

SUDAN CONFLICT OBSERVATORY

IMPACT OF 100 DAYS OF FIGHTING ACROSS
CIVILIAN AREAS IN KHARTOUM STATE
15 APRIL - 26 JULY, 2023

REPORT 007 | 28 JULY 2023

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METHODOLOGY



This report was produced as part of the Conflict Observatory with the support of the Bureau of Conflict and Stabilization Operations, United States Department of State. This report does not necessarily represent the views of the United States Government.

Mobility Data

Gravy Analytics (gravyanalytics.com) is a commercial company providing hundreds of companies aggregate location information products. All data is commercially available and maintains the highest privacy standards including containing no personal identification information, collected only from users who opt-in to sharing their data and meeting all legal and privacy guidelines including the EU's General Data Protection Regulation (GDPR).

Satellite imagery

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METHODOLOGY

Yale SCHOOL OF PUBLIC HEALTH
Humanitarian Research Lab

The Yale Humanitarian Research Lab's data fusion methodologies combine remote sensing analysis with open-source data to assess and geolocate events. Yale HRL uses remote sensing data including moderate and very high resolution (VHR) satellite imagery, NASA thermal detection data, as well as open source social media, local news reporting, multimedia, and other verified reports. When necessary, sources are redacted for protection purposes; a redacted source list is available to authorized users.

The conflict in Sudan is marked by a lack of data generally. This includes limited remote sensing data including moderate and VHR satellite imagery and open source data, including social media. The lack of open source multimedia may be attributed partially to the widespread power and telecommunications blackouts across the region. This means that (a) many events are unreported or under-reported, and (b) where reports of events exist there may not be sufficient data at this time to corroborate or assess alleged events.

The map herein shows approximate locations – to the highest spatial resolution possible across sources – to where airstrikes have been reported.

Data fusion methodologies combine remote sensing analysis with open-source data to assess and geolocate events. When necessary, sources are redacted for protection purposes; a redacted source list is available to authorized users.

Terms

- NASA FIRMS | NASA Fire Information for Resource Management System
- Reported | Based on credible, verified media reporting

KEY FINDINGS

- Close to two million people have been forced to leave Khartoum State.
- Medical personnel and volunteers have been repeatedly targeted for detention by both SAF and RSF forces.
- The fighting damaged a key water and sanitation facility that supplied the needs of over 1.5 million people.
- SAF and RSF consistently violated their own declaration to protect civilians and further violated multiple ceasefires.
- The fighting, alongside the airstrikes, shelling, and combat operations, have led to the destruction and damage of hundreds of civilian buildings and infrastructure across Khartoum, Omdurman, and Bahri, in addition to civilian deaths and casualties.
- 513 buildings have been damaged or destroyed in Khartoum State since the start of the conflict (15 April 2023).
- Mobility between cities in Darfur has reduced 68% compared to its pre-conflict average, a 19% decrease week over week.

EXECUTIVE SUMMARY

Impact of 100 days of Fighting across Civilian Areas in Khartoum State

15 April - 26 July, 2023

Sudanese Armed Forces (SAF), the Rapid Support Forces (RSF), and their respective aligned forces are required by International Law and the Jeddah Declaration to take precautions to ensure that they prevent and mitigate civilian harms while conducting military operations.

This report documents the destruction of protected civilian objects including hospitals, water and sanitation facilities, and a range of civilian infrastructure. It further documents civilian casualties, widespread forced displacement and allegations of sexual and gender-based violence (SGBV) in Khartoum, Omdurman, and Bahri. These actions were allegedly committed by both SAF and RSF and their respective aligned forces. Where possible, attribution to those responsible is alleged consistent with available data.

From the onset of this conflict on 15 April 2023, SAF and RSF have engaged in military operations across Khartoum, Omdurman, and Bahri in Khartoum State in an attempt to take and maintain control of the cities. Additional military operations have been undertaken in what appear to be attempts to secure or otherwise impact critical resources across Khartoum, Omdurman, and Bahri, as detailed in this and previous Sudan Conflict Observatory reports.

The fighting in Khartoum has displaced a large number of civilians with movement constrained by both warring parties. Close to two million people have been forced to leave Khartoum State. As of the end of March 2023, prior to the start of this conflict, Khartoum State alone hosted over 300,000 refugees and asylum seekers from outside Sudan.ⁱ Humanitarian access is

frequently impeded, where organizations are unable to deliver and distribute critical supplies or ensure the safety of their staff or assets.

The state of medical facilities and lack of civilian access in Khartoum remains dire. Medical personnel and volunteers have been repeatedly targeted for detention by both SAF and RSF forces.ⁱⁱ

Fighting in Khartoum, Omdurman, and Bahri has damaged critical infrastructure and limited the mobility of civilians across the state. The fighting damaged a key water and sanitation facility that supplied the needs of over 1.5 million people.

Since the start of the conflict, political activists have reportedly been detained by SAF and RSF.

In addition to civilian harm from airstrikes and other armed hostilities, there have been reports of widespread Sexual Gender-Based Violence (SGBV) perpetrated by both SAF and RSF in Khartoum State.ⁱⁱⁱ

i. <https://reliefweb.int/report/sudan/ocha-sudan-khartoum-state-profile-march-2023> archived at <https://perma.cc/7FTK-TVL5>

ii. <https://www.washingtonpost.com/world/2023/05/17/sudan-rsf-doctors-military-bahri/> , archived at <https://perma.cc/7AVM-RXLV>

iii. https://twitter.com/Sudan_tweet/status/1681918599500292097 , archived at <https://perma.cc/URQ4-PNEW>

Military Activity Across Khartoum, Omdurman and Bahri

Impact of 100 days of Fighting across Civilian Areas in Khartoum State

15 April - 26 July, 2023

The SAF and RSF signed the Jeddah Declaration of Commitment to Protect the Civilians of Sudan on 11 May 2023. This declaration reaffirms SAF and RSF's core obligations under International Humanitarian Law (IHL) to meet civilians' needs and ensure that civilians are protected at all times.^{iv} The SAF and RSF consistently violated their own declaration to protect civilians and further violated multiple ceasefires that re-affirmed the Jeddah Declaration through repeated clashes; SAF airstrikes have specifically caused civilian casualties.^v Both parties, regardless of the Jeddah declaration, have a responsibility to protect, mitigate, and refrain from causing harm to civilians.

As the war progressed, areas of control have shifted: RSF have gained ground across Bahri, parts of Omdurman, and strategic areas in Khartoum, including controlling parts of Central Khartoum and taking over the Central Reserve Police Headquarters (CRP) as of 25 June 2023.

The RSF have positioned in civilian occupied neighborhoods and buildings, a potential violation of the Geneva Conventions.^{vi} There are widespread reports of RSF actively forcibly taking over civilian homes and other civilian areas across Khartoum, Omdurman, and Bahri since the beginning of the conflict.^{vii} RSF allegedly has attacked civilians, evicted them from their homes, then looted the homes and buildings before using these homes for their military operations, personnel, and vehicles.^{viii} The RSF's alleged activities in civilian neighborhoods and buildings may make such structures legitimate military targets under the laws of armed conflict. These actions also may put nearby civilians or other civilian areas at risk by creating potential legitimate military targets within otherwise civilian areas.^{ix}

It was unclear to what extent SAF exercised the precautionary principle when targeting these facilities, or whether it took other steps to ensure that civilian harm is minimized regardless of whether a target has been made a legitimate military target.

