



MAPPING & SIZE ESTIMATION OF MOST-AT-RISK-POPULATION IN NEPAL-2011

Vol.1 MALE SEX WORKERS, TRANSGENDERS & THEIR CLIENTS



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



CONFIDENTIALITY CLAUSE AND DISCLAIMER

The Steering Committee of the Mapping and Size Estimation of Most-at-Risk Populations in Nepal considers it necessary to duly safeguard and overcome any stigma and discrimination that may afflict the subject populations of the study.

The purpose of the data and other information that is detailed in this report is to support evidence based HIV planning, programming and implementation in Nepal. It is the collective responsibility of all stakeholders who are privy to this information to apply adequate confidentiality safeguards in order to ensure that the data contained in this report is not misused and misinterpreted. However, neither Nielsen nor the supporting partners—World Bank, UNAIDS, UNDP, UNODC and USAID—conducting or supporting the study on mapping and size estimation of Most-at-Risk Population groups is liable or can be held responsible or accountable for the misuse of data

and information in the reports either through physical action or in any other manner.

Moreover, Nielsen and supporting partners are neither liable for the linguistic, local terminologies or designations utilised in this report, nor for the presentation of materials that are in consideration of local or country language, terms and sensitivities. It does not in any way necessarily reflect the individual and/or collective opinions or individual and/or collective sanctity of the supporting agencies. Supporting agencies are not accountable for issues related with the legal status of the country, territory, city or area or the boundaries and frontiers.

Nielsen, World Bank, UNAIDS, UNDP, UNODC and USAID do not warrant that the information provided through this report is complete and accurate. Any legal responsibility resulting through the use of any data or information contained in this report is withdrawn.

All rights reserved. The document may, however, be reviewed, quoted, reproduced or translated in part or full provided that sources is acknowledged. The document may not be sold or used for commercial purposes without prior written approval from HSCB, UNAIDS and World Bank.

© Mapping and Size Estimation of MARPs 2011-HSCB/Nielsen/UNAIDS/World Bank
Field work done upto January 2011

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



MAPPING & SIZE ESTIMATION

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

Vol.1 MALE SEX WORKERS, TRANSGENDERS & THEIR CLIENTS



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





Government of Nepal HIV/AIDS and STI Control Board

Department of Health Services Compound
NHEICC Old Building, Teku, Kathmandu
Tel: 016227566/4100097
Fax : 4100098
Email: info@hivboard.org.np

Ref No.067/068

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.

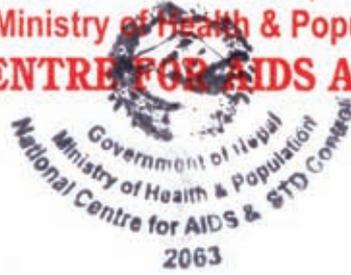
We would like to extend our gratitude to NCASC, UNAIDS, World Bank, UNDP, UNODC, FHI Nepal/USAID for supporting such a meaningful and prestigious study. We hope this report will be useful for programme planning, prioritization, implementation and monitoring and evaluation and will go a long way in strengthening 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.

Dr. Shyam Sunder Mishra
Vice Chair & Executive Chief



Government of Nepal
Ministry of Health & Population
NATIONAL CENTRE FOR AIDS AND STD CONTROL



4261653
4262753
4258219
Fax : 4261406

Email : ncasc@mos.com.np
Website : www.ncasc.gov.np
TEKU, KATHMANDU, NEPAL

Date :

Ref.No

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 our profound appreciation for Mr. Sanjay Rijal, M&E Officer and Mr. Komal Badal, M&E Assistant, HSCB for

the technical inputs, support and guidance extended by them 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 (consultant) and Ms. Nalini Chandra (volunteer) for support on report writing and editing.

We are also indebted to all government and non-government organizations and especially to the Blue Diamond Society (BDS) and Federation of Sexuality and Gender Minorities Nepal (FSGMN) for their support during the various stages of this study. Special appreciation goes to our respondents, who despite their busy lives spared their valuable time for the interviews and shared their personal experiences. Lastly, we would like to extend our gratitude to USAID for supporting the designing and printing of the reports.

**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 Organizations
CREPHA	Centre for Research on Environment, Health and Population Activities
DACC	District AIDS Coordination Committee
DIC	Drop-in Centre
DFID	Department for International Development
EB	Establishment- based
FSGMN	Federation of Sexuality and Gender Minorities Nepal
FSW	Female Sex Worker
GWP	General Welfare Paristhan
HB	Home-based
HD	Highway Districts
HIV	Human Immunodeficiency Virus
HSCB	HIV/AIDS and STI Control Board
IBBS	Intergrated 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
MTC	Male Sex Worker, Transgender and their Clients
MSW	Male Sex Worker
NCASC	National Centre for AIDS and STD Control
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 Intervention
UNAIDS	Joint United Nations Programme on HIV and AIDS
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
VCT	Voluntary Counselling and Testing
VDC	Village Development Committee

TABLE OF CONTENTS

Confidentiality clause and disclaimer	
Foreword	iii
Preface	v
Acknowledgements	vii
Abbreviations and acronyms	ix
Executive summary	xv
CHAPTER 1. INTRODUCTION	1
1.0: Objective of the study	2
1.1: Country profile	2
1.2: Epidemic (Epi) regions and selection of districts for mapping	4
1.3: Role of MTCs in shaping HIV epidemic	7
1.4: Definitions of key terminologies	7
1.5: STI/HIV vulnerability among MTCs	8
1.6: Conclusion	8
CHAPTER 2. DATA AND METHODOLOGY	11
2.0: Introduction	11
2.1: Methodology for mapping	12
2.1.1: Operational strategies for collecting data	12
2.1.2: Quality check measures	13
2.1.3: Limitations of the mapping study	14
2.2: Methodology for size estimation using mapping data	15
2.2.1: Application of correction factors	15
2.2.2: Protocols for extrapolating the size of MTCs in unmapped districts	18
2.2.3: Limitations of extrapolation	19
CHAPTER 3. MAPPING AND SIZE ESTIMATION	21
3.1: Region-wise and district-wise estimates of the number of MTCs	21
3.2: Geographical distribution of MTC activities	25
3.3: Availability and accessibility of condom outlets and VCT/STI service	28
CHAPTER 4. BEHAVIOURAL CHARACTERISTICS OF FEMALE SEX WORKERS	31
4.1: Background characteristics	31
4.2: Behavioural factors	33
4.3: Safer sexual practice	34
4.4: STI prevalence and treatment seeking behaviour	39
4.5: HIV testing	41
CHAPTER 5. CONCLUSIONS AND RECOMMENDATIONS	45
REFERENCES	47



APPENDICES

Appendix A:	Application of correction factors in estimating MTCs sizes in different districts of Nepal	49
Appendix B:	Methodology for obtaining national size estimates of MTCs through extrapolation	53
Appendix C:	Research tools	55
Appendix D:	Steering committee members	69
Appendix E:	Letter from Blue Diamond Society	71
Appendix F:	Name of co-investigators from MARPs community	73
Appendix F:	Monitoring checklist	77

LIST OF TABLES

Table 1.1:	Four-region categorization of epidemic zones by districts	6
Table 1.2:	Six-region categorization of epidemic zones by districts	6
Table 2.1:	Illustration of correction factors to estimate the size of MTCs in Kathmandu Valley	18
Table 3.1a:	Estimated of size of MTCs in mapped districts	23
Table 3.1b:	Estimated of size of MTCs in unmapped districts	25
Table 3.2:	Distribution of locations/hotspots across different mapped regions/ districts	26
Table 3.3:	Availability and accessibility of condom outlets and VCT/STI service	29
Table 4.1:	Percentage distribution of MTCs by selected background characteristics	32
Table4.2:	Percentage distribution of MTCs by number of children below the age of	33
Table4.3:	Percentage of MTCs who had sex for the first time before the age of 16 by selected background characteristics	34
Table 4.4a:	Percentage distribution of MTCs by number of commercial partners and use of condom and lubricants in last commercial sexual encounter by selected background characteristics	35
Table 4.4b:	Percentage distribution of MTCs by number of non-commercial partners and use of condom and lubricants in last non-commercial sexual encounter by selected background characteristics	36
Table4.4c:	Percentage distribution of MTCs by number of female sexual partners and use of condom in last commercial sexual encounter by selected background characteristics	38
Table4.5:	Percentage distribution of MTCs who had sex with commercial and non-commercial partners during the last six months	38
Table 4.6:	Percentage of MTCs who had sex with commercial and non-commercial partners using condoms during the last six months prior to the survey	39
Table 4.7:	Percentage of MTCs reporting the prevalence of STIs in the last 12 months prior to the survey and two most common symptoms of STIs by selected background characteristics	39
Table 4.8:	Percentage of MTCs reporting 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	41
Table 4.9:	Percentage of MTCs ever tested for HIV and time elapsed since the last testing by selected background characteristics	42
Table 4.10:	Percentage of MTCs ever tested for HIV at different health facilities by selected background characteristics commonly used health facilities for STI treatment by selected background characteristics	43



LIST OF MAPS AND FIGURES

Map 1.1:	Map of Nepal	3
Map 1.2:	Zones used for the selection of districts for mapping	5
Map 1.3:	Epidemic region (four-region map)	5
Map 3.1:	Concentration of MTCs in different districts of Nepal	27
Fig 1.1:	Trend of HIV prevalence and condom use during last event of engaging in anal sex among MSM in Kathmandu	7
Fig 4.1:	Percentage distribution of MTCs by their marital status and living arrangements	33
Fig 4.2a:	Percentage distribution of MTCs by number of commercial sexual partners in last six months	36
Fig 4.2b:	Percentage distribution of MTCs by number of non-commercial sexual Partners in last six months	37
Fig 4.2c:	Percentage distribution of MTCs by number of female sexual partners in last six months	37
Fig 4.3:	Percentage of MTCs reporting prevalence of any STIs in the last 12 months prior to the survey and two most common symptoms of STIs	40
Fig 4.4:	Percentage of MTCs having any STIs in the last 12 months by sources of getting treatment	41
Fig 4.5:	Percentage of MTCs who were ever tested for HIV by time since last testing	42
Fig 4.6:	Percentage of MTCs who were tested for HIV by source of testing	43

EXECUTIVE SUMMARY

Nepal conducted a mapping and size estimation exercise of Most At Risk Population (MARPs) in consideration of the epidemic's nature, availability of limited information on the MARP groups of Female Sex Workers (FSWs), Male Sex Workers, Transgenders and their Clients (MTCs), and Injecting Drug Users (IDUs) as well as 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. 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 MTCs. The mapping and size estimation exercise included the following three groups: Male Sex Workers (MSW), Transgenders

(TGs) and men having sex with men (MSM) clients of TGs and MSWs. Thus, it does not include the entire MSM population in the country, thereby flagging a knowledge gap on estimating total MSM size in Nepal.

The specific aims of the mapping and size estimation exercise were firstly, developing comprehensive maps of MTC sites; secondly, estimating the size of MTCs at district and national levels; and thirdly, studying MTC behavioural and background characteristics. Mapping and size estimation was conducted across the 35 selected districts in the following 6 epidemic regions used for mapping of the country: Highway Districts, Kathmandu Valley, West and Mid-west Hill, Far-Western Hill, Eastern Hill and Remaining Hill regions. The mapping data of the 35 selected districts across 6 epidemic regions was extrapolated for estimating the size of MTCs according to the similarity of risk and vulnerability present in the districts.

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, MSMs and IDUs. As acknowledged above, a need was felt for accruing greater knowledge on the size of MARPs and their behaviour to guide AIDS response.

Methodology

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

Various techniques and processes were applied for collecting data on hotspots where MTCs were concentrated in 35 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 MTCs. 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% of the MTCs were interviewed as a part of the behavioural survey for obtaining behavioural information. A validation of 10% of hotspots was conducted in a random manner. Thereafter, the data was analyzed using four correction factors to estimate sizes, and national level estimates were worked out using a scheme of extrapolation.

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

Results

The absence of MSM community networks in many districts is recognized as a possible barrier for estimating and reaching out to the MTC population that remains hidden. It is anticipated that once MSM networks are established in districts, it will facilitate programmatic reach and access to MSMs that otherwise remain inaccessible. Therefore, the results from those districts where no MSM networks exist have to be viewed in this context.

MTC hotspots

Information on MTC hotspots and size estimates at these hotspots is pertinent for programmers to consider whilst planning programmes and focusing interventions to target specific geographical areas. Key findings from the MTC mapping and size estimation exercise are presented under this subsection.

Within the 35 districts selected for mapping in the 6 epidemic regions, a total of 758 hotspots were identified in 437 different locations. The mapping exercise indicates that the Highway Districts region comprised the maximum number of MTC hotspots, followed by the Kathmandu Valley region.

Highway Districts region has 582 hotspots; however, these are distributed unequivalently across all districts in the region. The number of hotspots in a district in this region varies from 9 to 85. In the region, the Rupandehi district has the maximum number of the MTC hotspots at 85 followed by Sunsari and Nawalparasi districts, which have 60 hotspots each. The number of hotspots in Bara, Banke and Kanchanpur districts is estimated to range between 30 and 40. Six districts in the Highway Districts region have between 20 and 30 hotspots and these are Morang, Saptari, Parsa, Makwanpur, Chitwan and Kailali districts. The following eight districts have between 10 and 20 MTC hotspots: Siraha, Dhanusha, Sarlahi, Rautahat, Kaski, Palpa, Kapilbastu and Bhaktapur. Districts Mahottari and Bardiya have the minimum number of hotspots at 9 each.

The three districts of Kathmandu Valley altogether have 171 hotspots with the maximum number of



hotspots in Kathmandu district at 100 hotspots, followed by Lalitpur district with 46 hotspots and Bhaktapur district with 25 hotspots.

MTC size estimates

The mapping and size estimation exercise in 758 hotspots estimates the number of MTCs in Nepal as between 65,864 and 82,330, with a 31.5% coefficient of range, after all necessary corrections and adjustments are incorporated. In the mapped districts, there is a considerable variation in the number of MTCs by their typology in that the number of clients of MSWs and TGs were estimated at between 46,102 and 56,466, TG between 7,706 and 9,221 and MSW between 10,450 and 12,302.

Of the six proposed epidemic regions in Nepal, Highway District region has the maximum number of MTCs, that is, in the range of 34,941 to 45,997, followed by Kathmandu Valley where the MTC population is estimated to be between 30,498 and 35,234, followed by Western Hills where the MTC population is estimated to be between 132 and 360. The size of MTCs in Eastern Hills is estimated to be between 129 and 350. In the Remaining Hills region, MTCs are estimated to range between 105 and 229 MTCs and the Far-Western Hills region comprises the minimum number of MTCs wherein the estimated number of MTCs ranges between 60 and 160.

Eight districts in Highway Districts region have between 1,000 and 2,000 MTCs and these are Jhapa, Saptari, Parsa, Makwanpur, Chitwan, Dhading, Rupandehi and Dang. The districts Sunsari, Bara, Nawalparasi and Banke also have a very large number (more than 2,000) of MTCs. Thirteen districts in the Highway Districts region have an estimated MTC population of over 1,000. Six districts, namely, Sarlahi, Kaski, Syangja, Kapilbastu, Bardiya and Kanchanpur have an estimated MTC population of between 500 and 1,000 MTCs, whereas Siraha, Dhanusha, Mahottari, Rautahat, Palpa and Kailali have between 100 and 500 MTCs. In the Highway Districts region, only Tanahu district has less than 100 MTCs.

Out of the total estimated range of 30,498 to 35,234 MTCs in Kathmandu Valley, 27,538 to 32,163 MTCs are estimated in the Kathmandu district, followed

by 2,143 to 2,184 MTCs in Lalitpur and 817 to 887 MTCs in Bhaktapur districts.

MTCs are concentrated in 15 of the total number of districts included in the mapping and size estimation exercise and are situated in the Highway Valley and Kathmandu district regions. These 15 districts have over 1,000 MTCs each. Seven districts have between 500 and 1,000 MTCs. Six districts have a concentration of between 100 and 500 MTCs and forty seven districts have reportedly less than 100 MTC.

