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Surveying armed violence, arms and victimisation in Southern Sudan: findings and challenges

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Abstract: Although armed violence in southern Sudan has diminished since the signing of the Comprehensive Peace Agreement (CPA), civilians are still exposed to comparatively high levels of insecurity. National and local authorities continue to insist on forcible disarmament as a strategy to stabilise the situation. Drawing on the findings of three victimisation surveys, this paper considers the prospects for future disarmament in a particularly volatile region – *Eastern Equatoria and northern Kenya*. It reviews challenges encountered in the course of undertaking household surveys in the region and the role of arms as a ‘protective factor’ in enhancing community security.

Introduction

Southern Sudan is experiencing a volatile peace since the signing of the comprehensive peace agreement (CPA) in 2005. The Sudan People's Liberation Army (SPLA) sought to disarm armed groups and civilians – often forcibly and at great loss of life – in order to shore-up control. Enforced disarmament is a common intervention launched by governments and peace-keeping missions in the aftermath of war. It is expected that swift 'crack-down' operations can quickly re-assert control over the monopoly of violence.

In order to better understand the distribution and scale of armed violence in southern Sudan, the *Human Security Baseline Assessment* undertook three victimisation surveys between 2006 and 2007.¹ These semi-randomised household surveys were undertaken in Lakes state, Jonglei state, Eastern Equatoria state and the northern Kenyan region of Turkana. The surveys were designed to demonstrate the outcomes of recent disarmament campaigns and prospects for future interventions: both Lakes and Jonglei recently experienced a combination of coercive and voluntary disarmament programmes while Eastern Equatoria and northern Kenya have yet to experience SPLA-led disarmament campaign.

Divided into four parts, the first section reviews conventional approaches to disarmament in post-conflict contexts and highlights the emergence of innovative local interventions to promote security. The second section traces out the experience and outcomes of disarmament in Sudan in the wake of the CPA. The third section reviews the methods and challenges associated with undertaking victimisation surveys in Sudan. The fourth section features findings from a survey in Eastern Equatoria and northern Kenyan survey: it highlights the role of arms as a 'protective' factor and cautions against hasty top-down disarmament. The paper closes with concluding reflections on the limitations of these surveys.

Disarmament in post-conflict: guns and security

Governments emerging from conflict regularly face escalating rates of political and criminal armed violence.² Armed violence undermines development programmes and aid effectiveness, distorts public spending and perpetuates localised insecurity. The risk factors contributing to its onset and severity are increasingly well-known: social and economic – or horizontal – inequality, systemic unemployment, demographic youth ‘bulges’, rapid urbanisation and arms availability all strongly associated. When poorly planned or executed, development assistance itself can induce and prolong armed violence. Opportunities to prevent and reduce it are frequently overlooked or under-funded.

The conventional response to post-conflict armed violence is to focus on the vectors of violence – the arms themselves. Affected governments and communities regularly opt for enforcement operations to ‘crack-down’ on perpetrators. Forcible disarmament campaigns are often introduced targeting slums and ghettos to rural pastoral communities. These interventions regularly lead to significant loss of life while ‘success’, such as it is, is measured by the number of arms and munitions collected rather than changes in people’s real and perceived safety. Evidence of the effectiveness of forcible disarmament is derived from limited surveys in upper and middle-income contexts and not countries emerging from war or facing serious underdevelopment.

Research undertaken in the Americas and the Caribbean suggest that enforced disarmament is not particularly effective at ‘improving’ security of households and individuals in the medium to long-term – certainly not in the absence of enhanced public security provision or complementary bottom-up interventions. When coupled with interventions that target known ‘risk factors’ – including at-risk male youth, ‘hot spots’ in violence affected communities, single-headed female households, alcohol and narcotics abuse and weapons holding in public spaces – enforcement can potentially generate sharp and rapid gains. Although growing numbers of governments are supporting more voluntary approaches to preventing and reducing armed violence – often at the municipal level – there is little institutional memory or learning about what works and what does not.