SAF must exercise the precautionary principle when targeting these facilities. SAF would still be required to ensure that civilian harm is minimized regardless of whether a target has been made a legitimate military target.

The SAF have increasingly depended upon airpower in their efforts to dislodge RSF from their positions. The use of Wadi Sayyidna military base north of Omdurman to launch unmanned aerial systems (UAS) and other attack aircraft represents a central pillar in SAF's military strategy.

The fighting, alongside the airstrikes, shelling, and combat operations, have led to the destruction and damage of hundreds of civilian buildings and infrastructure across Khartoum, Omdurman, and Bahri, in addition to civilian deaths and casualties. It is not possible at this time for Sudan Conflict Observatory to accurately assess the number of civilians killed due to this violence in Khartoum, Omdurman, and Bahri.^x For their part, SAF claims that it is targeting RSF positions during airstrikes and not targeting civilians.^{xi}

The airstrikes documented in this report reveal a distinct concentration of airstrikes occurring in a limited geographic location. SAF's use of airstrikes appear to have been almost exclusively limited to the Khartoum State theater of operations with very few airstrikes reported elsewhere.

- iv. <https://www.state.gov/jeddah-declaration-of-commitment-to-protect-the-civilians-of-sudan/>, archived at <https://perma.cc/SUP7-9HXT>
- v. <https://hub.conflictobservatory.org/portal/sharing/rest/content/items/d3bb9f62c8c145b4b391475592a1a057/data>, archived at <https://perma.cc/EZN2-CFDP>
- vi. <https://www.reuters.com/world/africa/how-sudans-paramilitary-forces-took-parts-khartoum-stormed-army-chiefs-quarters-2023-05-10/>, archived at <https://perma.cc/FS5L-ZS3B>
- vii. <https://3ayin.com/en/scm4/>, archived at <https://perma.cc/9987-F6S4>; <https://3ayin.com/en/scm3/>, archived at <https://perma.cc/2L9L-UGPJ>; <https://3ayin.com/en/looting/>, archived at <https://perma.cc/Q6QC-3DAV>; <https://www.dabangasudan.org/en/all-news/article/shelling-continues-in-sudan-capital-15-killed-in-omdurman>, archived at <https://perma.cc/FCR7-KZE8>;
- viii. <https://www.aljazeera.com/news/2023/5/7/sudan-residents-describe-looting-evictions-by-rsf>, archived at <https://perma.cc/7TXS-ZS6A>;

- ix. <https://3ayin.com/en/scm4/>, archived at <https://perma.cc/9987-F6S4>; <https://3ayin.com/en/scm3/>, archived at <https://perma.cc/2L9L-UGPJ>; <https://www.dabangasudan.org/en/all-news/article/shelling-continues-in-sudan-capital-15-killed-in-omdurman>, archived at <https://perma.cc/FCR7-KZE8>; <https://www.nytimes.com/2023/04/27/world/africa/sudan-khartoum-paramilitary-fighters.html?smid=nytcore-ios-share&referringSource=articleShare>, archived at <https://perma.cc/8PVX-TLQD>; <https://www.nytimes.com/2023/05/05/world/africa/sudan-fighting-evacuations-rescue.html?smid=nytcore-ios-share&referringSource=articleShare>, archived at <https://perma.cc/5Q2J-X8BL>;
- x. <https://3ayin.com/en/scm3/>, archived at <https://perma.cc/2L9L-UGPJ>; <https://3ayin.com/en/indiscriminate/>, archived at <https://perma.cc/4C36-MJ4V>;
- xi. <https://www.dabangasudan.org/en/all-news/article/continuing-battles-in-sudan-leave-dozens-dead>, archived at <https://perma.cc/YKR4-HKBR>

Military Activity Across Khartoum, Omdurman and Bahri

Impact of 100 days of Fighting across Civilian Areas in Khartoum State

15 April - 26 July, 2023

Deployment of UAS

As the conflict evolved, SAF have reportedly made use of UAS for both surveillance and reconnaissance as well as the conducting of airstrikes.^{xii} It is probable that the use of UAS has increased since early June as this coincides with an increase in recorded airstrikes across Khartoum as assessed by Yale HRL.^{xiii} Satellite imagery analyzed has identified the SAF deployment of probable Iranian-manufactured Qods Mohajer-6 UAS in the theater of operations. Multiple open-source accounts suggest that SAF has also acquired and operationalized Bayraktar TB2, Turkish manufactured, UAS.^{xiv} If the Bayraktar TB2 is operational, this would mark SAF's first use of the system given its absence from SAF's inventory prior to the 15 April 2023 conflict.^{xv} Of note, both UAS are capable of deploying precision-guided munitions.

xii. <https://twitter.com/AlHadath/status/1678469132855943202?s=20>, archived at <https://perma.cc/DDT7-DTXX>

xiii. <https://www.arabnews.com/node/2323211/middle-east>, archived at <https://perma.cc/9BWV-LVC6>

xiv. CivKhart_09; <https://twitter.com/AlHadath/status/1678469132855943202?s=20>, archived at <https://perma.cc/DDT7-DTXX>

xv. <https://www.iiss.org/publications/the-military-balance/the-military-balance-2022> archived at <https://perma.cc/45NJ-4BFM>

Impact of Fighting on Civilians

Impact of 100 days of Fighting across Civilian Areas in Khartoum State

15 April - 26 July, 2023

Significant Internal Displacement of Khartoum's Civilians

The epicenter of clashes between SAF and RSF in Sudan are in Khartoum State.^{xvi} This state is the single largest source for Internal Displaced Persons (IDPs) in Sudan as of 19 July 2023. Civilians fleeing Khartoum State consist of 73.52% of total documented IDPs or at least 1,975,000 of the minimum 2,686,434 displaced persons across Sudan. Of those displaced, 98% have fled Khartoum State with an estimated 38,000 displaced people remaining in Khartoum State.^{xvii}

Civilian Killings, Casualties, and Injury Due to Fighting in Khartoum State

Airstrikes, shelling, and small arms fire throughout the city have resulted in civilian casualties and infrastructure damage, and has been corroborated using satellite imagery and open-source multimedia verified and assessed by Yale HRL.^{xviii} While airstrikes have been well documented in this report, artillery shelling and firefights have resulted in a large number of civilian injuries and deaths.^{xix} The 23 April 2023 shelling of the Khartoum International Airport allegedly resulted in civilian casualties. SAF shelling followed RSF's takeover and subsequent fighting for control of the civilian airport.^{xx} Humanitarian logistics have been threatened since the start of the

conflict as evidenced by the destruction of a WFP-operated UN humanitarian air service aircraft at the airport on 16 April 2023.^{xxi}

The United Nations High Commissioner for Refugees (UNHCR) reported on 25 June that 28 refugees living in Sudan were killed by fighting in South Khartoum; an unknown additional number of refugees were injured.^{xxii} These represent a fraction of the reports of civilian casualties in Khartoum State. Medecins Sans Frontiers (MSF) reports they have treated over 1,600 war-wounded patients in Khartoum State as a result of heavy fighting, shelling, and airstrikes.^{xxiii} There are many additional open source accounts of attacks on civilians which cannot be corroborated based on Yale HRL's data and analysis at this time.

