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Supply and demand

Arms flows and holdings in Sudan

As of late 2009, Sudan's future appears increasingly precarious. Just one year before the Comprehensive Peace Agreement (CPA) effectively expires, key aspects of the deal have yet to be implemented. Despite progress made in recent days,[1] the peace process continues to lurch from one crisis to the next. Just three months ago the head of the Sudan People's Liberation Army (SPLA) predicted a 50 per cent chance of a return to war with President Omar al-Bashir's National Congress Party (NCP).[2] Meanwhile, there has been no resolution of the Darfur conflict. Significantly, talks are now planned between the government and Darfuri insurgents for January 2010, but the obstacles to progress are many: major armed groups remain splintered and the Arab militias are increasingly disenchanted. Most of the armed actors continue to exercise their military options.[3]

In parallel with these troubling developments, the demand for small arms and light weapons—and some larger conventional weapons systems—among government forces, insurgents, and unaligned groups in the country has grown considerably since the outbreak of hostilities in Darfur in late 2002[4] and the signing of the CPA in 2005. Arms imports and internal transfers continue in violation of the UN arms embargo and other multilateral restrictions designed to prevent weapons from reaching certain Sudanese actors and areas—and despite the presence of more than 25,000 international peacekeepers tasked with promoting peace and security.

In this context, a clearer understanding of arms flows and holdings is important for understanding current security dynamics and future possible scenarios. This *Issue Brief* reviews small arms supply and demand among the spectrum of armed actors in Sudan, highlighting recent trends and developments.[5] It also describes the primary supply chains and mechanisms by which these arms transfers take place. It finds the following:

- Demand for small arms and light weapons among a range of state and non-state actors is on the rise in the post-CPA and post-DPA periods. In the lead-up to national elections in April 2010 and the referendum on Southern self-determination in January 2011, supply and demand are likely to remain high.
- China and Iran together accounted for an overwhelming majority (more than 90 per cent) of the NCP's self-reported small arms and light weapons and ammunition imports over the period 2001–08. Verifiable transfers to Southern Sudan by Ukraine through Kenya have been documented in 2007–08.
- Despite the extensive and growing weapons holdings of state security forces, a significant majority of weapons circulating in the country remain outside of government control. Khartoum's official security forces may possess some 470,000 small arms and light weapons, while perhaps 2 million weapons are in the hands of civilians countrywide.
- Khartoum's acquisitions of new weaponry will likely lead to greater arms proliferation and insecurity in Sudan, given that government stocks are a major source of weaponry for armed groups (both government allies and adversaries).
- The UN arms embargo has not prevented weapons from reaching Darfur, due to the unwillingness of the governments of Sudan, Chad, and other parties to abide by the terms of the embargo and the lack of robust monitoring by the African Union/UN Hybrid Operation in Darfur (UNAMID).
- The European Union (EU) arms embargo appears to have been largely effective in prohibiting direct weapons transfers from the EU to Sudan, but European arms manufacturers, brokers, and transporters continue to be involved in *indirect* arms transfers to the country. There is a clear need for better enforcement of the embargo and due diligence by EU-based companies and individuals.
- Available information indicates that the governments of Chad, Libya, and Eritrea have been involved in arming non-state groups in Darfur either as part of an official policy or by turning a blind eye to such activities.

Government acquisitions

As of late 2009 the optimism that followed the signing of the 2005 CPA between the NCP and the Sudan People's Liberation Movement/Army (SPLM/A) has been overshadowed by increasing violations, mutual distrust and provocation, and the possibility

Box 1 Legal restrictions on government acquisitions

Three international legal regimes place restrictions on arms supplies to entities within Sudan. These are the UN arms embargo on Darfur, the EU arms embargo on Sudan, and the CPA itself.

In July 2004 the UN Security Council prohibited the supply of arms and related materiel to non-state actors operating in the states of North, South, and West Darfur.[6] This was expanded in March 2005 to include all the parties to the N'Djamena Ceasefire Agreement and any other belligerents in Darfur's three states, including the Sudanese Armed Forces (SAF).[7] This has been interpreted by the UN Sanctions Committee established to monitor violations of the embargo as being confined to transfers of military equipment to the SAF and non-state actors within Darfur itself, despite the SAF outside Darfur constituting a principal source of arms transferred into the region.[8]

The most comprehensive international instrument restricting arms supplies to Sudan, the EU arms embargo on Sudan, came into force on 16 March 1994. It forbids any EU national from supplying 'arms and related materiel of all types' to any entity, governmental or non-governmental, in Sudan, either directly or indirectly.[9] It was expanded in 2004 to include a ban on technical, financial, brokering, transport, and other assistance relating to military activities and equipment.[10] The UN and EU embargoes contain exceptions for transfers of equipment in support of multinational peacekeeping operations, CPA activities, and humanitarian operations.

The Ceasefire Agreement which forms part of the CPA prohibits the '[r]eplenishment of ammunition, weapons and other lethal or military equipment' by SAF or SPLA forces within an agreed Ceasefire Zone; and elsewhere allows the '[r]e-supply of armed forces lethal items as shall be deemed appropriate by the JDB [Joint Defence Board] and coordinated with [the] UN Mission'.[11] The Ceasefire Zone covers all of Southern Sudan, as well as Abyei, Southern Kordofan, Blue Nile, and Eastern Sudan.[12] The CPA thus forbids both the Government of National Unity (GNU) and the GoSS from transferring lethal military items to their forces without the agreement of a joint SAF/SPLA board, the JDB, within a region that includes almost all of the SPLA's area of operation, but little of the SAF's area of operation.

Source: Lewis (2009a)

Table 1 **Conventional weapons systems transfers to Khartoum, 2004–09**

Supplier country	Weapons/systems	Number	Year(s)
Belarus	T-55M tanks	60	1999–2001
	BM-21 Grad 122 mm rocket launcher systems	12	2002–03
	D-30 122 mm towed guns	24	2002–03
	2S1 122 mm self-propelled guns	10	2003
	BMP-2 infantry fighting vehicles	9	2003
	BRDM-2 reconnaissance armoured vehicles	39	2003
	BTR-70 armoured personnel carriers (with 'Kobra' weapons turrets)	2	2007
	Su-25 ground attack aircraft	11	2007–08
China	Type-85-IIM tanks	?	2002
	A-5C Fantan ground attack aircraft	12–20	2002
	WZ-551 armoured personnel carriers	10	2003
	K-8 Karakorum trainer/combat aircraft	12	2005
	FN-6 man-portable surface-to-air missiles	?	By 2007
Russian Federation	BTR-80 infantry fighting vehicles	30	2001–02
	Combat helicopter (armed Mi-17 or Mi-24)	44	2001–08
	MiG-29 fighter/ground attack aircraft	12	2003–04
Iran	Rakhsh armoured personnel carriers	?	2004

Sources: UN Register on Conventional Arms; Stockholm International Peace Research Institute Arms Transfers Database; equipment sighted in Khartoum, 2007–08

of a return to armed conflict, whether localized or regional. Both the NCP and the Government of Southern Sudan (GoSS) continue to acquire small arms and light weapons destined for their armed forces (as well as allied and proxy groups), in what is taking on the character of an arms race, despite three legal instruments designed to limit flows (see Box 1). All three regimes have been violated since 2005.

