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HIV HOT-SPOT MAPPING AND SITUATIONAL ANALYSIS ALONG THE KAMPALA - JUBA TRANSPORT ROUTE



**Final Report
May 2008**



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The report was written by Alan Ferguson and Kelsi Kriitmaa, under the supervision of Greg Irving, IOM Nairobi.

For further information please contact:

International Organization for Migration (IOM)
Uganda Mission
Plot 40 Mackenzie Vale Kololo, P.O Box 11431, Kampala
Tel: +256 41 4236622/31 2263210
Email: iomkampala@iom.int

Financial support was provided by UNAIDS Programme Acceleration Funds.

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Acknowledgements

The data presented here were collected by the following members of the research team: Winnie Adoch, Project Assistant HIV/AIDS; Stella Oyo, Database/GIS Developer; and David Olara, Data Clerk. Field team members in Uganda included James Owiro, Field Team Manager; Aisu Ronnie, Ogera Nicholas, Stella Atim, and Karungi Joycelynn, Data Enumerators and field team members in Sudan, Edema Robert, Mogga Jackson, Tenge Regina, and Yange Agnes.

The International Organization for Migration in Uganda extends its appreciation to the following individuals and organizations for their support in completing this study: Uganda AIDS Commission (UAC), the Southern Sudan AIDS Commission, UNAIDS Uganda, the United Nations Population Fund (UNFPA) Uganda, CartONG, Sudan Interagency Mapping, Uganda Bureau of Statistics, IOM Juba, IOM's Migration Health Studies Manager Jesus N. Sarol, and the Migration Health Research Team of the IOM Regional Mission for East & Central Africa in Nairobi.

Furthermore, we would like to thank the Local Authorities of Nimule and Juba as well as District Local Government Officials of Nakasongola, Masindi, Gulu, and Amuru for their input and the enthusiasm with which they supported the IOM research team while in their Districts. Finally, special thanks to all of the respondents who gave their valuable time to participate, without whom the research would have been impossible.

Yours Sincerely,



Jeremy R.A. Haslam
Chief of Mission
IOM Uganda

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Introduction

HIV is one of the leading causes of death worldwide, with an estimated 2.1 million AIDS related deaths in 2007 and an estimated 33.2 million people living with HIV. Approximately 2.5 million individuals were newly infected in 2007, 1.7 million of whom were in sub-Saharan Africa alone (UNAIDS and WHO, 2007). Despite great strides in HIV research, awareness and prevention efforts, sub-Saharan Africa continues to remain the most gravely affected region of the world; and AIDS the leading cause of death (UNAIDS and WHO, 2007).

Uganda was the first country in sub-Saharan Africa to record a reduction in HIV prevalence (UNAIDS and WHO, 2007). The decrease began in the early 1990's due to strong mass public awareness campaigns, including behavioural change communication campaigns and condom advocacy. However, by the beginning of the millennium this downward trend began to stabilize and a noticeable increase in more sexual risk behaviour has emerged. This development has been illustrated in four national population-based surveys conducted between 1995 and 2006, where higher risk sex was reported between 12% and 16% of adult women and 29% and 36% of adult men (Kirungi et al, 2006; Ministry of Health Uganda & ORC Macro, 2006; Uganda Bureau of Statistics & Macro International Inc., 2007). The results of these surveys indicate the need for more concerted efforts in HIV prevention.

Targeting of prevention efforts to most-at-risk populations (MARPs) is a strategy being used worldwide to address HIV epidemics. By focusing programmes towards populations and behaviours conferring a large proportion of new infections, greater impact can be made in halting and reversing the epidemic. The National Strategic Plan (NSP) for Uganda clearly outlines truck drivers, sex workers, and other mobile populations as priority high-risk groups, calling for an immediate response in order to reduce risky behaviour and elicit behavioural change. Nevertheless, only 10% of sex workers are currently being reached by Ugandan prevention and intervention programmes (UNAIDS, 2006) and there is little evidence of programmes targeting workers in the transport industry.

Transport workers and sex workers, both considered to be MARPs, have together long been tied through risk behaviour to the spread of HIV in East Africa and on the African continent. Transport workers, including long-distance truck drivers and assistants, spend prolonged periods of time away from home and therefore may resort to casual sex or develop regular non-marital sexual relations while in transit due to a combination of loneliness, peer pressure, alcohol use, and to satisfy their sexual needs (Lema et al. 2003; Ntozi, 2003). Transactional sex workers, many of whom lack other livelihood options, frequent stopping points along transport corridors in great numbers. This situation creates an environment where individuals are engaging in sexual acts with concurrent multiple partners, thereby increasing the chances of contracting HIV and other STIs. Through sexual networks, this sexual behaviour has the potential to bridge HIV infection among high-risk groups with those in the general population.

Studies have revealed a high prevalence of HIV/AIDS in long distance truck drivers and their assistants (Bwayo et al., 1991, 1994), and further research demonstrates that truck drivers are at a higher risk of contracting HIV than the general population (Kribs-Zaleta et al., 2005; Morris & Ferguson, 2006). Additionally, studies have shown that truck stops along major highway corridors tend to have higher HIV prevalence than the general population (Serwadda et al., 1992). Furthermore, Gysels et al. (2001) cite a reported HIV prevalence of 40% in a town where the truck drivers stop along the Trans-Africa highway in south west Uganda.

Sex work can be difficult to distinguish from other sexual relationships, as money may not always be exchanged in the process, but commodities, favours or other goods as a substitute for money may be present. Pickering et al. (1997) described three "types" of sex worker in a Ugandan trading town on the Trans-Africa highway in south-west Uganda. The author classified the women into "high", "middle" and "low" class, the distinction based on the monetary amount

they charged for a sexual act. Results of the study showed that the type of client corresponded to these categories, for example the “high” class women only interacted with clients from outside the town versus “low” class women had clients who were mainly locals. Another study completed years later in the same town found a similar classification of women in addition to a group of waitresses who exchanged sex with primarily truck drivers (Gysels et al., 2002). This is just one of many studies to find that truck drivers often comprise the clientele of sex workers in East Africa; a wealth of evidence from other studies in the region also indicates the same trend (Morris & Ferguson, 2005, 2007; Ntozi et al., 2003; Pickering et. al, 1997).

The different categories of sex workers, described by various authors and studies, tend to have different risk profiles, which include varying levels of control over their exposure to risks (e.g. power over partner and condom negotiation resulting in exposure to STIs). A more recent qualitative study in Uganda found the main reason that women had engaged in commercial sex was as a means of economic survival, otherwise known as “survival sex” (Ntozi et al., 2003). Depending on the type of sex work (street based, brothel based, etc.), the country of origin, and individual situation and circumstances, sex workers will be exposed to varying degrees of risk and exhibit variations in sexual and health-seeking behaviour.

A few studies have investigated the sexual and health-seeking behaviour of MARPs, such as truck drivers and sex workers, in East Africa. Most notably, the work of Ferguson and Morris (2005, 2006, 2007) along the Mombasa-Kampala transport route provided reliable data including detailed information on the number of trucks parked overnight at numerous stops, the number of female sex workers present, STI prevalence, and access to condoms and health services such as HIV testing and STI treatment. The main findings from this research were that there are more than 6,000 truck drivers staying overnight along the Mombasa-Kampala Highway corridor and approximately 8,000 sex workers having sex with multiple concurrent partners, with clientele occupations and demographic groups varying widely. Rates of self-reported STIs were annually up to 15% in both truck drivers and sex workers, and reported condom use was only 50-80%. Access to treatment for HIV and STIs was limited, and there were no targeted VCCT services for these at-risk and vulnerable populations.

A regional study undertaken by IOM and GLIA country focal points in 2005 found that truck drivers in Uganda lack access to prevention programmes, VCCT, ART, and basic health services. This was not due to economic constraints, but rather due to poor availability and lack of targeting to their specific needs.

The overarching result from studies undertaken on risk behaviours among truck drivers and sex workers in the region is that the environment along transport corridors is placing transport and sex workers at particularly high risk to HIV, and that this may in fact be a significant driver of Uganda’s HIV epidemic – among most-at-risk and in the general population. Although truckers may only comprise half of FSW clients, truckers have spouses and children back home who may become infected. Southern Africa data indicates that we cannot assume that the spouse remains devoted to just one sex partner during the husband’s absence (Dladla, N., 2000; Lurie et al., 2003). Related to this, a key finding from Ferguson and Morris’s research is that many FSW have regular partners who they trust more; thereby reducing the likelihood of condom use. Findings from the current research indicate condom usage among these groups to be less than 60 percent. It makes sense that highway corridors are driving new infections both in MARPs and in non-MARPs. Additional sero-prevalence studies are required to begin to quantify numbers of new infections between MARPs and general. This will support programming and advocacy for scale-up of targeted highway corridor programmes. This epidemic, therefore, is not isolated among certain special groups, and therefore has the potential to significantly impact the national response.

Given the continued low-level and uncoordinated response for these most-at-risk populations, incidence of new infections could increase, and this could have spill-over effects into the

general population. There is already evidence to suggest that the AIDS epidemic among truck drivers and sex workers is growing more rapidly than the epidemic among the general population of Africa, which could lead to truck drivers being lost to AIDS at a rate faster than replacement, resulting in a serious impact on the transport sector of the economy (Kribs-Zaleta et al., 2005).

The HIV epidemic among MARPs in Uganda, however, does not exist in a vacuum, particularly when dealing with mobile populations such as transport workers. The progression of the peace processes and the relative improved security in Northern Uganda and South Sudan has resulted in an opening up of the Kampala - Juba transport route, with a significant increase in traffic in the recent year. Due to a need for goods in South Sudan, the transportation of goods from Kampala to Juba is common, with individuals also migrating north to explore employment opportunities. The reality of increased sex work along the transport corridor has been raised by the Uganda AIDS Commission (UAC) and other partners, as well as information pertaining to a consistent flow of Sudanese into Uganda to access health services in the absence of adequate health services in South Sudan. These issues have prompted concerns and the awareness for information gathering and subsequent evidenced based interventions.

Current HIV estimates in both countries are fairly low, in Sudan in 2005, 350,000 adults and children were living with HIV (UNAIDS, 2006). However, relatively speaking, Sudan is the country in the Middle East North Africa (MENA) Region with highest HIV prevalence, and unsafe heterosexual intercourse is the main risk factor for HIV infection. The most recent Ugandan National data shows one million adults and children were living with HIV in 2005 (UNAIDS, 2006). Though this data for both countries is informative in leading the response, it does not provide information on particular groups such as MARPs.

Due to this current lack of data and information available regarding the mobile populations along the Kampala - Juba transport route, the UAC, the National Committee for AIDS in Emergency Settings (NACAES), in collaboration with UNAIDS, requested IOM to perform a hot-spot mapping study to measure the volumes of transactional sex taking place on the Kampala-Juba highway, the risk-behaviour parameters of the sex workers and clients, the quantity and quality of health services, particularly STI-related services, and the health-seeking behaviour of truckers. The study can be viewed as a contribution to baseline knowledge of the epidemiology of STI and HIV on a fast-developing transport corridor and is intended to guide future research and targeted programme planning. The study concentrated on sex workers and their clients, truck drivers, as well as health facilities, pharmacists, private clinicians, employers, NGO staff, and bar lodging establishments.

Methodology

The overall approach of the current study is the linkage of existing survey methodologies and modelling methods to Geographical Information Systems (GIS). This allows the examination of spatial distributions and relationships involved in vulnerability to HIV and the programme elements associated with HIV responses. The methodology is based entirely on that used in the study of transactional sex on the Mombasa-Kampala Highway, but with some modifications which were made in view of the tight time-frame and resource availability for the present study (Ferguson and Morris, 2007:504).

The methodology encompassed the following components:

1. GIS: Each hot-spot was mapped using global-positioning systems (GPS). Mapping inputs include main highways and minor roads, truck parks, bars and lodgings, private and public health facilities, pharmacies, drug stores and other relevant points. The maps created were linked to existing GIS maps of Uganda and Sudan which included major highways, physical features and administrative boundaries.
2. Female Sex Worker (FSW) Diaries: This technique was used for estimating volumes of transactional sex and obtaining high-resolution data on risky sexual encounters along the highway. In this application, diaries were completed by a sub-sample of sex workers at eight of the nine hot-spots for a period of 28 consecutive days. Key information elicited included numbers, types and occupations of clients, numbers of liaisons and numbers of sexual acts in each liaison, condom use, mobility (measured by the recording of the place where the FSW spent each night) and days of menses.
3. Female Sex Workers (FWS) Focus Group Discussions (FGDs): At Arua Park (Kampala) and Migyera, FGDs were carried out with groups of FSW. The main topics for discussion were the nature and characteristics of the FSW and their work, estimates of FSW numbers at the spot, types of clients, payments and mobility of FSW and health-seeking behaviour. These were used to generate mainly qualitative data to illustrate several of the features identified through the diaries and health-seeking behaviour questionnaires.
4. Truckers' Focus Group Discussions: FGDs targeting truck drivers and their assistants were held at the same two places to confirm the locations and characteristics of the truck stops and to probe into the high-risk sexual and health-seeking behaviour of truckers.
5. Key informant interviews: Interviews were carried out in Nakasongola District Head quarters and Migyera with local council and health officials, probing into the truckers/FSW interface.
6. Survey of Bars and Lodgings: Transactional sex on the highway is often negotiated in bars and takes place in lodgings that line the corridor. Thus, these enterprises were mapped and surveyed. For each mapped bar or lodging, a set of associated data was obtained through interviews with staff members. For bars, and lodgings that included a bar, information on type of clientele, sales of alcohol, seating capacity and condom sales or distribution were collected. In a sub-sample of four bars/lodges in each stopover, counts of male and female customers were carried out each evening for a week, with counts being taken hourly between 7pm and 1am. These data are geo-referenced and any of the variables measured can provide a thematic map.
7. Truck census: The trucker population at each hot-spot was estimated by carrying out a census of parked trucks each evening between 8pm-9pm (except at Arua Park) over a seven day period. The data were averaged to give a mean figure for each spot.

8. Health-Seeking Behaviour of Truckers: A survey was carried out at eight points along the highway, investigating the health problems and health-seeking behaviour of truckers, including sexual health. The numbers and types of partners and condom use with each type over the twelve months prior to interview was probed using a sexual patterning matrix (Ferguson et al, 2004)
9. Health Facilities Inventory: An inventory of health facilities from hospitals to drug shops was taken and interviews with providers gave information on the disease profile on the road, particularly STIs, the main clientele and the ability to cater for their health care needs

Table 1.1 summarizes the methodologies deployed with locations where each was carried out and numbers of units collected.

Table 1.1 Summary of Methodology

Methodology	Locations	Numbers of Units Collected	Comments
GIS Mapping	9 hot-spots: 7 in Uganda, 2 in Sudan	9 individual maps, plus regional-scale thematic maps	
FSW diaries	8 spots	107 distributed 93 received and usable	Only 5/12 returned in Nimule
FSW FGDs	2 spots	2	Arua Park and Migyera
Truckers FGDs	2 spots	2	As above
KI Interviews	2 spots	2	Health care worker and local counsellor
Bar and Lodgings survey	All spots	79 bars and lodges surveyed and mapped. Patron census included for 16 bars	Some difficulty in identifying very small or informal bars
Truck Census	All spots	9	Spots included if over 10 trucks parked overnight
Truckers' health-seeking behaviour survey	All spots except Bweyale	Total sample = 103	
Health Facilities survey	All spots	Total sample n=64	Only two hospitals

Mapping was carried out in two ways. Firstly, using a GPS system downloading to GIS software, original maps were constructed of each hot-spot. For the smaller settlements, the entire area centred on the road was mapped. For hot-spots embedded in larger settlements (e.g. Arua Park, Gulu, Juba) mapping and subsequent surveying were restricted to the area immediately surrounding the focus of parked trucks.

Secondly, to construct maps at the regional scale, archived electronic mapping data were obtained (e.g. administrative boundaries, roads) and used as a background to produce the regional-scale thematic maps that used variables generated by the other techniques at hot-spot level.

The **sex worker diary** is one of the key instruments, yielding a large amount of high-resolution data that may be used to calculate several indicators of sexual behaviour. One of the field procedures (see below) was snowballing of the FSW at each hot-spot to provide volunteers to either participate in FGDs or complete a sex work diary. While the field team attempted to

balance the volunteers in terms of characteristics, there is an element of self-selection in the diary sample. Most obviously, this pertains to the sample being more representative of FSW who are more literate, for completion of the diary requires some basic skills of literacy and comprehension.

To ensure as high a quality of return as possible, volunteers were guided through the completion process by the field team. When possible, volunteers were asked to return within a few days after commencing recording to have the recording checked. At the collection day, individual diaries were scrutinized and corrections made. A final check on all diaries was made at IOM offices to screen out any that were considered not to be genuine. A small financial incentive was given to the FSW for completing the diaries.

The diaries were designed to run for a consecutive 28-day period so as to encompass a biological month that would include menses and build in any temporal variations in the volume of clients, such as weekends or end of the month.

Focus Group Discussions for Truckers were moderated by experienced researchers and transcripts and written reports were submitted. From these, the location of the potential hot-spots was determined and qualitative insights into the truckers' views of their working environment, including their interactions with FSW, were obtained.

Focus Group Discussions for FSW were carried out at Arua Park and Migyera. Moderated by young women experienced in FGD methodology, the results of these sessions provided a source of estimating sex worker numbers, showed similarities and differences in the characteristics of sex work on the highway, and revealed some of the thinking of FSW about their clients, health, HIV and the occupational hardships of the road.

The bar and lodging survey and patron census consisted of a short questionnaire targeted at managers or owners of these businesses. Quantitative data on size of premises and characteristics of clientele, volumes of beer and condom sales were collected. At the time of interview, permission was sought to deploy tally clerks for the patron count. Tally clerks visited allocated premises for seven consecutive nights at hourly intervals between 7pm and 1am then compiled data on numbers of male and female patrons.

A **Truck Census** was conducted each evening between 8pm and 9pm. In Arua Park, the origin of most journeys, the census was done in the afternoon as the trucks normally depart in the early evening. Initial FGDs clearly indicated that few trucks arrive at or leave the other stopovers after nightfall. Counts were carried out by a single tally clerk supervised by the field manager

The **Health-seeking behaviour survey** was carried out using a convenience sample of truckers. No survey was carried out in Bweyale. Arua Park managed only five responses, while the other spots returned 11-15 questionnaires. This included a sexual patterning matrix (Ferguson et al) which elicited details of all sexual partners and condom use in the twelve months prior to interview.

The **Health Facilities** survey covered all available facilities in or around the stopover points.

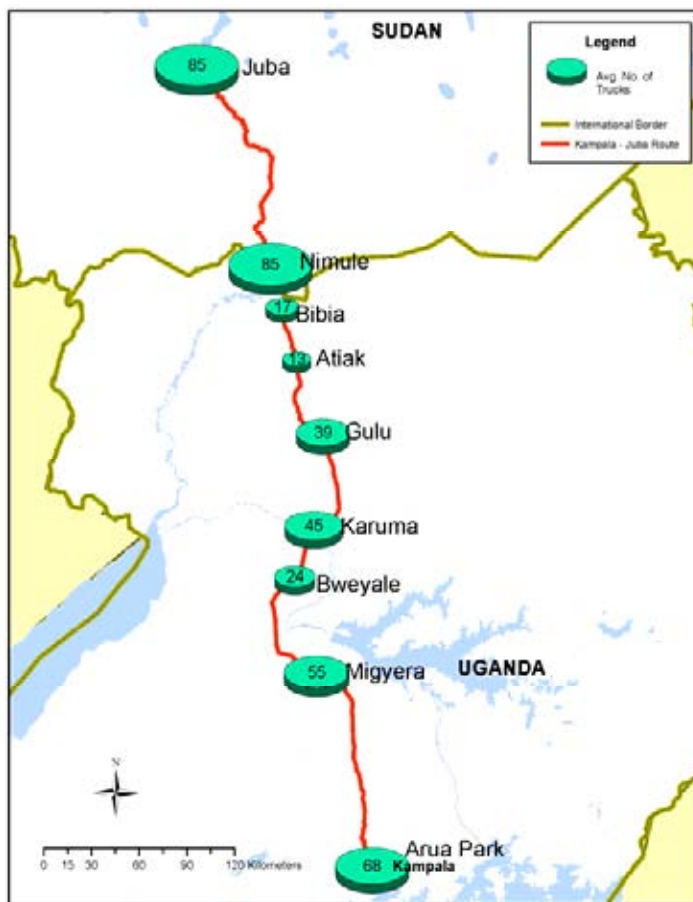
All forms and questionnaires used to elicit information appear in the annexes. Data were initially entered into MS-Access, and then re-worked into SPSS. Checking and correction were done by IOM staff and the external consultant. Mapping was performed using ArcGIS and data was transformed to this format from SPSS via MS-Excel and MS-Access. Most data analysis was carried out using SPSS.

Analysis

Truck Census

As noted in the methodology, trucks were counted each day at the nine stopovers for seven consecutive days and the counts averaged to give an estimate of the volumes of overnight trucks. As noted, the counts at Arua Park in Kampala were carried out in the afternoons as most trucks left the city in the early evening. Map 1 shows the truck volumes measured in this way for each of the stopovers.

Map 1 Average Number of Trucks per Day by Location



The overnight truck volumes vary from 13 in Atiak to 85 in Nimule and Juba. The stopover points are, therefore, rather small in terms of truck volume, but traffic is likely to grow rapidly in the near future, especially if the road from Gulu to Atiak is upgraded.¹ The absence of a substantial settlement on the Uganda side of the border means that most truckers stopover at Nimule on the Sudan side.

Migyera has the highest number of sex workers along the road since very many trucks park there and they are cheap. You can have sex for only 3000/= a round.

– Trucker, Arua Park

From Kampala, the favourite first-night stopover is at Migyera for slower trucks. Those that are faster or which leave early can reach Bweyale or Karuma from Kampala in one day.

¹ Some stopovers on the Mombasa-Kampala highway had in excess of 300 trucks parked overnight.

Health Facilities

As a complement to the survey of truckers' health-seeking behaviour, a questionnaire survey was carried out in all the health facilities (including pharmacies and drug stores) that were noted in each of the nine stopover points on the highway. Particular emphasis was made on the treatment of STIs and the main types of clients presenting with an STI.

The results of this analysis, when synthesized with the other components of the study, will provide evidence for eventual programmatic interventions to improve health services and align them with the needs of the highway populations.

Overall situation

A total of 64 facilities were found at the stopovers. Map 2 and Table 2 show their location and type. Pie sizes are proportional to the total numbers of health facilities and the slices to the facility type. Type of facility was not recorded for two facilities in Gulu and one in Atiak.

Map 2 Type of Health Facilities by Location

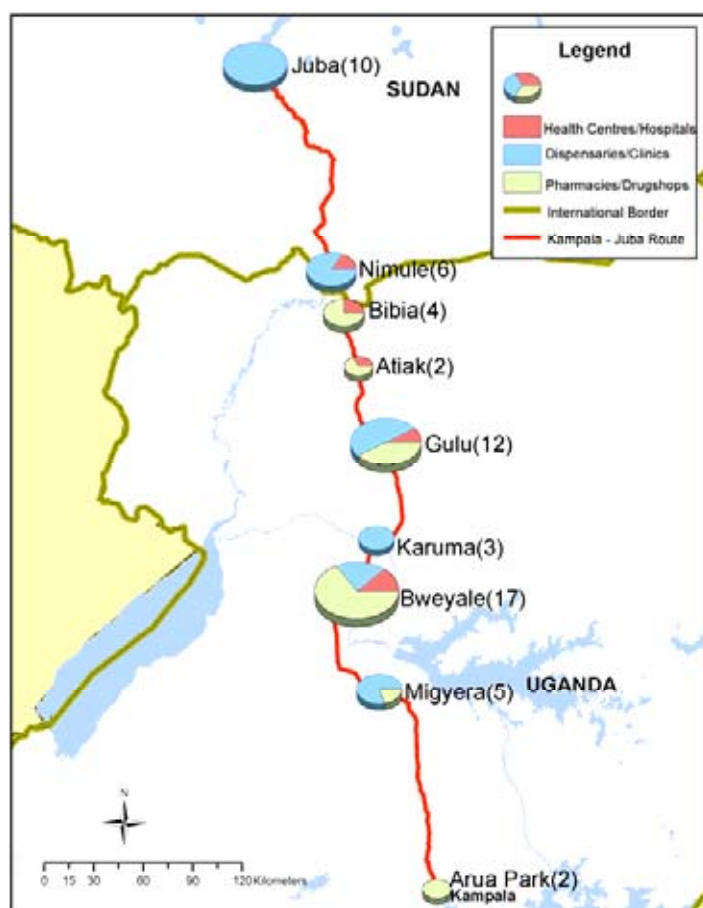


Table 2 Health Facilities by Stopover Point and Type

Stopover	Health Centre	Dispensary / Clinic	Pharmacy	Drug Shop	Others	Not Specified	Total
Arua Park	0	0	2	0	0	0	2
Migyera	0	4	0	1	0	0	5
Bweyale	2	4	0	11	0	0	17
Karuma	0	3	0	0	0	0	3

Gulu	1	6	1	4	0	2	14
Atiak	1	0	0	1	0	1	3
Bibia	1	0	0	2	1	0	4
Nimule	1	5	0	0	0	0	6
Juba	0	10	0	0	0	0	10
Total	6	32	3	19	1	3	64

The map and table show health services to be variable in terms of type and quantity over the stopover points. There are only six facilities at Health Centre level. The Juba stopover has ten dispensaries / clinics but no other facilities. Bweyale is relatively well-supplied and has eleven drug shops. Karuma, Atiak and Bibia have very few facilities.