Restrictions on Civilian and Humanitarian Movement

Movement across Khartoum, Omdurman, and Bahri is dangerous for both humanitarians and civilians. The fighting parties frequently create new checkpoints or rotate control through fighting.^{xxiv} While one displaced person noted that local civilians remaining in these communities perceive SAF-controlled checkpoints as less dangerous, the fighting across the city made each encounter unpredictable and surviving in these conditions akin to 'luck.'^{xxv} The fighting parties have established blockades, checkpoints, and control measures at the bridges connecting Khartoum, Omdurman, and Bahri since the start of the conflict on 15 April.

xvi. <https://reports.unocha.org/en/country/sudan/#cf-47vK8mLI80ijCln1eSav6>, archived at <https://perma.cc/8P5W-U5BN>

xvii. <https://dtm.iom.int/reports/sudan-situation-report-14?close=true>, archived at <https://perma.cc/4ELQ-YMEA>

xviii. <https://www.dabangasudan.org/en/all-news/article/renewed-fighting-erupts-in-sudan-capital-khartoum-as-ceasefire-expires#SudanCrisis>, archived at <https://perma.cc/N5G2-MFU7>; https://twitter.com/Sudan_tweet/status/1647178680735547397 ; <https://www.nbcnews.com/news/world/sudan-war-airstrikes-khartoum-military-rapid-support-forces-darfur-rcna85394>, archived at <https://perma.cc/JWX9-ZU3Y> ; CivKhart_05 <https://www.dabangasudan.org/en/all-news/article/sudan-army-rsf-clashes-continue-in-el-obeid>, archived at <https://perma.cc/AD6V-JPEX>

xix. CivKhart_06 <https://www.nbcnews.com/news/world/sudan-war-airstrikes-khartoum-military-rapid-support-forces-darfur-rcna85394>, archived at <https://perma.cc/JWX9-ZU3Y> ; CivKhart_07

xx. CivKhart_08

xxi. <https://reports.unocha.org/en/country/sudan/flash-update/6zi0ZB3owjMqIFT8Wt6wKs/>, archived at <https://perma.cc/84ED-QDTQ>

xxii. <https://www.unhcr.org/news/press-releases/after-28-refugee-deaths-khartoum-unhcr-urges-sudan-s-warring-parties-allow-safe>, archived at <https://perma.cc/F4GC-QJRN>

xxiii. <https://www.doctorswithoutborders.org/latest/sudan-msf-staff-threatened-and-beaten-khartoum-putting-lifesaving-care-jeopardy> archived at <https://perma.cc/3B9L-Y6QF>

xxiv. <https://www.nbcnews.com/news/world/sudan-conflict-fleeing-khartoum-egypt-rcna84815>, archived at <https://perma.cc/SQB2-NDV2>

xxv. <https://www.nbcnews.com/news/world/sudan-conflict-fleeing-khartoum-egypt-rcna84815>, archived at <https://perma.cc/SQB2-NDV2>

Impact of Fighting on Civilians

Impact of 100 days of Fighting across Civilian Areas in Khartoum State

15 April - 26 July, 2023

Restrictions on Civilian and Humanitarian Movement

The fighting parties have created roadblocks, further limiting the mobility of civilians and humanitarian actors and supplies. SAF announced that they would close the main road linking Barra to Khartoum which is primarily used to trade goods in and out of Khartoum state. SAF warned that any vehicles found on the road as of 24 July would be considered a military target.^{xxvi} This limitation on freedom of movement explicitly threatens both civilian lives and humanitarians who may rely on that route for transportation and the sustainment of life.

Limited Humanitarian Access

Humanitarian access in Khartoum State and across Sudan is extremely limited. The United Nations Office for the Coordination of Humanitarian Affairs (OCHA) has reported that there have been 145 humanitarian access incidents in Khartoum State from the start of the conflict until the end of May (their most recent update at the time of report production).

Humanitarian access incidents are situations preventing the delivery of humanitarian aid, including:

- bureaucratic impediment
- violence against humanitarian assets
- violence against public facilities
- active hostilities
- interference or physical violence

OCHA reported that bureaucratic impediments, active hostilities, and violence against humanitarian personnel and humanitarian facilities have harmed and impeded humanitarian operations in Khartoum State. There have been 90 incidents of looted humanitarian assets in Khartoum State.^{xxvii}

Humanitarian access is further limited by a lack of visas issued to humanitarians and severe restrictions imposed on the mobility of humanitarian organizations into Khartoum according to a Norwegian Refugee Council (NRC) report.^{xxviii} The Humanitarian Aid Commission (HAC) remains tasked with granting visas to aid workers and issues permits to humanitarian workers requesting to work in Sudan.^{xxix} The HAC monitors the delivery of aid and inspects all aid supplies that arrive to Port Sudan.^{xxx} The HAC operates under SAF's de facto command according to Al Jazeera's reporting.^{xxxi}

Civilians and especially vulnerable populations will continue to suffer for the foreseeable future as humanitarian access incidents continue to severely obstruct much needed aid. As an NRC report indicates, supplies of stocks are lacking, and absent improvement in access, much needed medical and humanitarian supplies will be unable to reach the people in need.^{xxxii}

xxvi. <https://twitter.com/GHQsudan/status/1683436715082383361?s=20>, archived at <https://perma.cc/3NQG-6YDC>

xxvii. https://reliefweb.int/report/sudan/sudan-humanitarian-access-situation-report-april-may-2023?_gl=1*7fagtt*_ga*ODg3MzA3MTA2LjE2NzUwNTg5NTQ.*_ga_E60ZNX2F68*MTY4ODk4NzU3MS45My4wLjE2ODg5ODc1NzEuNjAuMC4w, archived at <https://perma.cc/RJY9-YW7B>

xxviii. <https://reliefweb.int/report/sudan/sudan-one-hundred-days-war> archived at <https://perma.cc/L9F9-TNH4>

xxix. <https://www.aljazeera.com/news/2023/6/16/as-sudan-war-rages-rival-sides-accused-of-looting-diverting-aid>, archived at <https://perma.cc/6ZTS-R29Q>

xxx. <https://www.aljazeera.com/news/2023/6/16/as-sudan-war-rages-rival-sides-accused-of-looting-diverting-aid>, archived at <https://perma.cc/6ZTS-R29Q>

xxxi. <https://www.aljazeera.com/news/2023/6/16/as-sudan-war-rages-rival-sides-accused-of-looting-diverting-aid>, archived at <https://perma.cc/6ZTS-R29Q>

xxxii. <https://reliefweb.int/report/sudan/sudan-one-hundred-days-war> archived at <https://perma.cc/L9F9-TNH4>

Damage and Destruction of Civilian Protected Objects and Critical Infrastructure

Impact of 100 days of Fighting across Civilian Areas in Khartoum State 15 April - 26 July, 2023

Critical Infrastructure

There have also been widespread reports of power outages across the city, with significantly reduced access to water and health supplies.^{xxxiii} Yale HRL has previously documented targeted destruction to a water and environmental sanitation facility in Bahri on 17 April 2023.^{xxxiv} Satellite images analyzed for this report reveal that the water storage tanks have been dry since early May. The International Committee of the Red Cross (ICRC) noted that this plant previously covers the water needs of over 1.5 million people.^{xxxv}