Arms supplies to Khartoum

The GNU publishes no official information about its arms acquisitions. Nevertheless, customs data, field observations, and data supplied by other countries to the UN Register of Conventional Arms indicate that since 2000 Sudanese (i.e. NCP) arms purchases have been dominated by four supplier states: China, Iran, the Russian Federation, and Belarus. All these arms supply relationships were well established during the latter phase of the civil war.[13] Major transfers are reported in Table 1, although this must be regarded as an incomplete assessment.

Customs data, despite some serious evidential inadequacies,[14] also supports the view that Khartoum's imports of small arms and light weapons in particular have grown in magnitude since 2001 and have become dominated by direct imports from China and Iran. According to customs data, these two countries were responsible for 72 per cent and 22 per cent, respectively, of reported transfers of small arms and light weapons, small arms and light weapons ammunition, and conventional munitions and artillery from 2001 to 2008 (see Figure 1). Nine exporters combine to make up the remaining 6 per cent of transfers over the period.

Arms supplies from China and Iran are anchored in commercial and military-political relationships: Chinese state-led investment, particularly in Sudanese oil development, has arguably provided both the resources and the motivation for Chinese arms sales to Sudan;[15] while Iranian military supplies appear to be grounded partly in ideological support since 1989, and materially linked to ideological and

military training, particularly for Sudan's Islamist-inspired paramilitary force, the Popular Defence Forces.[16]

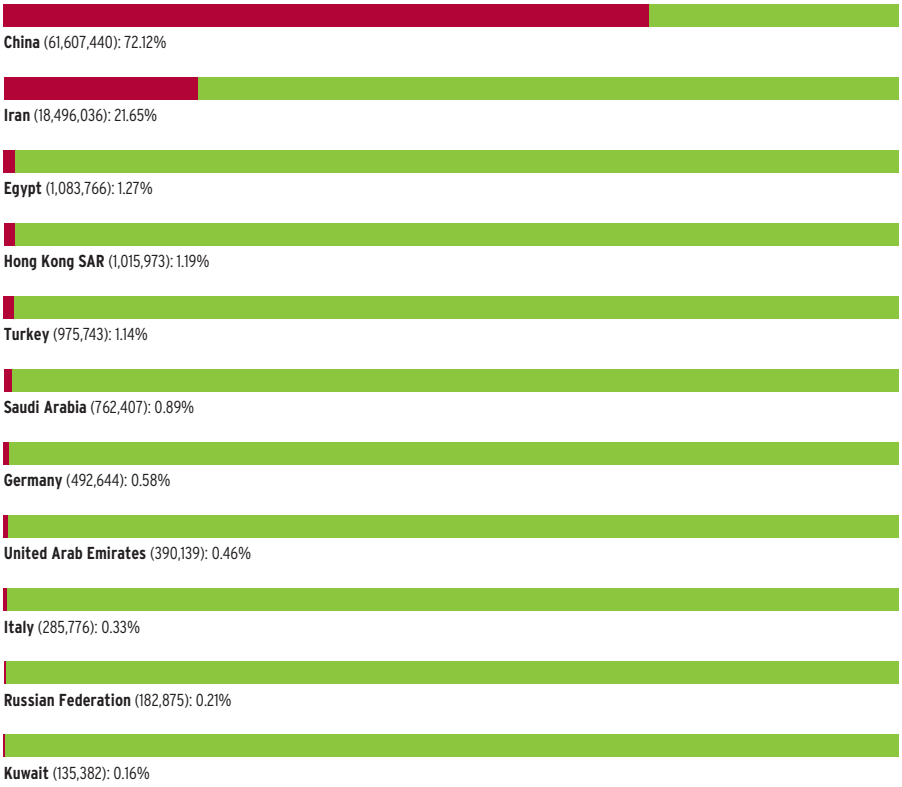
Over the period 2001–08 there was significant annual fluctuation in imports reported by Khartoum to UN Comtrade (see Figure 2). But the aggregate totals increased steeply from less than USD 1 million in 2001 to more than USD 23 million in 2008. Conventional munitions and artillery represented a little more than half of the total value imported over the period (54 per cent). Small arms and light weapons represented 43 per cent of the total, and small arms and light weapons ammunition 3 per cent of the total over the period. Interestingly, small arms and light weapons imports peaked from 2003 to 2006 and then declined somewhat, while imports of conventional munitions and artillery reached their highest levels in 2007–08.

The degree to which Sudan produces small arms and light weapons remains unclear. The NCP has long claimed that it is domestically capable of producing equipment ranging from assault rifles and RPGs to main battle tanks.[17] Evidence for this capability, however, comes almost entirely from Sudanese government statements, and from photographs and statements on the website of Sudan's overarching military production and procurement organization, the Military Industrial Corporation (MIC, n.d.). Most of these claims have yet to be independently substantiated.

Arms supplies to the GoSS

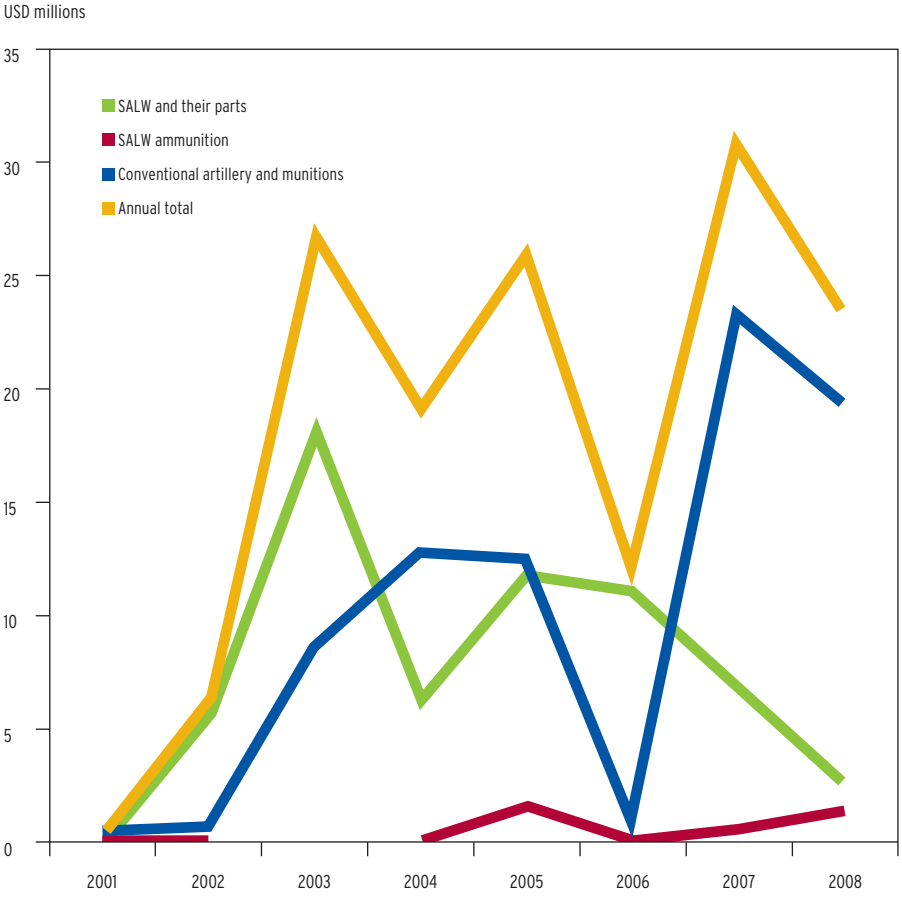
Because of the CPA's de facto prohibition on SPLA rearmament in the interim period (2005–11), the GoSS has chosen to side-step the JDB—thereby avoiding a veto from the SAF—and has actively boosted its arms acquisitions on the international market. Procurement is predicated on the GoSS's assumption that future armed conflict with the NCP is likely and that the SPLA has a legitimate right to obtain military equipment and materiel as part of its ongoing professionalization. The GoSS does not report imports to any official body, and Sudan's Comtrade data does not include imports

Figure 1 **Primary small arms and light weapons suppliers to Sudan reported by Khartoum to UN Comtrade, 2001–08 (USD)**[18]



Source: UN Comtrade (n.d.)

