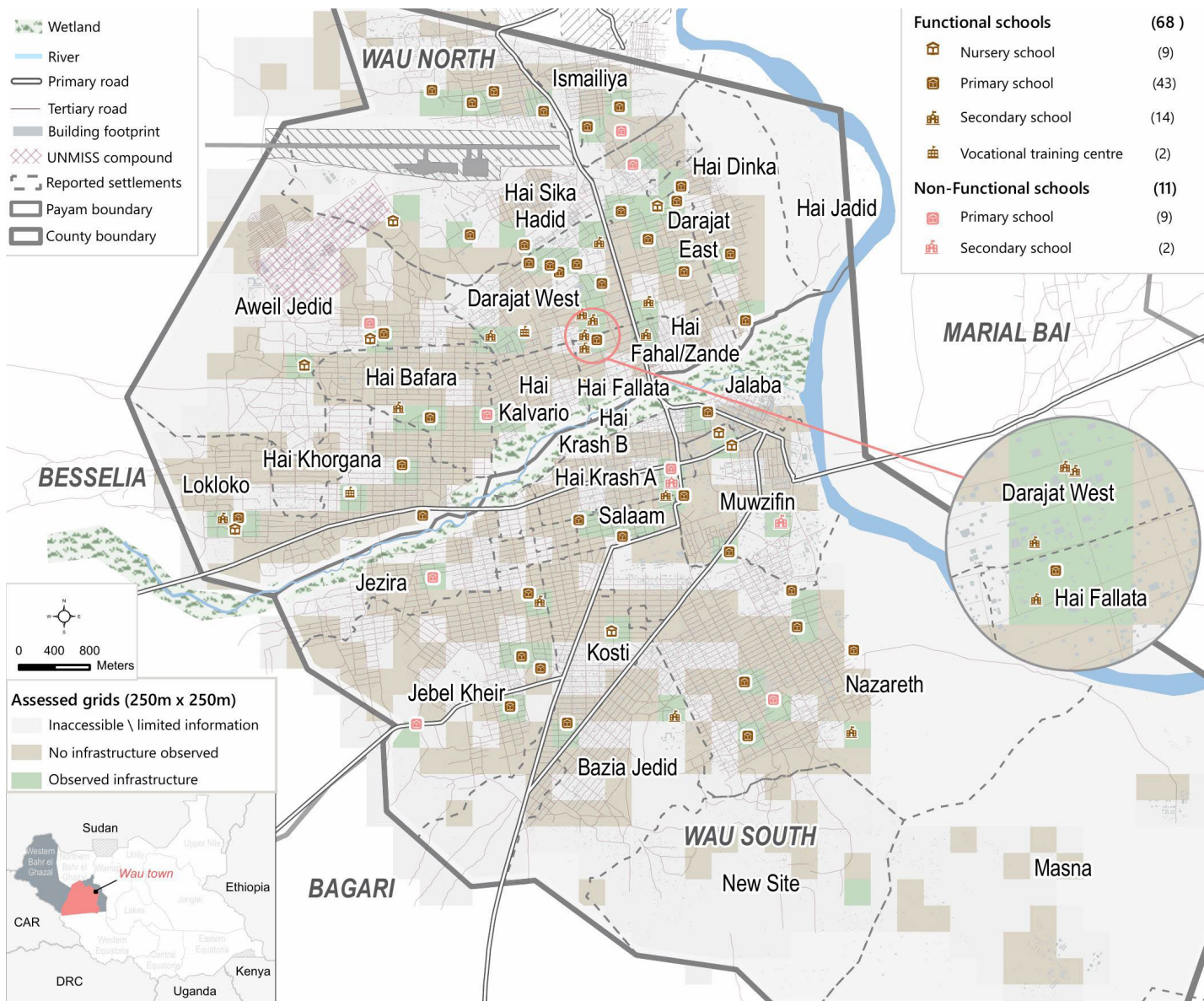


As shown in Map 12, the coverage of fully functional public latrines in Wau Town is fair. While there is good coverage in the town centre, neighbourhoods in the south of the city, such as Bazia Jedid, New Site and Nazareth, are over 2,500m away from a latrine, with residents thus walking 45-90 minutes to access one. There is particularly poor coverage in Masna, especially near the Masna IDP camp, where residents are forced to walk over 5000m (or 45-90 mins) for a fully functional latrine. Given this, it is likely that people in these neighbourhoods may defecate in the open. On a county level, the 2023 ISNA focused on Wau County indicates that 11% of residents defecate in an open hole, while 7% reported defecating in the open.³⁷

It is notable that this report only mapped public latrines, therefore there may be private latrines which provide additional coverage.

Map 12: Distances to functional public latrines in Wau Town. Source: Primary data – quantitative facilities assessment

³⁷ Inter Sectoral Needs Assessment (ISNA) 2022. Urban Component's Quantitative Assessment Report: Wau County. (2022). International Organization for Migration. [Link](#).



Map 13: Location of education facilities in Wau Town. Source: Primary data collection – quantitative facilities assessment

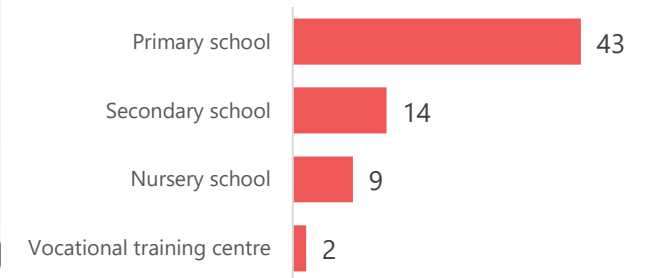
4.4 Education

The assessment team identified 68 functional and 11 non-functional education facilities in Wau Town. The functional schools are relatively evenly distributed around the city, with a particular density in Darajat West, while some neighbourhoods appear to be missing schools entirely, such as New Site and Masna. Among the functional facilities were 43 primary schools, and 14 secondary schools (see Chart 18). The average number of teachers per school was 18, and the average number of children per school was 581, resulting in a student-to-teacher ratio of 1:33. In comparison, the GoSS reported in 2023 that the national student-to-teacher ratio is 1:59, indicating that Wau Town is performing significantly better than the national average.³⁸

According to World Bank data, primary school in South Sudan is usually attended by children between the ages of 6 and 12, and secondary school is attended by children between the ages of 12 and 17.³⁹

As seen in Chart 19, almost all schools in Wau Town reportedly have host community students attending. Three quarters of schools have returnees attending, while roughly the same proportion reportedly has IDP students.

CHART 18: NUMBER OF DIFFERENT TYPES OF FUNCTIONAL EDUCATION FACILITIES

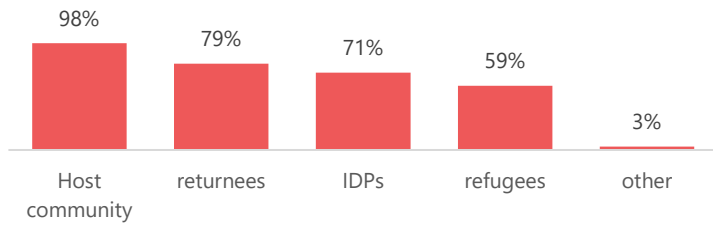


Source: Primary data collection – quantitative facilities assessment

³⁸National Education Census Summary Report 2023. (2023). The Republic of South Sudan: Ministry of General Education and Instruction. [Link](#).

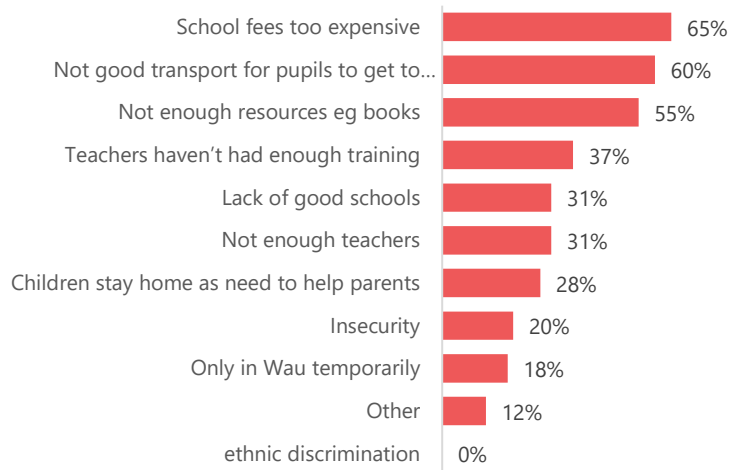
³⁹World Bank Development Indicators. (2023). The World Bank. [Link](#).

CHART 19: % OF EDUCATION FACILITIES WITH STUDENTS FROM DIFFERENT GROUPS (N=68)



Source: Primary data collection – quantitative facilities assessment

CHART 20: % OF KIS WHO REPORTED DIFFERENT TYPES OF BARRIERS FOR CHILDREN TO ACCESS SCHOOL (N=68)

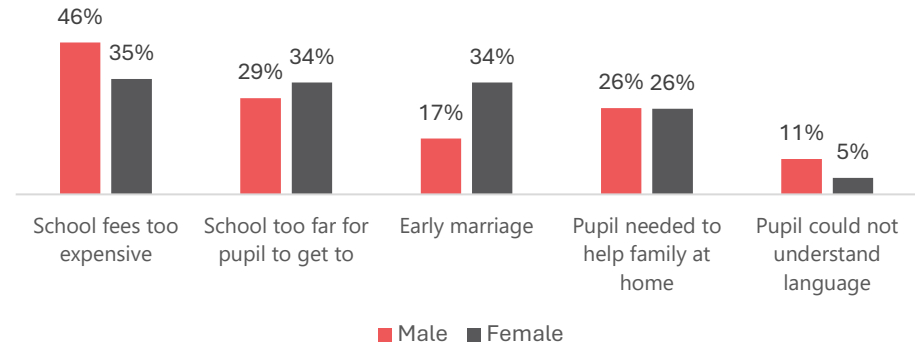


Source: Primary data collection – quantitative facilities assessment

When asked about the barriers to access education for pupils in Wau Town (see Chart 20), the majority of KIs cited the cost of school fees, inadequate transport, and insufficient educational resources such as books.

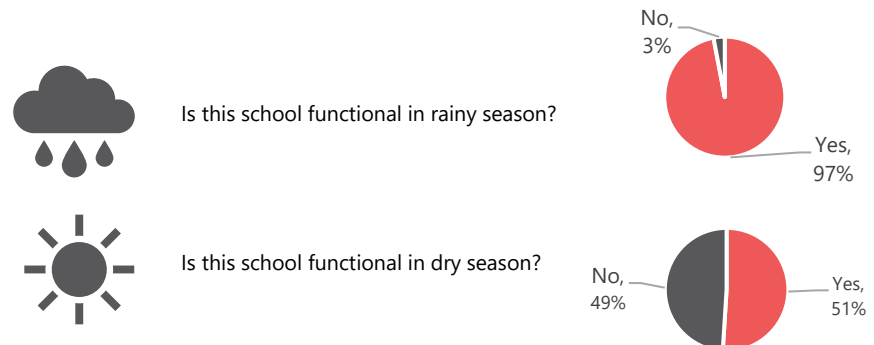
As shown in Chart 21, the cost of school fees was also the primary reason that KIs identified for why students drop out of school, for both male and female students. Early marriage was also a common reason for female students, with a third of KIs reporting female students drop out due to this.