Medical Facilities and Personnel under Attack

Pre-conflict, Khartoum State contained nearly 80% of the country's medical services.^{xxxvi} The damage to health services in the city since 15 April 2023 has resulted in significant deterioration of Sudan and Khartoum's health infrastructure overall. Hospitals have been frequently targeted since 15 April 2023, and many have frequently closed, with only five still fully functioning across Khartoum city.^{xxxvii} Doctors have also been leaving the city.^{xxxviii} On 8 June 2023, ICRC facilitated the evacuation of 280 children and 70 orphans from Khartoum to a safer location.^{xxxix}

MSF, which operates the only two hospitals left in South Khartoum, noted that supplies are dwindling and that they have been unable to bring experienced teams to provide relief to their exhausted staff.^{xl} From sources in their Turkish Hospital, an originally pediatric and maternity focused clinic that was converted into an emergency care facility following the conflict, they cite a lack of medical oxygen, water and food as their most critical challenges.^{xli}

MSF has also experienced violent attacks against their staff, threatening their operations in the region. On 20 July 2023, four MSF workers with a team of drivers and daily workers were stopped by armed actors, violently attacked, and had their vehicle stolen. Following the incident, the MSF emergency manager of Sudan warned if supplies continue to be disrupted and attacks happen again, "operations would be untenable."^{xlii}

On 7 May 2023, SAF detained two men engaged in humanitarian work but were flagged as "traitors."^{xliii} In an interview with Al-Hadath on 26 May 2023, Dr. Nuqud spoke of the dire medical situation with shortages of medical supplies and hospitals' conditions being out of service in Khartoum.^{xliv} Dr. Nuqud was subsequently reportedly arrested, detained and tortured by GIS.^{xlv} Medical volunteers were also arrested by Sudanese army intelligence in May, leading to condemnation from Sudan's Doctors syndicate.^{xlvi}

xxxiii. <https://reports.unocha.org/en/country/sudan/card/3nE04UiikI/>, archived at <https://perma.cc/3BJS-8P3H>

xxxiv. <https://hub.conflictobservatory.org/portal/sharing/rest/content/items/d3bb9f62c8c145b4b391475592a1a057/data>, archived at <https://perma.cc/EZN2-CFDP>

xxxv. https://twitter.com/ICRC_Sudan/status/1682314261832318985 archived at <https://perma.cc/6FBA-25BS>

xxxvi. <https://abcnews.go.com/International/sudan-conflict-african-countrys-health-system-nears-breaking/story?id=99564797>, archived at <https://perma.cc/8F4M-EM5V>

xxxvii. <https://www.doctorswithoutborders.org/latest/sudan-we-have-daily-power-problems-khartoum-and-hospital-can-have-life-or-death-consequences> archived at <https://perma.cc/86FS-NHME>

xxxviii. CivKhart_04

xxxix. <https://www.icrc.org/en/document/sudan-280-children-and-70-caretakers-khartoum-orphanage-reach-safety> archived at <https://perma.cc/5ZAY-89SL>

xl. <https://www.theguardian.com/global-development/2023/jul/21/sudan-attacks-on-health-workers-jeopardise-remaining-hospitals-operating-in-khartoum>, archived at <https://perma.cc/3WKS-3H6G>

xli. <https://www.doctorswithoutborders.org/latest/sudan-we-have-daily-power-problems-khartoum-and-hospital-can-have-life-or-death-consequences>, archived at <https://perma.cc/86FS-NHME>

xlii. <https://www.zawya.com/en/press-release/africa-press-releases/khartoum-aid-in-jeopardy-as-medecins-sans-frontieres-msf-staff-face-beatings-death-threats-and-theft-vri0x14b>, archived at <https://perma.cc/UJ3D-R3WX>

xliii. https://www.aljazeera.com/news/2023/5/17/three-pro-democracy-activists-arrested-in-sudan?utm_source=dlvr.it&utm_medium=twitter, archived at <https://perma.cc/35HJ-S3VP>

xliv. https://sudantribune.com/article274138/#google_vignette, archived at <https://perma.cc/3VAE-MN2E>

xlv. https://sudantribune.com/article274138/#google_vignette, archived at <https://perma.cc/3VAE-MN2E>

xlvi. <https://www.theguardian.com/world/2023/may/08/sudan-medical-volunteers-detained-after-being-seized-from-ambulance> archived at <https://perma.cc/N8HU-MR8L>

Damage and Destruction of Civilian Protected Objects and Critical Infrastructure

Impact of 100 days of Fighting across Civilian Areas in Khartoum State 15 April - 26 July, 2023

Sexual Gender-Based Violence (SGBV) in Khartoum State

This conflict has been marked with widespread sexual and gender-based violence (SGBV), which is systematically underreported. According to OCHA, there are an estimated 4.2 million civilians vulnerable to SGBV across Sudan.^{xlvi} The Unit of Combating Violence Against Women and Children (CVAW) in Sudan has documented 108 cases of rape and sexual violence since the conflict began, including 56 in Khartoum as of 20 July 2023.^{xlvi} The reports of SGBV thus far are likely to have been grossly underreported; the CVAW estimates that number only represents 2% of cases.^{xlix} There have been increasing reports of SGBV cases according to the UN Human Rights Office in Sudan, as women and children IDP numbers continue to swell from Khartoum and Darfur.ⁱ While the majority of reported SGBV cases have been attributed to RSF, both RSF and SAF have been identified as perpetrators of SGBV by survivors.^{li}

Extrajudicial Detainment of Political Activists

The SAF and RSF have reportedly detained hundreds of political activists and medical volunteers in Khartoum State since the start of the conflict.^{lii} In February 2022, UN Human Rights expert Adama Dieng commented on the security force's repeated use of excessive force against political activists as human rights violations.^{liii} The General Intelligence Service (GIS), formerly known as National Intelligence and Security Service (NISS), have a history of arresting political activists criticizing the political status quo with the most recent reported case having occurred as of 19 June 2023. In Bahri, the Resistance Committees called for the release of three of its members as of 19 June 2023.^{liv} Medics, journalists, and political activists have continued to be threatened, arrested and attacked by SAF and RSF forces.^{lv}

- xlvi. <https://theconversation.com/rising-sexual-violence-in-sudan-conflict-reflects-entrenched-patriarchy-but-women-and-girls-are-fighting-back-208408>, archived at <https://perma.cc/FK42-Y62D>
- xlvi. <https://www.dabangasudan.org/en/all-news/article/rsf-accused-of-killings-robberies-and-sexual-violence>, archived at <https://perma.cc/55WA-YN4E> ; https://twitter.com/Sudan_tweet/status/1681918599500292097, archived at <https://perma.cc/URQ4-PNEW> ; Sudan: Sexual violence against women spikes – DW – 07/06/2023, archived at <https://perma.cc/35VP-CD93>
- xlix. <https://www.savethechildren.net/news/sudan-children-young-12-raped-and-assaulted-sexual-violence-rips-through-country>, archived at <https://perma.cc/EQY5-U9TC>
- i. <https://www.who.int/news/item/05-07-2023-sudan-top-un-officials-sound-alarm-at-spike-in-violence-against-women-and-girls>, archived at <https://perma.cc/CPX7-49EM>
- li. <https://search.brave.com/search?q=Sudan%3A+Sexual+violence+against+women+spikes+%E2%80%93+DW+%E2%80%93+07%2F06%2F2023&source=desktop>, archived at <https://perma.cc/WRP3-8TUU>