Figure 2 **Annual procurement of small arms and light weapons, their ammunition, and conventional artillery/munitions reported by Khartoum to UN Comtrade, 2001–08**[19]



Source: UN Comtrade (n.d.)

into Southern Sudan.[20] What is known about GoSS supplies has emerged from isolated transfers being interdicted or coming to light en route, and through field research. For these reasons, it must be assumed that what has been identified is only a portion of the actual transfers conducted during the interim period.

Available information indicates that Southern Sudanese arms acquisitions are also rooted in civil war-era political alliances, with regional allies, including Ethiopia and Kenya, acting as conduits for arms supplies from their own stocks, or acquired on the international market.[21] Based on interviews with SPLA staff and international sources, as well as visual assessments of SPLA capabilities, however, it is clear that the SPLA's capabilities remain dwarfed by those of the NCP/SAF.[22]

The first verified transfer occurred on 3–4 July 2008, when an SPLA troop company moved 18 T-55 series tanks into Blue Nile State, which they claimed (credibly) were returning from repair in Ethiopia.[23] In addition, however, transfers have been occurring since 2007. This has been confirmed by a GoSS spokesperson, who said in July 2009 that the SPLA had acquired T-72 tanks during 2007–08.[24] Satellite imagery from March and May 2009 also confirms that tanks of T-72 dimensions, subsequently visible at the SPLA's interim general headquarters in Juba, visually matched those being moved through Mombasa port in Kenya in February 2008. These were part of three shipments of T-72 tanks, 122 mm vehicle-mounted rocket launchers, 14.5 mm machine guns, 23 mm anti-aircraft cannon, RPG-7 rocket launchers, and AKM assault rifles shipped from Ukraine between 2007 and 2008 under contracts labelled 'GOSS' but ostensibly consigned to the Kenyan Ministry of Defence.[25]

Some of these GoSS-destined transfers have involved transport and brokering actors from a range of other states, including European ones, despite the EU embargo, which prohibits 'brokering services, financing and other related services' for the supply of arms and related materiel of all types. The Ukraine shipments were organized by two UK-registered companies, shipped partly by a German shipping company, and facilitated by a shipping agency run by a UK national in Mombasa. Two of these European transport actors stated that they were aware the shipments were destined for Sudan.[26]

Table 2 **Selected transfers to the SPLA, 2005–09**

Supplier country	Arms	Number	Year(s)
Conventional weapons			
Ethiopia	T-55 tanks	18	2008*
Ukraine/Kenya	T-72M1 tanks	100+	2007–09
	BM-21 122 mm rocket launchers	6–8	2007–09
	ZU-23 (23 mm) anti-aircraft guns	15–21	2007–09
	ZPU-4 (14.5 mm) anti-aircraft guns	Unknown	2007–09
Small arms and light weapons			
Ukraine/Kenya	RPG-7V rocket launchers	405+	2007–09
	AKM 7.62 mm assault rifles	Est. 10,000	2007–09

* This shipment could be older SPLA tanks returning from repair/refurbishment.

Sources: Lewis (2009a); UNSC (2008a; 2008c)

Arms supplies to non-state groups

Non-state groups proliferate in Sudan, including anti-government forces, armed tribal groups, and paramilitaries—as well as a range of specialized security forces and private armies with unknown mandates and chains of command.

Box 2 Weapons and ammunition in common: the SAF, insurgent groups, and militias

Field research by the UN's Panel of Experts[27] and independent researchers has brought to light at least three instances of common weapons or ammunition among the SAF, tribal militia, and Darfurian, Chadian, and Southern Sudanese armed groups. These commonalities are strongly suggestive of common sourcing, most likely through the SAF itself.

Common munitions in the stocks of the SAF, the Justice and Equality Movement (JEM), Pibor Defence Force (PDF) militia, and Chadian insurgent groups. Distinctive packing cases marked 'M081-1-667' were found after fighting between the SAF and JEM near Kornoi, West Darfur, in May 2009; in stockpiles of weapons turned in during disarmament campaigns by former PDF[28] members in Jonglei in 2007; and captured from Chadian armed insurgent groups during 2006. Although an 'M081' designation on the cases suggests that they contained 81 mm mortars, in the Chadian case they contained Chinese-made HN-5 MANPADS.

Chinese ammunition common to the SAF, the JEM, 'Janjaweed' militia, PDF members, and Chadian armed groups. Distinctively labelled ammunition boxes containing 12.7 x 108 mm and 7.62 x 51 mm ammunition have been identified among weapons given up by former PDF militia members in Jonglei in 2007 (batch date 2002-03); following fighting between SAF forces and the JEM near Kornoi in western Darfur in May 2009 (batch date 2004); and among SAF forces in Darfur in late 2008 (batch date 2008). The ammunition box marked 'batch date 2008' contained ammunition headstamped '41/08', believed to be of Chinese manufacture, according to the UN Panel of Experts,[29] although it may have been repackaged and relabelled elsewhere. Other 12.7 x 108 mm ammunition headstamped '41' has been found in JEM stocks in Omdurman and Darfur in 2008 (production date 2007);[30] in the stocks of the alliance of Chadian armed groups that attacked N'Djamena in January 2008;[31] and in use by the 'Janjaweed' militia group led by Mohammed Hamdan Dogolo (known as 'Hemeti') in Darfur in February 2008 (production date 2004).

Mortar bombs in SAF stocks in Darfur and in former PDF militia stockpiles. Distinctive 120 mm mortar bombs, in boxes labelled '120-PM H.E.' and with a '116' code, have been identified among weapons turned in by former PDF members in Jonglei in 2007 (batch numbers 4-01-116 and 2-97-116); and among weapons abandoned by the SAF following an attack on an SAF base at Kornoi in May 2009 (batch numbers 13-01-116 and 81-06-116). These are labelled as OF-843B 120 mm HE mortar bombs, a type originally produced in the Soviet Union, but which may also have been produced under licence elsewhere. They also match mortar bombs displayed on the website of Sudan's Military Industry Corporation (MIC), but it is not known whether these are really manufactured or assembled by the MIC.[32]

Source: Lewis (2009b)

Some groups operate under the direct control of government forces, while others remain (semi-)independent and accept weapons and support to pursue their own aims (which may also serve government interests). Weapons supply vectors include direct contributions from governments, leakage from governments, capture during fighting, stolen or captured peacekeeping stocks, and the cross-border 'ant trade' (see below). This section reviews what is known about the arms acquisition patterns of key non-state armed groups.