Most facilities (52/55 of those reported) are privately-owned. Bibia and Nimule have Government health centres and Atiak has a health centre run by an international NGO.

Table 3 summarizes the key characteristics of staffing and availability of services among the facilities surveyed.

Table 3 Characteristics of Health Facilities

Characteristic	Measure
Median no. of staff	3
% Having doctor i/c	37.5
% Having clinical officer	50.0
Median no. of nurses	1
% With separate examination room	64.9
% Offering STI services	92.2

Table 3 suggests that most facilities are small and that half have no senior staff above a nurse. Indeed, it is likely that most of the “doctors” specified, are more likely to be clinical officers. Most have a separate examination room and all but five facilities stated that they treated STIs.

Table 4 shows the most common complaints treated by the facilities.

Table 4 Most Common Complaints Treated

Complaint	% Facilities
Malaria	93.8
STIs	82.8
Diarrhoeal diseases	34.4
URTI	25.0
Typhoid	20.3
Others	23.4

Malaria and STIs are, by far, the most common complaints seen in the health facilities. Poor hygiene is suggested by the significant reporting of diarrhoeal disease and typhoid.

Sexually-transmitted infections (STIs)

Of most interest in the present study is the quality of management of STIs and the availability of appropriate drugs. Unfortunately, the schedule did not record whether HIV tests were available,

or the availability of VCCT sites. Anecdotal reports suggest that these services are few and far between. The questionnaire did not probe into the syndromes or details of the presenting STIs.

Figure 1 shows the proportions of different cadres of staff who had received STI training.

Figure 1 Proportions of Health Staff Who Have Received STI Training

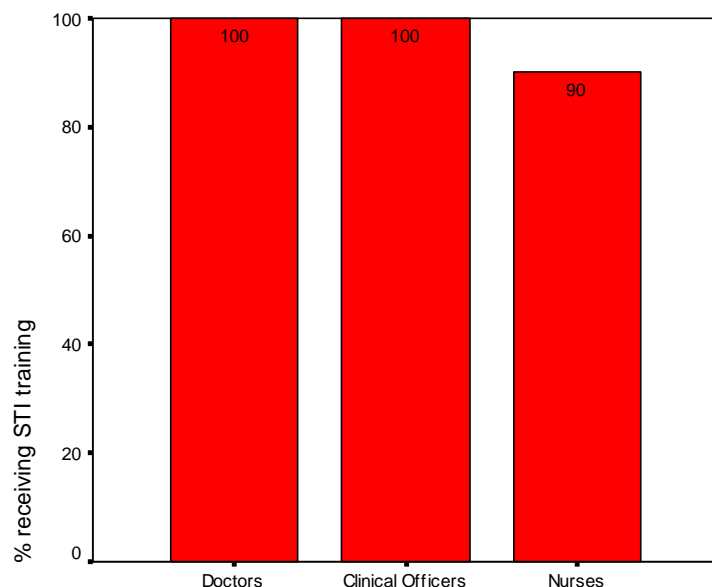


Figure 1 shows that all doctors and clinical officers, and 90% of nurses, have undergone training in STI management. Most of these have included syndromic management and STI counselling. Syndromic management charts were observed in 39% of facilities.

Although STI treatment is available at most facilities, only 44% have testing facilities, but 78% provide STI counselling. Testing is restricted mainly to clinics and health centres, although two drug shop respondents claimed to test for STIs.

All but one facility reported that drugs for treating STIs were kept. Table 5 shows, in two ways, the availability of the most important first-line STI drugs, firstly, by asking whether each of these drugs is normally stocked and, secondly, reporting on the actual availability of the drug at the time of interview.

Table 5 Availability of Main STI Drugs

Drug	% Facilities Reporting	
	Normally Stocked	Available on Day
Metronidazole	93.7	93.7
Erythromycin	92.1	90.3
Norfloxacin	55.6	54.8
Doxycycline	95.2	95.2
Clotrimoxazole	90.5	93.7
Benzathine penicillin	83.6	82.5
All drugs above	39.3	37.7

Most facilities stocked all the main STI drugs except for Norfloxacin and the spot-checks revealed that most facilities had supplies on the day of interview. Overall, 37.7% of the facilities had all six of the drugs shown in Table 4 on the day of interview, while 45.5% had five of the six drugs.

Two-thirds of the respondents reported a stock-out of STI drugs at some time or another, with the median stock-out lasting one week. Drugs are mainly sourced from Kampala (for the Ugandan facilities) and Juba or Khartoum for those in Sudan.

Only half of the facilities – mainly the health centres and dispensaries – keep records of STI clients. However, all informants were asked to report or estimate the numbers of STI clients treated in the past week and past month. These are shown in Figures 2a and 2b respectively

Figure 2a Weekly STI Clients

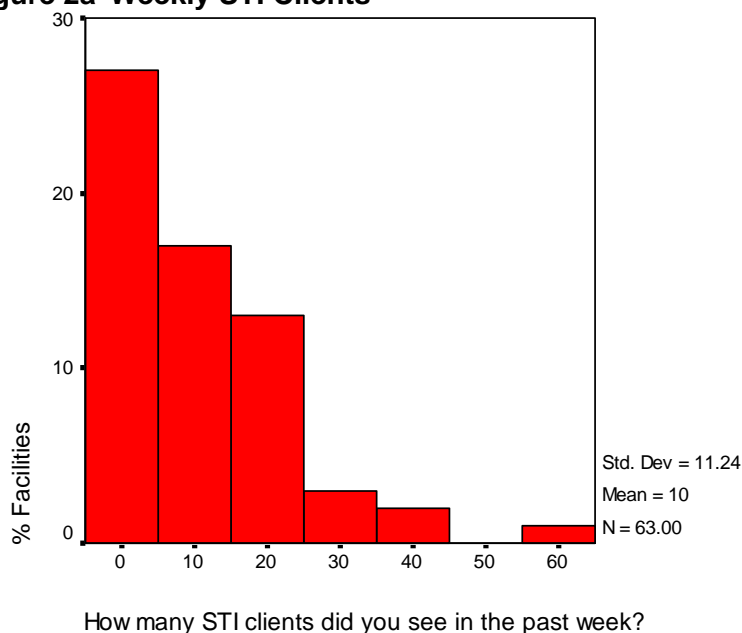
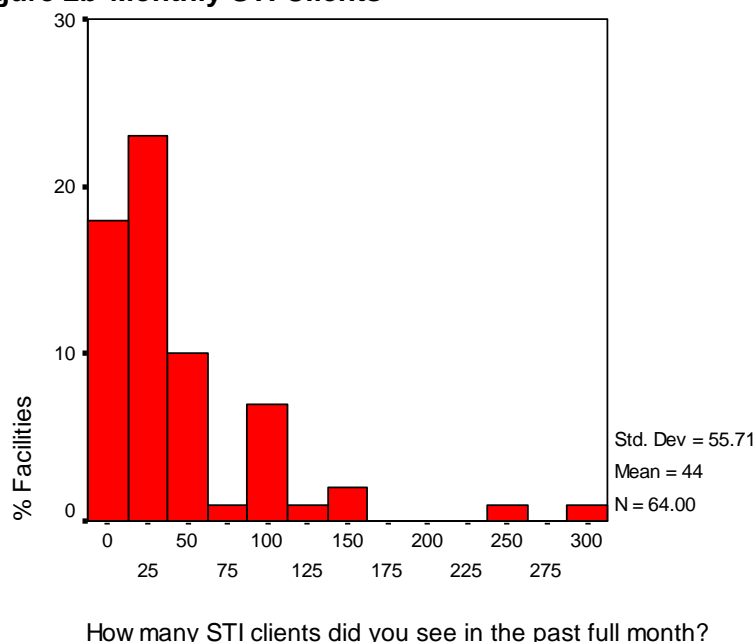


Figure 2b Monthly STI Clients



Most facilities treat relatively small numbers of STI clients – the medians of six per week or 20 per month are well below the means on the graphs because of the skewed distributions. However, two facilities – one in Nimule and one in Juba – reported 250 and 300 STI clients in the previous month. Table 6 shows the estimates of total weekly and monthly STI clients by each stopover point.

Table 6 STI Client Totals by Stopover Point

Stopover	Total STI Clients in Past Week	Total STI Clients in Past Month
Arua Park	30	122
Migera	19	83
Bweyale	92	371
Karuma	43	150
Gulu	137	482
Atiak	23	80
Bibia	27	50
Nimule	109	433
Juba	166	1,022
Total	646	2,793

The STI numbers estimated reflect the availability of health facilities (see Table 1 above). The widespread prevalence of STIs on the highway is clearly shown, with an estimated 2,793 clients treated in the month prior to interview. The two stopovers in the Sudan sector account for over half of the estimated number of STI clients per month, and, together with Gulu, these three stopover points account for over two-thirds of all the STI cases treated recently.

Respondents were asked about the occupation of the main types of STI clients. Figures 3a and 3b report the results for males and females respectively.

Figure 3a Main Occupations of Male STI Clients

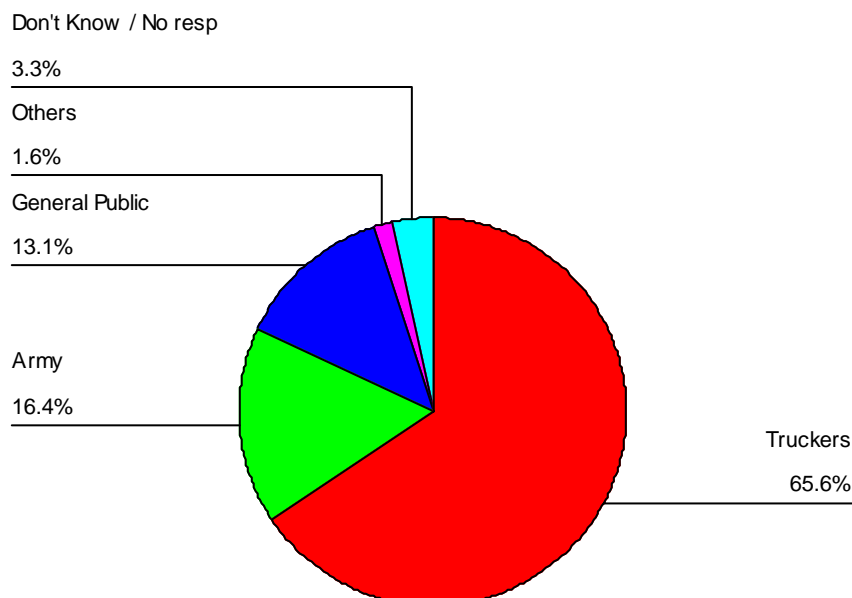
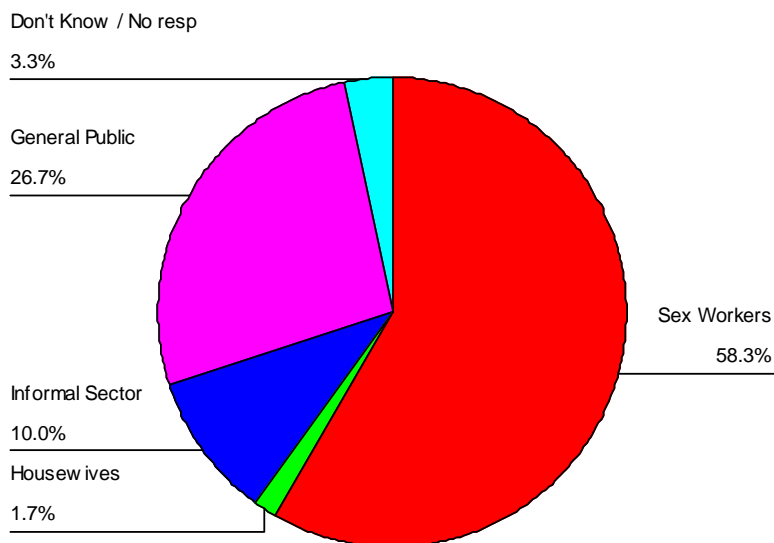


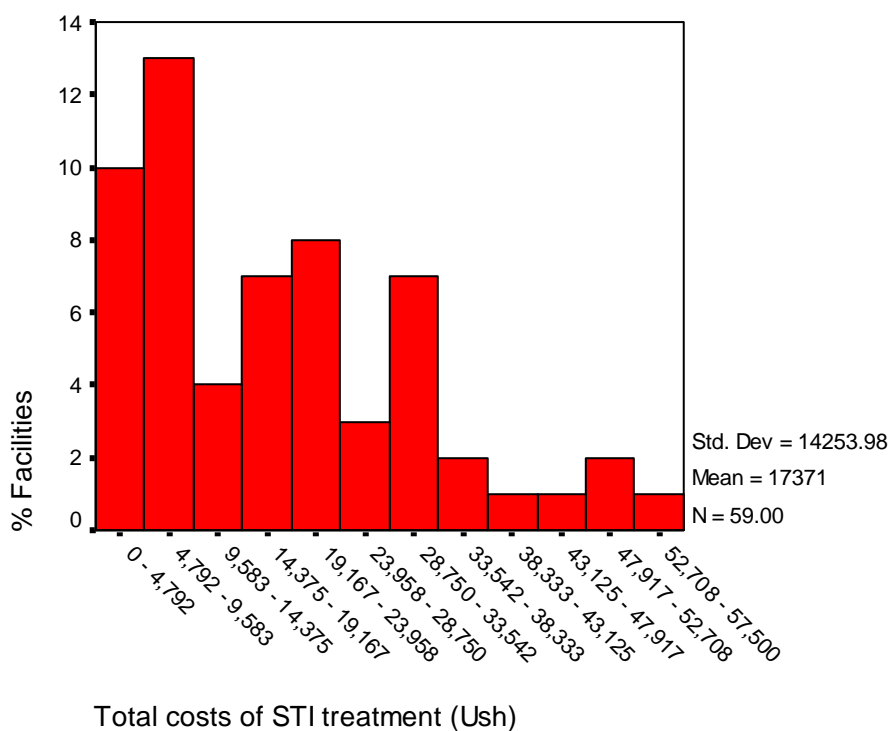
Figure 3b Main Occupation of Female STI Clients



Health facility respondents perceived that truckers and sex workers are their main clients for STI treatment. Almost two-thirds of respondents mentioned truckers as the major male occupation type, while 58% picked sex workers as the major type of female client.

Facilities either charged for consultation or treatment for STIs, or both. When combined, a total cost is obtained and the range of charges can be seen in Figure 4.

Figure 4 Total Cost of STI Treatment



Treatment is free or cheap at 10% of facilities whose average charges are under USH. 5,000/-. The maximum charge was USH. 57,500/-, with a mean charge of 17,371/- and a median of 15,000/-.

Condom availability

Fifty-six of 58 facilities that answered a question on condoms reported selling or distributing condoms as part of the STI treatment.

Table 7 shows the brands of condom sold, by the numbers of health facilities stocking.

Table 7 Proportions of Health Facilities Stocking Condoms, by Brand

Brand of Condom	% Facilities Stocking
Lifeguard	85.2
Protector	73.8
Trust	32.8
Engabu	11.5
Rough Rider	6.6
Number One	14.8
Condoms not kept	3.1

Six brands were identified at the facilities. All but two of the 64 facilities stocked condoms, with Lifeguard and Protector the most commonly-stocked brands.

Table 8 shows the price ranges and quantities sold by brand of condom sold per week.

Table 8 Condom Provision at Health Facilities

Brand	Price (US\$ per Pack)			Quantity Sold / Distributed per Week
	Minimum	Maximum	Median	
Lifeguard	0	1,500	300	1,229
Protector	0	1,500	300	1,103
Trust	200	500	300	306
Engabu	0	300	200	537
Rough Rider	1,500	3,500	-	55
Number One	500	1,500	1,000	204
Total	3,434			

Table 8 shows that Lifeguard, Protector, Trust and Engabu are relatively cheap, but the commercial brands (Rough Rider and Number One) are much more expensive. The quantities sold or distributed reflect both the availability and the price. Lifeguard and Protector are the most commonly-supplied brands (accounting for 68% of all condoms supplied). Together with Engabu, they are the only brands that are occasionally supplied free of charge. However, free condoms were only available at four outlets – two Government facilities, the international NGO and one dispensary.

Lifeguard and Protector were available at all nine sites (not shown), while Number One was available only in the Sudan sites (Juba and Nimule). Half of the 20 Trust outlets were found in Bweyale.

Health-Seeking Behaviour of Truckers

A total of 103 truckers were interviewed at 8 sites on the Kampala - Juba highway, documenting their perception of health problems and health services and their experience of health problems associated with their occupation, including recent experience of STIs. A sexual patterning matrix was used to elicit sexual behaviour over the year prior to interview.

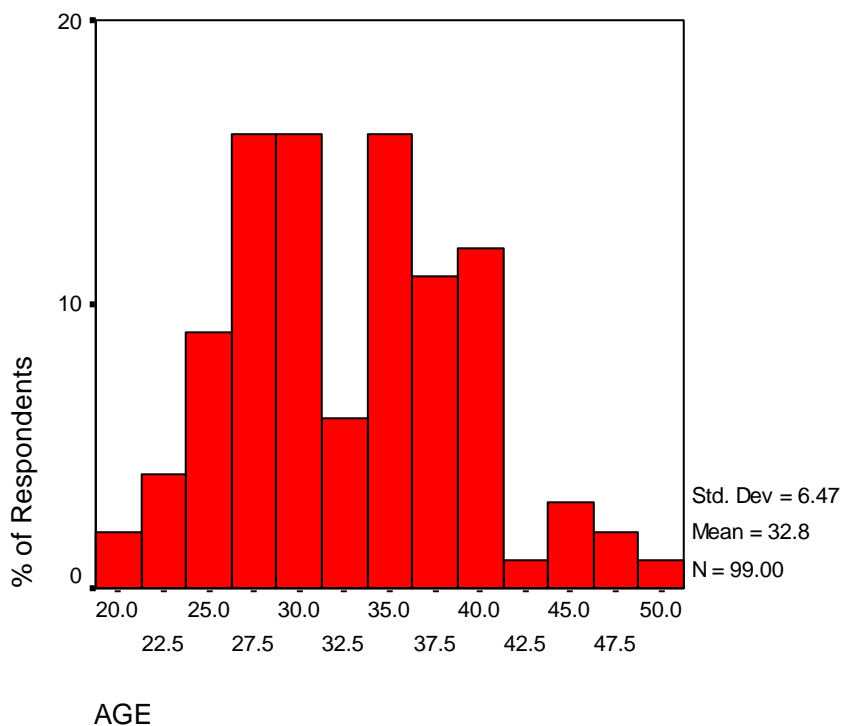
Background characteristics

Table 9 and Figure 5 show the characteristics of the 103 truckers interviewed

Table 9 Characteristics of Sampled Truckers (n=103)

Characteristic	% or Mean/Median or Range
Nationality	
Ugandan	73.8
Sudanese	8.7
Kenyan	9.4
Tanzanian	1.9
Other	5.8
Occupation	
Driver	77.2
Loader	21.8
Salesman	1.0
Mean age	32.8
Marital Status	
Married	56.3
Never Married	17.5
Cohabiting	9.7
Separated / Divorced	11.6
Widowed	4.9
Children	
Median	4
Range	0 – 18
Education	
8 years or less	47.6
More than 8 years	52.4

Figure 5 Age Distribution of Trucker Respondents



Over three-quarters of the sampled truckers were Ugandans, from a wide range of districts. Relatively few were Sudanese, emphasizing the dominant flow of goods in the northerly direction. Most of those interviewed were drivers rather than loaders.

Over half of the truckers interviewed were currently married, but a significant number were widowed, separated or divorced. The truckers had a median of four children to support, with a range of none to 18 children, in an exceptional case.

Around half of those interviewed had more than 8 years of schooling.

No ages were recorded for four respondents. With a range of 21 to 50 years and mean and median ages around 33 years, the truckers represent the most vulnerable male age groups for contracting HIV.

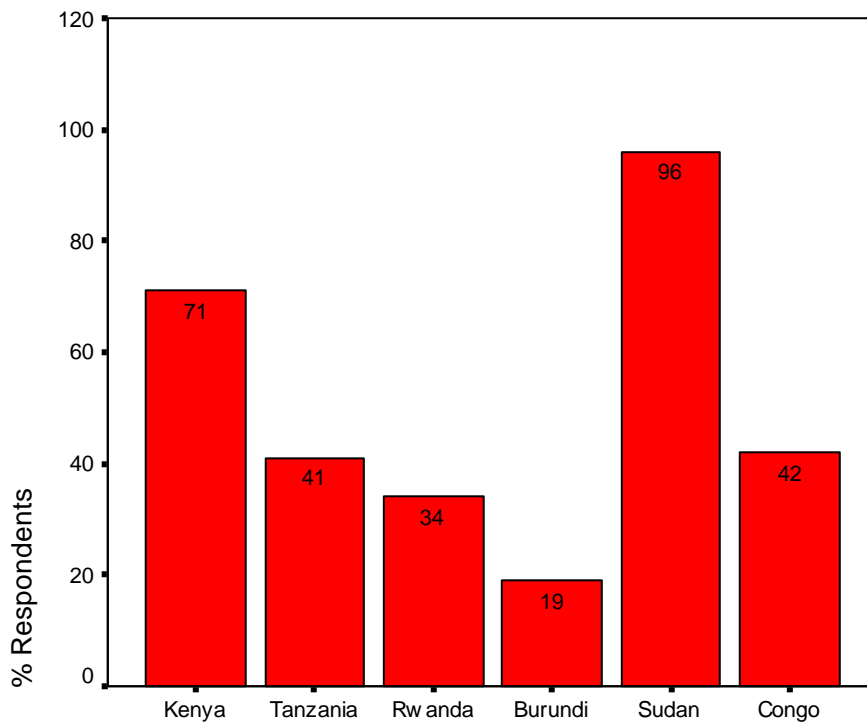
Drivers were significantly older than loaders (mean ages 34.0 and 28.7 years respectively) and had higher education levels (mean 8.4 years compared with mean of 5.3 years).

Occupational characteristics

The truckers had been in this occupation for a median time of seven years, but with a wide range of less than one year to 35 years. Movement between employers, however, showed a more fluid situation, 18% of respondents having been with their current employer for less than one year and 55% for fewer than two years.

Figure 6 shows the range of travel of the truckers in terms of countries visited over the 12 months prior to interview (Uganda is excluded as the country where most of the interviews took place).

Figure 6 Countries Visited by Truckers in 12 Months Prior to Interview



The truckers have a wide range of operation over East Africa, with Kenya, Tanzania and Congo being the most frequently-visited countries outside the Uganda-Sudan route.

Figure 7 shows the duration of time spent at home in the past year, as reported by the truckers.