- lii. <https://www.dabangasudan.org/en/all-news/article/sudans-warring-parties-detain-activists-hold-volunteers-incommunicado>, archived at <https://perma.cc/649X-8VTK>
- liii. <https://www.dabangasudan.org/en/all-news/article/resistance-committee-members-detained-as-sudan-s-gis-given-power-of-arrest>, archived at <https://perma.cc/BS59-ZG4D> ; <https://sudan.un.org/en/173200-un-human-rights-expert-adama-dieng-concludes-his-official-visit-sudan-20-24-february-2022>, archived at <https://perma.cc/4UVS-KLDU> ; <https://sudan.un.org/en/173200-un-human-rights-expert-adama-dieng-concludes-his-official-visit-sudan-20-24-february-2022>, archived at <https://perma.cc/4UVS-KLDU>
- liv. <https://www.dabangasudan.org/en/all-news/article/military-intelligence-continues-to-detain-activists-in-sudan>, archived at <https://perma.cc/3KFQ-FRNG>
- lv. <https://www.aljazeera.com/news/2023/5/17/three-pro-democracy-activists-arrested-in-sudan>, archived at <https://perma.cc/35HJ-S3VP>

SAF Airstrikes

As the conflict evolved, SAF have reportedly made use of UAS for both surveillance and reconnaissance as well as the conducting of airstrikes.

It is probable that the use of UAS has increased since early June as this coincides with an increase in recorded airstrikes across Khartoum as assessed by Yale HRL.

Satellite imagery analyzed has identified the SAF deployment of probable Iranian-manufactured Qods Mohajer-6 UAS in the theater of operations. Multiple open-source accounts suggest that SAF has also acquired and operationalized Bayraktar TB2, Turkish manufactured, UAS.

If the Bayraktar TB2 is operational, this would mark SAF's first use of the system given its absence from SAF's inventory prior to the 15 April 2023 conflict.

Of note, both UAS are capable of deploying precision-guided munitions.

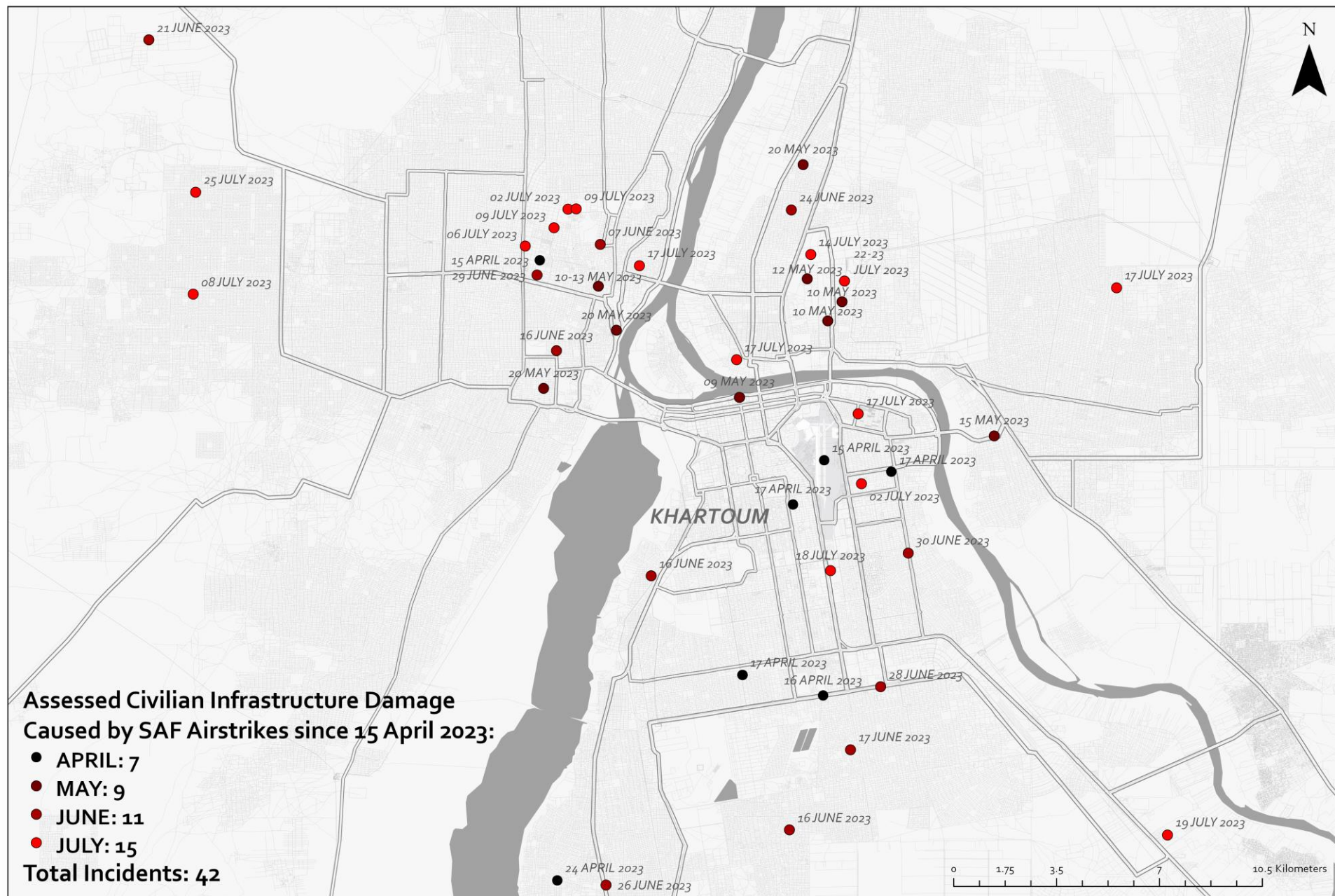
Sources:

<https://twitter.com/AlHadath/status/1678469132855943202?s=20>,
archived at
<https://perma.cc/DDT7-DTXX>;

<https://www.arabnews.com/node/2323211/middle-east>,
archived at
<https://perma.cc/9BWV-LVC6>

<https://www.iiss.org/publications/the-military-balance/the-military-balance-2022>,
archived at
<https://perma.cc/45NJ-4BFM>

CivKhart_09



Khartoum Airport

16 APRIL 2023

Khartoum International Airport has sustained extensive damage based on imagery and multimedia from 16 April 2023.

A likely precision guided munition impact hole is observed on the roof of the airport building, suggesting SAF intentionally targeted the airport.

The airport is a key transportation and mobility node, and the destruction of a World Food Programme-operated United Nations Humanitarian Air Service aircraft is indicative of the threats to humanitarian logistics and operations.

Khartoum International Airport, as of report production, remains unable service civilian travel.

