MAPPING & SIZE ESTIMATION

OF MOST-AT-RISK-POPULATION IN NEPAL-2011

Vol.3 FEMALE SEX WORKERS

HIV/AIDS and STI Control Board (HSCB)
National Centre for AIDS and STD Control (NCASC)

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Field work done upto January 2011

Study Conducted by:
The Nielsen Company Nepal Pvt. Ltd.

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Foreword

Effective response to HIV AIDS requires evidence to inform its course of action and priorities for maximizing the impact. In Nepal the reliable estimates of sizes of Most at Risk Population groups have remained a big data gap in recent years and the needs was felt at all levels to have a comprehensive exercise to map MARP populations groups and estimate their sizes. These data sets of mapping and size estimates of MARPs will help country in evidence based planning, prioritizing the geographical areas for resource allocation, feed into second generation surveillance including estimation of the infection load and to monitor and evaluate the response by tracking the coverage.

So, in order to fulfill these data gaps, HSCB in partnership with NCASC and with technical and financial support from UNAIDS, World Bank, UNDP, UNODC, FHI Nepal/USAID, conducted a study for mapping and estimating size of most at risk population namely, Female Sex Worker, Male Sex Worker, Transgender and Their Clients (MTC) and Injecting Drug User (IDUs) in 41 districts systematically selected to represent entire country. As a result, these estimates number will play key role to guide policy makers and planners for ensuring effective response to HIV/AIDS targeting these groups in various parts of the country.

The results have come out at an opportune time as the country prepares its next National Strategic Plan 2011-16 and when a review of the targeted interventions is underway with Government taking up the leadership role in implementing the prevention programs amongst MARPs with support of GFATM and pooled funding.

We would like to extend our gratitude to NCASC, UNAIDS, World Bank, UNDP, UNODC, FHI Nepal/USAID for supporting such a meaningful and prestigious study. We hope this report will be useful for programme planning, prioritization, implementation and monitoring and evaluation and will go a long way in strengthening the culture of learning from evidence. It will also assist in identifying risk, vulnerability of HIV at district level as well as the available services which will help decentralized planning and management.

Finally, we would also like to thank all individuals for their contribution and active role played in completion of this study.

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Preface

In countries like Nepal, where there is concentrated epidemic of HIV, the national response to HIV and AIDS should be prioritize according to burden of risk and vulnerability among most at risk populations in country. The reliable size estimates of MARPs at national, regional and district level provides a basis for both policy and programming. It is also important to know where these population sub groups are located/ concentrated to design and implement the effective intervention. Size of MARPS helps us to alert policy-makers to the existence and the magnitude of a different subpopulation that may be at risk for HIV.

Previously, country had estimated size of MARPs using different secondary methods. For the first time NCASC & HSCB conducted a mapping and size estimation of most at risk population (IDUs, FSW and MTC) in a collaborative manner with technical and financial support from UNAIDS, WB, UNDP, UNODC, USAID/FHI.

Result from this extensive exercise are expected to be useful in programme planning, policy formulation and strategy development which will contribute to acquire outcome with shaping the intervention to be more specific.

At last, I would like to thanks all the organizations and individuals who have substantially contributed on this important and meaningful study. I hope facts on this report will be extensively used in programme planning and implementation.

.....
Dr. Ramesh Kumar Kharel
Director
NCASC

DIRECTOR

ACKNOWLEDGEMENTS

We would like to extend our gratitude to World Bank, UNAIDS, UNDP, UNODC (support managed by TSF South Asia), USAID/ASHA Project for providing us with the opportunity to conduct such a meaningful and prestigious study.

We would also like to extend our sincere thanks to all the steering committee members for guiding all the aspects of the study right from the stage of study conceptualization. Their visits to the field and frequent interaction with the research team proved to be extremely helpful while carrying out the study.

Mr. Alankar Malviya, Strategic Information and M&E Advisor for Nepal and Bhutan, deserves special credit for the guidance and support provided during the entire course of the study. We would like to express appreciation for Mr. Sanjay Rijal, M&E Officer and Mr. Komal Badal, M&E Assistant, HSCB for their technical inputs, support and guidance throughout the course of the study.

We also gratefully acknowledge the substantial contribution of Dr. S.K. Singh, Tobi Saidel and Virginia Loo for their technical inputs throughout this study. Moreover, we are also grateful to Ms. Tanya Sarin for her support on report writing and editing.

We are also indebted to all government and non-government organizations including network of FSW, Jagriti Mahila Maha Sangh and its district partners for their support during the various stage of this study. Special appreciation goes to our respondents, who spared their valuable time for the interview and shared their personal experiences. Lastly, we would extend our gratitude to USAID for supporting the designing and printing of the report.

HIV AIDS and STI Control Board
National Centre for AIDS and STD Control
Teku, Kathmandu
2011

ABBREVIATIONS & ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
ART	Anti-Retroviral Therapy
ASHA	Advancing Surveillance, Policies, Prevention, Care and Support to Fight HIV/AIDS
BCC	Behaviour Change Communication
BDS	Blue Diamond Society
CBO	Community Based Organization
CREPHA	Center for Research on Environment, Health, and Population Activities
DACC	District AIDS Coordination Committee
DIC	Drop-in Center
DFID	Department for International Development
DoHS	Department of Health Services
EB	Establishment- based
FSW	Female Sex Worker
HB	Home-based
HD	Highway Districts
HIV	Human Immunodeficiency Virus
HSCB	HIV/AIDS and STI Control Board
IBBS	Integrated Bio-behavioural Survey
IDU	Injecting Drug User
I/NGO	International Non-governmental Organization
KI	Key Informant
KV	Kathmandu Valley
MARP	Most-At-Risk Population
MSM	Men who have sex with men
MSW	Male Sex Worker
MTC	Male Sex Worker, Transgender and their Clients
NCASC	National Centre for AIDS and STD Control
NGO	Non-Governmental Organization
NLFS	National Labour Force Survey
PLHIV	People Living with HIV
PRA	Participatory Rapid Assessment
RH	Remaining Hill
SI-TWG	Strategic Information Technical Working Group
STI	Sexually Transmitted Infections
TI	Targeted Interventions
UNAIDS	Joint United Nations Programme on HIV and AIDS
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
VCT	Voluntary Counseling and Testing
VDC	Village Development Committee

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EXECUTIVE SUMMARY

Nepal conducted a mapping and size estimation exercise of Most-at-Risk Population groups (MARPs) in consideration of the epidemic's nature, availability of limited information on the MARP groups of Female Sex Workers (FSWs), Men who have sex with Men (MSMs) and injecting drug user (IDUs) population and the need for a more robust and evidence informed response to HIV for maximizing results. Mapping and size estimation was conducted under the leadership of the HIV/AIDS and STI Control Board (HSCB) and National Centre for AIDS and STD Control (NCASC) and was enabled by the financial and technical support of UNAIDS, World Bank, UNDP, UNODC and FHI Nepal/USAID. Moreover, the Steering Committee on Mapping and Size Estimates of MARP Groups closely monitored the process and provided close supervision throughout the course of the study.

This report presents the data and key findings emerging through the mapping and size estimation exercise of the FSWs. FSWs in the mapping and size estimation exercise included the following groups: establishment-based FSWs, street-based FSWs and home-based FSWs.

The specific aims of the mapping and size estimation exercise were firstly, developing comprehensive maps of FSWs' sites; secondly, estimating the size of FSWs at district and national levels; and thirdly, studying FSW behavioural and background characteristics. Mapping and size estimation was conducted across 39 select districts in the following six epidemic regions of the country: Highway Districts, Kathmandu Valley, West and Mid-west Hill, Far-western Hill, Eastern Hill and Remaining Hill regions.

Following a brief outline of HIV's epidemiology in the subsequent paragraph, the methodology and key findings from the mapping and size estimation exercise are summarized.

Epidemiology

Nepal remains a concentrated epidemic country, with an estimated 64,000 people living with HIV (PLHIV) (NCASC, 2009). The epidemic is concentrated amongst the FSWs, MTCs and IDUs. As acknowledged above, a need was felt for

accruing greater knowledge on the size of MARPs and their behaviour to guide the AIDS response.

Methodology

Although the methodology used for mapping and estimating the size of FSWs took due cognizance of the methods that were previously utilized for estimating the sizes of MARPs, it focused on overcoming the limitations associated with each.

Under the current exercise, mapping data of 39 systematically selected districts across six epidemic regions was extrapolated for estimating the size of FSWs according to the similarity of risk and vulnerability present in the districts. Various techniques and processes were applied for collecting data on hotpots where FSWs were concentrated in these 39 districts. These included firstly, the district level stakeholder meetings. These stakeholder meetings aimed at facilitating community participation in the data collection process at the field level and supporting the monitoring and supervision of the entire study at the national level through the Steering Committee. The meetings enabled all stakeholders to list locations and hotspots and estimate the size of MARPs. Secondly, a Participatory Rapid Assessment (PRA) technique was employed. Population sizes were estimated and prevalent hotspots were determined on the basis of the information that was accrued by primary, secondary and tertiary informants through focused group discussions. Finally, three-day observations were recorded by teams' comprising of social scientists and community members at each hotspot in the mapped districts. Approximately 10% FSWs were interviewed as a part of the behavioural survey for obtaining behavioural information.

The Steering Committee used inbuilt quality checks for ensuring data quality. The correction factors used and scheme of extrapolation are discussed in the subsequent chapters of this report.

FSW hotspots

Information on FSW hotspots and size estimates is pertinent for national and district level programmers to consider whilst planning programmes and focusing interventions to target specific geographical areas. Key findings from the FSW mapping and size estimation exercise are presented under this sub-section.

Within the 39 districts selected for mapping in the 6 epidemic regions, a total of 3,476 hotspots were identified in 623 different locations. Among those hot spots, 1,440 were establishment based, 1,427 were home based and remainder 609 were street based. The mapping exercise found that the Highway Districts region has the maximum number of home-based and street-based hotspots at 1,334 and 316, respectively, whereas the Kathmandu Valley region has the maximum number of establishment-based hotspots at 830.

Highway Districts region has 2,257 hotspots; however, these are distributed unequivalently across all districts in the region. Of these, 1,334 are home based, 607 are establishment based and 316 hotspots are street based. The number of hotspots in a district in this region varies from 5 to 455. In the region, Rupandehi and Kailali districts have 455 and 299 hotspots, respectively. Moreover, 7 different districts including Saptari, Siraha, Sarlahi, Dhading, Syangja, Palpa and Kapilbastu have less than 30 FSW hotspots. The number of FSW hotspots in Dhanusha, Mahottari, Rautahat, Tanahu, Bardiya and Kanchanpur are estimated to range between 30 and 60. Similarly, five districts including Jhapa, Morang, Parsa, Sunsari and Banke have 60 to 90 hotspots. Besides Rupandehi and Kailali, the following six districts also have over 90 different hotspots: Bara, Makwanpur, Chitwan, Nawalparasi, Kaski, and Dang.

The three districts of Kathmandu Valley altogether have 1,177 hotspots with the maximum number in Kathmandu district with 902 hotspots, Lalitpur district with 102 hotspots and Bhaktapur district with 173 hotspots. In this region, 830 hotspots are establishment based, 276 are street based and 71 are home based. Of these 902 hotspots in Kathmandu, 691 are establishment based.

FSW size estimates

The mapping and size estimation exercise in 3,476 hotspots estimates the number of FSWs in Nepal as between 24,649 and 28,359—with

an 8.5% coefficient of range—after all necessary corrections and adjustments are incorporated. In the mapped districts, there is a considerable variation in the number of FSWs by their typology in that a maximum number of FSWs are establishment based, that is between 12,552 and 14,277, between 5,780 and 6,795 FSWs are street based, and a minimum number of FSWs are home based, that is, between 5,502 and 6,301.

Of the six epidemic regions, Highway District region has the maximum number of FSWs, which are estimated to be between 13,157 and 15,435, followed by Kathmandu Valley where the FSW population is estimated to be between 10,457 and 11,653, followed by Remaining Hills where the population is estimated to be between 431 and 523. The size of the FSWs in West and Mid-West Hills is estimated to be between 210 and 267. In the Far-Western Hills, FSWs are estimated to range between 241 and 295. Eastern Hill Region comprises the minimum number of FSWs wherein the estimated number of FSWs ranges between 153 and 186.

Within the Highway Districts region, Rupandehi district is estimated to have the maximum number of FSW, that is, between 1,507 and 1,667, and Syangja district is estimated to have the minimum number of FSWs, which are in the range of 38 and 48. The districts of Rupandehi, Kaski and Kailali are estimated to have over 1,000 FSWs each. Within the Kathmandu Valley region, the highest number of FSWs is estimated at between 8,235 and 9,107 in Kathmandu district, which is also the highest concentration of FSWs in a district in Nepal. The number of FSWs range between 1,172 and 1,328 in Bhaktapur and between 1,050 and 1,218 in Lalitpur district in this region.

In the Eastern Hill as well as the West and Mid-West Hill regions, none of the districts are estimated to have more than 100 FSWs

In the Remaining Hill region, Kavre district has the maximum number of FSWs, that is, between 101 and 123. The estimated size of FSWs in Rasuwa, Manang, Mustang, Dolpa, Mugu and Humla districts is less than 50.

FSW's profile and behavioural characteristics

Here, the demographic profile of FSW respondents in terms of age, educational qualification, marital status, their living arrangements and migratory status are presented. Two-fifths or 40% of the FSWs belong to the age group of 20 to 29 years. Almost one-fourth or 23% of the FSWs are below 20 years of age, whereas 35% are 30 years old or above. Regarding population distribution according to educational levels, the data indicates high levels of illiteracy among FSWs in Nepal; over half or over 50% of them are illiterate and over three-fifths or over 60% of them have neither received any formal education nor received education for atleast a period of five years prior to the survey. Only a very small proportion of FSWs, that is, 5% of the total FSWs, have more than 10 years of education.

With regard to distribution by typology, almost two-fifths of the FSWs operate from establishments and homes, whereas only one-fifth or 20% operate from streets. Data on the marital status of FSWs highlights that although 74% have ever been married, only 42% reported cohabitation with spouses and 31% reportedly stayed alone. Although 23% of the FSWs were reported to be unmarried and not living with any partner, a small proportion of 4% of the FSWs are reportedly unmarried and cohabiting with a sexual partner. Over one-fourth of the FSWs have been in this profession prior to their marriage. This may be reflective of the fact that factors such as poverty and higher vulnerability may be responsible for their entry into sex work. Given that almost three-fourths of the FSWs have ever been married and the probability of engaging in multi-partner sex is high, increased awareness and access to HIV prevention and STI services is central for prevention. STI/HIV preventive measures and treatment must consider and attempt to overcome the stigma surrounding FSWs across communities when services are provided.

Over three-fifths or 62% of the sex workers have at least one child who is younger than 16 years of age, where almost one-fourth or 25% of FSWs have one child and another one-fourth or 25% of the FSWs have two children less than age 16 years. These figures are indicative of the proportion of children who are

dependent on FSWs for basic sustenance and this is a rather important consideration in planning the services for the families of these women. The mean number of the dependent children who are younger than 16 years is 1.3 per FSW.

The age of sexual debut or the age at which females have their first sexual intercourse is an important risk factor and is established to compound sexual health problems and result in adverse physical, social and psychological health outcomes when these encounters occur at lower ages. FSWs in Nepal indicate a strikingly low age of sexual debut with an overwhelming 39% FSW in Nepal reporting to have engaged in sexual intercourse before the age of 16. The mean age of the respondents at a first sexual contact was as low as 17.5 years.

It is pertinent to examine the age of sexual debut of FSWs owing to its implications on design and implementation of programs and interventions for FSWs. Although entry into sex work before attaining the age of 16 years may indicate child prostitution because of child trafficking or forceful adoption of this profession owing to various socio-cultural factors, entry into this profession after the age of 25 years may be indicative of other factors, such as poverty and lack of empowerment. In either case, it is a gross violation of sexual rights and results in increasing the burden of reproductive morbidities including STI/HIV, thereby necessitating concerted programme efforts for protecting their rights, health and overall well-being.

In case of sex workers, where multi-partner behaviour is an occupational vulnerability, the client load is an important behavioural factor, which affects the overall sexual health of FSWs and amplifies the risk of STI/HIV transmission in the absence of condom usage. The mapping study analysed client load in terms of the number of clients per week, number of clients that visit in a day and number of clients a day prior to the survey. It was found that 53% of the FSWs in Nepal have up to 4 clients in a week, 29% have 5 to 9 clients in a typical week, whereas another 17% have 10 or more clients in a week. On an average, the FSW client load per week was 6.7 persons. A large majority or 86% of the FSWs usually have between 1 and 3 clients in a day and 88% have 0 to 2 clients a day before the survey. On an average, an FSW had 2.2 clients per day, whereas the average client load per day before the survey was 1.3.

Approximately 48% of the FSWs work six or more days in a week and 29% of FSWs work 4 to 5 days in a week. FSWs in Nepal worked as sex workers for approximately 5.1 days per week. Sixty-three percent of the FSWs who are below the age of 20 years, 70% of those who are establishment based, and 75% of those who are primarily located in the Kathmandu valley work for more than 6 days in a week.

A substantial proportion, that is, 86% of the FSWs in Nepal reported the use of condom in their last sexual encounter and 83% reportedly used a condom with a regular client. However, only 48% of the FSWs reported condom use during their last sexual encounter with a spouse or partner, which is indicative of the low prevalence of condom use while having sex with spouses or partners. The marital status of FSWs is observed to affect condom use, where a lower proportion of married women negotiate condom use, which could be a result of lack of education and empowerment.

This study indicates that 79% of the FSWs had ever been tested for HIV. This proportion is similar for FSWs across background characteristics except for those who are currently under 20 years of age and currently unmarried, which stand at 72% and 74%, respectively. FSWs operating in the highway districts are more likely to test positive for HIV than those working in other regions. Relatively higher prevalence of HIV testing is seen among those operating from their homes at 83% as against 75% among other typology categories.

Current programme interventions for FSWs

The principle strategy of National AIDS Programme of Nepal includes focus on HIV prevention, treatment, care and support services for FSWs towards the realization of Millennium Development Goal 6. Although progress is notable through current and previous programmes, the achievements must nevertheless consider the mapping and size estimation data—coupled with FSW profiles and background characteristics—for plugging gaps, expanding coverage and increasing service access. The subsequent paragraphs provide an analysis of the coverage of current condom outlets and Voluntary Counselling and Testing (VCT) and/or Sexually Transmitted Infections (STI) service centres for FSWs hotspots.

Mapping of condom outlets and VCT and/or STI service centres within a one kilometre range of mapped hotspots indicated that 61.5% and 38.1% of the total FSW hotspots in Nepal have condom outlets and VCT/STI services within a one kilometre range, respectively. In 17 of the mapped districts, condom outlets are present within a one kilometre range of over 60% of the FSW hotspots. Similarly, in 9 mapped districts, more than 60% of the hotspots have VCT/STI service centres within a one kilometre range.

The four districts of Ilam, Saptari, Dhading and Surkhet comprise at least one FSW hotspot that has at least one condom outlet but no VCT/STI services within a one kilometre range. Syangja is the only district amongst all the mapped districts where neither any condom outlets nor VCT/STI service are found within a one kilometre range of the FSW hotspots.

In the Highway Districts region, approximately 55% of the FSW hotspots have condom outlets within a distance of one kilometre and 33.5% of the hotspots have VCT/STI services within the same distance. In the Kathmandu Valley region, more than 90% of the hotspots in Lalitpur and more than 70% of the hotspots in Kathmandu and Bhaktapur district have condom outlets within the one-kilometre range. Almost half of the total FSW hotspots in the districts of Kathmandu and Bhaktapur and one-fourth of the total hotspots in Lalitpur district reportedly have the VCT/STI service within one kilometre. In the West and Mid-West Hill region, 38% percent of the FSW hotspots in the mapped district of Surkhet have condom outlets within one kilometre, but lack VCT/STI services within the same distance of the FSW hotspots.

Within the Far-Western Hill region, approximately 10% of the FSW hotspots in the mapped district of Bajhang have condom and VCT/STI services outlets within the one kilometre range. Lastly, in the Remaining Hill region, 87% and 73% of the FSW hotspots in the mapped district of Kavre have condom outlets and VCT/STI services within the one-kilometre range, respectively.

Programmatic recommendations

This study has identified a number of districts where despite substantial presence of FSWs, no targeted interventions have been implemented. This data must be used for prioritizing resource allocation and planning the extension of prevention services in these districts in order to achieve universal access targets. In the upcoming National Strategic Plan, these findings could form an integral part of the geographic prioritization scheme and the target settings, coverage and achievement should be decentralized and percolated down to district level for effective monitoring.

In districts where the size of the FSW group may not be large enough to initiate targeted interventions, the epidemic may spread suddenly in absence of any programs. In order to prevent this, national programs must undertake innovative strategies to ensure coverage of these population groups when providing access to services and should regularly monitor the trend so that the dynamics of transmission pattern in these districts can be tracked and corrective actions can be taken in a timely manner.

Furthermore, the findings of mapping study can be extremely useful for increasing the effectiveness and efficiency of targeted interventions by using the detailed data on size, spread, behavioural patterns, etc.

Since the research indicates that a considerable proportion of FSWs are initiated into commercial sex at early ages, there is a need to ensure the expansion of services to this young population before they are exposed to high-risk behaviour. Therefore, programme monitoring should separately focus on the new FSWs covered in this research and these must be followed up as a separate focus area, which will enable the programme to 'catch them young'. This also calls for the need to ensure age disaggregated monitoring of prevention care treatment programmes.

Since the analysis of risk and vulnerability indicates the multi-sectorality of HIV, the response also needs to be multi-sectoral in nature, addressing all aspects of risk and vulnerability including a coordinated response between various sectors and line ministries in order to create an enabling environment wherein these population sub-groups can emerge and access services.

CHAPTER

1

INTRODUCTION

Nepal is a concentrated epidemic country with an estimated 64,000 seropositive persons (National Centre for AIDS and STD Control (NCASC), 2009). Nepal's HIV epidemic remains concentrated amongst the Female Sex Workers (FSWs), Men who have Sex with Men (MSM) and Injecting Drug Users (IDUs) sub-population groups who are considered most vulnerable to HIV. Concentrated character of the epidemic, amidst concerns of a proliferation of infection amongst sub-population groups, coupled with the Government's endeavour to formulate a robust response to HIV to achieve the Millennium Development Goals, Nepal has patroned the generation and use of sound data and a strong evidence base for policy and programme formulation. In keeping with this objective, the Government of Nepal—through HIV/AIDS and STI Control Board (HSCB) and NCASC and with the support of key partners, has undertaken a mapping and size estimation exercise for Most-at-Risk Population groups (MARPs).

Knowledge on the size of MARPs and their behaviour is fundamental not only for HIV policy and programme formulation but also for monitoring and evaluating interventions and undertaking necessary mid-course corrections for ensuring effective and efficient delivery of the national AIDS programme. This report presents data and analysis of key information emerging through the mapping and size estimation exercises of FSWs, who are classified as establishment based, street based and home based, across 39 systematically selected districts in the following six HIV epidemic regions used for mapping of the country as proposed for mapping: Highway District, Kathmandu Valley, West and Mid-West Hill, Far-Western Hill, Eastern Hill and Remaining Hill regions.

This introductory chapter presents the specific objectives of this study, country profile, definitions of key terminologies, and vulnerability factors for HIV and STI with respect to FSWs. Chapter two details the methodology for size estimation through extrapolation based on risk and vulnerability. Chapter three presents key findings and analysis in text, tabular, and pictorial formats, including the number of locations, number of hotspots and size of FSWs across the epidemic regions. Chapter four provides a detailed analysis on FSW sexual behaviour and HIV testing behaviour amongst various indicators according to background characteristics. Finally, chapter five summarizes the conclusions and programmatic recommendations on the basis of the mapping and size estimation exercise along with their behaviours.

1.0: Objective of the study

Mapping and size estimation of FSWs was conducted in Nepal since although FSWs are undoubtedly one of the MARPs with respect to the HIV epidemic, accurate information regarding the number of FSWs, their behaviours, presence, etc. still remains unavailable owing to the absence of robust data sets. Moreover, most FSWs are hidden and do not want to disclose their identities owing to the stigma and discrimination associated with their behaviour, and thus far, there is no single robust method to estimate the size of MARPs accurately. Previously, several exercises for estimating the population size of various MARP groups have been undertaken by Nepal; FHI Nepal conducted such research under the leadership of the NCASC. However, no previous research has studied all MARP groups for the entire country. Consequently, there is a lack of requisite data for an effective national response to address the HIV epidemic in the country and it is impossible to plan targeted programmes and interventions without this information.