CHART 21: % OF KIS WHO REPORTED DIFFERENT REASONS FOR CHILDREN DROPPING OUT OF SCHOOL (N=68)

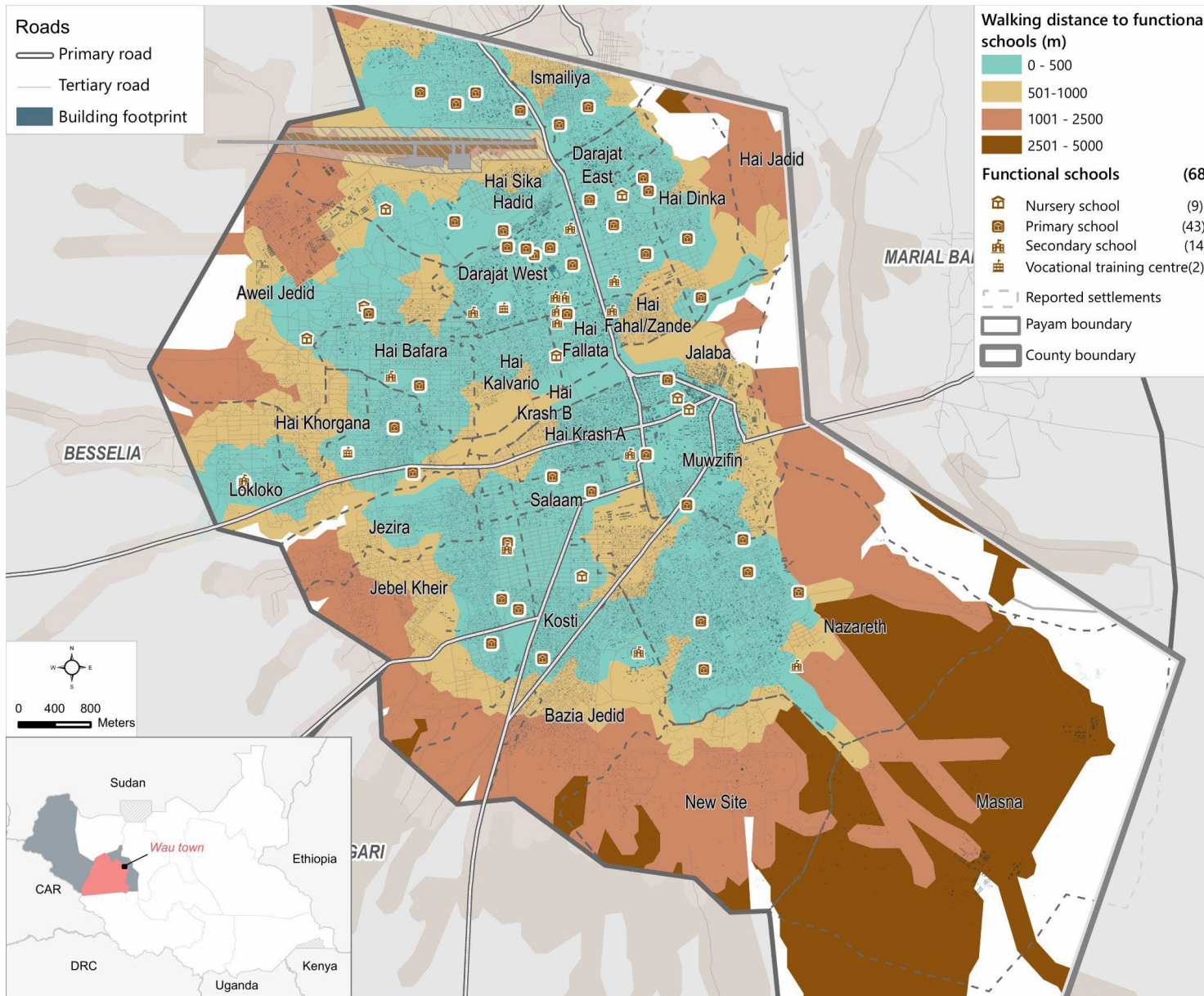


Source: Primary data collection – quantitative facilities assessment

CHART 22: SEASONALITY OF FUNCTIONAL SCHOOLS (N=260)



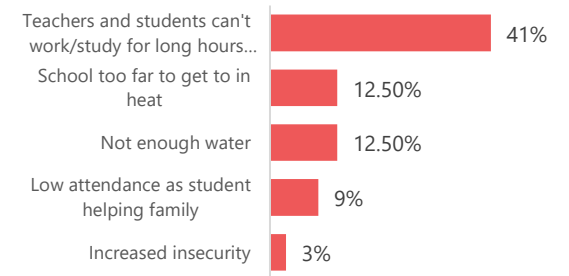
Source: Primary data collection – quantitative facilities assessment



Map 14: Distances to functional schools in Wau Town. Source: Primary data – quantitative facilities assessment

While the vast majority of KIs stated that their school is functional during the rainy season, 49% of KIs reported that their school was not fully functional in the dry season, shown in Chart 22. As seen in Chart 23, of these, the most commonly cited reason was due to teachers and students not being able to work/study for long hours in the heat. Indeed, the 2023-24 dry season drew temperatures in the high 0s°C, necessitating widespread school closures for 2 weeks in March 2024.⁴⁰ This issue is compounded by the widespread lack of electricity in Wau Town, and across South Sudan as a whole, resulting in likely inadequate air circulation in schools during heatwaves.

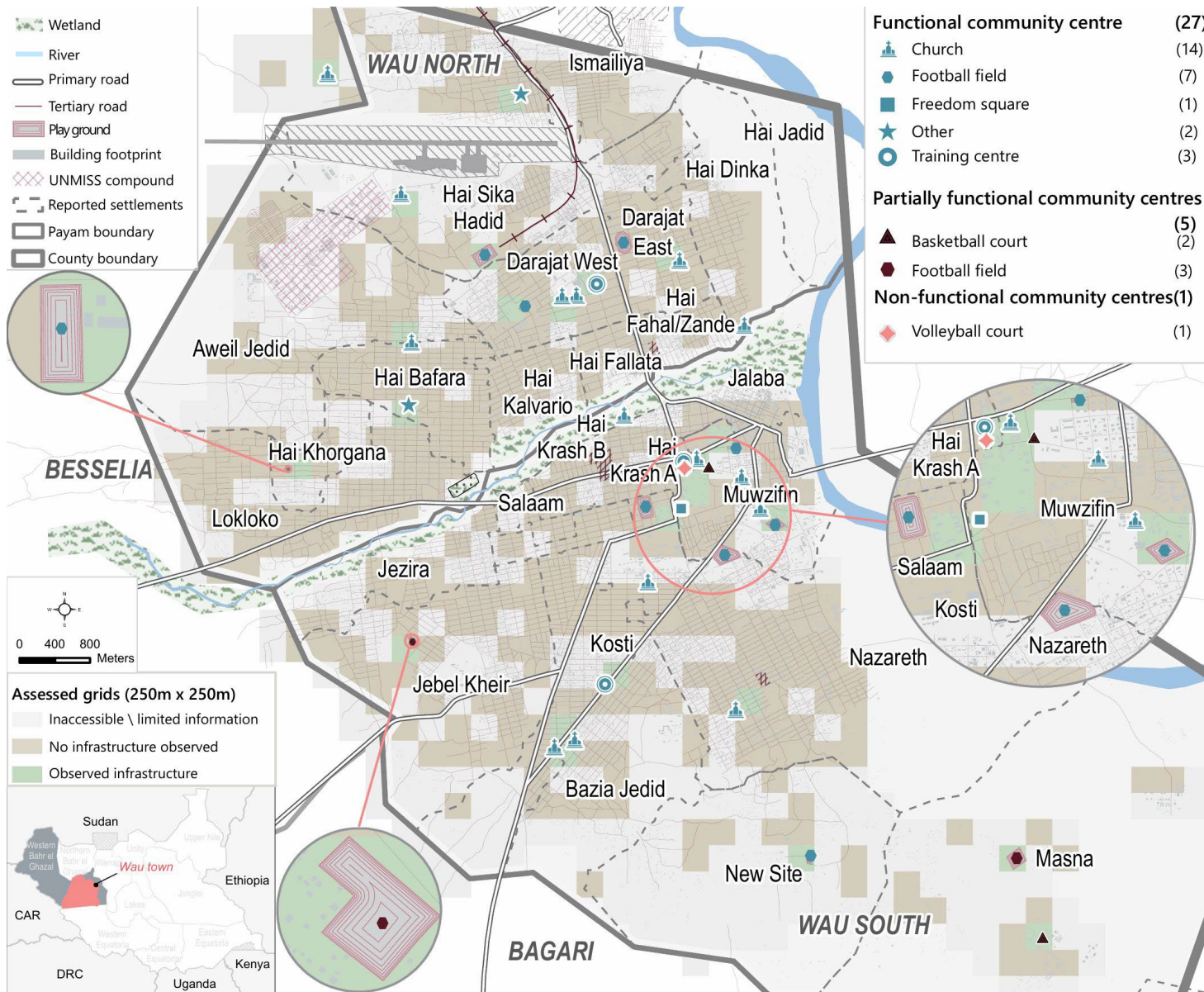
CHART 23: % OF KIS REPORTING REASONS WHY STUDENTS CANNOT ACCESS SCHOOL IN THE DRY SEASON (N=32)



Source: Primary data collection – quantitative facilities assessment

Map 14 shows that the majority of Wau Town is within close proximity (500m or less) of a fully functional school, while those on the outskirts may have to travel longer distances of up to 2,500m to access a school. However, when cross-referencing Map 14 with Map 5 'Population Density in Wau Town', on pg. 11. It is likely, therefore, that the majority of the population of Wau Town is within 1000m (10-20 mins walk) of a school.

⁴⁰ South Sudan closes schools in preparation for 45C heatwave. (2024, March 20). *The Guardian*. [Link](#).



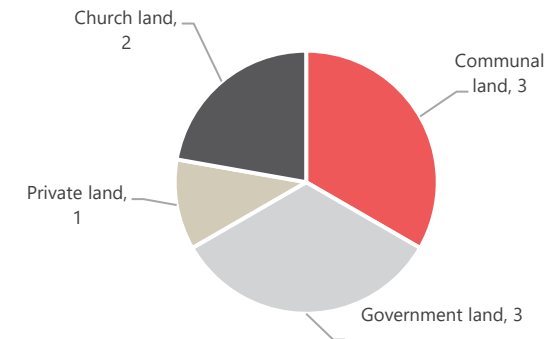
Map 15: Location of community centres in Wau Town. Source: Primary data collection – quantitative facilities assessment

4.5 Community Centres

The assessment team also sought to map community centres in Wau Town, including churches, training centres (e.g. for women), sports grounds, and other places that people gather such as public squares. The team identified 33 community centres in Wau Town, of which 27 were fully functional, 5 partially functional, and 1 not functional.

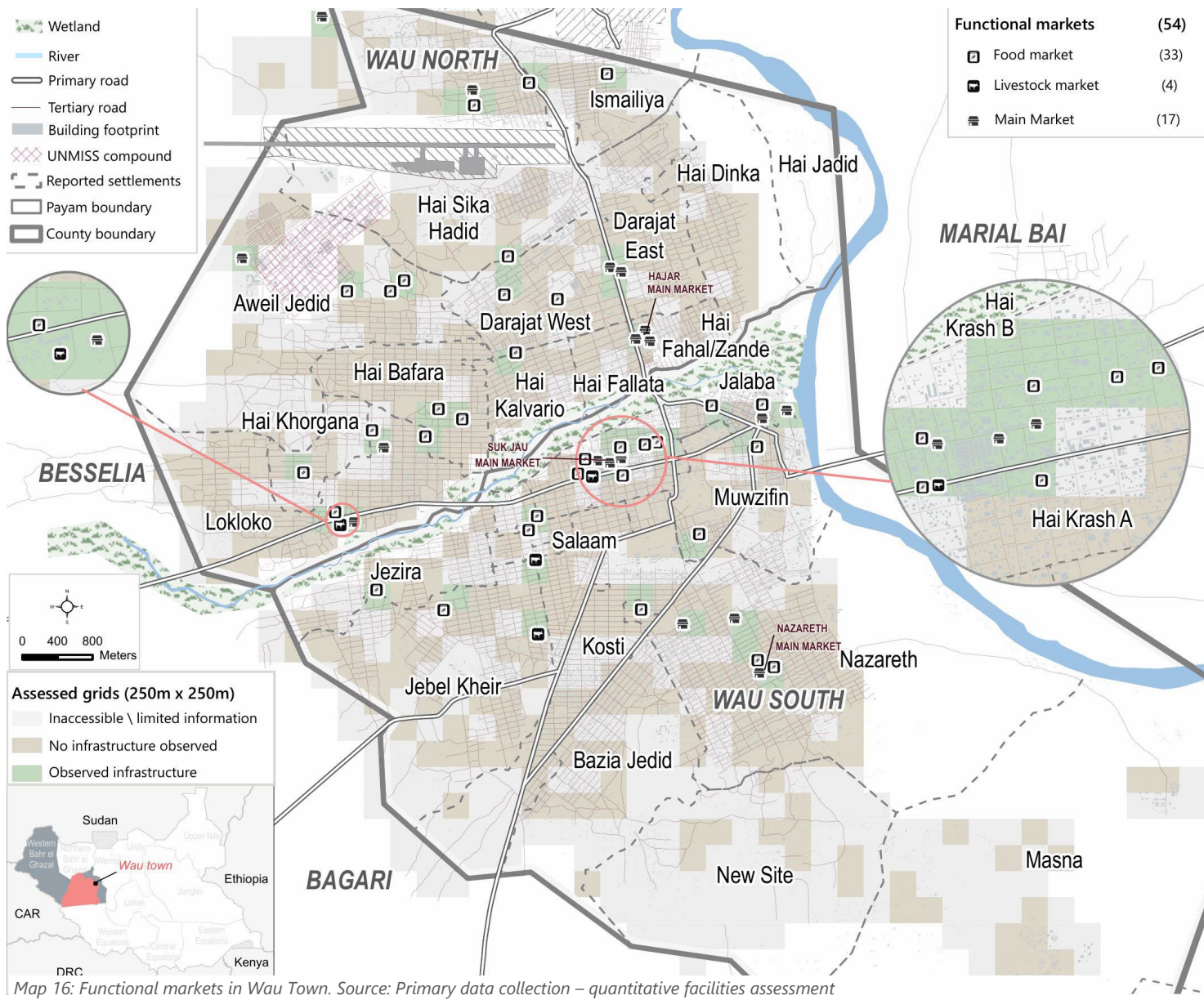
All KIs reported that the community centre functions in the rainy season, while 24 out of 27 KIs reported that the community centre functions in the dry season.