Source | <https://reports.unocha.org/en/country/sudan/flash-update/6zi0ZB3owjMqIFT8Wt6wKs/>, archived at <https://perma.cc/84ED-QDTQ>



30 March 2023 | © 2023 Maxar



16 April 2023 | © 2023 Maxar

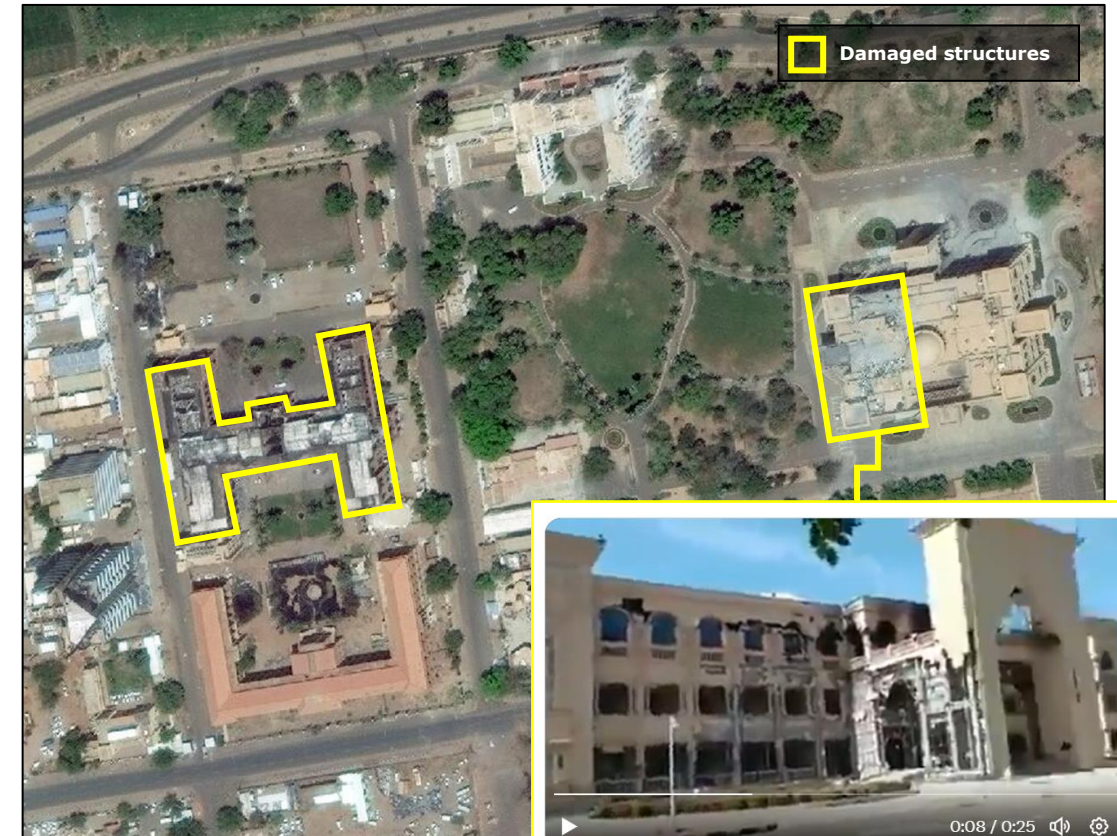
New Republican Palace and Government Facilities

09 MAY 2023



06 May 2023 | © 2023 Maxar

Satellite imagery confirms that the New Republican Palace and the Ministry of Finance were partially damaged between 06 May 2023 and 12 May 2023. It is highly likely, based on thermal detections, that damage to these two facilities occurred on 09 May 2023. Open-source reporting corroborates visual damage to the New Republican Palace, with further reports alleging the damage was a result of SAF airstrikes.



12 May 2023 | © 2023 Maxar

Omdurman

07 JUNE 2023

Three structures within a civilian neighbourhood in Omdurman appear to have been destroyed between 01 June 2023 and 07 June 2023.

News reports corroborate the incidence of airstrikes on the El-Muweileh area of Omdurman, where RSF had purportedly been gathered near the area's camel market.



01 June 2023 | © 2023 Maxar



07 June 2023 | © 2023 Maxar

Industrial Destruction

29 APRIL – 15 JUNE 2023

At least twenty-four (24) structures are observed to have been damaged or destroyed in the Ombada industrial area since 29 April 2023. A preponderance of the structural damage appears consistent with airstrike damage, likely a result of SAF strikes. Based on thermal signature detections by NASA FIRMS, it is highly likely that the observed damage occurred between 2 and 15 June 2023.



29 April 2023 | © Maxar



15 June 2023 | © Maxar

Omdurman

29 JUNE 2023

Satellite imagery visually confirms the destruction of several civilian buildings, likely corporate offices, in Omdurman between 27 June 2023 and 02 July 2023. Thermal detections by NASA FIRMS indicate that the destruction likely occurred between 29 June 2023 and 02 July 2023.



27 June 2023 | © 2023 Maxar



02 July 2023 | © 2023 Maxar

Omdurman

02 JULY 2023

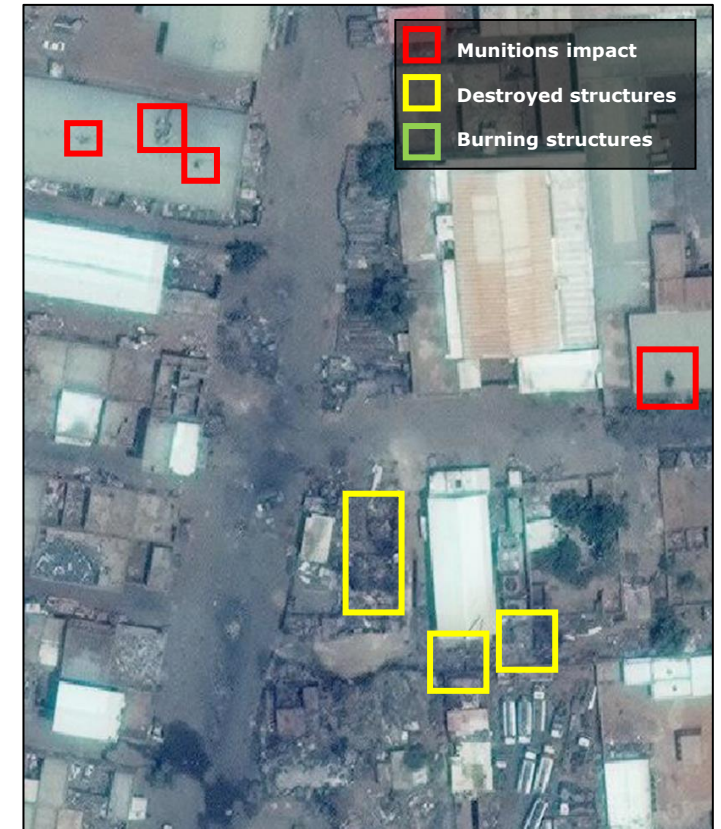
Structures within commercial area in Omdurman appear to have sustained extensive damage. Satellite imagery identifies multiple munition impacts to buildings as well as three destroyed structures. Thermal detections from NASA FIRMS corroborates the incidence of fires likely caused by airstrike damage, with further airstrike damage observed in imagery between 02 and 09 July 2023.



27 June 2023 | © Maxar



02 July 2023 | © Maxar



09 July 2023 | © Maxar

Omdurman

09 JULY 2023

Smoke emanations, visible in satellite imagery, indicate the destruction of a structure opposite a mosque. Based on satellite imagery and thermal signature detections by NASA FIRMS, it appears that this incident occurred between 05 July and 06 July 2023.



02 July 2023 | © Maxar



09 July 2023 | © Maxar



16 July 2023 | © Maxar

Khartoum North Light Industrial Area

12 MAY 2023

Smoke emanations, visible in satellite imagery, indicate a fire destroyed 3 buildings between 10 May 2023 and 13 May 2023. These buildings are likely to be a factory or offices located in the Khartoum North Light Industrial Area.



10 May 2023 | © 2023 Maxar



12 May 2023 | © 2023 Maxar



13 May 2023 | © 2023 Maxar

Omdurman National Bank

10 – 13 MAY 2023

Between 10 May 2023 and 13 May 2023, satellite imagery indicates that the roof of Omdurman National Bank partially collapsed likely due to munitions impact as a result of an airstrike.