This study on the mapping and size estimation of FSWs endeavours to overcome the above mentioned limitations and generate information regarding the size, location and behavioural dispositions of FSWs, which is essential for implementing suitable programmes in order to mitigate the proliferation of HIV and STI. The objective of this study was threefold: First, to develop comprehensive maps of the sites and locations where FSW activities occur by ensuring participation of the affected communities. Second, to estimate the district-wise and nationwide sizes of FSWs, using systematic extrapolation of the data from mapped districts. Third, to study the availability of and access to services, behaviours, risk factors etc. of FSWs.

This study is not without limitations if one considers, for example, the hidden FSW population that may not be reachable by means of the mapping exercise, as stated above, for self-explanatory reasons. However, every effort has been made to ensure the highest quality of collected data and its analysis.

1.1: Country profile

This section provides pertinent fundamental information that was duly considered in the research and formed the basis of the mapping and size estimation exercise: the geographical profile of Nepal, epidemic regions of the country, population, and ranking on certain human development indicators.

Situated in South Asia—with India to its south, China to its north and Tibet autonomous region of China to its east—the landlocked country of Nepal accounts for 0.3 percent and 0.03 percent of the total landmass of Asia and the earth, respectively. Nepal's total area is 147,181 square kilometres. The country shares an approximate 1,800 kilometres long porous border with India touching the states of Sikkim and West Bengal in the East, Bihar and Uttar Pradesh in the South, and Uttarakhand in the West, and an approximate 1,155-kilometres long border with China.

The country's topography is diverse. Situated at a height of between 70 meters above mean sea-level in Kechana Kalan of Jhapa and 8,848 meters above mean sea level in the mountainous region; Nepal's geographical landmass includes flatlands, hilly regions and mountainous regions. Although hilly regions cover 68% of Nepal's total land mass, the mountainous and the Terai regions cover 15% and 17% of the total area, respectively.

***Map 1.1:** MARPs districts in Nepal selected for mapping study-2010/2011*

The map depicted above is only for illustration purposes and none of the partners in this study confirms the accuracy of the depicted limits and the territorial boundary of Nepal.

With the seat of political power at Kathmandu—the country's national capital—Nepal is divided politically into 5 developmental regions, 14 zones and 75 districts for administrative and governance purposes. Each district includes a number of Village Development Committees (VDCs) and/or municipalities that are determined according to the population, area and condition of urbanisation.

According to the National Census, the total population of Nepal in 2001 was 23.15 million with males and females accounting for 11.56 million and 11.59 million of the total population, respectively. With an annual population growth rate of 2.25% (Source: Central Bureau of Statistics (CBS)), the total population of Nepal has been projected at approximately 29 million in 2011. Although the population density in the country is 197 persons per square kilometres, there is variance between the hilly, mountainous and Terai districts. Overall, 13.9% of Nepal's citizens reside in urban areas (Source: CBS).

The largest ethnic population groups in Nepal are the Chhetris and Brahmins who account for 15.80% and 12.74% of Nepal's total population, respectively. Following the Chhetris and Brahmin ethnic groups, in terms of size, are the Magar, Tharu, Tamang and Newars in ascending order.

Although multiple languages/dialects are spoken in the country, the national language of Nepal is Nepali. Thus, although approximately half or 48.16% Nepalese consider Nepali as their mother tongue, other citizens speaking Maithili, Bhojpuri, Tharu, Tamang, Newar, Magar and Abadhi consider these languages/dialects as their mother tongue. 80.62% of the Nepalese practice Hinduism, whereas 10.74% practice Buddhism, 4.2% follow Islam, 3.60% follow the Kirat religion and 0.45% follow Christianity (Source: CBS).

The literacy rate in Nepal is increasing and this increase has particularly been seen amongst the female

population. According to the 2008 National Literacy Survey, the total literacy rate among people over the age of 5 years was 63.2%, with males and females accounting for 74.7 point percent and 53.1 point percent, respectively. As compared with the 35.8% estimated literacy rate for females in 1998–1999, the increase is by a notable near 30 point percent. The overall literacy rate of adults over the age of 15 has also increased from the estimated 44.5% in 1998–1999.

The increasing literacy rate has given rise to a dichotomy in that there are limited employment opportunities in Nepal. The unemployment rate in Nepal is estimated to have grown at a rate of 42% over the previous decade (NLFS-II, 2008). Therefore, a greater proportion of the population is exercising the option of taking up foreign employment opportunities. This migratory pattern of the total population is not a direct concern or risk for HIV. Nevertheless, it does heighten the vulnerability of HIV, particularly if unsafe sex is practiced with multiple partners.

With the scaling up of the health sector, availability and access to health services has increased over the past decade. However, urban areas have seen a greater expansion of these services as compared to rural areas, where the health service levels remains unsatisfactory. Doctors are unavailable and as a result, government health facilities remain under staffed, although the cost for health services is relatively lesser than private hospitals. During the 2009–2010 fiscal year, there were a total of 117 government hospitals, 208 primary health care centres, 6 health care centres, 675 health posts and 3,127 sub health posts. The number of doctors and health assistants working in government health facilities were 1,361 and 7,491, respectively. This excludes the number of doctors and health assistants employed under the private sector hospitals that are urban centred.

Increased education and awareness of available programmes has resulted in an improvement in the utilization of family planning methods for birth control and as a preventive mechanism for STI. According to DOHS, 2,353,532 people used various means of family planning in fiscal year 2009-2010.

1.2 Epidemic (Epi) regions and selection of districts for mapping

Although traditionally Nepal is divided into four epidemic (epi) zones or regions (Map 1.3) for national HIV programming and response delivery, for the purpose of the mapping exercise, the country was divided into six epidemic zones or regions, as highlighted in Map 1.2. This division was based on HIV prevalence risk and vulnerability by the Strategic Information Technical Working Group (SI-TWG) in Dhulikhel during November 2009. These six epidemic zones include (i) the Highway District region, which comprise 20 Terai districts and 6 hilly districts; major highways run through these districts, (ii) Kathmandu Valley region, which comprises the following three districts: Kathmandu, Bhaktapur and Lalitpur, (iii) Eastern Hills region, which is comprised of 13 hilly and mountainous districts of the eastern region, (iv) West and Mid-West Hills region, which comprises 13 hilly districts of the mid-western and western development regions, (v) Far-Western Hills region, which comprises 7 hilly districts in the far-western region, and (vi) Remaining Hills, which comprises the remaining hilly and mountainous districts of the central, western and mid-western regions. Each of these epidemic zones has distinct kinds of vulnerability factors to HIV and STI. Tables 1.1 and 1.2 pictorially represent the names of the districts according to the four- and six-region categorizations.

Map 1.1 depicts the districts choosen for mapping different MARPs as per the scheme described above. based on the similarity of risk and vulnerabilities, a representative of each mapping region's expected low and high was mapped in addition to all districts having substantial size based on routine progamming data.

***Map 1.2:** Epidemic zones used for selections of districts for mapping*

***Map 1.3:** HIV epidemic zones*

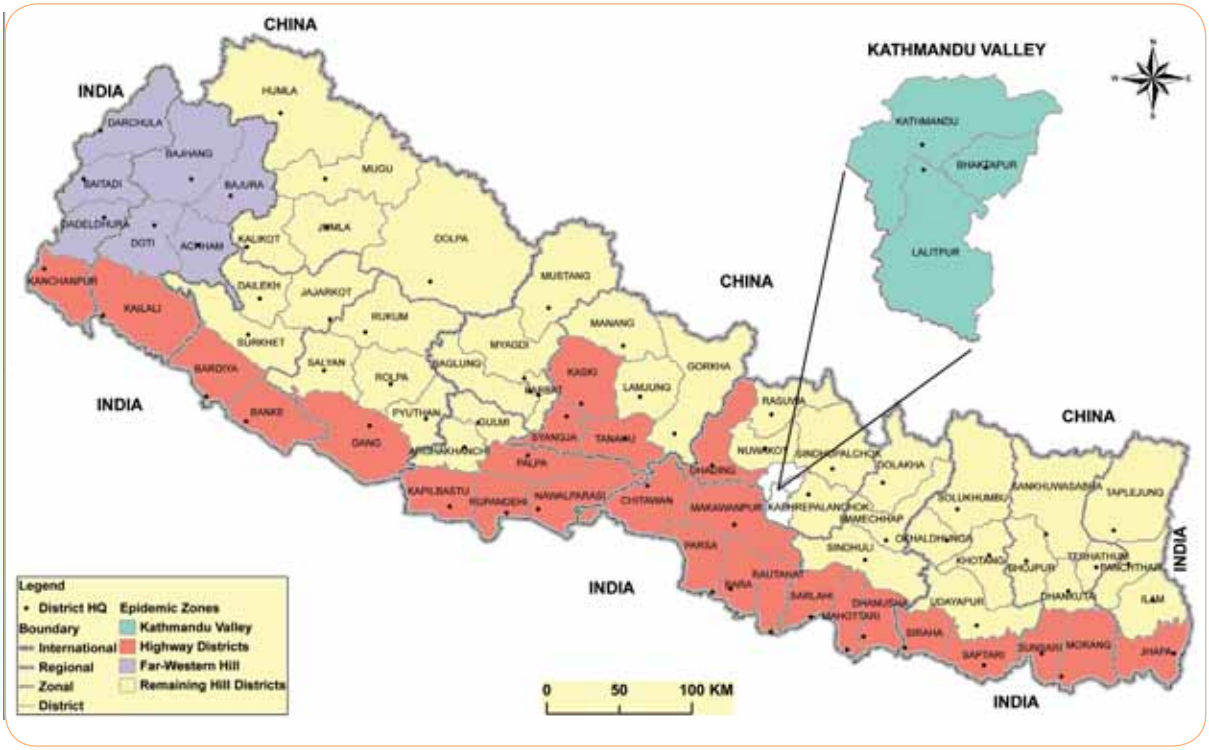


Table 1.1: Four-region categorization of epidemic (Epi) zones by districts

Epidemic zones and their respective districts	Number of districts	Name of districts
Kathmandu Valley	3	Kathmandu, Lalitpur and Bhaktapur
Highway Districts (Mahendra, Prithvi and Pokhara-Butwal highways)	26	Jhapa, Morang, Sunsari, Saptari, Siraha, Dhanusha, Mahottari, Sarlahi, Rautahat, Bara, Parsa, Chitwan, Dhading, Makwanpur, Syangja, Kaski, Palpa, Rupandehi, Kapilbastu, Dang, Banke, Bardiya, Kailali, Kanchanpur, Tanahu and Nawalparasi
Far-Western hill (7 hill districts of the Far-western development region	7	Bajura, Bajhang, Achham, Doti, Dadeldhura, Baitadi and Darchula
Remaining Hill	39	Taplejung, Panchthar, Ilam, Dhankutta, Tehrathum, Sankhuwasabha, Bhojpur, Solukhumbu, Okhaldhunga, Khotang, Udayapur, Sindhuli, Ramechhap, Dolakha, Sindhupalchowk, Kavrepalanchowk, Nuwakot, Rasuwa, Gorkha, Lamjung, Manang, Mustang, Myagdi, Parbat, Baglung, Gulmi, Argakhanchi, Pyuthan, Rolpa, Rukum, Salyan, Surkhet, Dailekh, Jajarkot, Dolpa, Jumla, Kalikot, Mugu and Humla

Table 1.2: Six-region categorization of epidemic (Epi) zones by districts used for mapping

Revised epidemic zones used for mapping	Number of districts	Name of districts
Kathmandu Valley	3	Kathmandu, Lalitpur and Bhaktapur
Highway Districts (Mahendra, Prithvi and Pokhara-Butwal highways)	26	Jhapa, Morang, Sunsari, Saptari, Siraha, Dhanusha, Mahottari, Sarlahi, Rautahat, Bara, Parsa, Chitwan, Dhading, Makwanpur, Syangja, Kaski, Palpa, Rupandehi, Kapilbastu, Dang, Banke, Bardiya, Kailali, Kanchanpur, Tanahu and Nawalparasi
Far-Western Hill (7 hill districts of the Far-western development region	7	Bajura, Bajhang, Achham, Doti, Dadeldhura, Baitadi and Darchula
Eastern Hill	13	Dolakha, Taplejung, Panchthar, Ilam, Dhankutta, Terhathum, Khotang, Sankhuwasabha, Bhojpur, Solukhumbu, Okhaldhunga, Udayapur and Ramechhap
West and Mid-west Hill	13	Myagdi, Parbat, Baglung, Gulmi, Arghakhanchi, Pyuthan, Rolpa, Rukum, Salyan, Surkhet, Dailekh, Jajarkot and Kalikot
Remaining Hill	13	Lamjung, Gorkha, Sindhupalchowk, Sindhuli, Kavrepalanchowk, Nuwakot, Rasuwa, Mugu, Humla, Dolpa, Jumla, Manang and Mustang

1.3: Role of FSWs in shaping the HIV epidemic

Of the three MARP groups in Nepal, FSWs have continued to play a significant role in the spread of the HIV epidemic in Nepal. The empowerment (or lack of it) of FSWs can significantly influence the spread or control of the HIV epidemic in Nepal. The first case of HIV was detected in Nepal in 1988. Subsequently, HIV cases rose sharply in the 1990s and the early 2000s on account of the rapid changes in social trends in the 1990s following the restoration of democracy and liberalisation of economy. Moreover, migration for education increased during this period.

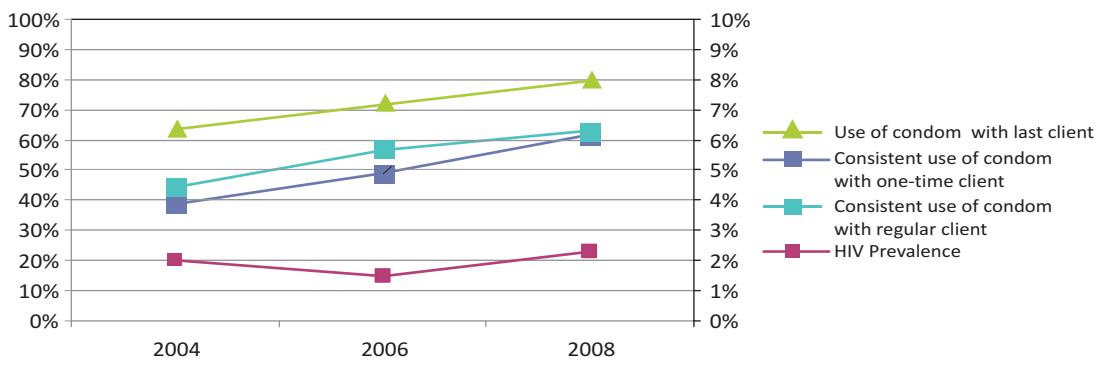
Although the actual number of estimated HIV cases is approximately 64,000, only 17,058 cases of HIV were reported by the NCASC till 2010. Among these reported HIV positive cases, the male to female ratio was found to be 1.54:1, which reflected a decline in the male to female ratio that was reported in 2008 (2.1:1). This implies that over the recent years, an increasing number of women are testing HIV positive.

As per the latest estimates (2009), 1% of the estimated HIV infections can be attributed to FSWs. However, in a concentrated epidemic scenario, FSWs are a major source of transmission of new infection, especially when having unprotected sex with clients, who in turn either transfer the HIV virus to their spouses or put them at a high risk of contracting HIV-related diseases. As reflected in Figure 1.1, the prevalence of HIV among FSWs has considerably stabilized over the years.

Before systematic Integrated Bio-behavioural Survey (IBBS) was conducted, a few individual studies in select geographic locations indicated a relatively high degree of HIV prevalence. Amongst FSWs however, they had limitations in terms of the geographic area covered. A considerable proportion of Nepalese women are employed in the sex work industry in India and a number of these women are trafficked across the border; however, this study only captures those FSWs who are engaged in sex work in Nepal.

Another indicator of the fact that FSWs significantly contribute to the spread of HIV-related diseases is that HIV prevalence is higher in locations where there are a large number of FSWs. Since the Terai highway districts, which share their borders with India, is a region wherein rampant FSW activities occur under vulnerable circumstances, the highest incidence of HIV infections has been found in these districts; 49% of all the estimated people who are HIV positive in Nepal reside in these districts (NCASC 2007).

Figure 1.1: Trends in the utilization of condoms and HIV prevalence among FSWs in Nepal



Note: These are weighted averages of the IBBS results of different regions in proportion to the size of FSWs in that region.

1.4: Review of the previously used estimates of FSWs

In early 2003, UNAIDS, WHO and FHI conducted a workshop in Bangkok for estimating the proportion of the adult population in South Asian Countries that are HIV positive on the basis of sound data from these countries. Subsequently, under the direction and leadership of the NCASC, Nepal also conducted a similar study for estimating the size of the MAR population and proportion of adults infected with HIV in Nepal.

In 2003, with the technical support from UNAIDS, WHO, FHI, CREPHA and New ERA, NCASC released scientific estimates of FSWs in a number of regions in the country. CREPHA and New ERA used social mapping tools and extensively consulted FHI's implementing partners in different districts and arrived at an estimate of between 4,000 and 5,000 FSWs in the Kathmandu Valley. Similarly, a mapping exercise estimated that there were approximately 280 to 320 FSWs in Pokhara, 5,300 to 6,900 FSWs in 16 highway districts from Jhapa to Rupandehi and 1700 to 2200 FSWs in 6 highway districts from Kapilbastu to Kanchanpur.

Thus far, four rounds of infection estimations have been conducted in Nepal (2003, 2005, 2007 and 2009). In each of these rounds, more updated and reliable data on HIV prevalence and estimated sizes of risk groups were employed. In the absence of a more appropriate method, the multiplier method was utilized for estimating the sizes of the risk groups in 2005, 2007 and 2009. NCASC estimated the national size of FSWs by using the population growth rate as a multiplier and in the infection estimates of 2009, a total estimate of 32,137 FSWs was used.

1.5: Definitions of key terminologies

The definitions of the key terminologies that have been approved by the Strategic Information Technical Working Group and endorsed by the Steering Committee to be applied to the mapping and size estimation exercise of FSWs are presented as follows.

Female Sex Workers (FSWs): FSWs are women aged 16 years and above, reporting having been paid in cash or kind for sex during the last 12 months. They are classified as establishment based, home based and street based.

a. *Establishment-based (EB) FSWs:* Establishment-based FSWs are those who are approached by their clients in specific establishments, such as hotels, lodges, bars, cabin restaurants, massage parlours, etc. For example, lodge-based FSWs are those who reside in so-called lodges (small hotels) and their clients are contacted by the lodge owners, managers or any other employees of the lodges on a profit-sharing basis. These sex workers do not publicly solicit clients and are accessed by clients who visit these locations.
b. *Street-based (SB) FSWs:* Street-based FSWs are those who solicit clients on the streets or in public places, such as streets, parks, bus stands, markets, cinema halls, etc. They may entertain their clients in lodges, cars, trucks, hotel rooms, at the clients' homes, cinema halls or public places.
c. *Home-based (HB) FSWs:* Home-based FSWs are those who do not belong to either of the two categories mentioned above. Such FSWs usually operate from their homes and contact their clients on the phone or through word-of-mouth or intermediaries (e.g. pimps, taxi drivers, etc.). Generally, the fact that such women are working as sex workers is not common knowledge even within their neighbouring areas. In fact, they could have an entirely different 'public' identity, for example, they could be housewives, students, professionals, etc.

Location: Location is a geographical area that is demarcated by a particular boundary, such as name of a colony, road, etc. However, for the mapping of MARPs, the research team had the flexibility of defining the boundaries of a location in consultation with the key stakeholders at the district levels.

Site: Site is an area within a location, wherein high-risk activities are practiced by the populations categorized as MARPs. A site may or may not be a hotspot, wherein MARPs may solicit, socialize and interact with other MARP members, have sex or share injecting drugs.

Hotspot: A hotspot is a smaller area within a site, such as restaurant, massage parlour, dance bar, night club, etc., where MARPs gather/congregate for soliciting their clients or for entering into high risk behaviour.

1.6: STI/HIV vulnerability among FSWs

Four dominant factors that make FSWs throughout Nepal more vulnerable to HIV/STI are as follows: poverty, unemployment, lack of awareness and lack of empowerment of women. Although the education opportunities that are being provided to girls are increasing, the employment opportunities are shrinking. Moreover, consumer goods are becoming increasingly expensive and the younger generations are aspiring to lead luxurious and fashionable lifestyles, which can be particularly attributed to greater media exposure. Earlier, girls in villages would marry at young ages and actively engage in household and agricultural work; however, owing to enhanced exposure, an increasing number of girls nowadays are travelling to bigger towns and cities for higher education or in search of employment.

Although it is commendable that girls are being allowed to equip themselves with higher levels of education and are getting greater exposure, the fact that ample suitable employment opportunities are not available creates a risky environment. In this context, many girls, who either are compelled to become sex workers or become sex workers willingly, are unable to leave the profession owing to a lack of employment opportunities. Another aspect that must be considered here is that even if FSWs in Nepal have alternative employment options, they would find it nearly impossible to leave the profession owing to the deep-rooted social stigma associated with being FSWs, which does not permit them to lead normal lives even after they have left the profession.

The fact that numerous FSWs do not willingly join this profession and are compelled to do so renders them weaker when they have to select between a client and health safety. For example, if an FSW were in a more empowered situation, she would rather refuse to have sex than to have sex without a condom. However, in reality, a majority of the FSWs are not in such an empowered situation and therefore, they would rather have sex without a condom than lose a client, thereby increasing their vulnerability to contracting HIV- and STI-related diseases. Since a majority of these clients are seasonal migrant workers and the prevalence of HIV among these migrant workers is rather high, the risk exposure of FSWs to HIV considerably increases. What further exacerbates this issue is that a number of FSWs are married, and this jeopardizes the health of their partners.

Although the availability of condoms does not pose an issue in urban areas, the continuous unavailability of condoms in rural areas is another reason that plays a significant role in spreading HIV. Owing to the stigma attached to being a FSW, many FSWs, particularly those who are active only occasionally, may experience apprehension in visiting health posts and clinics to obtain free condoms and keeping condoms at home.

Vulnerability factors for FSWs with regard to HIV/STI differ slightly with different epidemic zones. As mentioned earlier, Nepal is divided into six epidemic zones for mapping based on HIV prevalence and vulnerability. The Highway Districts have similar dynamics in terms of HIV and STI vulnerability as the roadside shops and truckers are the major risk groups. The second epidemic zone, that is, the Kathmandu Valley districts also share similar dynamics for HIV and STI prevalence and vulnerability. The largest urban conglomerate of the country and the capital, the Kathmandu Valley districts are the second most vulnerable to HIV/STI.

The third epidemic zone, that is, the Far-Western Hills region, comprises districts that are rather vulnerable to HIV and STI because a considerable proportion of men from these districts visit various Indian cities and towns for seasonal work. The statistics indicated that the labour migrants are the most vulnerable group and account for 42% of the reported cases of HIV. Moreover, the wives of such migrant workers accounted for 15% of the reported cases of HIV.

The fourth epidemic zone, that is, the West and Mid-West Hills region, comprises districts that have similar dynamics to that of the Far-western region; however, the level of awareness and education is slightly better

than that of the far-western region. A large number of youth from these districts also migrate to India and other cities of Nepal for work. Moreover, a large number of people from these districts had migrated during the time of conflict, because this region was severely affected by the conflict.

The fifth epidemic zone, that is, the Remaining Hills region, is rather vulnerable to HIV and STI because a number of districts in this region, including Sindhulpalchowk, Nuwakot, Kavre and Rasuwa, are districts where reportedly rampant human trafficking occurs. A number of girls from these districts are trafficked to Indian cities to work as sex workers and an equally large number of girls from these areas are involved in sex trade in Kathmandu. The sixth epidemic zone, that is, the Eastern Hills, is arguably the least vulnerable area to HIV and STI.

CHAPTER

2

DATA AND METHODOLOGY

2.0: Introduction

Mapping MARPs is pertinent for supplying information to the national AIDS programme regarding geographical areas where HIV prevention efforts are particularly required. This is in due consideration of the concentrated nature of the HIV epidemic among specific sub-populations. By obtaining information regarding the geographical locations where MARPs– FSWs, MTCs and IDUs amalgamate across the country coupled with an estimation of their numbers, Nepal will be better equipped to target interventions and thus produce a tangible impact for reducing the number of people suffering from HIV infections in the longer term.