Municipal violence prevention is emerging an effective strategy in many developed and medium-income countries. It is a direct reaction to the spatial, temporal and demographic concentration of armed violence in cities and slums and the limitations of national governments to contend with such challenges from above. Such strategies are frequently described as ‘citizen security’ or ‘safer-city’ programmes and focus on a broad range of risks, protective factors and effects reduction strategies. More recently, in Africa and Asia ‘community security’ programmes and ‘zones of peace’ are being

introduced in rural areas to draw on local leadership structures and capacities to define and respond to local security needs.

Local government and civil society structures often exhibit a robust, if frequently under-recognised, potential for reducing and preventing armed violence from the bottom-up. Because of their immediate contact with communities, municipal institutions and leaders – from governors to locally-elected officials, mayors, police authorities, education and health services, and universities – can play an important role in nurturing people’s confidence in governing institutions and perceptions of public safety. The evidence for such capacity in rural local authorities is not available, but in principle there are many similarities and also specific differences to take into account.

Post-conflict disarmament in Sudan: disarming tribal militia

Armed violence in Sudan is largely a function of the country’s brutal history of civil war (1952-1972; 1983-2005) and localised conflicts between competing ethnic groups. A pattern of exploitative governance precedes the civil war whereby ‘power’ was concentrated in Khartoum and the north at the expense of western, eastern and southern regions. From the 1990s onward the central government pursued a policy of manipulation and extraction³ from the periphery – often supported through the use of the armed forces but also through proxy militia.⁴ The competition over control of territory – whether in relation to oil, land and grazing rights or for water – remains a major ‘trigger’ for a return to all out war.

A consequence of these tensions is the emergence of massive array of armed groups. There as many as seventy documented armed groups with a heterogeneous array of interests and areas of control. Combined with more official actors such as the Sudanese armed forces (SAF) or the Sudanese People’s Liberation Arms (SPLA), the PDF, Janjaweed, Murahalin and other self-financing actors were frequently issued arms and munitions.⁵ Public authorities frequently avoided accusations of waging war by branding their proxies as ‘bandits’ or ‘criminals’ or describing their activities as little more than ‘tribal conflict’. The subsequent fragmentation of these groups due to the divide and war strategies of Khartoum served to prolong the armed violence through the creation of multiple spoilers.

Following intense pressure from the international community, the CPA marked the ‘formal’ end of the second Sudanese civil war (1983-2005). The costs of the war were catastrophic by any measure: an estimated 1.9 million people died directly and indirectly and over 4 million people were displaced across borders and internally as IDPs.⁶ What is more, the various wars and enduring tribal conflicts have resulted in a vast surplus of arms and munitions in the country – particularly the southern region. The porous nature of the country’s borders coupled with limited purchase of the rule of

law has facilitated the easy transfer and availability of military style hardware. The Small Arms Survey (2007) estimates that there are between 1.9 and 3.2 million arms in circulation – of which two thirds are in civilian possession.⁷

The CPA signalled a major restructuring of the Sudanese government and associated state entities. The newly established government of South Sudan (GoSS) was expected to reform its fighting forces into a legitimate security sector accountable to civilian oversight and authority. The CPA also determined that all armed groups not aligned to the SAF or SPLA be disbanded and absorbed into either. The challenges of developing a legitimate army in the south and integrating renegade groups was never going to be straight-forward.

As in many other post-conflict contexts, the peace agreement did not lead to an immediate cessation of armed violence. The northern government of Sudan continues to manipulate parties in the south and inter-southern hostilities continue between SPLA and other armed groups that refuse to disband. Also contributing to escalating rates of armed violence in the wake of the CPA are the persistent raiding of tribal militia, clashes between pastoralist groups competing over resources and grazing land, predatory behaviour by foreign armed groups such as the Ugandan-based Lords Resistance Army (LRA) and common predatory activity (SAS 2006; Young 2007a, 2007b).

Escalating rates of armed violence are increasingly being attributed to inter-tribal clashes and tribal militia. During the civil war a variety of tribal groups – including the Nuer, the Murle and the Dinka – competed for territorial and resource control in various ‘states’ of southern Sudan including Lakes, Jonglei and Eastern Equatoria. In some cases, communities armed themselves to protect their communities and families: one such group was the ‘white army’ which consisted of young Lou Nuer males who otherwise raised cattle and raided neighbouring tribes. Though not fully organised or politicised, the group was increasingly drawn into civil war owing to tacit support from Khartoum. The white army was also ill-disposed toward the SPLA who were in case dominated by the Dinka, a traditional enemy of the Nuer.