10 May 2023 | © 2023 Maxar



13 May 2023 | © 2023 Maxar

East Nile Hospital

15 MAY 2023

Satellite imagery corroborates open-source reporting that part of the East Nile Hospital was struck on 15 May 2023. Open-source reporting alleges that part of the hospital was hit and destroyed by a SAF airstrike.



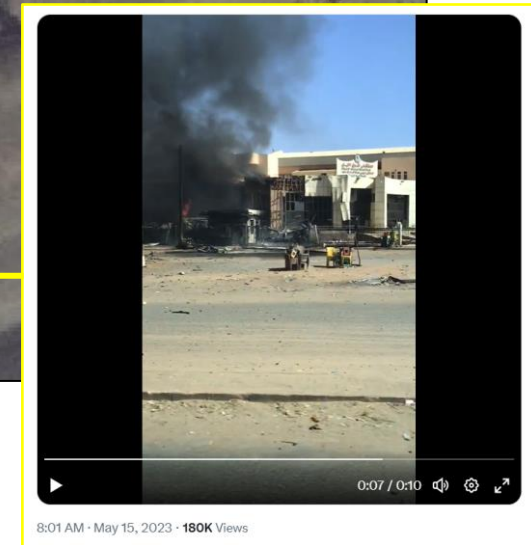
13 May 2023 | © 2023 Maxar



18 May 2023 | © 2023 Maxar

Source | CivKhart_02

Source | <https://www.middleeastmonitor.com/20230516-sudanese-army-air-strikes-hit-east-nile-hospital/>
archived at <https://perma.cc/ER6X-C4UX>



Ibn Sina Specialized Hospital

17 APRIL 2023

Satellite imagery confirms munitions impact on the roof of Ibn Sina Specialised Hospital in Khartoum. Open-source reporting indicates that the hospital was targeted on or before 17 April 2023.



30 March 2023 | © 2023 Maxar



17 April 2023 | © 2023 Maxar



1:44 PM · Apr 17, 2023 · 9,295 Views

Source | CivKhart_03

Omdurman Industrial District

06 JULY 2023

Based on satellite imagery at least 10 structures in the Omdurman Industrial District were destroyed. Thermal detections by NASA FIRMS and damage consistent with likely air-delivered munitions indicate that airstrikes were launched against this area on 06 July 2023.



02 July 2023 | © 2023 Maxar



09 July 2023 | © 2023 Maxar

Bahri Water Treatment Plant

30 MARCH – 02 MAY 2023

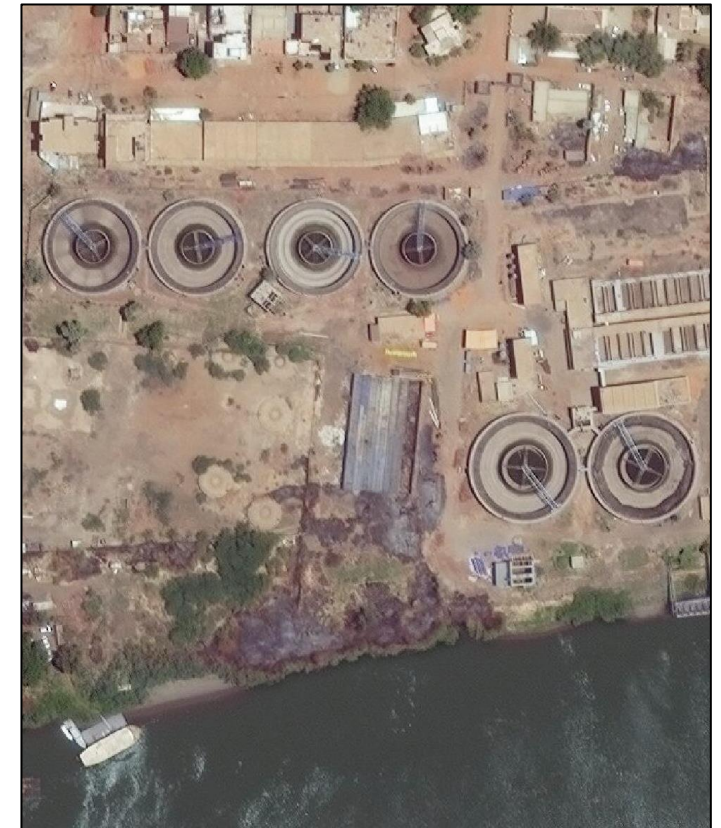
Imagery captured on 02 May 2023 indicates an absence of water in storage at the Bahri Water Treatment Plant. This is a significant reduction since 30 March 2023, before fighting broke out in Khartoum. This reduction occurred after extensive damage was caused to the water treatment centre as of 17 April 2023.