CHART 24: COMMUNITY CENTRES REPORTED TO BE ON DIFFERENT TYPES OF LAND (N=9)



Source: Primary data collection – quantitative facilities assessment

While the majority of KIs (6) reported that the community manages the community centre (N=9), the reported ownership of the land used by community centres was more mixed, with the Government and the community reported by a third of KIs as owning the land (see Chart 24).



4.6 Markets

4.6.1 Location

Through the quantitative facilities assessment, the research team found 54 functional markets in Wau Town: 17 main markets (including food and non-food items), 33 food markets, and 4 livestock markets. As shown in Map 16, these are spread throughout the town, with the highest concentration in Hai Krash, correlating with the higher population density in this area (see Map 5 'Population Density in Wau Town' on pg. 11). Wau Town has 3 main markets: Hajar, Suk Jau, and Nazareth, shown on Map 16.

4.6.2 Functionality

Findings suggest that while Wau Town's market functionality is relatively stable, FGD participants face significant challenges in access, particularly financial challenges.

As per REACH's Market Functionality Score (MFS) in Chart 4, Wau Town's market functionality has stayed relatively stable since the data first started being collected in May 2023, even showing small signs of improvement, as per the trendline. The MFS captures data on different dimensions of market functionality. Its weighting is as follows: accessibility (physical access, social access, safety/security) 25%; availability of core items 30%; affordability (financial access, price volatility) 15%; resilience (supply chains, variety of routes, vulnerability to disruption) 20%; and infrastructure (secure storage facilities) 10%. By this metric, Wau Town market's accessibility and resilience have both slightly decreased, while its affordability, availability, and infrastructure have slightly increased. While the increase in affordability may contrast to the depreciation of the SSP as seen in Chart 25, this aspect of the MFS is calculated by comparing prices to the median across South Sudan, thus explaining how affordability may improve even though prices have also risen substantially in the same period.

Map 16: Functional markets in Wau Town. Source: Primary data collection – quantitative facilities assessment

However, FGD participants and key informants cited several issues in the market's functioning. Depreciation of the currency was a key concern both for consumers and suppliers in the markets, with prices reportedly changing multiple times in a single day. The price of a minimum-expenditure food basket increased from 64,600 SSP in October 2023 to 466,000 SSP in September 2024.⁴¹ Primary quantitative data in Chart 27 also reveals that high cost of items at the market was the most-reported barrier in accessing the market out of those surveyed.

'The challenges for me here are the expensive things in the market. Sugar and water are expensive, tea leaves as well. The money I earn now is not enough to make profit. Everything I earns now goes back to the market' – Key informant (Tea stall owner)

Chart 26 shows that the second most-reported barrier was lack of transport, which was cited by FGD participants as well as market traders. The economic situation may have exacerbated this, as communities outside Wau Town reportedly now have trouble paying for transport to reach the market. This situation may worsen during the rainy season.

Where I am staying, there is flooding. When it's raining, the [motorbike] guys ask for 5,000 SSP to get me to the market. So I cannot go to the market on days when it's raining – Key informant (Market trader)

Indeed, a market trader reported that increasing prices have changed community's eating habits, indicating that some level of coping strategies have been employed.

'Ugali now costs less than sorghum, so poor people buy ugali more' – Key informant (Market trader)

CHART 26: COST IN SSP OF MINIMUM-EXPENDITURE FOOD BASKET

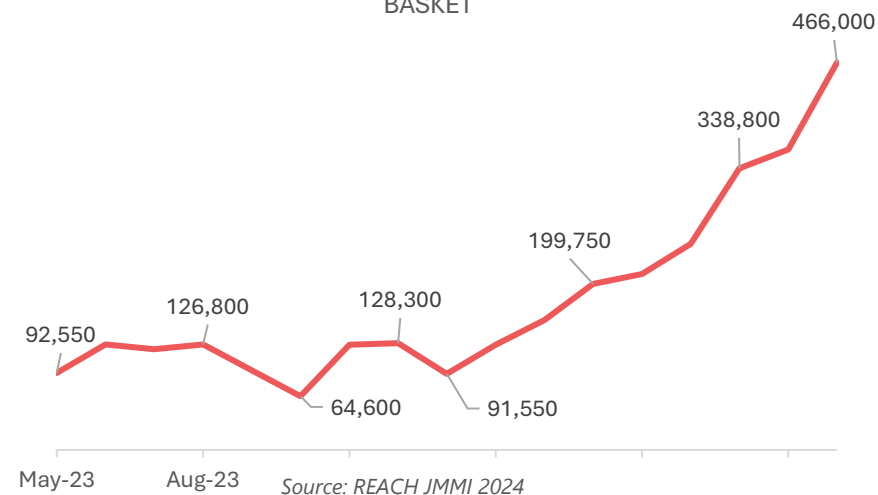


CHART 25: WAU TOWN MARKET FUNCTIONALITY SCORE MAY 2023-OCT 2024

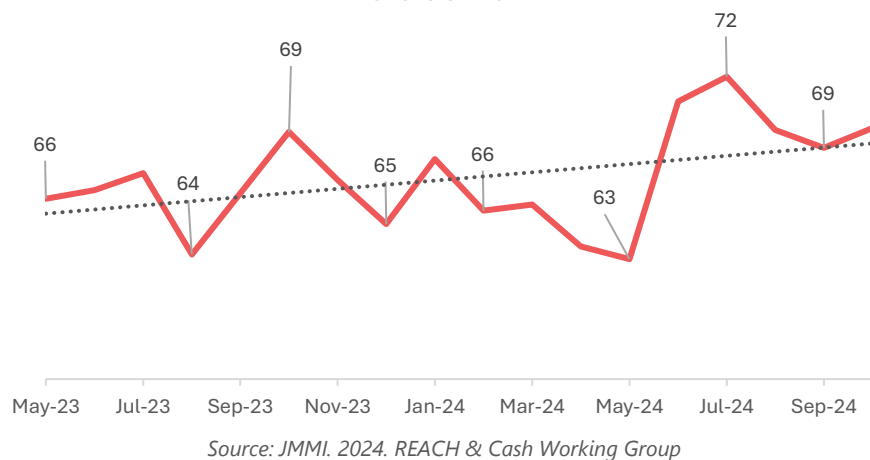
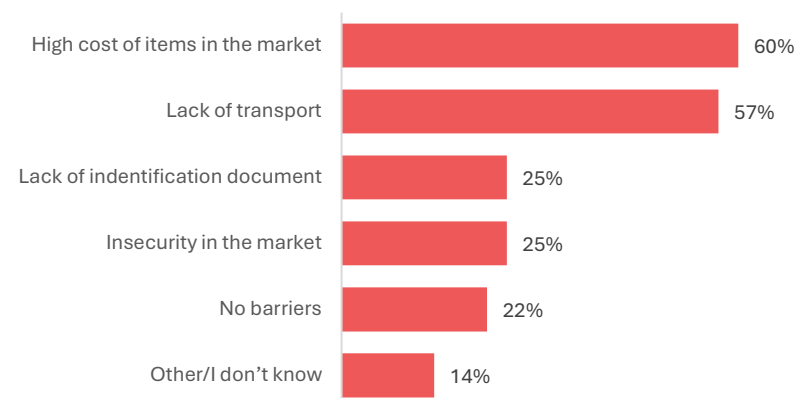


CHART 27: % OF MARKET KIS REPORTING BARRIERS FOR THE COMMUNITY IN ACCESSING THE MARKET (N=51)



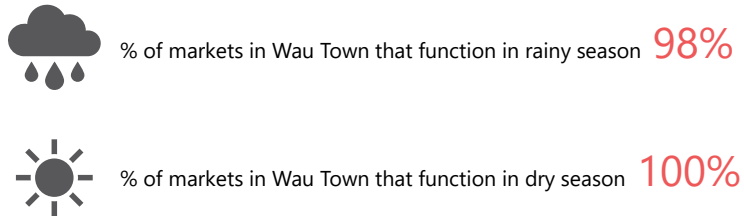
Source: Primary data – quantitative facilities assessment

⁴¹ JMMI Joint Market Monitoring Initiative Dashboard. (2024). REACH. [Link](#).

4.6.3 Seasonality

Findings the quantitative facilities assessment suggest that the markets in Wau Town function in both dry and rainy seasons.

CHART 28: SEASONALITY OF FUNCTIONING MARKETS (N=51)



Source: Primary data – quantitative facilities assessment

However, 2 markets were reportedly not functioning in rainy season. Indeed, some FGD participants reported that market functionality declines during the rainy season.

'During rainy season, market is very expensive. So it's harder to access. But during dry season it's cheap' – FGD participant (female, returnee)

The market trader explained that the rainy season brings difficulties in transporting goods to Wau Town, while another FGD participant described how communities are occupied during the rainy season, such as with farming, meaning that the market is most active during dry season.

'During rainy season, goods come from Juba and transportation is challenging because of flooding of Juba-Wau highway. This makes the prices of products at the market in Wau increase, so makes them more difficult to access' – Key informant (Market trader)

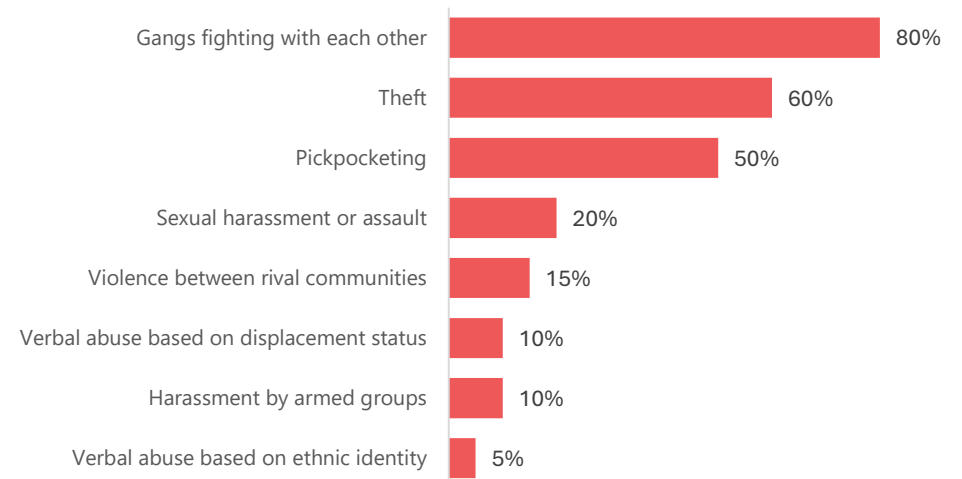
Secondary sources corroborate these accounts, attesting to the greater dependency on market during the dry season within WBeG.⁴²

4.6.4 Safety

Results from the quantitative survey show that KIs had several security concerns at the market. The majority of respondents (80%) described criminals fighting with each other as a security concern, while theft and pickpocketing also featured highly, as seen in Chart 29. Findings from qualitative data support this. According to one KI, homeless children reside in the market, and often engage in petty crime like theft and pickpocketing during the daytime. While they themselves do not engage in violence, there are reportedly older criminals who come to the market at night, and it is these criminals who sometimes engage in violence. Moreover, an FGD participant described how the journey to the market can be dangerous for some people, such as if someone is going to a main market from the Naivasha IDP site.

