Centre for
Global Public Health
University of Manitoba

fpa
SRI LANKA
enriching relationships


**National STD/AIDS Control Programme**

No. 29, De Saram place, Colombo 10, Sri Lanka.
(94) 011 26 67163
(94) 011 533 6873 / (94) 011 2682859
info@aidscontrol.gov.lk

**www.aidscontrol.gov.lk**

**The Family Planning Association of Sri Lanka**

37/27, Bullers Lane, Colombo 07, Sri Lanka.
Tel: (94) 011 2 555 455 Fax: (94) 011 2 55 66 11
E-mail: fpa@fpasrilanka.org

**www.fpasrilanka.org**



ISBN 955-4-821019


National Size Estimation of Risk Populations (MPRPs) for HIV in Sri Lanka

# National Size Estimation of Most at Risk Populations (MARPs) for HIV in Sri Lanka

## REPORT

November 2013

The Global Fund
To Fight AIDS, Tuberculosis and Malaria

NATIONAL
STD/AIDS
CONTROL
PROGRAMME

# National Size Estimation of Most at Risk Populations (MARPs) for HIV in Sri Lanka

---

# REPORT

November 2013

The Global Fund
To Fight AIDS, Tuberculosis and Malaria

NATIONAL
STD/AIDS
CONTROL
PROGRAMME

fpa
SRI LANKA
enriching relationships

Centre for
Global Public Health
University of Manitoba

## LEAD CONSULTANT: FAMILY PLANNING ASSOCIATION SRI LANKA

Ms. Thushara Agus, Executive Director

Ms. Madusha Dissanayake, Local Team Leader & Social/Behavioral Scientist for National Size Estimation (NSE)

Ms. Bhagya Ratnayake, Family Planning Association- Sri Lanka, NSE Project Coordinator

Ms. Radhika Wikramanayake, Family Planning Association, NSE Documentation Officer

Dr. Thilothama Munasinghe, Public Health Specialist, Consultant to Family Planning Association Sri Lanka

## TECHNICAL ADVISORS TO LEAD CONSULTANT

Dr. Stephen Mosses, Senior Advisor for NSE, University of Manitoba, Canada

Dr. Shajy K. Isac, Statistician for NSE, University of Manitoba, Canada

## WORKING GROUP

**The Working Group consisted of the Family Planning Association Sri Lanka, the Institute for Participatory Interaction in Development and the Alcohol and Drug Information Center, and worked in consultation with the Technical Advisors.**

Amil Epa, NSE Project Manager, Institute for Participatory Interaction in Development

Mr. Suranga Wanniarachchi, Alchohol and Drug Information Center, NSE Documentation Officer

Ms. Kaveesha Galappaththi, Alcohol and Drug Information Center

ISBN 955-4-821019

# ACKNOWLEDGEMENTS

The FAP Sri Lanka on behalf of the research team would like to express their sincere gratitude to the following for their support and participation.

## Surveillance Advisory Committee (SAC)

Dr. S. Liyanage, *Chairperson SAC & Director, National STD/AIDS Control Programme (NSACP)*

Dr. A.P.S Beneragama, *Coordinator Special Survey Global Fund Project & Consultant Epidemiologist, NSACP*

Dr. A. Karawita, *Consultant Veneriologist, NSACP  Venereologist*

Dr. C. Wickramasuriya, *Consultant Veneriologist, NSACP*

Dr. G. Weerasinghe, *Consultant Veneriologist, NSACP*

Dr. K.A.M. Ariyaratne, *Consultant Veneriologist, NSACP*

Dr. K. Buddhakorala, *Consultant Veneriologist, NSACP*

Dr. L. Rajapakse, *Consultant Veneriologist, NSACP*

Dr. N. Punchihewa, *Senior Medical Officer, NSACP*

Badrani Senanayake, Assistant Director- Research & Outreach, *National Dangerous Drugs Control Board* (NDDCB)

Dr. D. Ranatunga, *Social Mobilization Officer, Joint United Nations Programme on HIV/AIDS*

Dr. S. Janakan, *National Professional Officer, World Health Organization, Sri Lanka*

Dr. M.C. Weerasinghe, *Senior Lecturer, Department Community Medicine, Faculty of Medicine, Colombo*