Mapping and size estimation in Nepal was conducted by following a methodology that was developed under the technical oversight of HSCB, NCASC, UN and other internal development partners, who monitored the research agency that conducted this exercise at the districts in order to ensure that the prescribed standard norms for all MARP sub-categories were adhered to. The names of the representatives from these organizations, who formed the Steering Committee for ensuring the quality of this exercise, may be referred to under Appendix D. Steering Committee members' deliberations and dialogue amongst themselves as well as with other national and international technical experts resulted in the identification of the most suitable methodology for conducting this study in Nepal. Due consideration was attributed to the latest internationally prescribed methods for mapping and size estimation, as identified by the WHO/UNAIDS, that is, UNAIDS Global Reference Group, and were contextualized in order to meet the country's requirements and specifications.

This chapter emphasizes the methodology applied for mapping and estimating the size of MARPs in Nepal for reflecting the data accuracy, assurance, and comprehensiveness of the data sets.

Although section one of this chapter focuses on the methodology, section two describes the technique and process for extrapolating the data for producing national estimates of FSWs. The assumptions and limitations have also been highlighted in these two sections.

2.1: Methodology for mapping

This section describes the design and methodology for conducting the mapping exercise in 39 selected districts in Nepal. Once a clear definition of FSWs and their risk activities was concurred upon, research teams were formulated for selected geographical locations to accrue mapping and estamating data through a participatory approach involving government and networks of community/local community organizations. Various data collection methods and tools were utilized by research teams and each of these methodologies are subsequently detailed in this section.

2.1.1: Operational strategies for collecting data

Data was captured by the research teams at the district, location and site levels for acquiring a comprehensive macro and micro geographical overview. Research teams, which comprised one representative from the research agency and one from the FSW community, were formed in each geographical location in order to collect data. Civil society representatives from the local FSW community, who were selected based on their qualifications and interests, partnered the research teams conducting the mapping exercise. These representatives were included not only because of their knowledge on FSW's behaviours, formation patterns and locations—amongst other insights—but also because it helped to make the study more inclusive. Moreover, since these community representatives would enhance the access to the FSW community, the overall data quality would be augmented. The Steering Committee also regarded the skills that the community members gained through participation in this study—besides receiving on the job training—as a constructive step for strengthening their productivity.

Data for the mapping and size estimation exercise was collated by focusing on stakeholder participation and increased community and government ownership at decentralized levels. The research team closely interacted with the District AIDS Coordination Committees (DACC) and Non-governmental Organisations (NGOs) working with the community for the following reasons: firstly, for identifying and listing locations; secondly, for indicating the estimated size of FSWs within the select geographical area on the basis of their experience on account of working in the district for a long period of time; thirdly, for obtaining leads on possible Key Informants (KIs) for a district, location or site; and fourthly, for receiving access to routine programme data. The list of FSW community members engaged in data collection and administration activities are indicated in Appendix E.

The methods for data collection at district, location and site levels—using especially formulated tools—are detailed below. At the **district level**, the research team collected HIV information and ascertained FSW locations in both urban and rural areas by holding meetings with DACC and conducting one day district level consultations with major stakeholders. These included representatives from DACC, government agencies, NGOs, Community-based Organisations (CBOs), and media. This allowed the study teams to get reflections from the NGOs based on the routine program data.

Focused discussions were held for firstly, determining issues associated with STI and HIV in the districts, such as the nature of the epidemic, change in the trajectory and factors attributing to this change; secondly, obtaining information on locations where FSWs congregate and operate—termed hotspots—and identifying key person(s) who are sufficiently knowledgeable for providing greater insights regarding the FSWs located at the hotspots; and thirdly, determining the estimated size of FSWs in each of the districts by seeking inputs from various programme and community representatives. Data was captured by using the specifically developed tool referred to as 'Tool 1'; Tool 1 can be referred to under Appendix C. In order to enable size estimation of FSWs at the **location level**, initially, the research team collected information on the sites where FSWs are concentrated by using specifically developed tools termed 'Tool 2'. Moreover, **Participatory Rapid Appraisal (PRA)** was conducted in locations with a minimum estimation of five FSWs. The tools utilized for data collection at the location level are indicated in Appendix C. The research group employed Tool

3 for collating the following two fundamental site level data: the total count of FSWs observed or interacted with, and the geographical and social overview of a site. In other words, data was collected for understanding the landmarks of the site areas and location of MARPs in different parts of the site. Tool 3 is included in Appendix C of this report.

A free listing technique was deployed for a conducting comprehensive assessment of hotspots at the district, location and site levels. Using this technique, initially, the district, location and Village Development Corporation levels were segmented into smaller operational areas and subsequently, 6 to 8 KIs were interviewed for obtaining broad perspectives on the mapped area. A geographical map of the area that highlighted the hotspots or sites and landmarks where FSWs congregated—as identified by the research team during the district level consultations—was utilized as a primary tool.

Following the broad mapping of hotspots, through adherence to research protocols, further information on FSWs present at the hotspots was collated through **group discussions** with mixed categories of **primary, secondary, and tertiary KIs. Primary KIs** were populations engaged directly in higher risk activities. Secondary key informants were populations closely associated with the primary informants. This would include the intermediaries. Tertiary key informants were populations that possessed information regarding FSWs and were usually involved with the secondary stakeholders. These informants could be working for the interests of the primary stakeholders and included representatives from NGOs, government offices and armed forces. The PRA technique was also utilized at hotspots where the number of FSWs was estimated at over five.

The information that was collected during discussions with KIs and by using the PRA technique included the number of FSWs, busiest day, mobility pattern, number of clients, most accessed services for the last seven days and for the last twelve months. The research team visited a site for three days at different points of time and observed the actual number of FSWs operating at that time.

For obtaining behavioural and background information on FSWs, the research team interviewed a minimum of five randomly selected FSWs at all locations where over five FSWs were present. Tool 4 was utilized for obtaining and recording behavioural data.

2.1.2: Quality check measures

The quality of the mapping and size estimation was ensured by following a four-pronged strategy: selecting a skilled research team, building the research teams' capacities for mapping and size estimation by providing them with formal and on-the-job trainings, implementing a three-tier monitoring and supervisory structure, and revalidating the mapping and size estimation data across ten percent of the locations.

The research body that was responsible for conducting the mapping and size estimation exercises comprised of the research staff, research fieldworkers, field executives, supervisors and investigators. According to their respective profiles, each person was provided specific terms of reference and a set of deliverables that they were accountable for. All the **persons were selected** and appointed on the basis of their relevant past experience in mapping and association with the HIV and STI programme, and previous experience with FSW projects and/ or related disciplinary fields. Those individuals who possessed direct associated experience were given preference. In addition, community representatives who were recruited to support the field research were selected on the basis of their experience.

All field research teams—collectively comprising of 110 individuals—were required to attend and successfully complete a four-day **skill building training** that was conducted at the national capital. The primary objectives of the skill building training were as follows: firstly, to orient participants on issues of sexuality, STI, HIV and high-risk behaviours. Secondly, to increase participants' understanding of FSW associated behaviours, holding dialogues with them regarding structural factors and socio-cultural norms that increase FSW vulnerability for HIV, and requesting them to self-introspect in order to enable them to ascertain their own abilities and attitudes to work with the population. Thirdly, to familiarize the participants with the research methodology, tools and techniques, the knowledge of which was necessary for them to discharge their functions effectively. Fourthly, to acquaint them with the questionnaires and other tools that they would be required to use for data collection. Fifthly, to train

the participants on questionnaire administration techniques, including approach and probing techniques. In addition, the training also covered topics like the importance of the use of appropriate language, necessity for using non-verbal expressions, effective documentation techniques and developing skills for handling situations wherein respondents may get agitated. Moreover, the significance and requirement for ensuring confidentiality and privacy, and dispensing the questionnaire only after receiving informed consent was emphasized as a part of the training. Finally, to build capacities on other fieldwork protocols that were standardized for implementation.

Local community members who were recruited to support the mapping and size estimation exercise received appropriate orientation covering a select few or all of the areas that were encompassed by the four-day national level training. The fieldwork conducted by the research team was **monitored** on a daily basis for overseeing activity implementation and providing supportive supervision and feedback. As mentioned previously, a three-tier monitoring system was formulated in a pyramid structure, wherein the research team supervisors formed tier one at the base of the pyramid, the research organization (Nielsen) and Steering Committee members formed tier two at the middle of the pyramid and HSCB nodal officers formed tier three at the top of the pyramid. The key responsibilities of each of the three monitoring teams are briefly highlighted here. The research monitored activity implementation by research teams at both location and site levels on a daily basis for ensuring timely progression in mapping and size estimation, adherence to appropriate protocols and provision of sustained supportive supervision and feedback. Supervisors who were delegated from the research organization and Steering Committee—along with the FSW community network members—oversaw the mapping and size estimation at the district levels and provided the requisite technical inputs. Moreover, supervisors also periodically conducted field visits for providing supportive supervision. HSCB monitored the mapping and size estimation at the macro level. The monitoring and evaluation checklist developed for supporting these tasks was utilised by monitoring teams and can be accessed under Appendix F.

Within a period of three months of completing the fieldwork in the districts, **a revalidation of the mapping and size estimation exercise** was conducted in ten percent of the locations included in the study. This revalidation was conducted by an independent research team who adhered to the same protocols and methodology that was developed and adopted for the mapping and size estimation exercise. Considering that the revalidation team conducted three-day visits to each location, identified hotspots and conducted PRA wherever over five FSWs were concentrated, this was another important dimension for evaluating the overall quality of data collection. If any differentials in the results were noticed by the revalidation team, they were utilized for calculating the coefficient of range. This has been subsequently highlighted under section two of this chapter; however, prior to proceeding to section two, the limitations of the mapping exercise are summarized in the following sub-section.

2.1.3: Limitations of the mapping study

To the extent possible, the methodology for the mapping exercise was comprehensively and uniformly applied across the 39 districts; however, certain limitations, which are typical of a study of this scale, in attempting to estimate hidden population groups like FSWs are summarized as follows:

Firstly, a central assumption of the mapping and size estimates of FSWs at the hotspots was the definition of a **typical day**. A typical day was considered as the number of observations made and recorded at hotspots during three consecutive day visit at diffent times. Although this definition was applied to a majority of the districts, there were fluctuations among the observations owing to seasonal variations or changes in law and order situation at the hotspots, considering that FSWs do not receive legal sanctity and are largely stigmatized.

Thus, whenever police raids or protests are organised by certain social groups/organizations at a hotspot or location, it negatively influences the turn out of the FSW population and the accessibility of a research team to visit the site. Another factor that necessitates consideration is the mobility of FSWs from one location or district to the other. In order to overcome these weaknesses, which influence the size estimates of a population at a hotspot or location and are beyond the researchers' control, different levels of **correction factors** were employed for adjusting for frequency of the visit and avoiding duplication in the estimation of the population size.

Four correction factors were employed for estimating the size of FSWs based on certain assumptions. These correction factors were generated at the national level based on available data and in order to ensure stability in the distributions, these correction factors were made available to all the regions for ensuring uniform application to each district. However, considering the type of error that exists, applying these values uniformly across different regions may not be free from possible bias.

Secondly, although the research team was successful in observing and interacting with FSWs as required under the methodology terms for estimating the population at the hotspots, the number of interviews that were conducted for the behavioural survey in few locations was insufficient. This could be attributed to the fact that they were anxious about being labelled as FSWs, as also indicated by the FSWs themselves. Therefore, certain FSWs were unwilling to openly participate and disclose information. This weakness was addressed by developing proportional weights by using extrapolated figures of different regions.

Lastly, the data from the mapped districts where thus far no targeted interventions (TIs) have been implemented must be read with the caveat that in the absence of the population of an enabling environment by means of TIs, it is difficult to approach MARPs.

2.2: Methodology for size estimation using mapping data

This section details the methodology employed for estimating the size of FSWs captured during the mapping exercise using Tools 1, 2 and 3 and the PRA technique, as highlighted under the previous section. Moreover, this section explains the various correction factors and adjustment factors, including assumptions and limitations that have been applied to the data.

2.2.1: Application of correction factors

The data that was supplied by the FSW mapping exercise across 39 districts—using Tools 1, 2, and 3 and the PRA technique—enables the estimation of the size of FSWs across hotspots, locations, and districts in Nepal.

In particular, the following **three sources** were considered for determining the correction factor that was required for arriving at the size estimate: first, the data included under the three columns of Tool 2—wherein KIs recorded the 'minimum,' 'maximum' and 'agreed upon' sizes of FSWs under respective columns—on the basis of their experience and interaction with the community; second, data under Tool 3 wherein the field research team recorded the 'minimum,' 'maximum' and 'estimated' sizes of FSWs following their visit to a hotspot on three consecutive days at different points of time; and third, the PRAs conducted at hotspots where over five FSWs were estimated.

The data that were obtained from different hotspots in five districts were reviewed one at a time. Once stability in the estimated number of FSWs of different typologies was ascertained, the reported number of FSWs, based on observations and interactions at different hotspots, was used as a base estimate for applying correction factors at four levels. However, this was based on certain assumptions, which are presented as follows:

The **first assumption** was that the timings of the visits of FSWs to hotspots were fixed over a three day period. Therefore, the records of three consecutive days that were considered at different points of time may constitute the estimated number of FSWs operating from a hotspot in one full day. The **second assumption** was that the proportion of FSWs visiting multiple hotspots is uniform in different parts of a district. Following this, the **third assumption** was that the proportion of FSWs not visiting any hotspot—either for soliciting or for activities—is uniform across different parts of a district.

Additional details regarding the correction factors, assumptions and computational procedures along with illustrations and hypothetical examples are presented in Appendix A. As stated earlier, based on the above-mentioned assumptions, four correction factors were computed for making estimations at the national level and applied to each district for determining the FSW size estimates. The correction factors were applied for adjusting the frequency of FSWs visiting a hotspot, duplication of FSWs visiting multiple spots, turnover of FSWs, and hidden population.

Adjustment for the frequency of FSWs visiting a hotspot

In any geographical area, there is inconsistency in the number of FSWs that visit all hotspots owing to varying trends across hotspots. In other words, although the level of activity at a hotspot varies on different days of the week, FSWs may visit certain hotspots more infrequently than other hotspots on different days. If FSWs visit hotspots less often than the period of recall used in the PRA technique or the period of observation, their probability of not visiting the hotspot during the period of data collection is high.

In order to prevent undercounting of FSWs, a formula was applied using two different data sets. The first data set represented the total number of FSWs that were estimated through observation and interaction at particular hotspots on three consecutive days at three different points of time. This value was assumed to represent the number of FSWs operating from the hotspot. The second data set represented the frequency of visits to hotspots, which was derived from the behavioural survey of FSWs conducted at different hotspots using Tool 4. The formula that was applied for adjusting the frequency of visiting hotspots is given below:

Formula for adjustment of frequency

$$S_1 = (C_i \times P_f \times f_p) + (C_i \times P_f \times f_p) + (C_i \times P_f \times f_p),$$

where S1 = Estimated total of FSWs in X district (i) after adjusting for the frequency,

C_i = Estimated number of current FSWs functioning in a district on the basis of FSWs that were observed or interacted with,

P_f = proportion of FSWs visiting hotspots in a district with frequency f_p

Adjustment for the duplication of FSWs visiting multiple hotspots

The likelihood of FSWs visiting more than one hotspot in a day or a week is rather high. In this context, there is a high probability that a particular KI's size estimates of FSWs include a certain proportion that is already included in the FSW size estimates drawn up by other KIs, thereby resulting in duplication. Moreover, field research teams visiting a hotspot may have noticed the same FSWs that are already included in the count of other field research teams.

In order to address such a case of duplication, an adjustment factor was applied in order to account for FSWs, who visit one hotspot as frequently as other hotspots. The computational procedure required two types of data: the proportion of FSWs who visit multiple hotspots and the total size of FSWs at each of the hotspots. The proportion of FSWs is determined on the basis of the information that was collected whilst conducting PRA at each hotspot. This is subsequently aggregated in order to provide the national estimate. The weighted average is computed using this data. Table 2.1 presents the specific values of the different parameters that were used for estimating duplication for the Kathmandu Valley. The formula that was applied for adjusting this duplication is given below:

Formula for adjustment of duplication

$$S_2 = S_1 - \tfrac{1}{2}(D_i),$$

where S_2 = Estimated number after adjusting for duplication

S_1 = Estimated size after adjusting for frequency

D_i = Estimated number of current FSWs in district i who are estimated to operate from multiple hotspots

Adjustment for the turnover of FSWs

There exists an element of turnover of FSW population and it is imperative that this turnover is considered during size estimation. In the context of this study, turnover implies the probability that at any given point and time, the FSW population includes those FSWs who have recently engaged in FSW activities or have been doing so for a minimum specific duration, and those who no longer engage in FSW activities.

It must be noted that turnover is distinct from frequency. The duration of being involved in FSW activity is independent from the frequency of practicing FSW activity. In this regard, a hypothetical example that can explain this distinction more effectively is

the case of a street-based FSW who, on an average, has been engaging in transactional sex for a period of ten 10 years. This is distinct from the number of clients that this FSW entertains on a daily, weekly or monthly basis and therefore, independent of the total number of years that the FSW has been engaged in this profession. The formula that was employed for adjusting the turnover of FSWs is indicated below:

Formula for turnover adjustment

$$S_3 = S_2 + [T \times S_2/2D],$$

where S_3 = Adjusted total size of FSW population over time T

S_2 = Estimated number of current FSWs after first two adjustments

T = Period of interest for the estimate (e.g. one year)

D = Average duration of belonging to FSWs

Table 2.1 presents the particular values of different parameters that were used for estimating the turnover for Kathmandu Valley.

Adjustment for the hidden population

Another aspect that was considered whilst determining the FSW size estimates was the number of FSWs that are estimated to remain hidden. Such hidden FSWs do not visit the mappable sites; therefore, appropriate adjustment factors were employed for considering this hidden population. Although ideally, this adjustment of hidden population should have been made on the basis of the findings of a broader survey of FSWs that could indicate the percentage of FSWs who preferred visiting public sites or meeting partners in private locations to the hotspots, since this would have been an effective indicator of their preferred meeting areas; however, such a survey was beyond the scope of this research. Therefore, initially, the available researches on the subject in the country/region were used and subsequently, the correction factor was used.

Therefore, in this research, in order to estimate the number of hidden FSWs that were not included in the mapping exercise, the total number of FSWs in a district was inflated by the inverse of the proportion of the FSW population that was assumed to visit mappable sites. The formula that was applied in order to identify the hidden population is provided below:

Formula for hidden population adjustment

$$S = S_3/P,$$

where S = Adjusted total size

S_3 = Adjusted total size of FSW population over time T after adjusting for frequency, duplication and turnover

P = Estimated proportion of FSWs who do not visit mappable sites

Once the size estimates of the FSWs were finalized through the application of the four different level correction factors, the final estimates were presented as interval estimates with a coefficient of range, which was computed using the following formula:

$$\left(\frac{[\text{Maximum range} - \text{Minimum range}]}{[\text{Maximum range} + \text{Minimum range}]} \right) \times 100$$

The inputs for the computation of interval estimates were based on the number of FSWs that were estimated during the mapping exercise, irrespective of whether this estimation was conducted through observation or interaction. The difference between the estimated maximum and minimum numbers of FSWs obtained by using the three sources was halved and this value was added to and subtracted from the final estimates, after adjusting for all corrections, in order to yield the lower and upper limits of the final interval estimate, respectively.

Since the estimates are presented in range, for those wanting to use a point estimate, the use mean of the range is suggested.

Table 2.1: Ilustration of correction factors to estimate the size of FSWs in Kathmandu Valley

Indicator	FSW			
	EB	HB	SB	All
PRA estimate	3,728	147	1,154	5,029
Agreed upon estimate	4,287	134	885	5,306
Observed and interacted (S)	4,150	226	1,291	5,667
Frequency adjustment				
P1	0.97	0.89	0.84	0.93
P2	0.03	0.10	0.16	0.07
P3	0.00	0.01	0.00	0.00
S1	***4,324.21***	***273.46***	***1,608.59***	***6,354.12***
Duplication adjustment				
Ci	0.11	0.10	0.14	0.11
Di	475.66	27.35	225.20	698.95
S2	***4,086.38***	***259.79***	***1,495.98***	***6,004.64***
Turnover adjustment				
T	1.00	1.00	1.00	1.00
Di	4.71	7.07	6.64	5.93
S3	***4,520.17***	***278.16***	***1,608.63***	***6,510.94***
Hidden population adjustment				
P	0.60	0.60	0.60	0.60
S4	***7,533.62***	***463.60***	***2,681.06***	***10,851.56***
Maximum MARPS value	4,287	226	1,291	5,667
Minimum MARPS value	3,728	134	885	5,029
Range	279.50	46.00	203.00	319.00
S4+/- range	7254	418	2,478	10,533
	7813	510	2,884	11,171
Coefficient of Range	7.0	25.6	18.7	6.0

Based on the validation exercise the positive predictivity for FSw is 87% i.e. there may be a changes of 13% variance.

2.2.2: Protocols for extrapolating the size of FSWs in unmapped districts

Nepal has a total of 75 districts and FSW mapping and size estimation exercise was undertaken in over half, that is, 39 of these districts. Although the total number of districts—including those that were selected for mapping and size estimation—was determined by considering the spatial distribution of the 75 districts in the six proposed epidemic zones in the country, the mapping and size estimation exercise was conducted on the premise that the size of FSWs in unmapped districts would be estimated by extrapolating the data from mapped districts according to two rules and parameters. These two rules were developed and adhered to for the specific purpose of extrapolating the size of FSWs in unmapped districts and are presented as follows:

Rule 1. Each of the 36 districts, which are not included in the current mapping and size estimation exercise, were assessed on the basis of the following six parameters with the objective of effectively matching them with any of the 39 districts that were included in the mapping and size estimation exercise:

a. Percentage of urban population
b. Population density
c. Total adult population in the district as per the most recent estimates

d. Total length of highways across the district
e. Reported number of STI cases in the last 12 months
f. Special characteristics, such as caste based sex work, drug trafficking routes, trafficking of women for sex trade and other trafficking and trekking routes

Once the mapped district that closely matched the unmapped district was identified, and the Steering Committee had unanimously approved its suitability, the proportion of the total FSWs in the district was estimated against the total adult female population that was aged between 15 and 49 years. This ratio was multiplied with the total adult female population aged between 15 and 49 years in the unmapped district for which the extrapolation of FSWs was required. This method was employed for effectively extrapolating the number of FSWs in all the unmapped districts. In applying this method, the following two assumptions were made: first, child prostitution has been eliminated, and second, the proportion of women engaged in sex work over the age of 50 years is negligible. However, in the event that the mapping data reflected the presence of child sex workers and women over the age of 50 years engaged in sex work in particular districts, then Tool 4 was utilized for estimating the proportion of such sex workers in these districts and the estimated numbers were reduced prior to estimating the proportion of FSWs to the total adult population.

Rule 2. In the event that a suitable match for the unmapped district could not be identified according to the parameters specified under Rule 1, an average of the ratio of the two districts from the same epidemic zone was considered for the purpose of extrapolation. A detailed application of the protocols was developed for the extrapolation exercises and this is explained with the help of an illustration in Appendix B.

2.2.3: Limitations of extrapolation

Since the scheme of extrapolation as explained above depends upon various assumptions related to the similarity of unmapped districts with mapped districts, it is recommended that the results for unmapped districts be viewed in this context. It is recommended that further exploratory studies be undertaken in unmapped districts in order to obtain the numbers first hand and subsequently plan for the programs.

CHAPTER

3

RESULTS OF MAPPING AND SIZE ESTIMATION

National, regional and district level data on the number and location of hotspots, number and location of FSWs and number and location of service centres available for providing treatment, care and support for FSWs is detailed in this chapter. Although the estimated numbers are produced in ranges, the use of mean is suggested for point estimates.

3.1: District-wise variation in the estimated number of FSWs

The size estimation exercise reflects the variance in the number of FSWs across regions and within different districts of a region. This section presents firstly, the estimated size of FSWs in the six HIV mapping regions of Highways Districts, Kathmandu Valley, Eastern Hills, West and Mid-West Hills, Far-Western Hills, and Remaining Hills. Secondly, the geographical distribution of FSWs across districts within a region and the districts with the maximum and minimum number of FSW size estimates. Thirdly, the three districts with the maximum and minimum number of FSWs across the six regions. Finally, the FSWs that are concentrated in different districts. Tables 3.1a and 3.1b provide individual district level FSW size estimates in the mapped and unmapped districts*.