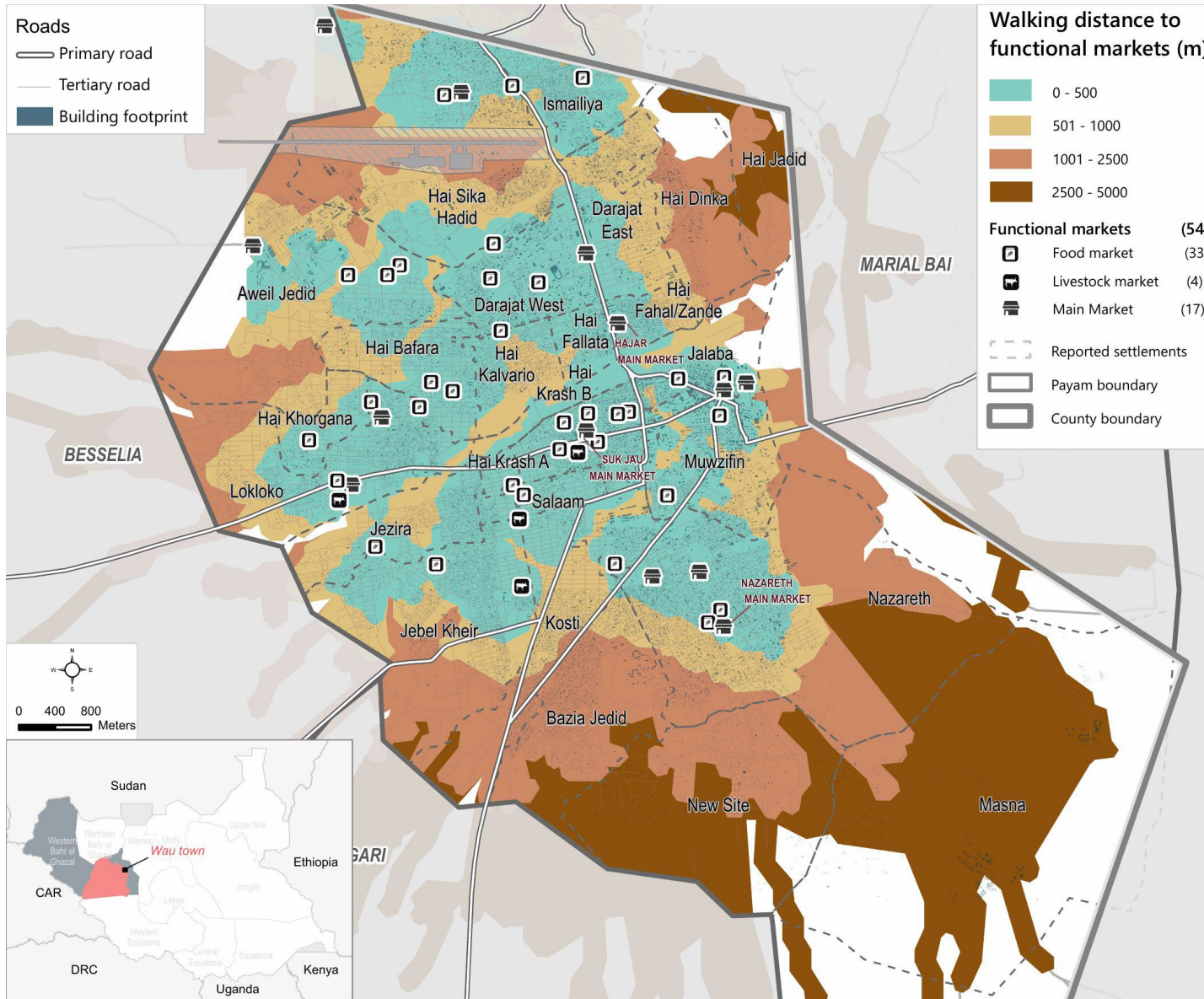
According to a market trader, the police and government play a prominent role in managing the markets. More specifically, another market trader cited the Town Mayor as the person 'who controls everything', including providing security. There may also be a role for commercial traders in management of the market, as they 'divide [the market] according to blocks.'

CHART 29: REPORTED SECURITY CONCERNS IN THE MARKET (N=51)



Source: Primary data – quantitative facilities assessment

⁴² Significant household-level food deficits likely due to poor harvest, conflict, and rising prices. (2014). Famine Early Warning Systems Network (FEWS NET). [Link](#).



4.6.5 Distance to Markets

As seen in Map 17, the majority of Wau Town is within 1km, or 10-20 minute walk, of a market or food stall. There are some populations living in the south of the Jebel Kheir neighbourhood, as well as New Side, who would have to walk further to access markets, as they are within 2500m or a 20-45 minute walk of a market. No markets were reported in Masna, though the IDP centre may have smaller food stands that were not reported, given their nearest market is 5000m or a 45-90 minute walk away.

4.7 Role of Wau in Servicing Wider Region

According to a World Food Programme (WFP) assessment in 2018, the main market in Wau Town serves as a key distribution hub to markets within WBeG and neighbouring states, with 57% of customers to wholesalers in Wau Town being traders.⁴³ WFP's findings are confirmed in statements from local government officials in KIs. One local government official noted that Wau is one of the 'biggest trade centres in the Bahr el-Ghazal region.'

'Wau is one of the biggest trade centres in Bhar El Ghazal region. All its neighbouring states comes to buy both food and noon food items from Jou market' – Local government official

However, another local government official noted that no food is actually produced in Wau, but expressed a desire for this to change in the future.

'There is nothing actually we produce to supply the region or country. The food items produce in Wau is for consumption. Right now there is no planation for any food items but in the future we will have, God willing' – Key informant (Local government official)

⁴³ Market Assessment Wau Market, South Sudan. (2018). WFP VAM. [Link](#).

4.8 Access to Electricity at Neighbourhood Level

Map 18 shows the areas of the city that have access to electricity, with the data collected using night-time satellites showing which areas are lit at night. This therefore captures not only the neighbourhoods with access to the main electricity grid, but also those who have off-grid access, which has been described in secondary sources as constituting a large proportion of access to electricity in South Sudan. According to one report, only 5% of households nationally have access to an electricity source. Of these, 70% use off-grid technologies (mostly solar), and 30% have access to the national grid.⁴⁴

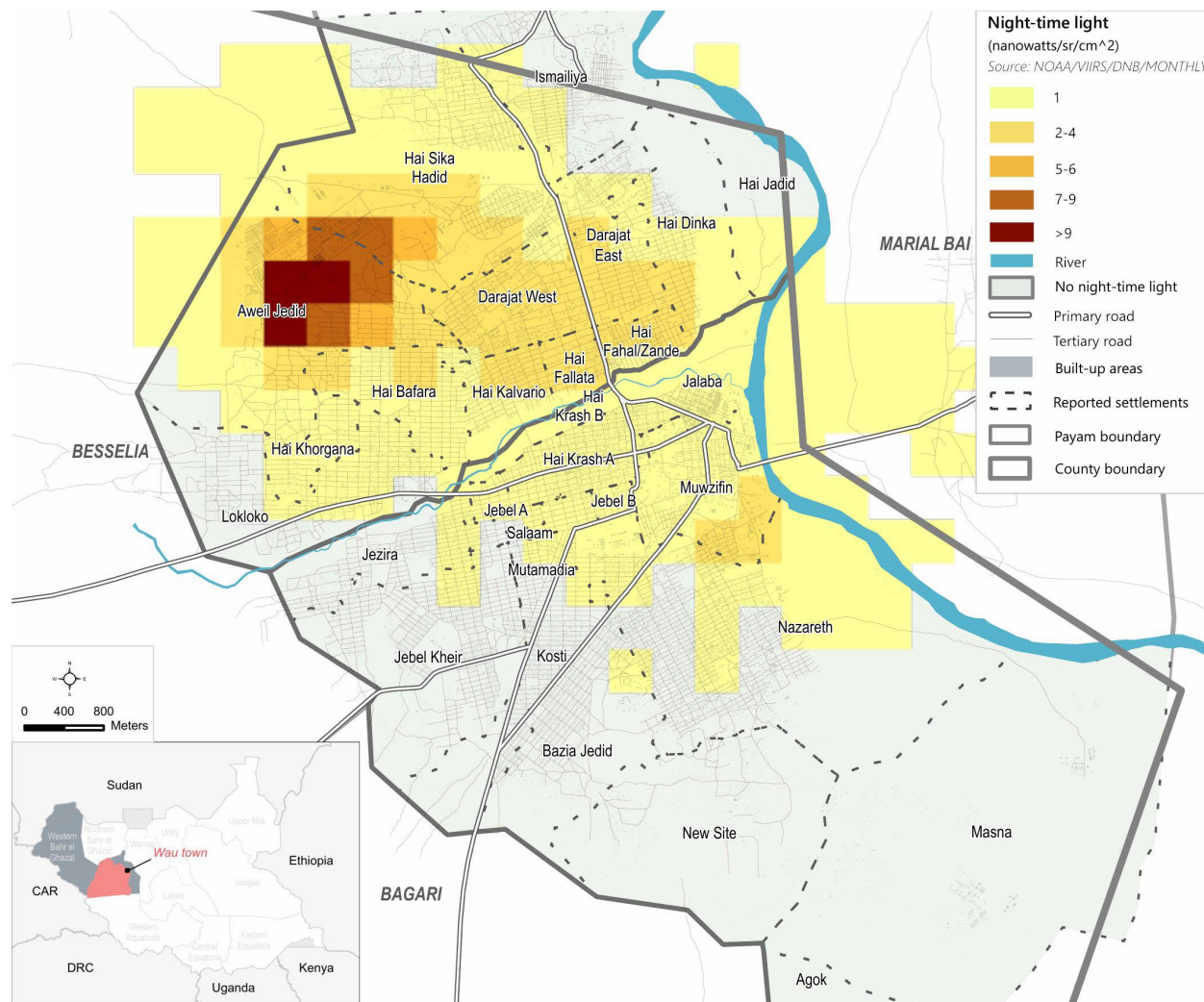
As seen in Map 18, Wau Town shows low levels of night-time light around the northern and eastern parts of the town. Given the low levels of access to electricity in South Sudan, that there is any electricity at all is notable. This is corroborated by secondary sources which point out that Juba and Wau have the highest access to electricity in South Sudan.⁴⁵ There is significant night-time light in Aweil Jedid, corresponding to the location of the UNMISS base.

5. Security and Governance

5.1 Conflict

In Wau County, tension may arise between sedentary farming communities and pastoralist groups over access to land, particularly grazing land.⁴⁶ This mirrors patterns in the wider Bahr el-Ghazal region, in which disputes arise from competition for access to increasingly scarce resources.⁴⁷ These disputes over land are also reflected in disagreements regarding the ownership of Wau Town.⁴⁸ Tensions may be seasonal, in light of the migration of pastoralist cattle herders during the dry season from Tonj and Gogrial States to Wau State in order to graze their cattle.⁴⁹

While Wau County suffered from violence throughout the South Sudanese Civil War 2013-18, since the peace agreement in 2018, the situation has improved, as seen in data from the Armed Conflict Location and Event Data (ACLED) displayed in Charts 30 and 31. While there has been a small increase in fatalities and violent events in Western Bahr el-Ghazal (WBeG) in 2022 and 2023, in Wau Town both have remained low (see Charts 30 and 31). Supporting this, participants in FGDs



Map 18: Nighttime light in Wau Town January to June 2024.. Source: Elvidge, K. et al. VIIRS night-time lights, *International Journal of Remote Sensing*.