Prof. A. Pathmeswaran, *Professor of Community Medicine, Faculty of Medicine, Ragama*

Prof. S. Sivayogan, *Professor of Community Medicine, Faculty of Medicine, Sri Jayawardenapura*

## Project Review Committee

Dr. Sudath Samaraweera, *Project Director, Global Fund to Fight AIDS, Tuberculosis and Malaria, Ministry of Health*

Dr. A.P.S Beneragama, *Coordinator SAC & Consultant Epidemiologist, NSACP*

Dr. K.A.M. Ariyaratne, *Consultant Veneriologist, NSACP*

Dr. C Malavige, *Medical Officer SIM*

Ms. T  Wickramasinghe , *Accountant TB component, GFATM Project, Ministry of Health*

## Community Based Organizations (CBOs) involved in field work for NSE

**Alcohol and Drug Information Center** - *CBO working with Drug Users*

**Mithuru Mithuru** - *CBO working with Drug Users*

**Heart to Heart**- *CBO working with Men who have Sex with Men*

**Wayamba Govi Sanwardhana Padanama**- *CBO working with Female Sex Workers*

**Organization of Environment and Children Rights Prevention** - *CBO working with Beach Boys*

**Rajarata Gami Pahana-** *CBO working with Men who have Sex with Men and Female Sex Workers*

**Laksetha Sahana Seva-** *CBO working with Female Sex Workers*

**Saviya Development Foundation-** *CBO working with Men who have Sex with Men and Drug Users*

**Community Oriented Resource Exchange (CORE) -** *CBO working with Beach Boys*

**Human and Natural Resource Development Foundation (HNRDF)-** *CBO working with Female Sex Workers*

**Sri Lanka Human Development Foundation (SLHDF) -** *CBO working with Female Sex Workers.*

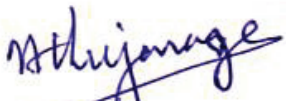
# FORWARD

Sri Lanka has maintained a low prevalence HIV epidemic status (less than 0.1% among adults in the general population) in the South Asian region since 1987. The National STD/AIDS Control Programme (NSACP) of the Ministry of Health spearheads the multi-sectoral HIV prevention response of the National AIDS Policy on advice of the National AIDS Council chaired by H.E. the President.

The epidemiologically acknowledged strategy to maintain the low prevalence status is to target the key populations (female sex workers, men who have sex with men, injecting drug users and beach boys) driving the epidemic with preventive interventions. The National Size Estimation of most at risk populations for HIV in Sri Lanka provides the NSACP with valuable data on the size and locations of these groups towards the design and delivery of programmatic interventions.

I thank the Family Planning Association Sri Lanka, who conducted the study in collaboration with the University of Manitoba, the Alcohol and Drug Information Centre and the Institute for Participatory Interaction in Development and active support of community based organizations. I deeply appreciate the valuable inputs of the Surveillance Advisory Committee throughout the study.

This study would not have been possible without the financial support of the Global Fund for TB, AIDS and Malaria.



Dr. Sisira Liyanage

Director National STD/AIDS Control Programme, Sri Lanka

*December 19 2013*

# ACRONYMS

| | |
|---|---|
| ADIC | Alcohol & Drug Information Centre |
| AIDS | Acquired Immune Deficiency Syndrome |
| BB | Beach Boys |
| BSS | Behavioral Surveillance Survey |
| CBOs | Community Based Organization |
| CIDA | Canadian International Development Agency |
| CSO | Civil Society Organizations |
| DS | Divisional Secretariat |
| DU | Drug Users |
| FPA | Family Planning Association |
| FRO | Field Research Officer |
| FS | Field Supervisor |
| FSW | Female Sex Worker |
| GFATM | The Global Fund to Fight AIDS, Tuberculosis and Malaria |
| HASP | HIV/AIDS Surveillance Project |
| HIV | Human Immunodeficiency Virus |
| HRA | High Risk Activity |
| HRG | High Risk Group |
| IDU | Injecting Drug User |
| INGO | International Non-Governmental organizations |
| IPID | Institute for Participatory Interaction in Development |
| IPPF | International Planned Parenthood Federation |
| KI | Key Informant |
| KP | Key Populations |
| L1 | Level 1 |
| L2 | Level 2 |
| MARPs | Most At Risk Populations |
| MoH | Ministry of Health |
| MO | Medical Officer |
| MSM | Men having Sex with Men |
| MSW | Male Sex Worker |
| NDDCB | National Dangerous Drugs Control Board |
| NGO | Non-Governmental Organization |
| NSACP | National STD/AIDS Control Programme |
| PLHIV | People living with HIV |
| SAC | Surveillance Advisory Committee |
| SDP | Service Delivery Program/Package |
| SM | Social Mapping |
| SR | Sub-recipient |
| SSR | Sub-sub recipient |
| STD | Sexually Transmitted Diseases |
| STI | Sexually Transmitted Infection |
| SW | Sex Workers |
| UN | United Nations |
| UNAIDS | United Nations joint program on HIV and AIDS |
| UoM | University of Manitoba |
| WG | Working Group |