Despite the diversity of routes involved, three of the five pathways identified involve weapons primarily originating in SAF stocks, whether through deliberate supply, negligence, or via armed engagement. The centrality of the SAF to arms flows within Sudan is supported by commonalities between SAF arms stocks and arms held by non-state armed groups in both Southern Sudan and Darfur (see Box 2). These commonalities illustrate the connection between the international supply of weapons to Sudan and the acquisition of weapons by armed groups throughout the country, including groups fighting against the SAF in Darfur.

Basic visual assessments suggest that arms held by non-state actors across Sudan are dominated by two unsurprising types: AK-type (7.62 x 39 mm) assault rifles and RPG-2 or RPG-7 rocket launchers; as well as RPK and 'DshK'-type machine guns. Many of these are relatively old weapons, manufactured in several dozen countries in Eastern Europe, the Middle East, and East Asia and widely circulated within and between armed groups and communities across the region and beyond, making it difficult to establish their original source or route to Sudan. As discussed below, however, some groups have obtained weapons of greater range, destructive power, and sophistication.

Darfuri insurgents

As of late 2009, armed insurgent groups in Darfur continue to seek and acquire weapons in clear violation of the UN arms embargo—mirroring the GoS's policy of openly moving military equipment to SAF and allied auxiliary forces in Darfur.[33] In its October 2009 report, the UN Panel of Experts noted that 'an increasing proportion of 12.7 mm, 7.62 x 39 mm and 7.62 x 54 mm ammunition, as well as 4 x 4 vehicles, in use by all parties to the conflict in Darfur was produced post-embargo', indicating increasing embargo violations.[34] According to the Panel of Experts, the violators include both Darfurian and Darfur-based Chadian groups, including the JEM, the Sudan Liberation Army (SLA)-Abdul Wahid, and the Union of Forces of the Resistance.[35]

Darfur insurgent groups have been acquiring progressively more sophisticated weaponry, including some heavy weapons, since 2005: not only assault rifles, machine guns, RPGs, and mortars, but by 2007 new-production Chinese 35 mm grenade launchers, and newly produced Israeli TAR-21 assault rifles originally supplied to the Government of Chad.[36] By 2008 heavier weapons observed with JEM forces or captured from them included 82 mm and 106 mm recoilless rifles, 107 mm multiple barrel rocket launchers and rockets with MJ-1 proximity fuzes, HN-5 MANPADS, 122 mm rockets, and ammunition for all of these systems.[37] It thus appears that by 2008 the holdings of the best-armed groups in Darfur exceeded those of the best-armed southern Sudanese armed groups during the NCP–SPLM/A civil war, whose arms included MANPADS, mortars up to 120 mm, and 107 mm MBRLs.[38]

Much weaponry used by insurgent groups in Darfur is evidently captured from hijacked SAF convoys and battlefield engagements. The capabilities of Darfur's best-armed groups, particularly the JEM, match the SAF's battlefield losses to some degree. Close correlations that exist between SAF arms stocks and JEM weaponry and ammunition, which share weapon types, manufacturers, and close batch numbers and dates (see below), likewise support the view that this is a major supply vector to Darfur's armed groups.[39] The JEM in particular appears to operate in cycles of attacks to capture equipment and ammunition prior to further major attacks, as in the case of JEM offensives in Muhajeriya in February 2008, and Um Barrua and Kornoi in May 2009. Box 2 illustrates the reappearance of SAF stocks in JEM possession following these attacks.

A number of the most viable Darfur armed groups have also benefitted from arms supplies—in clear violation of the UN arms embargo—from the Government of Chad, which is engaged in an ongoing proxy war with Sudan. For example, small arms delivered to Chadian armed forces (including assault rifles and ammunition shipped from Israel and Serbia between July and September 2006) emerged rapidly among National Redemption Front and subsequently JEM forces in Darfur in March 2007 and July 2008.[40] Although their direct supply by Chadian security forces has not been confirmed, the JEM and several SLA factions have operated openly in eastern Chad since 2005, interacting operationally with elements of Chad's military and security forces.[41] In 2007, JEM-controlled aircraft reportedly flew arms, including more than 3,000 AK-type weapons and anti-aircraft guns originating from Eastern Europe, from Eritrea to JEM forces in Chad in early 2007.[42] The JEM's heaviest weaponry, its 122 mm rockets, were also reportedly driven from Chad into Darfur immediately prior to its most ambitious attack, on Omdurman, in March 2008.[43]

Similar reports from JEM and SLA sources since 2006 describe Darfur-bound arms being collected by rebel groups from sources in eastern Chad and from the Al Kufrah region in south-eastern Libya, reportedly with the collusion of elements within Libya's security forces.[44]

Attacks on UNAMID forces by both insurgent and Khartoum-aligned armed groups in Darfur have in some cases extended beyond opportunistic ambushes to well-planned, large-scale assaults on UNAMID facilities and forces, such as the major attack on the UNAMID facility at Haskanita in September 2007 led by Bahr Idriss Abu Garda.[45] Abu Garda

was vice president of the JEM at the time of the attacks, but later switched to a JEM splinter group (JEM-Collective); he is now the chairperson of the United Resistance Front and being tried at the International Criminal Court for his role in the attack.[46]

The inadequate resources provided to UNAMID for its own force protection are exacerbated by the lack of security measures taken by some UNAMID units when transporting arms and ammunition supplies through insecure parts of Darfur. As a result, thefts from UNAMID have enhanced the equipment of armed groups both quantitatively and qualitatively: adding substantial quantities of ammunition, including 12 tons of Chinese-made small arms ammunition stolen from a commercial truck convoy operating for a UNAMID contingent on its way to Nyala in South Darfur in March 2008; and also adding armoured vehicles to their holdings for the first time.

Chadian insurgents in Darfur

In the long-running proxy conflict between the governments of Sudan and Chad, SAF-supported Chadian groups have used Darfur as their staging grounds. The NCP's aims are both to aid and abet the insurgent groups in their campaign to destabilize the government of Idriss Déby and to use the Chadian forces as auxiliaries in its counter-insurgency in Darfur. Since the publication of the Small Arms Survey's (2007a) *Issue Brief* on militarization and arms holdings in Sudan, the number of Chadian groups operating in Darfur has grown exponentially (see Table 3). In recent months there has been a significant increase in their numbers, as well as their joint operations with the SAF. Chadian insurgents and SAF units are now travelling, training, and co-locating together in Darfur.

This development comes as the UN Panel of Experts has highlighted the existence of an 'arms race' between the Government of Chad and Darfur-based Chadian insurgent groups, following a February 2008 attack on N'Djamena. After the failed assault, the government acquired additional armoured vehicles, Sukhoi-25 jets, and attack helicopters. The Panel of Experts documented in statements by Chadian insurgent group leaders and eyewitness identifications that by May 2009 the armed groups had also acquired improved weaponry, including Chinese QLZ-87 automatic grenade launchers, 9M113 'Konkurs' and 9M14M 'Sagger' anti-tank guided missile systems, and Chinese HN-5 shoulder-fired surface-to-air missiles.[47]

Darfur militias

The Sudanese government has systematically violated the UN arms embargo on Darfur since its introduction in 2005. The SAF has moved weapons platforms into Darfur, including Mi-24 attack helicopters, arms, and ammunition, using both military flights and chartered civilian aircraft. Although the NCP is permitted to move military equipment and supplies into Darfur if approved in advance by the UN's

Box 3 **Fragmentation and proliferation: Chadian groups in Darfur**

Proxy arming has a long tradition in the Horn of Africa, with the governments of Ethiopia, Eritrea, Sudan, Chad, Somalia, and Uganda arming and supporting armed groups from neighbouring countries for decades.[48] For Sudan, the origins and metamorphosis of the Darfur conflict are deeply entwined with decades of civil war in Chad and a long-running conflict between successive governments in Khartoum and N'Djamena.