30 March 2023 | © 2023 Maxar



17 April 2023 | © 2023 Maxar

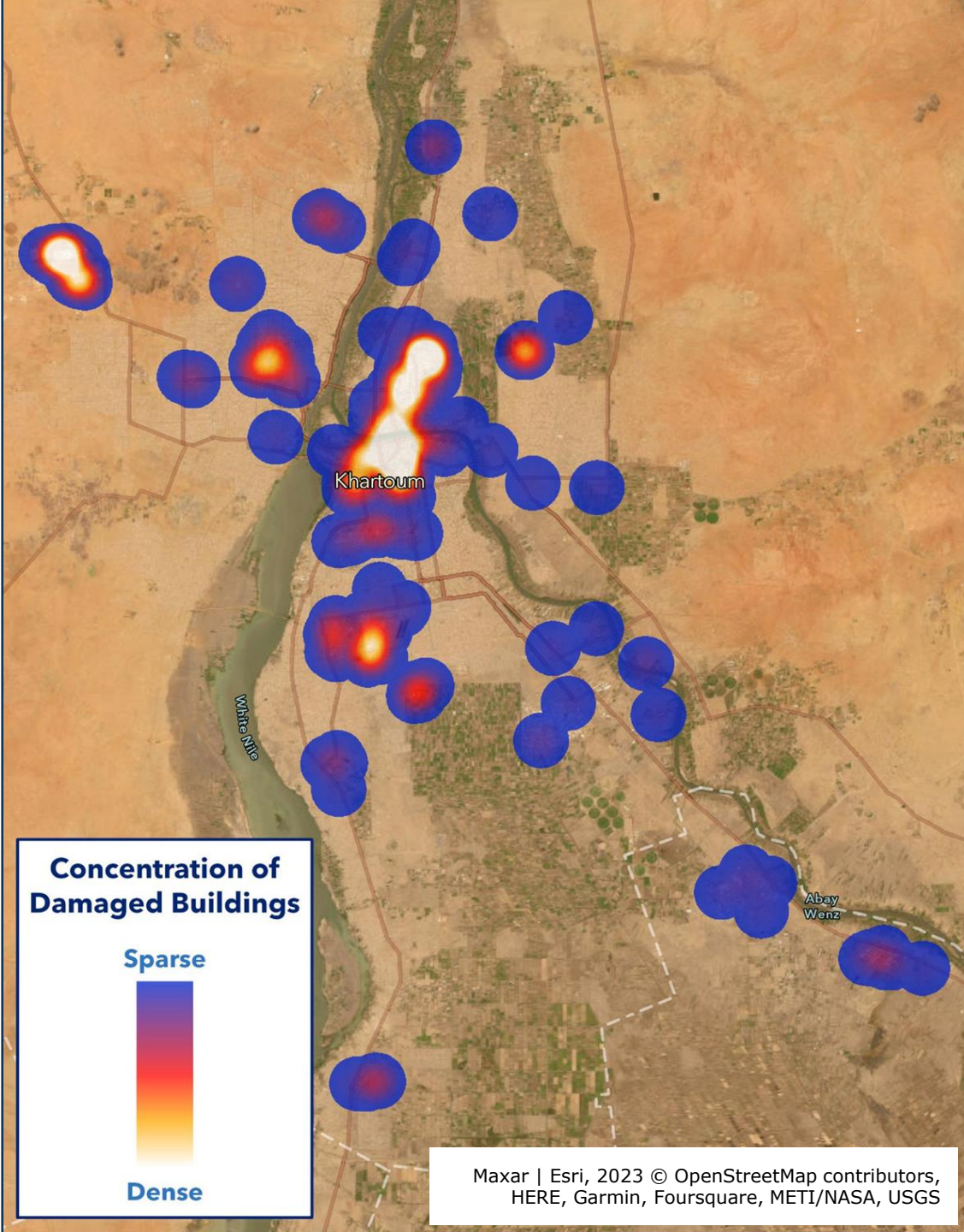


02 May 2023 | © 2023 Maxar

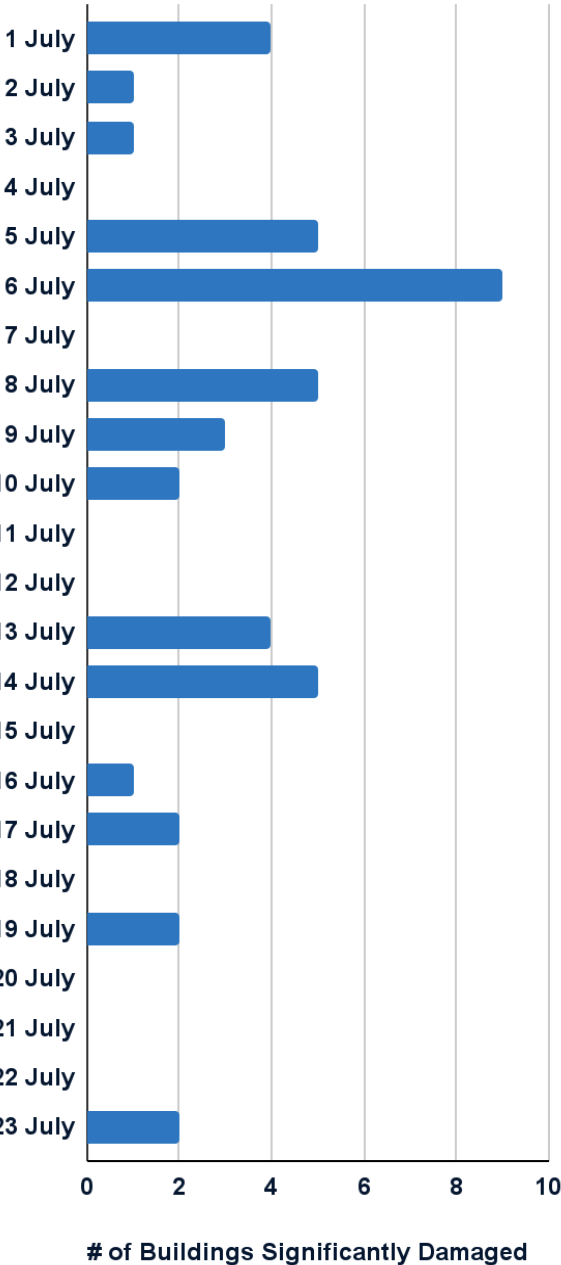
Khartoum

BUILDING DAMAGE UPDATE

- 46 buildings have been significantly damaged or destroyed in July 2023.
- 513 buildings have been identified as destroyed since the start of the conflict (15 April 2023).



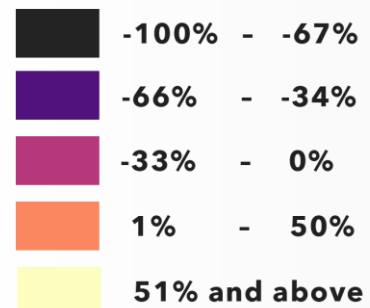
Khartoum Building Damage in July 2023



Change in Mobility Corridors

10 JULY - 23 JULY vs. PRE-CONFLICT

- Mobility between cities in Darfur has reduced 68% compared to its pre-conflict average, a 19% decrease week over week.
- Most corridors between cities in eastern Sudan have increased mobility.
- The low mobility around Darfur cities likely represents regional restrictions to movement increasing the risk of mass atrocities in the region.



Annex 1:

Incidents of **Damage** to Protected Civilian Objects and Civilian Infrastructure by SAF Airstrikes Since 15 April 2023

(Data produced as of 26 July 2023)

APRIL	LOCATION
15-Apr-2023	Omdurman
15-Apr-2023	Near Khartoum International Airport, Khartoum
16-Apr-2023	Khartoum
17-Apr-2023	Jabra Scientific College for Islamic Studies, Khartoum
17-Apr-2023	El-Riyadh, Khartoum
17-Apr-2023	Ibn Sina Specialized Hospital, Khartoum
24-Apr-2023	Al-Kalakla, Khartoum

MAY	LOCATION
9-May-2023	New Republican Palace, Khartoum
10-May-2023	DAL Food Industries, Khartoum
10-May-2023	SAMIL Plumpy'Nut® Production Facility, Khartoum
12-May-2023	Khartoum North Light Industrial Area, Khartoum
10-13-May-2023	Omdurman National Bank
15-May-2023	East Nile Hospital, East Nile
20-May-2023	State broadcaster in Omdurman, Omdurman
20-May-2023	Southern Omdurman
20-May-2023	Northern Bahri

JUNE	LOCATION
7-Jun-2023	Muweileh, Omdurman
16-Jun-2023	Al-Lammab, West Khartoum
16-Jun-2023	Khartoum
16-Jun-2023	Mayo, Khartoum
17-Jun-2023	Yarmouk, Khartoum
21-Jun-2023	DAL factory, Khartoum
24-Jun-2023	Shambat, Khartoum North
26-Jun-2023	Al-Kalakla, Khartoum
28-Jun-2023	Khartoum
29-Jun-2023	Omdurman
30-Jun-2023	60th Street, Khartoum

JULY	LOCATION
2-Jul-2023	El-Riyadh, Khartoum
2-Jul-2023	Omdurman
6-Jul-2023	Omdurman Industrial District
8-Jul-2023	Dar El-Salaam
9-Jul-2023	Omdurman
9-Jul-2023	Omdurman
14-Jul-2023	Bahri
17-Jul-2023	Hillat Hamad, Bahri
17-Jul-2023	El-Haj Yousef, East Nile
17-Jul-2023	Burri, Khartoum
17-Jul-2023	Omdurman
18-Jul-2023	The Salam Rotana Hotel, Khartoum
19-Jul-2023	Al-Yaseen, Khartoum
22-23-Jul-2023	Bahri
25-Jul-2023	Ombada, Omdurman

SUDAN **CONFLICT OBSERVATORY**

Sudan.ConflictObservatory.org