The mapping exercise indicates that all the districts in the Eastern Hills, West and Mid-West Hill, Far-Western Hill and Remaining Hill regions have an MTC concentration of below 100 each.

MTC's profile and behavioural characteristics

As a part of the mapping and size estimation exercise, the profile, including age, educational qualification, marital status, and sexual behaviour tendencies of MTCs are surveyed and analysed. At the time of the survey, the maximum proportion or over two-fifths of MTCs in Nepal were aged between 20 and 29 years. One-fourth of the total MTCs were aged below 20 years and approximately one-third or 29% were over 30 years old. Regarding population distribution according to educational levels and level of formal school education achieved, the data does not indicate any definite trend as approximately two-fifths or 40% of the MTCs had completed 10 or more years of schooling at the time of the survey, whereas approximately one-fourth or 25% of the total MTCs included in the sampling frame, had received no formal schooling.

Every other MTC or half of the total population estimated was married. This finding not only provides perspective on the socio-cultural predispositions that determine or guide the necessity for marriage with the opposite sex but also indicates the scope for HIV transmission, particularly if unsafe sex is practiced, to spouses or other concurrent partners. Approximately, two-fifths of the MTCs are migrants who are not residing in their native places or place of origin on account of employment or other factors.



No significant trend was ascertained regarding the proportion of MTCs who are married and those who are migrants. Nonetheless, it was estimated that over two-fifths of the MTC are married and living with their spouses, whereas approximately half of the population is unmarried and living with family members. Of those who are married, over two-fifths have at least one child below the age of 16 years. These distributions raise the possibilities of a significant number of MTCs in Nepal who remain hidden. Therefore, reaching these hidden MTCs for HIV prevention and treatment—including counselling for positive prevention—through programmatic interventions is rather challenging. It warrants the need to create sensitization for creation of a conducive and enabling environment towards encouraging these populations to emerge at an early age. This is essential because a significant proportion of MTCs reportedly engaged in anal sex for the first time when they were below the age of 16 years.

Approximately two-fifths of the MTCs engaged in anal sex for the first time when they were below the age of 16 years. Analysis of this data reflects a U-shaped curve with a higher proportion of MTCs in the age groups of under 20 years and 30 years or above reportedly engaging in anal sex for the first time before attaining the age of 16 years as compared to those in the age group of 20-29 years. Educational attainment, however, has a definite negative association with the proportion of MTCs who reportedly engaged in anal sex for the first time before the age of 16 years. This pattern is noticed across different epidemic regions of Nepal.

Overall, a total of 54% of the MTCs in Nepal had reportedly paid for sex during the last 6 months prior to the survey, and had an average of 4.8 commercial partners during this time period. Data indicates that 87% of the MTCs used a condom and 82% used lubricants when they had last engaged in anal sex with a commercial partner. The trend for the number of partners over the last six months prior to the survey, use of condoms and use of lubricants during their last sexual encounter does not vary significantly across different regions, or by the marital status of MTCs. However, MTCs aged 30 years or above had reportedly had 10 or more commercial sexual partners during the last six months prior to the survey, indicating a marked departure from the general trend.

Reportedly, 72% of the MTCs had engaged in anal sex with a non-commercial partner 6 months prior to the survey, and the average number of non-commercial partners during this time was 3.5. Frequency of condom and lubricant use during sex with a non-commercial partner is lower than that with commercial partner, with 77.6% of the MTCs reporting the use of condoms and 74.1% reporting use of lubricants during sex with a non-commercial partner, compared to a higher proportion of MTCs reporting condom and lubricant use with commercial partners, as mentioned in the previous paragraph.

Of the total number of MTCs that have had sex with a female partner during the last six months prior to the survey, over half or 52% have reportedly had sex with 1 female partner during the last six months, 33% have had sex with 2 to 3 female partners and 15% have had sex with over 4 female partners. The survey indicated that younger MTCs are more likely to have a higher number of female partners vis-à-vis relatively older MTCs.

This emerging data not only highlights the sexual behaviour of surveyed MTCs with commercial and non-commercial partners, whether male or female, and the inconsistent condom usage reported with multiple commercial and non-commercial partners, but also indicates the potential HIV transmission dynamics across and between sub-populations. This analysed data merits due consideration by the programmers whilst designing and implementing programmes for this population group.

Reportedly, 74% MTCs had sex with both a commercial and non-commercial partner during the last 6 months prior to the survey. Of the MTCs who reported condom usage during sex with a commercial partner, over four-fifths of the respondents or 84% reportedly used condoms during their last sexual encounter with a non-commercial partner as well. Out of the total MTCs who reportedly did not use condoms in their last sexual encounter with a commercial partner during the last 6 months prior to survey, one-fourth or 25% used a condom during their last sexual encounter with a non-commercial partner. This indicates the potential HIV vulnerability of MTCs' various sexual partners.

STI cases were noted among 7% of the MTC population in the last 12 months prior to the survey.



Of this percentage, 66.7% MTCs experienced an abnormal discharge from their penis/anus, whereas 69.8% reported a sore or ulcer around the penis and/or anal area. Although 87% of the MTCs—across all sub-categories—sought treatment at public-private clinics, or clinics run by untrained ‘doctors’, or relied on home remedies, the treatment seeking behaviour of MTCs who were relatively younger, that is below 20 years of age, was weaker than those over 20 years of age.

Nearly 67% of the MTCs of the sample population had been tested for HIV at least once in their lives. This proportion does not vary according to background characteristics, except in the case of MTCs under the age of 20 years, of which, 63% have reportedly been tested for HIV and in case of MTCs of Kathmandu Valley with 83% having been tested for HIV. Three-fourths of the total MTCs who were tested for HIV at least once in their lives had undergone testing within the last 12 months prior to the survey. For testing, 60% visited Voluntary Counseling and Testing (VCT) centres, 20% visited private clinics and 16% visited government hospitals. Nearly all the MTCs who had been tested reportedly having received their results.

Current programme interventions for MTCs

The principle strategy of National AIDS Programme of Nepal includes focus on HIV prevention, treatment, care and support services for MTCs 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 MTCs 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 VCT and/or Sexually Transmitted Infections (STI) service centres for MTCs hotspots.

Seventy-two percent of the total MTC hotspots in Nepal have condom outlets within a one kilometre range. This is a key measure for ensuring easier

access to this prevention service. Nevertheless, since approximately two-fifths of the hotspots have VCT/STI service centres within a one kilometre range, there is scope for providing VCT/STI services in the remainder of the three-fifths of the total hotspots for ensuring a more comprehensive programme coverage.

As stated earlier, the Highway Districts region and Kathmandu Valley region have the maximum proportion of MTCs in the entire country. Therefore, these two regions have a higher number of STI/VCT centres as compared to the other regions, which have fewer MTC hotspots. Although accessibility to STI/VCT centres in these two regions is relatively better than other regions, scaling up of STI/VCT centres would be essential and should be done with respect to the number of MTC hotspots and the estimated MTC population. This is particularly essential considering the variance in the number of condom outlets and VCT/STI centres across districts within the Highway Districts and Kathmandu Valley regions.

For example, in Kathmandu Valley region, all the hotspots in Bhaktapur district and over two-thirds of the total hotspots in Kathmandu and Lalitpur districts have condom outlets within a one kilometre range. VCT/STI service centres are also reportedly located within a one kilometre range in 88% of the MTC hotspots in Bhaktapur district, 44% of the MTC hotspots in Kathmandu district and 26% of the hotspots in Lalitpur district.

Condom outlets are present within a one kilometre radius of all the MTC hotspots in Morang, Dhanusha and Mohattari districts of the Highway Districts region. Additionally, VCT/STI centres are located within a one kilometre distance in 96%, 82% and 78% of MTC hotspots in these 3 districts. On the other hand, in districts such as Jhapa, Parsa, Kaski, Nawalparasi, Bardiya, Kailali and Kanchanpur, where the proportion of hotspots that have condom outlets within a one kilometre range is reasonably high, the number of STI/VCT centres within the same distance is below satisfactory. Saptari, Siraha, Sarlahi and Chitwan districts have neither condom outlets nor STI/VCT centres within a one kilometre range of the hotspots to fulfil the population’s health requirements.



Programmatic recommendations

Nepal's success in reaching the MTC population and increasing the availability and access to HIV treatment, prevention, and care and support services for universal access is highly dependent on a multitude of factors. Foremost amongst these factors is the expansion of the programme's focus on outreach activities implemented through a strong network of peer educators and receiving the support of MSM networks.

In consideration of the large MTC population that is hidden largely owing to the prevalent cultural predispositions that propel a discriminatory attitude—by community members and/or service

delivery personnel—towards this vulnerable population, attention is drawn to the need for widely sensitizing the general population and health service providers with respect to this population. This measure would increase MTC's access to HIV prevention, treatment and support centres.

Finally, with respect to the mapping and size estimates data, the number of HIV prevention, treatment and care services must be scaled up in districts with large a number of hotspots and a large MTC population. There is also a need to focus on the delivery of early diagnosis and treatment of STIs, increased access to condoms through the scaling up of condom depots at innovative and strategic locations, and partner counselling for positive prevention.

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. Despite the concentrated nature of the epidemic and 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), 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 Male Sex Workers, Transgenders and their Clients (MTCs), across 35 systematically selected districts in the following six HIV epidemic regions 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, definition of key terminologies, and vulnerability factors for HIV and STI with respect to MTCs. Chapter two details the methodology for size estimation through



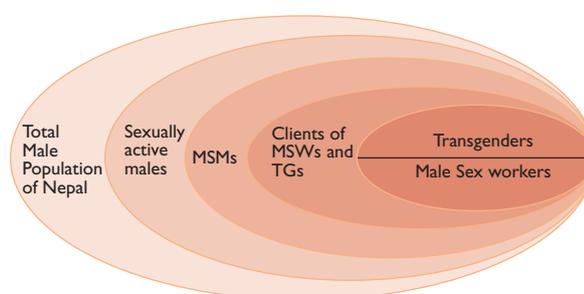
extrapolation based on risk and vulnerability. Chapter three presents key findings and analysis in text, tabular, and pictorial formats, including the number of locations, number of hotspots and size of MTCs across the epidemic regions. Chapter four provides a detailed analysis on MTC sexual behaviour 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

Although MTCs are one of the MARPs with respect to the HIV epidemic, accurate information about MTCs still remains unavailable owing to absence of robust data sets. Hence, mapping and size estimation of MTCs was conducted in Nepal in order to obtain accurate information regarding MTCs, including their size, behaviours, presence, etc. Moreover, most MTCs are hidden and do not want to disclose their identities owing to the stigma of discrimination associated with their behaviour. 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 this MARP group 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 MTCs endeavours to overcome the limitations mentioned above, and generate information regarding the size, location and behavioural dispositions of MTCs, which is essential for implementing suitable programmes for mitigating the proliferation of HIV and STI. The objective of this study was threefold: First, to develop comprehensive maps of the sites and locations where MTC activities occur by ensuring participation of the affected communities. Second, to estimate the district-wise and nationwide sizes of MTCs, using systematic extrapolation of the data from mapped districts. Third, to study the availability of and access to services, behaviours, risk factors, etc. of MTCs.

This study is not without limitations if one considers, for example, the hidden MTC 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. In the districts where no MSM network exists, the estimates must be viewed with the limitation in mind that in the absence of an enabling environment, these population groups will continue to remain hidden. The following pictorial depiction appropriately describes the population subset that has been estimated in this study.



As highlighted in the above diagram, the study only estimates transgenders (TGs), male sex workers (MSWs) and their clients who are subsets of the MSM population in country. The remainder of the MSM population, which is also exposed to the risk of HIV infection because of its behaviour has not been estimated in this study.

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% and 0.03% 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.



Map 1.1: MARPS mapping & population size estimation 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.

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.

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, and unsafe infecting behaviour is adopted.

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.

I.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 Hill region, which is comprises 13 hilly and mountainous districts of the eastern region, (iv) West and Mid-West Hill region, which comprises 13 hilly districts of the mid-western and western development regions, (v) Far-Western Hill region, which comprises 7 hilly districts in the far-western region, and (vi) Remaining Hill region, which comprises of 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 categorization.



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	Names 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, Arghakhanchi, 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

Revised epidemic zones used for mapping	Number of districts	Names 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 MSMs in shaping the HIV epidemic in Nepal

Of the three MARP groups in Nepal, HIV prevalence among MSMs is a significant factor for the spread of the HIV epidemic in Nepal. This is on account of the following factors: First, this sub-population is rather vulnerable to infection on account of their sexual behaviour and it is difficult to reach this population group through programmatic interventions owing to their 'hidden' nature. A considerable number of MSMs remain hidden owing to their socio-cultural dispositions and the discriminatory attitudes experienced by them. Second, the relatively high HIV prevalence rate estimated amongst the sub-population. According to the 2009 Integrated Bio-behavioural Survey (IBBS), HIV prevalence among MSMs is estimated at 3.8% in Kathmandu. Third, although the trend for HIV prevalence is not increasing, is not declining either, as HIV prevalence was estimated at 3.9% and 3.3% under the 2004 and 2007 rounds, respectively and at 3.8% in 2009. However, the sample size of the survey is small and only confined to Kathmandu; therefore, it may not provide decisive insights. Fourth, behavioural surveys indicate that a majority of the MSMs are married and engage in multiple sexual relationships with other male or female partners besides their spouses. This indicates complex potential transmission dynamics.

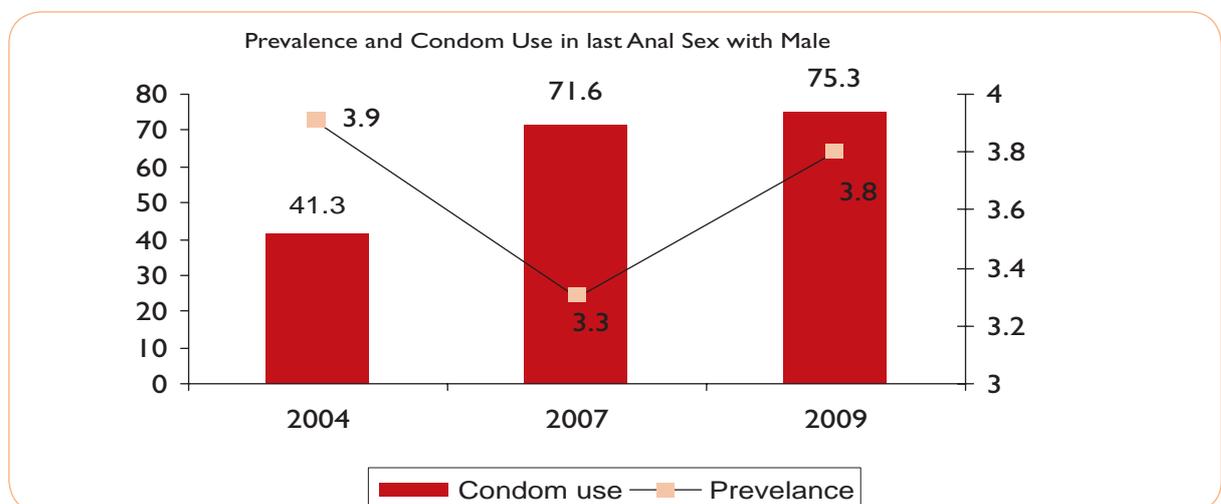
Nevertheless, HIV programmatic interventions by the country have yielded results. Firstly, there is increased HIV awareness and adoption of safer sex practices by MSMs. As indicated in Figure 1.1, 75.3% MSMs reported condom usage with their most recent sex partner in 2009 (IBBS). Secondly, an increased number of MSMs are accessing HIV prevention and treatment services, which is reflected in the increased—though far from satisfactory—programmatic reach of interventions. This is owing to a relatively more conducive environment created for MSMs despite the existence of societal stigma and discriminatory attitudes as highlighted earlier.