Figure 7 Time Spent at Home in Past 12 Months by Truckers

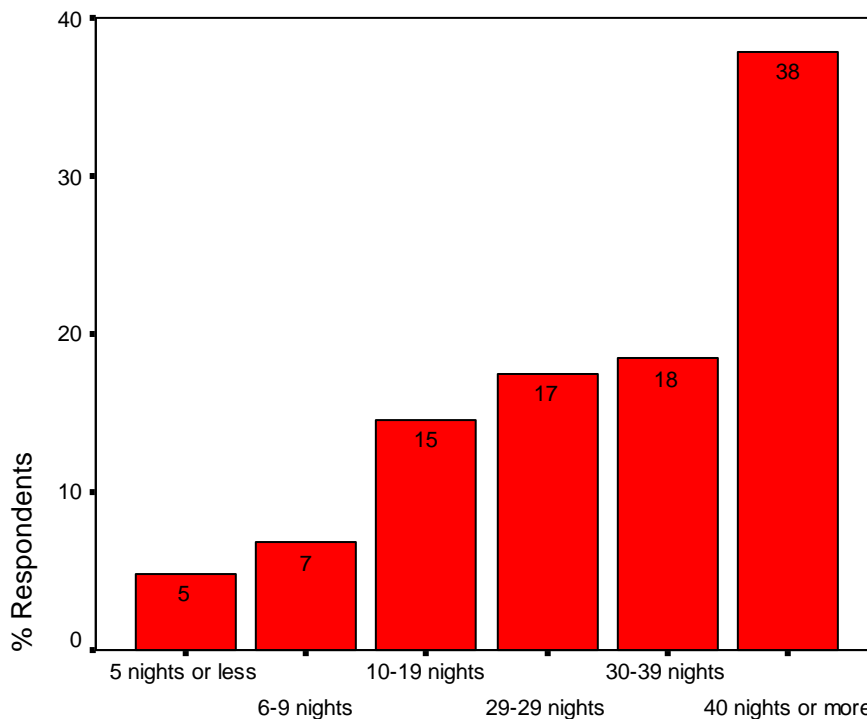


Figure 7 portrays “life on the road” clearly, with only 38% of truckers reporting having spent 40 nights or more at home over the past year, and 27% reporting less than 20 nights at home.

Health problems - general

Table 10 shows the common health problems reported by the truckers in the course of their work.

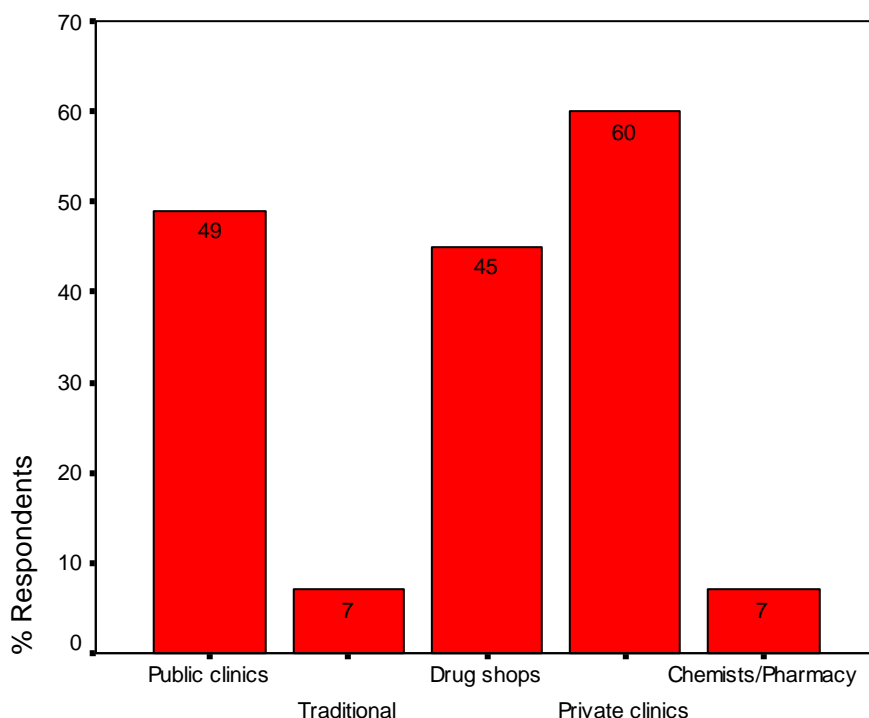
Table 10 Common Health Problems Reported by Truckers

Problem Reported	Percent of Truckers Reporting
Malaria	90.4
URTI	43.6
Diarrhoeal diseases	38.3
STIs	30.9
Backache / fatigue	23.4
Skin infections	7.4
Others	50.0

A wide variety of health problems are evident. Reporting of malaria is almost universal. Upper respiratory tract infections (URTI) are frequently reported, as well as diarrhoeal disease and STIs.

Asked about health problems and health care, specifically on the Kampala - Juba route, truckers identified several different types of facility, as shown in Figure 8.

Figure 8 Trucker Awareness of Types of Facilities Available



Private clinics are the most commonly mentioned facilities (60%), with almost half of the sample mentioning public clinics and drug shops. Traditional healers and chemists/pharmacists were also noted by a few men.

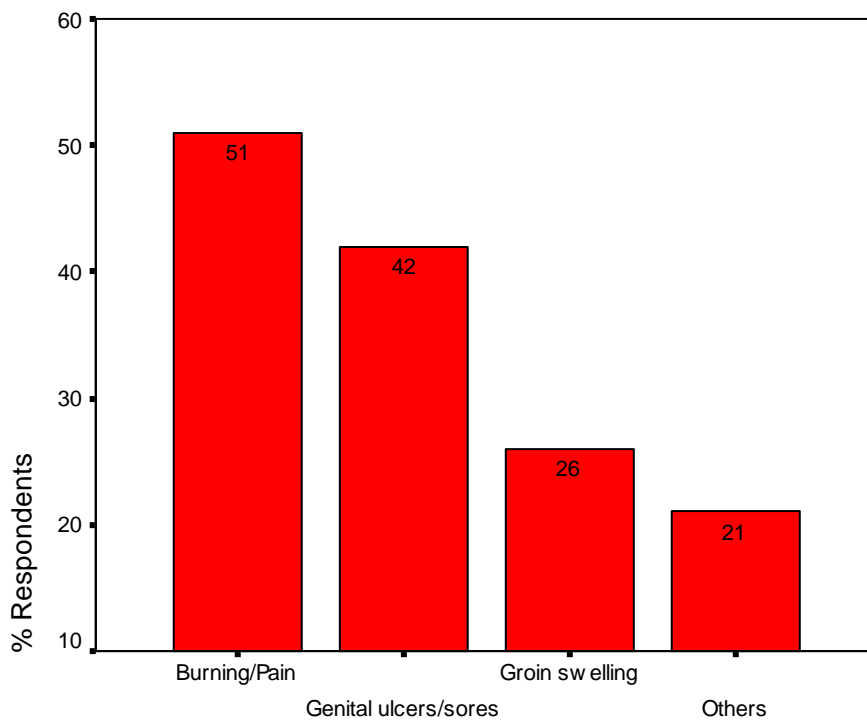
While on the Kampala - Juba route, 49% of truckers had sought medical treatment for some condition in the past year. The truckers' responses reflected the main ailments noted in Table 2, with 40% reporting malaria 12.5% STIs, 8.3% URTI, and 12.5%, headaches, this possibly reflecting the fatigue noted in the more general question.

The truckers used three different types of health facility on the highway. Of the total of 45 responding to this question, 31% had used a public health facility, 53% a private facility and 16% a drug shop or pharmacy.

Health problems – STIs

Truckers were questioned about their knowledge of STIs. Figure 9 shows the frequency with which various STI symptoms were reported on an unprompted question.

Figure 9 Trucker Knowledge of Common STI Symptoms



Just over half of the sample could identify burning or pain on urination as a symptom of an STI. Genital ulcers or sores were identified by 42% and swellings of the groin area by 26%. Some 21% suggested a variety of other symptoms.

Overall, 15% could not identify any STI symptom, with an average of just over two symptoms known.

Table 11 shows the self-reporting of STIs during the year prior to interview

Table 11 Trucker Recent Experience of STIs, Percent Reporting

STI Symptoms Reported	Yes	No
Urethral discharge	25.5	74.5
Genital Sore	27.7	72.3
Either symptom	32.0	68.0

The incidence of STIs reported by the truckers (with two missing cases) is very high, with an overall 32% reporting at least one symptom, and most of those affected reporting both symptoms². Knowledge of symptoms is well informed by experience as Table 12 shows.

Table 12 Numbers of STI Symptoms Identified by Recent Experience of STI

STI	Mean Number of Symptoms Known	
	Yes	No
Had urethral discharge	2.78	1.74
Had genital sore	3.0	1.52

Of the 32 men reporting a recent STI, 19 reported seeking treatment within one week of the symptoms appearing. Overall, all but two sought some form of treatment, with 17 opting for a private clinic, 11 for a public health facility, one going to a pharmacy and one “going for a test”.

Of the 28 reporting having been given a prescription, 16 completed the course fully and only four men recalled being counselled on treatment adherence.

The median cost of treatment of the most recent STI was USH 25,000/- (or equivalent), with the highest amount reported being USH 80,000/-. Two men reported having been given free treatment. Of the 29 men reporting charges, 18 found the cost to have been reasonable.

Median waiting time was 120 minutes, with a range of 1 minute to 5 hours. No correlation was found between waiting time and whether the respondent thought waiting time was reasonable – the trucker who waited 5 hours did not think this was unreasonable.

The men were generally satisfied with the treatment received and 28/32 would recommend the facility attended for STI to a friend.

Asked which type of facility on the Kampala - Juba route they would prefer if they were to have an STI, 51% preferred a private clinic and 37% a public clinic, proportions that are very close to the actual health-seeking behaviour reported above. Reasons for preference are cited in Table 13.

Table 13 Comparisons of Public vs. Private Facility Preference by Truckers for STI Treatment

Feature	Percent of Respondents	
	Preferred Public (n=38)	Preferred Private (n=56)
Availability	50.0	53.6
Cost	42.1	33.9
Privacy	10.5	21.4
Positive provider attitude	18.4	28.6
Drugs available	42.1	73.2
Waiting time	7.9	35.7
Opening hours	36.8	28.6

² It should be noted that this is much higher than the 12.5% reporting an STI above. The lower figure pertains to the health problems experienced on the Kampala - Juba route only, whereas the present figure does not specify location. Figure 2 has shown that the truckers interviewed make many trips on other routes in the region besides the Kampala - Juba route.

Preference for public health facilities as preferred places for STI treatment are mainly based on perceptions of availability, cost and opening hours. Few truckers noted privacy, waiting time or drug availability as reasons for this choice. Truckers preferring private facilities were clearer on their reasons for choice, especially citing availability of drugs.

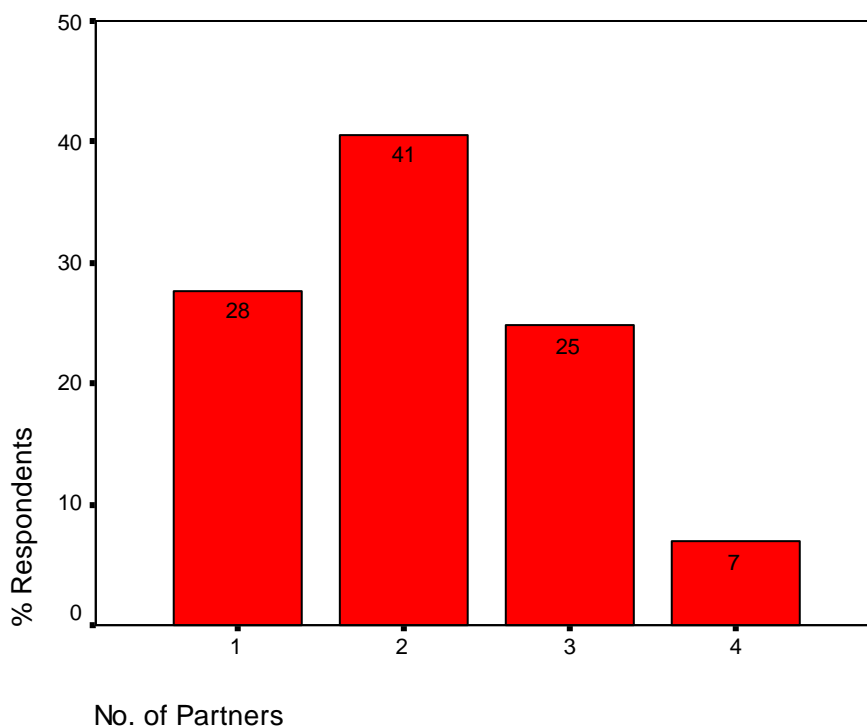
Finally, respondents were asked which facilities they used to obtain condoms. Private clinics (98%) and shops (94%) were the most popular, followed by public health facilities and chemists (82%). Only two men mentioned traditional healers as a source of condoms.

Sexual patterning

As described in the methodology, the use of a sexual patterning matrix has advantages over more traditional methods of recall where social desirability and recall biases are present. The truckers were asked to recall all sexual partners over the 12 months prior to interview by name, nickname, or description. Information on frequency of contact, type of partner and consistency of condom use were obtained. There were two refusals, leaving 101 completed matrices to form the basis of the analysis.

Figure 10 shows the number of different sexual partners reported by the truckers (n=101) in the year prior to interview.

Figure 10 Number of Partners Reported by Truckers in Previous 12 Months

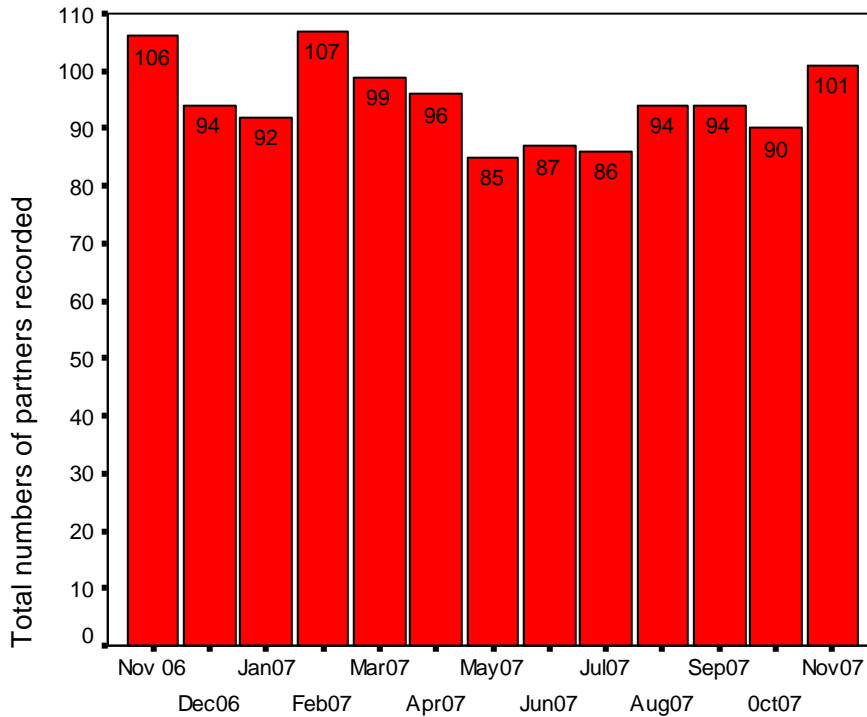


A total of 210 different sexual partners were recorded by the 101 men reporting. A range of 1 to 4 partners was reported. No abstention was recorded. Around 72% of the men reported having had more than one sexual partner over the period. Currently-married men reported an average of 2.16 partners compared with 1.96 partners for all other men.

Figure 11 shows variations in the numbers of liaisons recorded month-by-month over the 12-month period.³

Figure 11 Trucker Total Sexual Partners Recalled by Month

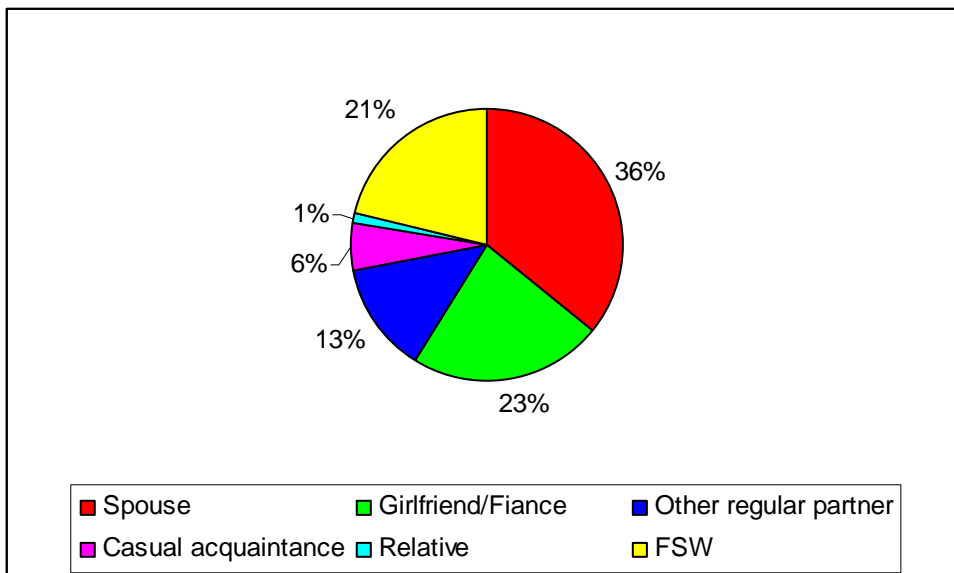
³ Both November 2007 and November 2008 are recorded as the recall period varied depending on the timing of the fieldwork



The monthly range in partner numbers is relatively small, varying from 85 in May 07 to 107 in February 07. No peaks were noted in the usual East African holiday months and there is no evidence of memory fade towards the less-recent recall months.

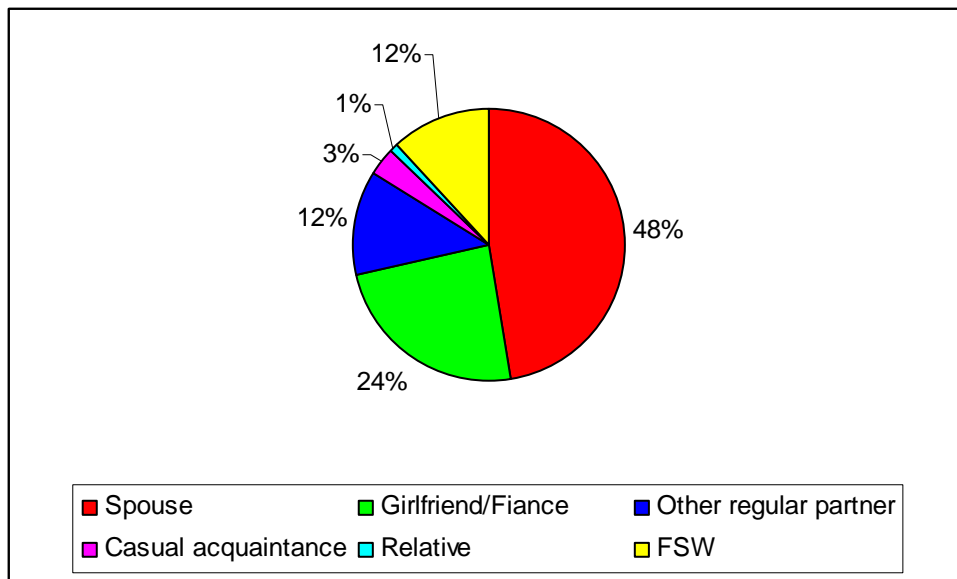
Figure 12a shows the distribution of partners by type.

Figure 12a Sexual Partners by Type – Unweighted Frequencies



Noting that 56% of the truckers were married, 36% of partners were spouses. A further 23% were regular girlfriends / fiancées and 13% other regular partners. Over 20% of all partners were defined as female sex workers (FSW), and it is possible that some of the “other regular” partners are also FSW. Sexual liaison with a relative was noted on three occasions. These data can be weighted by the numbers of months during which liaisons took place with each type of partner, as shown in Figure 12b.

Figure 12b Sexual Partners by Type, Weighted by Numbers of Months in Which Liaisons Were Recorded



Weighting has the main effect of increasing the dominance of spousal partners in the mix of partner types. Short-term relationships (FSW and casual partners) are correspondingly reduced, while regular partner representation remains almost unchanged.

Condom use with individual partners was reported in four ways: ever-use, use at first liaison, use at last liaison and consistent (always) use. These indicators were tabulated against the different partner types and the results are shown in Figure 13.

Figure 13 Truck Driver Condom Use by Types of Partner

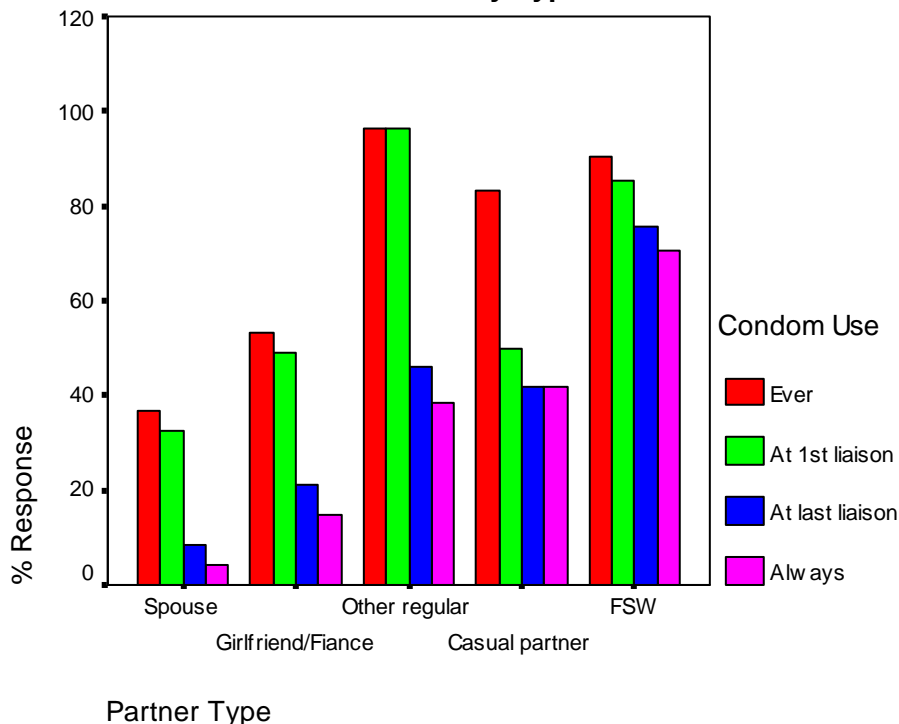


Figure 13 clearly shows the trade-off between degree of intimacy and condom use. Condom use with close partners is very low. Consistent condom use is highest for liaisons with sex-

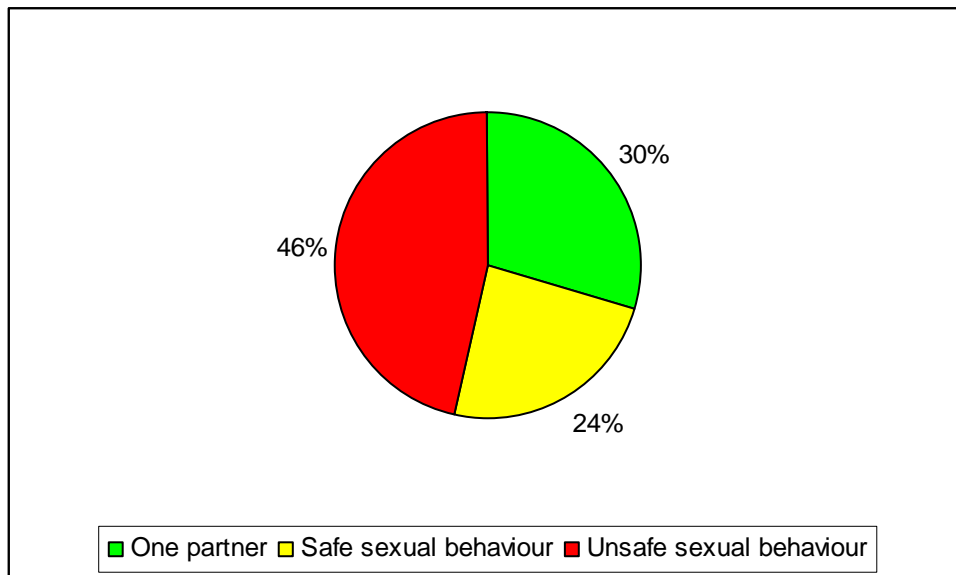
workers and lowest with spouses. Although condom use is high initially for “other regular” partners, use at last liaison and consistent use are only around 40%.