In fact, the Chadian and Darfurian conflicts are best understood as two sides of one aggregate conflict. Early Darfur-based Fur self-defence groups received arms from the Chadian regime of Hissène Habré for their own purposes, as well as to counter Sudanese government-supported Chadian insurgent groups. In the mid-1990s Chadian Arab (Abbala/Jammala) pastoralists who fled the Habré regime moved into north Darfur and joined the raiding forces known as 'Janjaweed'.[49] Similar Arab militia in eastern Chad are responsible for displacing more than 200,000 Chadians, some of whom fled into Darfur. Many of the SLA leadership were also originally members of the armed forces under Idriss Déby, who overthrew Habré in 1990.

In recent years, since 2005 especially, Chadian armed groups have become more effective, due partly to increased assistance from Khartoum. On two occasions the NCP has tried to force the groups into large coalitions to increase their effectiveness. The nearly successful February 2008 assault on N'Djamena by the Union of Forces for Democracy and Development (UFDD), UFDD-Fundamental, and the Rally of Forces for Change was launched from Darfur with extensive support from the NCP.[50] In the last two years, however, these Darfur-based Chadian forces have fractured and proliferated (see Table 3).

Table 3 **Darfur-based Chadian armed groups as of September 2009**

Name	Abbreviation (in French)
United Front for (Democratic) Change	FUC/FUCD
Rally for Democratic Change and Freedom	RDL
Union of Forces for Democracy and Development	UFDD
Union of Forces for Change and Democracy	UFCD
UFDD-Fundamental	UFDD-Fondamentale
Front for the Salvation of the Republic	FSR
Rally of Democratic Forces	RFC/RAFD (an umbrella for several groups, of which the Platform for Change, Unity and Democracy [SCUD] is the principal one)
Chad National Concord/Convention	CNT
Movement for Peace, Reconstruction, and Development	MPRD
Popular Front for National Rebirth	FPRN

Notes: More heavily shaded boxes indicate groups that are part of the National Alliance (AN). This table is representative rather than exhaustive.

Source: Berman (2009)

Sanctions Committee, no such request has ever been made.[51]

The UN Panel of Experts has also documented the close operational collaboration and the exchange of logistical and military assistance between militia groups and SAF forces in Darfur, as well as the interchange of personnel between militias and GNU paramilitary groups, including the Popular Defence Forces, Border Intelligence Guards, and Central Reserve Police, which receive arms and training directly from the SAF.[52] While the deliberate agency of the highest levels of the government is not always possible to prove, the direct military assistance of armed groups at least by elements of the government's security forces has been well documented.[53]

The entourage of Janjaweed militia leader Hemeti, filmed in Darfur in February 2008, displayed not only AK-type rifles, but also G3-type (7.62 x 51 mm) assault rifles, an M14 (7.62 x 51 mm) self-loading rifle, a Dragunov SVD-type (7.62 x 54R mm) sniper rifle, and Galil (5.56 x 45 mm) assault rifles.[54] Similarly, Sudanese armed forces carry AK-type assault rifles, G3-type rifles, and also (in small elite groups) Beretta SCS-70/223-type carbines. Hemeti temporarily defected to form an Arab insurgent group in October 2007, taking at least 70 heavily armed vehicles with him, before he returned in early 2008.[55] Further fragmentation and realignment among Arab militia groups are certainly likely.

Southern armed tribal groups

2009 has witnessed an upsurge of violence by tribal militias in Southern Sudan, including among the Lou and Jikany Nuer, Murle, Dinka, Shilluk, and Toposa. By August 2009 the UN said that more than 2,000 people had been killed in clashes in 2009,[56] in some cases in attacks involving 'thousands' of heavily armed attackers. A number of tribal groups who were active in the SSDF, a government-aligned umbrella of southern armed groups during the civil war, remain strong and well-armed. The GoSS assumption—so far unproven, but reasonable, based on the conduct of the civil war—is that outside actors, whether former SSDF commanders or the SAF itself, are actively supplying weapons to allied militia. Arms and munitions captured from Murle fighters in mid-2007, for example, appear to match those captured from the SAF (see Box 2), but the supply lines and the timing remain obscure. Whether elements within the SAF are directly arming tribal groups in the post-CPA period or not, various entities have managed to resupply since SPLA disarmament campaigns in 2006 and 2007. The sourcing is likely diverse.

Southern tribal militias are a wild card in NCP–SPLM/A relations in the run-up to the Southern referendum in 2011. The GoSS sees their resurgence as clear evidence of renewed proxy arming by Khartoum, designed to create chaos and to show up the fledgling government's inability to provide security. Indeed, the SPLA has proved both unable (in terms of capacity) and in some cases unwilling (in terms of identifying individuals responsible and holding them to account) to contain tribal violence to date. These groups are likely to continue to be active as their aims intersect with those of Northern and Southern power brokers jockeying for influence, power, and wealth ahead of elections scheduled for April 2010.

Community militia and tribal groups may also acquire weapons through the ongoing small-scale 'ant trade' flowing over Sudan's 7,000 km of largely unmonitored borders. The trade ranges from individual weapons purchased from markets in neighbouring countries to low-level commercial smuggling. Available figures from 2006 show that in that single year Sudanese customs seized weapons illicitly imported from neighbouring countries, particularly Egypt and Eritrea, that included 4,249 pistols, 533 AK-type rifles, 16,851 rounds of ammunition, and other weapons.[57] Actual flows are likely to be several orders of magnitude larger, thus amounting to several thousand small arms and perhaps hundreds of thousands of rounds of ammunition each year.

GNU customs also claim that Sudan's northern and eastern neighbours are significant sources of illicit inflows;[58] GoSS officials responsible for firearms policy concur, citing the seizure of several smuggled consignments of Egyptian-made 7.62 x 39 mm ammunition into Jonglei State in early 2007, although the supply chain (i.e. the initial export destination and where the ammunition may have been diverted) has not been determined.[59]

Estimating holdings

Sudanese state and non-state armed groups are extremely non-transparent concerning their strengths and weapons holdings. Their attitudes have not changed in the past 30 months since the Small Arms Survey published an initial estimation of Sudanese firearms inventories.[60] The following assessment is derived from dozens of field-based accounts from Sudanese government officials, foreign diplomats, humanitarian aid workers, and UN staff members. Nevertheless, the picture that emerges of groups' firearms holdings remains very murky. Four principal factors explain why this is so. Firstly, despite the three peace agreements that were signed during 2005 and 2006,[61] great distrust remains among many of the numerous signatories and interested parties. Secondly, in public statements, legitimate or established armed actors have incentives to minimize their reported arms holdings, whereas groups seeking a seat at the table or to improve their bona fides are often motivated to inflate their strength and materiel. Thirdly, major protagonists in the various armed conflicts—especially governments in Khartoum—have provided arms clandestinely to a dizzying array of ethnic and political groups. Finally, poor record keeping and fluid environments in which factions splinter or form new alliances often result in groups' leaders knowing neither the true number of forces they have armed nor the number of weapons they have distributed or are at their disposal.