1.4: Definition 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 MTCs are presented as follows.

Men having Sex with Men (MSM): Men having Sex with Men are biological males who have engaged in sexual relationships (oral and/or anal sex) with other biological males, at least once, in the past 12 months prior to the date of study/mapping. They are further sub-classified as MSMs, Most-at-Risk MSMs/

Figure 1.1: Trend of HIV prevalence and condom usage during last event of engaging in anal sex among MSMs in Kathmandu (IBBS 2004, 2007, 2009)



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



Clients of MSWs/TGs (*renamed in consultation with the community*), MSWs, and TGs. This study only aimed at capturing MSWs, TGs and Clients of MSWs and TGs who are MSMs.

- a. *Male Sex Worker (MSWs)*: Those males who are aged 16 years or above who have had sexual relationships (oral and/or anal sex) with other males during the last 12 months in exchange for money or other benefits.
- b. *Transgenders (TGs)*: Transgenders are biological males who have identified themselves as Transgenders. A transgender is a male who appears as, wishes to be considered as, or has undergone surgery to become a female. Transgenders belong to a distinct socio-religious and cultural group, a “third gender” (apart from male and female). They usually dress in feminine attire (cross-dressing).
- c. *Clients of MSWs and TGs*: Those males who are aged 16 years or above and have had sexual relationships (oral and/or anal sex) with other males in exchange for money or other benefits during the last 12 months.

For this mapping study, the following three categories have been included: MSWs, TGs and their clients, which are jointly abbreviated as MTC.

Location: Location is a geographical area 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 to define the boundaries of a location in consultation with the key stakeholders at the district level.

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 the MARP may solicit, socialize and interact with other MARP members, have sex or share injecting drugs.

Hotspot: A hotspot is a smaller area within the site such as, restaurants, massage parlours, dance bars, night clubs, etc., where MTCs gather/congregate for soliciting their clients or entering into high risk behaviour.

1.5: STI/HIV vulnerability among MTCs

MSM in Nepal face a different kind of vulnerability to STI/HIV compared to FSW and IDU. While poverty, migration, lack of awareness and employment are vulnerability factors some MTCs suffer and others don't, social stigma and lack of empowerment are common vulnerability factor to all MTCs. MTCs are less empowered due to the social stigma attached to them. Migration is prevalent among most MTCs as they cannot live in their place of birth again due to the social stigma, it is not always easy for MTCs to go to dispensaries and buy condoms or get counseling from service centres. Many MTCs are in married relationship. So, their wives are also vulnerable to contracting HIV/STI in case their husband gets infected. Although, poverty is not a universal problem MTCs in Nepal, many MTCs are quite poor. Those MTCs who come from a weak financial background and a backward community also have lesser education and lower awareness level. Due to the lower awareness level, many MTCs are not aware that STI/HIV can be transmitted through anal sex, too.

In the recent years, many organizations like Blue Diamond Society have opened to provide service for MTCs. However, such organizations have presence in limited number of districts. The vulnerability factors are different from epidemic zones. There is maximum presence of MTCs in Highway districts and valley districts. In other epidemic zones, there is no visible presence of MTCs. MTCs in those districts have migrated to highway districts or the capital to avoid the stigma in their villages. The MTCs in Highway districts are more vulnerable to STI/HIV than those in the valley districts due to accessibility, awareness and presence of intervening organizations.

1.6: Conclusion

MSMs are vulnerable to STI/HIV infections owing to a few factors that are exclusive to this sub-population; however, certain factors are common across all MARPs: poverty, illiteracy, migration, limited employment opportunities, lack of HIV knowledge and limited awareness of the available services.



However, MSM behaviour significantly influences HIV transmission and acquisition dynamics. This is on account of firstly, biological factors considering that unprotected anal sex carries a higher risk for HIV transmission than unprotected vaginal sex. Moreover, if MSMs have STIs and if this infection is present rectally, then these infections are often difficult to diagnose and therefore remain untreated. In certain cases, fear of discrimination may prevent them from accessing health services. Secondly, MSM behaviour is taboo among numerous communities, which makes it difficult to reach them through programmatic interventions. Thirdly, certain behaviours increase

MSM's risk of HIV infection. For example, if MSM engage in sex with multiple sex partners, do not use condoms regularly and exhibit a complacent attitude towards safe sex.

Therefore, accruing behavioural and epidemiological data through the mapping and size estimation exercise is extremely pertinent for developing informed national AIDS programmes and policies. This report will prove beneficial for all national programmers and implementers to review and utilize as the country undertakes sustained measures for mitigating the proliferation of HIV.

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 of FSWs, MSMs and transgenders, 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 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 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 details 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. Section one of this chapter focuses on the methodology, and section two describes the technique and process for extrapolating the data for producing national

estimates of MTCs. 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 35 selected districts in Nepal. Once a clear definition of MTCs and their risk activities was concurred upon, research teams were formulated for selected geographical locations to accrue mapping and estimate 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 included one representative from the research agency and one from the MTC community, were formed in each geographical location in order to collect data. Civil society representatives from the local MTC 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 MTC'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 MTC 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 MTCs 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 MSM community members engaged in data collection and administration activities are indicated in Appendix F.

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 MTC 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.

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 MTCs congregate and operate—termed hotspots—and identifying key person(s) who are sufficiently knowledgeable for providing greater insights regarding the MTCs located at the hotspots; and thirdly, determining the estimated size of MTCs 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 MTCs at the **location level**, initially, the research team collected information on the sites where MTCs 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 MTCs. 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 MTCs 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 conducting comprehensive assessment of hotspots at the district, location and site levels. Using this technique, initially, the district, location and Village Development Committee 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 MTCs 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 MTCs 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 MTCs 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 MTCs was estimated at over five.

The information that was collected during discussions with KIs and by using the PRA technique included the number of MTCs, busiest day, mobility pattern, number of clients, and 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 MTCs operating at that time.

For obtaining behavioural and background information on MTCs, the research team interviewed a minimum of five randomly selected MTCs at all locations where over five MTCs 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 10% of the locations.

The research body that was responsible for conducting the mapping and size estimation exercises comprised 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 **personnel 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 MSM 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.

The community representatives who were recruited to support field research were selected according to their past experience. In order to facilitate the recruitment process, the Blue Diamond Society (BDS) issued a letter, which is available under Appendix E, for facilitating the recruitment of the research team members and all MSM co-investigators. 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 research teams from West and East Nepal travelled to Kathmandu for attending this training program. 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 MSM associated behaviours, holding dialogues with them regarding structural factors and socio-cultural norms that increase MSM 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. They 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 MSM 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 G.

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 10% of the locations from each of the districts 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 MTCs 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 35 districts; however, certain limitations, which are typical of a study of this scale, in attempting to estimate hidden population groups like MTCs are summarized as follows:

Firstly, a central assumption of the mapping and size estimates of MTC 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 different 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 MTCs 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 MTC population and the accessibility of a research team to visit the site. Another factor that necessitates consideration is the mobility of MTCs 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 visits and avoiding duplication in the estimation of the population size.



Four correction factors were employed for estimating the size of MTCs 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 MTCs 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 MTCs, as also indicated by the MTCs themselves. Therefore, certain MTCs 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 provision of an enabling environment by means of TIs, it is difficult to approach MARPs.

In the context of MSMs in absence of network presence in district, it is difficult to approach hidden population.

2.2: Methodology for size estimation using mapping data

This section details the methodology employed for estimating the size of MTCs 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 MTC mapping exercise across 35 districts—using Tools 1, 2, and 3 and the PRA technique—enabled the estimation of the size of MTCs 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 MTCs under respective columns—on the basis of their experience and interaction with the community; second, data under Tool 2 wherein the field research team recorded the ‘minimum,’ ‘maximum’ and ‘estimated’ sizes of MTCs 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 MTCs 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 MTCs was ascertained, the reported number of MTCs, 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 MTCs to hotspots were fixed over a three days period. Therefore, the records of three consecutive days that were considered at different points of time may constitute the estimated number of MTCs operating from a hotspot in one full day. The **second assumption** was that the proportion of MTCs visiting multiple hotspots is uniform in different parts of a district. Following this, the **third assumption** was that the proportion of MTCs 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 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 MTC size estimates. The correction factors were applied for adjusting the frequency of MTCs visiting a hotspot, duplication of MTCs visiting multiple spots, turnover of MTCs, and hidden population.

Adjustment for the frequency of MTCs visiting a hotspot

In any geographical area, there is inconsistency in the number of MTCs 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, MTCs may visit certain hotspots more infrequently than other hotspots on different days. If MTCs 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 MTCs, a formula was applied using two different data pieces. The first data piece represented the total number of MTCs 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 MTCs operating from the hotspot. The second data piece represented the frequency of visits to hotspots, which was derived from the behavioural survey of MTCs 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 S_1 = Estimated total of MTCs in X district (i) after adjusting for the frequency,

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

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

Adjustment for the duplication of MTCs visiting multiple hotspots

The likelihood of MTCs 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 MTCs include a certain proportion that is already included in the MTC size

estimates drawn up by other KIs, thereby resulting in duplication. Moreover, field research teams visiting a hotspot may have noticed the same MTCs 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 MTCs who visit one hotspot as frequently as other hotspots. The computational procedure required two types of data: the proportion of MTCs who visit multiple hotspots and the total size of MTCs at each of the hotspots. The proportion of MTCs 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

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

where S_2 = Estimated number after adjusting for duplication

S_1 = Estimated size after adjusting for frequency

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

Adjustment for the turnover of MTCs

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

It must be noted that turnover is distinct from frequency. The duration of being involved in MTC activity is independent from the frequency of



practicing MTC activity. In this regard, a hypothetical example that can explain this distinction more effectively is the case of an MSW 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 MSW entertains on a daily, weekly or monthly basis and therefore, independent of the total number of years that the MSW has been engaged in this profession. The formula that was employed for adjusting the turnover of MTCs is indicated below:

Formula for turnover adjustment

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

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

S_2 = Estimated number of current MTCs after first two adjustments

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

D = Average duration of belonging to MTCs

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 MTCs size estimates was the number of MTCs that are estimated to remain hidden. Such hidden MTCs 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 MTCs that could indicate the percentage of MTCs 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 MTCs that were not included in

the mapping exercise, the total number of MTCs in a district was inflated by the inverse of the proportion of the MTC population that was assumed to visit mappable sites. On the basis of information available in Nepal (based on parallel study conducted in selected locations to assess percentage of hidden MTCs), the estimated proportion of MTCs that visit mappable sites is assumed. 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 MTC population over time T after adjusting for frequency, duplication and turnover

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

Once the size estimates of the MTCs 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 MTCs that were estimated during the mapping exercise, irrespective of whether this estimation was conducted through observation or interaction.

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

Based on the validation exercise the positive predictivity for MTC is 93% i.e. there may be a changes of 7% variance.

Table 2.1: Illustration of correction factors to estimate size of MTCs in Kathmandu Valley

Indicators	Client of MSW/TG	TG	MSW
PRA estimate	2,792	426	886
Agreed upon estimate	4,531	597	1,181
Observed and interacted (S)	1,058	225	371
Frequency adjustment			
<i>P1</i>	0.80	0.80	0.80
<i>P2</i>	0.11	0.11	0.11
<i>P3</i>	0.09	0.09	0.09
S1	7,800.12	1,027.74	2,033.09
Duplication adjustment			
<i>Ci</i>	0.28	0.27	0.28
<i>Di</i>	2,184.03	277.49	569.27
S2	6,708.10	888.99	1,748.46
Turnover adjustment			
<i>T</i>	1.00	1.00	1.00
<i>Di</i>	9.97	9.97	9.97
S3	7,044.51	933.57	1,836.14
Hidden population adjustment			
<i>p</i>	0.30	0.30	0.30
S4	23,482	3,112	6,120
Maximum MARPS value	4,531	597	1,181
Minimum MARPS value	1,058	225	371
Range	1,736.50	186.00	405.00
S4+/-range	21,745	2,926	5,715
	25,218	3,298	6,525
Coefficient of Range	62.1	45.3	52.2

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

Nepal has a total of 75 districts and MTC mapping and size estimation exercise was undertaken in less than half, that is, 35 of these districts. Although the total number of districts—including those that were selected for mapping and size estimation—was determined by considering the geographical 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 MTCs 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 MTCs in unmapped districts and are presented as follows:

Rule I: Each of the 40 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 35 districts that were included in the mapping and size estimation exercise:

- Percentage of urban population
- Population density
- Total adult population in the district as per the most recent estimates
- Total length of highways across the district
- Reported number of STI cases in the last 12 months
- Special characteristics, such as local cultural practice, border to India, trafficking and trekking routes, etc

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 MTCs in the

district was estimated against the total adult male population that was aged between 15 and 49 years. This ratio was multiplied with the total adult male population aged between 15 and 49 years in the unmapped district for which the extrapolation of MTCs was required. This method was employed for effectively extrapolating the number of MTCs in all the unmapped districts. In applying this method, the following two assumptions were made: first, no male below the age of 14 years engages in MSM activity, and second, the proportion of males engaged in MSM activity over the age of 50 years is negligible.

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 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 in unmapped districts be undertaken in order to obtain the numbers first hand and subsequently plan for the programmes.

CHAPTER

3

RESULTS OF MAPPING AND SIZE ESTIMATION

This chapter details the national, regional and district level data on the number and location of MTCs, number and locations of MTC hotspots, and number and locations of service centres available for providing treatment, care and support to MTCs. Although the estimates in this report are provided in the form of ranges, the use of means is recommended in order to arrive at point estimates.

3.1: Region-wise and district-wise estimates of the number of MTCs*

The size estimation exercise indicates a variance in the number of MTCs across regions and within districts of a region. This section presents the estimated size of MTCs firstly, at the national level. Secondly, in the six HIV epidemic regions used for mapping, namely, the Highways Districts, Kathmandu Valley, Eastern Hill, West and Mid-West Hill, Far-Western Hill, and Remaining Hill regions. Thirdly, the geographical distribution of MTCs across districts within a region, while highlighting the districts with the maximum and minimum estimated MTC sizes. Fourthly, it highlights the three districts with the

maximum and minimum number of MTCs across the six regions. Finally, data on the concentration of MTCs in different districts is presented. Tables 3.1a and 3.1b provide individual district-level MTC size estimates in mapped and unmapped districts.

The mapping and size estimation exercise estimates the number of MTCs in Nepal as between 65,864 and 82,330—with a 31.5% coefficient of range—after all necessary corrections and adjustments are incorporated.

Of the six epidemic regions, Highway Districts region has the largest MTC population, which is estimated at between 34,941 and 45,997. This is followed by Kathmandu Valley Region where the MTC population is estimated at between 30,498 and 35,234. The West and Mid-West Hill region has an estimated population of between 132 and 360, whereas the Eastern Hill region has between 129 and 350 estimated number of MTCs. The estimated size of MTCs in Remaining Hill region is between 104 and 229. The number of MTCs in the Far-Western Hill region is estimated at between 60 and 160 and is the region with the lowest size estimates.

* Presence of MSM networks plays an important part in creating an enabling environment where MTCs come out in the open. The findings of the districts where no networks exist should be read with this context in mind.



As evident from Table 3.1a, within the Highway Districts region, Morang district has been identified to have the maximum number of MTCs at between 8,143 and 12,151, whereas Tanahu district has the minimum number of MTCs. The MTC population is concentrated at an estimated size of over 2,000 in the following five districts: Morang, Sunsari, Bara, Nawalparasi and Banke. Eight districts are estimated to have between 1,000 and 2,000 MTCs. These are Jhapa, Saptari, Parsa, Makwanpur, Chitwan, Dhading, Rupandehi and Dang.

In the three districts in the Kathmandu Valley region, the highest number of estimated MTCs is found in the Kathmandu district where the population ranges between 27,538 and 32,163. Following Kathmandu district is Lalitpur district where the size estimate is between 2,143 and 2,184. Bhaktapur district has an

estimated MTC population of between 817 and 887 MTCs.