The data from the sexual patterning matrix can be manipulated to fit the “ABC” formulation of HIV prevention. As noted above, no abstentions were recorded. Of the 28 men reporting only one partner, 18 cited a spouse, 9 a girlfriend/fiancée and one another regular partner. Two men citing two partners classified them both as spouses in polygamous marriages, so these were added to the “one-partner” category.

For those reporting multiple relationships, a division was made between those practicing “safe sex” and the others. To be classified as having “safe sex”, a respondent had to report consistent condom use with all non-spousal partners.

Classifying the sexual behaviour in this way, the breakdown of the three categories is given in Figure 14.

Figure 14 Generalized Sexual Behaviour of Truckers



The data suggests that 46% of the truckers are not practicing safe sexual behaviour. Detailed examination of this group shows that the majority are reporting two intimate partners (e.g. spouse and regular girlfriend) and condoms are not used with either. However, there are several instances of multiple liaisons that include casual partners or FSW where condom use is not consistent.

Focusing on the interface between truckers and FSW, 32% of the truckers reported at least one liaison with a sex worker during the recall period. Table 14 shows the frequency of reported liaison by the eight stopover points in the study.

Table 14 FSW Liaisons Reported by Truck Drivers at Each Stopover Point

Stopover Point	Number of Truckers Reporting	Number of FSW Liaisons Reported	Percent of Total Sample	Percent of Total Liaisons
Arua Park	5	5	4.9	11.4
Attiak	11	0	10.7	0.0
Bibia	18	6	17.5	13.6
Gulu	17	11	16.5	25.0
Juba	12	3	11.7	6.8
Karuma	16	5	15.5	11.4
Migyera	12	5	11.7	11.4
Nimule	12	9	11.7	20.5
Total	103	44	100.0	100.0

Arua Park, Gulu and Nimule are the spots where most FSW liaisons, relative to the numbers interviewed, are reported.

Use of FSW services by marital status of the trucker is shown in Table 15.

Table 15 Percent of Truckers Reporting at Least One Liaison with FSW by Marital Status

Marital Status	Percent Reporting Liaison with FSW
Currently Married	30.4
Others	35.6

There is little difference between the two groups of truckers in their use of FSW services, with 30% of currently married men having had at least one FSW liaison compared to 35.6% of all other men.

Younger men were no more likely to use FSW services than older men, the mean ages of those having had a liaison and those who had not were both 32.7 years.

Mean years of schooling of those having used FSW service was 8.6 compared to 7.4 for those who did not report any FSW liaison.

Table 16 shows the relationship between the amount of time spent at home over the year prior to interview and the likelihood of having a liaison with a FSW.

Table 16 Nights Spent at Home and Use of FSW Services

Time Spent at Home in Previous 12 Months	Number (and Percent) of Truckers Reporting at Least One FSW Partner
Under 30 nights	18 (41.9%)
30nights +	15 (25.9%)

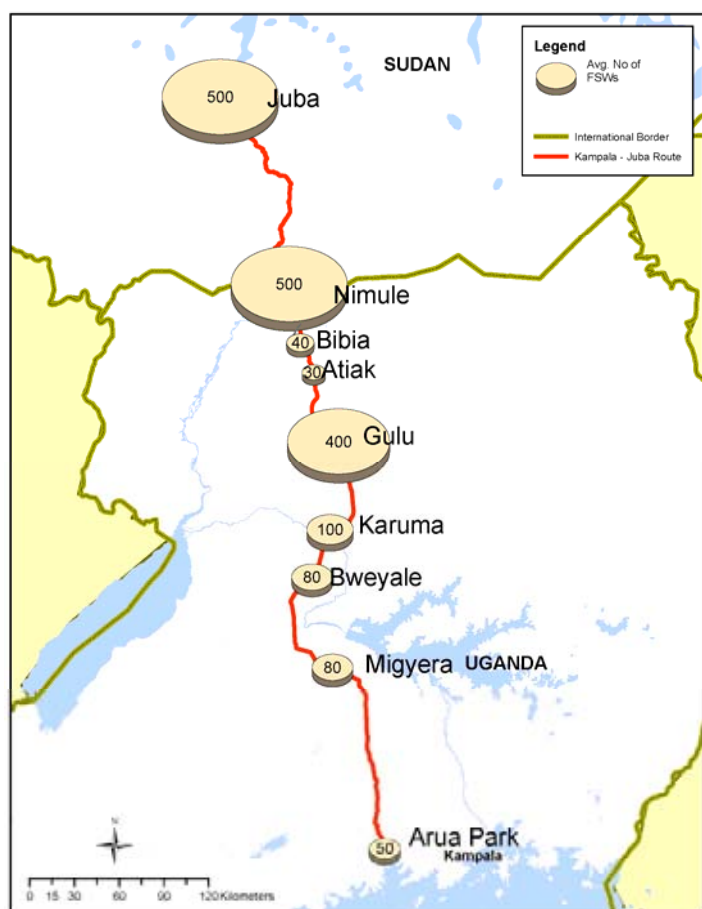
Although the sample size is too low to show statistical significance, (chi-square = 2.9, p=0.09), there is some suggestion that there is a trend for those “on the road” for the greatest time have more recourse to sex workers.

As seen on Figure 13 above, condom use with FSW is not universal. For the FSW partners included in the matrix, 76% of most recent sexual encounters were protected and 71% of all liaisons with FSW partners were protected

Estimated Numbers of Female Sex Workers

The estimates of FSW numbers is an average of two figures received from the key informants and the FSW themselves. The question was posed to the FSW during the FGDs and the key informants at each spot. Figures obtained from both FSW and key informants were compared and an average number of FSW per spot was obtained. Map 3 shows the estimates of FSW by hot-spot along the corridor.

Map 3 Estimated Number of Female Sex Workers per Location



This methodology was used because it was determined early on in the research that due to the mobile nature of many of the FSW it would be a challenge to enumerate or use a common methodology such as capture / recapture for a more accurate portrayal. Thus, the second best option was to triangulate using estimates from FSW and key informants.

The key informant figures in Uganda do not vary much from the FSW estimates; however, this was not the case on the Sudanese side, where a great variation was found in one location, likely attributed to the mobility of FSW.⁴

⁴ Nimule (Sudan) was the only location where a large variation between the FSW and key informants' estimations occurred. The reason for this was the key informant based the figure on the number (700) that was reported by the police, this number, however, could be significantly greater given that the number reported by police was only for

Table 17 shows the combined and averaged estimate from both sources of the number of FSW at each Hot-Spot.

Table 17 Estimated Female Sex Worker Population by Hot-Spot

Hot-Spot	Number of FSW
Arua Park	50
Migyera	80
Bweyale	80
Karuma	100
Gulu	400
Atiak	30
Bibia	40
Nimule	500
Juba	500
Total	1,780

Bar and Lodging Census

This component of the study was designed to highlight some of the contextual issues around transactional sex on the Kampala - Juba highway. The bars and lodges on the stopover points provide entertainment, food and accommodation for truckers and other residents and travellers, and are thought to be the main nexus between FSW and their clients.

An inventory of all bars and lodges around each of the stopover points was conducted. For a smaller sample of bars in the seven Ugandan stopover points, client counts were carried out during seven consecutive evenings. The capacities of the bars and lodges were measured (seating capacities, number of rooms) and some idea of the cash flow in the spots was gained by aggregating the numbers of crates of beer and other alcoholic drinks sold in a typical week for each stopover point.

The informants were all owners or employees of the bars and lodges, of whom 61% were the managers.

The contribution of bars and lodges in the provision of condoms was also assessed.

Overall situation

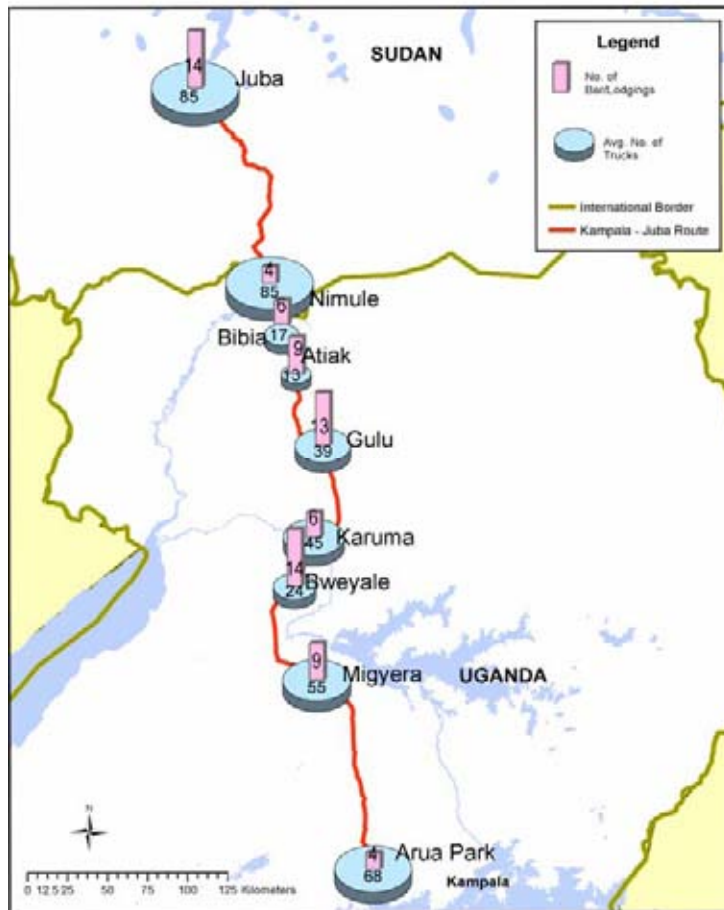
Table 18 shows the distribution of bars and lodges by stopover point and Map 5 shows these set against the mean number of overnight trucks at each point.

those FSW with whom they had been in contact (in the process of crossing the border) and there are likely many FSW that had not been in contact with the police. The FSW from Nimule provided estimations that were a great deal larger, as they were estimating based on the number of FSW that actually reside in Nimule.

Table 18 Distribution of Bars and Lodges

Stopover	Bars Only	Bars and Lodges	Lodges Only
Arua Park	3	1	0
Migyera	3	6	0
Bweyale	7	7	0
Karuma	1	5	0
Gulu	4	9	0
Atiak	8	0	1
Bibia	5	1	0
Nimule	2	2	0
Juba	3	10	1
Total	36	41	2

Map 4 Number of Bars and Lodgings vs. Average Number of Trucks Parked



A total of 79 facilities were counted. All except two of the 43 lodges have bars attached and there were 36 stand-alone bars. Arua Park, Atiak and Bibia are poorly-resourced in terms of lodgings while Juba and Bweyale are well-supplied.

Map 5 shows that there is little relationship between the numbers of bars and lodges and the volume of trucks parked overnight.

Table 19 shows the mean weekly beer sales and seating capacities, plus the total available lodging rooms at each stopover point.

Table 19 Beer Sales and Seating Capacities per Stopover

Stopover	Beers Sales (Crates per Week)	Total Seating Capacity	Total Lodging Rooms
Arua Park	78	423	7
Migyera	82	307	75
Bweyale	67	388	172
Karuma	36	252	63
Gulu	232	2,149	149
Atiak	40	409	8
Bibia	52	353	12
Nimule	124	361	51
Juba	255	507	167
Total	966	5,149	704

Table 19 shows Gulu to be a major centre for bars and beer sales. It has several bars with seating capacities of over 300. The bars at Arua Park and Nimule also tend to be larger than average.

Lodgings are very small, mean number of rooms per lodging was under nine per lodge. Arua Park, Atiak and Bibia have hardly any local accommodation. At the other end of the spectrum, there are more rooms available in Bweyale, Juba and Gulu.

Figure 15 shows the year of establishment of each bar or lodge. Four informants could not specify this.

Figure 15 Year of Establishment

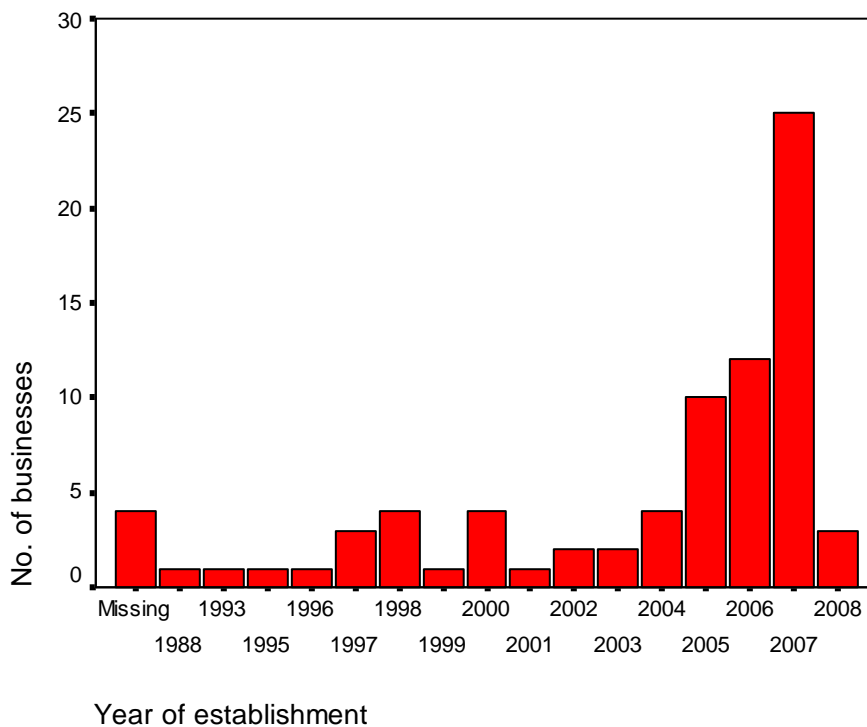


Figure 15 shows that most of these premises are of recent origin. Of the 75 with this information, over half were established after 2005.

Clientele

Informants were asked to state the three main types of male and female clients that patronized their premises. Table 20 shows the details.

Table 20 Main Types of Bar and Lodge Clients by Sex, Percent Reporting (n=79)

Male Clients		Female Clients	
Type	% Bars/Lodges	Type	% Bars/Lodges
Truckers	60.8	FSW	98.7
Businessmen	49.4	Businesswomen	26.6
Soldiers	16.0	Travellers	5.1
Police	15.2	Others	27.8
Travellers	11.4		
Others	43.0		

The dominance of truckers and sex workers as clientele is clear from the table. FSW, in particular, figure as major clients in all but one of the 79 bars and lodges surveyed. There is more variation in the male clientele, with 43% of bars entertaining clients outside the main categories compared to 28% of bars entertaining clients outside the three main types of female clients.

Table 21 shows the estimated proportions of female clients who are sex workers, these estimates being supplied by the respondent.

Table 21 Perceived Proportion of Sex Workers among Female Bar Clientele

Proportion	Percent Response
All	1.3
75% - 99%	1.3
50% - 74%	19.0
25% - 49%	30.4
>0% - 24%	39.2
None	8.9

In most bars, FSW were thought to be a minority of the female clientele. However, only nine respondents (8.9%) did not mention FSW among the main female clients of the bars surveyed, and 21.6% of respondents thought FSW constituted over half of the female clients

Of the 16 bars where a census of clients was carried out each evening for seven consecutive nights, substantial variation was found in client numbers. Over half of the respondents reported times when the premises were particularly busy or particularly quiet. The particular busy and quiet times varied from place to place, but the busiest days for most were Fridays and Saturdays and the quiet days were mainly Mondays. Similarly, month-ends were usually said to be busy and mid-months, quiet.

Figure 16 and 17 show, for each point, the maximum and mean numbers of male and female clients, the latter averaged over the hours and days of counting.

Figure 16 Mean Maximum Male and Female Bar Clients by Stopover

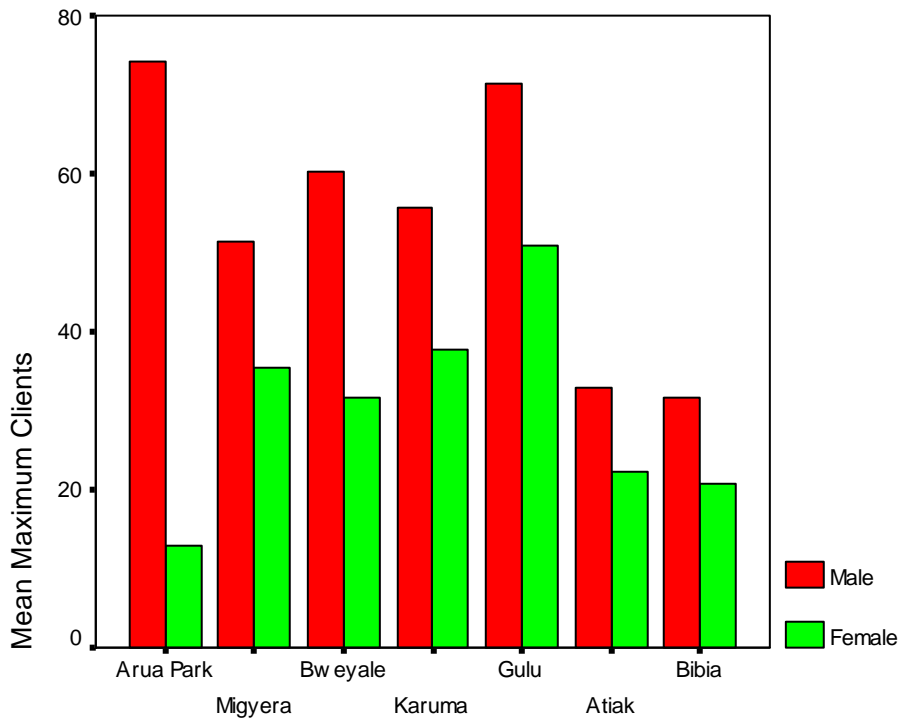
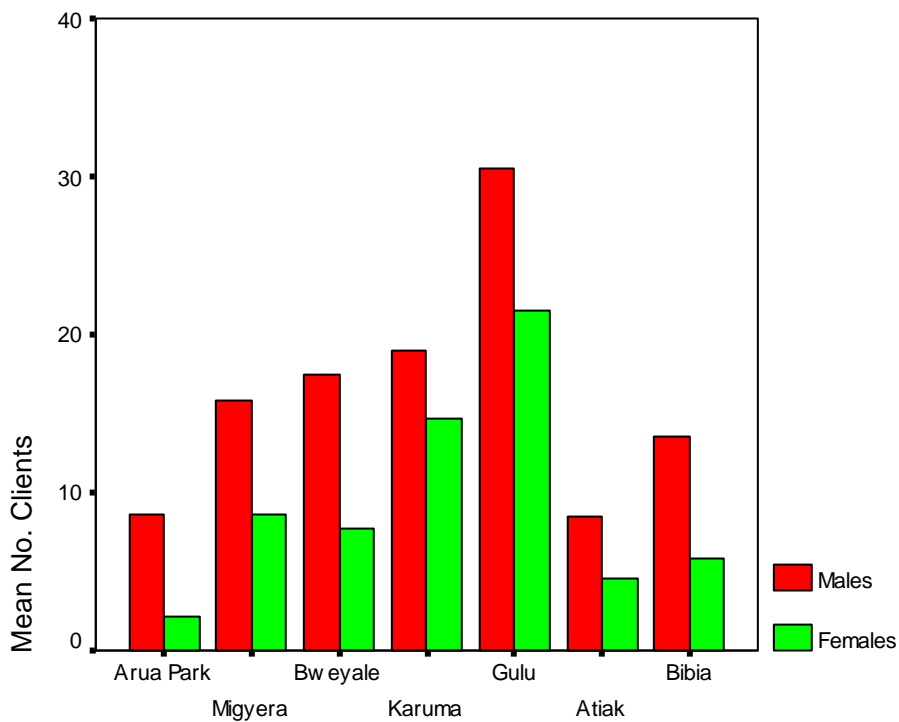


Figure 17 Mean Male and Female Clients by Stopover



Figures 16 and 17 show that there is considerable variation between the stopovers in the numbers of bar patrons. With its large bars, Gulu has the largest clientele of both male and female clients. Atiak and Bibia have a very small bar clientele. The periodicity by day of week

and time of the evening is clear in the difference between the maxima and the means. Arua Park, in Kampala, in particular, has a large “spike” represented by the maximum of male clients (which occurred between 7pm and 8pm on a Saturday evening), but otherwise the four bars visited had relatively few male or female clients.

The difference in proportions of bar clients by sex is clear from Figures 16 and 17. Typically, males will constitute 60%-70% of the clientele of the bars, although Figure 17 shows Gulu and Karuma to have a more even mix of clientele.

Condom distribution and sales

Respondents were questioned on whether they distributed or sold condoms and whether the premises had a condom dispenser. Follow-up questions were asked about the types of condoms kept, the numbers distributed or sold and the price of the different brands. Table 22 summarizes these details.

Table 22 Condom Distribution and Sales by Stopover

Stopover	Number of Bars and Lodges	Number Selling Condoms	Number Providing Free Condoms	Number with Condom Dispenser
Arua Park	4	0	0	1
Migyera	9	5	2	4
Bweyale	14	9	1	4
Karuma	6	4	2	1
Gulu	13	5	6	5
Atiak	9	2	5	1
Bibia	6	1	0	0
Nimule	4	0	1	3
Juba	14	12	0	12
Total	79	38	17	31

Table 22 shows that just under half of the bars/lodges (38/79) sell or distribute condoms. Only Juba has well-developed sales and distribution outlets with both sales and dispensers in 12 out of 14 bars/lodges. Bweyale and Migyera are the best-supplied points in the Uganda section.

A variety of condom brands are available as can be seen in Table 23.

Table 23 Percent of Bars / Lodges Supplying Specified Brands of Condoms

Brand	Percent of Bars / Lodges Supplying	Price Range (US\$) per Pack of Three
Protector	31.6	300 – 500
Trust	26.3	500
Engabu	1.8	-
Lifeguard	15.8	750 – 2,250
Number One	21.1	-
Unidus	3.5	750 – 2,500

Protector, Trust and Number one are the most commonly-found brands. Unidus is a brand restricted to two Nimule outlets and Number One is only available in Juba.

Trust and Protector, the main brands sold, have fairly standard and low prices, while Lifeguard and Unidus are relatively expensive.

Female Sex Worker Diaries

Diaries were distributed to collaborating female sex workers (FSW) at eight of the nine mapped stopover points. No diaries were collected in Bweyale because of tension between the local FSW, the police, and the town's population. As noted in the methodology, these were completed for a period of 28 consecutive days. Instruction on their completion and follow-up during the first week of recording was performed by the field team. A total of 107 diaries were distributed and 95 (89%) received at the end of the recording period. At Nimule, only five out of 12 diaries were received.

The completed diaries were screened and corrections made, where possible. Two completed diaries (both from Arua Park) were not used as they were judged to be inaccurate. Several others were incomplete in some way, but were retained as most information had been included.

The details of the FSW reporting their activities on the diaries was kept private and only date of birth was recorded.

The diaries, therefore, record key aspects of sex work of 93 women over 28-day periods in November and December 2007, covering a total of 1,671 clients who generated 2,368 sexual liaisons and a reported 5,918 sexual acts. Details of numbers, types and occupations of clients, mobility, condom use and sex during menses were captured.

Table 24 shows the locations and numbers of diaries used in the analysis, together with the mean ages of the FSW recording.

Table 24 FSW Diaries Collected, Ages of FSW, by Location

Location	Number of Diaries	Percent of All Diaries	Mean Age of FSW
Arua Park	12	12.9	25.00
Migyera	15	16.1	26.14
Karuma	15	16.1	23.71
Gulu	13	14.0	26.91
Atiak	12	12.9	26.75
Bibia	10	10.8	26.71
Nimule	5	5.4	n/a
Juba	11	11.8	n/a
Total	93	100.0	25.74

All stopover locations yielded at least 10 diaries except for Nimule where there was a poor response. Ages were not recorded in the two Sudanese locations. Overall, the FSW are very young, especially in Karuma where they averaged less than 24 years.

Dynamics of sex work

Table 25 shows the main parameters of sex work on the highway – the mean numbers of different clients, liaisons, and sex acts recorded by the FSW. These are also shown graphically in Figures 18a to 18c.