Another particularly insidious form of armed violence relates to forcible SPLA-led disarmament of specific ‘tribal militia’ and armed civilians. Many local tribal groups integrated gun possession and carrying into customary rites of passage in the latter half of the twentieth century. The declining price of weapons reflected their growing supply: the cost of a single assault rifle was reportedly ten cows in the late 1980s. From 1994 onward the price allegedly dropped to as few as three. The accumulation of arms among young males led to confrontations with traditional elders and may have contributed to a rise in confrontations and inter-ethnic rivalries for which local

compensation could not keep up – particularly in Jonglei (Young 2007b; SAS 2007).

Quantifying armed violence in Sudan: A role for surveys?

It remains exceedingly challenging to quantify the distribution and scale of Sudan's armed violence during the post-conflict period. Reported fatal and non-fatal injury, sexual violence and other forms of abuse is low because the health system in Sudan is among the least developed in the world (Healthnet International 2006).⁸ The ratio of hospitals to the population and the quality of the services provided may be amongst the lowest found in any country of a similar size. A rash of agencies have sought to fill the health services 'gap': at least 66 non-governmental and bilateral agencies currently provide health services in southern Sudan. Despite their presence, even basic geographic, demographic and population health data is missing.⁹

Household surveys offer an important entry-point to diagnosing risk factors and symptoms of armed violence in southern Sudan. While such surveys are not without difficulty, there are important precedents. Since 2005 several surveys have been administered in various regions of Sudan – notably Darfur¹⁰ and the south. A range of mortality and health surveys were also administered in IDPs camps in Darfur.¹¹ In addition to a survey of IDPs in nine states of northern Sudan in 2006¹², the northern and southern governments undertook a 'Sudan household health survey' in all 25 states targeted more than 25,000 households.¹³ Significantly, while the UNDP is seeking to undertake comprehensive 'threat mapping' in various areas of the south, no victimisation surveys have ever been undertaken in Sudan.

But with more than two years passing since the signing of the CPA, such information is invaluable for the affected government, UN and non-governmental agencies and civil society groups. Reliable baseline data on armed violence can assist such actors identify priorities, target risk factors, enhance protective factors and contribute to effects reduction. The UN Mission in Sudan (UNMIS) and the UN Development Programme (UNDP) in particular require solid baseline data to support the GoSS in undertaking disarmament, demobilisation and reintegration (DDR) and civilian disarmament in keeping with prescriptions drafted into the CPA (Muggah 2007; 2006).¹⁴

Victimisation surveys in southern Sudan

The victimisation surveys were undertaken as part of the HSBA. The HSBA is a project designed to shed light on the production, distribution, demand and effects of arms in Sudan (ref website/info). Though covering all of the country just three southern states were selected in which to undertake victimisation surveys: Lakes (N: 720)¹⁵, Jonglei (N: 880) and Eastern Equatoria (N: 521)

between 2006 and 2007. These states were purposively selected owing to the perceived security challenges they faced by key informants, the recent or planned disarmament of other armed groups and civilians and their geographic distribution and size in relation to other smaller states in the south. Populations in the three states are highly stratified according to ethnic groups with multiple and varying experiences and levels of vulnerability and exposure to armed violence.

Drawing on specialists from academic and aid organisations and established best epidemiological practice, the HSBA developed survey instruments to review mortality, morbidity and victimisation trends in affected communities in southern Sudan. A questionnaire was established for Lakes and was subsequently adapted for Jonglei. A revised questionnaire drawing from past instruments and tailored for local context includes 140 questions divided into a number of sub-categories addressing socio-economic profiles, real and perceived security, the distribution and frequency of victimisation events, weapons possession and use and livelihoods. These surveys addressed a number of 'sensitive' topics that may have been comparatively new to enumerators and respondents. For example, there was an understandable resistance to discuss abuse in the context of 'domestic violence'. Exploring such areas requires drawing upon local enumerators that can establish trust with their respondents. In certain cases, foreign supervision can potentially contribute positively to response rates as it may be perceived as neutral or enhance confidentiality associated with information provided.