Table 4 **Estimated firearms inventories in Sudan, December 2009**

Category	Strength	Ratio of weapons to members	Estimated small arms	Notes
GNU forces				
SAF (not including JIUs)	225,000	Various[1]	310,000	Infantry and reserves do not seem to lack arms (mostly Kalashnikovs). Popular Defence Forces not included (see below).
SAF Joint Integrated Units (JIUs)	17,000	1.1/soldier	19,000	GNU pays salaries, SAF provides arms.
National Police Service (NPS)	100,000	Various[2]	110,000	Central Reserve Police are well armed.
Popular Defence Forces	20,000	0.5/personnel	10,000	Strength may once have been 100,000 men.
National Intelligence and Security Service (NISS) (armed units)	7,500	2.5/official	19,000	NISS armed personnel comparatively well equipped and stocked. Separate NISS force to protect oil fields.
GoSS forces				
SPLA (not including JIUs)	125,000	1.4/combatant	175,000	SPLA arms Southern police.
SPLA JIUs	16,000	1.1/combatant	17,500	GNU pays salaries, SPLA provides arms.
Southern Sudan Police Service	28,000	0.3/policeman	8,400	Budget includes 5,000 more police, but no weapons.
GoSS Prison Service	17,000	0.08/staff member	1,300	Prison staff reported to possess 1,300 AKM rifles.
GoSS Wildlife Service	13,000	0.08/staff member	1,000	Assume no better armed than Prison Service.
Armed groups				
Eastern Front	2,000	0.5/combatant	1,000	Roughly half of estimated 4,000 ex-rebels have joined the SAF or reintegrated into civilian life.
SAF-aligned Arab militias[3]	5,000	1.2/combatant	6,000	Believed to possess some 250 Landcruisers.
Ex-SAF-aligned Arab militias[4]	2,000	1.2/combatant	2,400	Believed to possess some 120 Landcruisers.
Sudan Liberation Army (SLA) – Minni Minawi	1,500	1.2/combatant	1,800	Weakening, but benefits from sporadic SAF support. Believed to possess some 80 Landcruisers.
SLA – Abdul Wahid	2,500	1.2/combatant	3,000	Believed to possess some 40 Landcruisers.
'Addis Ababa Group'[5]	1,000	1.2/combatant	1,200	Alliance believed to possess 20–25 Landcruisers.
Sudan's Liberation Revolutionary Forces (SLRF)[6]	500	1.0/combatant	500	SLRF believed to possess perhaps 5–10 Landcruisers, most held by SLA field leadership's Ali Mukhtar.
Justice and Equality Movement (JEM)[7]	5,000	1.5/combatant	7,500	JEM believed to possess some 325 Landcruisers.
National Movement for Reform and Development (NMRD)	500	1.2/combatant	600	NMRD believed to possess around 30 Landcruisers.
Chadian groups[8]	4,000	1.5/combatant	6,000	Believed to possess some 150 Landcruisers.
Lord's Resistance Army (LRA)	500	0.8/combatant	400	Recent clashes with UPDF have resulted in LRA losing men/access to arms caches. Many LRA now in Central African Republic.
Foreign UN and state forces				
UN Mission in the Sudan (UNMIS) (military units)	8,800	1.4/military personnel	12,500	UNMIS police, military observers, and civilian staff are unarmed. No formed (armed) police units.
AU/UN Hybrid Operation in Darfur (UNAMID) (military units and formed police units)	15,250	1.3/military and police personnel	20,000	UNAMID like UNMIS, except (1) higher percentage of troop contributors provided with fewer weapons than requested and (2) formed police units are armed.
Uganda Peoples Defence Force (UPDF)	2,000	1.5/soldier	3,000	UPDF Battle Group operates in Southern Sudan to counter and pursue the LRA (sometimes outside Sudan).
Additional weapons held by civilians[9]				
Among those residing in the North	31 million	4 per 100	1.24 million	State security forces and urban settings suggest low ratio.
Among those residing in the South	9 million	8 per 100	720,000	Prevalence of armed violence among pastoralist groups and lack of law and order suggest ratio could be higher.
Total	**n/a**	**n/a**	**2.7 million**	

Notes for Table 4:

All figures have been rounded.

[1] Calculation assumes the SAF comprised of 20,000 officers (ratio of 1 weapon per officer), 120,000 infantry (1.5/soldier), 70,000 'reserves' (1.2/reservist), 10,000 air defence units (1.2/serviceman), 10,000 border guards (1.0/guard), and 1,200 navy and 3,500 air force personnel (0.5/serviceman).

[2] Calculation assumes NPS has for many years consisted of the Central Reserve Police (CRP), Emergency Police, Immigration Police, Petroleum Police, and Popular Police. Recently, the Prison, Customs, and Wildlife services have been incorporated into the NPS. The strengths and comparative levels of equipment among these various components are extremely difficult to ascertain. It is understood that the CRP is the largest and best-armed force among these various units and that personnel possess light weapons and riot-control equipment in addition to their personal firearms. A ratio of 1.5:1 is used for the CRP, which is believed to represent perhaps 20 per cent of the 100,000-strong NPS. Members of the rest of the units are believed to receive one weapon each (which they may or may not have on their person, depending on the assignment).

[3] The militias are frequently referred to as 'Janjaweed', which is often defined as 'devil on horseback'. The label was originally used to describe bandits. The international media have seized on this term to refer more generally to pro-Khartoum militias responsible for attacks on people in Darfur. While this is not a monolithic group with a unified command structure, the term here is used to denote militias in Darfur, drawn mostly from nomadic Arab tribes, which were armed by Sudanese Military Intelligence and the SAF in 2003–04. Many have since been given army IDs and salaries and remain by and large loyal to the SAF. The militias mostly comprise nomadic camel herders (Abbala), including the Mahamid (e.g. the Um Jalul tribe of Musa Hilal) and the Maharia of 'Hemeti'. This said, three points need to be underscored: (1) many Arabs have remained outside the conflict; (2) some Arabs have sided with the rebels; and (3) 'alignments'—even long-standing ones—can be fluid.

[4] Many militias in Darfur, previously supported with arms from Khartoum, have since turned against the government. Some have joined pre-existing Darfur rebel movements or their offshoots. Many have formed armed groups of their own, but have not generated significant popular support among Arab communities.

[5] The Addis Ababa Group owes its genesis to the efforts of US envoy Scott Gration to unite the SLA. In the short term, Gration has united only one faction of SLA Unity with a handful of commanders briefly aligned with Abdel Wahid.

[6] The SLRF was established in Tripoli, by Libyan diktat, in September 2009 as Libya challenged Qatar's new central role in peacemaking in Darfur. It is an artificial construct designed as a political asset for Col. Gaddhafi. Its membership is unclear. What seems clear is that its creation increased the fragmentation of the rebel movements, splitting, for example, SLA Unity.

[7] This refers to the movement headed by Khalil Ibrahim, militarily the strongest and politically the most coherent in Darfur. There have been several offshoots of the JEM since it was established in 2003 (e.g. the NMRD and Democratic JEM)—but the JEM has remained relatively stable compared to the SLA.