Table 25 Mean and Median Number of Clients, Liaisons and Sexual Acts (n=93)

Indicator	Mean (SD)	Median (Range)
Different clients per month	18.0 (6.1)	19 (1-34)
Liaisons per month	25.5 (6.3)	25 (9-43)
Sexual acts per month	63.6 (31.0)	58 (2-154)

Figure 18a Numbers of Different FSW Clients per Month

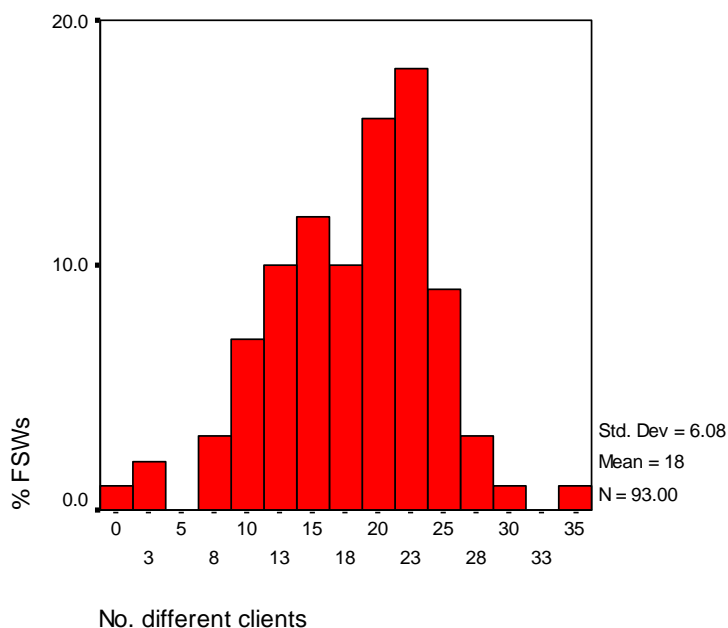


Figure 18b Numbers of FSW Liaisons per Month

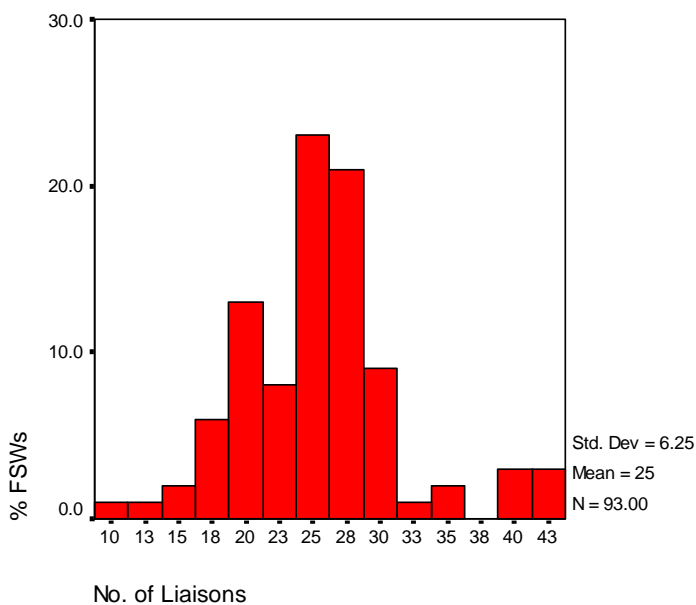
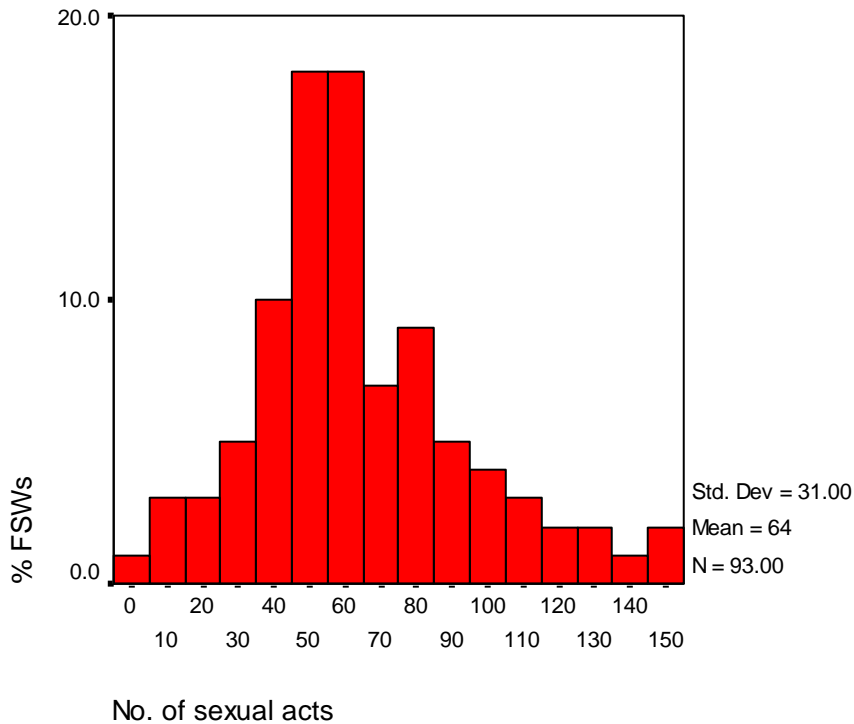


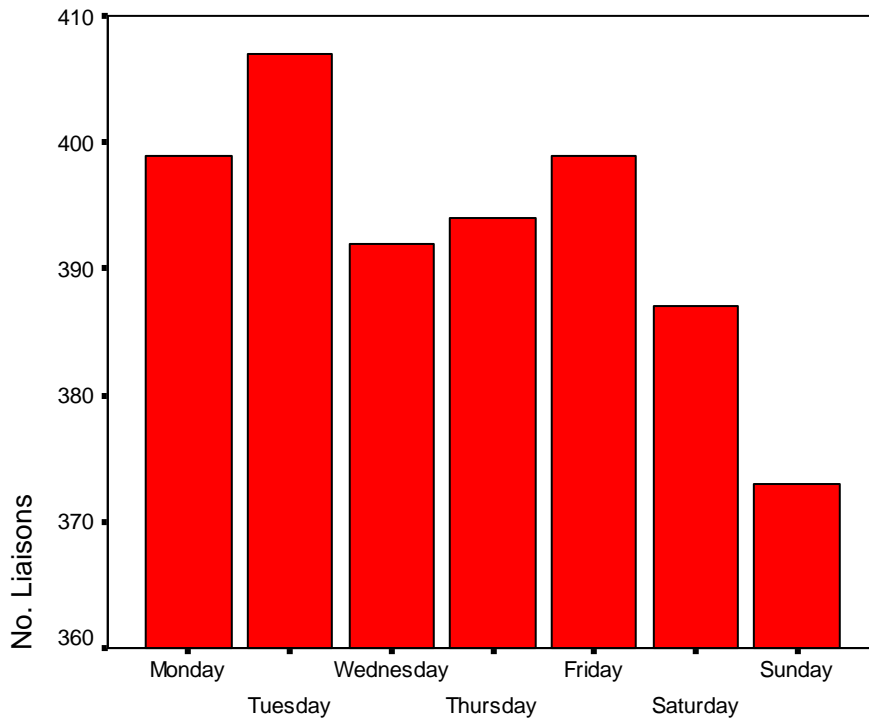
Figure 18c Numbers of FSW Sexual Acts per Month



The diary data shows a high volume of transactional sex, but also substantial variation between individual sex workers. The mean of 18 different clients per month are engaged in an average of 25 liaisons with 64 sexual acts – over two acts per liaison.

Figure 19 shows the variation in numbers of liaisons recorded by day of the week.

Figure 19 Number of FSW Liaisons by Day of the Week



There is not much variation in total numbers of liaisons recorded by day (varying between 370 and 405), with a peak during Tuesdays and a trough during Sundays. There is no evidence of any “weekend effect” in these data.

The FSW self-classified clients into casual and regular. Table 3 shows the type of client by mean numbers of liaisons and sexual acts.

Table 26 Number and Proportions of Liaisons and Sexual Acts by Type of Client

Indicator	Type of Client	
	Casual	Regular
Number (percent) of Clients	1,232 (74.1%)	431 (25.9%)
Number (percent) of Liaisons	1,473 (62.2%)	895 (37.8%)
Number (percent) of Sex Act	3,574 (60.4%)	2344 (39.6%)

A proportion of 74.1% of FSW clients are casual clients. However, as would be expected, casual clients account for lower proportions of all liaisons and all sexual acts. Thus, although only 26% of clients are regulars, they account for nearly 40% of the sexual acts recorded.

The variation in these parameters by individual site is shown in Table 27.

Table 27 Number of Different Clients, Liaisons, and Sexual Acts by Location

Location		Number of Different Clients	Number of Liaisons	Number of Sexual Acts
Arua Park	Mean	18.09	27.08	80.50
	N	12	12	12
Migyera	Mean	15.89	22.67	44.07
	N	15	15	15
Karuma	Mean	18.28	26.33	63.40
	N	15	15	15
Gulu	Mean	20.98	28.92	60.85
	N	13	13	13
Atiak	Mean	15.39	21.92	53.58
	N	12	12	12
Bibia	Mean	17.20	22.40	47.60
	N	10	10	10
Nimule	Mean	17.20	27.80	128.40
	N	5	5	5
Juba	Mean	20.55	27.82	71.64
	N	11	11	11
Total	Mean	17.97	25.46	63.63
	N	93	93	93

The number of clients per sex worker is highest in Juba and Gulu and lowest in Migyera and Atiak. The mean number of sexual acts (averaging 5 per liaison) is extraordinarily high in Nimule, where only five FSW submitted diaries.

In terms of mobility of the sex workers, 78% of the 2,558 women-nights recorded were at the home location. Of the 93 FSW, 16 spent each of the nights recorded at the home location while the remainder spent at least some nights away from home during the month. By individual site, all except Arua Park were in the range of 59%-92% of women-nights spent at the home location, with the least mobile FSW operating at Karuma and Gulu. Arua Park is a special case. Only 10.5% of women-nights were spent at the normal location. The associated focus group discussion suggests that the FSW were moved out of their normal operating areas in Kampala because of the The Commonwealth Heads of Governments Meeting (CHOGM).

Risk Avoidance – condom use and abstinence from sex during menses

Table 5 shows overall condom use per liaison to be 77%. Condom use with casual clients is significantly higher (chi-square $p < 0.001$).

Table 28 Condom Use by Type of Client

Type of Client	% Liaisons Where Condoms Used
Casual	77.2
Regular	53.8
Total	68.4

Of the 93 FSW, 15 (16.1%) reported exclusive condom use. No correlation between exclusive condom use and age was seen. However, exclusive condom use was reported at three sites only – Arua Park, Migyera and Karuma – and 13 of the 15 FSW reporting exclusive condom use were in Arua Park and Migyera. FSW reporting exclusive condom use had significantly fewer partners than the others (t-test, $p = 0.031$).

Yes, there are those who are regular clients whom at time you feel like you love or could have developed some kind of trust, so with such customers you may at times not use condoms.

– Female Sex Worker, Focus Group Discussion, Migyera

What do you do when they refuse to use a condom?

– Focus Group Discussion Leader

We return their money and walk away. But there are some who when you return their money they will hold you by force and rape you.

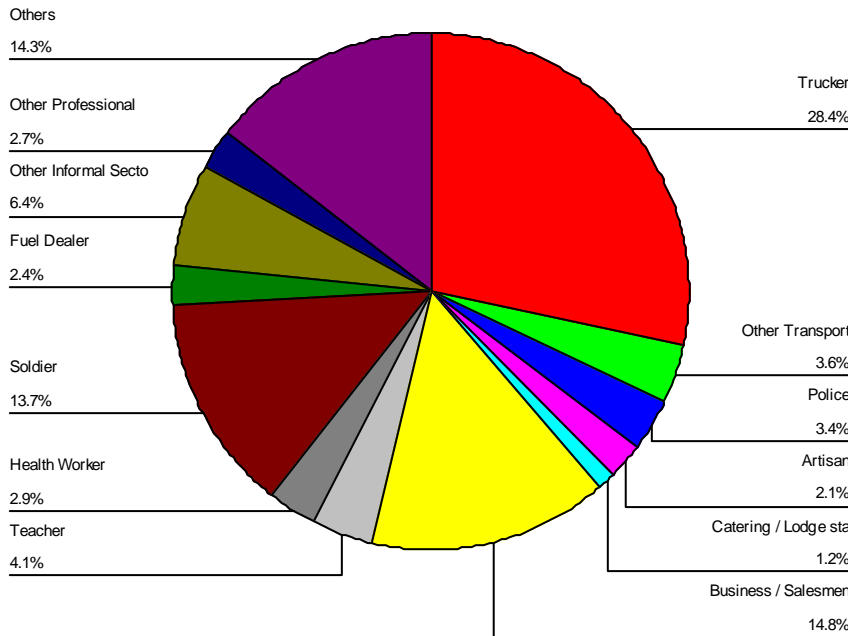
– Female Sex Worker, Focus Group Discussion, Migyera

A high proportion of FSW (29%) did not record any day of menses on the diary. Of the 66 remaining FSW, 27 (41%) recorded at least one sexual liaison during menses, with a total of 103 liaisons being recorded. Of these, 57 (55%) were protected by use of condoms. Thus, overall, 57/2,368 (2.4%) of sexual liaisons represent unprotected sex during menstruation.

Occupation of clients

Occupation of client was recorded for all but 64 of the 1,668 different clients. The occupations were initially classified into 30 categories and then amalgamated up to 13 more general classes as shown in Figure 3. The 3.8% of missing cases are not included in the diagram.

Figure 20 Occupation of Clients



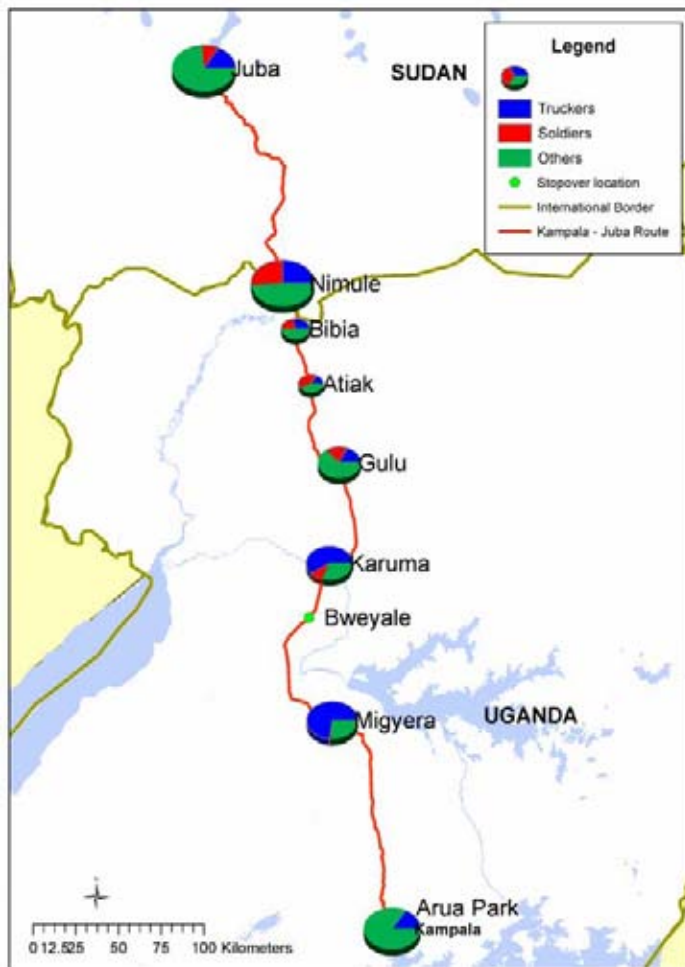
Most of our clients are obviously truck drivers. But sometimes the locals are also our clients and we get them or they get us like on the market days when businessmen and market vendors get money.

– Female Sex Worker, Focus Group Discussion, Migyera

Figure 20 shows 28% of FSW clients to be truckers and a further 3.6% other transport-related occupations. Businessmen / salesmen / traders are the next largest individual group at 14.8%, with soldiers at 13.7%. Professionals (teachers, health workers and other professionals) account for 9.7% of clients. Informal sector occupations, particularly fuel dealers, (locally referred to as “OPECs”), make up around 10% of FSW clientele.

Map 5 extends this analysis by showing the numbers of different clients for each spot, dividing occupations into truckers, soldiers and others.

Map 5 Type of Female Sex Worker Clients by Location



Map 5 shows truckers as major sources of FSW clients in Migyera (73%) and Karuma (59%). Atiak, Arua Park, Gulu and Juba have fewer than 20% of truckers in the client mix.

The proportion of soldiers in the client mix increases steadily as the highway proceeds north from Kampala, as far as Atiak where the FSW clientele includes 41% soldiers. Soldiers are also prominent in Nimule (25%) and Bibia (28%).

The larger points have a wider client base. Arua Park, in central Kampala, showed only 15.5% of clients being truckers and no soldiers. Arua Park has a clientele that comprises 27% of clients in professional occupations. Gulu has 63% of clients who are neither truckers nor soldiers and Juba, 74%. The other sites have a more even balance of occupations.

Mapping of Stopovers

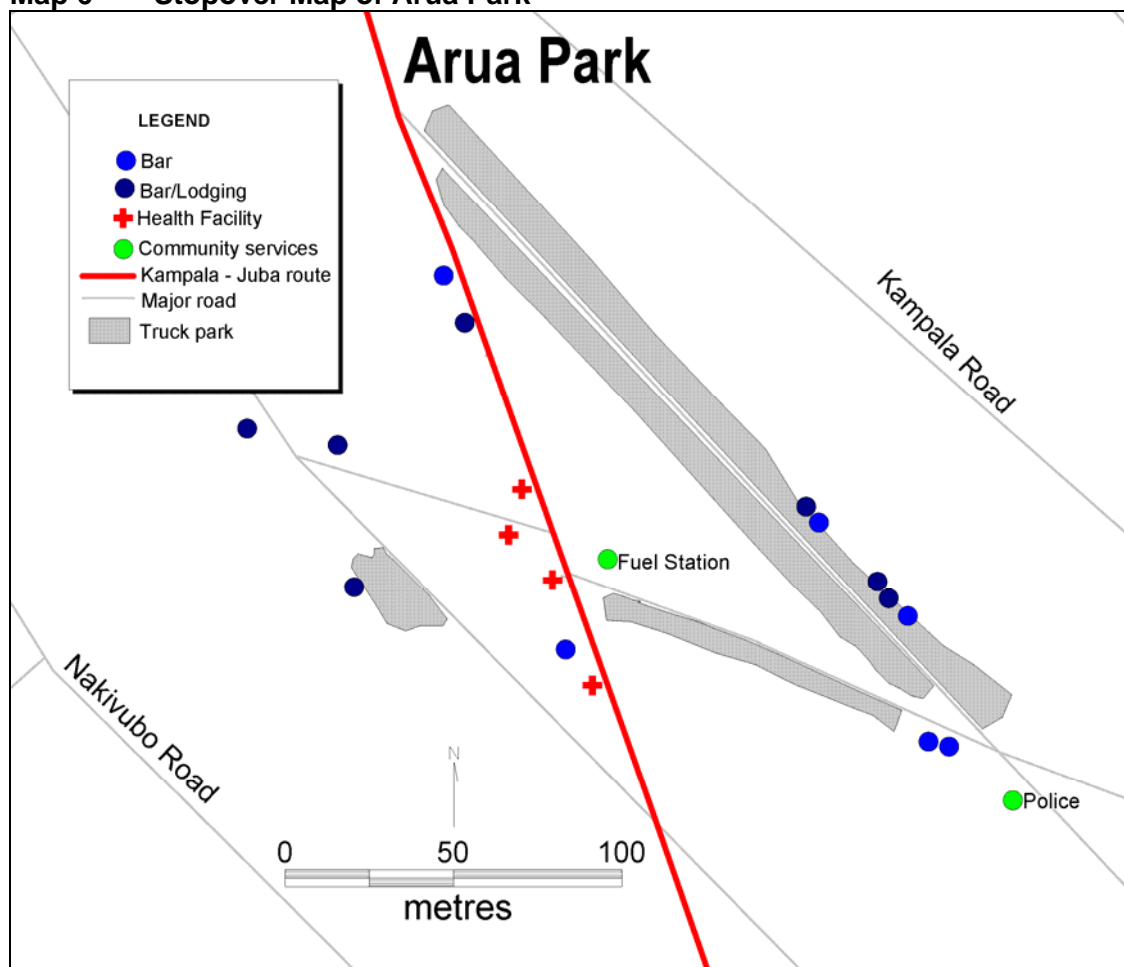
Arua Park

Arua Park was the first spot mapped during the study. It is a busy location situated in the middle of Kampala city with more than 50 trucks parked to be loaded with goods every day. It is one of the major loading areas in Kampala for trucks supplying general merchandise and hardware materials to both local surrounding rural towns such as Arua, Koboko, and Yumbe, as well as cross boarder towns in Sudan. Trucks are parked for loading along most of the streets around the Park, and for this reason it was difficult, for mapping purposes, to clearly demarcate within the parking yard where exactly trucks loading goods for Southern Sudan stopped. The study

team therefore resorted to identifying trucks for Southern Sudan using the yellow Licence sticker/ pass issued to all vehicles allowed entry and exit to South Sudan.

The park environment is extremely busy during the day with businesses ranging from food and vending establishments (small restaurants and/or take ways), clinics, bars, Khat sellers, particularly around Petrol Stations, and card playing among other activities, were noted. It was also difficult to establish the number of the FSW at this location because the exercise was undertaken at a time when the country was organizing to hold the CHOGM meeting. Because of this meeting, most of the FSW had to operate on call. The situation was characterised by high security in the city and all operations were to close by 9:00 pm. The patron counts could not continue past 10:00 pm since the bars were closed by that time.

Map 6 Stopover Map of Arua Park



Migyera

Migyera was the second spot mapped during the study. It is a small trading centre situated in Nakasongola district and has developed over the last decade because of the high volume of traffic along the route. Many travellers, to and from different locations of Northern Uganda, often stop here for a quick snack, to buy meat which is usually cheaper than the rate at major town centres, and also for lodging facilities depending on the time of the day. The numbers of lodges, however, are still very low, as the people who normally spent the night here are truckers and often sleep in their truck to save money.

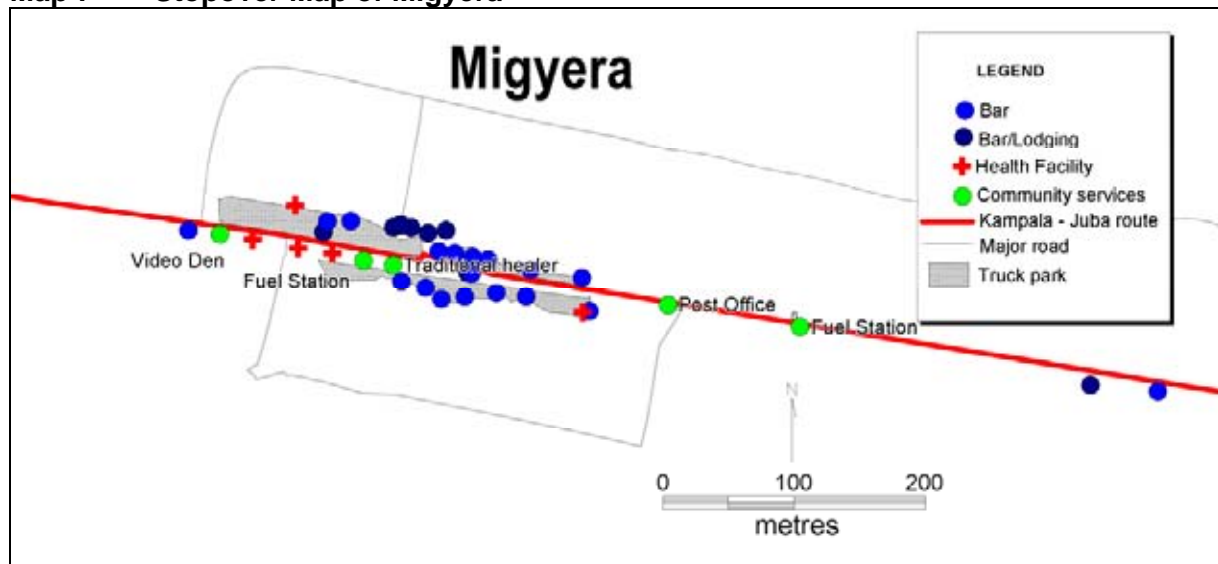
There are a few health facilities in this location despite the limited services they offer. Most of the health facilities are drug shops and clinics. According to general observations, the people of the area have little awareness on HIV/AIDS or are simply not afraid of the disease. According to HIV & AIDS focal persons at one of Nakasongola Health Centres, people living in the area do

not know much about the disease; they spend their day in the lake fishing and at the end of the day spend money earned on sex workers as a way of relaxation.