A major challenge in semi to non-literate societies is the recruitment and training of high-quality enumerators. Between 30 and 55 enumerators were selected in consultation with local partners – namely PACT-Sudan – and following communication with local community leaders.¹⁶ Although no enumerator worked for local government, most had participated in social development campaigns and were widely known in and around their communities of origin. Most if not all interviewers could read and write English and at least the predominant local language. Although special effort was devoted to selecting women interviewers, less than half of those recruited in all three states were ultimately female. In some cases enumerators were encouraged to recruit a female relative to accompany them during surveying in order to enhance information collection from women informants.

Another key challenge to surveying in southern Sudan relates to logistical constraints. There are simply few access roads, transportation or accommodation hubs or administrative infrastructure across much of the region.¹⁷ Accessing households in remote and volatile regions has financial, sampling and ethical implications.¹⁸ As a result, communities selected in the sample were chosen in part on the basis of their geographic and spatial dispersion, but also on the basis of logistical criteria. In Lakes and Jonglei, for example, there was only one vehicle available for transport and since many

communities were inaccessible by vehicle due to lack of roads or bridges (or owing to the wet season and political violence), communities were generally near or close to the principle state roads. In the event, most urban communities had fewer than fifty family compounds.

The survey adopted a two-stage format. Clusters of urban, semi-urban and rural 'communities' were selected semi-randomly and the selection of respondents in each cluster were randomised. Samples in urban areas were selected by drawing an imaginary circle around the area where family compounds were concentrated. A centre point of these circles was identified in order to start survey selection. From the centre, enumerators spun a bottle and walked in the direction indicated, tagging households for participation on the way. When they reached the outskirts of town, they returned to the centre and repeat the procedure until a total of 25 household interviews were completed. Most interviews conducted the procedure three times to reach their individual quotas. An analogous procedure was administered in rural areas fanning out from urban centres.

The sampling of households in contexts of transhumance and armed violence requires certain adjustments and innovations. Indeed, the 'bottle' procedure required modification in certain instances – particularly in rural communities – owing to the (forced) migration of certain households either to new cattle grazing areas or owing to insecurity arising from renewed armed violence. In certain cases enumerators observed that no household members were home during the time of interviews. Even so, interviewers kept a notation of houses visited, houses considered 'empty', and refusals to take part in the survey.¹⁹ These data were collected and analysed by the supervisor: approximately one per cent of all sampled respondents in 'occupied' homes declined to take part in the household surveys.²⁰

Reviewing Security in Eastern Equatoria and Northern Kenya

Although surveys were undertaken in Lakes and Jongelei state, this section focuses primarily on preliminary findings from Eastern Equatoria and northern Kenya. Perceptions of safety and security were measured amongst individuals and households living Eastern Equatoria and Turkana in northern Kenya. This section considers three specific areas covered by the household survey: perceived levels of security attributed to arms ownership and possession; perceived levels of security in villages/bomas in the aftermath of the CPA; and the incidence and nature of reported violent events (and weapons used). The following section considers basic demographic data and then reviews each of these issues in turn.

Demographic profile of the sampled population

The victimisation survey interviewed 521 residents from Eastern Equatoria and the northern Kenya, particularly Kapoeta, Kotos, Torit, Lafon and

Turkana. Basic demographic information was obtained on age, sex and residential environment (urban or rural) (see table 2). Over half of the respondents (52.6 per cent) were 36 years or older while less than half (40.5 per cent) were between 21 and 35 years of age. Fewer than five per cent (3.3 per cent) were adolescents between 14 and 20. With just over 70 per cent of all respondents male (n: 377), the majority (60.9 per cent) of the sample live in rural areas.