In the remaining four regions of West and Mid-West Hill, Eastern Hill, Far-Western Hill and Remaining Hills, the estimated number of MTCs in none of the mapped districts exceed 50.

Thus, the three districts with the largest size of MTC population in ascending order are Kathmandu in Kathmandu Valley region, followed by Morang and Sunsari in the Highway Districts region. The district with the least number of MTCs is Manang in the Remaining Hill region. Districts Myagdi in the West and Mid-West Hill region, Terhathum and Solukhumbu in Eastern Hill region, Bajura, Dadeldhura, and Darchula in Far-Western Hill region all have the least number of MTCs.

Table 3.1a: Estimated size MTC in mapped districts

Regions	Districts	Clients			TG			MSW			All (MTC)		
		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
Highway Districts		24,338	31,214		4,656	5,736		4,733	5,767		33,727	42,717	
	Jhapa	787	1,021	44.8	107	129	28.9	120	158	48.7	1,014	1,308	43.5
	Morang	7,010	10,538	92.6	630	896	72.3	503	717	72.3	8,143	12,151	89.2
	Sunsari	3,585	4,711	48.1	893	1,151	43.6	674	852	38.7	5,152	6,714	46
	Saptari	653	749	19.6	111	124	15.3	199	218	12.3	963	1,091	17.5
	Siraha	155	170	12.4	57	69	30	102	133	46.3	314	372	21.6
	Dhanusa	118	140	25.6	37	44	25.9	61	77	38.1	216	261	17.2
	Mahottari	91	106	22.4	60	74	33.3	78	95	30.9	229	275	28
	Sarlahi	303	366	29	101	121	27.8	80	97	29.8	484	584	28.9
	Rautahat	294	338	24.2	50	71	72.4	80	87	11.1	424	496	38.7
	Bara	2,489	2,859	19.8	658	728	13.8	565	630	14.9	3,712	4,217	14.6
	Parsa	953	1,075	16.8	62	68	12.5	114	144	38.5	1,129	1,287	17
	Makwanpur	720	786	11.7	172	222	43.9	162	207	41.3	1,054	1,215	12.7
	Chitwan	1,082	1,396	43.5	96	111	21.1	280	338	29	1,458	1,845	37.4
	Nawalparasi	1,336	1,568	23.6	460	593	43.6	490	649	50.2	2,286	2,810	32.7
	Kaski	719	793	13.3	117	143	31.7	35	42	28	871	978	6.3
Palpa	159	175	12.9	28	35	36.8	60	64	8	247	274	6.2	
Rupandehi	678	742	12.1	148	159	9.4	225	230	2.7	1,051	1,131	6.7	
Kapilbastu	379	440	21.7	26	32	33.3	53	66	35.1	458	538	21	
Banke	1,989	2,279	19.4	593	667	16.4	621	700	16.7	3,203	3,646	18.3	
Bardiya	238	313	48.4	101	129	41.2	77	96	35.8	416	538	44.2	
Kailali	287	311	10.6	31	32	4	51	55	10	369	398	8.6	
Kanchanpur	313	338	10.1	118	138	23.3	103	112	11.1	534	588	13	
Kathmandu Valley		21,740	25,224		3,041	3,475		5,717	6,535		30,498	35,234	
	Kathmandu	20,191	23,622	68.3	2,327	2,719	68.1	5,020	5,822	62.2	27,538	32,163	67.1
	Lalitpur	1,062	1,073	2.7	481	509	17.3	600	602	0.9	2,143	2,184	3.4
	Bhaktapur	487	529	27.3	233	247	17.9	97	111	53.8	817	887	21

Table 3.1a: Contd...

Regions	Districts	Clients			TG			MSW			All (MTC)		
		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
Remaining Hill		24	28		9	10		0	0		33	38	
	Kavre	24	28	22.2	9	10	14.3	0	0	0	33	38	20
Mapped districts with low MARPS presence (Ilam, Sankhuwasabha, Tanahun, Myagdi, Jajarkot, Dadelhura, Bajhang, Mustang, Mugu)													

Table 3.1b: Estimated size of MTC in unmapped districts

Regions	Districts	Final estimate (lower)	Final estimate (upper)	Coefficient of range
Eastern Hill	< 50 (Dhankuta, Udayapur, Taplejung, Terhathum, Panchthar, Bhojpur, Khotang, Okhaldhunga, Solukhumbu, Ramechhap, Dolkha)	107	290	31.5
Highway Districts		1,199	3,240	
	Dhading	370	1,001	31.5
	Syangja	278	750	31.5
	Dang	551	1,489	31.5
West & Mid-West Hill	<50 (Parbat, Gulmi, Argakhanchi, Baglung, Pyuthan, Rukum, Rolpa, Salyan, Surkhet, Dailekh, Kalikot)	121	330	31.5
Far-Western Hill	Achham, Doti, Bajura, Baitadi, Darchula	49	130	31.5
Remaining Hill	Sindhupalchok, Rasuwa, Nuwakot, Gorkha, Lamjung, Manang, Dolpa, Jumla, Humla	67	179	31.5

A comparative analysis of MTC sizes across districts indicates that 15 districts—including Kathmandu and Lalitpur—have a minimum estimate of 1,000 MTCs. Seven districts namely, Sarlahi, Kaski, Syangja, Kapilbastu, Bardiya, Kanchanpur, and Bhaktapur, have between 500 and 1,000 estimated number of MTCs, whereas 6 districts including Siraha, Dhanusha, Mahottari, Rautahat, Palpa and Kailali reportedly have between 100 and 500 MTCs. Forty-seven districts, mostly from Eastern Hills, West and Mid-West Hill, Far-Western Hill and Remaining Hill regions, have less than 100 estimated number of MTC (to be read in the context of the limitation of non-existence of networks there).

3.2: Geographical distribution of MTC activities[†]

This section details the geographical distribution of hotspots—whether for MSWs, TGs or Clients—across the six HIV epidemic regions and in districts within a region. The mapping exercise found 758 MTC hotspots in 437 different locations across Nepal. As indicated by Table 3.2, the Highway Districts region has the maximum number of hotspots with 582 hotspots. A total of 23 districts in the region were included in the mapping study of which, Tanahu was the only district where no hotspot was identified. In the remaining 22 districts in the

[†] Because of the very nature of the activities at the MTC hotspots, it is difficult to further classify them into MSWs, TGs and Clients.

region, the number of hotspots per district ranged from 9 to 85. The maximum number of hotspots was reported in Rupandehi with an estimated number of 85 MTC hotspots, whilst Mahottari and Bardiya were estimated to have the least number of hotspots with only 9 hotspots. The three districts of Sunsari, Nawalparasi and Rupandehi had over 40 hotspots, whereas the three districts of Bara, Banke and Kanchanpur had between 30 and 40 estimated number of hotspots. Districts Siraha, Dhanusha, Sarlahi, Rautahat, Kaski, Palpa and Kapilbastu had an estimated number of between 10 and 20 hotspots each, whereas Morang, Saptari, Parsa, Makwanpur, Chitwan, and Kailali districts were estimated to have 20 to 30 hotspots each.

Kathmandu Valley region was estimated to have 171 hotspots. Among those hotspots, 100 were in

Kathmandu district, 46 in Lalitpur district, and 25 in Bhaktapur district.

In the Remaining Hill region, Kavre, Mustang and Mugu districts were mapped for MTC population. Kavre district was estimated to have 5 hotspots, whereas no hotspot was reported to be present in Mustang and Mugu districts. In the Eastern Hills region, the mapping exercise for MTC was conducted only in Sankhuwasabha and Ilam districts, and in both these districts, the number of reported hotspots was nil. Similarly, in the West and Mid-West Hill region, mapping was conducted in Jajarkot and Myagdi, and hotspots were reported in neither district. Moreover, no MTC hotspot was reported in the mapped districts of Dadelhura and Bajhang in the Far-Western Hills region.

Table 3.2: Distribution of locations/hotspots across different mapped regions/districts in Nepal

Regions	District	No. of Locations	No. of Hotspots
Nepal		437	758
Eastern Hill		0	0
	Ilam	0	0
	Sankhuwasabha	0	0
Highway Districts		344	582
	Jhapa	8	19
	Morang	11	22
	Sunsari	22	53
	Saptari	25	27
	Siraha	15	17
	Dhanusha	10	11
	Mahottari	8	9
	Sarlahi	7	17
	Rautahat	9	12
	Bara	25	40
	Parsa	16	22
	Makwanpur	12	21
	Chitwan	14	28
	Nawalparasi	15	44
	Tanahu	0	0
Kaski	17	18	
Palpa	6	16	

Table 3.2: Contd...

Regions	District	No. of Locations	No. of Hotspots
	Rupandehi	30	85
	Kapilbastu	17	20
	Banke	32	35
	Bardiya	8	9
	Kailali	17	23
	Kanchanpur	20	34
Kathmandu Valley		88	171
	Kathmandu	57	100
	Lalitpur	15	46
	Bhaktapur	16	25
West and Mid West Hill		0	0
	Myagdi	0	0
	Jajarkot	0	0
Far-Western Hill		0	0
	Dadeldhura	0	0
	Bajhang	0	0
Remaining Hill		5	5
	Kavre	5	5
	Mustang	0	0
	Mugu	0	0

Map 3.1: Concentration of MTCs in different districts of Nepal



3.3: Availability and accessibility of condom outlets and VCT/STI services

Ensuring availability and accessibility of service centres to the mapped hotspots—whilst considering the estimated MTC 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 within a one kilometre range of MTC hotspots. 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 firstly, that 72.2% and 40% of the total MTC hotspots in Nepal have condom outlets and VCT/STI service centres within a one kilometre range, respectively. Out of the 35 mapped districts, only 4 districts of Morang, Dhanusha, Mahottari and Bhaktapur have condom outlets within a one kilometre range at all recorded sites. Although in 19 mapped districts, more than 60% of the MTC hotspots have condom outlets within a one kilometre range, in 8 districts, 60% of the MTC hotspots have VCT/STI service centres within the same range.

Regarding regional distribution and accessibility—as highlighted in table 3.3—73% and 39% of the hotspots in the Highway District region have condom outlets and VCT/STI centres within a distance of one kilometre, respectively. Among the mapped districts of this region, three districts, namely, Morang, Dhanusha, and Mahottari were reported to have condom outlets within a one kilometre distance of all hotspots; however, none of these districts had VCT/STI service centres within the same distance of all hotspots. Further, no VCT/STI service centres were located within a one kilometre radius of any of the hotspots of Siraha and Palpa. Further details on the availability

and accessibility of condoms and VCT/STI service centres across districts in the Highway Districts region are elaborated subsequently.

In descending order of availability, 80% of the hotspots in 11 districts of Jhapa, Morang, Sunsari, Dhanusha, Mahottari, Bara, Kaski, Palpa, Rupandehi, Kailali and Kanchanpur are located within a one kilometre distance from condom outlets, whereas 40-80% hotspots in the 9 districts of Siraha, Sarlahi, Rautahat, Parsa, Chitwan, Nawalparasi, Kapilbastu, Banke and Bardiya are located within a one kilometre range of condom outlets. In Saptari and Makwanpur districts, less than 30% of the hotspots have condom outlets that are located within a one kilometre distance.

Regarding VCT/STI services, 80% of the hotspots in the Morang, Dhanusha, and Bara districts have VCT/STI service centres that are located within a one kilometre range, whereas 40-80% of the hotspots in the 9 districts of Jhapa, Sunsari, Mahottari, Rautahat, Parsa, Makwanpur, Kaski, Kapilbastu, Banke, and Bardiya have VCT/STI centres that are located within a one kilometre range. In 4 districts of Saptari, Nawalparasi, Rupandehi, Kailali and Kanchanpur, less than 20% of the hotspots have access to these services within the same distance.

In Kathmandu Valley region, all the hotspots in Bhaktapur district and over two-thirds of the hotspots in Kathmandu and Lalitpur districts have condom outlets that are present within a one kilometre range. VCT/STI service coverage was reported at 88% in the Bhaktapur district, 44% in the Kathmandu district and 26% in the Lalitpur district.

In the Remaining Hill Region, 80% of the hotspots in Kavre have condom outlets that are located within a one kilometre range; however, no VCT/STI service centres are located within the same distance of any of the hotspots in this region.

Table 3.3: Availability and accessibility of venue/site for condom outlets and VCT/STI service

Regions	District	% of hotspots having condom outlets within one km	% of Hotspots having STI/VCT service within One Km
Nepal		72.2	40.0
Eastern Hill		NA	NA
	Ilam	NA	NA
	Sankhuwasabha	NA	NA
Highway Districts		72.5	38.7
	Jhapa	89.5	42.1
	Morang	100.0	95.5
	Sunsari	90.6	79.2
	Saptari	33.3	3.7
	Siraha	47.1	0.0
	Dhanusha	100.0	81.8
	Mahottari	100.0	77.8
	Sarlahi	41.2	35.3
	Rautahat	50.0	75.0
	Bara	82.5	80.0
	Parsa	72.7	45.5
	Makwanpur	23.8	76.2
	Chitwan	53.6	21.4
	Nawalparasi	63.6	13.6
	Tanahu	NA	NA
	Kaski	83.3	55.6
	Palpa	81.3	0.0
	Rupandehi	83.5	7.1
	Kapilbastu	40.0	35.0
	Banke	71.4	57.1
	Bardiya	77.8	44.4
	Kailali	91.3	13.0
Kanchanpur	82.4	5.9	
Kathmandu Valley		70.8	45.6
	Kathmandu	64.0	44.0
	Lalitpur	69.6	26.1
	Bhaktapur	100.0	88.0
West and Mid West Hill		NA	NA
	Myagdi	NA	NA
	Jajarkot	NA	NA
Far—Western Hill		NA	NA
	Dadeldhura	NA	NA
	Bajhang	NA	NA
Remaining Hill		80.0	0.0
	Kavre	80.0	0.0
	Mustang	NA	NA
	Mugu	NA	NA

CHAPTER

4

BEHAVIOURAL CHARACTERISTICS OF MSWs, TGs AND THEIR CLIENTS

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 to and the use of facilities and services. When no consideration is ascribed to the average needs and requirements of the target population, service use can be expected to be below optimal level. Research evidence firmly points to the need for considering the varied individual, interpersonal, social, and environmental factors that influence the risk for HIV infection along with behavioural patterns, including age of having sex for the first time, 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 2,182 MTCs* during the mapping and size estimation exercise in the

districts. The first section presents the background information on the surveyed population, and the subsequent sections summarize the sexual behaviour patterns and service use patterns of this surveyed population. The most considerable proportion, that is, 90% of the MTCs who were surveyed belonged to the Highway District region. However, the results have been weighted in order to make them representative of the country as a whole in proportion to the sizes of MTC.

4.1: Background characteristics

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

* Although the present report only analyses these parameters for MTCs taken as a whole and does not consider the disaggregated results of subcategories, the detailed data sets are available at HSCB for need-based analysis.

The average age of MTCs cannot be classified according any of the three categories of below 20 years between 20 and 29 years or over 30 years; however, it can be indicated that the majority, that is, over two-fifths of MTC belong to age group of 20 to 29 years. One-fourth of the MTCs are below the age of 20 years and approximately one-third or 29% of the MTCs are over the age of 30 years. Regarding population distribution according to educational levels, approximately two-fifths of the MTCs have completed 10 or more years of formal school education. One-fourth of the MTCs have completed between 6 and 10 years of school education and another quarter have received no formal education.

Data on the marital status of MTCs is a factor that requires due weightage, given its implications on the epidemic's pattern, particularly on transmission of HIV and/or STIs between partner(s). Given that nearly half of the MTCs are married and the probability of engaging in multi-partner sex is high, increased awareness and access to HIV prevention and STI services is critical for positive prevention. STI/HIV preventive measures and treatment must consider and overcome the stigma surrounding MTCs across communities when services are provided for ensured continued access.