⁴⁴ Pathways to electricity access expansion in South Sudan: Off-grid and mini-grid market assessment. (2023). Energy Sector Management Assistance Program (ESMAP), EED Advisory Limited and the SUDD Institute. Washington, DC: World Bank. [Link](#).

⁴⁵ Thiak, S., & Hira, A. (2024). Strategic options for building a new electricity grid in South Sudan: The challenges of a new post-conflict nation. *Energy Research & Social Science*, 109, 103417. [Link](#).

⁴⁶ Vuylsteke, S. (2018). *Identify and Self-Determination: The Fertit Opposition in South Sudan*. Small Arms Survey. [Link](#).

⁴⁷ *All Alone in the Governor's Mansion: Sarah Cleto's Travails in Western Bahr el Ghazal State* (Situation Update). (2023). Small Arms Survey. [Link](#).

⁴⁸ Kuot, L. M. (2024). Farmers-Herders' Conflict Undermines Peace building Efforts in South Sudan. *International Journal of Humanities and Social Science Invention (IJHSSI)*, 13(1), pg. 1-12. [Link](#).

⁴⁹ *Addressing peace and safety concerns in Wau, South Sudan*. (2019). Saferworld. [Link](#).

and KIs almost invariably described the situation as ‘safe’ or ‘stable’, and described how the security situation had improved greatly in recent years.

‘We are feeling safe, nothing happened here. We are not hearing gunshots. Even though poverty is there... People are staying without any gunshots and fighting so we feel safe’ – FGD participant (female, returnee)

‘It is good now. Before we were fearing conflict.... But now, nobody cares anymore which tribe you are. So it has gotten better’ – FGD participant (male, returnee)

The only reports in FGDs or KIs of recent insecurity were references to tensions between some communities from Warrap State and Wau communities over land. These accounts are supported by a local news report describing ‘inter-communal hostilities’ between the two communities in July 2024.⁵⁰ Moreover, in December 2023, local news reported that 11 people had been killed in ‘renewed fighting’ between these communities.⁵¹

5.2 Crime

Wau Town also reportedly suffers from criminals, who may be a greater concern to FGD participants than communal tensions.

‘We aren’t having issues with police, communal violence, or militias, but we are facing issues with criminal groups when coming to or leaving the town’ – FGD participant (male, host community)

FGD participants described how the criminals are a particular threat to people leaving or coming into Wau Town, for instance for the IDPs going to or coming from Naivasha IDP site. The criminals reportedly use violence, or the threat thereof, to rob and attack people.

‘There is crime, especially at night. Criminals will rob you, take your phone and everything’ – FGD participant (female, IDP)

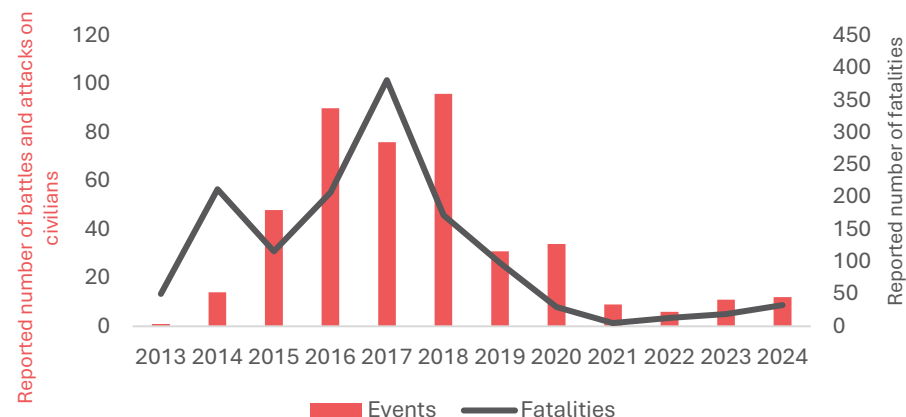
The prevalence of criminals reportedly also affects people’s access to livelihoods, particularly findings suggest that much of Wau Town relies on agriculture and timber/firewood products on the outskirts of the town.

‘When people move outside Wau town in search of land for cultivation, wild food and firewood collection, they are threatened or looted by criminals, or unknown gun men’ – FGD participant (male, returnee)

Women may be particularly vulnerable to criminals, with several FGD participants stating that women have been sexually assaulted by criminals.

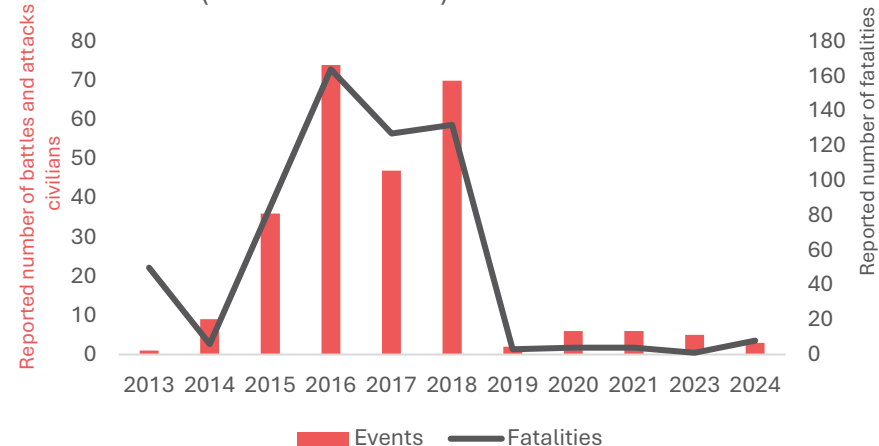
While a local government official stated that the security situation has improved in recent years, statements from FGD participants suggest that the threat of criminals is still a significant issue. Indeed,

CHART 30: BATTLES AND ATTACKS ON CIVILIANS (WITH FATALITIES) IN WBEG



Source: Armed Conflict Location & Event Data (ACLED) 2024.

CHART 31: BATTLES AND ATTACKS ON CIVILIANS (WITH FATALITIES) IN WAU COUNTY



Source: Armed Conflict Location & Event Data (ACLED) 2024.

⁵⁰ Apuk-Giir, Marial-Wau communities agree to end hostilities. (2024, July 21). Radio Tamazuj. [Link](#).

⁵¹ Panchol, A. (2023, December 1). Apuk-Wau fighting claims 11 lives. *The Radio Community*. [Link](#).

several FGD participants reported that the worsening economic situation had led directly to increased criminal activity.

'The crime is increasing due to the country's economic crises. Youth are suffering and there are no job and that is why they have turn to crime in order to survive' – FGD participant (male, host community)

'Here in the market, the construction is not good. Everyone comes and just builds a small tukul and lives there. Sometimes the criminal groups will hide under those things. If they would build a good clothing shop for the women to visit, it would be better for their safety' – FGD participant (male, returnee)

5.2 Governance

FGD participants and key informants reported that governance of the city, particularly in relation to law and order, is controlled by the Government, mainly through local government actors such as Chiefs, as well as the police and security forces. UNMISS was also reported by one key informant as involved in peacebuilding between communities.

One strategy the Government reportedly employs to control insecurity is patrols, with FGD participants and key informants stating that this has helped them to stay safe at night. Several FGD participants and key informants also commented that these patrols have helped to ensure security of the market.

Some attempts have reportedly been made to arrest criminals. According to a local government official, the criminals used to wreak havoc on Wau Town, including holding parties in hotels, but the Government 'took control' and worked 'hand in hand' with the Chiefs and hotel managers to arrest them. If the criminals now hold a party in a hotel, the Chiefs and hotel managers are reportedly 'held accountable'. The same key informant described that there is a police hotline set up for community members to report security situations.

According to key informants, the local government in Wau Town struggles with a lack of funding, bad roads, and insufficient number of vehicles to respond to calls, issues recorded in secondary sources as common to Government workers in South Sudan.⁵² Moreover, key informants described that while infrastructure maintenance is the responsibility of the relevant Ministry, local government may struggle to access the required spare parts or funds to do repairs. During extreme heatwaves, such as in March 2024, it is possible that infrastructure maintenance may potentially halt temporarily, given that schools, businesses, and offices were closed in March 2024.

Several FGD participants expressed a desire for improvements in the management of security and governance. Some gave more specific suggestions, many related to improving safety in Wau Town:

⁵² Idris, I. (2017). *Local Governance in South Sudan: Overview*. UK Department for International Development. [Link](#).

⁵³ *Land Act*. (2009). Government of the Republic of South Sudan. [Link](#).

⁵⁴ Van Leeuwen, M., Van De Kerkhof, M., & Van Leynseele, Y. (2018). Transforming land governance and strengthening the state in South Sudan. *African Affairs*, 117(467), 286–309. [Link](#).

'We need vocational training centre for different departments. One for driving school one for mechanic, one for tailoring. This will make youth very busy and prevent them to go for criminal groups. Same for women, make a centre for them so they can be busy there. And for organization, they need help with balls. There's a football ground but there's no ball' – FGD participant (male, IDP)

5.3 Land Administration

Land allocation is governed by the Government of South Sudan's (GoSS) Land Act 2009,⁵³ though as with many governmental procedures at the local level, the de facto situation in many counties appears to have slight variations, such as an elevated role for traditional authorities.⁵⁴

According to the Land Act 2009, traditional authorities (i.e Chiefs and Headmen) may allocate customary land rights for residential, agricultural, forestry, and grazing purposes. For land over 250 acres, the allocation should be approved by the relevant state-level Ministry. Indeed, community members and key informants reported that the Chief and the Ministry of Land play important roles in land allocation and demarcation, though none described the difference in plots over or under 250 acres. One report in 2019 found that 99% of respondents in Wau County said their plot had been registered with the Ministry of Physical Infrastructure and Location. This number was significantly higher than the other locations that the report assessed (Nimule was 83%, Torit was 81%, and Yei was 34%).⁵⁵

'Access to land is through the Ministry of Land, and they are the ones responsible for giving land to people. It's the same Ministry who decided the boundaries in Wau Town' – Key informant

The role of the Chief may vary across Wau Town. One FGD participant described the Chief as responsible for selling land, and that by giving the Chief this responsibility, the Government had 'put the land in the hands of the community'. In contrast, another FGD participant said that the Chief used to be the one to distribute land 'tokens', but following the 'demarcation' (likely a government-run land survey), the responsibility shifted and the Government may reportedly reallocate the land if the owner doesn't have the relevant documentation.

Community members were more aligned in their reports of the important role of the Chiefs in land dispute resolution and management.

5.4 Land Disputes

Several FGD participants described how land disputes can result in social tensions between groups in Wau Town. According to the 2023 ISNA for Wau County, 6% of households in Wau County are facing an ownership dispute, 5% are facing a case of unlawful occupancy, and 5% are facing a rent dispute.⁵⁶

⁵⁵ Deng, D. (2019). *Housing, Land and Property Disputes in South Sudan: Findings from a Survey in Nimule, Torit, Wau, and Yei*. South Sudan Law Society. [Link](#).

⁵⁶ Ibid.

'Land disputes bring back the issue of [tensions] between groups' – FGD participant (male, returnee)

'When people discuss land issues, it develops slowly and increases tension, until people start fighting and get killed' – FGD participant (female, IDP)

There may also be difficulties in accessing land; one returnee FGD participant that some returnees haven't been able to access their former land due to a lack of documentation.

Several FGD participants attributed land disputes to the system change from the Chief giving out 'tokens' for land, to the Government requiring formal documentation to own land. Others attributed land disputes in Wau Town to 'demarcations', likely referring to annual surveys to divide up new land.

Secondary sources suggest that the lack of documentation may also be a cause of land disputes. According to the ISNA for Wau County (2023), 55% of households in Wau County do not have formal HLP documentation. Given the legal requirements for formal documentation, the lack thereof is likely to be a key cause of HLP disputes. Indeed, several FGD participants referenced that the lack of HLP documentation had led to disputes.