The number of FSWs in Nepal were found to be between 24,649 and 28,359—with an 8.5% coefficient of range—after all necessary corrections and adjustments are incorporated. Of the six epidemic regions, Highway District region has the maximum number of FSWs, which has been estimated to be between 13,157 and 15,435. Kathmandu Valley comprises the second highest number of FSWs, where FSW population is estimated to be between 10,457 and 11,653, followed by the Remaining Hills region, where the FSW population is estimated to be between 431 and 523. The size of the FSWs in

* *Detailed district reports are available at HSCB , which contain detailed maps of hotspots and other data sets that can be extremely useful for program managers to plan and monitor the programs. However, as agreed upon by Steering Committee, the sharing of these results will be restrained in order to safe guard confidentiality and circulation will be at the sole discretion of HSCB.*

the West and Mid-West Hills region was estimated to be between 210 and 267 whereas in the Far-Western Hills region, their number was estimated to be between 241 and 295. Eastern Hill region has the minimum number of FSWs with an estimated population between153 and 186.

A district-wise comparison reveals that Kathmandu district has a maximum number of FSWs at between 8,235 and 9,107, followed by Rupandehi and Kaski districts, where the populations range between 1,507 and 1,667, and 1,039 and 1,454, respectively.

Table 3.1a highlights that within the Highway Districts region Rupandehi district was estimated to have the maximum number of FSWs at between 1,507 and 1,667. Although the districts of Rupandehi, Kaski and Kailali were estimated to have over 1,000 FSWs each, the size of FSWs was lowest in the district of Syangja where less than 100 FSWs were estimated to be present. Within the Kathmandu Valley region, the highest number of FSWs was estimated between 8,235 and 9,107 in Kathmandu, which is the highest concentration of FSWs in a district in Nepal. Between 1,172 and 1,328 FSWs were estimated in Bhaktapur*. Between 1,050 and 1,218 FSWs were estimated in Lalitpur district in this region.

In the Eastern Hills region, none of the districts had more than 50 FSWs.

In the West and Mid-West Hills region, Surkhet district had the maximum number of FSWs at between 37 and 59, whereas the number of FSWs in all the other districts was lower.

In the Remaining Hills region, Kavre district was identified to have the maximum number of FSWs, which was estimated to be between 101 and 123. The estimated size of FSWs in Rasuwa, Manang, Mustang, Dolpa, Mugu and Humla districts is less than 50.

* *A police raid was reportedly conducted in FSW establishments in Bhaktapur and hence the results should be viewed in this context.*

Table 3.1a: Estimated size of FSWs in mapped districts

Regions	Districts	EB			HB			SB			All		
		Final Estimate (lower)	Final Estimate (upper)	Coefficient of Range	Final Estimate (lower)	Final Estimate (upper)	Coefficient of Range	Final Estimate (lower)	Final Estimate (upper)	Coefficient of Range	Final Estimate (lower)	Final Estimate (upper)	Coefficient of Range
Eastern Hill		**0**	**0**		**0**	**0**		**32**	**39**		**32**	**39**	
	Ilam	0	0	0	0	0	0	32	39	25.9	32	39	25.9
Highway Districts		**4,972**	**6,027**		**5,011**	**5,690**		**3,174**	**3,718**		**13,157**	**15,435**	
	Jhapa	512	585	13.7	6	7	20	42	50	22.2	560	642	13.8
	Morang	349	355	1.6	15	17	14.3	72	74	2.9	436	446	0.6
	Sunsari	448	482	7.1	14	15	7.7	8	9	14.3	470	506	6.8
	Saptari	122	147	20.3	177	209	20.5	133	167	30.9	432	523	23.4
	Siraha	152	174	13.9	157	176	13.3	61	85	52.2	370	435	18.7
	Dhanusha	164	225	30.7	41	53	35.3	123	225	63	328	503	26.1
	Mahottari	40	47	17	0	0	0	331	391	21	371	438	20
	Sarlahi	0	0	0	133	187	52.9	105	124	20.9	238	311	31.4
	Rautahat	129	139	7.2	131	143	9.8	153	166	9.2	413	448	7.7
	Bara	30	38	26.7	227	266	19.4	121	133	10.9	378	437	8.8
	Parsa	147	166	12.4	54	57	5.9	345	357	3.7	546	580	3.8
	Makwanpur	177	218	23.3	365	399	10.1	27	31	16.7	569	648	13.1
	Chitwan	204	249	22	256	274	7.5	52	68	38.1	512	591	15.3
	Dhading	51	66	30.6	175	186	6.7	0	0	0	226	252	12.1
	Nawalparasi	219	275	25.9	182	200	10.7	319	362	15.1	720	837	10.9
	Tanahu	255	267	4.3	42	52	27.8	38	41	8.6	335	360	0.3
	Kaski	955	1,358	46.3	55	63	16	29	33	15.4	1,039	1454	11.7
	Syangja	26	35	36	0	0	0	12	13	9.1	38	48	22.2
	Palpa	18	19	5.3	10	14	50	71	75	6.1	99	108	7.4
	Rupandehi	617	755	22.3	827	834	0.9	63	78	28.3	1507	1,667	10.9
	Kapilbastu	6	8	33.3	140	175	29.4	322	405	31.1	468	588	29.9
	Dang	224	258	14.7	355	376	6.3	304	353	18.4	883	987	11.9
	Banke	62	80	30	406	444	10.1	191	211	11.5	659	735	12.1
	Bardiya	0	0	0	307	325	6.2	63	66	5.1	370	391	5.5
	Kailali	56	72	29.6	846	1,123	40.6	29	37	33.3	931	1232	37.5
	Kanchanpur	9	9	0	90	95	5.9	160	164	2.6	259	268	11.2

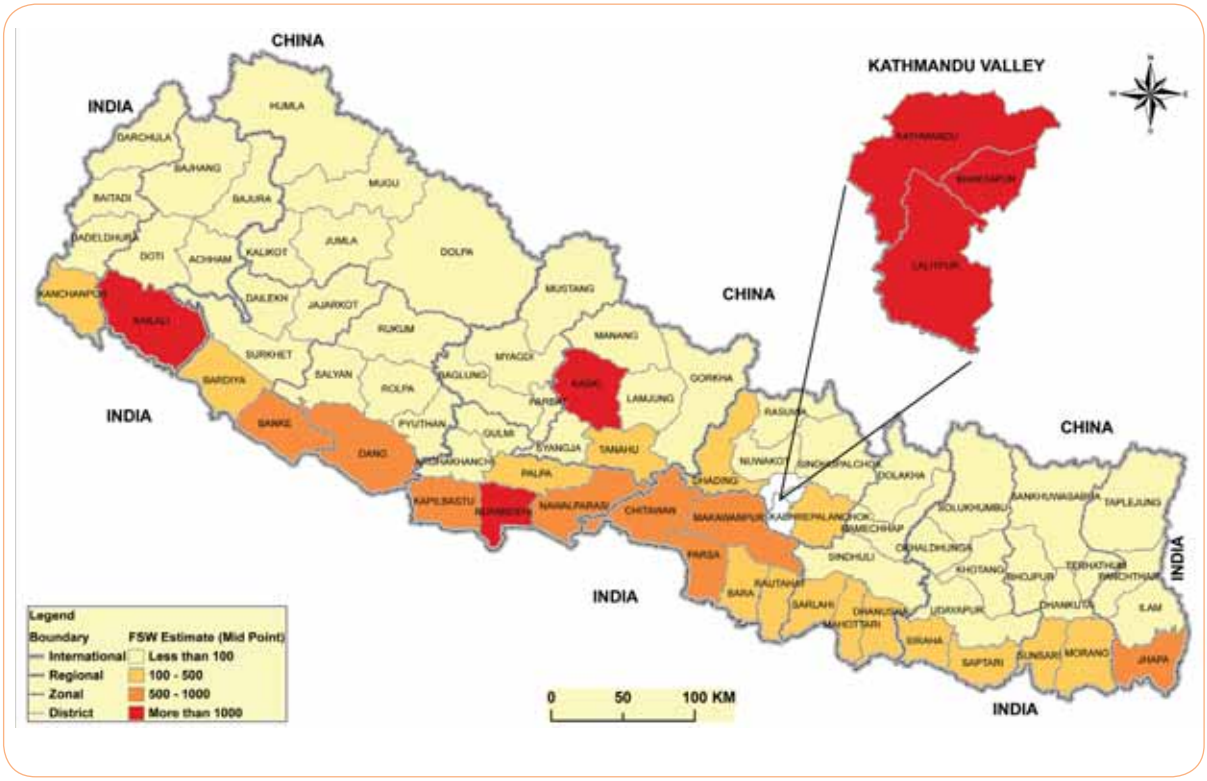
Regions	Districts	EB			HB			SB			All		
		Final Estimate (lower)	Final Estimate (upper)	Coefficient of Range	Final Estimate (lower)	Final Estimate (upper)	Coefficient of Range	Final Estimate (lower)	Final Estimate (upper)	Coefficient of Range	Final Estimate (lower)	Final Estimate (upper)	Coefficient of Range
Kathmandu Valley		**7,543**	**8,200**		**413**	**514**		**2,501**	**2,939**		**10,457**	**11,653**	
	Kathmandu	6,511	7,119	8.8	165	187	14.7	1,559	1,801	17.6	8,235	9,107	5.4
	Lalitpur	514	535	3.8	69	95	48.1	467	588	31.3	1,050	1,218	14.4
	Bhaktapur	518	546	5	179	232	36.1	475	550	17.9	1,172	1,328	12.2
West and Mid West Hill		**0**	**0**		**5**	**7**		**32**	**52**		**37**	**59**	
	Surkhet	0	0	0	5	7	50	32	52	100	37	59	91.7
Far-Western Hill		**0**	**0**		**50**	**64**		**0**	**0**		**50**	**64**	
	Bajhang	0	0	0	50	64	33.3	0	0	0	50	64	33.3
Remaining Hill		**37**	**50**		**23**	**26**		**41**	**47**		**101**	**123**	
	Kavre	37	50	37.1	23	26	14.3	41	47	16.7	101	123	15.9
Mapped districts with low MARPS presence (Sankhuwasabha, Dadeldhura, Mustang, Mugu, Jajarkot, Myagdi											**61**	**74**	**8.5**

Table 3.1b: Estimated size of FSWs in unmapped districts

Regions	Districts	Final Estimate (lower)	Final Estimate (upper)	Coefficient of Range
		115	**140**	**8.5**
Eastern Hill	<50 (Dhankuta Udayapur Taplejung Terhathum Panchthar Bhojpur Khotang Okhaldhunga Solukhumbu Ramechhap Dolkha)	115	140	8.5
West and Mid-West Hill		**161**	**194**	**8.5**
	Gulmi	46	55	8.5
	Baglung	42	51	8.5
	<50 (Parbat Argakhanchi Pyuthan Rukum Rolpa Salyan Dailekh Kalikot)	73	88	8.5
Far-Western Hill		**153**	**185**	**8.5**
	Doti	63	76	8.5
	Baitadi	71	86	8.5
	<50 (Achham, Bajura, Darchula)	19	23	8.5
Remaining Hill		**325**	**393**	**8.5**
	Sindhuli	61	73	8.5
	Sindhupalchok	66	79	8.5
	Nuwakot	63	76	8.5
	Gorkha	66	80	8.5
	Lamjung	42	50	8.5
	<50 (Rasuwa, Manang, Dolpa, Jumla, Humla)	27	35	8.5

An analysis of FSW concentration in different districts reveals that there were less than 100 FSWs in 46 districts, between 100 and 500 FSWs in 13 districts, and between 500 and 1,000 FSWs in 10 districts. Six districts of Kaski, Rupandehi, Kailali, Kathmandu, Lalitpur and Bhaktapur have above 1,000 FSWs. All districts in the epidemic regions of Eastern Hills, West and Mid-Western Hills and Far-Western Hills have less than 100 FSWs. In Remaining Hills, there are between 100 and 500 FSWs in the Kavre district, whereas the remaining districts have less than 100 FSWs. In the Highway Districts epidemic region, only Syangja has less than 100 FSWs. In this region, 12 districts have between 100 and 500 FSWs and 9 districts have 500 to 1,000 FSWs. Kaski, Rupandehi and Kailali have more than 1,000 FSWs. In Kathmandu valley, all three districts of Kathmandu, Lalitpur and Bhaktapur have more than 1,000 FSWs.

Map 3.1: Concentration of FSWs in different districts of Nepal



3.2: Geographical distribution of FSW hotspots

The geographical distribution of hotspots across the six HIV epidemic regions and districts within a region is detailed in this section.

The mapping exercise identified 3,476 FSW hotspots in 623 different locations in Nepal. As indicated in Table 3.2, the Highway Districts region, with 2,257 hotspots has the maximum number of hotspots amongst the six epidemic regions. It must be noted that all the 26 districts of the region were mapped for FSWs and the presence of FSW hotspots was reported in all these districts. With 455 hotspots, Rupandehi district has the maximum number of FSW hotspots in this region, and emerges as the district that has the second highest number of FSWs among the mapped districts across the country. Kailali has the third highest number of FSWs among the mapped districts with 299 FSWs. In this region, Syangja district has the minimum number of hotspots with only 5 hotspots. The following 7 districts have less than 30 FSWs hotspots: Saptari, Siraha, Sarlahi, Dhading, Syangja, Palpa and Kapilbastu. The districts of Dhanusha, Mahottari, Rautahat, Tanahu, Bardiya and Kanchanpur have 30 to 60 FSW hotspots. Moreover, five districts of Jhapa, Morang, Saptari, Parsa and Banke have between 60 and 90 hotspots. Besides Rupandehi and Kailali, 6 other districts including Bara, Makwanpur, Chitwan, Nawalparasi, Kaski, and Dang also have more than 90 different hotspots.

Kathmandu Valley region has the second highest number of FSWs across the 6 regions at 1,177 FSWs. All three districts of the region were mapped for FSWs and with 902 hotspots, the Kathmandu district emerges as the district that has the maximum number of hotspots in the country. Bhaktapur and Lalitpur districts of this region have 173 and 102 hotspots, respectively.

In Eastern Hills, the mapping exercise was conducted in the Sankhuwasabha and Ilam districts. Eight FSW hotspots were identified in Ilam and Sankhuwasabha was reported as a negligible FSW district, that is, a district where no MARP group was reported during the study.

In West and Mid-West Hills region, the mapping study was conducted in Myagdi, Jajarkot and Surkhet. Eight FSW hotspots are present in Surkhet, whereas Myagdi and Jajarkot are negligible FSW districts.

In Far-Western Hills, the mapping study was conducted in four districts of Baitadi, Achham, Dadeldhura and Bajhang. Table 3.2 indicates that Baitadi, Achham and Dadeldhura are negligible FSW districts and eleven different hotspots for FSWs are present in Bajhang.

In the Remaining Hill region, Kavre, Mustang and Mugu were mapped for FSWs during the mapping study. Fifteen hotspots for FSWs were reported in the Kavre district, whereas Mustang and Mugu were reported to be negligible FSW districts.

Table3.2: Distribution of locations/hotspots across different regions/districts

Regions	Districts	No. of Locations	No. of Hotspots
Nepal		**623**	**3,476**
Eastern Hill		**8**	**8**
	Ilam	8	8
	Sankhuwasabha	0	0
Highway Districts		**455**	**2,257**
	Jhapa	14	73
	Morang	9	68
	Sunsari	21	75
	Saptari	14	23
	Siraha	16	27
	Dhanusha	9	33
	Mahottari	19	35
	Sarlahi	6	15
	Rautahat	6	33
	Bara	8	100
	Parsa	5	70
	Makwanpur	34	178
	Chitwan	35	103
	Dhading	12	20
	Nawalparasi	26	105
	Tanahu	9	54
	Kaski	20	112
	Syangja	4	5
	Palpa	6	12
	Rupandehi	57	455
	Kapilbastu	17	26
	Dang	20	185
	Banke	34	69
	Bardiya	20	34
	Kailali	24	299
	Kanchanpur	10	48

Table3.2: Contd...

Regions	Districts	No. of Locations	No. of Hotspots
Kathmandu Valley		**147**	**1,177**
	Kathmandu	76	902
	Lalitpur	28	102
	Bhaktapur	43	173
West and Mid West Hill		**5**	**8**
	Myagdi	0	0
	Jajarkot	0	0
	Surkhet	5	8
Far-Western Hill		**1**	**11**
	Dadeldhura	0	0
	Bajhang	1	11
Remaining Hill		**7**	**15**
	Kavre	7	15
	Mustang	0	0
	Mugu	0	0

3.3: Profile of hotspots

This section details information regarding the profiles of the three distinct types of hotspots, namely establishment-based, street-based and home-based hotspots, which were mapped across the epidemic regions and within the districts of these regions.

As indicated by Table 3.3, 1,440 of the total mapped FSW hotspots are establishment-based, 1,427 are home-based and 609 are street- based. Highway Districts region has the maximum number of home-based and street-based hotspots at 1,334 and 316 hotspots, respectively, whereas the Kathmandu Valley region has the maximum number of establishment-based hotspots at 830.

Kathmandu has 691 establishment-based hotspots, which is the maximum number of hotspots within a district across all the 6 epidemic regions, followed by Kaski, which has 88 establishment-based hotspots. The maximum number of home-based hotspots is present in Rupandehi district at 389, followed by Kailali at 279 and Makwanpur 151. The maximum number of street-based hotspots are present in Kathmandu at 186, followed by Lalitpur at 49 and Dang at 48.

Table 3.3 indicates that in the Highway Districts region, 2,257 different hotspots are present across 26 districts. Of these, 1,334 are home-based, 607 are establishment-based and 316 are street-based hotspots. Kaski district has the maximum number of establishment-based hotspots at 88, followed by Jhapa and Sunsari with 67 establishment based FSW hotspots each. Rupandehi has the maximum number of home-based hotspots at 389, followed by Kailali at 279 and Makwanpur with 151 home-based hotspots. Maximum street-based hotspots are present in Dang at 48, followed by Parsa with 41 and Nawalparasi with 34 street-based hotspots. In the districts of Mahottari, Sarlahi, Dhading, Syangja and Bardiya, atleast one type of FSW hotspot does not exist. In particular, no home-based hotspots are present in Mahottari and Syangja, and no street-based hotspots are present in Dhading. Sarlahi and Bardiya districts have no establishment-based FSW hotspots. At least one hotspot for each typology is present in all other districts of this region.

In the Kathmandu Valley region, 830 hotspots are establishment based, 276 are street based and 71 are home based. All the three types of hotspots are present in each district of the Kathmandu Valley.

The maximum numbers of establishment- and street-based hotspots in this region are present in the Kathmandu district at 691 and 186, respectively, whereas the maximum number of home-based hotspots are present in the Bhaktapur district at 39.

Within the Eastern Hills region, all eight identified hotspots mapped in the Ilam district are street based. In the West and Mid-West Hill region, 8 hotspots have been identified in the Surkhet district, and of these, 6 are street-based and two are home-based hotspots. In the Far-Western Hill region, 11 hotspots have been identified in the Bajhang district and all of these hotspots are street based. In the Remaining Hills region, 9 home-based hotspots, and 3 establishment-based and street-based hotspots each are present within the Kavre district.

Table3.3: Distribution of hotspots by their typology across different mapped regions/districts

Regions	Districts	EB	HB	SB	Total
Nepal		**1,440**	**1,427**	**609**	**3,476**
Eastern Hill		**0**	**0**	**8**	**8**
	Ilam	0	0	8	8
	Sankhuwasabha	0	0	0	0
Highway Districts		**607**	**1,334**	**316**	**2,257**
	Jhapa	67	1	5	73
	Morang	58	3	7	68
	Sunsari	67	6	2	75
	Saptari	7	8	8	23
	Siraha	10	14	3	27
	Dhanusha	19	6	8	33
	Mahottari	5	0	30	35
	Sarlahi	0	8	7	15
	Rautahat	12	7	14	33
	Bara	7	71	22	100
	Parsa	17	12	41	70
	Makwanpur	24	151	3	178
	Chitwan	25	73	5	103
	Dhading	4	16	0	20
	Nawalparasi	36	35	34	105
	Tanahu	41	8	5	54
	Kaski	88	19	5	112
	Syangja	4	0	1	5
	Palpa	4	1	7	12
	Rupandehi	59	389	7	455
	Kapilbastu	1	8	17	26
	Dang	28	109	48	185
	Banke	6	44	19	69
	Bardiya	0	28	6	34
	Kailali	16	279	4	299
	Kanchanpur	2	38	8	48

Table3.3: Contd...

Regions	Districts	EB	HB	SB	Total
Kathmandu Valley		**830**	**71**	**276**	**1,177**
	Kathmandu	691	25	186	902
	Lalitpur	46	7	49	102
	Bhaktapur	93	39	41	173
West and Mid-West Hill		**0**	**2**	**6**	**8**
	Myagdi	0	0	0	0
	Jajarkot	0	0	0	0
	Surkhet	0	2	6	8
Far-Western Hill		**0**	**11**	**0**	**11**
	Dadeldhura	0	0	0	0
	Bajhang	0	11	0	11
Remaining Hill		**3**	**9**	**3**	**15**
	Kavre	3	9	3	15
	Mustang	0	0	0	0
	Mugu	0	0	0	0

3.4: Share of FSWs of different typology

This section presents information regarding FSWs based on their typology, and outlines their geographical distribution and concentrations across epidemic regions and districts within regions.

In the mapped districts, there is a considerable variation in the number of FSWs by their typology in that a maximum number of FSWs are establishment based, that is, between 12,552 and 14,277, between 5,780 and 6,795 FSWs are street based, and a minimum number of FSWs are home based, that is, between 5,502 and 6,301.

Establishment-based FSWs

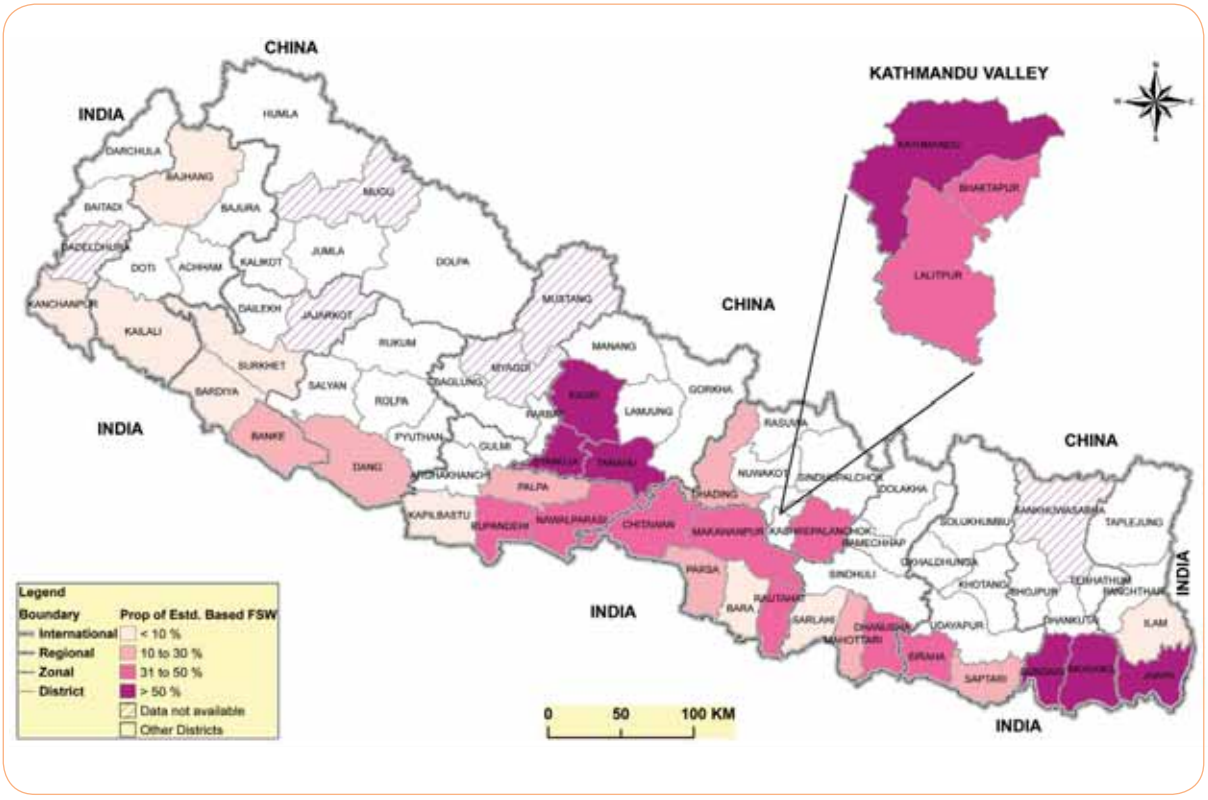
The mapping study found that in 7 districts, over 50% of the mapped FSWs are establishment based. Furthermore, 30% to 50% of the FSWs in 10 districts, 10% to 30% of the FSWs in 7 districts and less than 10% of the FSWs in 9 districts are establishment based. The highest proportion of establishment-based FSWs are found in the Sunsari district, wherein 95.3% FSWs are establishment based, and this is closely followed by Kaski and Jhapa wherein 93.4% and 91.1% of the FSWs are establishment based.