# TABLE OF CONTENTS

# LIST OF TABLES

# LIST OF FIGURES

# EXECUTIVE SUMMARY

Size estimation of Most-At-Risk Populations is a precursor to effective HIV prevention interventions and epidemic projections in any country. A national study was conducted by the National STI and AIDS Control Program (NSACP), Ministry of Health, Sri Lanka through a consortium of management and technical partners including the Family Planning Association (FPA) of Sri Lanka; University of Manitoba (UoM), Canada; Alcohol and Drug Information Center (ADIC), Sri Lanka. The financial assistance for the study was provided by the Global Fund.

The overall goal of the size estimation was to provide accurate information on the size and locations of most-at-risk populations for HIV in Sri Lanka, with a view to helping to improve the scale, quality and impact of HIV prevention programmes among these populations. The specific objectives of the study were to: 1) identify key locations where MARPs congregate and can be reached for HIV prevention programmes and services; 2) describe the typology of MARPs (e.g. brothel-, street- or venue-based etc); and 3) estimate the size of MARPs populations. The MARPs interested in the study included Female Sex Workers (FSWs), Men who have Sex with Men (including primarily male sex workers (MSWs) and Nachchis), Drug Users (DU), including injecting drug users; and Beach Boys (BB). The size estimation used two approaches, a globally tested geographic mapping approach (Emmanuel, Isac & Blanchard, 2013), and a validation of existing spots in 4 districts (Colombo, Gampaha, Kaluthara and Galle), where the information about the hotspots was available from previous mapping in the districts for all the four study groups.

The data generated through this methodology provided an important starting point for micro-level planning HIV prevention programmes for MARPs, including the prioritization of province/districts and locations for establishing MARPs programmes. The geographic mapping methodology applied involved collecting data at two levels: in Level 1, interviews were conducted with carefully selected secondary key informants to identify spots where MARPs may be found, their operational dynamics, and the estimated minimum, maximum and usual numbers of MARPs who frequent the spots; Level 2 involved validation of the existence of the spots and size estimates through interviews with members of the most-at-risk populations themselves at the identified spots. This report includes a detailed discussion of the size estimation methodology.

The study adopted a two-tier training approach. An initial 2 day training of trainers (TOT) workshop was conducted in May at Family Planning Association (FPA) of Sri Lanka office in Colombo. This was followed by a five day residential training workshop in June 2013 at the FPA Chinthana Training Centre, Nainamadama that consisted of classroom and field based training sessions. Workshop participants included members of the data collection teams (both MARPs and non MARP members), data management personnel, field supervisors, members of the National STI / AIDS Control Program and social mobilizes drawn from MARP

communities. The approach ensured involvement of the target communities and peer group members at every stage of the study, thus gaining their support and endorsement. The field work was carried out from June 2013 to August 2013 in all 25 districts in the country.

The primary data collection unit was the Divisional Secretariat (DS). The research covered all 303 DS divisions. To obtain the final estimate, the ranges of estimate of each spot were rolled up for a zone/DS division, district/city and province to produce minimum and maximum estimates in each of these geographic units. To arrive at a single "best" estimate, the mid-point ("mean") of the minimum and maximum estimates was used.

A total of 5784 key informants were interviewed in 21 districts, where geographic mapping was introduced They represented various types of key informants to interviewed derive hotspot details. On an average, over 275 key informants were interviewed per district with a maximum of 611 interviews in Kandy district.