Table 1 Respondents by county (n = 521, 3 unidentified counties)

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 777	3	.6	.6	.6
Ikotos County	57	10.9	10.9	11.5
Kapoeta East	164	31.5	31.5	43.0
Kapoeta North	31	6.0	6.0	48.9
Kapoeta South	13	2.5	2.5	51.4
Lafon	14	2.7	2.7	54.1
Torit	45	8.6	8.6	62.8
Turkana North	194	37.2	37.2	100.0
Total	521	100.0	100.0	

Table. 2. Age Distribution

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 14 - 20 years old	17	3.3	3.3	3.3
21 - 35 years old	211	40.5	40.5	43.8
36+ years old	274	52.6	52.6	96.4
Do not know	19	3.6	3.6	100.0
Total	521	100.0	100.0	

Perceived security due to arms ownership and possession

The surveys potentially reinforce the conclusion that arms potentially assume a 'protective' function among sampled residents of Eastern Equatoria and northern Kenya. The clear majority (89.8 per cent) of the sample reported that having a small arm 'makes a person safer'. What is more, the safety of both villages and households is perceived to increase owing to the ownership of small arms. The assumption that arms play a protective role is reinforced by responses to two specific questions: (i) the collective ownership of arms within villages in relation to perceived security of the village and (ii) personal ownership of arms and its role within the household.

Table 3a. Would the reduction of arms in your boma change the level of security?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	377	72.4	89.8	89.8
	No	39	7.5	9.3	99.0
	Do not want to answer	4	.8	1.0	100.0
	Total	420	80.6	100.0	
Missing	System	101	19.4		
Total		521	100.0		

Table 3b. How would local disarmament affect your area? (n =526)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Increase Security	94	18.0	24.9	24.9
	Decrease Security	283	54.3	75.1	100.0
	Total	377	72.4	100.0	
Missing	System	144	27.6		
Total		521	100.0		

Contrary to popular narratives on arms holding in Sudan, not all residents in the sampled areas possess weapons. Even so – perceptions of high small arms possession are persistent and widespread. At least eighty percent (80.4 per cent) of residents sampled in Eastern Equatoria and northern Kenyan believe that someone in their local village owns at least one small arm or light weapon. Over three quarters (75.1 per cent) of those that responded affirmatively and added that a reduction in small arms in their village/boma would *decrease* the level of security in their village/boma (see table 3b).

Table 4. Do you think that disarmament in this area would affect you and your household's level of security?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	443	85.0	85.0	85.0
	No	70	13.4	13.4	98.5
	Do not know	7	1.3	1.3	99.8
	Do not want to answer	1	.2	.2	100.0
	Total	521	100.0	100.0	

Figure 4b. How would it affect your and your household's security?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Increase Security	130	25.0	29.3	29.3

	Decrease Security	313	60.1	70.7	100.0
	Total	443	85.0	100.0	
Missing	System	78	15.0		
Total		521	100.0		

It follows that residents in both Eastern Equatoria and northern Kenya would likely respond negatively to the introduction of disarmament programmes in their area. When presented with the hypothetical prospect of disarmament – more than 70 per cent (70.7 per cent) believe that security in their area would decrease. Less than a third (29.3 per cent) counter that disarmament could increase security (table 4a, 4b). These findings are reinforced by the perceived relationship between personal possession of small arms and household security. Almost 60 per cent (59.3 per cent) of respondents reporting personal arms ownership. Not surprisingly, more than eighty per cent (84.8 per cent), n: 239) of respondents claimed that the weapons increases the security of their household (table 5b).

Table 5a. Level of Household's Security Affected by Small Arm Ownership

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	283	54.3	91.3	91.3
	No	27	5.2	8.7	100.0
	Total	310	59.5	100.0	
Missing	System	211	40.5		
Total		521	100.0		

Table 5b. How does small arms ownership affect the security of your household

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Increase Security	239	45.9	84.8	84.8
	Decrease Security	43	8.3	15.2	100.0
	Total	282	54.1	100.0	
Missing	System	239	45.9		
Total		521	100.0		

Perceived safety in villages/bomas in the aftermath of the CPA

As observed in Lakes and Jonglei, more than half (56.4 per cent) of all respondents in Eastern Equatoria and northern Kenya believe that security in their communities remains precarious (see table 6). But when asked to compare their village conditions before and after the CPA – more than two thirds (67.3 per cent) of those surveyed reported that their village is now safer

than before the CPA. Even so, a third (32.6 per cent) still do not feel safe when walking alone to the market alone during daylight hours.