Table 4.1: Percentage distribution of MTCs by selected background characteristics

Background characteristics	Percent of MTC	No. of MTC (unweighted)
Age		
Below age 20	25.9	544
20-29 years	45.0	1006
30 and above	29.1	632
Educational qualification		
No formal education	23.7	484
Upto 5 years	14.2	311
6-10 years	24.9	553
More than 10 years	37.3	834
Marital status		
Ever married	49.9	1,028
Never married	50.1	1,154
Migratory status		
Migrants	28.5	721
Non-migrants	71.5	1,461
Epidemic region		
HD	92.5	1,748
KV	7.2	427
RH	0.3*	07
Total	100.0	2,182

* Based on fewer than 10 observations



Figure 4.1: Percentage distribution of MTCs by the marital status and living arrangements

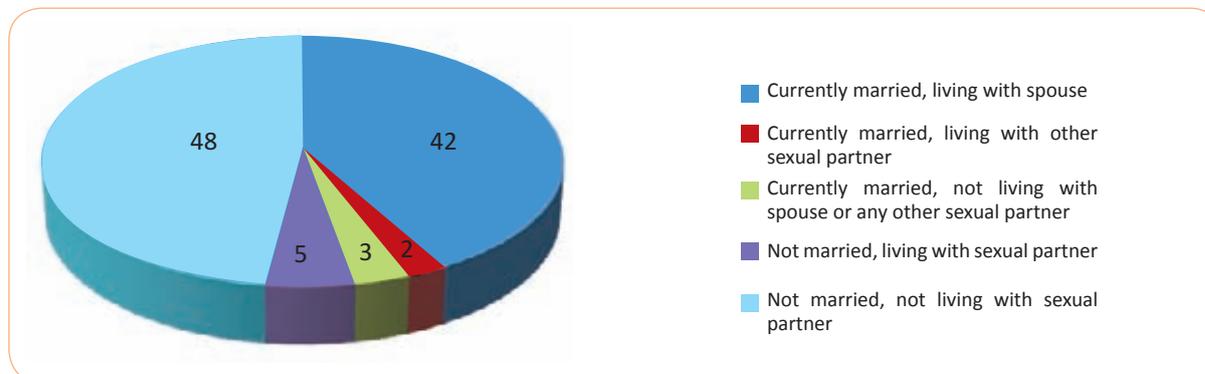


Figure 4.1 presents the living arrangements of MTCs according to their married or unmarried status. The survey indicated that over two-fifths of MTCs are currently married and live with their spouses. Seven percent of the MTCs reportedly live with their sexual partners irrespective of their marital status. Nearly half or 48% of the MTCs are neither married nor living with any sexual partners. This data reflects on the possible hidden nature of this proportion of MTCs and the need for appropriate strategies and interventions for reaching them. Reportedly, 56% of the MTCs do not have any dependent children who are younger than 16 years, whereas 13% report having one child who is younger than 16 years. Fifteen percent have two children, whereas 10% of the MTCs have 3 children

residing, and operating from their native place. Nearly one-third or 29% of the MTCs are migrants and their potential vulnerability to HIV must be considered in programme formulation owing to the established influence of migration and mobility on the distribution and spread of HIV.

These background data must be considered not only whilst tailoring HIV interventions for MTC but also during the implementation of risk reduction strategies. Efficacy of programme delivery increases when the target populations’ characteristics and behaviours taken into consideration. MTC’s behaviour patterns as observed during the behavioural survey are included in the section below.

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

No. of living children below the age of 16	Percentage	No. of MTCs
0	56.2	1,290
1	13.0	271
2	15.1	320
3	10.0	195
4+	5.3	106
Total number of MTCs who have children		1,290
Mean number of children below the age of 16	1.07	

below the age of 16 years. As is evident from table 4.2, the mean number of children below the age of 16 years is 1.07 per MTC.

As is evident from Table 4.1, approximately three-fifths of the MTCs are reportedly non-migrants,

4.2: Behavioural factors

The behavioural survey was conducted with the objective of gaining an understanding on MTCs’ HIV risk behaviour and enabling intervention monitoring. Studying behavioural factors is

essential, considering that they form covariates of risk and vulnerability of STI/HIV among MTCs. This section highlights MTC's sexual behaviour trends including age of sexual debut, sexual relationships with multiple partners, and adoption of safer sex methods for insight into the level of potential risk for HIV acquisition and transmission.

of 20-29 years. Educational attainment, however, has a definite negative correlation with the age of first anal sex encounter, because the proportion of MTCs who reportedly engaged in anal sex for the first time before the age of 16 years was found decrease with increasing education.

Table 4.3: Percentage distribution of MTCs who engaged in anal sex for the first time before attaining the age of 16 years and selected socio-economic characteristics

Background characteristics	% of MTCs who had their first anal sex encounter before the age of 16	No. of MTCs (unweighted)
Age		
Below age 20	47.4	544
20–29 years	31.3	1,006
30 and above	42.9	632
Educational qualification		
No formal education	47.1	484
Up to 5 years	50.0	311
6–10 years	38.9	553
More than 10 years	26.9	834
Marital status		
Ever married	41.7	1,028
Never married	36.1	1,154
Migratory status		
Migrants	33.3	721
Non-migrants	41.2	1,461
Epidemic region		
HD	38.8	1,748
KV	40.0	427
RH	**	07
Total	38.9	2,182

* Based on fewer than 10 observations; ** Too small cell frequencies to give any information

Approximately two-fifths of the MTCs engaged in anal sex for the first time when they were below the age of 16 years. Analysis of this data reflects a U-shaped curve with a higher proportion of MTCs in the age groups of under 20 years and 30 years or above reportedly engaging in anal sex for the first time before attaining the age of 16 years as compared to those in the age group

4.3: Safer sexual practice

The HIV prevention programme centres on the need for promoting safer sex practices through consistent condom usage and reduction in multiple partner relationships and remains a central part of Nepal's Behaviour Communication Change (BCC) strategy. Information from the survey on aspects including



types of partners, whether commercial or non-commercial, female partners, condom usage during last sexual encounter, and use of lubricant provides evidence for guiding future BCC interventions and evaluates the impact of activities undertaken. Key findings are presented under Tables 4.4a, b and c and Figures 4.2a, b and c.

As indicated by Table 4.4a and Figure 4.2a, over half or 54% of MTCs reportedly had sex with a commercial partner in the last 6 months prior to the survey. It is to be noted that 99.4% of the clients of MSW reported buying sex in the last six months. Of the MTCs who reportedly had sex with a commercial partner, 53% had less than 5 commercial partners, 17% had sex

with 5-10 commercial partners, whereas 30% had sex with 10 or more commercial partners. On an average, MTCs had anal sex with 5 (4.8) commercial partners in the past 6 months prior to the survey. While engaging in anal sex with the last commercial partner, 87% MTCs used a condom and 82% MTCs used lubricant. Data comparison indicates that variance between the three indicators number of partners in the last 6 months, use of condom during last sexual encounter and use of lubricant during last sexual encounter is not very significant across regions, age and marital status. The exception was the cohort of MTCs over 30 years of age, where 91% reported condom use while last having sex with a commercial partner and was the highest proportion among the other age groups.

Table 4.4a: Percentage distribution of MTCs by their number of commercial partners during the last six months prior to the survey and use of condom and lubricants in their last commercial sexual encounter by selected background characteristics

Background characteristics	% of MTCs reporting the number of sexual partners during the last six months prior to the survey			No. of MTCs (unweighted)	% of MTCs reporting condom use in the last commercial sexual encounter	% of MTCs reporting use of lubricants in the last commercial sexual encounter
	< 5	5-10	10 & above			
Age						
Below age 20	62.5	12.5	25.0	266	88.9	77.8
20-29 years	57.9	15.8	26.3	566	84.9	83.3
30 and above	45.3	18.2	34.4	351	90.9	81.8
Marital status						
Ever married	50.0	20.0	30.0	562	85.0	84.2
Never married	55.0	15.0	30.0	621	89.5	78.9
Epidemic region						
HD	55.6	16.7	27.8	940	86.1	80.6
KV	25.0	25.0	50.0	242	100.0	100.0
RH	**	**	**	01	**	**
Total	52.5	17.5	30.0	1,183	87.2	81.6

* Based on fewer than 10 observations; ** Too small cell frequencies to give any information

Figure 4.2a: Percentage distribution of MTCs by the number of commercial sex partners during the last six months prior to the survey

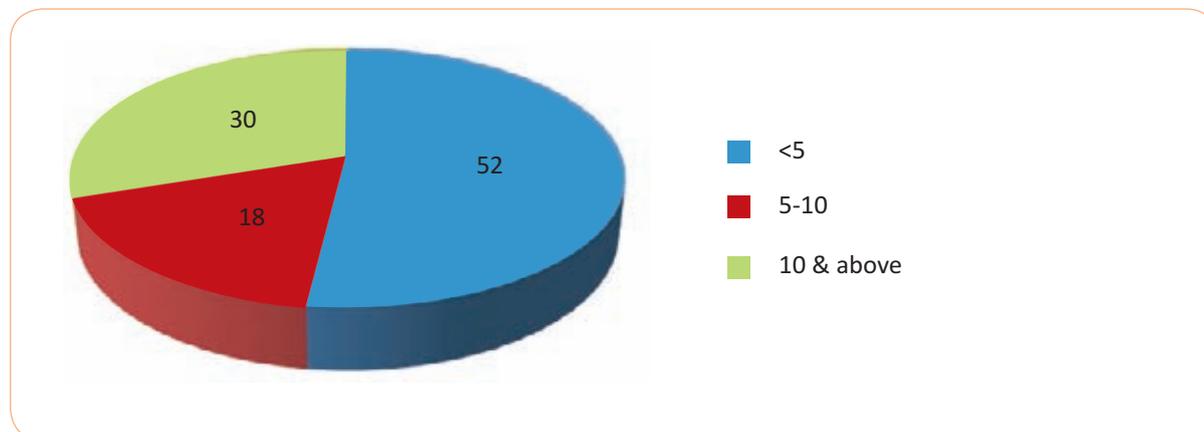


Table 4.4b: Percentage distribution of MTCs by their number of non-commercial partners during the last six months prior to the survey and use of condom and lubricants in their last non-commercial sexual encounter by selected background characteristics

Background characteristics	% of MTCs reporting number of sexual partners during the last six months prior to the survey			No. of MTCs (unweighted)	% of MTCs reporting condom use in the last non-commercial sexual encounter	% of MTCs reporting use of lubricants in the last non-commercial sexual encounter
	1-2	3-5	6 & above			
Age						
Below age 20	50.0	28.6	21.4	447	80.0	73.3
20-29 years	46.2	26.9	26.9	834	76.9	73.1
30 and above	35.3	29.4	35.3	529	76.5	76.5
Marital status						
Ever married	41.4	31.0	27.6	843	75.9	72.4
Never married	48.3	27.6	24.1	967	79.3	75.9
Epidemic region						
HD	46.3	29.6	24.1	1413	75.9	73.6
KV	20.0	20.0	60.0	391	100.0	80.0
RH	**	**	**	06	**	**
Total	44.8	29.3	25.9	1810	77.6	74.1

* Based on fewer than 10 observations; ** Too small cell frequencies to give any information



Figure 4.2b: Percentage distribution of MTCs by the number of non-commercial sexual partners during the last six months prior to the survey

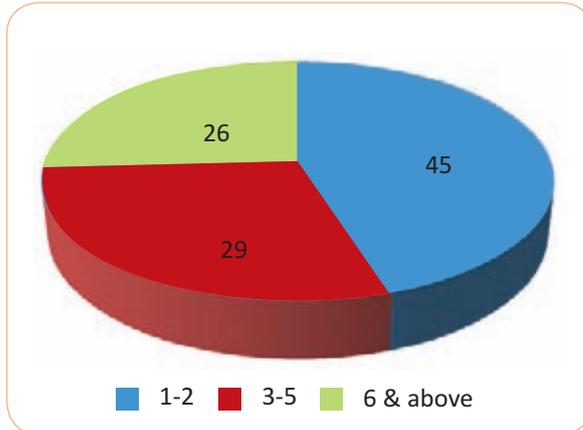


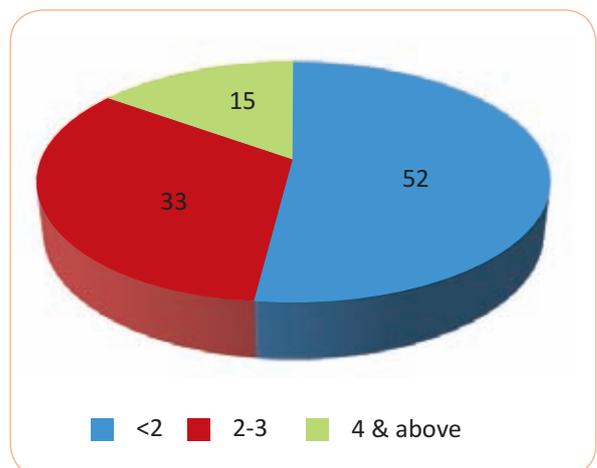
Table 4.4a and Figure 4.2b present data on sexual behaviour of MTCs reportedly had sexual relationships with non-commercial partners during the last 6 months prior to the survey. Seventy-two percent of the MTCs reported having sex with non-commercial partners 6 months prior to the survey, with the average number of non-commercial partners during this period being 3.0. Out of this group of MTCs, 45% had 1-2 non-commercial partners, 29% had 3-5 non-commercial partners, whereas 26% reported having 6 or more non-commercial sexual partners. It is observed that the proportion of MTCs who reportedly had 1-2 non-commercial partners during the last 6 months prior to the survey, is higher among those who are younger than 20 years as compared to their older counterparts. In contrast, the proportion of MTCs reporting non-commercial sex with 6 or more partners is greater among those aged 30 years or more, in comparison with their younger counterparts. The correlation between marital status of MTCs and the number of non-commercial partners in the last 6 months prior to the survey is not very significant. Data shows that a higher proportion of MTCs reported having 1-2 non-commercial partners in the six months prior to the survey irrespective of their marital status, as compare to MTCs reporting 3-5 or 6 or more partners in the same time period.

The proportion of MTCs who used condoms during their last sexual encounter is highest among those in the younger age groups, with 80% MTCs below the age of 20 years reportedly using condom during their last sexual encounter, as compare to 76.9%

MTCs aged between 20 and 29 years and 76.5% MTC aged 30 years or more. The proportion of MTCs using condom is higher than those using lubricants, and this pattern is observed across background characteristics with 78% MTCs reporting condom usage while lubricant usage is reported by 74% MTCs during their last sexual encounter with non-commercial partners.

The trend of MTCs engaging in anal and vaginal sex with male and female partners has implications on the rate of HIV transmission between and across both genders. Table 4.4c and Figure 4.2c highlight that 76% MTCs reportedly had sex with one or more female partners during the 6 months prior to the survey. The average number of partners reported by them is 2(1.4) female partners in the last 6 months prior to the survey. Of all the MTCs who reportedly had sex with a female partner during the last six months, 52% had sex with 1 female partner, 33% with 2-3 female partners and 15% had sex with 4 or more female partners during the last 6 months prior to the survey. The variation in number of female partners and ages of MTCs indicates that the number of female partners decreases with the increasing age of MTCs.