There is quite some money in circulation from landing sites at this location although the clientele of restaurants, butcheries and other businesses are primarily truckers and travellers who spend nights at Migyera. Quite a number of female sex workers are also attracted to the location and most FSW have rented accommodation where they host their clients. The cost for this kind of accommodation for FSW is USH 5,000 per night and according to them it is a good bargain, because the least amount one can make in a day is 30,000 USH. On a busy day however, a FSW can make up to 60,000 USH.

The FSW at Migyera are very serious about condom adherence. They say “no condom, no sex”. They are the ones who buy the condoms and insist on their use. Many bars operate until 11:00 pm, but on days when there is no electricity, they close around 10:00 pm. The electricity supply is quite unreliable, though most of the establishments have generators as backups.

Map 7 Stopover Map of Migyera



Bweyale

The population of Bweyale rapidly increased in the early 1990s. This area is occupied by people from different parts of the country including many Sudanese refugees. Many of the people are from the Acholi and Lango sub-region who settled in the area because of the Lords Resistant Army (LRA) insurgency in their land. Bweyale is found in Masindi district.

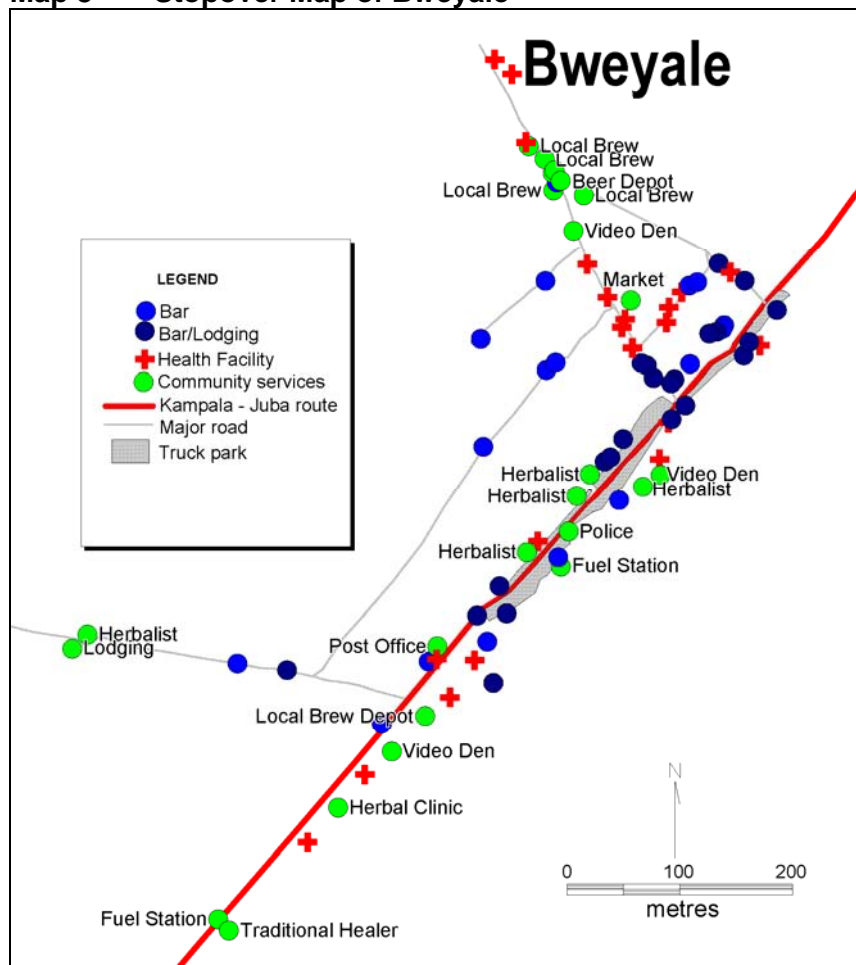
A number of small bars and restaurants have arisen and a police station was established at the trading centre. Bweyale has become the preferred overnight parking location for truckers because of the availability of services, instead of Kigumba that initially served this purpose.

Bweyale was the third “hot-spot” mapped during the study, with most of overnight patrons being business women and men involved in the sales and production of agricultural commodities. There are usually a few NGO workers who travel from Masindi district to work in the area and later decided to spend their nights in Bweyale. However, as far as commercial sex work is concerned, sexual activities are done with caution. This is due to the social implication the Luo speaking people attach to expressing sexuality in public. Also, because of the heavy existence of the police who often harass FSW, the girls prefer to operate in privacy. This made it difficult for the study team to organize a FGD with the FSW, a forum through which participants were recruited for the sex workers diaries. In the end, the completed diaries at this location were not obtained to be included in the analysis.

It was also not possible to hold FGDs for truckers because most of the trucks that come during the day are empty, and immediately upon arrival the truckers begin to supervise the loading of the trucks. Often, the truckers have to park and look for the middlemen who are usually in the communities putting together produce for truckers to come and pick. A forum for a FGD was therefore never reached.

There were a number of health facilities, most of them small drug shops. The services in these health facilities were limited. The facilities lacked some drugs in addition to qualified staff for prescription of drugs and treatment. Most of the STI cases are reported from among locals. A major referral hospital is Kiryandongo Hospital, near Bweyale. There are also a number of traditional healers in the area who substitute for the poorly equipped health faculties by treating all types of diseases including STIs.

Map 8 Stopover Map of Bweyale



Karuma

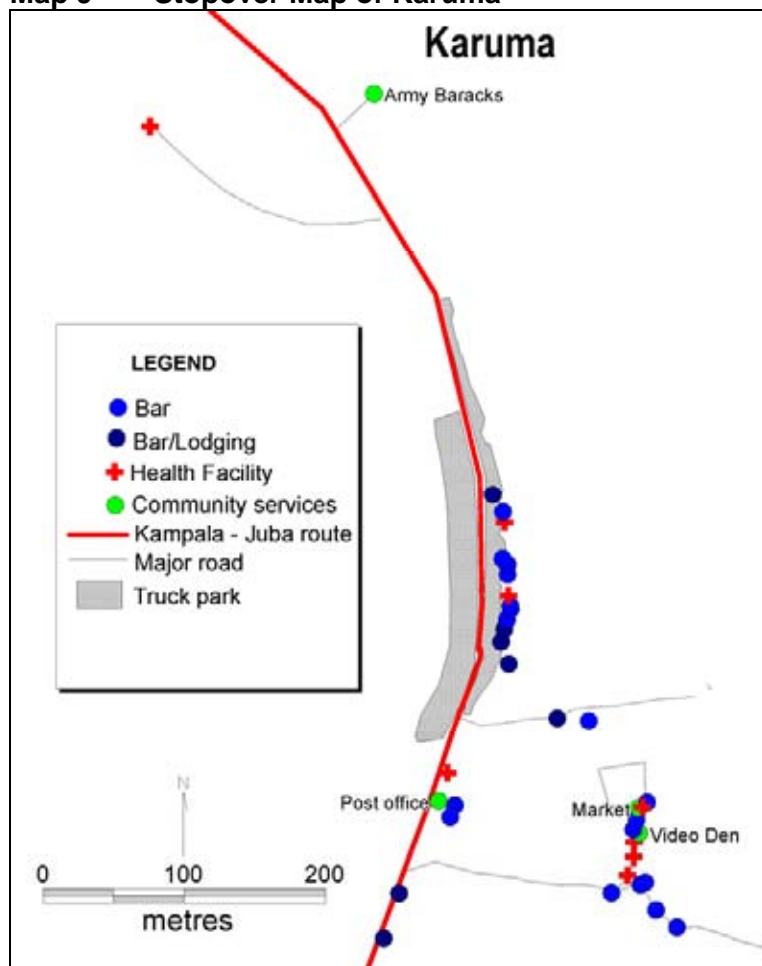
Also in Masindi district was Karuma, “hot-spot” number four. It is located at the bridge that separates Masindi from Amuru districts. Karuma developed into a popular destination along the corridor due to the 20 years of insurgency in Northern Uganda. During the war there was an army barracks at the centre and this was partly what drew FSW into Karuma. Vehicles heading to Northern Uganda would assemble in Karuma as the army cleared roads for vehicles to proceed in convoys. Sometimes the convoys would not leave due to delays in clearance authorizations, thus spending the night. Karuma then became a popular stopping point and remains a popular overnight stopover of trucks intending to leave early for Arua, Koboko, Gulu or towns in Sudan.

Large numbers of sex workers were found in Karuma. Most of the girls involved in the business are from the Northern region (Lango and Acholi sub-region) and others are Alur and Iunyoro speaking. Some women also travel from other spots, such as Migyera, in search of clients. The FSW in Karuma are not strict in terms of condom use and unprotected sex went for as low as US\$ 2,500 per act. For this reason, self-reported cases of STIs were alarming. This finding alone advocates for sensitization on the importance of condom use, STIs and treatment packages.

There were few health facilities in this location, and they were poorly stocked. One health facility caters for road construction workers. Although it was open to the local populace as well, the health unit had limited drugs, was understaffed, and was open only three days a week. It was common knowledge that the health unit was scheduled to close by early 2008, if the road works are completed as scheduled.

The number of bars and lodging in Karuma are minimal. When travellers along the corridor realize that they will fail to cross the bridge, they prefer to spend the night in Bweyale. The lodging facilities at the spot are mostly occupied by truck drivers, the FSW and their clients.

Map 9 Stopover Map of Karuma



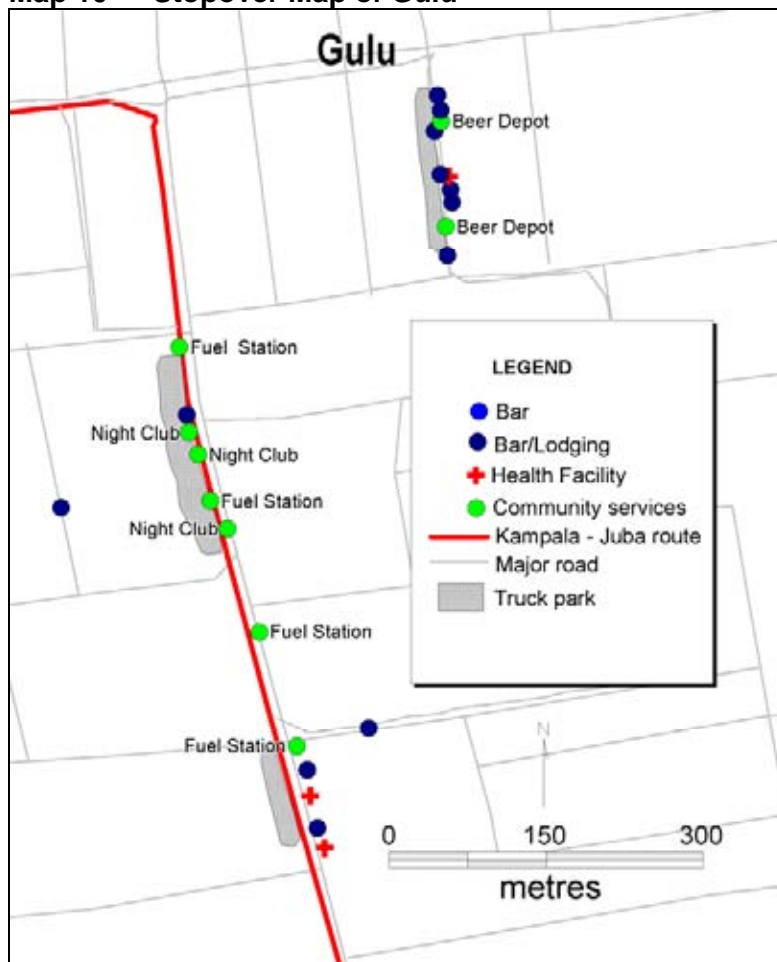
Gulu

Gulu town is a major stopping point along the Kampala Juba highway and one of the largest districts in Northern Uganda. The town is primarily Acholi-speaking currently populated with internally displaced populations (IDPs) who fled the rural areas in search of security. Instead of loading in Kampala, many trucks bound for South Sudan load in Gulu. This has also lead to increased prices of goods and services in the Gulu town.

The Data Collection Team was challenged to map facilities in Gulu due to its sprawling size and existence of three separate parking areas. There are many bars, lodges, and health facilities within and beyond parking areas. Compared to other “hot-spots” along the highway, Gulu has better health facilities with more qualified staff, including NGOs, public and private proprietors.

Transactional sex activities are expanding. FSW travel from as far away as Kampala to work in Gulu. Also in the trade are Congolese women who were brought to the district by Uganda Peoples Defence Force (UPDF) soldiers as wives but have now been abandoned. The town has a very active entertainment industry, with large establishments hosting transactional sex. Clients range from businessmen, soldiers, married men, students and truckers who park near the pub. FSW in this location appear more aware and empowered for requiring condom use.

Map 10 Stopover Map of Gulu

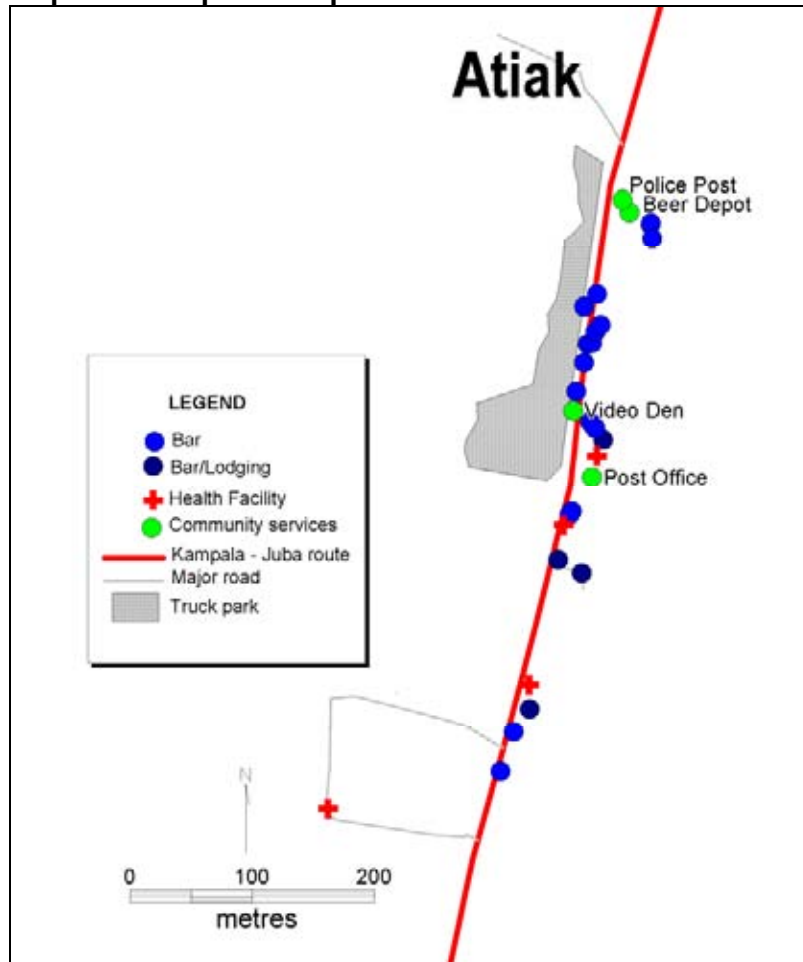


Atiak

Atiak is a small trading centre north of Gulu near the Sudanese border. It is found in Amuru District, a new district created from the old Gulu district. Atiak used to be a customs point before it was extended to Bibia. Atiak is largely Acholi, and due to LRA activity hosts a large IDP camp. The area is benefitting from a gradual return to normalcy.

Transactional sex and businesses have generally reduced in area since the removal of the customs point from the town. Trucks prefer to travel directly to the Bibia border customs point. Business is slow, with only a few restaurants serving food to travellers. Health, bars and lodging facilities are also few.

Map 11 Stopover Map of Atiak



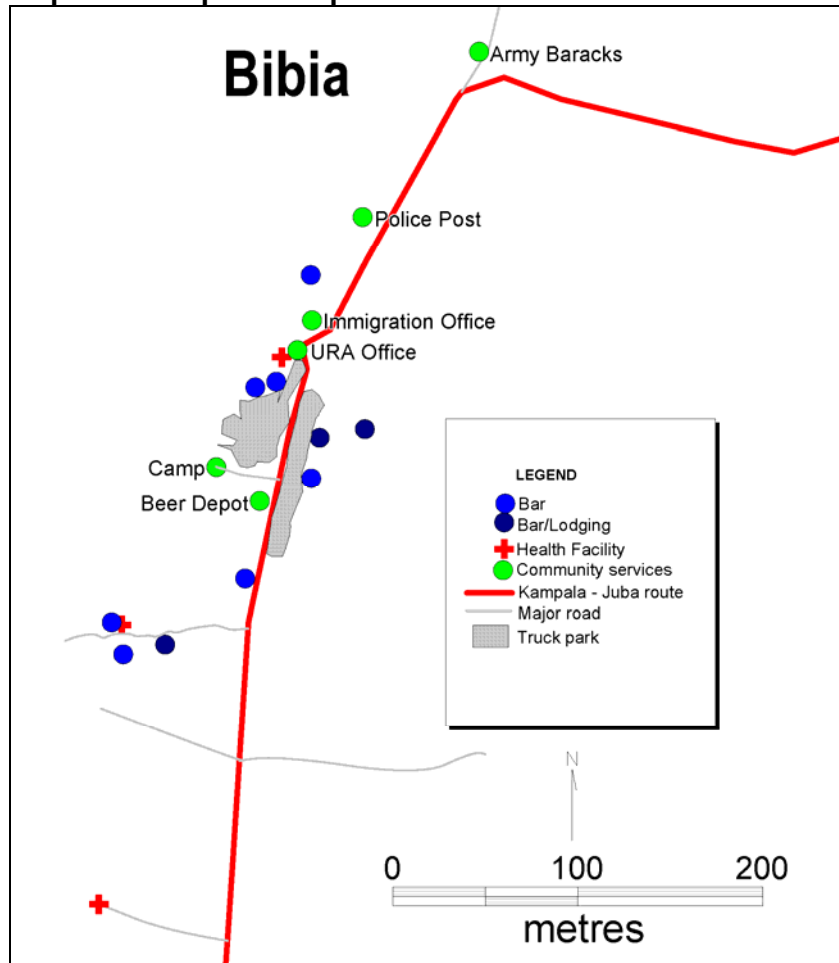
Bibia

Bibia was the seventh and the last spot in the Ugandan section of the corridor. It is situated at the border of Sudan and Uganda and is mainly occupied by the Madi people of West Nile. It is the checkpoint from the Ugandan side before entry into the Sudan. Most trucks park at this spot waiting for clearance to cross into Sudan.

The stopover has high levels of transactional sex, with most FSW comprising Congolese and Ugandans from Gulu, Lira, Amuru, and locals. There are also a few Baganda girls who are in transit to Sudan but prefer to do some business as they clear at the border.

There are very few lodging facilities in the area; the truckers normally spend their nights in their trucks. Even those who have the company of FSW tend to entertain them in the trucks. There are also few health facilities in the area, mostly small drug shops with limited drugs and unqualified personnel. There is only one health centre at this location.

Map 12 Stopover Map of Bibia



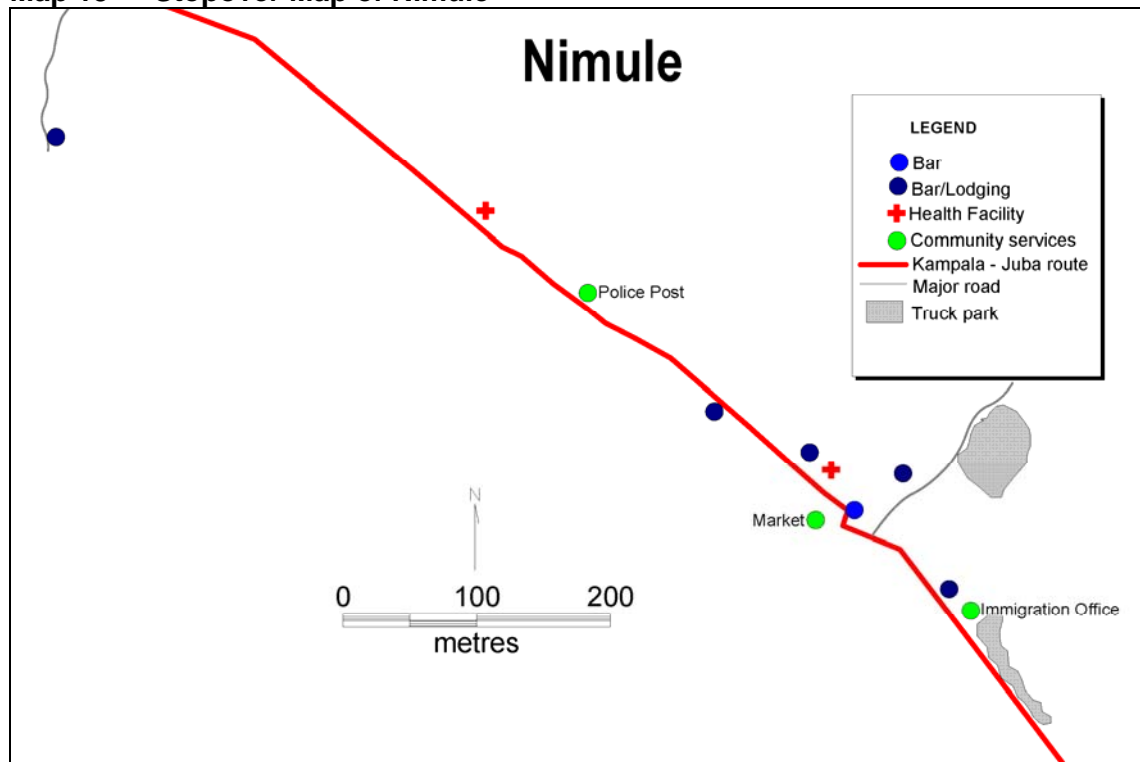
Nimule

Nimule is also located at the border of Uganda and Sudan, but on the Sudanese side. It is busier than Bibia, as most of the trucks cleared for Sudan from Uganda or those from Sudan waiting to be cleared for Uganda, tend to park here. In terms of population, the area is relatively populated with business and is a bustling border trading point, including large numbers of daily cross-border traders from Uganda.

The few lodging facilities are insufficient for the population size. The bars are also not that busy and are closed between 8:30pm and 9:00pm due to a night time curfew.

Nimule has large numbers of transactional sex workers. A key informant explained that in July 2007, about 700 female sex workers were deported back to Uganda. Many of the women encountered during this study had been among those deported and had since returned.