Table 6. Do you think that the security of your village/boma is currently good enough?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	214	41.1	41.1	41.1
No	294	56.4	56.4	97.5
Do not know	13	2.5	2.5	100.0
Total	521	100.0	100.0	

A range of security threats persist in the aftermath of the CPA. But in Eastern Equatoria and northern Kenya, respondents reported fewer incidents of armed violence than residents in either Lakes or Jonglei.²¹ Indeed, more than half (54.4 per cent) of the sample never witnessed a violent event take place near or around his or her household. It is worth considering that a major factor influencing perceived levels of village security may be the experience or witnessing of violence in close proximity to one's home. A *chi-square* analysis suggests that having witnessed a violent event in one's life has a significant impact on personal opinion toward village security (see table 7).

Table 7. Witnessing a violent event as a predicting factor for perceived level of village security (N = 526)*

		Have you ever witnessed any violent event(s) taking place around your household? (Witnessed Event)		Total
		Yes	No	Yes
Do you think that the security of your village/boma is currently good enough?	Yes	66	150	216
	No	168	129	297
	Do not know	6	7	13
Total		240	286	526

* χ^2 (2, N = 526) = 34.103, $p < 0.001$

Among those respondents witnessing a violent event (n = 394), respondents were subsequently asked to recall the most recent violent event on memory. It is useful to note that the disparity between the number of witnessed events and the number of respondents actually witnessing an event (n = 240) is because certain violent events reported included several sub-classifications of events within a single recorded event. For example, an 'attack' from a neighbouring village/boma could also have included a 'fight' or a 'robbery' involving others from outside a respondent's village.

The role of arms in incidence of violence

Table 8 reviews the temporal variability of reported events in Eastern Equatoria and northern Kenya. The first column highlights the total number

of reported events ever witnessed (since 1989 to the present). The second column considers the most recently witnessed events in relation to the total number witnessed. The third column considers the most recently witnessed events taking place since 2005 to the present.

Table 8. What type(s) of violent event have you witnessed taking place around your household most often?

	No	%
Fight Involving People from Within Village	37	13.91
Fight Involving People Outside Village	21	7.89
Fight Involving People from Both Within and Outside	16	6.02
Robbery Involving People from Within Village	7	2.63
Robbery Involving People from Outside Village	16	6.02
Robbery Involving People from Both Inside and Outside Village	2	0.75
Cattle Rustling	135	50.75
Disarmament	1	0.38
Attack from People Outside Village	15	5.64
Other	16	6.02
Total	266	100.00

There were a host of events reported by respondents that are reportedly linked to the onset of armed violence. According to the survey findings, the most common event *ever* witnessed is cattle rustling (36.5 per cent). As in both Lakes and Jonglei, cattle rustling also appeared to be the most common recently witnessed event, accounting for 50.75 per cent of all ‘most recent’ events witnessed (see table 8). Almost 90 percent (88.2 per cent) of all cattle rustling events recorded occurred in the year 2005 or later. Importantly small arms were reported in over 90 per cent of all reported events.

Table 9a. Most Recent Type of Event Witnessed and Weapons Used

	No	%
Firsts and Feet	22	7.9%
Sharp or blunt instruments*	73	26.4%
Small Arms**	170	61.4%
Explosive weapons/devices***	5	1.8%
Other	7	2.5%
Total	277	100.0%

* This includes knives, farm implements and sticks

** This includes pistols, rifles, AK-47s

*** This includes RPGs, rocket launchers

Table 9b. Comparing all reported events with and without small arms

Small Arms	170	75.56%
Other	55	24.44%
Total	225	100.00%

While small arms remain the most common weapons used in incidents of violence overall, there is evidence that arms are more likely to be used to

protect one's village (presumably from outsiders) than used 'internally' against local residents.²² Specifically, in reported events that were exclusive to residents from a respondents village (i.e. 'fight' or 'robbery') the most commonly reported weapon was a sharp or blunt instrument.²³ Where perpetrators are declared to be from 'outside' ones village there is a high reliance on arms usage.²⁴ Of course, more research is required to determine if these variations are significant. At present it is plausible to infer that the inclination or resort to gun ownership and use is more likely as a means of 'protecting' ones village rather than for use in predatory or even self-defence in one's own village. It may be that the an increase in the use of arms during 'fights' or 'robberies' may be due to the presence of outsiders (see table 9a, 9b).