[8] The term 'Chadian rebel groups' refers to numerous Darfur-based 'Chadian armed insurgent groups'. As of September 2009, by some accounts there were as many as ten distinct groups.

[9] In the absence of reliable data, the population figures used here are rough estimates. According to disputed 2008 census results, the population of the North is 30.89 million, with 8.26 million in the South. The GoSS rejected the results on the basis that various populations, including in the south and the west, were deliberately under-counted. The Central Bureau of Statistics refused to share raw data with the Southern Sudan Commission for Census, Statistics, and Evaluation.

Source: Berman (2009)

The figures provided in Table 4 are meant to provide a basis for dialogue and further analysis. They should not be taken as definitive, but rather as a compilation of the best information available. As a general rule, conservative estimates were used for various units' strengths and for multipliers to determine holdings. We estimate that Khartoum's vast network of state security forces possess some 470,000 small arms and light weapons. The SPLA may possess some 200,000 firearms. More than just the quantitative advantage, the quality, sophistication, and condition of the weapons held by Khartoum are considerably better overall than those held by the SPLA.

Civilians and armed groups are believed to possess many more weapons than the Sudanese state security forces and SPLA combined. We estimate the average civilian holdings in the 10 Southern states to be twice that of the 15 Northern states (see Table 4). The weighted average is a little below 5 per 100. With some 40 million inhabitants, we put civilian holdings at roughly 2 million.[62] A minuscule percentage of these weapons are registered with authorities. (For example, as of 2007, the Khartoum government reported the number of registered weapons among the civilian populace at fewer than 10,000.[63]) Armed groups in Darfur, including Chadian insurgent groups, probably possess more than 25,000 firearms, including mostly assault rifles, but also numerous examples of machine guns, rocket-propelled grenades, and more sophisticated light weapons such as MANPADS, multiple-barrel 107 mm rocket launchers, and 82 mm recoilless anti-tank guns.[64]

As the rearmament of Southern pastoralist groups in the wake of GoSS and SPLA arms recovery initiatives attests, weapons are in plentiful supply and the recent spate of bloody clashes among ethnic groups in the South suggests that there is no shortage of ammunition. One important measure of armed groups' capabilities in Darfur is not so much what weaponry various armed groups and militias possess, but the number of comparatively scarce civilian vehicles (primarily Landcruisers) outfitted with machine guns or anti-aircraft guns that they have at their disposal. The ease with which civilians and armed groups can obtain weapons has significant implications for security sector reform; disarmament, demobilization, and reintegration programmes; and arms collection efforts.

Conclusion

As of late December 2009 all eyes are fixed on the national elections scheduled for April 2010 and the January 2011 referendums on self-determination for Southern Sudan and Abyei.[65] These key CPA benchmarks will have immense consequences for the whole of Sudan. With the ongoing potential for politically related and engineered armed violence in the run-up to 2011, Sudan's power brokers are preparing for a range of eventualities. This means having ready access to arms and armed supporters.

The international community appears completely unprepared to put out the fire that is likely to start in the event of a CPA breakdown. It has singularly failed to prevent ongoing weapons flows into this highly volatile environment to date. Indeed, the UN is all but powerless to enforce its

own embargo, while Darfurian and Chadian insurgent groups, Sudanese state forces, and paramilitaries in Darfur all continue to receive arms from Khartoum, Chad, and elsewhere. Without the possibility of interdiction within Sudan, and with little prospect of a global EU-style embargo on the entire country, small arms and light weapons will remain a key factor in the calculus for various actors over the next 12–24 months. To date, supply has risen to meet demand; all indications are that it will continue to do so.

The preponderance of weapons in non-state hands is particularly worrisome, given the role that armed groups, paramilitaries, tribal 'defence' forces, and other irregular forces have played in the decades of conflict in Sudan. Many of these groups are at least as well armed today as they have ever been. With time running out in the CPA's interim period, and little hope of resolving the Darfur conflict any time soon, much of the country appears militarized and ready for possible future conflict. ■

Notes

This Issue Brief *is based on research conducted by Mike Lewis, author of* Skirting the Law: Post-CPA Arms Flows to Sudan, *HSBA Working Paper No. 18, and the HSBA team.*

1 The parties reached agreement in mid-December on the content of three key CPA-mandated laws: on the referendum on self-determination for the South; the referendum on Abyei; and the 'popular consultations' planned for Southern Kordofan and Blue Nile States. An effective deadlock remains on a number of other issues, including border delineation/demarcation, the disputed findings of the 2008 census, and key reforms necessary for fair elections to take place in April 2010.

2 Interview with SPLA Chief of General Staff, Lt Gen. James Hoth Mai, Juba, September 2009.

3 UNSC (2009, p. 33).

4 On the origins of the Darfur conflict, see de Waal and Flint (2008).

5 This *Issue Brief* updates Small Arms Survey (2007), which provided an initial account of Sudanese arms flows and holdings.

6 UNSC (2004). The Humanitarian Cease Fire Agreement on the Conflict in Darfur ('N'Djamena Ceasefire Agreement') was signed by the Government of Sudan, the SLM/A, and the Sudanese Justice and Equality Movement on 8 April 2004.

7 UNSC (2005, para. 7).

8 See reports by the UN Panel of Experts on Sudan at <http://www.un.org/sc/committees/1591/reports.shtml>.

9 EC (1994).

10 EC (2004a).

11 GoS and SPLM/A (2004, arts. 5.3.5 and 9.6).

12 The Ceasefire Zone is divided into the following areas: Bahr el Ghazal Area, Equatorial Area, and Upper Nile Area (Southern Sudan); Nuba Mountains Area; Southern Blue Nile Area; Abyei Area; and Eastern Sudan Area (covering Hamashkoreb, new Rasai, Kotaneb, Tamarat, and Khor Khawaga).

13 Human Rights Watch (1998). Following several decades during which Sudan was armed predominantly by US and NATO sources, Russian Federation arms supplies resumed to Sudan following a military agreement signed between the Russian Federation and Sudan in 1993. According to the UN Register, the Russian Federation and Belarus have been supplying military vehicles and aircraft to Sudan since at least 1996.

14 Although UN Comtrade remains the most comprehensive, publicly accessible source of comparable data on global transfers of small arms, light weapons, and their ammunition, it is subject to many limitations. For a fuller discussion, see Small Arms Survey (2007, p. 6).

15 Small Arms Survey (2007).

16 Salmon (2007, pp. 17–18); Lewis (2009a, p. 28).

17 Reuters (2007).

18 UN Comtrade codes for 'small arms and light weapons' included in this figure: 930100: military weapons, other than handguns, swords, etc.; 930190: military firearms; 930200: revolvers and pistols; 930320: sporting/hunting/target-shooting shotguns, including combination, and shotgun-rifles (excluding muzzle-loading); 930330: rifles, sporting, hunting, or target-shooting; 930510: parts and accessories of revolvers or pistols; 930521: shotgun barrels; and 930529: parts and accessories of shotguns or rifles. These categories do not include some light weapons, such as grenades, missiles (including man-portable air defence systems—MANPADS), rockets, and mines. The category 'small arms and light weapons ammunition' includes: 930621: shotgun cartridges and parts thereof; and 930630: other cartridges and parts thereof, bombs, grenades, torpedoes, mines, missiles, and similar munitions of war. Category 930629: airgun pellets includes firearms ammunition, but the codes are not clear about what the cut-off is for calibre. Under 'conventional weapons' are included: 930111: artillery weapons (e.g. guns, howitzers, and mortars), self propelled; 930119: artillery weapons (e.g. guns, howitzers, and mortars), other than self-propelled; 930120: rocket launchers, flame-throwers, grenade launchers, torpedo tubes, and similar projectors; 930590: parts and accessories of weapons (changed to 930591 and 930599 after 2002); and 930690: munitions of war, ammunition/projectiles, and parts. Some light weapons and their ammunition may be included in this latter category.