Across the country, the study identified a total of about 3683 FSW spots and an average of about 14,132 FSWs in Sri Lanka, ranging from a minimum of 12,329 to a maximum of 15,935. Over half of the estimated FSWs are from Western Province, mostly in Colombo. Street/public place based FSWs dominated and account for about 42 percent, followed by hotel/lodge and home/shanty based (28%).

An intervention requires effective planning and resource allocation and hence the study assessed the progressive coverage of FSWs by province and district. An intervention in western province alone can reach a coverage of about half of the FSWs in the country. Five out of 9 provinces in the country, namely Western, North Central, Central, North West and Sabaragamuwa provide coverage of about 84% of the FSWs in the country and suggest the resources may be allocated into these provinces for effective intervention. Further, Colombo district alone account for 44% of the FSWs in the country and this along with Gampaha provides a reach of 51% of the total FSWs. Eight out of 25 districts in the country account for 80% of the FSWs, which suggest that one-third of the total 25 districts provides a coverage of 80% FSWs in the country.

Estimated number of MSMs in the country is slightly less than numbers of FSWs and is estimated an average of 7551 MSMs with a range of 6547 to 8554. MSWs and Nachchis often engage in sex with more number of partners than other MSMs and therefore, the study estimated MSWs and Nachchis. Approximately half the estimated MSMs are either MSWs or Nachchis. Most MSMs in the country are from the Western Province and again from Colombo district. The estimated MSMs are less than 500 each in all districts, except that in Colombo and Gampaha.

Men sex with men (MSM) also largely concentrated in Western Province and about 65% of the MSMs in the country cruise here. While two provinces, Southern and Western, account for coverage of about 73% of the MSMs, it is about 81% when included the Central Province.

Colombo district alone account for 53% of the MSMs; and Colombo and Gampaha together in the western province account for 63% of the MSMs. Similarly, including another district (Kandy) would reach 68% of the total MSMs. Seven districts in the country provide a reach of 81% of the MSMs.

The estimated number of DUs in Sri Lanka is around 17,459, ranging from a minimum of 15,338 to a maximum of 19,542 DUs. The study estimated that about 2% of the DUs inject drugs and about 50% of the injecting drug users share needles. A large proportion of the DUs in the country were estimated in western province (42%), followed by North Western province (18%). The North Western and Western Province together provides coverage of three-fifth of the DUs, whereas 4 out of 9 provinces provide coverage of as high as 85% of the DUs in Sri Lanka. As far as coverage of DUs by districts is concerned, one-fifth of the DUs each are from Colombo and Gampaha districts, suggesting these 2 district cover about two-fifth of the DUs in Sri Lanka. Eight out of 25 districts in the country reach a very high coverage of DUs in Sri Lanka.

The study estimated an average of 1314 BBs in Sri Lanka, ranging from 1142 to 1486. A very high level of seasonality is seen with BBs with the number increasing by over 50% from the usual numbers during the peak month of the year. It may be also noted that the BBs are seen only in 4 provinces, namely, Southern, Western, Eastern and North Western. The Southern Province alone accounts for 45% of the BBs in Sri Lanka. The Southern and Western Province together account for 72% of the BBs; and this along with Eastern Province provides coverage of as high as 97% of the BBs in Sri Lanka. BBs are estimated only in 10 districts in the country, with the highest estimate in Ampara district (24%). Ampara and Galle districts together give coverage of 44%; and including Kaluthara along with these two districts account for 61% of BBs. Over 80% coverage of BBs can be reached in 5 districts.

In conclusion, the study showed a certain provinces and districts are important as far as the HIV prevention intervention among MARPs is concerned. Interventions in Western, North Central, Central, North Western, Sabaragamawa, Southern and Eastern Provinces would provide coverage of large proportion of all the 4 MARPs groups. Similarly, the districts of Colombo, Gampaha, Kandy, Polonnoruwa, Rathnapura, Kurunegala, Anuradhapura, Ampara, Matara, Galle and Jaffna are the priority districts for the HIV prevention program among MARPs are concerned.