Map 13 Stopover Map of Nimule

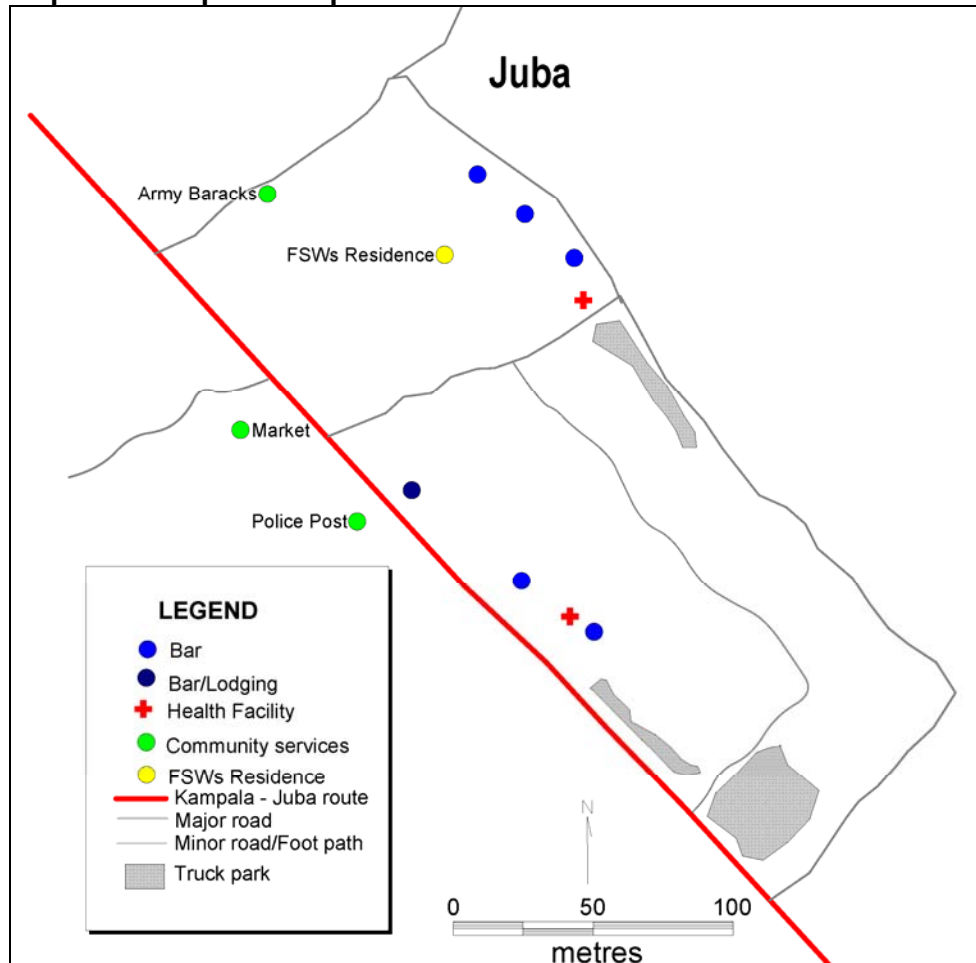


Customs Corner in Juba

Customs Corner in Juba town is one of the major areas with a lot of business activities, including transactional sex. Adjacent to the army barracks, it is a point where the trucks park as their final destination. The sex workers in this location have made makeshift iron sheet structures in which they live and conduct business. They tend to sit in front of their house as they wait for clients. The majority of the FSW at this location are Ugandan, Congolese, and Kenyan. Few local girls are involved in the business.

There are a few drug shops within the area. Unlike Nimule, the bars here operate until late in the evening. Customs Corner in Juba is a hostile place, where one is required to be very cautious.

Map 14 Stopover Map of Juba



Discussion

The Kampala - Juba highway is a rapidly-growing transport artery supplying the remote region of Southern Sudan. The termination of the prolonged war in the south of Sudan has initiated rapid and long-overdue growth of infrastructure and services, requiring all manner of supplies. Most of these supplies are routed from Kampala to Juba.

In synthesizing the data analyzed in the previous sections, several comparisons will be made to the study of the Mombasa-Kampala highway (Ferguson et. al, 2006; Ferguson and Morrison, 2007; Morris and Ferguson, 2005, 2006) from which much of the methodology of the present study has been adopted.

The traffic on the highway is still at a fairly low level, as can be seen from the census of trucks at the stopovers. The total number of overnight trucks tallied in the nine spots is 431, compared with 3,066 per night on the Mombasa-Kampala sector in which 47 stopovers were mapped. However, the rate of growth of traffic on the Kampala - Juba highway is likely to increase greatly in the near future. The indicators of growth are already evident. For example, the bar and lodgings survey revealed that the average date of establishment of 75 premises on the Juba route was 2004, compared to the 993 establishments on the Mombasa-Kampala highway where the average year of establishment was 1996.

With rapid growth comes increased circulation of money, goods and people. The north of Uganda, itself, is recovering from insecurity, with many displaced populations living along the

route, both from within and outside the country. Increases in casual and transactional sex must be anticipated. The foregoing analysis reveals that this is already well-established and that there are disturbing signs that the highway may become a significant diffusion hearth for an upsurge in HIV.

The “health profile” of the highway can be seen from the analysis of facilities and truckers health-seeking behaviour data. From both sources, malaria and sexually-transmitted infections stand out as principal health problems. The prevalence of STIs is extremely high: self-reported STI symptoms in previous 12 months among truckers on the Juba route was 32%. This is over twice the rate recorded on the Mombasa-Kampala route, where a sample of 202 truckers gave a self-report rate of 15%.

The analysis of sexual behaviour of truckers and FSW using the instruments fielded in the study provides several possible explanations for this high level of STI and by implication transmission of HIV.

Firstly, the level of transactional sex on the Kampala - Juba highway is very high. Although gaining an exact number of FSW at each stopover would be a major technical challenge, the study was able to offer estimations that clearly illustrate that sex work is a major source of subsistence for the women living along the truck route. With a rough estimate of the total number of FSW at the nine spots of around 1,800 women, the potential for transmission of STIs, including HIV, is high. The diary data also shows high average numbers of liaisons per FSW per month and an average of 18 different clients per FSW per month, most of whom are casual partners.

Secondly, there is a significant amount of risky sexual behaviour exhibited by FSW and clients. Condom use, though common, is far from universal. The commonly-observed trade-off between condom use and level of intimacy is seen both from the FSW diary data and the truckers reporting of condom use differing by type of partners.

Thirdly, additional risk factors were also observed: Some FSW were seen to practice unprotected sex during menses. Although the proportion is not high, the risk of transmission is greatly magnified.

Again, in investigating the response to STI infection, only 16 out of 28 men given a prescription for STI actually completed the course. The numbers are small, but, if this represents a general trend, then the transmission risk of STIs, including HIV, as well as increased resistance to first-line STI drugs, will be correspondingly increased.

Table 29 compares some of these risk parameters from this study with those measured from the Mombasa-Kampala route.

Table 29 Parameters of Transactional Sex and Risk of Infection: Kampala - Juba vs. and Mombasa-Kampala Routes

Parameter	Kampala - Juba	Mombasa-Kampala
FSW – client interactions		
Av. different clients per month	18.0	13.3
Av. no. of liaisons per month	25.3	24.4
Av. no. of sexual acts per month	63.6	52.9
Condom use		
Reported by FSW (Average)	53.8	64.5
With regular partners	77.2	89.9
With casual partners	68.4	77.7
Overall		
Reported by truckers (Last encounter)	41.7	69.5
With casual partners	75.6	88% (casual), 69% (regular)
With FSW		
% Truckers reporting STI symptom in previous 12 months	32.0	15.0
% Truckers practicing “unsafe sex”	46.0	33.2
% Liaisons where unprotected sex during menses occurred	2.4	0.79
% Truckers completing prescribed course of STI drugs	57.1 (16/28)	45.0 (18/40)

Table 29 suggests that, without inferring statistical significance, for nearly all risk parameters, the FSW-Trucker interactions on the Kampala - Juba route are likely to facilitate HIV transmission. The FSW have higher numbers of different partners and more sexual acts per liaison. Condom use, as reported by both FSW and truckers, is lower on the Juba route and FSW on this route are three times more likely to practice unprotected sex during menses. Only in terms of completing the prescribed STI drugs do truckers on the Juba route perform better, however the sample size in both cases was quite small.

The analysis of sexual patterning of the truckers suggests that transmission from the FSW-client core to the general population is likely, with 46% practicing unsafe sex of some kind. The true picture is likely to be even higher, as the maximum number of partners recorded – four – is much lower than expected and is likely to reflect under-reporting.⁵ Likewise, transport workers comprised just 31% of FSW clientele, a large percentage of the non-truckers were either mobile (e.g. soldier, police, salesmen) or from the local community.

The current range of health facilities at the stopovers is narrow and the facilities tend to be small and privately-run, mainly by nurses. Pharmacies are the most commonly-found facility. Nevertheless, most clinical staff have received some training in STI management and the supplies of the recommended first-line drugs are reasonably good (assuming they are not counterfeit), particularly considering the relative remoteness of some of the stopovers. Absence of quality control and lack of comprehensive counselling may be the main immediate problems, both of which are vital given the very high prevalence of STIs.

Truckers seem reasonably satisfied with the services, however, and neither long waiting times nor high costs of treatment were voiced as major problems. Nevertheless, the cost of STI treatment may reflect itself in the gaps in completing courses of antibiotics or in the sale of partial-courses of possibly inappropriate STI drugs. Further investigation into these questions is required.

Condoms appear to be available fairly widely and are commonly stocked in bars, lodges and health facilities. The costs do vary but most are obtainable for USH 300/- to 500/- per pack. The

⁵ The Mombasa-Kampala study recorded a mean of 2.8 partners per trucker and a maximum of 11.

costs are significantly less in the health facilities compared with the bars. Lifeguard and Protector are the most commonly-marketed brands.

The lower than required use of condoms may be more related to local acceptability than shortage of outlets. The FSW FGDs suggest that clients from certain occupations or ethnic groups demand unprotected sex and that a higher price can often be negotiated for this. It is noticeable that the FSW recording 100% condom use in the diary completions had significantly fewer clients than average.

Yes there are clients as we earlier said Dinkas from Sudan can never accept condom use and men from the North and even drug users like Marijuana smokers do not accept condom use.

– Female Sex Worker, Focus Group Discussion, Migyera

The nature of “life on the road” is by definition, highly mobile. This factor alone provides a means for truckers to be widely travelled within the region, and correspondingly their potential for transmitting HIV over wide areas is well-documented. It is this mobility in addition to the social and economic contexts of long-distance transport that leads to the spread of HIV. The FSW on the highway are less mobile. About three-quarters of the nights recorded in the diaries show FSW to be present at their normal location. This is comparable with the results of the Mombasa-Kampala study. The FGDs with FSW however, suggest that, over the longer time periods FSW are also mobile, following supply and demand on the highway or in other places. The presence of a cadre of displaced women, mainly from DRC, also complicates the mobility issue and the epidemiology of HIV on this highway.

Also adding a further complication to the population mobility on the highway is the role of soldiers as FSW clients. The steady increase in the presence of soldiers in the client mix between Kampala and Atiak is striking. The soldiers may circulate widely throughout the country on a longer-term basis than the truckers, but their role as a bridge population is significant and a factor that is not present on the Mombasa-Kampala route.

The prominence of soldiers in the client mix at some stopovers emphasizes the width of the bridge population. Thus, while truckers are the main FSW clients (28% of all), the bridge population extends far beyond the transport sector. This finding replicates the situation on the Mombasa-Kampala route and has implications for planning HIV prevention programmes.

As noted in the notes accompanying the individual stopover maps, the nine stopovers differ slightly one from another. Arua Park, embedded in downtown Kampala, is not comparable to the rest. It is a point of origin of much of the commercial trucking originating from Kampala, but this function is mixed up with the other commercial undertakings of a busy urban centre. Although truckers appear as FSW clients here, they are outnumbered by clients who have professional occupations.

Atiak, similarly, is a garrison town where soldiers dominate and relatively few overnight trucks are found. Nimule and Gulu are larger regional centres where truckers are joined by soldiers and a wide range of other occupations as FSW clients.

The spots where truckers dominate as FSW clients are Migyera and Karuma, stopovers with slightly higher-than-average numbers of overnight trucks, but with little other economic activity. In terms of intensity of transactional sex, the most significant “hot-spots” are the Juba stopover and Gulu, where the average numbers of different clients per FSW exceed 20 per month. The bar survey shows these two stopovers to have, by far, the highest weekly sales of alcohol, a probable marker of the higher economic status of these two towns which are both major centres of administration.

Study Limitations

The overall research design and agenda was ambitious given the time and monetary constraints. The methodology was adapted from the Mombasa-Kampala study but without the necessary human or financial resources. This had an impact on the amount of data collected and a particular impact on technical aspects of managing the data collection processes.

Study limitations included:

- Time constraints led to rushing for results, which was evident in the incomplete bars and lodgings survey and the diaries, which require significant time commitment to achieve desired quality.
- The study team was unable to adequately investigate availability and quality of behavioural interventions, which is arguably more important than mapping of health services.
- Lack of sufficient funding resulted in the research being carried out without the services of a full-time experienced researcher. This in turn led to:
 - Lack of a mechanism to regularly monitor data quality
 - Rapport and trust between enumerators and respondents would have been strengthened with improved supervision
 - Insufficient training and supervision of data collection staff in carrying out interviews
 - Insufficient supervision of data handling processes, particularly with reference to the FSW diaries, caused data to require re-entering in a new database
 - The bars and lodgings survey was not completed in full; therefore, after three months the research team was sent back to complete this survey
 - The condom units (e.g. individual condom or package of condoms) were not specified upon data collection; therefore, analysis is limited
 - The methodologies used to estimate the number of FSW are not exact (asked in FGDs and triangulated with key informants), but this would be a challenge even under ideal circumstances.
- Time constraints led to trade-offs between reaching the targeted number of sites vs. maintaining the highest standards of data quality. An experienced researcher would likely have chosen to maintain quality in a reduced number of sites. This led to a particular impact on the depth of data gathered through sex worker diaries.
- The sample of truckers and FSWs may not be representative of their respective populations. Compare Map 1 and Table 14 for truck drivers and Table 17 and 24 for FSWs, showing disproportionate allocation of sample size to each hot-spot location. Arua Park, Nimule and Juba are underrepresented while Attiak and Bibia are overrepresented. Based on Table 14, the average number of liaisons per trucker differed by hotspot, so possible that overall results could be different with a more representative sample.

Conclusions and Recommendations

The hot-spot mapping and situation analysis raised a number of key issues around transport corridors, HIV risk behaviours, and existing services along the Kampala Juba Transport route. Firstly, the highways are currently carrying relatively small volumes of traffic, but this is likely to grow sharply in the near future. Transactional sex is already at high levels and condom use is below that needed to curb the transmission of HIV/STIs. This finding alone provides strong evidence for the need of targeted health programming for these groups and at-risk populations. Furthermore, there were very high levels of STIs self reported by truck drivers and then later confirmed by review of health facility data. Health facilities along the route tend to be small, private dispensaries and drug shops. STI drugs are available and most staff have been trained in STI syndromic management; however, quality control is unknown in addition to the availability and accessibility of VCCT services. Mobility of truckers is high, the mobility of FSW is less so, though complicated by Congolese victims of trafficking and history of expulsions of Ugandan FSW from Sudan. Finally, the wide range of client occupations calls for programming beyond specific occupation groups; a focus on forming peer groups of FSW and linking with community structures taking account of the local context (e.g. transport hot-spot, military base) would be ideal.

Recommendations

The results of this study and inputs from national and district-level stakeholders during the validation workshop (hosted by IOM, UNAIDS, and UAC in April 2008) offer evidence for establishing and strengthening services along the Kampala - Juba route.

Following successful models used in other countries, an integrated approach is indicated which combines peer education strategies with access to integrated health services that include STI management and promotion of VCCT. Provider-initiated counselling and testing (PICT) should also be introduced as access to treatment becomes available.

The approach should be supplemented by a number of supportive activities that avail strategic information and strengthened M&E, improve coordination among implementing partners, and address structural / environmental determinants of risk-behaviour.

Priority target populations for the programme should be female sex workers and truckers.

A successful phased programmatic intervention can include the following, with emphasis on the first two components:

1) “FSW-friendly” and “trucker-friendly” integrated health services

Access to targeted integrated services is required, with special emphasis on location, operating hours, and preferences of sex workers and truckers on the service package. Activities should include:

- Training of providers on national guidelines for diagnosis and treatment of STIs.
- Expansion of VCCT.
- Provider-initiated counselling and testing (PICT).
- Voucher schemes and other incentives for STI services.
- Clinical services for malaria (incl. ACT), respiratory infections, and diarrhoea.
- Facilities will ideally be branded, marketed to target groups, and offer a standard package of services.

- Client health information system can be linked on the Kampala - Juba corridor, both within Uganda and trans-border, to facilitate referral and continuity of care.

2) Peer education

Peer groups of female sex workers can be organized within each truck stop, with emphasis on recruitment and retention strategies, including limiting time of membership. Activities should include:

- Condom negotiation and usage.
- Health-seeking behaviour, especially VCCT, early STI diagnosis, and proper STI treatment.
- Referral and linkages to available services.
- Sensitization and avoidance of gender-based violence.

3) Development of targeted behavioural change communication toolkits for implementing partners on transport corridors

- Targeted towards specific risk-behaviours, under national BCC frameworks.
- Focus on consistent condom usage with casual *and regular* partners, treatment seeking behaviour and completion of STI regimen, accessing VCCT.
- Involvement of national BCC working group and implementing partners in development and dissemination.
- Demand creation strategy for VCCT and STI services.
- Mobility of populations necessitates strengthened coordination at local, national, bilateral, sub-regional, and inter-regional levels

4) Monitoring and evaluation

- Representative sero-prevalence and behavioural data is required to guide programming, and is a logical extension of the qualitative data provided by this study. A Second-generation Surveillance Survey is indicated, encompassing sites on both the Kampala - Juba and Northern Corridor segment from Kenyan to Burundi borders.

5) Addressing environmental and structural factors

Reducing HIV-risk behaviours along the Kampala - Juba corridor requires a combination of individual-level interventions (seeking treatment, changing behaviour) and higher-level actions, including the following:

- Reducing waiting time for trucks at loading / unloading and customs clearing sites.

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List of Acronyms

ACT	Artemisinin-based Combination Therapy
ART	Antiretroviral Treatment
AIDS	Acquired Immune Deficiency Syndrome
CHOGM	Commonwealth Heads of Governments Meeting
FGD	Focus Group Discussion
FSW	Female Sex Worker
GIS	Geographic Information System
GLIA	Great Lakes Initiatives on AIDS
GPS	Global-Positioning Systems
HIV	Human Immunodeficiency Virus
IDP	Internally Displaced Persons
IOM	International Organization for Migration
LRA	Lord's Resistance Army
MARPs	Most-at-Risk Populations
MENA	Middle-East and North Africa
NACES	National Committee for AIDS in Emergency Settings (NACAES)
NGO	Non-Governmental Organization
NSP	National Strategic Plan
OI	Opportunistic Infections
PICT	Provider-Initiated Counselling and Testing
STI	Sexually Transmitted Infection
UAC	Uganda AIDS Commission
UNAIDS	United Nations Programme on HIV/AIDS
UNFPA	United Nations Population Fund
UPDF	Uganda Peoples Defence Force
URTI	Upper Respiratory Tract Infection
USH	Ugandan Shilling
VCCT	Voluntary Confidential Counselling and Testing
WHO	World Health Organization

Annexes

Annex 1: Health Provider Questionnaire

Health Provider Questionnaire

I would like to inform you that some of the questions that I am going to ask you will be of a general nature relating to your economic activity, but there will also be some specific questions relating to sexually transmitted infections and their treatment. All information provided by you will be treated with confidentiality. The data collected may be published as a whole, but your name will not appear on any forms, and no identifying information will be released. The information gathered will be used to identify the providers of STI care for transport workers along the Trans-Africa highway and to determine the type of care provided to clients presenting with symptoms of STI. Participating in this interview is completely voluntary, and you may refuse to participate or you may withdraw from it at any time. If you have any questions about the study itself or any issues about any aspects of the interview, please feel free to discuss them with me at any point. We can also provide you with contact information of the investigators should you desire further information about the study or your rights after the interview has been completed. Are you willing to participate in the interview?

- 1 Yes 2 No (If no, End Interview)

Site: _____

Date: _____

Identifying number: (match to checklist) _____

Job title of respondent: _____

1. Type of facility: (select one from each column)

- a. Hospital
Health Centre
Dispensary/Clinic
Other _____

- b. Organization:
Government
Mission
Private
Other _____

2. Hours of operation: _____

3. What illnesses do you treat most often? (Record all that are named in order that they are listed by the respondent)

4. What services do you offer? (read out and check one only)

- a. Curative
b. Preventative
c. Both

5. Do you offer STI services? Yes No

If yes→Q7

If no→Q6

6. What do you do if a client comes to you with an STI?

(End of survey)

7. Do you keep records of STI clients? Yes No
- a. If yes, how do you keep the records? **(Unprompted, ask how they record the information and check all that apply)**
- i. Individual Patient Cards
 - ii. Complete Patient Register (book)
 - iii. Computer program
 - iv. Other _____

8. How many STI clients did you see in the...
- a. Past week? _____
 - b. Past full month? _____

9. What are the main occupations of male STI clients?
(Do not read list, check off all that apply and add as necessary)
- Truck Driver/Assistant
 - Police
 - Army
 - Other, please specify _____
 - Don't know

10. What are the main occupations of female STI clients?
(Do not read list, check off all that apply and add as necessary)
- Sex Worker
 - Informal Sector
 - Other, please specify _____
 - Don't know

11. Do you ever refer STI clients elsewhere? Yes No
- a. For what reasons do you refer clients?

 - b. Where do you normally refer clients to? _____

12. How much do you charge for
- a. STI consultation? _____ UGX/SUDANESE £
 - b. STI treatment? ...**(If they answer that the treatment cost varies, ask what the lowest possible cost for treatment is and also the highest possible cost, and record the range)**
_____ UGX/SUDANESE £

13. How many people work here? _____

	Number	STI training
Doctors		
Clinical Officers		
Nurses		
Other _____		

14. For those who have had STI training, what courses have been covered? **(Read list out and check off all that apply, adding others as necessary)**

- a. Syndromic management of STIs
- b. STI counselling
- c. STI supervision
- d. Other _____

15. What guidelines or protocols do you use in the management of STIs?

16. Do you test for STIs? Yes No

Do you do counselling for STIs? Yes No

17. Do you have drugs for the management of STIs? Yes No
 (If no→end survey here.)

18. What drugs do you use in the treatment of STIs? **(Unprompted, check off all that apply and list others as necessary. Ask if there are any other drugs they use after they have finished listing them)**

Drug	Use (yes/no)
Metronidazole	
Erythromycin	
Norfloxacin	
Doxycycline	
Clotrimoxazole	
Benzathine Penicillin	

Other: _____

19. Where do you obtain STI drugs? _____

20. Have you ever ran out of stock of any of the STI drugs? Yes/No

a. What was longest time that you were out of stock of STI drugs?

b. Has this ever interfered with the treatment of a patient? Yes/No
 If yes, how was the patient treated in the absence of the specific drug?

Annex 2: Truckers Health-seeking Behaviour Survey

TRUCKERS HEALTH-SEEKING BEHAVIOUR SURVEY

I would like to inform you that the questions that I am going to ask you will be of a general nature relating to your perception of health care and your economic activity, but there will also be some of a personal nature. All information provided by you will be treated with confidentiality. The data collected may be published as a whole, but your name will not appear on any forms, and no identifying information will be released. The information gathered will be used to identify the providers of STI care for transport workers and to determine which providers of STI care transport workers like to use. Participating in this interview is completely voluntary, and you may refuse to participate or you may withdraw from it at any time. If you have any questions about the study itself or any issues about any aspects of the interview, please feel free to discuss them with me at any point. We can also provide you with contact information of the investigators should you desire further information about the study or your rights after the interview has been completed. Are you willing to participate in the interview?

Sasa ningependa kukueleza kuwa maswali nitakayo kuuliza yatakuwa ya kawaida na yatahusiana na hali yako ya kiafya, kiuchumi na pia kutakuwa na maswala mengine ambayo yatahusiana na magonjwa ya zinaa na jinsi yanavyotibiwa. Habari zote utakazo toa zitawekwa siri. Na habari zitakazo tolewa nanyi zitachapishwa kwa ujumla na hakuna jina litakalo tolewa katika fomu hizi au mtu kutajwa.

Habari mtakazo toa zitatumika tu kugundua wale watu ambao au vituo ambazo zinatoa utunzi kuhusiana na magonjwa ya zinaa katika barabara kuu ya kupita Afrika kwa jumla. Na pia kujua utunzi gani utatolewa kwa wateja walio na dalili za magonjwa ya zinaa. Kutoa habari katika mahojiano haya ni kwa hiari yako, umekubaliwa kukataa kushiriki, pia unaweza kuacha kati kati ukitaka.

Ukiwa na maswali yoyote kuhusu utafiti huu au jambo lolote linalohusu sehemu yoyote ya utafiti, tafadhali kuwa huru kujadiliana na mimi wakati wowote. Tunaweza kukupatia jinsi za kuwasiliana na wachunguzi wakuu wanaohusiana na utafiti huu kama utataka na mambo yanayohusiana na haki zako baada ya mahojiano haya kumalizika. Je umekubali kushiriki katika mahojiano haya?

Je, umekubali kushiriki katika mahojiano haya?