In the Highway Districts epidemic region, over 50% of the FSWs in the six districts of Jhapa, Morang, Sunsari, Tanahu, Kaski and Syangja are establishment based. Furthermore, 30% to 50% of the FSWs in the 7 districts of Saptari, Dhanusha, Rautahat, Makwanpur, Chitwan, Nawalparasi and Rupandehi are establishment based. In the 7 districts of Saptari, Mahottari, Parsa, Dhading, Palpa, Dang and Banke, 10% to 30% of the total FSWs are establishment based, whereas in the 6 districts of Sarlahi, Bara, Kapilbastu, Bardiya, Kailali and Kanchanpur, less that 10% of the total FSWs in the districts are establishment based.

Within the Kathmandu Valley region, more than 50% of the total FSWs in Kathmandu and Bhaktapur and 30% to 50% of the FSWs in Lalitpur district are establishment based. In this region, the Kathmandu district has the maximum proportion, that is, 78.2% of FSWs that are establishment based.

In the Eastern Hill region, less than 10% of the FSWs are establishment based. Similarly, in the West and Mid-Western Hill region, less than 10% of the total FSWs in Surkhet district are establishment based.

***Map 3.2:** Proportion of establishment-based FSWs to total FSWs in different mapped districts*



Within the Far-Western Hill region in Bajhang district, the proportion of establishment-based FSW is less than 10%, whereas in the Remaining Hill region, Kavre has 30% to 50% of the total mapped FSWs in Kavre are establishment based.

Home-based FSWs

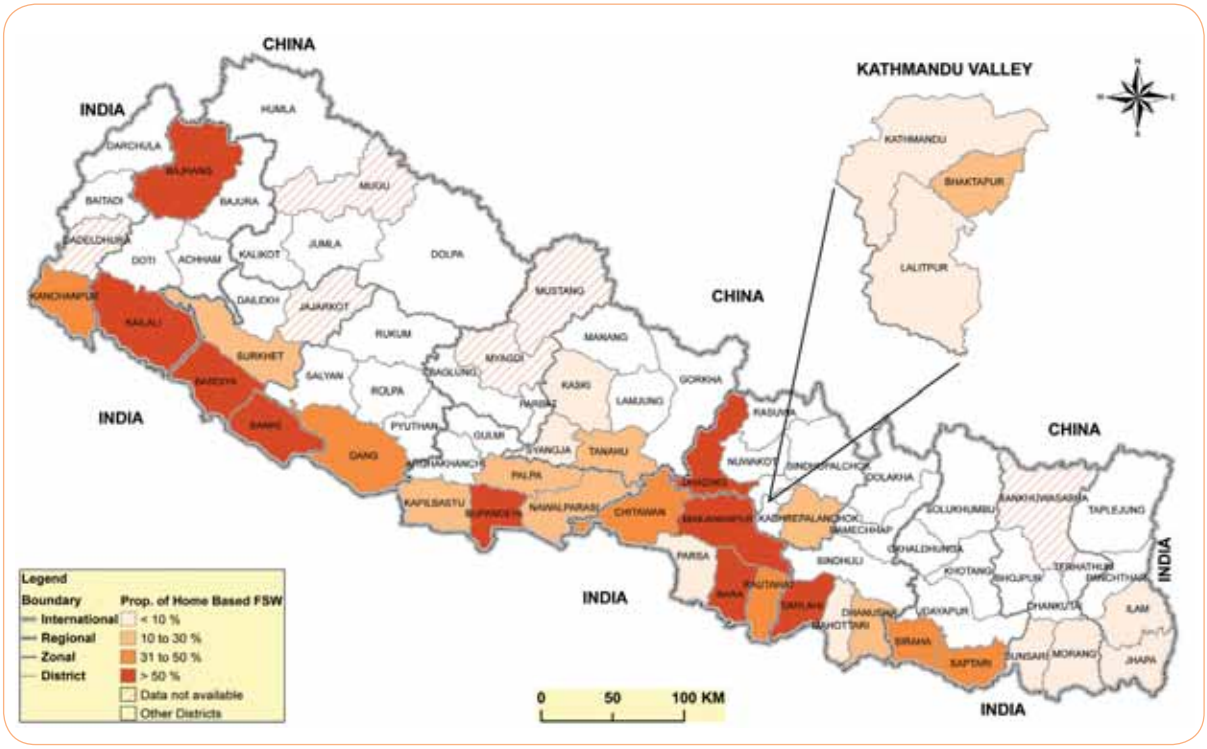
Map 3.3 shows the proportion of home-based FSW in the mapped districts of Nepal. The mapping study indicated that there were 9 districts where more than 50% of the total FSWs in the district are home based. Moreover, 6 districts have 30% to 50%, 8 districts have 10% to 30% and 10 districts have less than 10% home-based FSWs among the total mapped FSWs. The maximum number of home-based FSWs in a district was in Bajhang wherein 100% of the FSWs were home based, followed by Kailali at 91.2% and Bardiya at 83.1%.

Within the Highway Districts region, the highest proportion of home-based FSWs is found in Kailali wherein 91.2% of the total FSWs are home based. More than 50% of the FSW population in 8 districts of Sarlahi, Bara, Makwanpur, Dhading, Rupandehi, Banke, Bardiya and Kailali is home based. Home-based FSW population in the 6 districts of Saptari, Siraha, Rautahat, Chitwan, Dang and Kanchanpur accounts for 30% to 50% of the total FSW population. Although 10% to 30% of the total FSW population in 5 districts of Dhanusha, Nawalparasi, Tanahu, Palpa and Kapilbastu is home based, less than 10% of the total FSW population in the 7 districts of Jhapa, Morang, Sunsari, Mahottari, Parsa, Kaski and Syangja is home-based.

In the Kathmandu Valley region, the proportion of home-based FSWs was less than 10% in Kathmandu and Bhaktapur district and ranges between 30% and 50% in the Bhaktapur district.

In Eastern Hill region, the proportion of home-based FSW in the mapped district Ilam is seen to be less than 10%. On the contrary, in the West and Mid-West Hill region, 10% to 30% of the total FSW poupulation in the mapped district of Surkhet is home-based. The proportion of home-based FSWs in Bajhang district of Far-Western Hill region is more than 50% and this proportion is 10% to 30% in the Kavre district of the Remaining Hill region.

***Map 3.3:** Proportion of home-based FSWs to total FSWs in different mapped districts*



Street-based FSWs

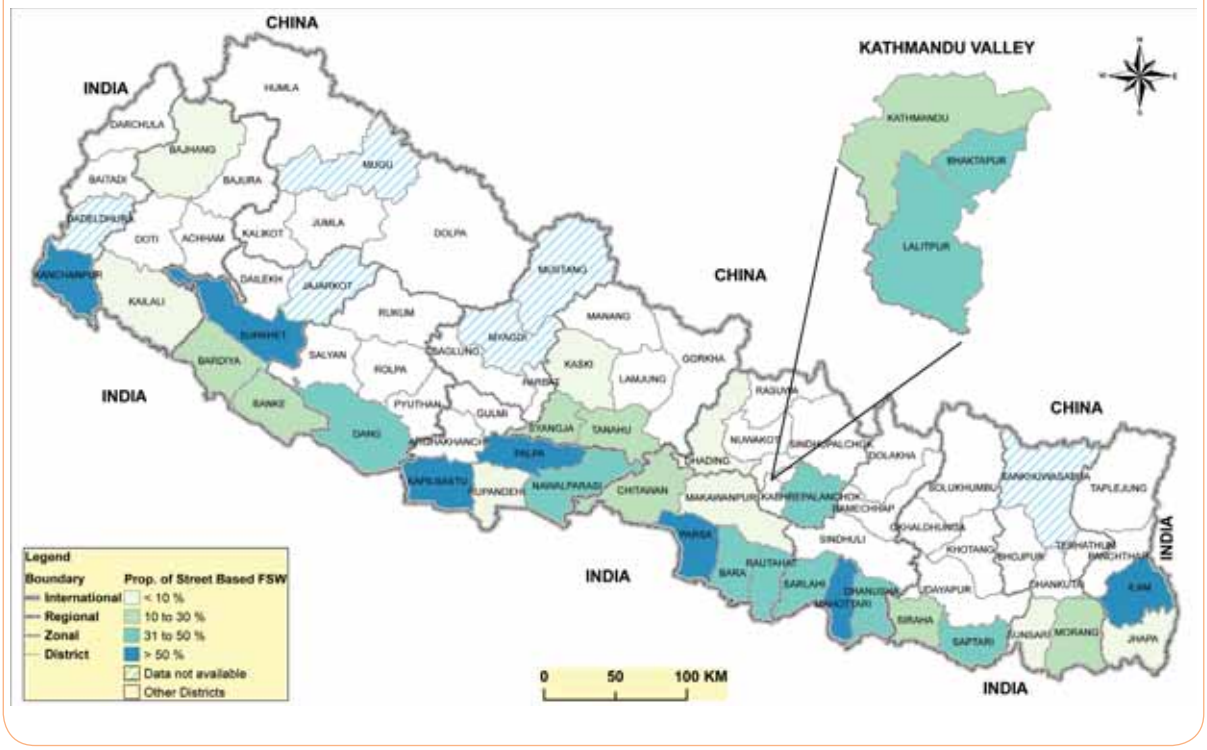
Map 3.4 reveals that in 7 districts across Nepal, the proportion of street-based FSWs to the total FSW population is 50%. This proportion is 30% to 50% in 10 districts, whereas it is 10% to 30% in 8 districts. The proportion of street-based FSWs within a district is the highest in Ilam, where 100% of the FSW population is street based; this is followed by Mahottari and Surkhet where 89.3% and 88.1% of the total FSW population is street based.

Within the Highway Districts epidemic region, 89.3% of the FSW population in Mahottari is street based. More than 50% of the FSW population in the following 5 districts are street based: Mahottari, Parsa, Palpa, Kapilbastu and Kanchanpur. Moreover, 30% to 50% of the total FSWs in seven districts including Saptari, Dhanusha, Sarlahi, Rautahat, Bara, Nawalparasi and Dang are street based. The proportion of street-based FSWs is 10% to 30% in Morang, Siraha, Chitwan, Tanahu, Syangja, Banke and Bardiya, whereas this proportion is less than 10% of the total FSW population in another 7 districts of this region, including Jhapa, Sunsari, Makwanpur, Dhading, Kaski, Rupandehi and Kailali.

In the Kathmandu Valley region, 30% to 50% of the total FSW population is street-based in Lalitpur and Bhaktapur districts and 10% to 30% in Kathmandu district.

In the Eastern Hill region, more than 50% of the total FSW population in Ilam is street based, and in the West and Mid-West Hill region, more than 50% of the FSW population in Surkhet is street based. In the Far-West Hill region, less than 10% of the total FSW population in Bajhang is estimated to be street based, whereas in the Remaining Hill region, 30% to 50% of the FSW population in Kavre is estimated to be street based.

Map 3.4: Proportion of street-based FSWs to total FSWs in different mapped districts



3.5: Availability and accessibility of condom outlets and VCT/STI service

Ensuring availability and accessibility of service centres to the mapped hotspots—whilst considering the estimated FSW population size—is a step towards increasing service usage for HIV prevention, treatment and care. This section highlights the availability of condom outlets and VCT/STI services that are available to FSWs within a one kilometre range of a hotspot. Following a country level overview, regional details are provided in the subsequent paragraphs.

Mapping of condom outlets and VCT/STI service centres at locations within a one-kilometre range of mapped hotspots for determining accessibility indicated that 61.5% and 38.1% of the total hotspots of FSWs in Nepal have condom outlets and VCT/STI service within a one kilometre range respectively. In 17 districts, condom outlets are present within a one kilometre of 60 % of the FSW hotspots. Similarly, in 9 mapped districts, more than 60% of the hotspots have VCT/STI service within a one kilometre range. Four districts including Ilam, Saptari, Dhading and Surkhet have at least one FSW hotspot that has atleast one condom outlet but no VCT/STI services within a kilometre whereas Syangja is the only district amongst all the mapped districts where neither any condom outlets nor VCT/STI services are present within a kilometre of the FSW hotspots.

In the Highway Districts region, Table 3.4 indicates that approximately 55% of the FSW hotspots in the region have condom outlets within a distance of one kilometre and 33.5% of the hotspots have VCT/STI services within same distance. A district wise analysis shows that all hotspots in Dhanusha district have condom outlets within a one kilometre range. In Mahottari, Makwanpur and Banke, over 90% of the hotspots have condom outlets within a distance of one kilometre. Condom outlets are present within a range

of one kilometre of 60% to 90% of the hotspots in the following 8 districts in this region: Jhapa, Sarlahi, Parsa, Nawalparasi, Kapilbastu, Dang, Bardiya and Kanchanpur. Moreover, 30% to 60% of the hotspots in 9 districts of this region, namely Morang, Sunsari, Rautahat, Bara, Dhading, Tanahu, Kaski, Palpa, and Rupandehi have condom outlets within a kilometre. In contrast, in 4 districts, namely Saptari, Siraha, Chitwan and Kailali, less than 30% of the FSW hotspots have condom outlets within a distance of a kilometre.

In terms of availability of VCT/STI services in the Highway Districts region, 80% of the hotspots in 4 districts, that is, Morang, Sunsari, Makwanpur and Kaski have access to VCT/STI services within one kilometre radius. In the following 7 districts, 40% to 80% of the FSW hotspots have VCT/STI services within a one kilometre range: Dhanusha, Sarlahi, Rautahat, Bara, Chitwan, Kapilbastu and Banke. On the contrary, VCT/STI services were present within one kilometre of less than 20% of the total hotspots that are located in 6 districts of this region, including Siraha, Nawalparasi, Rupandehi, Dang, Kailali and Kanchanpur. Notably, no VCT/STI service is present within a one-kilometre range of FSW hotspots in the following districts: Saptari, Dhading, Palpa and Syangja. In this region, Syangja district has neither condom outlets nor VCT/STI services within a one-kilometre distance of any FSW hotspot in this district.

In Kathmandu Valley region, over 90% of the hotspots in Lalitpur and over 70% of the hotspots in Kathmandu and Bhaktapur district have condom outlets within one kilometre range. Half or 50% of the total FSW hotspots in Kathmandu district have VCT/STI services within one kilometre, whereas approximately 48% of the total hotspots in Bhaktapur and 23.5% of the total hotspots in Lalitpur district have access to this service within a distance of one kilometre.

In the Ilam district of the Eastern Hill region, all FSW hotspots have condom outlets within a distance of one kilometre; however, none of them have access to VCT/STI services within the same distance. Likewise, in the West and Mid-West Hill region, although 38% percent of the FSW hotspots in the mapped district of Surkhet have condom outlets within a one kilometre range, there are no VCT/STI services within the same distance of hotspots.

Within the Far-Western Hill region, approximately 10% of the FSW hotspots in the mapped district of Bajhang have condom outlets within a one kilometre radius and same proportion of hotspots also have VCT/STI services within one kilometre. Lastly, in the Remaining Hill region, 87% of the FSW hotspots in Kavre have condom outlets within a distance of one kilometre and 73% of the hotspots have access to VCT/STI services within the same distance.

Table 3.4: Availability and accessibility of condom outlets and VCT/STI service

Regions	Districts	% of Hotspots having Condom Outlets within One Kilometre	% of Hotspots having VCT/STI Service within One Kilometre
Nepal		**61.5**	**38.1**
Eastern Hill		**100.0**	**0.0**
	Ilam	100.0	0.0
	Sankhuwasabha	NA	NA
Highway Districts		**55.1**	**33.5**
	Jhapa	80.8	83.6
	Morang	42.6	22.1
	Sunsari	40.0	84.0
	Saptari	17.4	0.0
	Siraha	7.4	3.7
	Dhanusha	100.0	60.6
	Mahottari	94.3	28.6

Table 3.4: Contd...

Regions	District	% of Hotspots having Condom Outlets within One Kilometre	% of Hotspots having VCT/STI Service within One Kilometre
	Sarlahi	60.0	66.7
	Rautahat	36.4	60.6
	Bara	50.0	46.0
	Parsa	64.3	24.3
	Makwanpur	94.4	99.4
	Chitwan	29.1	68.9
	Dhading	50.0	0.0
	Nawalparasi	87.6	7.6
	Tanahu	37.0	29.6
	Kaski	33.9	83.9
	Syangja	0.0	0.0
	Palpa	41.7	0.0
	Rupandehi	53.6	2.9
	Kapilbastu	65.4	42.3
	Dang	65.4	14.1
	Banke	97.1	42.0
	Bardiya	88.2	32.4
	Kailali	17.7	10.4
	Kanchanpur	87.5	10.4
Kathmandu Valley		**73.8**	**47.4**
	Kathmandu	71.6	50.0
	Lalitpur	94.1	23.5
	Bhaktapur	73.4	48.0
West and Mid-West Hill		**37.5**	**0.0**
	Myagdi	NA	NA
	Jajarkot	NA	NA
	Surkhet	37.5	0.0
Far-Western Hill		**9.1**	**9.1**
	Dadeldhura	NA	NA
	Bajhang	9.1	9.1
Remaining Hill		**86.7**	**73.3**
	Kavre	86.7	73.3
	Mustang	NA	NA
	Mugu	NA	NA

CHAPTER

4

BEHAVIOURAL CHARACTERISTICS OF FEMALE SEX WORKERS

Consideration of socio-demographic and behavioural characteristics of the population at whom HIV services are directed—during intervention design stage—is a precursory mechanism for ensuring its success in increasing access and use of facilities and service centres. When the average needs and requirements of the target population are not considered, service use can be expected to be below the optimal level. Research evidence indicates the need for considering the varied individual, interpersonal, social, and environmental factors that influence the risk for HIV infection along with behavioural patterns. Background factors that influence risk may include individual factors, such as age, education, marital status, and migration, whereas behavioural factors may include age of sexual debut, age of entry into sex work, client loads, HIV/STI prevention behaviours, other sexual practices, etc.

This chapter presents findings from the behavioural survey conducted amongst 2,901 FSWs during the mapping and size estimation exercise in the districts. The first section of this chapter includes background information on the surveyed population, whereas their sexual behaviour patterns and service use patterns are summarized in the subsequent sections. It must to be noted that the most considerable proportion or 82.5% of the surveyed FSWs belonged to the Highway District Region. Therefore, the results have been weighted according to the size of FSWs in districts.

4.1: Background characteristics

Background characteristics are important individual level factors that shape the vulnerability and risk behaviours and serve as crucial demographic inputs for programme intervention. This section presents the demographic profile of FSW respondents in terms of age, educational qualification, marital status, living arrangements and migratory status.

Table 4.1 indicates that although the age distribution of FSWs in Nepal is not uniform, two-fifths or 42% of FSWs belong to the age group of 20 to 29 years. Almost one-fourth or 23% of the FSWs are below 20 years of age, whereas 35% are 30 years old or above. Regarding population distribution according to educational levels,

the data indicates high levels of illiteracy among FSWs in Nepal; over half of them are illiterate and over three-fifths of them have neither received any formal education nor were educated for at least five years. Only a very small proportion of FSWs, that is, 5% of the total FSWs, have more than 10 years of education. It is important to emphasize that 75% of the FSWs are migrants and therefore face increased vulnerability and risk. In fact, mobility and migration among FSWs may pose multiple challenges for the programmes and interventions being implemented for their risk reduction and improving their quality of life.

With regard to distribution by typology, almost two-fifths or 40% of the FSWs operate from establishments and homes, whereas only one-fifth or 20% operate from streets. Highest concentration of FSWs was found in the Highway Districts epidemic region at 82.5%, and is followed by Kathmandu Valley region at 17%. A very small proportion of FSWs is present in the remaining four epidemic regions.

Data on the marital status of FSWs highlighted in Table 4.1 and Figure 4.1 indicates that although 74% have ever been married, only 37% report cohabitation with spouses and 31% reportedly stay alone. Although 23% of the FSWs report being unmarried and not living with any partner, a small proportion of 4% of the FSWs are reportedly unmarried and cohabiting with a sexual partner. Over one-fourth or 25% of the FSWs have been engaged in this profession prior to their marriage. This may be reflective of the fact that factors such as poverty and higher vulnerability may be responsible for their entry into sex work rather than sexual motives. Given that almost three-fourth or 75% of the FSWs have ever been married and the probability of engaging in multi-partner sex is high, increased awareness and access to HIV prevention and STI services is central for positive prevention. STI/HIV preventive measures and treatment must consider and overcome the stigma surrounding FSWs across communities when services are provided.

Table 4.1: Percentage distribution of FSWs by selected background characteristics

Background characteristics	Percent of FSWs	No. of FSW (unweighted)
Age		
Below age 20	22.8	712
20–29 years	42.1	1,229
30 and above	35.1	960
Educational qualification		
No formal education	52.6	1,460
Upto 5 years	23.7	706
6–10 years	18.5	576
More than 10 years	5.3	159
Marital Status		
Ever married	74.0	2,113
Never married	26.0	788
Migratory status		
Migrants	75.4	2,251
Non-migrants	24.6	650
Typology		
EB	39.5	1,296
HB	39.3	1,001
SB	21.1	604
Epidemic region		
HD	82.5	2,242
KV	17.0	825
RH	0.5	34
Total	**100.0**	**2,901**

Figure 4.1: Distribution of FSWs by their living arrangements

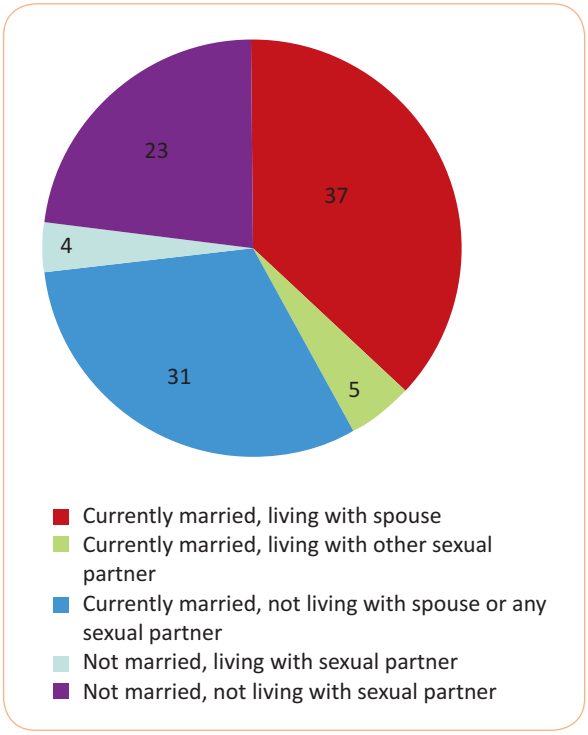


Table 4.2: Percentage distribution of FSWs by number of children below the age of 16 years

No. of living children below age 16	Percent	No. of FSW
0	37.7	1,150
1	22.7	676
2	23.6	651
3+	16.0	424
Total		**2,901**
Mean no. of children below the age of 16 years	**1.3**	

Over three-fifths or 62% of the sex workers have at least one child who is younger than 16 years of age, wherein approximately one-fourth or 25% have one child and another one-fourth or 25% have two children who are aged below 16 years. These figures are indicative of the proportion of children who are dependent on FSWs for basic sustenance and that is an important consideration in planning the services for the families of these women. The mean number of the dependent children who are younger than 16 years age is 1.3 per FSW.

It is important to consider this background data not only whilst tailoring HIV interventions for FSWs but also during the implementation of risk reduction strategies. Efficacy of programme delivery is enhanced when the target population characteristics are also considered as their behaviour. FSW behavioural factors, as found by the behavioural survey, are included to the subsequent section.