Figure 4.2c: Percentage distribution of MTCs by number of female sexual partners during the last six months prior to the survey



Data regarding condom usage during sex with a female partner indicates that 54% of the MTCs used condom during their last sexual encounter with a female partner. Condom usage is notably higher among MTCs aged below 20 years with 73%, 54%, and 42% of the MTCs who are below the age of 20 years, between

Table 4.4c: Percentage distribution of MTCs by the number of female sexual partners during the last six months prior to the survey and use of condoms during their last commercial sexual encounter by selected background characteristics

Background characteristics	% of MTCs reporting the number of sexual partners during the last six months prior to the survey			No. of MTCs (unweighted)	% of MTCs reporting condom use in the last sex
	<2	2–3	4 & above		
Age					
Below age 20	34.4	36.4	23.3	292	72.7
20–29 years	50.0	33.3	16.7	689	54.2
30 and above	64.7	23.5	11.8	500	42.1
Marital status					
Ever married	61.8	26.5	11.8	954	42.9
Never married	33.3	44.4	22.2	527	73.7
Epidemic region					
HD	52.0	32.0	16.0	1302	52.9
KV	50.0	50.0	0.0	177	66.7
RH	**	**	**	02	**
Total	51.9	32.7	15.4	1481	53.7

* Based on fewer than 10 observations; ** Too small cell frequencies to give any information

Table 4.5: Percentage of MTCs who had sex with commercial and non-commercial partners during the last six months prior to the survey

Anal sex with commercial partner during the last six months prior to the survey	Anal sex with non commercial partners during the past six months prior to the survey	
	Yes	No
Yes (n=1,183)	74.4 (895)	25.6
No (n= 999)	90.9	9.1
	81.9 (1,810)	18.1 (372)

20–29 years and aged 30 years or more respectively reportedly using condoms. Data on condom usage according to marital status indicates that 74% of the MTCs who had never been married reported condom usage during their last sexual encounter with a female partner, whilst this proportion was only 43% in case of MTCs who had ever been married. These data indicate the potential HIV transmission to females through marital sex and signify the need to focus efforts on positive prevention and awareness generation on consistent condom usage as a barrier against STI/HIV and unwanted pregnancies.

As stated previously, structural factors and societal norms affect the social acceptability of MTC behaviour and result in a large proportion of the sub-population remaining hidden and unreachable by any HIV intervention. Tables 4.5 and 4.6 capture the percentage of MTCs engaging in sex with commercial and non-commercial partners along with condom usage—although this data has also been reflected previously—to highlight the proportion of MTCs who still do not adhere to safer sex measures, thereby indicating the potential for HIV prevention.



Table 4.6: Percentage of MTCs who reportedly used condom while having sex with commercial and non-commercial partners during the last six months prior to the survey

Condom use in anal sex with commercial partner during last 6 months	Condom use in anal sex with non commercial partners during past 6 months	
	Yes	No
Yes (n = 797)	84.0	16.0
No (n = 97)	25.0	75.0
	707	185

4.4: STI prevalence and treatment seeking behaviour

Sexually transmitted infections (STI) increase susceptibility to 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. STI prevention, testing, and treatment thus, can play a vital role in comprehensive programs to prevent sexual transmission of HIV. Furthermore, STI trends can offer important insights into where the HIV epidemic may grow. Hence, acquiring further information on MTCs with STIs, and their behaviour is warranted.

As is evident from Table 4.7, over 7% of the MTCs in Nepal have contracted STI through sexual contact during the last 12 months prior to the survey. Out of this total, 67% reportedly have an abnormal genital

discharge whilst 70% have a genital sore or an ulcer. These were the two most common STI symptoms reported by the MTCs. The pattern of STI prevalence during the last 12 months prior to the survey is not uniform across various background characteristics. Regarding proportional distribution according to age, although 8% of the MTCs aged 30 years or above are reportedly suffering from STI since 12 months prior to the survey, approximately 7.5% and 6.5% of the MTCs aged 20-29 years and below the age of 20 years respectively, have reportedly been suffering from STI since the same time.

At 87%, a majority of the MTCs who were suffering from STI sought medical advice. Although approximately 90% of the MTCs aged over 20 years sought medical advice, a lower proportion at 78% of the MTCs aged below 20 years demonstrated this treatment seeking behaviour. Regarding the source for receiving treatment, 26% of the MTCs visited VCT centres and private hospitals, whereas 24% sought treatment from government hospitals and 21% from STI clinics.

Table 4.7: Percentage of MTCs reportedly suffering from any STIs during the last 12 months prior to the survey and two most common symptoms of STIs by selected background characteristics

Background characteristics	Any STI	No. of MTCs (unweighted)	Abnormal discharge with bad smell	Genital sore or ulcer	No. of MTCs (unweighted)
Age					
Below age 20	6.6	544	66.7	69.4	36
20-29 years	7.3	1,006	67.1	69.9	73
30 and above	7.9	632	66.0	70.0	50

Table 4.7: Contd...

Background characteristics	Any STI	No. of MTCs (unweighted)	Abnormal discharge with bad smell	Genital sore or ulcer	No. of MTCs (unweighted)
Marital status					
Ever married	7.4	1,028	64.5	64.5	76
Never married	7.2	1,154	68.7	74.7	83
Epidemic region					
HD	7.5	1,748	68.7	69.5	131
KV	6.0	427	57.1	71.4	28
RH	0.0	07	0.0	0.0	00
Total	7.3	2,182	66.7	69.8	159

Figure 4.3: Percentage of MTCs reportedly suffering from any STI during the last 12 months and those exhibiting the two most common symptoms of STIs

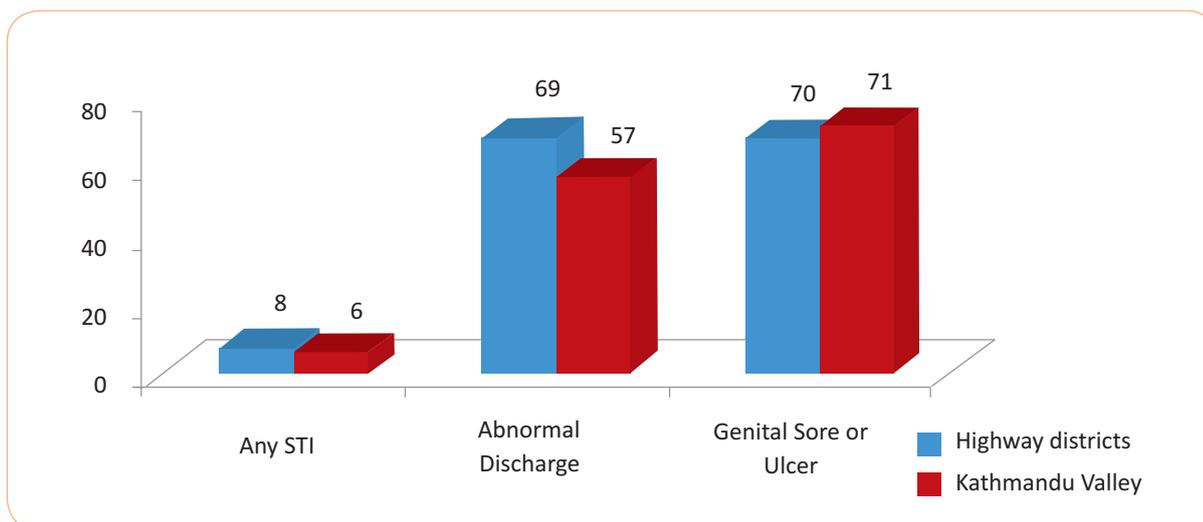
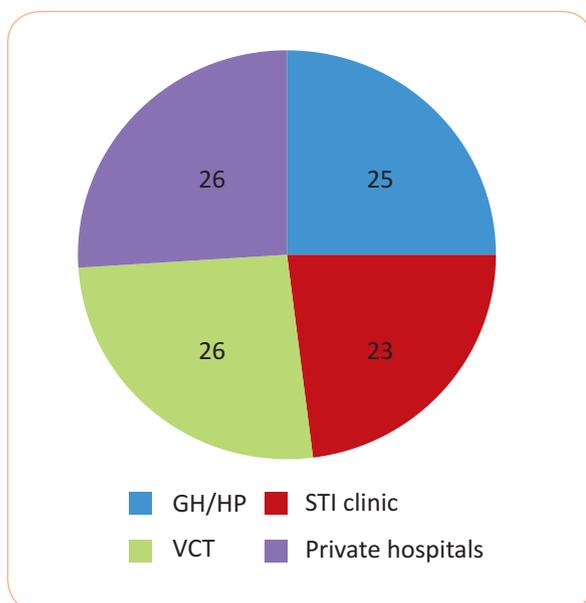




Table 4.8: Number of MTCs reportedly suffering from STIs, percentage of MTCs who sought treatment and the most commonly used health facilities for STI treatment during the last 12 months prior to the survey by selected background characteristics

Background Characteristics	% sought treatment	No. of MTC reported suffering from STIs (unweighted)	Sources of getting STI treatment				No. who sought treatment (unweighted)
			GH/HP	STI clinic	VCT Centres	Private Hospitals	
Age							
Below age 20	77.8	36	7.1	35.7	39.3	17.9	28
20–29 years	89.0	73	26.2	23.1	23.1	27.7	65
30 and above	90.0	50	33.3	15.6	22.2	28.9	45
Marital status							
Ever married	90.8	76	31.9	15.9	21.7	30.4	69
Never married	83.1	83	17.4	30.4	30.4	21.7	69
Epidemic region							
HD	87.0	131	27.2	22.8	28.1	21.9	114
KV	85.7	28	12.5	25.0	16.7	45.8	24
RH	0.0	00	0.0	0.0	0.0	0.0	00
Total	86.8	159	24.6	23.2	26.1	26.1	138

Figure 4.4: Percentage distribution of MTCs suffering from any STI during the last 12 months prior to the survey by sources of obtaining treatment



4.5: HIV testing

HIV testing is critical for HIV control and roll back. The behaviour survey indicated that 67% MTCs have ever been tested for HIV status. Little variance is observed according to age—except in the case of MTCs below 20 years—or marital status. HIV testing is also significantly higher among respondents in the Kathmandu Valley region at 83%, as compared to 65.7% among respondents of the Highway District region. Approximately three-fourths or 75% of the respondents had undergone an HIV test in the last 12 months, 8% had undergone an HIV test 12 to 24 months prior to the survey and 17% of the MTCs had undergone an HIV test two or more years prior to the survey. MTCs living in Kathmandu Valley are more likely to have undergone an HIV test than their counterparts within the last 12 months prior to the survey.

As Table 4.10 and Figure 4.6 indicate, nearly all respondents who were tested for HIV reported to have received their results. The most preferred site for HIV testing was VCT centres and 60% of the respondents were reportedly tested there, whereas 20% and 16% of the MTCs were reportedly tested at private clinics and government hospitals, respectively.

In conclusion, MTCs' increased vulnerability for HIV is a factor that influences the rate for HIV transmission and the trajectory of the total number of people who are living with HIV. Sustainable measures for overcoming the associated risk factors among MTCs through increased HIV awareness and dissemination of knowledge regarding the prevention of HIV and availability of treatment and support services needs must be adopted and due consideration must be given to the data generated through the mapping and size estimation exercise.

Figure 4.5: Percentage distribution of MTCs who were ever been tested for their HIV status by time elapsed since they were last tested

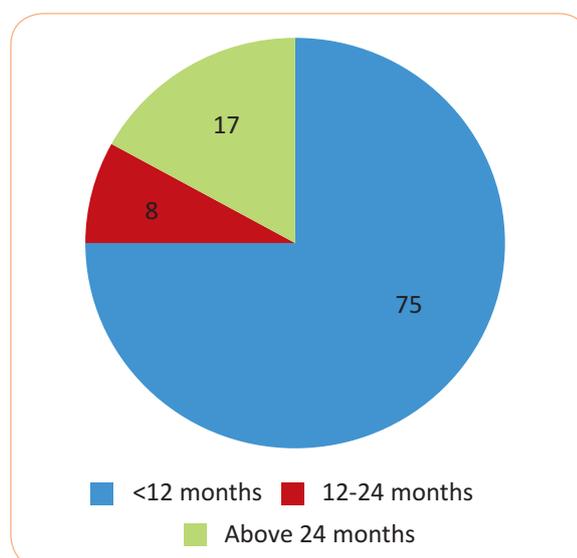


Table 4.9: Percentage of MTCs ever tested for HIV and time elapsed since the last testing by selected background characteristics

Background Characteristics	Tested for their HIV Status	No. of MTC (unweighted)	Time since the last time testing for HIV			No. of MTC (unweighted)
			<12 months	12-24 months	Above 24 months	
Age						
Below age 20	63.2	544	75.0	8.3	16.7	357
20–29 years	68.8	1006	77.3	9.1	13.6	717
30 and above	66.7	632	71.4	8.3	16.7	449
Marital status						
Ever married	69.4	1028	72.0	12.0	16.0	719
Never married	66.7	1154	79.2	8.3	12.5	804
Epidemic region						
HD	65.7	1748	72.7	11.4	15.9	1145
KV	83.3	427	100.0	0.0	0.0	372
RH	0.0*	07*	0.0*	0.0*	0.0*	06*
Total	66.7	2182	75.0	8.3	16.7	1523

* Based on fewer than 10 observations

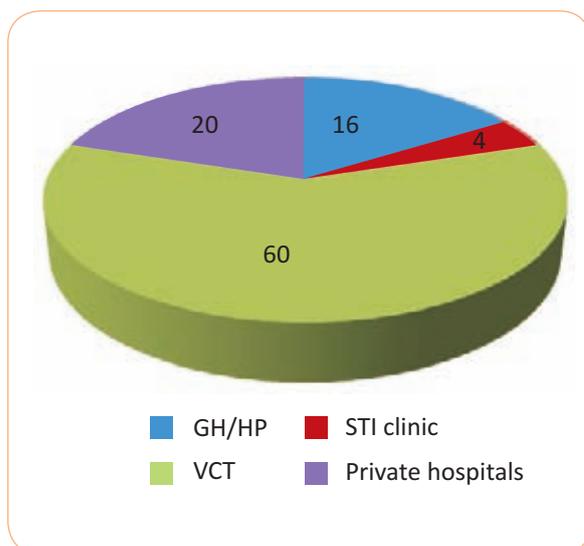


Table 4.10: Percentage of MTCs ever tested for HIV at different health facilities by selected background characteristics

Background	GH/HP	STI Clinic	Sites of HIV testing		
			VCT	Private hospitals	No. MTCs who were tested (unweighted)
Age					
Below age 20	15.4	7.7	61.5	15.4	357
20–29 years	17.4	4.3	56.5	21.7	717
30 and above	14.3	0.0	64.3	21.4	449
Marital status					
Ever married	20.0	4.0	60.0	16.0	719
Never married	13.0	4.3	60.9	21.7	804
Epidemic region					
HD	16.3	4.7	62.0	16.3	1,145
KV	0.0	0.0	50.0	50.0	372
RH	0.0	0.0	**	**	06
Total	16.0	4.0	60.0	20.0	1,523

* Based on fewer than 10 observations; ** Too small cell frequencies to give any information

Figure 4.6: Percentage distribution of MTCs who were tested for HIV status by source of testing



Combination prevention that incorporates biomedical and behavioural as well as social and structural interventions, such as information, education, community mobilization, HIV preventive measures and treatment adherence, is recommended. The aim is to reduce and halt transmission of HIV through positive prevention strategies.

CHAPTER

5

CONCLUSIONS AND RECOMMENDATIONS

This mapping and size estimation exercise presents concrete evidence in order to enable the national AIDS programme to deliver the HIV response more comprehensively.

The nature of HIV in Nepal, its trajectory and trend clearly emphasizes the need for addressing HIV amongst MARPs through increased programme coverage and service access, and through the creation of an enabling environment. This is particularly relevant to the MTCs who among the other MARPs are especially vulnerable to HIV considering associated biological and behavioural factors. Owing to prevalent structural factors and socio-cultural norms deeming their associated sexual behaviour as inappropriate, a large proportion of the MTCs are estimated to remain hidden and therefore reaching them is challenging. Increasing MTC reach and access to appropriate programmes—based on mapping, size estimates and behavioural data needs to become a central strategy that will also allow for efficient and effective resource utilization.