1 Yes 2 No (**If no, End Interview**)

Section One: Background Information

1. Date: day _____ month _____ year _____

Tarehe ya Mahojiano Siku Mwezi Mwaka

2. Subject's study number: *Nambari ya Muhojiwa* _____
UNIQUEID

3. Interviewer's name/number _____

Jina la Anayehoji

4. Site _____

Hali

SITE

5. Ethnic affiliation _____

Kabila

ETHNIC

6. Month /Year born: _____

Miaka / Mwezi wa kuzaliwa

AGE

7. Religion *Dini* (Read out the following. Circle one answer only.)

RELIG

1 Protestant/*Mprotestanti*

2 Catholic/*Mkatoliki*

3 Muslim/*Muislamu*

4 Hindu / *Muhindi*

5 Traditional / *dini ya kawaida*

6 None / *Hakuna dini*

9 Other: *Nyinginezo* _____

98 Don't know/Don't remember/*sijui/sikumbuki*

99 No response/*hakuna jibu*

8. Are you currently married or living with a woman? *Kwa sasa umeoa ama unaishi na mwanamke?* (Read out the following. If not married or living with partner, ask respondent if he is separated, divorced or widowed. Circle one answer only.)

MARSTAT

1 Never married / *sijaolewa*

2 Married/ *nimeolewa*

3 Separated / *kutengana*

4 Divorced / *kuachwa kisheria*

5 Widowed / *ni mjane*

6 Cohabiting/ *unyumba*

98 Don't know/Don't remember/ *sijui /sikumbuki*

99 No response / *hakuna jibu*

9. Number of living children: */nambari ya watoto walio hai* _____

CHILD

98 Don't know/Don't remember/*sijui/sikumbuki*

99 No response/*hakuna jibu*

10. Highest number of years completed in school/*miaka ya juu zaidi katika shule?*

EDUC

11 Home location and district/ *tarafa na wilaya*

Location/*tarafa* _____ District/*wilaya* _____

LOC

DIST

Section Two: Work details

12 What work do you currently do? / *hivi sasa unafanya kazi gani?* (Read out the following. Circle one answer only.)

OCC

1 Driver

2 Turnboy

3 Other (Specify)

13 No. of years in this occupation / *umefanya kazi hii kwa miaka mingapi?* _____
 Years
 YEAROCC

14 No. of years with present employer/ *Umefanya na mwajiri wako wa sasa kwa miaka mingapi* _____ Years
 YEAREMP
 If less than one year, number of months/ _____ Months

15 During the past 12 months, which countries have you visited in the course of your employment? / *Inchi gani umetembelea kikazi kwa muda wa mwaka moja uliopita?* (**tick each mentioned and prompt for others**)
 NATIONS

Kenya	Uganda	Tanzania	Rwanda	Burundi	Sudan	Others (Specify)

17 During the past 12 months, approximately how many nights did you spend at home? / *Katika miezi kumi na mbili iliyopita, umelala kwako siku ngapi?* (**Check only one box**)
 HOMETIME

Less than 5 nights	
6-9 nights	
10-19 nights	
20-29 nights	
30-39 nights	
40 nights or more	

Section Three Health and STIs

18 In your work as truckers, what are the main health problems that you suffer from? / *Nyinyi kama madereva na maturn boi, ni matatizo gani ya kiafya yanayo watatiza?* (**List the three main problems cited, if less than 3 prompt for more**)
 HPROB1-HPROB3

1. _____
2. _____
3. _____
4. _____

I'd now like to ask you some questions about diseases that can be transmitted sexually. *Sasa ningependa kukuliza maswali kuhusu magonjwa yanayo ambukizwa kwa kuonana kimwili*

19 Can you describe symptoms of such diseases in men/ *waweza kueleza dalili ya maradhi hayo kwa wanaume?* (**Unprompted, check each one cited and list any others cited.**)
 SYMPMEN

- 98 Don't know / *sijui*
 99 No response / *hakuna jibu*

- 1 Urethral discharge/ *kutokwa na usaa kwenye njia ya mkojo*
 2 Burning/pain on urination / *kuchomwa au uchungu wakati wa kukojoa*
 3 Genital ulcers or sores/ *vidonda kwenye sehemu ya siri* 4 Swelling
 in groin area/ *uvimbe kwenye mraba wa paja* 5 Other/
nyinginezo _____

Total of all checked in this column only: (calculated at data entry)

- 20 Have you had urethral discharge in the past year? / *Ushatokwa na kitu kama usaa kutoka njia ya mkojo katika muda wa mwaka moja uliyopita?* (Unprompted, Circle one answer only.)

DISCHARG

- 1 Yes / *ndiyo*
 2 No / *hapana*
 98 Don't know/Don't remember/ *sijui/sikumbuki*
 99 No response / *hakuna jibu*

- 21 Have you had a genital sore in the past year/ *Umekuwa na kidonda kwenye sehemu za siri kwa muda wa mwaka moja iliyopita?* (Unprompted. Circle one answer only.)

GENTSORE

- 1 Yes/ *ndiyo*
 2 No/ *hapana*
 98 Don't know/Don't remember/ *sijui/sikumbuki*
 99 No response / *hakuna jibu*

FILTER: CHECK Q20 AND Q21

IF THE REpondENTS NEVER HAD SYMPTOMS, SKIP TO Q38

Section Four: STI Health Seeking Behaviour

- 22 When you first realized you had an STI, where were you at the time? / *Ulipo gundua una ugonjwa wa zinaa, ulikuwa wapi wakati huo?* (Unprompted, select one answer only)

STILOC

- On the road, far from home, specify where _____
 On the road, but near home, specify where _____
 At home
 Elsewhere (Specify) _____

23. For how many days did you stay with the symptoms before you sought treatment? / *Ulikaa kwa siku ngapi na dalili hizo kabla ya kupata matibabu?*

A _____

B Never Sought treatment / *sikutafuta matibabu*

24. While you had these symptoms, did you continue to have sex / *wakati ulikuwa na hizo dalili uliendelea kuonana kimwili?* (Circle one answer only.)

STDSEX

- 1 Yes / *Ndiyo*
 2 No / *hapana*
 98 Don't know/Don't remember/ *sijui/ sikumbuki*
 99 No response / *hakuna jibu*

25. What did you do to protect your partners while you had these symptoms/ *Je ulifanyaje kuzuia wapenzi wako wasipate maradhi haya ulipokuwa na dalili?* (Unprompted. Circle all answers cited.)

PROPART

- 1 Nothing / *hakuna*

- 2 Used a condom/ *nilitumia kondomu*
- 3 Abstained from sex until cured / *nilijizuia kuonana kimwili mpaka nipone*
- 4 Other/ *nyinginezo (Cite all mentioned)* _____
- 98 Don't know/Don't remember/ *sijui/sikumbuki*
- 99 No response/ *hakuna jibu*

26 When you realized that something was wrong, what did you do FIRST/ *Ulipogundua kuna itilafu fulani ulifanya nini kwanza? (Unprompted. Circle one answer only.)*

TREATDIS

- 1 Went to a government hospital or clinic/ *nilienda kwa kliniki ya serikali*⇒Q27
 - 2 Went to a private/mission clinic/doctor / *Nilienda kwa kliniki/ daktari wa kibinafsi*⇒Q27
 - 3 Went to a pharmacy for advice and/or medicine / *nilienda kwa duka ya kuuza dawa kwa ushauri/madawa*⇒Q27
 - 4 Went to a traditional healer/ *Nilienda kwa matibabu ya kienyeji* ⇒Q27
 - 5 Took medicine that I had with me/ *Nilitumia dawa nilizokuwa nazo* ⇒Q38
 - 8 Got leftover medicine from someone/ *nilitumia dawa za mwenzangu zilizobaki* ⇒Q38
 - 9 Did nothing and let the symptoms pass/ *nilikaa tu mpaka dalili zikapotea* ⇒Q38
 - 10 Other/ *nyinginezo(specify)* ⇒Q27 or 38 depending on answer
-
- 98 Don't know/Don't remember/ *sijui/ sikumbuki* ⇒Q38
 - 99 No response / *hakuna jibu*⇒Q38

27. Were you given a prescription/ *Je ulipata cheti cha maelezo cha matibabu?*

PRESC

- 1 Yes/ *ndiyo*
- 2 No / *hapana*⇒Q29

28. If yes, how long did you take the drugs/ *Je ulimeza dawa kwa siku ngapi au wakati gani? (Unprompted. Circle one answer only.)*

COMPLDIS

- 1 Until I felt better/ *mpaka nilipata nafuu*
 - 2 Until the symptoms disappeared / *mpaka dalili zilipotoweka*
 - 3 Until I completed the drugs / *Mpaka nilipomaliza dawa*
 - 4 Other/ *nyinginezo (Record specific response)*
-
- 98 Don't know/Don't remember/ *sijui/sikumbuki*
 - 99 No response/ *hakuna jibu*

29. Does this facility provide counseling service for STI ? / *Je, kituo hiki hutoa mawaidha kuhusu magonjwa ya zinaa?*

- 1 Yes
- 2 No ⇒Q31
- 3 Don't know ⇒Q31

30. What aspects are covered in counseling for STI?/ *Ni mawaidha gani yanayo guziwa kuhusu magonjwa ya zinaa? (Do not prompt)*

- 1 Condom use / *utumizi wa kondomu*
- 2 STI/HIV prevention / *kuzuia magonjwa ya zinaa na virusi vinavyo*

- sababisha ukimuwi*
- 3 Consequences of STI/HIV / *madhara ya magonjwa ya zinaa na virusi vinavyo sababisha ukimwi*
 - 4 Treatment Compliance / *jinsi unavyo endelea na matibabu*
 - 5 Contact Tracing / *kujua ni nani aliyeambukizwa*
 - 6 Other _____

31. Are condoms available at this facility? / *Je, kondomu zinapatikana kwenya kituo hiki?*

- 1 Yes
- 2 No
- 3 Don't know

32. How much did the last treatment of STI cost you? / *Kutibiwa kwa ugonjwa wa zinaa mara ya mwisho kuligharimu pesa ngapi?* UGX/SUDANESE £ _____

34. Do you consider this charge / *Je ulionelea bei hii kwa: (Read out and check one)*

- 1 Reasonable / *sawa*
- 2 Expensive / *ghali*

35. The last time you went for treatment what was the average waiting time? / *Mara ya mwisho ulipoenda kwa matibabu ulingoja kwa muda gani hivi?*

____Hours____ Minutes

36. Do you consider this reasonable / *Unaona muda huo ni sawa?*

- 1 Yes
- 2 No

37. Would you recommend a friend to use this facility for treatment of STI? / *Je, ungependekeza rafiki yako kutumia kituo hiki cha matibabu ya zinaa?*

- 1 Yes
- 2 No

If no, why not / *kama la, kwa nini?* _____

Client Perception of Health facilities

38. Along the Kampala-Juba road what are the main sources of health care? / *Kati ya barabara kuu kutoka Kampala hadi Juba, ni vituo vipi vinavyatoa huduma za utunzi za kiafya? (Unprompted. Circle all that apply)*

- 1 Public health facilities
- 2 Traditional/herbal medicine
- 3 Shops/Over the counter drugs
- 4 Private clinics
- 5 Chemists /Pharmacy

39. During the past 12 months, have you sought treatment for any ailment at any health facility along the road between Kampala and Juba? / *Kwa muda wa miezi kumi na mbili iliyopita umewahi kutafuta matibabu ya aina yoyote kwa kituo chochote cha afya kwenye barabara kuu ya Kampala-Juba?*

- 1 Yes
- 2 No

If yes, specify what for and what facility:

1 _____

2. _____

40. If you had an STI which one of these facilities would you prefer to use for treatment of STI?
/ Kama ungekuwa na ugonjwa wa zinaa ni vituo vipi kati ya hizi ungependelea kupata matibabu? (Read out and circle one answer only)

- 1 Public health facilities / *kituo cha uma cha matibabu*
- 2 Traditional/herbal medicine / *daktari wa kienyeji*
- 3 Shops/Over the counter drugs / *maduka*
- 4 Private clinics / *kliniki za kibinafsi*
- 5 Chemists /Pharmacy/*duka la dawa*

41. List the facilities in order of importance / *Panga vituo hivi kwa umuhimu wao:*

- 1 Public health facilities / *kituo cha uma cha matibabu* _____
- 2 Traditional/herbal medicine / *daktari wa kienyeji* _____
- 3 Shops/Over the counter drugs / *maduka* _____
- 4 Private clinics / *kliniki za kibinafsi* _____
- 5 Chemists /Pharmacy/ *duka la dawa* _____

42. For the facility you have selected as the first choice give the reasons why you prefer it?
Kwa kituo ulichokichagua kuwa cha kwanza, niambie ni kwa sababu gani unakipendelea?
(Unprompted, multiple answers)

- 1 Availability
- 2 Cheaper
- 3 More privacy
- 4 Positive provider attitude
- 5 Drugs are available
- 6 Less waiting time
- 7 Long opening hours
- 8 Other, specify _____

43. Do you ever obtain condoms in the following health facilities? / *Je, umewahi kupata kondomu kwa vituo vya afya vifuatavyo? (Prompt and tick as appropriate)*

Type of facility	Yes	No
Public health facility / <i>kituo cha uma cha matibabu</i>		
Traditional/herbalist / <i>daktari wa kienyeji</i>		
Private clinics/ <i>kliniki za kibinafsi</i>		
Chemists/ <i>duka la dawa</i>		
Shops/ <i>maduka</i>		

If No, why not / *Kama la, kwa nini ?* _____

Annex 3: Bar and Lodgings Census Form

BAR AND LODGINGS CHECKLIST

Spot: Name of Establishment

Unique Code

Interviewer: _____ Date of interview:/...../.....

Category

Bar / Lodging

Lodging, no bar

Bar only

Part 1 Managers Questionnaire

Respondent: _____

Position: _____

Length of time in this establishment? _____

Year business established _____

Main type of clients (male) _____

Main type of clients (female) _____

What proportion of female clients do you estimate to be sex workers?

All / Almost all

Over 75%

50% - 74%

25% - 49%

<25%

None

Rooms (If lodgings): _____ # Bars: _____ # Employees _____

Total Seating Capacity: _____ Beer sales per week (avge): _____ crates

Sachet drink sales per week (avge): _____ sachets

Condom Dispenser? Yes / No If Yes, # condoms per average week: _____

Condoms distributed free? Yes / No If Yes, # condoms per average week: _____

Condoms sold? Yes / No

Brand(s) sold:

1) _____ Price per Pkt _____ # condoms per average week: _____

2) _____ Price per Pkt _____ # condoms per average week: _____

3) _____ Price per Pkt _____ # condoms per average week : _____

If no condoms distributed or sold, what are the reasons for this?

Are there any days of the week when the bar/hotel/lodge is particularly busy or particularly quiet? Yes / No

Busy days: _____

Quiet days: _____

Are there any times of the month when the bar/hotel/lodge is particularly busy or particularly quiet? Yes / No

Busy times: _____

Quiet times: _____

Spot: Name of Establishment

Unique Code

Part 2: Patron Counts

Day / Date	Time											
	7-8pm		8-9pm		9-10pm		10-11pm		11pm-12am		12-1am	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Mon												
Tues												
Wed												
Thurs												
Fri												
Sat												
Sun												

Tally Clerk: _____ Checked by: _____

Notes:

List no. and types of posters for HIV _____

Condom adverts (No. and brand) _____

Displays: _____

Other Notes: _____

Interviewer: Thank respondent for his/her time, explain purpose and procedures of tallies and ask permission for tally clerk to be present in the establishment for the required period.

Annex 4: Female Sex Workers Diaries

FEMALE SEX WORKER DIARY

DoB Code No. Start and end dates From To

Day (e.g. Mon, Tues, Wed)	Date	Town/Place where you spent the night	C=casual R=regular	Occupation of client	Has he been recorded already in your diary? YES or NO	No. Rounds	C=condom N=no condom/ + No. Condoms used	Write 'M' if on menses

Note these details on back page of completed diary on surrender:

Regular Partners in Diary

Other Regulars not recorded in Diary

Annex 5: Sexual Patterning Recording Form

SEXUAL PATTERNING RECORDING FORM

Unique ID. Date Interviewer

Sexual Partners (If more than 8, continue overleaf)									
Month	Marker	Partner 1	Partner 2	Partner 3	Partner 4	Partner 5	Partner 6	Partner 7	Partner 8
Nov 06									
Dec 06									
Jan 07									
Feb 07									
Mar 07									
Apr 07									
May 07									
Jun 07									
Jul 07									
Aug 07									
Sep 07									
Oct 07									
Nov 07									
Type of partner									
Condom use: (Yes/No)									
1. Ever		1.	1.	1.	1.	1.	1.	1.	1.
2. At first encounter		2.	2.	2.	2.	2.	2.	2.	2.
3. At last encounter		3.	3.	3.	3.	3.	3.	3.	3.
4. Always		4.	4.	4.	4.	4.	4.	4.	4.

Type of Partner codes

Male: 1 Wife/live in partner, 2 Girlfriend/fiancee, 3 Other regular partner 4 Casual acquaintance, 5 Relative, 6 FSW

Female: 1 Husband/live in partner, 2 Boyfriend/fiancé, 3 Other regular partner, 4 Casual acquaintance, 5 Relative, 6 CSW, 7 Client (if respondent is FSW)

Sexual Partners									
Month	Marker	Partner 9	Partner 10	Partner 11	Partner 12	Partner 13	Partner 14	Partner 15	Partner 16
Nov 06									
Dec 06									
Jan 07									
Feb 07									
Mar 07									
Apr 07									
May 07									
Jun 07									
Jul 07									
Aug 07									
Sep 07									
Oct 07									
Nov 07									
Type of partner									
Condom use: (Yes/No)									
1. Ever		1.	1.	1.	1.	1.	1.	1.	1.
2. At first encounter		2.	2.	2.	2.	2.	2.	2.	2.
3. At last encounter		3.	3.	3.	3.	3.	3.	3.	3.
4. Always		4.	4.	4.	4.	4.	4.	4.	4.

Type of Partner codes

Male: 1 Wife/live in partner, 2 Girlfriend/fiancee, 3 Regular partner 4 Casual acquaintance, 5 Relative, 6 FSW

Female: 1 Husband/live in partner, 2 Boyfriend/fiancé, 3 Regular partner, 4 Casual acquaintance, 5 Relative, 6 CSW, 7 Client (if respondent is FSW)

Annex 6: Additional Recommendations

In addition to recommendations resulting directly from this study, research findings and lessons-learned in the region from similar interventions indicate a package of interventions that may possibly be relevant to the Kampala – Juba Transport Corridor.

Importantly, this package or framework seeks to address individual-level risk factors (e.g. prevention and service access), while also mitigating environmental vulnerabilities (e.g. reducing stigma, creating enabling environment), and structural determinants of risk (e.g. reducing waiting times at borders). Strategies for addressing the environmental and structural determinants include engaging multisectoral stakeholders such as community groups, police, owners of entertainment venues and lodgings, customs officials, and transport ministries in addressing specific programmatic areas such as supporting women to negotiate with clients to use condoms.

This proposed regional framework comprises six main components generally reflecting the study recommendations, with inclusion of the additional activities and components.

The entire programme framework can be placed within the context of HIV prevention for most-at-risk populations. This means that prevention should also be integrated into aspects of treatment, care, and support.

1) “FSW-friendly” and “trucker-friendly” integrated health services

Access to targeted integrated services is required, with special emphasis on location, operating hours, and preferences of sex workers and truckers on the service package. Activities should include:

- Training on national guidelines for diagnosis and treatment of STIs. Emphasis on private sector providers.
- Training on national guidelines for tuberculosis and opportunistic infections (OI).
- Expansion of VCCT.
- Provider-initiated counselling and testing (PICT).
- Clinical services for malaria (incl. ACT), respiratory infections, and diarrhoea.
- Voucher schemes and other incentives for STI services.
- Standard client health information system linked between facilities corridor-wide and trans-border, including a swipe-card system for accessing client medical records.
- Facilities will ideally be branded, marketed to target groups, and offer a standard package of services.
- Condom promotion.

2) Roll-out of ART and TB-DOTS

Existing data in East Africa tends to indicate that sero-prevalence among most-at-risk populations along transport corridors is twice that of the general populations, approximately 20-25% among truckers and 30-50% among sex workers. Current infection levels are however unknown due to generalizability concerns and the fact that existing sero-data is 12-15 years old. Nevertheless, given the continued high levels of STIs, low condom usage, existence of multiple concurrent partners, general lack of targeted prevention, and concern of most-at-risk groups (transport workers, sex workers) about high numbers of their peers dying of AIDS, ART is clearly needed.

In addition to elements described under component 1, additional considerations are required for rolling out ART:

- Innovative means of supporting adherence, e.g. with mobile phones and driver assistants as “treatment buddies”.
- Accreditation, procurement, and monitoring of integrated health clinics.
- Establishing support groups and treatment literacy for HIV-infected drivers and FSW.
- Introduction of routine counselling and testing, including pre-test counselling in group settings.
- Building skills for service providers and peer educators in treatment literacy.
- Establishing laboratory capacity for HIV-related diagnostics.
- Strengthening programming for TB-HIV co-infection and detection.
- Emphasizing HIV prevention through post-test counselling, PMTCT, adherence counselling, and discordant couple counselling.
- Condom promotion.

3) Communication Framework

Behavioural Interventions

- Peer education for sex workers.
- Outreach and/or peer education for truckers.
- Facilitation of target populations to identify media preferences and lead development of and testing of materials and messages.
- Targeted behavioural change communication toolkits for implementing partners on transport corridors, targeted towards specific risk-behaviours, under national BCC frameworks.
- Development of focused messages on consistent condom usage with casual *and regular* partners, treatment-seeking behaviour, completion of STI regimen, accessing VCCT.
- Involvement of national BCC working group and implementing partners in development and dissemination.

Campaigns, Advocacy, and Demand Creation

- Demand creation strategy for VCCT and STI services.
- Stigma reduction strategy.
- Marketing and advocacy for policy and resource mobilization.
- Advocacy and sensitization strategy for gatekeepers and employers.
- Use of media to propagate awareness and prevention messages, with emphasis on common misconceptions among target groups.
- Condom programming, including social marketing.

4) Mobility of populations necessitates strengthened coordination at local, national, bilateral, sub-regional, and inter-regional levels

- Client health information system can be linked on the Kampala - Juba corridor, both within Uganda and trans-border, to facilitate referral and continuity of care.
- Regional BCC and communication programmes should be tailored to prevalent languages and cultural norms.
- Sharing of lessons learned and avoidance of overlap.
- Inter-regional dialogue, advocacy, and collaboration.

- Harmonization of treatment regimens and guidelines, so that if an individual begins treatment in one country, he/she can continue treatment (or refill prescription) in another.

5) Monitoring and evaluation

- M&E should ideally be standardized among service providers corridor-wide, under existing government M&E structures, in order to identify programmatic gaps and progress, with key indicators reflecting those at different levels in the national M&E system.
- Action research is indicated in a number of areas, including evaluation of effectiveness of targeting, client satisfaction with service-friendliness, and epidemiological study of STI management.
- Representative sero-prevalence and behavioural data is required to guide programming, and is a logical extension of the qualitative data provided by this study. A Second-generation Surveillance Survey is indicated, encompassing sites on both the Kampala - Juba and Northern Corridor segment from Kenyan to Burundi borders.
- BSS+ will allow capture of key UNGASS indicators for MARPs, including:
 - Percentage of MARPs who receive an HIV test in the last 12 months and who know their results
 - Percentage of MARPs reached with HIV prevention programmes
 - Percentage of MARPs who both correctly identify ways of preventing the sexual transmission of HIV and who reject major misconceptions about HIV transmission
 - Percentage of women and men aged 15-49 who say they used a condom the last time they had sex with a non-marital, non-cohabiting partner, of those who have had sex with such a partner in the past 12 months
 - Percent of men reporting sex with a sex worker in the last 12 months who used a condom during the last paid intercourse
 - Percentage of MARPs who are HIV-infected.

6) Advocacy, Policy Change, and Partnership-building

Reducing HIV-risk behaviours along the Kampala - Juba corridor requires a combination of individual-level interventions (seeking treatment, changing behaviour) and higher-level actions, including the following:

- Reducing waiting time for trucks at loading / unloading and customs clearing sites.
- Sensitizing police and soldiers on gender-based violence.
- Involving police, owners of bars/lodgings, and sex workers in creating a 100% condom environment (e.g. following the Thai model).
- Involving community development groups in protecting the well-being of sex workers and offering alternative livelihoods for sex workers who wish to engage in other means of employment.
- Building partnership with the private sector, including multinationals.
- Stigma-reduction interventions involving multiple stakeholders.
- Needs assessment on trafficking of women into the sex trade.