4.2: Behavioural Factors

The behavioural survey was conducted with the objective of gaining an understanding of FSWs HIV risk behaviour in order to provide insights while designing strategies and interventions to combat the HIV epidemic as well as to enable monitoring. It is important to study behavioural factors since they form the covariates of risk and vulnerability of STI/HIV among FSWs. Behavioural research is important especially in the context of predominance of HIV transmission owing to risky sexual behaviour and practices. This section highlights FSW sexual behaviour trends including age of sexual debut, sexual relationships with multiple partners and adoption of safer sex methods for developing insights regarding the level of potential risk for HIV acquisition and transmission.

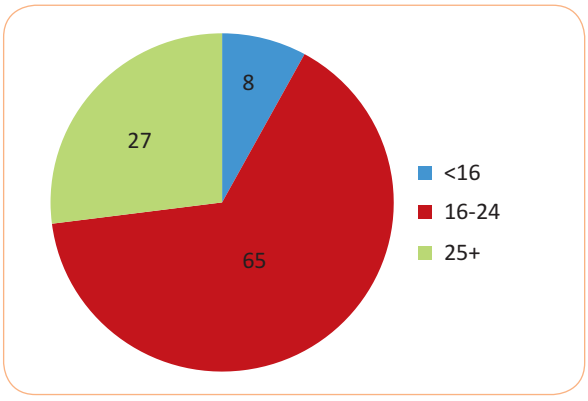
The age of sexual debut or the age at which females have their first sexual intercourse is an important risk factor and is established to compound sexual health problems and result in adverse physical, social and psychological health outcomes when these encounters occur at lower ages. FSWs in Nepal show a strikingly low age of sexual debut with an overwhelming 39% of FSW in Nepal reporting to have had sexual intercourse before the age of 16. The mean age of the respondents when they had their, first sexual encounter was as low as 17.5 years. Table 4.3 presents an analysis of distribution of FSWs who had their sexual debut when they were under the age of 16 years according various background characteristics. Variance is observed across background characteristics and a high incidence of sexual debut before attaining 16 years of age is seen in FSWs who

Table 4.3: Percentage of FSWs who had sex for the first time before the age of 16 by background characteristics

Background characteristics	Percentage of FSWs	No. of FSW (unweighted)
Age		
Below age 20	48.1	712
20–29 years	31.5	1,229
30 and above	43.1	960
Educational qualification		
No formal education	44.8	1,460
Upto 5 years	32.9	706
6–10 years	32.8	576
More than 10 years	33.3	159
Marital status		
Ever married	40.9	2,113
Never married	34.4	788
Migratory status		
Migrants	37.8	2,251
Non-migrants	43.5	650
Typology		
EB	34.3	1,296
HB	36.5	1,001
SB	52.7	604
Epidemic region		
HD	40.9	2,242
KV	32.2	825
RH	0.0	34
Total	**39.2**	**2,901**

are currently in the under the age group of 20 years, illiterate, non-migrants, married and working as street-based sex workers.

Fig-4.2: Percentage distribution of FSW by their age of entry into sex work



It is pertinent to examine the age at which FSWs enter into sex work owing to its implications on design and implementation of programs and interventions for FSWs. Although entry into sex work before attaining the age of 16 years may indicate child prostitution due to child trafficking or forceful adoption of this profession owing to various socio-cultural factors, entry into this profession after the age of 25 years may be indicative of factors of poverty and lack of empowerment, which drive FSWs into this profession. In either case, it is a gross violation of sexual rights and results in increased burden of reproductive morbidities including STI/HIV, which

Table 4.4: Percentage Distribution of FSWs according to the age of entry into sex work and some selected socio-economic characteristics

Background characteristics	<16	16–24	25+	No. of FSW (unweighted)
Age				
Below age 20	24.1	75.9	0.0	712
20–29 years	2.7	88.4	8.9	1,229
30 and above	2.5	31.1	66.4	960
Educational qualification				
No formal education	5.5	54.6	39.9	1,460
Upto 5 years	10.8	73.5	15.7	706
6–10 years	10.9	79.7	9.4	576
More than 10 years	11.1	77.8	11.1	159
Marital status				
Ever married	3.1	61.1	35.8	2,113
Never married	21.1	76.7	2.2	788
Migratory status				
Migrants	6.9	64.5	28.6	2,251
Non-migrants	10.6	67.1	22.4	650
Typology				
EB	10.2	73.0	16.8	1,296
HB	5.8	60.6	33.6	1,001
SB	6.8	58.9	34.2	604
Epidemic region				
HD	7.0	62.9	30.1	2,242
KV	10.3	75.9	13.8	825
RH	0.0	100.0	0.0	34
Total	**7.5**	**65.2**	**27.2**	**2,901**

demands concerted programme efforts to protect the rights, health and overall well-being of FSWs. In this context, the age at entry into sex work has been classified into three groups namely, below the age of 16 years, 16 to 24 years and 25 years or above. The classification of FSWs in Nepal based on the ages at which they entered into sex work has been presented in Table 4.4 and Figure 4.2. Less than one-tenth of FSWs in Nepal (7.5%) reportedly entered this profession before attaining the age of 16 years. Over one-fifth or over 20% of the FSWs entered the profession after attaining the age of 25 years. Interestingly, 24% of FSWs who are currently below the age of 20 years, 21% of those who have never been married, 11% of non-migrants, 10% of those operating from establishments and 10% of those FSWs who are based in the Kathmandu valley are relatively more likely to enter the profession of sex work than their counterparts in the respective categories. Illiterates, migrant women, those who are ever married and engage primarily in street based sex work with relatively larger concentration in highway districts are more likely to enter into this profession after attaining the age of 25 years.

Table 4.5: Percentage distribution of FSW by their client load

Duration	Client Load	Percent	No. of FSW
Weekly	Up to 4	53.0	1,533
	5 to 9	29.4	860
	10 or more	17.5	508
	Mean	**6.7**	
Daily	1–3	86.2	2,455
	4–5	10.6	301
	6 or more	3.3	100
	Mean	**2.2**	
Yesterday	0–2	88.1	2,562
	3–4	10.1	287
	5 or more	1.8	52
	Mean	**1.3**	
	Total	**100.0**	**2,901**

Fig-4.3a: ***Percentage distribution of FSW by their daily client loads***

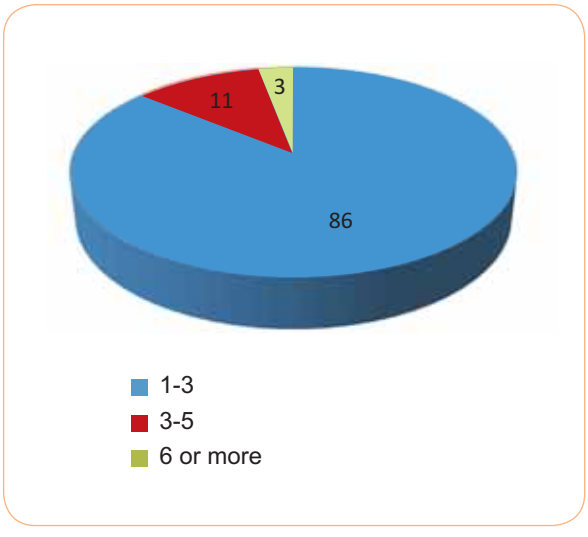


Fig-4.3b: ***Percentage distribution of FSWs by their weekly client loads***

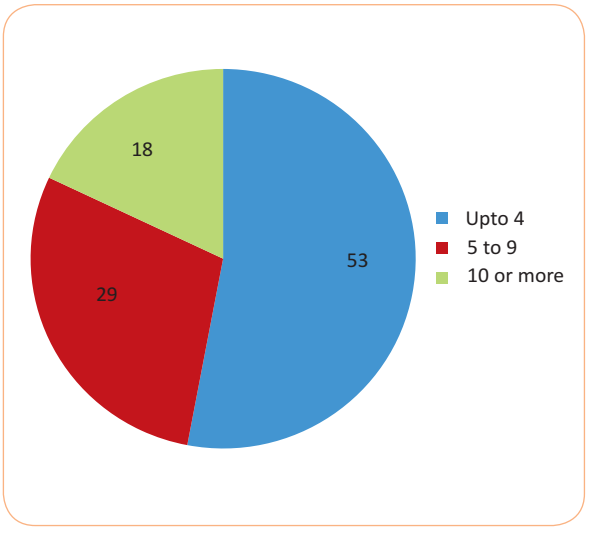


Table 4.6a: Percentage distribution of FSWs by average number of sex work days

Sex work days in a week	Percent	No. of FSWs
0–3 days	23.2	625
4–5 days	29.2	788
6 or more days	47.6	1,488
Mean	**5.1**	
Total	**100.0**	**2,901**

Table 4.6b: Percentage distribution of FSWs by average number of sex work days and some selected background characteristics

Background characteristics	0–3	4–5	6+	No. of FSWs (unweighted)
Age				
Below age 20	15.2	21.5	63.3	712
20–29 years	19.9	30.8	49.3	1,229
30 and above	32.5	32.5	35.0	960
Typology				
EB	11.6	18.8	69.6	1,296
HB	36.0	34.6	29.4	1,001
SB	20.3	39.2	40.5	604
Epidemic region				
HD	25.5	32.2	42.3	2,242
KV	11.9	13.6	74.6	825
RH	0.0	50.0	50.0	34
Total	**23.2**	**29.2**	**47.6**	**2,901**

Fig-4.4: ***Percentage distribution of FSWs by average number of sex work days and typology***

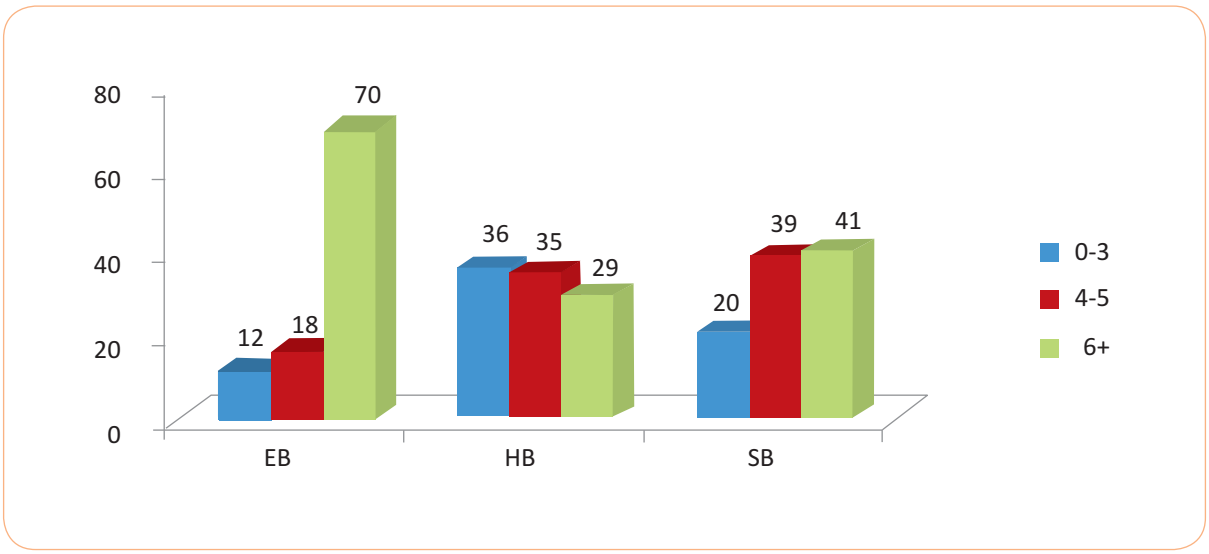
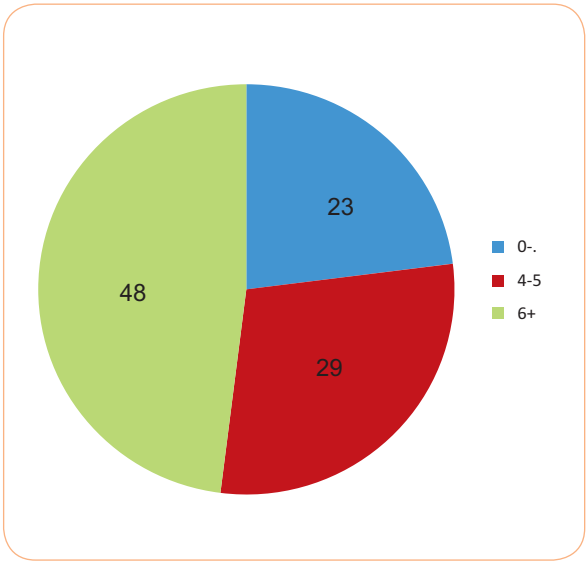


Fig-4.5: Percentage distribution of FSWs by their average number of sex work days



In case of sex workers, where multi-partner behaviour is an occupational vulnerability, the client load is an important behavioural factor that affects the overall sexual health and amplifies the risk of STI/HIV transmission in the absence of condom use. The mapping study analysed client load in terms of the number of clients per week, number of clients that visit in a day and number of clients that had visited a day before the survey. Table 4.5 and Fig. 4.3b indicate that over half or 53% of the of FSWs in Nepal have up to four clients in a week, 29% have five to nine clients in a typical week, whereas another 17% have 10 or more clients in a week. On an average, the FSW client load per week was 6.7 persons. A large majority, that is, 86% of the FSWs usually have one to three clients in a day and 88% had zero to two clients a day before survey. On an average, an FSW entertain 2.2 clients per day, whereas the average client load a day before the survey was 1.3.

With reference to the number of days worked as a sex worker, Table 4.6a and Fig.4.5 indicate that approximately 48% of the FSWs work 6 or more days in a week and 29% FSWs work 4 to 5 days in a week. On an average, FSWs work for 5.1 days in a week. Furthermore, 63% FSWs below the age of 20 years, 70% FSWs who are establishment based, and 75% FSWs who are primarily located in the Kathmandu valley work for more than 6 days in a week.

4.3: Safe Sexual Practice

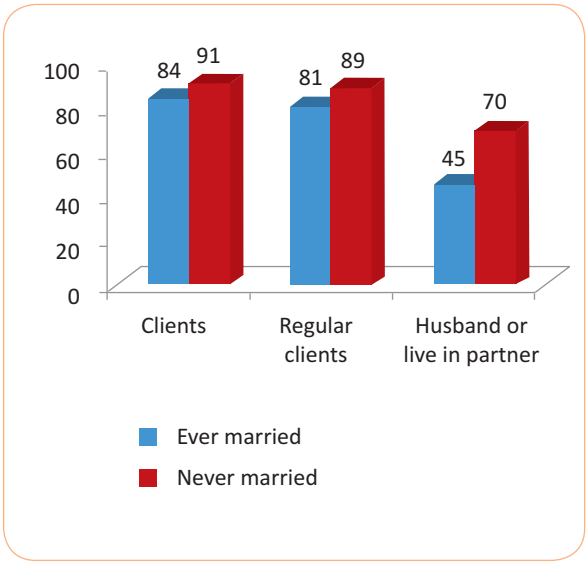
The HIV prevention programme centres on the need for promoting safer sex practices—through consistent condom use and reducing multiple partner relationships—and remains a central part of Nepal's Behaviour Communication Change (BCC) strategy. The information from the survey, including information on types of partners, whether commercial or non-commercial partners, and condom use during last sex, provides evidence for guiding future BCC interventions and evaluating the impact of activities that have been undertaken.

Key findings are presented in Table 4.7 and Figure 4.6. A substantial proportion, that is, 86% of FSWs in Nepal reported the use of condom in their last sexual encounter and 83% reportedly used a condom with a regular client. However, only 48% of the FSWs reported condom use during their last sexual encounter with a spouse or partner, which is indicative of the low prevalence of condom use while having sex with spouses or partners. It is observed that young women under the age of 20 years, those who are educated and urrently unmarried are more likely to have used a condom in their last sexual encounter irrespective of type of partners. It was observed that typology and epidemic zone of FSWs did not cause substantial difference in the pattern of condom use in their last sexual encounters with different types of partners. On the contrary, the marital status of FSWs is observed to affect condom use, where a lower proportion of married women negotiate condom use, which could be a result of lack of education and lack of empowerment.

Table 4.7: Percentage distribution of FSWs reporting condom use in their last sexual encounter with different type of partners by selected background characteristics

Background characteristics	Clients	Regular clients	Husband or live in partner	No. of FSWs (unweighted)
Age				
Below age 20	88.6	87.0	60.7	712
20–29 years	87.7	83.3	48.8	1229
30 and above	82.0	79.7	43.4	960
Educational qualification				
No formal education	83.0	79.6	45.8	1460
Upto 5 years	90.4	87.8	51.4	706
6–10 years	87.5	83.3	51.6	576
More than 10 years	89.5	91.7	55.6	159
Marital status				
Ever married	84.0	80.7	45.0	2113
Never married	91.2	88.9	69.6	788
Migratory status				
Migrants	86.6	83.3	47.2	2251
Non-migrants	83.7	82.4	51.2	650
Typology				
EB	90.5	85.1	48.4	1296
HB	82.4	84.0	48.4	1001
SB	84.9	76.9	48.8	604
Epidemic region				
HD	86.0	83.3	49.7	2242
KV	85.0	81.3	39.3	825
RH	100.0	100.0	NA	34
Total	**85.9**	**83.0**	**48.4**	**2901**

Fig-4.6: Percentage distribution of FSWs reporting condom use in their last sexual encounter with different type of partners by their marital status



4.4: STI prevalence and treatment seeking behaviour

Sexually transmitted infections (STIs) increase the susceptibility for HIV. This is owing to two factors. Firstly, STIs, such as syphilis, herpes and chancroid, cause a break in the genital tract lining or skin. These breaks create a portal of entry for HIV. Secondly, inflammation resulting from genital ulcers or non-ulcerative STIs increases the concentration of cells in genital secretions that can serve as targets for HIV. Therefore, STI prevention, testing, and treatment can play a vital role in developing comprehensive programs for preventing sexual transmission of HIV. Furthermore, STI trends can offer important insights into where the HIV epidemic may grow. Owing to this, acquiring further information on FSWs with STIs and their behaviour is warranted.

As is evident from Table 4.8, over one-third or approximately 33% of the FSWs in Nepal have contracted diseases that have been transmitted through sexual contact in the last 12 months prior to the survey. Out of this total, 94% reported abnormal genital discharges and 47% had genital sores or ulcers. These were the two most common STI symptoms that were reported by FSWs across the mapped districts. The pattern for STI prevalence in the last 12 months prior to the survey is not uniform across various background characteristics. With respect to proportional distribution according to age, 42% of the FSWs above the age of 30 years, 38% of the FSWs who are currently married, 40% of those having no formal education, 36% to 42% of the FSWs operating from homes or streets and 36% of the FSWs operating from highway districts are more likely to have sexually transmitted infections.

Fig-4.7 : Percentage of FSWs reporting prevalence of any STI in the last 12 months prior to the survey and two most common symptoms of STIs

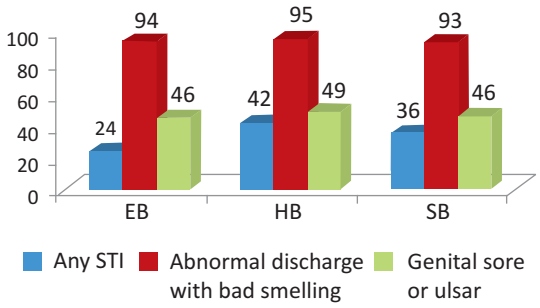


Table 4.8: Percentage of FSWs reporting the prevalence of any STIs in the last 12 months prior to the survey and two most common symptoms of STIs by selected background characteristics

Background characteristics	Any STIs	No. of FSWs (unweighted)	Abnormal Discharge with bad smell	Genital sores or ulcers	No. of FSWs (unweighted)
Age					
Below age 20	24.1	712	94.4	44.4	156
20–29 years	31.5	1,229	93.5	42.2	366
30 and above	41.8	960	94.2	52.9	393
Educational qualification					
No formal education	40.4	1,460	94.6	50.0	567
Up to 5 years	31.3	706	92.0	42.3	209
6–10 years	21.9	576	92.9	40.0	103
More than 10 years	11.1	159	100.0	50.0	23
Marital status					
Ever married	38.1	2,113	93.9	47.4	768
Never married	19.8	788	94.1	47.1	147
Migratory status					
Migrants	32.8	2,251	94.2	46.5	700
Non-migrants	34.9	650	93.3	50.0	215
Typology					
EB	24.1	1,296	93.9	45.5	291
HB	41.6	1,001	94.6	49.1	413
SB	35.6	604	92.6	46.2	211
Epidemic region					
HD	36.2	2,242	94.2	46.6	739
KV	18.6	825	91.7	50.0	158
RH	50.0**	34	100.0	100.0**	18
Total	**33.3**	**2,901**	**94.0**	**47.4**	**915**

*** Too small cell frequencies to give any information*

Table 4.9: Percentage of FSWs reporting the prevalence of any STIs in the last 12 months prior to the survey who sought treatment and the most commonly used health facilities for STI treatment by selected background characteristics

Background characteristics	% sought treatment	No. of FSW reported STIs (unweighted)	Sources of getting STI treatment				
			GH/HP	STI clinic	VCT Centres	Private Hospitals	No. who sought treatment (unweighted)
Age							
Below age 20	89.5	156	6.3	37.5	43.8	12.5	136
20-29 years	91.3	366	9.5	38.1	45.2	7.1	336
30 and above	90.4	393	14.9	31.9	42.6	8.5	358
Educational qualification							
No formal education	90.5	567	11.9	34.3	44.8	7.5	514
Upto 5 years	92.3	209	8.7	47.8	34.4	8.7	192
6-10 years	85.7	103	8.3	25.0	50.0	16.7	116
More than 10 years	100.0	23	0.0	50.0	50.0	00.0	21
Marital status							
Ever married	91.8	768	12.2	34.4	43.3	8.9	703
Never married	88.9	147	6.3	37.5	43.8	12.5	127
Migratory status							
Migrants	90.8	700	10.5	35.5	43.4	9.2	635
Non-migrants	90.0	215	8.0	36.0	48.0	8.0	195
Typology							
EB	87.9	291	10.3	41.4	41.4	6.9	258
HB	93.0	413	11.5	40.4	40.4	7.7	385
SB	88.5	211	8.7	17.4	56.5	13.0	187
Epidemic region							
HD	91.3	739	9.7	35.5	45.2	8.6	674
KV	90.9	158	11.1	33.3	33.3	22.2	138
RH	100.0**	18	0.0	00.0	00.0	00.0	18
Total	**90.5**	**915**	**10.6**	**35.6**	**44.1**	**9.8**	**830**

*** Too small cell frequencies to give any information*

***Fig-4.8:** Percentage of FSWs reporting the prevalence of any STIs in the last 12 months prior to the survey who sought treatment and most common used health facilities for STIs treatment by selected background characteristics*

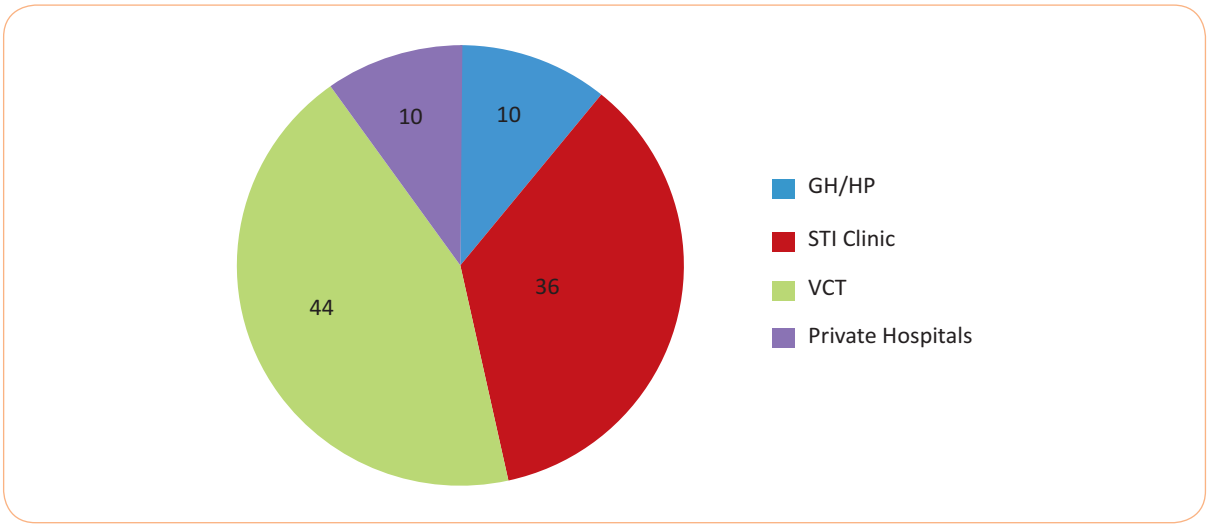


Table 4.9 shows that a large majority or 91% of the FSW population who had an STI sought some kind of medical advice for the disease. More than 85% of the respondents across background characteristics sought medical treatment. Regarding the source for receiving treatment, 44% of the interviewed FSWs reportedly visited VCT centres, whereas 36% reportedly visited STI clinics for treatment in the last 12 months prior to the survey.