Closing reflections

While still nascent, the CPA appears to have generated a modest 'peace dividend'. There are clearly fewer weapons in circulation in Lakes and Jonglei - especially in areas purposefully disarmed, and perceived security appears to be increasing, even if incrementally. Increases in cattle-rustling and other attacks from outside areas while serious, are occurring in an environment characterised by fewer reported victimisation events overall. Civilians also appear to be far less likely to use arms then before. As survey findings from Eastern Equatoria and northern Kenya remind us, however, in areas that have not yet experienced disarmament, small arms also potentially play an important 'protective' factor. Disarming these communities without adequate security guarantees will likely fail.

Despite persistent security threats, it is possible to undertake systematic household surveys in remote and unstable areas of southern Sudan. The comparatively high response rates among surveyed households in Lakes and Jonglei, for example, reveal that with adequate preparation, together with the selection and training of skilled enumerators, it is possible to explore sensitive topics. The findings from the three surveys in southern Sudan shed new light on the dimensions and variation of victimisation. But data must also be treated with caution. There are vast range of underlying factors (observed and non-observed) that condition resort to arms and exposure or vulnerability to victimisation. Acknowledging and addressing the limitations of the HSBA surveys is critical and can only enhance repeated assessments in the future.

While there appears to be some evidence supporting the 'protective' thesis, the hypothesis requires still further testing. Although the victimisation survey provides compelling findings and reveals strong predictive trends and patterns in surveyed areas, there are likely a host of other variables that must also be tested and considered. There are, for example, strong customary norms associated with weapons holding and misuse that need further

exploration and the use of qualitative research methods, presumably using ethnographic or anthropological research.

The breadth and depth of survey findings are inherently tied to the questionnaire instrument used. A major challenge facing researchers in violent contexts is balancing the imperatives for information collection with the limitations of the tool being used and the capacities and interests of local respondents. A questionnaire is necessarily limited by its length and focus: loading it up can make it quickly become burdensome, overly expansive and lead to imprecise data collection. When this happens the validity of the entire survey can be called into question. Although the HSBA survey team sought to limit the number of questions in the questionnaire and limit the focus to narrow range of themes (of which only three are discussed above in the context of Eastern Equatoria and northern Kenya), many potentially important issues have yet to be explored. For example, the 'destructive' factors associated with gun ownership in relation to neighbouring villages and households have not been adequately unpacked.

A major, though frequently under-reported, challenge obstacle to robust survey work relates to monitoring and supervision. The paper signalled certain challenges relating to access and logistics – challenges that are unlikely to be surmounted in the near term. But constraints on mobility – particularly of survey supervisors – can severely compromise survey data quality. The difficulties of accessing certain areas resulted in a the production of only semi-generalisable findings. Moreover, while enumerators displayed a remarkable capacity to visit hard to reach and marginalised areas in Lakes, Jonglei and Eastern Equatoria and northern n Kenya – this was not always the case with the HSBA survey team. Future surveys in these areas, as are planned by UNMIS and UNDP, will hopefully shed more light on the reliability and validity of the findings presented herein.

Endnotes

¹ Information on the HSBA is available at

http://www.smallarmssurvey.org/files/portal/spotlight/sudan/sudan_publications.html.

² See, for example, Ghobarah, H., P. Huth and B. Russett. 2003. "Civil Wars Kill and Maim People—Long After the Shooting Stops", *American Political Science Review*, 97:2 (May).

³ While this tradition continues, the task for guarding oil reserves in the 'transitional areas' of Sudan now fall largely to the 'oil police' and private security companies. There is a near total lack of transparency regarding oil extraction or associated revenues, a source of major tension between the current northern and southern governments.

⁴ The so-called popular defence forces (PDF) are routinely used to wage counter-insurgency and are characterised by a fundamentalist Islamic ideology, also shared by the central government.