19 See note 18 for a list of the Comtrade codes used to compile this figure.

20 Email communication from the International Trade Statistics Section, UN Statistics Division, 26 May 2009. Similarly, no states report arms transfers to the GoSS/SPLA, either in national arms export reports or to the UN Register.

21 Lewis (2009a, p. 35).

22 Many of the SPLA's larger weapons systems were captured from Khartoum's forces during the civil war.

23 UNSC (2008a; 2008c).

24 Reuters (2009).

25 Lewis (2009a, pp. 39–41); Gelfand and Puccioni (2009). Because the story was widely reported and Kenya denied assisting Southern Sudan, the third shipment has likely not reached Southern Sudan yet.

26 Lewis (2009a, p. 41).

27 The Panel of Experts was established pursuant to UN Security Council Resolution 1591 (2005) and assists in monitoring the implementation of the arms embargo imposed by Resolutions 1556 (2004) and 1591 (2005), among other tasks. The Panel's reports can be found at <http://www.un.org/sc/committees/1591/reports.shtml>.

28 The PDF was a Murle militia component of the government-aligned South Sudan Defence Forces (SSDF) during the civil war. The latter stages of the civil war were fought largely between the SPLA and the SSDF. For more on the SSDF, see Young (2006).

29 UNSC (2008b, para. 202).

30 UNSC (2008b, para. 202).

31 UNSC (2008b, para. 197, fn. 9).

32 MIC (n.d.). While the MIC claims to produce diverse materiel, the photographs on the company's website are copies from brochures and publicity material from European, Chinese, and Iranian arms manufacturers (Lewis, 2009a, p. 34).

33 UNSC (2009, p. 3).
34 UNSC (2009, p. 33).
35 UNSC (2009, pp. 36–37).
36 UNSC (2007b); Amnesty International (2006).
37 UNSC (2008b, paras. 188–92); official Chadian sources.
38 Interview with confidential source, April 2009; photographs of SSDF stockpiles obtained from confidential source.
39 See, for example, 2005 production SAF Dong Feng military trucks and arms shown to BBC journalists and UN panellists by the JEM, reportedly captured from an SAF convoy between El Geneina and Kulbus in Western Darfur in early 2008 (UNSC, 2008b, paras. 58–64; BBC, 2008).
40 UNSC (2007b, para. 82); UNSC (2008b).
41 UNSC (2007b, para. 23); UNSC (2008b, para. 246).
42 UNSC (2007b, paras. 75–80).
43 UNSC (2008b, paras. 191–92). Intriguingly, the UN Panel of Experts has reported that Egyptian-made 122 mm rockets captured from the JEM after this attack were held on storage racks marked for the Jordanian armed forces and that according to the Egyptian government, rockets of this type were delivered to Iraq in 1983. Although the provenance of these rockets has not been definitively established, the UK's 1992 inquiry into the export of defence equipment and dual-use goods to Iraq (the Scott Inquiry) found that Jordan was a common conduit for arms to Iraq during the 1980s. See HMSO (1996, sec. E, ch. 2). Their route from Jordan or Iraq to Chad/Sudan remains a matter of speculation.
44 UNSC (2006a, paras. 91, 100–01).
45 UNSC (2008b, paras. 311–16).
46 Trial Watch (2009). The case against Bahr Idriss Abu Garda opened in October 2009. See <http://www.icc-cpi.int/NR/rdonlyres/B3A6C818-35DB-4E43-B250-1A9EE849F37F/280960/CISAbu_GardaEn2.pdf>.
47 UNSC (2009, pp. 34–35).
48 See Small Arms Survey (2007, p. 3, Table 1).
49 Tanner and Tubiana (2007, pp. 17–8).
50 Tubiana (2008, p. 11).
51 Email correspondence with UN official, May 2009. See also UNSC (2005; 2006b; 2007b; 2008b).
52 UNSC (2005, Annex II); UNSC (2008b, paras. 136–42).
53 UNSC (2008b).
54 Unreported World (2008).
55 Flint (2009, pp. 36, 38).
56 UNMIS (2009, p. 1).
57 UNSC (2007a, para. 48a).
58 UNSC (2007b, para. 129).
59 Interview with GoSS official, Juba, 14 May 2009.
60 Small Arms Survey (2007, pp. 8–9).
61 The CPA between the NCP and the SPLM/A was concluded in January 2005. The DPA, which was effectively stillborn, was signed between the NCP and only one of the Darfur rebel groups (the SLA faction led by Minni Minawi) in May 2006. The Eastern Sudan Peace Agreement between the NCP and the Eastern Front was signed in October 2006.
62 SPLA officials report around 2 million small arms circulating in the South alone (Karp, 2009) but we believe this is to be an overestimate. The Small Arms Survey has estimated that per capita civilian arms holdings range from a high of 90 per cent in the United States to a low of 0.01 per cent in Tunisia (Karp, 2009). In the case of Sudan, we have used the figure of 4.9 per cent, somewhat lower than estimates for Afghanistan and the Philippines.
63 Small Arms Survey (2007, p. 9). Many countries require their citizens to register their weapons, Sudan included (Republic of Sudan, 2003, paras. 6–7). Despite repeated requests, however, neither the GNU nor the GoSS provided updated figures.
64 See UNSC (2009, paras. 107, 110, and 134).
65 For the second CPA-mandated referendum, see CPA, Protocol between the Government of Sudan and the Sudan People's Liberation Army on the Resolution of Abyei Conflict (art. 1.3) on the right to self-determination for Abyei.

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HSBA project summary

The Sudan Human Security Baseline Assessment (HSBA) is a multi-year project administered by the Small Arms Survey. It has been developed in cooperation with the Canadian government, the United Nations Mission in Sudan (UNMIS), the United Nations Development Programme (UNDP), and a wide array of international and Sudanese NGO partners. Through the active generation and dissemination of timely, empirical research, the project supports violence reduction initiatives, including disarmament, demobilization, and reintegration programmes, incentive schemes for civilian arms collection, as well as security sector reform and arms control interventions across Sudan. The HSBA also offers policy-relevant advice on redressing insecurity.

Sudan *Issue Briefs* are designed to provide timely periodic snapshots of baseline information in a reader-friendly format. The HSBA also generates a series of longer and more detailed Working Papers in English and Arabic, available at <http://www.smallarmssurveysudan.org>.

The HSBA receives direct financial support from the UK government's Global Conflict Prevention Pool, the Netherlands Ministry of Foreign Affairs, and the Norwegian Ministry of Foreign Affairs. The project has also received support from the Global Peace and Security Fund at Foreign Affairs and International Trade Canada and the Danish International Development Agency (Danida).

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