Thus, enabling the MTCs to lead a quality life necessitates a gradual priority based scale up of prevention, treatment and support services in districts particularly condom outlets, VCT/STI and support services, in consideration of data from mapping, size estimates, behavioural trends, and other available resources. A foremost-recommended step for increasing the coverage and access of mapped populations is to categorize districts with higher numbers of hotspots and higher estimated MTC population vis-à-vis other districts for priority programmatic attention. This will address a situation where, as the mapping and size estimation exercise identified, districts with a higher concentration of MTCs and hotspots have proportionally unequivalent number of service centres, thereby negatively affecting people's access to health services. Although there are a number of districts where basic HIV services, including condom outlets, STI diagnostic and HIV testing centres and treatment facilities, are not available, it is critical to overcome these structural weaknesses in districts where MTC populations are



relatively higher. The mapping exercise identified two scenarios. First, districts that do not provide any prevention, treatment and support services, such as condom outlets and VCT/STI centres, that are accessible by MTCs within a one kilometre range of mapped hotspots. Here districts such as Saptari, Siraha, Sarlahi, and Chitwan have been referred to where the access to condom and VCT/STI is sub-optimal. Second, districts offering only one and not the entire package of prevention, treatment, and support services that are accessible by MTCs within a one kilometre range of mapped hotspots. For example, although districts of Jhapa, Parsa, Kaski, Nawalparasi, Bardiya, Kailali, Kanchanpur, have condom outlets within a one kilometre range of mapped hotspots, the number of VCT/STI services is insufficient.

A conducive environment is critical for increasing service uptake. A conducive environment is created by firstly, tailoring programmes and services according to the specific vulnerabilities of MSMs and meeting population requirements. Focus must be on reaching out to the hidden population through appropriate behaviour, and communication and change interventions for both the communities and the populations. Second, instituting service centres in locations that are easily reachable by MTCs. Mapping data provides details on locations of hotspots and estimates population size, which is an important consideration for scale up; third, sensitizing the health personnel and staff in order to prevent MSMs from encountering any stigma or discriminatory behaviour at service centres.

Programmatic reach is facilitated by ensuring firstly, that all interventions have a component of outreach activities. This strategy should be well integrated to

the programme or project at design stage. Secondly, by establishing strong community networks. These networks can play a pivotal role not only in increasing awareness on HIV, service availability and access but also in reaching the hidden MTC community by tapping into their extensive network and knowledge of local customs. These networks must immediately be established in those districts that currently do not have any networks. They can dispense behaviour, communication and change interventions and increase comprehensive knowledge on HIV and STIs across communities. Information on sexual and reproductive health, safer sexual practices, condom usage and the importance of positive prevention needs to be disseminated. Collaborating with and complementing the work of NGOs, CBOs and MTC networks in this endeavour will not only strengthen the interventions but also prevent any activity overlap, ensure effective resource utilisation and enable identification of any gap areas.

Data presented in the report are anticipated to be a tool that will enable HIV programme formulation, development and expansion of need-based interventions across districts. The findings will also enable the evaluation of the impact of ongoing interventions, activities and areas that require intervention scale-up.

Using the data from this study, the epidemiological regions of the country needs to be revisited with devising a scheme of geographical prioritization informing the national strategy.

An exercise to estimate size of total MSM in Nepal needs to be undertaken to understand the size of population that is also at risk as MTCs.

References

- ▶ NCASC, 2004. National Estimates of HIV Infections Nepal 2003. Kathmandu.
- ▶ FHI/New ERA/SACTS, 2005a. Integrated Bio-behavioural Survey (IBBS) among Men who have sex with Men in Kathmandu Valley 2004, 2007,2009. Kathmandu.
- ▶ NCASC, 2006. National Estimates of HIV Infections Nepal 2005. Kathmandu.
- ▶ CBS, 2008, National Labour Force Survey (II)
- ▶ CBS, 2008, National Literacy Survey
- ▶ NCASC, 2008. National Estimates of HIV Infections Nepal 2007. Kathmandu.
- ▶ Commission on AIDS in Asia, 2008. Redefining AIDS in Asia: Crafting an Effective Response
- ▶ NCASC, 2010. National Estimates of HIV Infections Nepal 2010. Kathmandu.
- ▶ HSCB, 2010. UNGASS Country Progress Report Nepal 2010. Kathmandu.

APPENDIX



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

The algorithm for application of correction factors to estimate the size of Male Sex Workers, Transgenders and their Clients (MTCs) 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' MTC population size according to prior experience and interaction with the sub-populations at hotspots. Tool 3 included field research teams' records on the estimated number of MTCs based on the number of MTCs observed and interacted with sub-population members at a particular hotspot visited on three consecutive days at different points of time. The third source for providing MTC estimates at a hotspots where over five MTC operated was the PRA. Data collected from the hotspots of five districts was

reviewed by the researchers and Working Group for assessing the stability of the estimated number of MTCs. The Working Group determined that the highest number of MTCs 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 MTC population. These correction factors were applied under the following assumptions:

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



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

I. Adjusting for the frequency of MTCs visiting a hotspot

The level of MTC activity at a hotspot varies on different days of the week with some MTCs visiting a hotspot more frequently than others. If MTCs 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 MTCs were not at the hotspot during the period of data collection. In order to prevent such a potential undercounting of MTCs, 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 MTCs 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 MTCs from different hotspots using Tool 4.

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

1. The frequency of visits to different hotspots was derived at the national level after merging the SPSS data file for all the mapped districts to minimize the fluctuations in the distribution. This was applied to adjust the frequency of visits of MTCs 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. MTCs reporting frequency of visits less than once a week were not considered for this adjustment. They were included in a fourth category of MTCs, that is, those who do not visit any hotspot.
3. Since the behavioural survey was conducted among MTCs 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 MTCs 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* were modified to ensure true representation of those who were recorded as MTCs who visit hotspots daily.

The following assumptions were made whilst adjusting for frequency:

1. MTCs 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:

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

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

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

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



II. Adjusting for duplication of MTCs visiting multiple hotspots

There is a probability for double counting of MTCs visiting multiple sites. If some MTCs 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 hotspot based on observations or through interaction.

In order to prevent a potential duplication of MTCs 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 MTC visiting other hotspots, and second is the size of hotspots.

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

- Create an excel sheet.
- Obtain the compiled district level information on number of MTCs 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 MTCs, according to each hotspot, is entered.
- Calculate the sum of the product of values under column **p with q** ($\sum p \times q$). Calculate the sum up column **p** ($\sum p$). The ratio of these two values will give the weighted proportion of MTCs operating from multiple hotspots ($\frac{\sum pq}{\sum p} = C_i$)

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

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

where, S_2 = Estimated number after adjusting for duplication

S_1 = Estimated size after adjusting for frequency

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

The weighted proportion (C_i) needs to be multiplied with S_1 —the estimated number of MTCs in a district after adjustment for frequency—to obtain the exact number of MTCs 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 MTCs visiting other hotspots across different districts is observed.
2. The value of weighted proportion (C_i) is computed from the national level estimate, and is applied on district level S_1 to obtain the number of duplicates and subsequently S_2 .

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

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

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

The following formula was applied to adjust for MTC turnover:

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

Where, S_3 = Adjusted total size of MTC 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 MTCs are included in this category owing to their associated behaviour. This was calculated using data 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. S_2 was derived after frequency and duplication adjustments were made.

The following rules were adhered to:

- The average duration that an MTC 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 MTC turnover:

- 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 MTCs were at the halfway point of the total duration that they were likely to engage in MTC behaviour.

IV. Adjusting for “hidden” population

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

However, such a survey was beyond the scope of this study: in this study, the total number of MTCs in a district was inflated by the inverse of the proportion

of the population assumed to visit the mapped sites in order to estimate the number of MTCs excluded from the mapping exercise. In reference with the IBBS estimates of Nepal, it is assumed that 80% of the MARPs 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 MTC population over time 'T' after adjusting for frequency, duplication and turnover

P = Estimated proportion of MTCs who do not visit to mappable sites

Once the size estimates of the three sub-groups of MTC was finalized through the application of the four correction factors; the final estimates were presented as interval estimate 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 MTC observed during the mapping exercise—irrespective of whether it was through observation or interaction. The maximum and minimum number of estimated MTC obtained through three sources—Tool 2, Tool 3 and PRA—were added and subtracted from the final estimates—once 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 MTCs through extrapolation

This annexure presents the methodology for calculating national size estimates of MTCs using extrapolation algorithms. Since out of a total of 75 districts in Nepal, the mapping exercise was conducted in 35 districts for MTCs, the national estimates were calculated through the application of extrapolation algorithms wherein size values were assigned to the unmapped districts based on the subset of districts where mapping was conducted.

In the Kathmandu Valley region and the Terai districts, MTCs were mapped in all districts except in 3 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 accordingly were matched with the mapped districts, region-wise, which were designated as “high” and “low” depending

on the expected number of MTCs 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.

values (33,742/82,330)

Final extrapolation rules

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

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

MTC	Designated high	Designated low	Prediction correct
Eastern Hills	Ilam	Sankhuwasabha	Partially
Far West Hills	Dadeldhura	Bajhang	Partially
Remaining Hills	Mustang, Kavre	Mugu	Partially
West and Mid-west Hills	Myagdi	Jajarkot	Partially

For MTCs, the estimated number in Far-West Hills, West and Mid-West Hills, Eastern Hills, and Remaining Hills were negligible. Rather than assign 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 MTCs. The total estimated higher range of MTC was 82,330.

As indicated in Table B, the districts were MTC population was negligible were divided into quartiles based on the adult male population size for MTCs. For MTCs 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 IDUs and 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), and the values for IDUs were set at 41% of the MTC

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	16	40

For Hill Districts

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

MTCs were not mapped in 3 districts. Extrapolated values were assigned to these districts based on the average population proportion of MTCs from all the other Highway District region's districts.

APPENDIX



Research Tools

Tool I

Mapping Study of Male Sex Workers (MSW), Transgenders, and Clients (MTC) 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 MTC, including, their presence in different location, their size, risk behaviour, and availability of HIV/AIDS services and MTCs' 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 MTC size in this district?

.....

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

.....

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

.....

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

.....

B. Listing of locations of MTC activities and services

As we all agree, effective services to MTCs can be rendered 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 MTC groups can be found and practice the risky behaviour. (Also use a map to identify the locations) List all the locations and probe for more or new locations.

MARP	Location	Urban/Rural	Estimated No. of MTCs (of each sub groups)			Key Informant
			Max.	Min.	Agreed Upon	
MTCs	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 MARPs 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 MTCs 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 conformed 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: Male Sex Workers, Transgenders and their Clients (MTC)
Mapping Study of MTCs in Districts Location

Site/Hot Spot Information Sheet

I. Site Identifiers:

Site No. _____ Name of site: _____

2. Site type: _____ (MTC:)

3. Address of site: _____

Visit History:

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

Team members: _____ # KI interviewed _____

MTC observed: _____ # MTC interacted with: _____

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

Team members: _____ # KI interviewed _____

MTC observed: _____ # MTC interacted with: _____

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

Team members: _____ # KI interviewed _____

MTC observed: _____ # MTC interacted with: _____



Site Level Information including size data*

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

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

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

KI (MARP& Non-MARPs) Number	Busiest month at site (for MTC)	Average duration in months that MTC are active in a year	Estimated size on a normal day	% of MTC at the site who go to other sites	% of MTC coming to this site from other site	How many MTCs 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 MTCs as well as other informants like pimps, shopkeepers, paanwalas, 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 - : Mapping study of Male Sex Workers, Transgenders and their Clients (MTC) in selected priority districts in Nepal

CONFIDENTIAL

Primary Key Informants Questionnaire (Male Sex Worker, Transgender and Their Clients)

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 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 Male Sex Worker, Transgender and Their Clients (MTC)—their presence in different location, their size, risk behaviour and availability of HIV/AIDS services and MTCs access to them.

Confidentiality and consent: I’m going to ask you some questions. Your answers are 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. We would greatly appreciate your help in responding to 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 <input type="text"/> <input type="text"/> 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?	District _____ VDC/Municipality _____ Ward No. <input type="text"/> <input type="text"/> Village/Tole _____	

Q. N.	Questions and Filters	Coding Categories	Skip to
104	Where do you live now?	District _____ VDC/Municipality _____ Ward No. <input type="text"/> <input type="text"/> Village/Tole: _____	
105	How long you have been living here in (NAME OF COMMUNITY/TOWN/NEIGHBORHOOD/VILLAGE)?	Number of Years <input type="text"/> <input type="text"/> Always (since birth) 0 → 106 Record 00 if less than 1 year Don't know 98 Can't say 99	
105.1	Before you moved here, where did you live?	District: _____ VDC/Municipality: _____ Ward No. <input type="text"/> <input type="text"/> Village/Tole: _____	
106	Have you ever been married?	Yes 1 No 2 → 108 Can't say 99	
107	How old were you when you first married?	Age in years <input type="text"/> <input type="text"/> Don't know 98 Can't say 99	
108	Are you currently married or living with a man/women 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 No Response 99	
109	How many children less than 16 years are dependent on you?	Number <input type="text"/> <input type="text"/> Can't say 99	



2.0 SEXUAL HISTORY of MTC: Commercial Partners

Q. N.	Questions and Filters	Coding Categories	Skip to
201	What was your age when you have had the first anal sex?	Age <input type="text"/>	
202	Did you Have anal sex with commercial partner during past 6 months?	Yes 1 No 2 → 210 No Response 98	
203	What is the total number of commercial partner during the last 6 months?	Number of Partners <input type="text"/> Don't know 98 Can't Say 99	
204	Think about your most resent sex partner whom you exchanged money for sex. How many times did you have anal sex with your commercial partner during the past 30 days?	Number of times <input type="text"/> Don't know 98 Can't Say 99	
205	What is the frequency of anal sex with your commercial partner? RECORD NUMBER IN DIFFERENT CATEGORIES EXCLUSIVELY	Daily <input type="checkbox"/> 1-2 times a week <input type="checkbox"/> 3-5 times a week <input type="checkbox"/> Once in 2 weeks <input type="checkbox"/> Once in a Month <input type="checkbox"/> Less than once in a month <input type="checkbox"/>	
206	The last time you had anal sex with this commercial partner was a condom used?	Yes 1 No 2 Don't know 98 Can't Say 99	
207	With what frequency did you use condom with all of your commercial partner(s) during the past 6 months?*	All of the time 1 Most of the time 2 Some of the time 3 Rarely 4 Never 5	
208	The last time you had anal sex with this commercial partner was a lubricant used?	Yes 1 No 2 Don't know 98 Can't Say 99	
209	With what frequency did you use lubricant with all of your commercial partner(s) during the past 6 months?*	All of the time 1 Most of the time 2 Some of the time 3 Rarely 4 Never 5	
210	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	

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

Non-commercial partners

Q. N.	Questions and Filters	Coding Categories	Skip to
211	Did you Had anal sex with non commercial partners during past 6 months	Yes 1 No 2 No Response 98	219
212	What is the total number of non-commercial partner during the last 6 months?	Number of Partners <input type="text"/> Don't know 98 Can't Say	
213	How many times did you have anal sex with your last non-commercial partner during the past 30 days?	Number of times Don't know 98 Can't Say 99	
214	What is the frequency of anal sex with your non-commercial partner? RECORD NUMBER IN DIFFERENT CATEGORIES EXCLUSIVELY	Daily <input type="checkbox"/> 1-2 times a week <input type="checkbox"/> 3-5 times a week <input type="checkbox"/> Once in 2 weeks <input type="checkbox"/> Once in a Month <input type="checkbox"/> Less than once in a month <input type="checkbox"/>	
215	The last time you had anal sex with this non-commercial partner, was a condom used?	Yes 1 No 2 Don't know 98 Can't Say 99	
216	With what frequency did you use a condom with all of your non-paying partner(s) during the past 6 months?	All of the time 1 Most of the time 2 Some of the time 3 Rarely 4 Never 5	
217	The last time you had anal sex with this non-commercial partner was a lubricant used?	Yes 1 No 2 Don't know 98 Can't Say 99	
218	With what frequency did you use lubricant with all of your non-commercial partner(s) during the past 6 months?*	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%

Sex with females

Q. N.	Questions and Filters	Coding Categories	Skip to
219	Now I have some questions related to your sexual experiences with females. Have you ever had sexual intercourse with a woman?	Yes 1 No 2 No Response 98	→ 301 → 301
220	How many women have you had sexual intercourse with during the past 6 months?	Number of times <input type="text"/> Don't know 98 Can't Say 99	
221	Think about the last time you had sex with a female partner during the past 6 months, was a condom used?	Yes 1 No 2 Don't know 98 Can't Say 99	→ 301 → 301 → 301
222	How often did you use condom with your female partner over the past 6 months?	All of the time 1 Most of the time 2 Some of the time 3 Rarely 4 Never 5	

3.0 PREVALENCE OF STI AND TREATMENT SEEKING BEHAVIORS

Q. N.	Questions and Filters	Coding Categories	Skip to
301	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 1 No 2	→ 401
302	Sometime men experience a abnormal discharge from their penis/anus. During the last 12 months, have you had a bad abnormal discharge?	Yes 1 No 2 Don't know 98	
303	Sometimes men have sore or ulcer on or near penis/anus. During the last 12 months, have you had sore or ulcer near your penis/anus?	Yes 1 No 2 Don't know 98	
IF ANY OF 301 OR 302 OR 303 IS YES ASK 304 OTHERWISE GO TO 401			
304	Last time you had any of the above three problems did you seek any kind of advice or treatment?	Yes 1 No 2	→ 401
305	Where did you visit (Probe: Any other Place) RECORD ALL PLACE MENTIONED	Government Hospital A Health post B STI Clinic C VCT Centre D Private Hospital E Other (Specify) F STI Clinic G	

4.0 HIV TESTING

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

APPENDIX



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. Dhruva 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 Experts (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)



Letter from Blue Diamond Society (BDS)



नील हिरा समाज
Blue Diamond Society

Ref. No. 209-14-07-2010

Date: 14th July 2010



Date: July 8, 2010

To,
Monitoring and Evaluation Officer
HIV/AIDS and STI Control Board (HSCB)
Rani Marg-35, Baluwatar, Kathmandu, Nepal

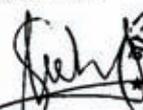
Subject: Request to support Mapping Studies conducted by Nielsen/HSCB.