4.5 HIV Testing

HIV testing is critical for mitigating the proliferation of HIV. As presented in Table 4.10 and Figure 4.9, the behaviour survey indicated that 79% of the FSWs have ever been tested for HIV status. This proportion is similar for FSWs across background characteristics except for those who are currently under 20 years of age or are unmarried, for whom the proportions are 72% and 74%, respectively. FSWs operating in the highway districts are more likely to test positive for HIV than those working in other regions. Relatively higher prevalence of HIV testing is seen among those operating from their homes at 83% as against 75% among other typology categories.

According to Table 4.11, although 66% of the FSWs were tested within the last 12 months prior to the survey, 24% of the FSWs were tested two or more years prior to the survey. Almost all of the respondents who underwent HIV testing were reported to have received their results. The most preferred site for HIV testing was VCT centres and 67% of the respondents had been tested there.

Table 4.10: Percentage of FSWs who have reportedly been tested for HIV in the past and time elapsed since they were last tested by selected background characteristics

Background characteristics	Tested for for their HIV Status	No. of FSW reported STIs (unweighted)	Time since the last time testing for HIV			
			<12 months	12-24 months	Above 24 months	No. of FSWs (unweighted)
Age						
Below age 20	72.2	712	68.4	7.0	24.6	469
20–29 years	80.8	1,229	68.4	8.5	23.1	957
30 and above	81.1	960	60.6	14.1	25.3	775
Educational qualification						
No formal education	78.7	1,460	64.6	11.1	24.3	1,115
Upto 5 years	81.7	706	65.7	10.4	23.9	555
6–10 years	75.0	576	70.8	8.3	20.8	407
More than 10 years	78.9	159	60.0	6.7	33.3	124
Marital status						
Ever married	80.5	2,113	65.5	11.2	23.3	1,666
Never married	73.6	788	65.7	7.5	26.9	535
Migratory status						
Migrants	79.0	2,251	67.6	10.1	22.2	1,700
Non-migrants	78.8	650	59.7	10.4	29.9	501
Typology						
EB	76.6	1,296	72.4	7.6	20.0	919
HB	83.2	1,001	58.8	13.2	28.1	829
SB	75.3	604	66.1	10.7	23.2	453
Epidemic region						
HD	83.2	2,242	63.0	10.1	26.9	1,698
KV	56.7	825	84.8	12.1	3.0	469
RH	100.0	34	50.0	9.0	50.0	29
Total	**79.0**	**2,901**	**65.6**	**10.3**	**24.2**	**2,201**

*** Too small cell frequencies to give any information*

Fig-4.9: Percentage of FSWs ever tested for HIV by region and typology

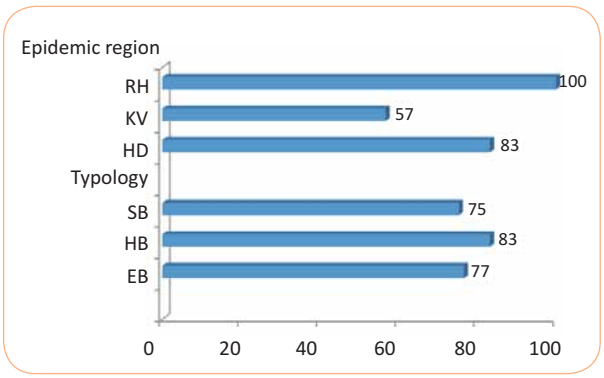


Fig-4.10: Percentage of FSWs who have reportedly been tested for HIV in the past and time elaspsed since they were last tested

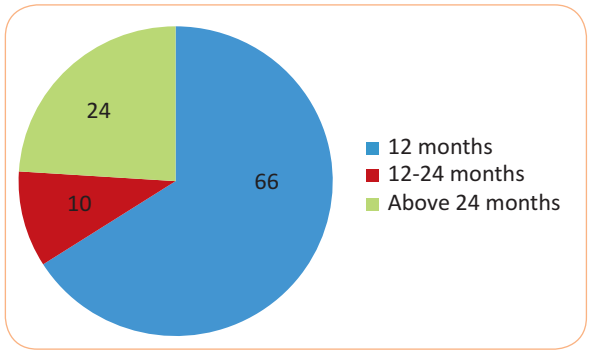


Table 4.11: Percentage of FSWs who have ever been tested for HIV at different health facilities by selected background characteristics

Background characteristics	GH/HP	STI Clinic	Sources of getting HIV tested		
			VCT	Private hospitals	No. FSWs who were tested (unweighted)
Age					
Below age 20	7.2	12.5	69.6	7.1	469
20–29 years	5.2	14.5	65.8	7.7	957
30 and above	5.2	17.5	66.0	7.2	775
Educational qualification					
No formal education	5.0	16.3	67.4	11.3	1,115
Upto 5 years	4.6	21.5	61.5	12.4	555
6–10 years	4.2	8.3	70.8	16.7	407
More than 10 years	6.7	0.0	73.3	20.0	124
Marital status					
Ever married	4.9	16.6	66.8	11.7	1,666
Never married	7.7	12.3	66.2	13.8	535
Migratory status					
Migrants	5.5	15.3	66.8	12.4	1,700
Non-migrants	6.0	16.4	67.2	10.4	501
Typology					
EB	6.9	13.7	67.6	11.8	919
HB	4.5	24.1	60.7	10.7	829
SB	5.5	1.8	80.0	12.7	453
Epidemic region					
HD	4.6	17.3	65.8	12.3	1,698
KV	9.4	3.1	71.9	15.6	469
RH	0.0	0.0	100.0	0.0	29
Total	**5.2**	**15.6**	**67.3**	**11.9**	**2,201**

CHAPTER

5

CONCLUSIONS AND RECOMMENDATIONS

- The report clearly highlights many districts where despite substantial presence of FSWs, no targeted interventions are in place. The data must be used for prioritizing resource allocation and planning for extention of prevention services in these districts in order to achieve universal access targets. These findings should form an integral part of the geographic prioritization scheme and the target settings in the upcoming National Strategic Plan and the coverage and achievement must be decentralized and precolated down to the district level for effective monitoring.
- Many districts wherein the estimated size of the FSW group may be lower than the threshold required to initiate targeted interventions have emerge in this study. However, in order to prevent a sudden surge of epidemic in these districts, national programme should undertake innovative strategies to ensure the coverage of this population and provision of a continuum of services to them. Moreover, the national programme should monitor the trend regularly so that the dynamic pattern of transmission in these districts can be tracked and corrective actions can be taken in a timely manner.
  One plausible option could be to commence composite targeted interventions for multiple MARP groups by initially providing a minimum package of services to them.
- The findings of mapping study can be extremely useful for increasing the effectiveness and efficiency of targeted interventions by using the detailed data on size, spread, behavioural patterns, etc. Detailed district reports are available at HSCB wherein district-wise detailed maps, which reflect the locations and hotspots of MARP groups and critical information such as busiest day, busiest hour, availability of condom outlets, availability of VCT/STI services, seasonal variation, etc is available and has been analysed at a district level (for mapped districts). This information should be utilised for planning programmes, cover hitherto left out hotspots, working out monthly district-wise targets, identifying the program component that requires

improvement, relocating of VCT/STI service delivery points, and opening/provisioning of additional condom outlets, deciding the most efficient work schedule for peer educators and outreach workers, etc. If put to proper use, these data sets can considerably enhance the effectiveness of targeted interventions and expand its coverage.

- As is clear from the analysis, a large number of FSW have been initiated into commercial sex at an early age many FSWs were adolescents when they were introduced to this profession. This highlights the need to ensure expansion of services to this young population before it is exposed to high-risk behaviour. Therefore, the programme monitoring should separately focus on and conduct follow up studies on the the new MARPs covered in this study in order to allow the programme to catch them young. This also calls for the need to ensure age disaggregated monitoring of prevention, care and treatment programmes.
- Since the dynamics of epidemic transmission keeps changing, this kind of mapping exercise should be repeated periodically, preferably at a three to four year intervals in order to identify new hotspots and emerging districts with MARP population. For districts that have not been mapped in this exercise, it is recommended that studies like light mapping be undertaken in order to validate the assumptions made for deciding upon the scheme for extrapolation.
- Since the study reveals a large number of children dependent upon MARPs program to take care of their needs most be started.
- As the analysis of risk and vulnerability clearly indicates the multi-sectorality of HIV, rather than it being only a health sector problem, the response also needs to be multi-sectoral in nature, addressing all aspects of risk and vulnerability including a coordinated response between various sectors and line ministries, such as Ministry of Home, Ministry of Women and Child Welfare, Ministry of Local Development, and Ministry of Health, in order to create an enabling environment wherein these population sub-groups can emerge and access services.
- As demonstrated by this study, the true picture of the presence of MARPs will emerge with the active participation of communities therefore, it is recommended that the capacity of community networks to be developed so that they can independently undertake such exercises in the future.
- Using the finding of the study the epidemiological zones of Nepal may be revised and these numbers should be inputed for generating strategic information like infection estimates, mode of transmission studies.

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APPENDIX

A

Application of correction factors in estimating FSW size in different districts of Nepal

The algorithm for application of correction factors to estimate the size of Female Sex Workers (FSWs) is highlighted in this annexure. Three data sources—developed specifically for the mapping and size estimation exercise in Nepal—were utilized. These were data under tools named Tool 2, Tool 3, and the Participatory Rapid Assessment (PRA).

Tool 2 included key informants' inputs on estimated 'minimum,' 'maximum' and the 'agreed' FSW population size according to prior experience and interaction with the sub-populations at hotpots. Tool 3 included field research teams' records on the estimated number of FSWs based on the number of FSW members observed and interacted with at a particular hotspot visited on three consecutive days at different points of time. The third source for providing FSW estimates at a hotspot where over five FSWs operate was the PRA. Data collected from the hotspots of five districts was reviewed by the researchers and Working Group for assessing the stability in the estimated number of FSWs of different typologies. The Working Group determined that the highest number of FSWs estimated by key informants, field research groups and through the PRAs would form the base estimate for applying correction factors at four levels for determining the size of the FSWs. These correction factors were applied under the following assumptions:

1. FSWs visit different hotspots according to a particular time during a three-day period. Hence, the number of FSWs recorded by the field research team over three consecutive days–at different points of time–constitutes the estimated number of FSWs operating at a hotspot within one full day.
2. Proportion of FSWs visiting multiple hotspots in different parts of a district is uniform.
3. Proportion of FSWs not visiting any hotspot—whether for soliciting or for other activities—is uniform across a district.

Based on these assumptions, the size estimates of FSWs were finalized by applying the following four correction factors. These correction factors were applied to adjust for frequency, duplication, turnover and FSWs not visiting any hotspot. The method for calculating these correction factors is detailed below.

I. Adjusting for the frequency of FSWs visiting a hotspot

The level of FSW activity at a hotspot varies on different days of the week with some FSWs visiting a hotspot more frequently than others. If FSWs visit a hotspot less frequently than the period of recall used in the PRA or the period of observation (as has been the case in Nepal), there is a probability that the FSWs were not at the hotspot during the period of data collection. In order to prevent such a potential undercounting of FSWs, the frequency is adjusted through the application of a formula.

Two different data sets are required for adjusting for frequency. The first data set is the total number of FSW sub-populations observed and interacted with on three consecutive days at three different points of time using Tool 3. The second data set is derived from the behavioural survey of FSWs from different hotspots using Tool 4.

Rules: The following three rules were adhered to for making frequency adjustments:

1. Frequency of visits to different hotspots was derived at a national level after merging the SPSS data file for all the mapped districts in order to minimize the fluctuations in the distribution. This was applied to adjust the frequency of visits of FSWs to the other districts where mapping was not conducted.
2. Frequency of visits was restricted to the following three categories: daily visits, visits 2 to 3 times a week and visits once a week. FSWs reporting frequency of visits less than once a week were not considered for this adjustment. They were included in a fourth category of FSWs, that is, those who do not visiting any hotspot.
3. Since the behavioural survey was conducted among FSWs who were available and willing to participate in the survey during the three-day visit of the field research team to the hotspot, there is a probability that some FSWs visiting the hotspot either once a week or 2 to 3 days in a week were recorded in the daily figure by the field research team. Therefore, the observed frequencies for *2-3 days in a week* and once a week would need to be modified in order to ensure true representation of those who were recorded as FSWs who visit hotspots daily.

The following assumptions were made whilst adjusting for frequency:

1. FSWs visit a hotspot infrequently or randomly over a period of time.
2. An overall pattern of seasonality—for example, the influx of tourists during the tourist season in specific spots—is not addressed by this adjustment. Neither does it consider other factors. For example, the increased purchasing power of clients influences their behaviour pattern to visit a hotspot and buy sex. This may be on the date or the week that they receive their wages/salaries.

The formula for adjusting for frequency is indicated in the box below through an example of FSWs based in a hypothetical district X:

$$S_1 = (C_i \times P_f \times f_p) + (C_i \times P_f \times f_p) + (C_i \times P_f \times f_p),$$

where S_1 = Estimated total of FSWs in X district (i) after adjusting for the frequency,

C_i = Estimated number of current FSWs functioning in a district based on observed plus interacted,

P_f = proportion of FSWs visiting hotspots in a district with frequency f_p

II. Adjusting for duplication of FSWs visiting multiple hotspots

There is a probability for double counting of FSWs visiting multiple sites. If some FSWs visit more than one hotspot in a day or in a week, then they are likely to have been accounted for twice by the key informants estimating the size of the different hotspots based on observations or through interaction.

In order to prevent a potential duplication of FSWs visiting multiple hotspots, a formula is applied. Two data inputs are required for the computational procedure for determining the weighted average. First, is the proportion of FSWs visiting other hotspots, and second is the size of hotspots.

The following steps indicate the process for calculating the weighted proportion of FSWs visiting multiple hotspots:

- Create an excel sheet.
- Obtain the compiled district level information on the number of FSWs visiting other hotspots (that was captured during field visit using Tool 3). Enter these details in the excel sheet under column name '***q***.'
- Create a column named '***p***' where the number of observed plus interacted FSWs, according to each hotspot, is entered.
- Calculate the sum of the product of values under column ***p*** with ***q*** ($\sum \mathbf{p}_i\mathbf{q}_i$). Calculate the sum up column, ***p*** ($\sum \mathbf{p}$). The ratio of these two values will give the weighted proportion of FSWs operating from multiple hotspots ($\sum \mathbf{pq} / \sum \mathbf{p} = \mathbf{C}_i$)

Once the weighted proportion of FSWs visiting multiple hotspots is obtained, an adjustment for duplication can be made using the following formula:

$$S_2 = S_1 - \tfrac{1}{2} (D_i),$$

where S_2 = Estimated number after adjusting for duplication

S_1 = Estimated size after adjusting for frequency

D_i = Estimated number of FSWs currently in district named 'i' who are estimated to operate from multiple hotspots.

The weighted proportion ($\mathbf{C}_i$) needs to be multiplied with $\mathbf{S}_1$—the estimated number of FSWs in a district after adjustment for frequency—to obtain the exact number of FSWs operating from multiple hotspots. The value thereby obtained will need to be divided by 2 for making the necessary adjustment.

The following rules were adhered to:

1. The adjustment is made at the national level under the assumption that no strong pattern of variation in terms of the proportion of FSWs going to other hotspots across different districts is observed.
2. The value of weighted proportion ($\mathbf{C}_i$) is computed from the national level estimate and is applied on the district level $\mathbf{S}_1$ to obtain the number of duplicates and subsequently $\mathbf{S}_2$.

III. Adjusting for turnover of FSWs (i.e. FSWs entering and exiting over the course of the year)

There is a turnover in FSW population that needs to be considered during size estimation. There is a probability that at any given time point, the FSW population includes those who have recently engaged in FSW related activities or behaviour, or have been doing so for a minimum specific duration, and those who no longer engage in FSW behaviour. This must be considered during size estimates.

Turnover is distinct from frequency. The duration of exhibiting FSW behaviour is independent from the frequency of practicing the activity. A hypothetical example is the case of a street based FSW who on an average engages in transactional sex for acquiring certain gains for a period of ten years. This indicates the duration of being involved in FSW activity. The number of clients that the FSW entertains on a daily, weekly, or monthly basis is the frequency.

The following formula was applied for adjusting for FSW turnover:

$$S_3 = S_2 + [T \times S_2 / 2D]$$

where S_3=Adjusted total size of FSW population over time T

S_2 = Estimated number of current FSWs after first two adjustments

T = Period of interest for the estimate (for example, one year)

A key input required for the computation is the average duration (**D**) that FSWs are included in this category owing to their associated behaviour. This was calculated using the data that was collected through Tool 4 where two values under question 101 and question 201 were subtracted (q101-102). The reference period of the estimate (**T**) was considered as 1 year. $\mathbf{S_2}$ was derived after frequency and duplication adjustments were made.

The following rules were adhered to:

- The average duration that an FSW is included to this category is calculated at the national level.
- The time variable (years/months/days) used for average duration (**D**) and period of interest of the estimate (**T**) was kept consistent and uniform.

The following assumption was made whilst making adjustment in FSW turnover:

- **D** = Average duration of being a MARP (e.g. 3 years), which should be computed for the country as a whole as has been the case in frequency and duplication adjustments. It should be noted that **T** and **D** should be in same units (i.e. if one is in years the other should also be expressed in years. Similarly, if one is in months, then the other should also be expressed in months).
- In the formula above, the denominator used for the calculation was two times the average duration (**2D**). This was based on the assumption that all FSWs were at the halfway point of the total duration that they were likely to engage in FSW behaviour.

IV. Adjusting for "hidden" population

The FSW size estimation must consider the proportion of the population that remains hidden and or did not visit the mapped hotspots during the time of the survey. Ideally, the adjustment should have been made on the basis of the findings of a broader survey of FSWs that would highlight the percentage of FSWs who would prefer visiting public places or meeting partners in private places over hotspots. This would be indicative of their preferred meeting area.

For estimating the number of FSWs excluded from the mapping exercise, the total number of FSWs in a district is inflated by the inverse of the proportion of the population assumed to visit the mapped sites. In reference with the IBBS estimates of Nepal, it is assumed that only 80% FSWs visit hotspots. The formula applied is expressed below.

Formula for hidden population adjustment

$$S = S_3/P,$$

where, S = Adjusted total size
S_3 = Adjusted total size of FSW population over time T after adjusting for frequency, duplication and turnover
P = Estimated proportion of FSWs who do not visit mappable sites

Once the size estimates of the three sub-groups of FSWs was finalized through the application of the four correction factors, the final estimates were presented as interval estimates with a coefficient of range calculated using the following formula:

$$\left(\frac{[\text{Maximum range} - \text{Minimum range}]}{[\text{Maximum range} + \text{Minimum range}]} \right) \times 100$$

The inputs for computation of interval estimates were based on the number of FSWs observed during the mapping exercise—irrespective of whether it was through observation or interaction. The maximum and minimum number of estimated FSWs obtained through three sources—Tool 2, Tool 3 and PRA—were added and subtracted from the final estimates, once the correction factors were applied, and halved to give the lower and upper limits of the final interval estimate.

APPENDIX

B

Methodology for obtaining national size estimates for FSWs through extrapolation

This annexure presents the methodology for calculating national size estimates of FSWs using extrapolation algorithms. Since out of a total of 75 districts in Nepal, the mapping exercise was conducted in 39 districts for FSWs, the national estimates were calculated through the application of extrapolation algorithms wherein size values were assigned to the unmapped districts on the basis of the subset of districts where mapping was conducted.

In the Kathmandu Valley region and the Terai districts, FSWs were mapped in all districts. The Hill districts were divided into 4 sub-zones for the mapping exercise: Far-West Hills, West and Mid-West Hills, Eastern Hills, and Remaining Hills. The sub-division to 4 zones was on the basis of geographic contiguity and expected similarity in epidemic patterns. In West and Mid-West Hills, Eastern Hills, and Remaining Hills, mapping was conducted in 13 districts each, whilst in the Far-West Hills, it was conducted in 7 districts.

For ensuring the quality of the extrapolation algorithms, the unmapped districts were first matched as far as possible with mapped districts. Herein, each of the districts that were not included in the mapping exercise was assessed on the basis of the following six parameters to obtain the best match to any of the districts included in the mapping and size estimation exercise:

a. Percentage of urban population.
b. Population density.
c. Total adult population in the district as per the most recent estimates.
d. Total length of highways across the district.
e. Reported number of STI cases in the last 12 months.
f. Special characteristics, such as caste-based sex work, routes of drug trafficking, trafficking of women in sex trade, and trafficking and trekking routes.

Accordingly, the unmapped districts were matched with the mapped districts, region-wise, which were designated as "high" and "low" depending on the expected number of MARPs in each district.

The designated high and low districts for Far-West Hills, West and Mid-West Hills, Eastern Hills, and Remaining Hills is reflected under Table A.

Table A: Designated high and low districts for mapping in the hills

FSWs	Designated High	Designated Low	Prediction correct
Eastern Hills	Ilam	Sankhuwasabha	Yes
Far West Hills	Dadeldhura	Bajhang	No
Remaining Hills	Mustang, Kavre	Mugu	Partially
West and Mid-west Hills	Surkhet	Jajarkot	Yes

For FSWs, the estimated number in many districts of Far-West Hills, West and Mid-West Hills, Eastern Hills, and Remaining Hills were negligible. Rather than assigning a value of zero, an algorithm was developed—using a quartile system—to assign values to these mapped districts.

For determining quartile values, the districts were divided into quartiles relative to their population sizes. Each quartile was assigned an index value based on the estimated size of the MARPS. The total estimated higher range of MTCs and FSWs was 82,330, and 28,359, respectively.

As indicated in Table B, the districts were MARP population was negligible were divided into quartiles based on the adult male population size for MTCs, and adult female population size for FSWs. For MTC the value of the index was set at 40 for the highest quartile, 30 for the second quartile, 20 for the third quartile and 10 for the fourth quartile. The values for FSWs were set relative to the MTC values. Since the estimated size of MTCs was the highest at 82,330, the index values for FSWs were set at 34% of the MTC values (28,359/82,330).

Table B. Quartile values assigned to 'zero' districts in the hills

Quartile	FSW	IDU	MTC
1	3	4	10
2	7	8	20
3	10	11	30
4	13	15	40

Final extrapolation rules

In summary, the following rules were developed and adhered to for extrapolating the size of FSWs in unmapped districts:

For Hill districts

- For all districts that were mapped and where the estimated number of FSWs was not negligible or 'zero', the mapped values were used after applying the 4 correction factors described in Annexure A.
- For all districts that were not mapped, a set of extrapolation rules was followed that involved applying the population proportions from the designated high and low districts to the expected high and low districts.
- For all districts that were mapped and where the estimated number of FSWs was not negligible or 'zero', the quartile index values were applied to those districts. Any expected high or low districts were assigned to them.

For Highway Districts

- For all districts that were mapped and where the estimated number of FSWs was not negligible or 'zero', the mapped values were used after applying the 4 correction factors described in the Annexure A.

APPENDIX

C

Research Tools

Tool I

Mapping study of Female Sex Workers in ..... district in Nepal

Group Discussion Guideline for Broad Mapping with Key Stakeholders

Introduction: Namaste! My name is..... And my colleague Name is_____ we are here from The Nielsen Company Nepal Pvt. Ltd. to collect data for a research study being conducted under the leadership of HIV/AIDS and STI Control Board (HSCB), **Ministry of Health and Population, Government of Nepal**. As you are aware, we all in the society are not at equal risk of contracting STI/HIV infection but some of our friends, who are also like us, are at higher risk of contracting STI/HIV. That is why Government of Nepal plans to provide essential support and services to such people in order to improve the quality of their life. Since planning of any such program or services will require database relating to their number/ location/time of operation etc, we are here to get your support in getting such information, especially the major locations so that our team member can personally visit those locations/sites and interact with some of them in order to assess their needs. Therefore, in this interaction we will ask you some questions that will be about Female Sex Workers for HIV/AIDs including their presence in different locations, their size, risk behaviour, and availability of HIV/AIDS services and FSWs' access to them. We would greatly appreciate your help in responding to this mapping exercise.

Thanks for your cooperation.