'The problem in Wau is the documents, if you don't have the document for your plot, if you sell without any document or procedure, your neighbours can come there and make the procedure and document for your plot so that they take your plot. You can buy your plot and buy on it and stay there, but at the end the Chief can sell your plot.' – FGD participant (female, IDP)

Findings from FGDs and secondary data also suggest that larger-scale land disputes between communities in Wau and communities from elsewhere may lead to tensions.

'The scariest thing in Wau is land disputes and grazing land in Western Bahr el-Ghazal. . . grazing land disputes . . .has taken many lives, markets and tukuls were burned and people were displaced' – FGD participant (male, host community)

'The issue of the land, the Chief is the one who knows everything because he distributes the tokens to everyone, so he knows who owns which land. So that's why we first go to the Chief. If he cannot handle, we go straight to Ministry. If that does not help, we go to court' – FGD participant (male, IDP)

Some key informants also reported that the Ministry of Land is involved in this process too.

4.3 Justice Delivery

Traditional authorities have historically played a hugely significant role in local governance in South Sudan, and justice is no exception.⁵⁷ Accordingly, findings from FGDs suggest that Chiefs in Wau Town continue to play a vital role in justice delivery.

'If there is any conflict inside the community, such as the rape of a girl, the parents of the girl can go to the Chief first. If it's beyond the Chief's capacity, he sends them to court' - FGD participant (female, IDP)

'If there's an issue which can be solved without police, [the Chief] will solve it without them. Only if it's violence or criminals, they will go to police' – FGD participant (female, returnee)

While the Local Government Act (2009) set out a series of court structures (as shown in Chart 32),⁵⁸ no FGD participants or key informants elaborated beyond simply describing the 'court'. While some FGD participants cited examples where justice had been effectively delivered, some struggled to pay the required fee.

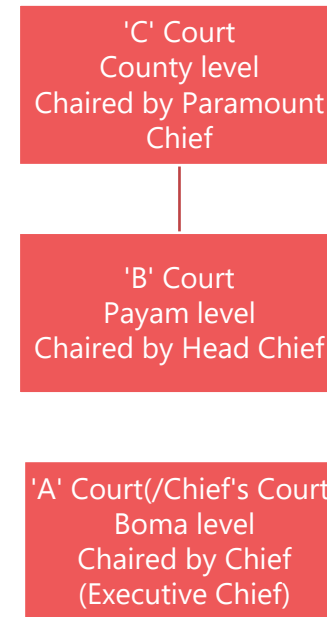


Chart 31: Justice delivery structure according to Local Government Act (2009) Source: Local Government Act (2009)

⁵⁷ Santschi, M. (2023). *CSRF Analysis: Why do chiefs matter for aid actors and conflict sensitivity? The role of chiefs in conflict-sensitive aid and peacebuilding*. Conflict Sensitivity Resource Facility. [Link](#).

⁵⁸ Local Government Act. (2009). Government of South Sudan. [Link](#).

6. Social Cohesion

6.1 Social Cohesion Between Groups

Secondary sources describe tense relations between groups in Wau Town, particularly between agricultural and pastoralist communities.⁵⁹ However, findings from FGDs and KIIs suggest that relations between ethnic groups are good at the time of assessment.

'In Wau, there is no problem. People are living peacefully; they don't have tribalism. They all see each other and people are living in peace' – FGD participant (male IDP)

Moreover, several FGD participants stated there is good integration between different groups in Wau Town, an assertion corroborated by accounts from local government officials and an aid worker.

'We are scared because there are different groups in different sections [of the former PoC site], so when kids go to play in another section it creates fights' – FGD participant (female, IDP)

Relations between groups based on displacement status appear to be good, with several FGD participants and key informants describing good integration, with the returnees integrated among local families. This corroborates findings from the ISNA for Wau County (2023), which found that 76% of households in Wau County described relations between the host community and displaced groups as good.

'The relationship between groups of different displacement status is good. There is no fighting. we stay as sisters and brothers in one place' – FGD participant (female, host community)

'We have good relationships with all groups, even with host community we have equal participation' – FGD participant (male, returnee)

Only in one FGD did participants describe tension between groups:

'The returnees came with their own civilisation here...they want to stay alone to have these norms. They cannot stay together with us' – FGD participant (female, IDP)

6.2 Role of Facilities in Building Relationships

Several FGD participants and KIIs were positive about the role of community centres in building relationships. Several FGD participants referred to the role of football fields specifically, in that they are places where communities come together. According to findings from the quantitative facilities assessment, there are 4 functioning football fields in Wau Town, as seen in Map 18 on pg. 26. Although, one FGD participant stated there is a severe lack of footballs in Wau for communities to use.

'Sport is good. I see many kids coming from different communities to play in these football fields. It makes them happy and bring them together and it can build good relationships among themselves' – FGD participant (male, host community)

'There is a club for building relationships between host communities and returnees. They have football grounds... Women have VSLA [village savings and loans] or women's associations groups, where they come together. These help because they bring people together' – FGD participant (male, returnee)

FGD participants and key informants also referenced a number of other places that help build relationships, including markets, churches, games clubs, youth centres, theatres, as well as a multipurpose centre built by NGOs in Hai Matumadia. According to the quantitative facilities assessment, there are 54 functional markets around Wau Town and 3 functional churches, as seen in maps 15 (pg. 26) and 16 (pg. 27), though the assessment team did not identify the locations of any games clubs, youth centres, or multipurpose centres.

'The market brings different ethnic groups interact daily in the markets which is a sign that there is good relationship' – Key informant (Local government official)

'We are having only a small place like a club, where we play dominoes. There, different groups come together' – FGD participant (male, returnee)

6.3 Access to Services and Food

Access to food and services is an issue of great concern to communities in Wau County, with 65% of households in the ISNA for Wau County (2023) reporting that food assistance was a top priority, followed by access to shelter (36%), water (36%), healthcare (34%) and education (34%) all ranking highly.⁶⁰ However, findings from FGDs suggest that access to services, or the perception thereof, may be uneven across different groups of people in Wau Town. In particular, returnees were cited by one IDP FGD participant as facing additional challenges in accessing food in the market.

'Those who came from Khartoum, living in Naivasha, life is hard and will be difficult if they are not supported with food. They need food support and also support to help agricultural production' – FGD participant (male, IDP)

One FGD participant stated that the returnees from Sudan had impacted access to services, because the increase in population has resulted in less food available in the market and higher prices:

⁵⁹ Report of the investigation committee on Wau incident of 24th-26th June 2016. (2016). Government of the Republic of South Sudan. [Link](#).

⁶⁰ Inter Sectoral Needs Assessment (ISNA) 2023. Urban Component's Quantitative Assessment Report: Wau County. (2022). International Organization for Migration. [Link](#).

'Those coming from Khartoum are not working or cultivating, they are just staying at home and getting items from the market, which makes less items to be available there' – FGD participant (female, host community)

FGD participants stated that some groups have limited access to services. Returnees are reportedly less able to access livelihood sources as easily as others, with one FGD participant worrying that they can't access food. Moreover, several FGD participants said that those far away from town have difficulty accessing services, particularly during the rainy season due to flooded roads.

'The road is always full of water and muddy, and it makes it difficult for people to access markets easily' – FGD participant (male, returnee)

7. Climate Vulnerability and Resilience

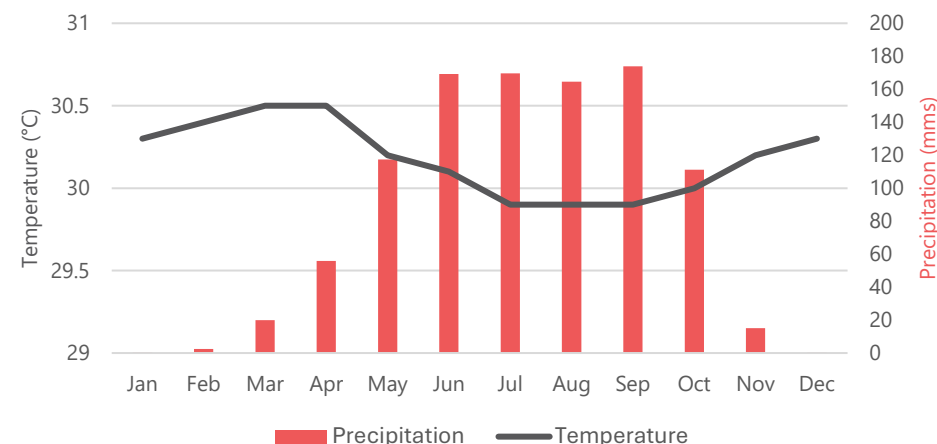
7.1 Climate

According to the Climate Change Knowledge Portal, Wau Town has a tropical monsoon climate.⁶¹ As evidenced in Chart 32, it has a dry season November-March, and a rainy season April-October, with the peak of the rain coming in June to September. During these months, the monthly precipitation is over 150mm (see Chart 33). The temperature stays stable throughout the year, deviating from a monthly average of 30.5°C in March, to a monthly average of 29.9°C in August.

Due to climate change, dry seasons in tropical climates, including South Sudan, are expected to become drier, and wetter seasons are expected to become wetter.⁶² The timing of the seasons is also likely to become more unpredictable.⁶³ This is corroborated by accounts from FGD participants, who described how the rainy season is starting later each year, reducing their period for cultivation.

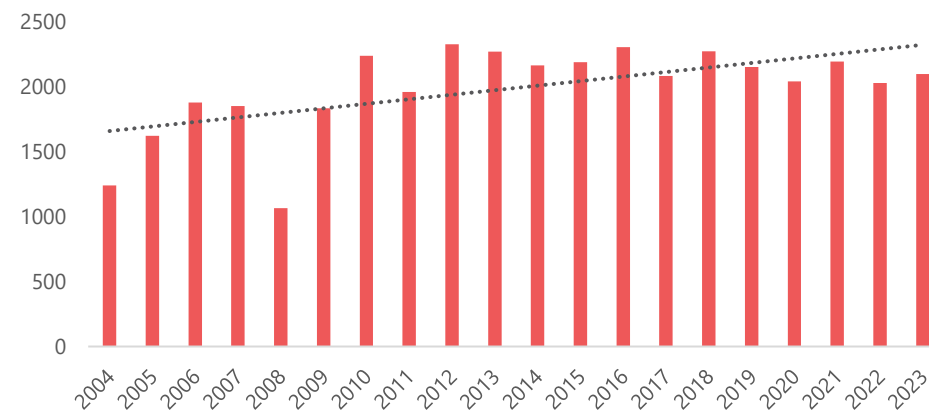
'There are changes in term of climate change. In the past the rain used to come earlier, from March, and we would start our cultivation then. So, by [September] we would have harvested our crops, so the crops would have escaped flooding. But recently, the rains start late, and so we have to start cultivation very late, in June, and the flood also comes earlier than September, so the period for cultivation is very short (3 Months). This is very challenging, and this contribute to food insecurity in our community' – FGD participant (male, host community)

CHART 32: AVERAGE MONTHLY TEMPERATURE AND PRECIPITATION IN WAU TOWN (2004-2024)



Source: CHIRPS: Rainfall estimates [Dataset]. (2023). Climate Hazards Center. & ERA5-Land Daily Aggregated Climate Reanalysis [Dataset]. (2023). Earth Engine Data Catalogue.

CHART 33: YEARLY PRECIPITATION (MMS) IN WAU TOWN (2004-2023)



Source: CHIRPS: Rainfall estimates [Dataset]. (2023). Climate Hazards Center.

⁶¹ The Climate Change Knowledge Portal for Development Practitioners and Policy Makers. (2024). World Bank. [Link](#).

⁶² Chou, C., Chiang, J. C. H., Lan, C.-W., Chung, C.-H., Liao, Y.-C., & Lee, C.-J. (2013). Increase in the range between wet and dry season precipitation. *Nature Geoscience*, 6(4), 263–267. [Link](#).

⁶³ Feng, X., Porporato, A., & Rodriguez-Iturbe, I. (2013). Changes in rainfall seasonality in the tropics. *Nature Climate Change*, 3(9), 811–815. [Link](#).

7.2 Flooding

Map 19 illustrates flood frequency across Northern Bahr el-Ghazal, Unity, Warrap, and WBeG states, with darker shades indicating areas that have a higher frequency of flooding, meaning the darkest shaded areas flood every year. The map suggests that in comparison to neighbouring regions, WBeG state is less vulnerable to flooding. However, low-lying regions of Wau Town near the Jur River are vulnerable to flooding, with areas to the north-east of the town potentially flooding annually. However, the western areas of Wau Town have a very low frequency of flooding.