Dear all,

HSCB is leading the Mapping study of the MARPs population in 41 priority districts of Nepal. The AC Nielsen has been selected to carry out the study with consultation and participation of local community people. Since, this study also includes the mapping of MSM/TG. The Mapping exercise will focus on third genders with in-depth interviews and through third genders indicative population size of their sexual partners (Masculine 'Ta' partners) will be estimated. Other than TG and Ta partners will be mapped through BDS's and its partners peer networks. This exercise will also use BDS and its partner's outreach contacts and other data as important component of Mapping tools agreed between BDS and HSCB. Moreover BDS people to be part of the mapping process where they can be the members of investigation team for MSM and TG and also give their inputs in tool 1, 2, 3 and four and in the district level validation workshops.

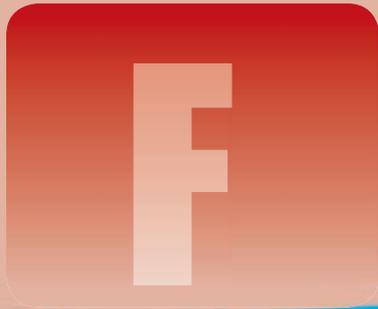
I would request you all to support this study by ensuring your active participation during field work.

Thank You


(Suben Dhakal)
Vice-president



APPENDIX



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 Chaudhary, 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, Niranjana 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, Tula, 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

Kaski: Darshan Adhikari, Yeshodha Labaju, Bimala Gurung, Sarita Timalina, Binod Tamang, Binita Sharma, Sushma Paudel, Mahesh Lamichhane, Bishwash Gurung, Bam Gurung, Dipak Tamang, Pradip Basnet, Sila Pant, Arju Gurung, Bishnu Adhikari, Varsha Rana, Asha, Menuka, Mina Kurmari Gurung, Maya Gurung, Roshani Rai, Shanti Gurung, Radhika Giri, Sunil Khadka, Kb Gurung, Anish Shrestha, Leena Rai, Sophia Lama, Suk Bahadur Gurung, Khushi Gurung, Jyoti Thapa

Kathmandu: Archana Khadka, Laxmi Sunuwar, Ambika Nakarmi, Liza Lama, Pancha Maharjan, Sunita Sharma, Seasom, Raj Kumar Gurung, Dipu Shrestha, Suresh Mahara, Bal Krishna, Subash, Dil Kumari, Tara Khadka, Asha Kumari Thapa, Kamala Dhakal, Niraj Shrestha, Amrit Adhikari, Om Prakash Chaudhary, Suman Maharjan, Aman Rai, Indra Lama, Nischal Adhikari, Raj Kumar Rai, Sarad Shrestha, Nirmal

Manandhar, Sanjay Gurung, Sunita Rai, Sita Shrestha, Ukesh, Laxmi Shrestha, Rajesh Maharjan, Raju Ghale, Yajna Raj Shrestha, Kumar Chaudhary, Balram, Anil Sherpa, Chandra Gurung, Govinda Chaudhary, Kumar Budhathoki, Suku Tamang, Dipendra Chaudhary, Pradip Adhikari, Rojan Thapa, Ravi Jee, Honey Jee, Sila Pant, Durga Simkhada, Nabin Thapa, Kanchhi Lama, Laxman Lama, Mohan Magar, Shrijana Thapa, Soniya Gurung, Subash Mali, Bishal Tahkuri

Lalitpur: Madan Tandukar, Bikesh Pradhan, Manish Tandukar, Birendra Baniya, Roshan Shrestha, Rabi Joshi, Simon Gurung, Sabin Rana, Renu Tamang, Ranjana Rai, Smriti Rai, Kanchi Maya Tamang, Laxmi Chaudhary, Basanti Sapkota, Mandira Chaudhary, Nirmal Wasti, Bishnu Koirala, Sanu Khatiwada, Sweetly Lama, Suntali Shrestha, Kasturi Gurung, Roma Maharjan, Laxmi Lama, Phul Maya, Sushil Rayamajhi, Jyoti Thapa, Sameer Thapa, Tanka Jee, Man Bdr. Majhi, Sanu Babu K.C., Amar Majhi, Youbraj Koirala, Budha Lama, Sajith, Gube Lama, Raj Kumar Magar, Prem Pakhrin, Santa Adhikari, Subarna Kapali, Nabin Jee, Mansha Ram Chaudhary, Prameshor Bhattarai, Keshav Jee, Nabraj Karki, Umesh Pandey, Anil Lama, Rajesh Tandukar, Dillip Budhamagar, Sadan Tandukar, Sagun Nath Joshi, Subhadra Bastakoti, Sita Sitaula, Arati Khadka, Rita Khadka, Kopila Basnet, Sunita Chhetri, Maya Ghale, Parbati Giri, Januka K.C

Kavre: Kamal Prasad Banjara, Dorje Lama, Madhav Tamang, Ramesh KC, Shyam Krishna Shahi

Mahottara: Binod Sah, Ram Baran Yadav, Ram Chhabila Yadav, Shova Poudel, Bindra Paswan, Babita Jah, Sita Gautam, Devi Thapa, Urmila Karki

Makwanpur: Keshave, Amrit, Ambika, Lalita, Bishwo Raj Adhikari, Mahesh Adhikari, Roman Karki, Dron, Sujan

Morang: Maya Chaudhari, Manoj Paswan, Phool Kumari Chaudhari, Tilak Katwal, Jyotish Ranjbansi, Khushi Rai, Dipendra Thapa, Bijay Magar, Nabaraj Rai, David Rai, Ashok Karki, Kedar Jung Limbu, Bashanta Bahadur Rai, Muskan Shrestha, Durga Bahadur Chaudhary

Nawalparasi: Milan Thapa, Damodar Sharma, Mohan Gurung, Bam Bahadur Rawal, Goma Thapa, Nasima Khatun, Rewati Bk, Malati Yadav, Pushapa Chaudhary, Sabitri Khanal, Lilu Nepali, Urmila Magar, Gobind

Chaudhary, Krishna Nepali, Hira Chaudhary, Binda Nepal, Ganga Thada Magar, Pramod Chaudhary, Mitra Kala Bhandari, Puran Bk, Rama Nepali, Hari Dev Pandey, Youbraj Gurung, Niraj Thakuri, Subash Kandel, Santosh Adhikari, Rupa Pariyar

Palpa: Sanu Khanal, Sita K.C, Bimala Lama, Pradeep Rajan, Radha K.C, Apsana Thapa

Parsa: Sumidha Pariyar, Sumita Kingring, Manu Bhandari, Subodh Poudhel, Mithlesh Gupta, Dipendra Paswan, Shabuddin Miya, Raju Saraf, Sanjya Singh, Ram Babu Thakur, Ram Dev Tharu, Champa Devi, Rekha Thapa, Bindu Bk, Reena Acharya, Neha Patel, Keshav Lamichhane, Ranjan Singh, Krishna Sah, Upendra Yadav, Roshan Shrestha

Rautahat: Champa Devi, Rekha Thapa, Bindu Bk, Reena Acharya, Neha Patel, Keshav Lamichhane, Ranjan Singh, Krishna Sah, Upendra Yadav, Roshan Shrestha, Tanka Thapa, Dil Bahadur Magar, Shiva Bhattarai, Jesika Yadav, Madhuri Baitha, Sunita Lama, Nur Mohamad, Binda Yadav, Reena Magar, Jyoti Magar, Sunil Tiwari

Rupendehi: Jugmaya Bhattarai, Sangita Chaudhary, Dhanraji Chaudhary, Uma Shrestha, Shanta Amagain, Gyan Kumari Chaudhary, Shanta Pun, Charis Sijapati, Narendra Chaudhary, Hem Raj Bk, Balmukunda Misra, Keshav Thapa Magar, Nabin Tamrakar, Ramesh Malla, Amrit Khadka, Himal, Sanjay Gupta, Binod Shrestha, Sunil Raymajhi, Rajesh Karush, Mahendra Thapa, Rojina Jee

Saptari: Manoj Shrestha, Pramod Shah, Bidhya Nand Chaudhari, Ram Prakash Chaudhari, Umesh Chaudhari, Pahari Mochi, Binit Narayan Chaudhari, Ajay Chaudhari, Durga Nanda Sonar, Sunita Sah

Sarlahi: Asmita Bhandari, Manju Magar, Pooja Thakur, Radhika Thakur, Baliram Shrestha, Manoj Yadav, Surya Shrestha, Dinesh Yadav, Kishori Ram, Nisha Thapa, Usha Timilsina, Yashoda Timilsina, Kalpana Thakur, Manahari Devi, Laxman Jee

Siraha: Jhagaru Sada, Laxmi Kant Chaudhari, Ram Shrestha, Hari Kumar Das, Bharosi Yadav, Niraj Kamti, Ram Prakash Saphi, Ram Udgar Mandal, Uma Khadka, Akalesh Shah, Momin Khatun, Ranjana Pariyar

Sunsari: Uttam Poudel, Lokendra Rai, Manish Gurung, Asmita Sundas, Gautam Limbu, Pawan Chamling, Bimala Malla, Sujata Chaudhary, Kabita Subba, Bulakani Devi Chaudhary, Sumitra Rai, Kul Bdr. Shrestha, Kalpana Basnet, Deepak Rai, Pranaya Majhi, Sandeep Rai, Ganga Limbu, Jeeban Karki, Birendra Chaudhary, Shuhani Rajdhani, Shrawan K. Chaudhary, Bharat Thapa, Hari Man Shrestha, Adhik Lal Chaudhary, Bechan Chaudhary

Surkhet: Bal Kumari Badi, Prabhakar Khadka

Syangja: Chudamani Bhandari, Ambika Rokka, Bijay Genwali, Radha Krishna Paudel, Shankar Rokka

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

APPENDIX



MONITORING CHECKLIST

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

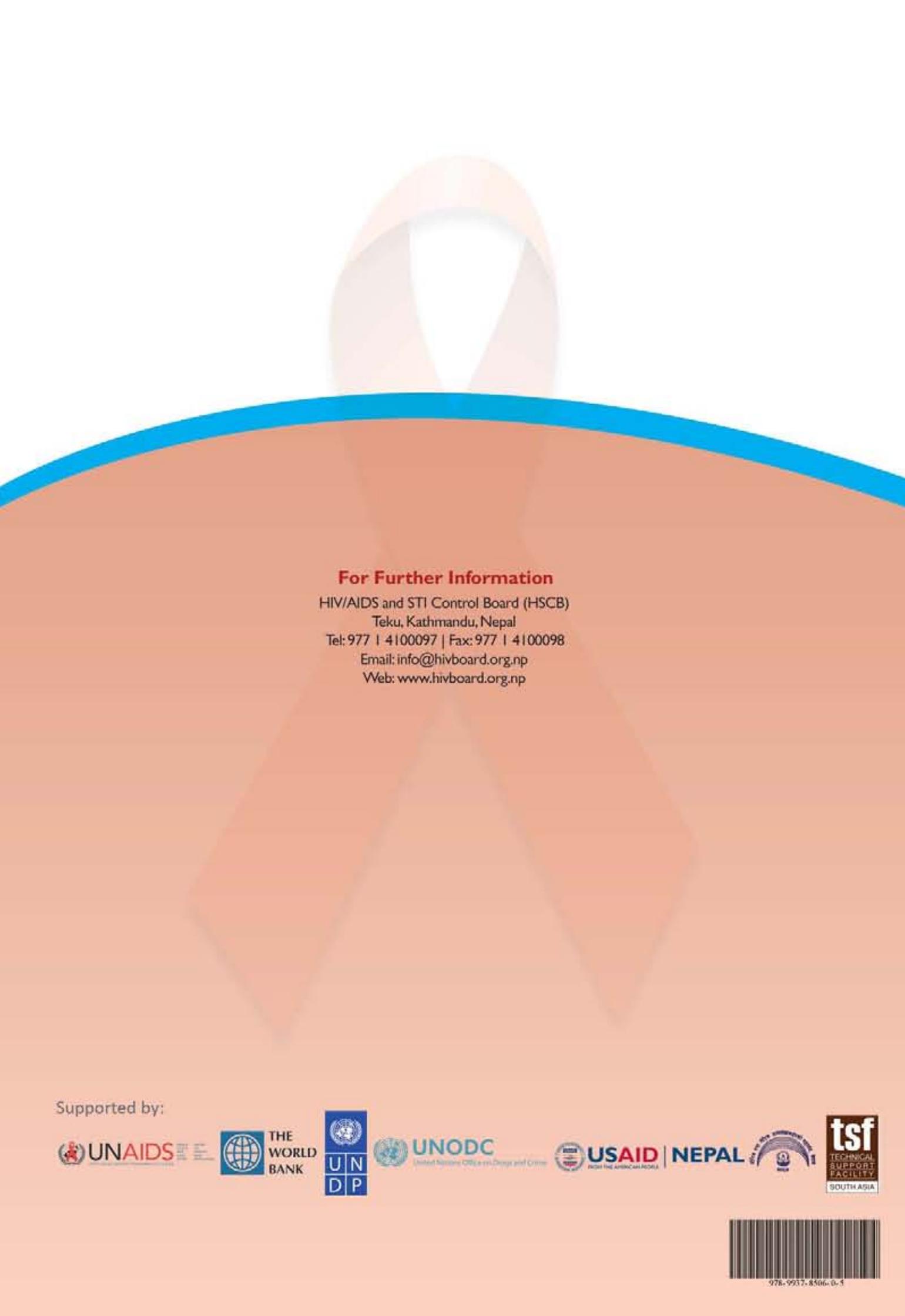
Key issues to be monitored	Yes	No	Remarks
Did any member of research team round up the location and identify major landmarks?			
Did assessment of hot spots / sites was completed using listing technique after segmenting location in smaller operational areas?			
Did research team draw a rough sketch of 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?			

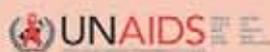
Comments and Suggestions:



For Further Information

HIV/AIDS and STI Control Board (HSCB)
Teku, Kathmandu, Nepal
Tel: 977 | 4100097 | Fax: 977 | 4100098
Email: info@hivboard.org.np
Web: www.hivboard.org.np

Supported by:



978-5937-8506-0-5