A. General Information about stakeholders and HIV/AIDS programs and services in the district

I request all of you to have a brief introduction; I am starting from my side. (Proceed one by one)

S.N.	Name	Organization	No. of years working in the area of STI/HIV (MARPs)	Type of Association (in terms of nature of involvements in HIV/ AIDS programs/services)

1. What are different types of MARPs present in urban or rural areas of your districts?

   <FSW> <MTC> <IDU>

2. Do you think that there is substantial change in size of MTCs in the recent years in this district? If yes, what may be the possible reasons?

   ---

3. How is the seasonal variation (including festivals) in FSW size in this district?

   ---

4. What are the STI/HIV services for FSWs in this district?

   ---

5. How these services for FSWs have changed over a period of time

   ---

6. In your opinion, what are the major gaps in effective services to FSWs in this district?

B. Listing of locations of FSW activities and services

As we all agree, effective services to FSWs can be render only after a comprehensive mapping of the areas of their operation. Therefore, let us list down the major locations size where high-risk activities are taking place in this district. Please tell us about the places in your district where FSW Groups can be found and practice risky behaviour? (Also use a map to identify the locations) List all the locations probe for more some new locations.

MARP	Location	Urban/Rural	Estimated No. of FSWs (of each sub groups)			Key Informant
			Max.	Min.	Agreed Upon	
FSWs	1					
	2					
	3					

Protocols:

1. Nielsen facilitator should interact with DACC coordinator and major NGO representatives one day in advance and prepare a detail list of locations in the district where HIV/AIDS programs are already in progress, which will be presented on the stakeholders meetings. Subsequently, all the stakeholders will be requested to suggest all other locations in the district where FSWs activities are going on. The participating NGO representative should be encouraged to use their routine programme data while responding to questions on size estimation.
2. Facilitator should explain the difference between location and sites and encourage the participants to list down the additional locations with a clear mention that the research team will visit each of these locations and execute broad mapping of sites in those locations adopting segmentation approach.
3. Please review, once the listing is completed, if some of the sites have been listed as locations and correct it.

Tool 2

Mapping study of FSWs in …….. districts in Nepal

Location Level Rapid Assessment (Instrument for Site Listing and Confirmation through Key Informants*)

Name of the Location: …….

S.N	Map No.	Site Number	Site Name	Land Mark	Estimated population on a normal day			Type of Hot Spot	Peak Activity Time	Services Available
					Max.	Min.	Agreed Upon			

*

1. After reaching to the location there should be the round of location and identify the major landmarks within the approximate boundary of the location.
2. Look for minimum 4 - 6 key informants with heterogeneous background.
3. Draw a rough sketch of the landmarks behind the sheet and then request KI to mark major sites where high risk activities take place.
4. Probe for additional sites until it is confirmed that no more site is left.
5. This information is not to be solicited by the KIs but the research team will use its judgments based on the inputs in numbers suggested by KIs to reach to a consensus about the number. If there is very large difference in the minimum and maximum estimated numbers, the research team should write a justification. This number should refer to the period of the research rather than
6. Sex workers site can be classified as Establishment based (EB), street based (SB) and home based (HB).
7. This is the hour time…….
8. Condom promotion, STI,VCT, IPC/BCC.

TOOL 3:

Female Sex Worker (FSW)

Mapping Study of FSWs in ..... Districts ..... Location

Site/Hot Spot Information Sheet

1. Site Identifiers:

Site No. _____ Name of site: _____

2. Site type: _____ (FSW:)

3. Address of site: _____

Visit History:

1st Visit: Date: ___/____/____ Time: ___ ___ : ____ ____ am/pm peak? Y/N

Team members: ___ ____ ____ ____ # KI interviewed _____

FSW observed: ____ ____ # FSW interacted with: ____ ____

2nd Visit: Date: ___/____/____ Time: ___ ___ : ____ ____ am/pm peak? Y/N

Team members: ___ ____ ____ ____ # KI interviewed _____

FSW observed: ____ ____ # FSW interacted with: ____ ____

3rd Visit: Date: ___/____/____ Time: ___ ___ : ____ ____ am/pm peak? Y/N

Team members: ___ ____ ____ ____ # KI interviewed _____

FSW observed: ____ ____ # FSW interacted with: ____ ____

Site Level Information including size data*

Number of FSW estimated to come to the site over the last one week

KI (MARP& Non -MARPs) Number	Busiest day at site (for FSW)	Average duration in hours that FSW are active in a week	Estimated size on a normal day	% of FSW at the site who go to other sites	% of FSW coming to this site from other site	How many FSWs at this site are under 16 years	Number of clients visiting the site	Which is the most accessed health service delivery point

Number of FSW estimated to come to the site over a last 12 months period

KI (MARP& Non -MARPs) Number	Busiest month at site (for FSW)	Average duration in months that FSW are active in a year	Estimated size on a normal day	% of FSW at the site who go to other sites	% of FSW coming to this site from other site	How many FSWs at this site are under 16 years	Number of clients visiting the site

*The tables below has to be filled based on the inputs from FSWs as well as other informants like pimps, shopkeepers, paanwaalas, rikshaw drivers, etc. functioning the locality. Please remember to clarify the difference between the two tables. While the first table seeks to get the number in the preceding week's period, the second table is asking for the information of over a period of last 12 months.

Identification of Additional Sites**:

Type of site	Name	Location information

If the additional sites reported here are the same recorded during the broad mapping it will act as revalidation while any new site identified here should be treated as an additional site in the locality and tools 3 and 4 will be canvassed. Please compare this list with the tool 2 at the end of every three-day's work.

Observations:

Data from key informants is consistent with team observations: Y/N

Comments or issues about site visits:

Completed by: _____Date: ___ / ___ / ____

Reviewed by: _____Date: ___ / ___ / ____

Data entered: ____ / ____ / ____

TOOL 4:

FSW-mapping study of MARPs in ..... district in Nepal

CONFIDENTIAL

Primary Key Informants Questionnaire (FSW)

Introduction: Namaste! My name is..... I am here from The Nielsen Company Nepal Pvt. Ltd. to collect data for a research study being conducted under the leadership of HIV/AIDS and STI Control Board (HSCB), **Ministry of Health and Population, Government of Nepal**. During this data collection, I will ask you some questions that will be about Most at Risk Population for HIV/AIDs (MARPS) like FSW their presence in different location, their size, risk behaviour and availability of HIV/AIDS services and MARPs access to them.

Confidentiality and consent: "I'm going to ask you some questions. Your answers will be kept completely confidential. Your name will not be written on this form, and will never be used in connection with any of the information you tell me. You do not have to answer any question that you do not want to answer, and you may end this interview at any time you want to. However, your honest answers to these questions will help us to collect genuine information. We would greatly appreciate your help in responding to our questions in this mapping exercise. The interview will take about 30 minutes.

Would you be willing to participate?
1. Yes 2. No

Date: 2067/___/___

Signature of Investigator: _____ Signature of Co-investigator _____

1.0 PERSONAL INFORMATION

Q. N.	Questions and Filters	Coding Categories	Skip to
101	How old were you at your last birthday?	Age in completed Years ☐☐ Don't know 98 Can't say 99	
102	What is your educational level?	Illiterate 1 Literate, no formal education 2 School up to 5 years 3 School up to 6-9 years 4 SLC Passed 5 PCL or +2 Passed 6 Bachelors Level Passed 7 Master Level Passed 8	
103	Where were you born?	Country_____ District_____ VDC/Municipality_____	

Q. N.	Questions and Filters	Coding Categories	Skip to
104	Where do you live now?	Country_____ District _____ VDC/Municipality_____	
105	How long you have been living here in **(NAMEOF COMMUNITY/TOWN/ NEIGHBORHOOD/VILLAGE)**?	Number of Years ☐☐ Always (since birth) 0 Record 00 if less than 1 year Don't know 98 Can't say 99	→106
105.1	Before you moved here, where did you live?	Country_____ District: _____ VDC/Municipality: _____	
106	Have you ever been married?	Yes 1 No 2 Can't say 99	
107	Are you currently married or living with a man with whom you have a sexual relationship?	Currently married, living with spouse 1 Currently married, living with other sexual partner 2 Currently married, not living with spouse or any other sexual partner 3 Not married, living with sexual partner 4 Not married, not living with sexual partner 5 Can't say 99	
108	How many children less than 16 years are dependent on you?	Number ☐☐ Can't say 99	

2.0 SEXUAL HISTORY

Q. N.	Questions and Filters	Coding Categories	Skip to
201	How old were you at your first sexual intercourse? **[FOR THE PURPOSE OF THIS STUDY, 'SEXUAL INTERCOURSE', IS DEFINED AS VAGINAL OR ANAL SEX.]**	Age in years ☐☐ Don't know 98 Can't say 99	
202	How old were you when you entered in this profession (that means when you first sold sex)?	Age in years ☐☐ Don't know 98 Can't say 99	
203	With how many different sexual partners in total have you had sex during the past week?	Number ☐☐ Don't know 98 Can't say 99	
204	Among all of your sexual partners, how many of them had sex with you in exchange for money/goods in the past week?	Number ☐☐ Don't know 98 Can't say 99	
205	Among all of your sexual partners, how many of them had sex with you without paying any money/goods in the past week? **(INCLUDE SEXUAL CONTACTS WITH SPOUSE AND LIVE-IN SEXUAL PARTNERS/BOY FRIEND/ FRIEND/CASUAL SEXUAL PARTNER)**	Number ☐☐ Don't know 98 Can't say 99	
206	Usually, how many clients visit you in a day?	Number ☐	
207	With how many clients did you have sexual intercourse yesterday?	Number ☐	
208	How many days in a week (on an average) do you work as a sex worker?	Days ☐	
209	How frequently do you visit this site?	Daily 1 Once in a week 2 2-3 Times a week 3 Once in a month 4 Less than once in a month 5 Can't say 99	
210	When did you have the last sexual intercourse with a client? **(WRITE '00' IF TODAY)**	Days before ☐☐	
211	How many partners did you have sexual intercourse with on that particular day including cohabitating partner?	Number ☐	

3.0 SAFER SEXUAL PRACTICES

Q. N.	Questions and Filters	Coding Categories	Skip to
	Any Client		
301	The last time you had sex with your client, did he use a condom?	Yes 1 No 2	
302	How often did your clients use condom over the past last 30 days?*	All of the time 1 Most of the time 2 Some of the time 3 Rarely 4 Never 5	
	Regular Client		
303	Do you have any clients who visit you on regular basis?	Yes 1 No 2 →	309
304	How many such regular clients do you have?	Number ☐	
305	What is the frequency of visit of your regular clients? **RECORD NUMBER IN DIFFERENT CATEGORIES EXCLUSIVELY**	Daily ☐ 1-2 times a week ☐ 3-5 times a week ☐ Once in 2 weeks ☐ Once in a Month ☐ Less than once in a month ☐	
306	How many times did you have sexual intercourse with your regular clients over the last 30 days?	Number ☐	
307	The last time you had sex with your regular client, did he use a condom?	Yes 1 No 2	
308	How often did your regular clients use condom with you over the last 30 days?*	All of the time 1 Most of the time 2 Some of the time 3 Rarely 4 Never 5	

* *All of the time – Around 100% | Most of the time – Around 70% | Some of the time – Around 50% | Rarely – 30% | Never – 0%*

Non-Paying Cohabiting Partner

Q. N.	Questions and Filters	Coding Categories		Skip to
309	Do you currently have husband or a male friend?	Yes No	1 2	 → 401
310	Did you have sexual intercourse with your husband or a male friend in the last 30 days?	Yes No	1 2	
311	Think about your most recent sexual intercourse with your husband or male partner. How many times did you have sexual intercourse with this person over the last 30 days? **(WRITE '00' FOR NO INTERCOURSE IN THE PAST ONE MONTH)**	Number of times Don't know Can't say	☐☐ 98 99	
312	The last time you had sex with your husband or male friend staying together; did your sex partner use a condom?	Yes No	1 2	
313	How often did all of your non-paying partners use condoms over the last 12 months?*	All of the time Most of the time Some of the time Rarely Never Did not have sexual intercourse in the last 12 months	1 2 3 4 5 6	

* *All of the time – Around 100% | Most of the time – Around 70% | Some of the time – Around 50% | Rarely – 30% | Never – 0%*

4.0 PREVALENCE OF STI AND TREATMENT SEEKING BEHAVIOURS

Q. N.	Questions and Filters	Coding Categories		Skip to
401	Now I would like to ask you some question about your sexual health in the last 12 months. During the last 12 months, have you had a disease which you got through sexual contact?	Yes No	1 2	 → 501
402	Sometime women experience a bad smelling abnormal genital discharge. During the last 12 months, have you had a bad smelling abnormal genital discharge?	Yes No Don't know Can't say	1 2 98 99	
403	Sometimes women have a genital sore or ulcer. During the last 12 months, have you had a genital sore or ulcer?	Yes No Don't know Can't say	1 2 98 99	
	IF ANY OF 401 OR 402 OR 403 IS YES ASK 404 OTHERWISE GO TO 501			
404	Last time you had any of the above three problems did you seek any kind of advice or treatment?	Yes No	1 2	 → 501

Q. N.	Questions and Filters	Coding Categories		Skip to
405	WHERE DID YOU VISIT? (PROBE - ANY OTHER PLACE) RECORD ALL PLACE MENTIONED	GOVERNMENT HOSPITAL HEALTH POST STI CLINIC VCT CENTRE PRIVATE HOSPITAL OTHER (SPECIFY)	A B C D E F	

5.0 HIV TESTING

Q. N.	Questions and Filters	Coding Categories		Skip to
501	I don't want to know the result, have you been ever tested to see if you have HIV?	Yes No	1 2 →	 505
502	When was the last time you were tested?	Less than 12 months ago 12 – 23 months 2 or more years ago	1 2 98	
503	I don't want to know the result; did you get the result of the test?	Yes No Don't know Can't Say	1 2 98 99	
504	Where was the test done?	Government Hospital Health post STI Clinic VCT Center Private Hospital Other (Specify)	1 2 3 4 5 6	
505	Do you know o a place where people can go to get tested for HIV/STI?	Yes No	1 2 →	 END
506	Where is that place? **(ANY OTHER PLACE)** **RECORD ALL PLACE MENTIONED**	Government Hospital Health post STI Clinic VCT Center Private Hospital Other (Specify)	A B C D E F	

APPENDIX D

STEERING COMMITTEE MEMBERS

1. Dr. Shyam Sunder Mishra, Vice Chair and Chief Executive, HSCB - Chair
2. Mr. Sanjay Rijal, HSCB - Member
3. Mr. Dilli Raman Adhikari/Mr. Deepak Karki, NCASC - Member
4. Dr. Sharad Ghimire, Family Health Division - Member
5. Mr. Dhruba Ghimire, HMIS - Member
6. Mr. Alankar Malviya, UNAIDS - Member
7. Dr. Atul Dahal, WHO - Member
8. Ms. Binija Goperma, UNODC - Member
9. Dr. Laxmi Bilash Acharya, USAID/ASHA Project - Member
10. Manisha Dhakal/Pinky Gurung/Salina Tamang, FSGMN/BDS - Member
11. Aruna Pant, UNDP - Member

Technical Expert (Invitees)

1. Ms. Tobi Saidel (From World Bank)
2. Dr. S.K. Singh (From UNAIDS)
3. Ms Viginia Loo (From World Bank)
4. Mr. Nischal Basnet (From UNAIDS/TSF)

APPENDIX E

NAME OF CO-INVESTIGATORS FROM MARPS COMMUNITY

Following members' contribution is greatly appreciated as they enabled study to compute/ contact MARPs in their respective locality.

Banke: Rajendra Anaujiya, Rohit Tharu, Kalpana Gautam, Harikala Neaupane, Sita Nepali, Chanda Sunar and Sita Thapa

Bara: Sanu Maya Chaudhary, Devi Chimoriya, Santoshi BK, Shabuddin Miya, Hari Chandra, Mahara, Bikash Guragain, Irsad Ansari, Abdulesh Ansari, Rama Kant, Jata Shankar and Sanjay Poudel

Bardiya: Raj Rani Chaudhary, Najima Khatun, Maya Rani Chaudhary, Dhanju Chaudhary, Sita Chaudhary, Gita Nepali, Suresh Tamata, Nikhil Giri, Shila Chaudhary, Chitra Pun, Moti Nepali, Abina Tharu, Anita Tharu, Dipa Chaudhry, Bal Kumari Badi and Pravakar Khadka

Bhaktapur: Kumar Rajak, Amrit, Nirmala Kyastha, Sujan Bhomi, Kamala Karki, Rama Thapaliya, Jyoti Kumari Dhungana, Anita Gole, Lila Rai, Sajana Devi Rai, King Neaupane, Bodh Neaupane, Satish Shrestha, Purna Chanda Poudel, Shyam Shrestha, Jyoti Thapa and Nikesh Shrestha

Chitwan: Seema Gurung, Nisha Shrestha, Usha Shrestha, Phoolmaya Tamang, Samjhana Thapa, Suda KC, Narimaya Gurung, Laxmi Magar, Ganga Basnet, Bimala Chhetri, Kamala Chaudhari, Parbati Khanal, Maya Pathak, Kalpana Pariyar, Narayan Magar, Kabi Raj Gurung, Jyoti Karki, Anil Adhikari, Kumar KC, Ganesh Pariyar, Susma, Rajesh Rai, Arjun Thapa, Yam Bahadur Kunwar, Puspa Hamal, Sher Bahadur Gurung, Sishnu Nyure, Chet Nath Ojha, Bipin Gurung, Bharat Ghimire, Sita Karki, Prem Magar, Gyanu Lama, Hem Limbu, Mina Karki, Janu Lama, Tek Bahadur.Lama and Bisram Khatiwada

Dang: Deepak Nepali, Maya Oli, Sita Chaudhari, Goma Chaudhari, Shardha BK, Basanta Acharya, Babita Bista, Radha Karki, Preeti Ali, Laxmi Nepali, Goori Ali, Niranjan Devkota, Parmila Nepali, Tara Chaudhary, Tara Rana, Abina Tharu, Anita Chaudhary, Dipa Chaudhary, Rajrani Chaudhary, Najina Khatun, Maya Rani Chaudhary, Dhanju Chaudhary, Gita Nepali, Suresh Tamatta, Nikhil giri, Chitra pun and Moti nepali

Dhading: Sita Shrestha, Manita Subedi,

Dhanusa: Abdul Ahmad,Tej Narayan Yadav, Sanjeev Yadav,Rameshwor Raut, Puspa Devi Yadav,Shila Jha,Shree Prasad Sah,Ram Jatan Sah,Pramila Sah

Jhapa: Rabindra Poudel,Amu Limbu, Sabina,Anita Rai, Samjhana, Sangeeta, Sita Thapa,Ananda Dhakal,Anisha Adhikari, Safal Tamang, J Udash, Subash Limbu, Basanta Subba,Tulsa, Hasta Magar, Rajendra Rai, Suraj, Krishna Pradhan, Bijay Shah, Milan Gurung, Bijay Shrestha, Bijay Dhakal, Mahesh Tamang, Dipak Jee, Susmita, Chitra Thapa, Shanti Thapa, Prem Thapa

Kailali: Rosan Nepal, Durga Bhat, Ramesh Bhatta, Kushum Chaudhary, Narayan Das Chaudhary, Sushil Chaudhary, Ram Chandra Chaudhary

Kanchanpur: Mahesh Chaudhary, Sindu Modai, Dharma Raj Bhatta, Pushkar Bhatta,Anu Karki, Damodar Joshi, Nima Chaudhary, Puna Sapkota, Dutha Rana, Nabraj Ojha, Bhisma Bhatta, Bhagal Ram Chaudhary, Jay Raj Joshi,Aasu Amate, Ganesh Joshi

Kapilbastu: Mena Koiri, Hema Aryal, Chemeli Chaudhary, Prema Rokka, Prakash Subedi, Prakash Ghimire, Prashant G.C, Sarju Mani Tiwari, Dambar Brd.Poudel, Dinesh Ojha, Sammi Koiri, Kamala Karki, Ram Binod Chaudhary, Santa Adhikari, Sagar Agrahari, Hari Shankar Upadhaya, Dipendra Mishra

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Tanahu: Rajesh Giri, Kailash Gurung, Hari Adhikari, Saroj Shrestha, Tulshi Gandharba

APPENDIX

F

MONITORING CHECK LIST

Kathmandu Training

Key issues to be monitored	Yes	No	Remarks
Was Three days training conducted?			
Was the batch of 30 to 40 professional investigators per training session maintained?			
Were MTCs also trained with professional investigators on third day of the training?			
Did the training follow the training schedule?			
Were facilitators able to respond the queries?			
Did the MTCs participants actively participate during training?			

Regional/ District Training

Key issues to be monitored	Yes	No	Remarks
Was two days training conducted?			
Was the batch of 30 to 40 professional investigators per training session maintained?			
Were MTCs trained with professional investigators?			
Were MTCs and researcher trained together?			
Did the training follow the training schedule?			
Were facilitators able to respond the queries? Did the MARPs participants actively participate during training?			

Tool 1

Key issues to be monitored	Yes	No	Remarks
Did research team interact with DACC coordinator and major stakeholders prior to the stakeholder's meeting and prepare a detail list of location/sites in the district where HIV /AIDS program are already in progress?			
During that interaction, did research team collect all available secondary information and review them before the stakeholder's consultation meeting?			
Did the research team request the participants to fill the attendance sheet along with additional information about their organisation and their area of involvement?			
Were almost all key INGO/NGOs present in district level consultation meeting with stakeholders?			
Was there a healthy discussion to have a comprehensive insight in HIV/AIDS scenario in the district?			
Was there a discussion with the programmatic response to the epidemic in the district?			
Was there a discussion on changing face of epidemic in the district?			
Was there a discussion to get the response and major gaps in effectively addressing the needs of MTCs in the district?			
Did the facilitator give a good background of STI/HIV situation in Nepal?			
Did the facilitator share issues related to HIV/AIDS at most at risk population like FSW, IDU and MTC?			
Were the following major topics covered in the discussion?			
-Types of MTCs present in the district			
-Changes in their number over a time			
-Seasonal variation			
-Availability of services for MTCs			
-Variation in the service provision			
-Major gaps in the existing services			
Did the facilitator explain about the difference between location and sites?			
Was there any duplication between sites and location?			
Was the comprehensive list of locations and sites within the location of MTCs concentration prepared?			
Were the geographical district maps used to divide the location?			
Did the information of KI / organisation collect for each location and sites?			

Tool 2

Key issues to be monitored	Yes	No	Remarks
Did any member of research team round up the location and identify major landmarks?			
Did assessment of hot spots / sites was completed using listing technique after segmenting location in smaller operational areas?			
Did research team draw a rough sketch of the site, after fixing the tentative boundaries of the location for broad mapping?			
Did research team draw a rough sketch of the site after fixing major land marks (Hospital/ Nursing homes, clinic , STI treatment centres, VCT , DIC ,Schools and Colleges, Post office etc) for broad mapping ?			
Did team members draw rough sketch of the sites on the full back page of Tool 2?			
Did the broad map provide complete geographical overview of the site, with landmarks in areas and with location of MTCs in different parts of site?			
Did the broad map provide complete social overview of the site, with landmarks in areas and with location of MTCs in different parts of site?			
Did the research team consult with 4-6 KIs to ensure the completeness in broad mapping exercise?			
Did the research team ask KI about the places where MTCs are found and ask the respondent to mark such places on the map and probe for more such places?			
Did the research team probe the KI about the hot spots by mentioning the name of specific landmarks?			
Did the research team enquire about approximate number of MTCs operating from the hot spots in a normal day?			
Their Typology			
Peak hour of their functioning			
Different types of services available in the locality or in the near by areas			
Did they record the minimum, maximum and base figure, which emerged as a consensus of the group?			
Did they record the peak hour of their functioning in the hot spot in interval rather than a specific time?			
Was a comprehensive repetition done while asking KI for recording the maximum possible hotspots in the boundary of the site?			
Were 4-6 KI asked about various types of risk behaviours?			

Tool 3

Key issues to be monitored	Yes	No	Remarks
Did the research team visit a site for three consecutive days at different point of time?			
Did the team plan first two days for observations and individual level interactions/ interviews of primary and secondary KIs before conducting PRA?			
Did the team conduct PRA on the third day			
On the day of conducting PRA, did the team collect a group of 2-3 MTCs with the help of community member in the team and also 2-3 secondary stakeholders or KI?			
Was heterogeneity of KI maintained while conducting PRA?			
Was consent obtained using standard consent form?			

Comments and Suggestions:

For Further Information

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