Map 20 demonstrates the potential severity of a major flood event. It shows the potential flood depth for a major flood which has a 1% chance of occurring each year (i.e. a '100-year flood'). Areas of Wau Town close to the Jur River, therefore, may face flooding risk, with flood depths potentially reaching several meters.

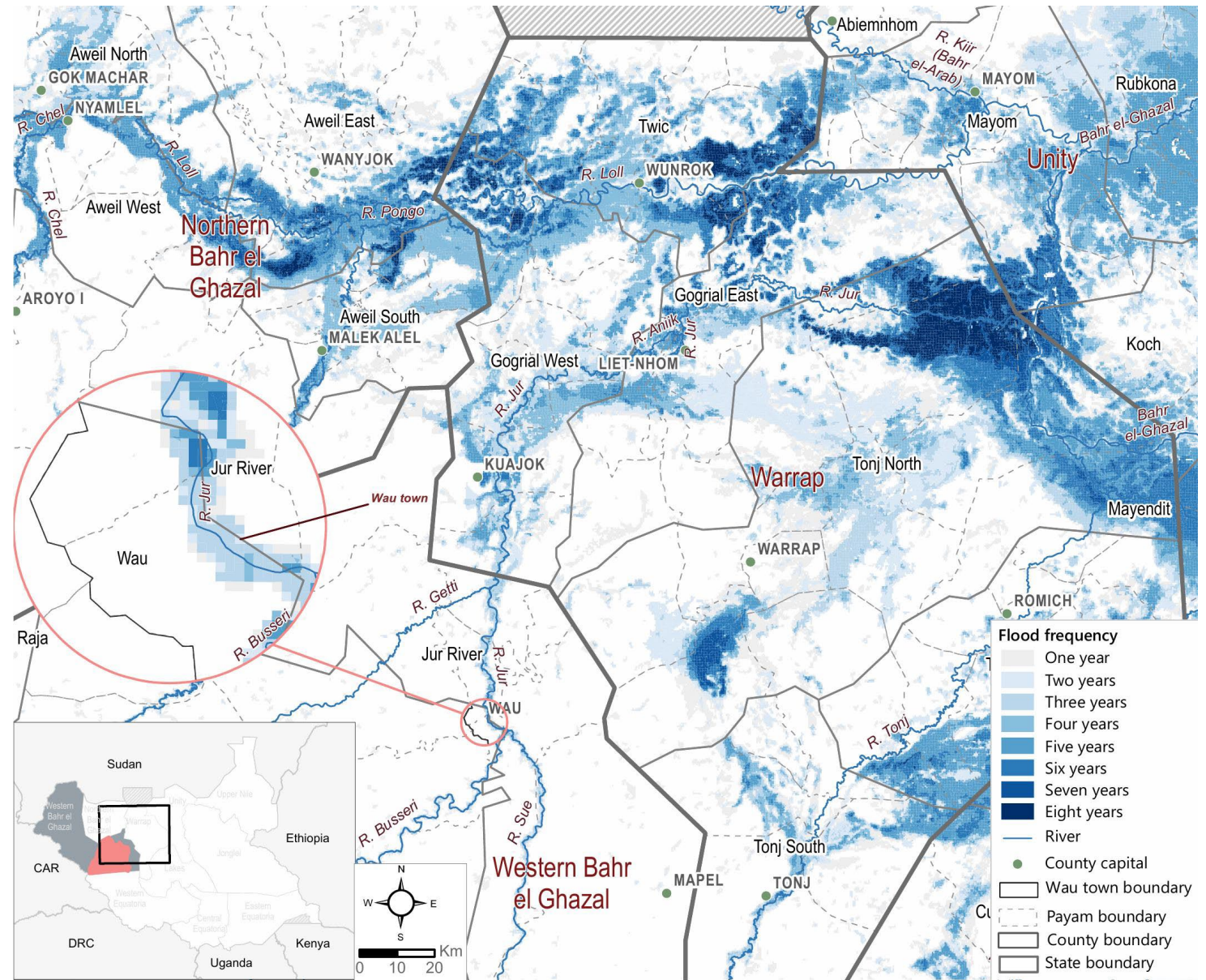
Findings from FGDs and KIIs indicate that communities in Wau Town do not perceive flooding to be a major problem within the Town.

'Only in Jur River is there flooding. In Wau County and Wau Town, no, there is no flooding and no drought' – Aid worker

However, several FGD participants described how flooding had damaged their crops, potentially because they use land outside of the built-up areas of the town, close to the river, for cultivation. This impacts both their access to income as well as access to food.

'Floods have already destroyed crops of groundnut, simsim, cowpeas and sorghum. Some shelters have been destroyed, others stand in water. This is a serious concern. If the Government and NGOs don't support us, most people will starve to death' – FGD participant (male, host community)

Flooding may also impact transport networks, such as due to the accumulation of mud, as described in Section 2.3.4 'Access to Services and Food'. One FGD participant living across the river in Wau Town described how flooding had impacted their

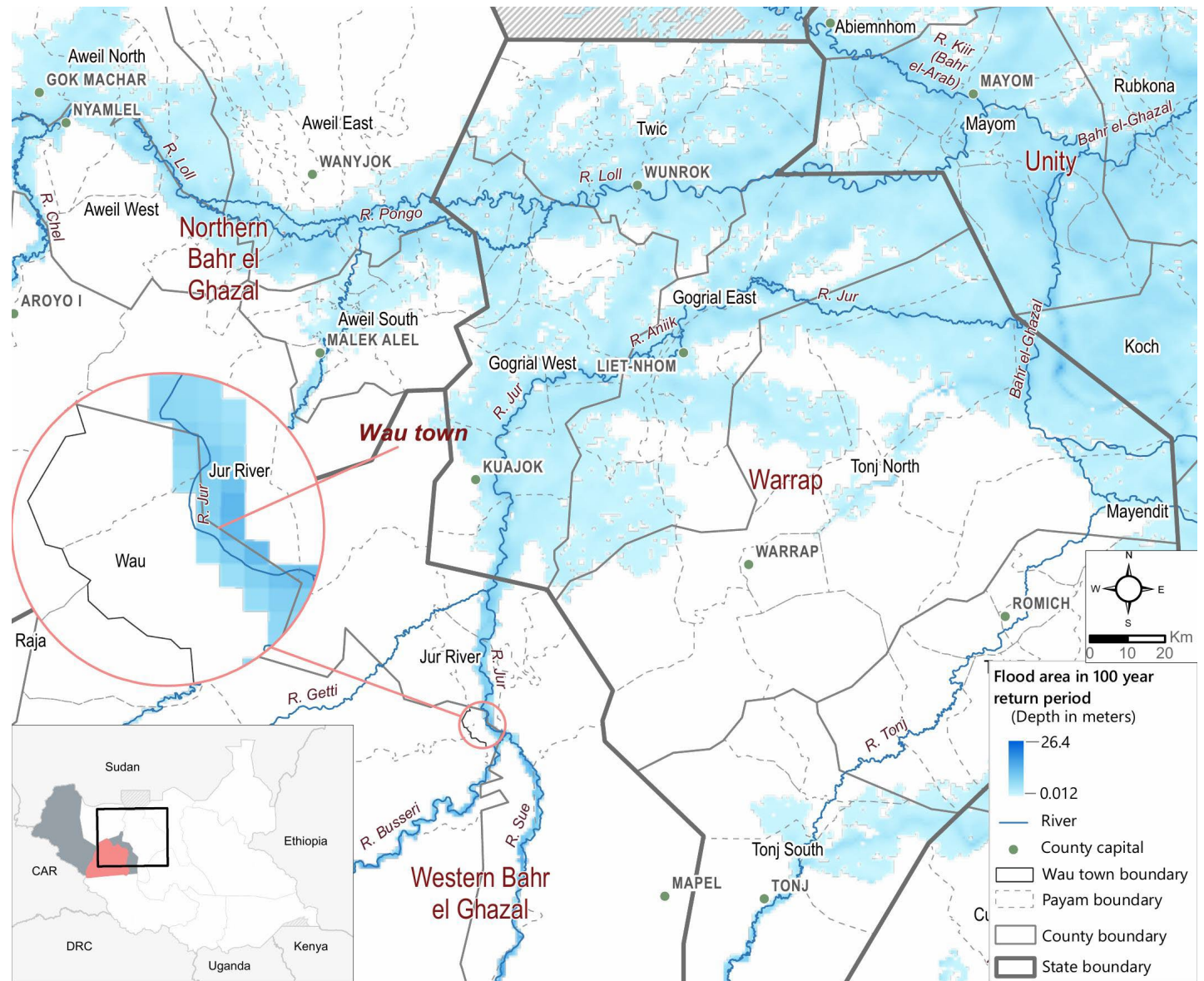


ability to access essential services because the dangers of crossing the river in a small boat when the water level is high.

'We are also facing challenges crossing the river to Wau town because we don't have motorboat to cross the river and if we use the local boat people get drown every year. We have relatives who've on the other side of the river who are locked out from town when the river is full' – FGD participant (male, host community)

Moreover, a market trader reported that she couldn't sell goods at the market on days it was raining, because she couldn't afford 5,000SSP for a motorbike taxi.

Flooding also impacts local infrastructure, with reports in October 2022 that heavy rains had washed away parts of the Sofo Bridge, which connects Raja County to Wau County.⁶⁴



Map 20: Flood area and depth in a 100-year return period in wider Wau region, including parts of Western Bahr el-Ghazal, Northern Bahr el-Ghazal, Warrap, and Unity States. Source: Bough et al. (2024). Global river flood hazard maps. Joint Research Centre.

⁶⁴ Raja town cut off from Wau after bridge collapsed. (2022, October 6). Radio Tamazuj. [Link](#).

7.3 Flash Floods & Functionality of Drainage System

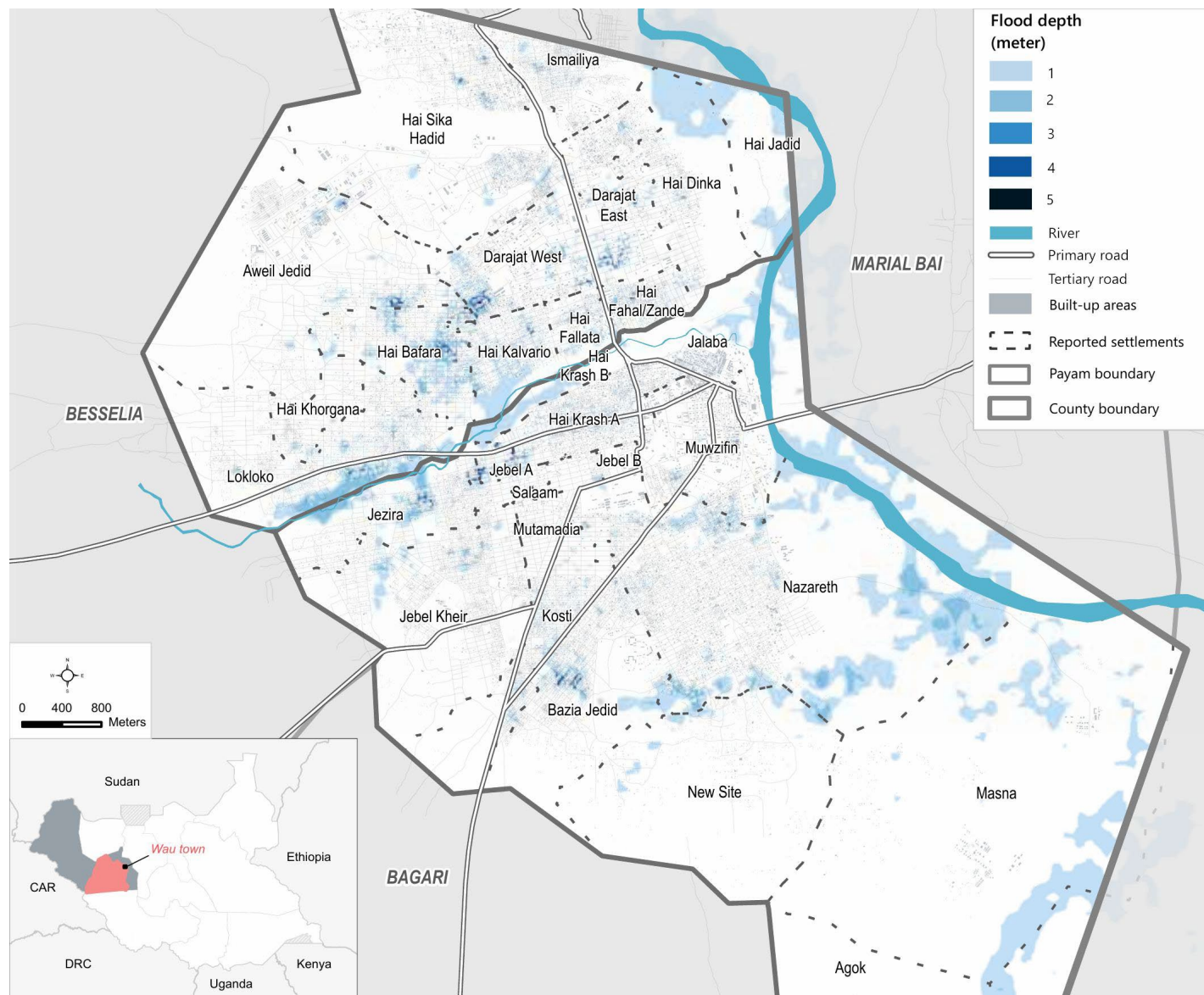
Wau Town may also suffer from flash floods, with one key informant describing how flash floods had occurred in the neighbourhoods of Jezira, Hai Bafra, and New Site, close to the centre of town and next to a small stream that runs through Wau Town. According to the key informant, these areas are of a lower altitude than other areas in Wau Town. Indeed, a news report from Radio Tamazuj in May 2024 described how 700 households in Wau Town had lost their homes due to flash floods in one night.⁶⁵ The neighbourhoods affected were reportedly Lokloko, Jezira, Kosti, and New Site.