⁵ See *HSBA Issue Briefs and Working Papers* on the HSBA website.

⁶ See *Small Arms Survey* (2007).

⁷ See also *HSBA Issue Brief 6* (2006: 9).

⁸ A total of 94 health centres and 17 hospitals serve a population of approximately 8 million (NSCSE and UNICEF 2004). In addition, 20 specialised hospitals treat kala-azar, sleeping sickness, tuberculosis and leprosy. There are a total of 799 'primary' health care facilities, though many are not routinely supplied or staffed (OCHA and NSCSE 2004).

⁹ In Lakes, Jonglei and Eastern Equatoria, for example, much of the states have not been adequately mapped. Remote sensing and geographic imaging data provides only an imperfect template on which to undertake household surveys. Even supposedly reliable maps that include transport corridors are out of date or difficult to access adding considerable time to the preparation and oversight of surveys and censuses. Most important, the lack of demographic data means it is impossible to develop a reliable denominator – therefore reducing the capacity of surveys to render generalisable estimations. For this reason – a non-random sample was ultimately chosen for the HSBA surveys discussed in the subsequent section.

¹⁰ These were administered by the World Health Organisation (WHO), the World Food Programme (WFP) and the UN Children's Fund (UNICEF) as well as humanitarian agencies such as Medecins Sans Frontières, Epicentre and Action Contre la Faim. See Degomme and Guha-Sapir (2005: 3) for a review of Darfur surveys in 2004-2005.

¹¹ More technical assessments were also administered by Mine Action Group, the Survey Action Center in seven states of southern and northern Sudan, Eastern Equatoria, Blue Nile, Kassala, Red Sea, Gaderef, Sennar and Northern Bahr el Gazal, Warrap and Lakes.

¹² The International Organisation for Migration (IOM) carried out a survey of 6,500 respondents.

¹³ The UN population fund (UNFPA) is also coordinating a national census to begin in February 2008 though it is likely that this will be significantly delayed.

¹⁴ Working conjointly with the GoSS, UNMIS and UNDP are currently investing in a combination of initiatives to promote security. They are involved in monitoring and reporting violations to various units, promoting human rights, providing capacity building to police, judiciary and prison reform, promoting community security and arms control, de-mining, humanitarian relief and the return and resettlement of refugees and IDPs.

¹⁵ A total of 720 households were visited and 674 provided full to partial responses resulting in a response rate of 94 per cent (HSBA 2006).

¹⁶ The Lakes survey recruited xx enumerators, the Jonglei survey included xx and the Equatoria/northern Kenyan survey selected 30 local enumerators.

¹⁷ Much of Jonglei was inaccessible with some roads completely impassable and others barely passable with an average speed of 10km per hour. In Jonglei, enumerators were able to reach five of eleven counties in the state, often at great personal and temporal expense. Supervision visits and quality controls were therefore exceptionally challenging.

¹⁸ Not only are costs increased in such environments, but both enumerators and respondents are potentially exposed to elevated risk.

¹⁹ There is no way to confirm or deny the accuracy of the responses provided by respondents. Even though several logical checks were embedded in the instrument itself and demonstrated consistency in responses, it remains possible for people to understate or overstate the number of events occurring or their own behavioural/attitudinal responses to particular phenomena.

²⁰ Even so, supervision was difficult in all three surveys in Lakes, Jonglei and Eastern Equatoria. When errors were located in questionnaire forms or during data-entry, enumerators were requested to return to complete or correct required information. But without an opportunity for additional close supervision, it is likely that certain sensitive events reviewed in this paper are under-reported.

²¹ See for example HSBA Working Paper 1 and forthcoming working paper on Jonglei.

²² Small arms clearly remain the most prevalent weapon type involved in the violent events witnessed by our sample. They were reported in 71.7% (n = 269) of all most recently witnessed events.

²³ 'Own village people and small arms usage': Fight - 7.9 per cent, n = 38 & Robbery - 28.6 per cent, n = 7.

²⁴ 'Outside people and small arms usage': Fight - 85.7 per cent, n = 21; Robbery - 68.8 per cent, n = 16; and Attack - 81.3 per cent, n = 16.