Findings from Map 21 shows potential locations of flash flooding in Wau Town in heavy rainfall. It corroborates the aforementioned accounts, with flash flooding seen in areas along the river running through Wau Town (Lokloko, Jezira and Hai Bafara). Additionally, areas on the outskirts of Wau Town, such as Nazareth and Masna, also experience substantial flooding.

Findings were conflicting regarding the functionality of the drainage system in Wau. Both local government officials interviewed reported the presence of 'khors' in Wau Town; drainage channels which run down to the nearest stream or river. Indeed, one aid worker said that the 'land topography allows water to flow to the river'. However, both aid workers stated that, overall, the drainage system had room for improvement.

'There has been no drainage put in. In June [2024], there had been a road constructed in Nazareth, and when it rained the water could not flow away. This affected some 30-40 families' – Key informant (Aid worker)

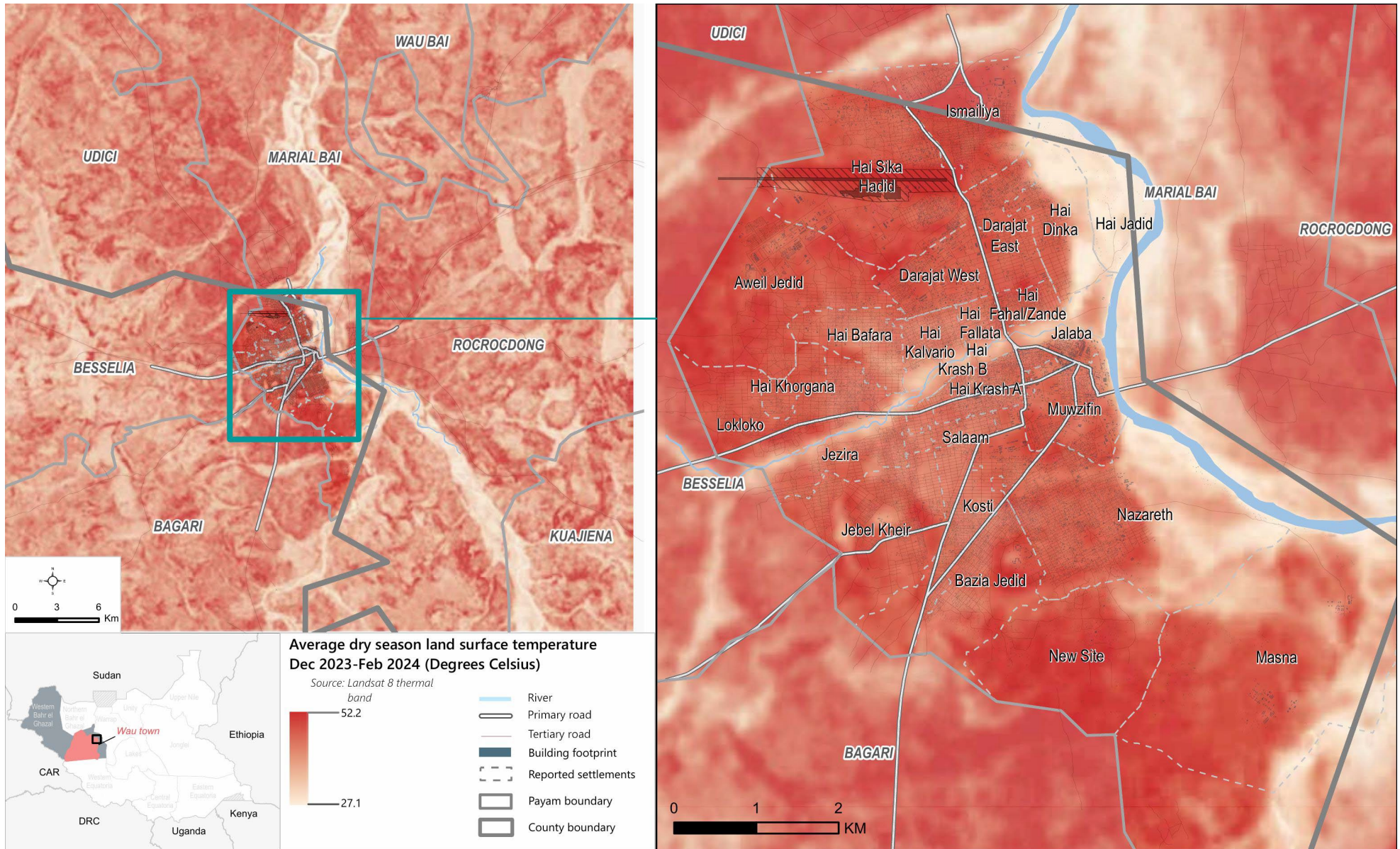
'There is no drainage system. The land topography allows water to flow, it flows along the road to the river. The land slopes down from town to the stream to the river. No drainage has been put in' – Key informant (Aid worker)



Map 21: Flash flood depth (meters) in Wau Town. Source: Flood simulation using ArcGIS Pro 3.4 flood modelling tools and Sentinel-1 derived 10m elevation model (2024).

⁶⁵ Flash floods destroy over 700 homes in Wau town. (2024, May 24). Radio Tamazuj. [Link](#).

7.4 Heatwaves



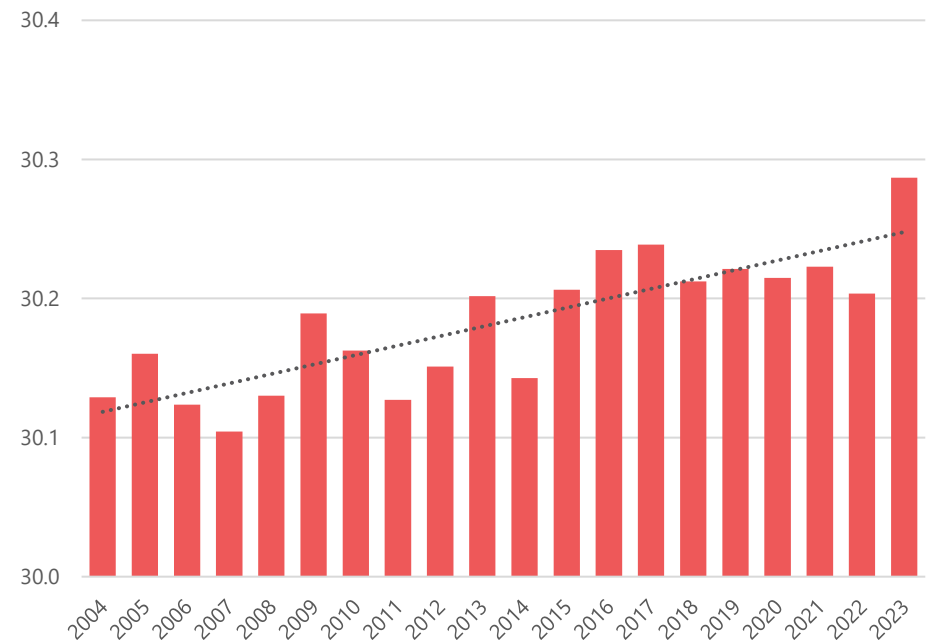
Map 22: Land surface temperature over December 2023–February 2024 in Wau Town. Source: Earth Resources Observation and Science Center (2020). Landsat 8 Thermal Infrared Sensor Level-2. [dataset]. U.S. Geological Survey.

Due to climate change, South Sudan’s average temperature is increasing, with Meteo Blue finding that the average temperature of WBeG has increased from 26°C in 1979 to 28°C in 2023.⁶⁶ Corroborating this, this assessment found that the average temperature in Wau Town has increased from 30.1°C in 2004 to 30.3°C in 2023 (see Chart 36). While average temperatures are increasing, with dry seasons becoming drier,⁶⁷ heatwaves are also expected to become more frequent and more severe.⁶⁸

Several key informants described the most recent heatwave in March 2024, when temperatures across South Sudan stayed in the low-mid 40s°C for several weeks, leading to the Government closing schools for 15 days. According to several key informants, businesses and traders closed during this time, as people stayed home and indoors. One key informant commented that this heatwave was reportedly particularly impactful on the young and elderly, a statement supported by secondary sources. As seen in Map 22, Wau Town is warmer than the surrounding rural areas. This phenomenon, called an urban heat island, has been widely documented, and climate change is expected to lead to an increasing disparity between the temperatures of urban and rural areas.⁶⁹ However, areas in Wau Town close to the river are cooler; this is expected, given that research has shown that urban areas next to waterways are up to 1-3°C cooler than areas without bodies of water close by.⁷⁰

The average land surface temperature of most of Wau Town in December 2023-February 2024 reached over 50°C, which is notably higher than the average air temperature of 30°C shown in Chart 34. However, this disparity is expected, given land surface temperatures are usually far higher than air temperatures. Moreover, this map shows land surface temperature during dry season, when rain and clouds are far less frequent.

CHART 34: AVERAGE YEARLY TEMPERATURE (°C) IN WAU TOWN (2004-2023)



Source: CHIRPS: Rainfall estimates [Dataset]. (2023). Climate Hazards Center.

⁶⁶ *Climate Change Western Bahr al Ghazal*. (2023). MeteoBlue. [Link](#).

⁶⁷ Chou, C., Chiang, J. C. H., Lan, C.-W., Chung, C.-H., Liao, Y.-C., & Lee, C.-J. (2013). Increase in the range between wet and dry season precipitation. *Nature Geoscience*, 6(4), 263–267. [Link](#).

⁶⁸ Marcotullio, P. J., Keßler, C., & Fekete, B. M. (2021). The future urban heat-wave challenge in Africa: Exploratory analysis. *Global Environmental Change*, 66, 102190. [Link](#).

⁶⁹ McCarthy, M. P., Best, M. J., & Betts, R. A. (2010). Climate change in cities due to global warming and urban effects. *Geophysical Research Letters*, 37(9). [Link](#)

⁷⁰ Shi, D., Song, J., Zhong, Q., Myint, S. W., Zeng, P., & Che, Y. (2024). Cooling wisdom of ‘water towns’: How urban river networks can shape city climate. *Remote Sensing of Environment*, 300, 113925. [Link](#).

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