The study was conducted in all urban areas, and other town areas of every DS divisions in the country in view of the available resources. Thus, the given estimates refer only to the areas that were mapped. Any gaps due to failure to identify all the spots in the L1 stage of mapping was addressed by incorporation of questions in Level 2 identify such spots.

The methodology identified those spots, where MARPs visits for high risk behaviour. Hence, the estimates provided in this study only relate to those MARPs who visit spots for high risk

behavior. The study may not have captured those engaging in risky behaviour through other modes, such as networks, one-on-one interaction etc.

In a study of this nature involving participants of high risk behavior, their mobility makes double counting a possibility. The study tried to address this issue by collecting information regarding the mobility of MARPs from primary key informants during validation of the spots, and during analysis.

In each identified spot, MARP members were identified and interviewed. The study assumes that interviewed MARPs have complete knowledge of the spot. The quality of data, particularly the estimates is affected by this assumption.

In addition to providing reliable estimates, the approach provides contextual milieu and information on group operational characteristics, based on the sub-typologies. Information regarding the geography of a spot along with the number of key populations attached to each spot serves as a valuable tool for planning services and intervention.

This study has given a strong data as far as the hotspots are concerned. Any scientific study among the MARPs groups is a challenge since it lacks a sampling frame. The list of hotspots generated from the study can be used for all the scientific researches in the country, including the Integrated Behavioural and Biological Survey (IBBS) in future. In addition, the data generated from this study can help in a) identification and allocation of peer educators in programme locations; b) project implementation planning, including micro-planning at hotspot level; c) setting up individualized tracking systems for MARPs; and d) as baseline figures for monitoring and evaluation purposes.

# 1. BACKGROUND

## 1.1 Introduction

Although classified as a lower middle- income country, with a population of almost 21 million, Sri Lanka has achieved remarkable social and health indicators, some of which are on par with those of developed nations. Geographically divided into 9 provinces and 25 districts, Sri Lanka is classified as a country with a high social development in Asia and globally.


Figure 1.1.1: The nine provinces of Sri Lanka

## 1.2 HIV in Sri Lanka

The country is classified as having a low level epidemic of HIV in the Southeast Asia region, with an estimated HIV prevalence of less than 0.1% among adults (15-49 years). Almost three decades since the detection of the first HIV infection in Sri Lanka, as at December 2012, a cumulative total of 1649 HIV infections have been reported to the National STD/AIDS Control Programme (NSACP). Over the years a slow but a gradual increase in the number of reported cases has been observed, in part due to the increase in testing facilities and availability of antiretroviral therapy, which has encouraged more people to come forward for HIV testing. The main mode of transmission is unprotected sex between men and women followed by men having sex with men. It has been claimed that unprotected paid sex, the sharing of contaminated needles and syringes by injecting drug users and

unprotected sex between men seem to be the commonalities observed in Asia in relation to HIV transmission (UNAIDS, 2008).

In Sri Lanka, the emerging trend of a large youth population, internal and external migration, an underground but thriving sex industry, low levels of condom use and concurrent sexual relationships among most-at-risk-populations (MARPs) may be regarded as the factors most likely to influence the prevalence of HIV in the future. Further, low levels of sexually transmitted infections (STI), availability and accessibility to free state health services, a high literacy rate and the presently low number of drug injectors, are factors that may be considered to constrain the spread of HIV.

The first Behavioral Surveillance Survey (BSS) conducted by the NSACP in 2006-2007 and the Mapping Key Populations for HIV prevention in Sri Lanka (NSACP-Sri Lanka, 2010) documented the relatively high levels of risk behavior amongst MARPs and noted that if these groups (FSWs and MSMs) were not adequately addressed, Sri Lanka would be vulnerable to an increase in HIV infections.

Experience from other countries in South Asia has shown that concentrated HIV epidemics involving MARPs, even with a low prevalence among MARPs, can expand quickly within those sub-populations and affect the wider population through “bridge populations” [usually men who have sexual partnerships with both members of higher risk populations (MARPs) and lower risk partners]. In other words, HIV transmission to other populations will occur depending on the magnitude of the risk behaviours among these populations at risk as well as the size of the MARPs

A geographic mapping of the size and sexual behaviours of the MARPs (FSWs, IDUs, MSMs and Beach boys) is critical for program planning. It will help to predict how fast the local epidemic is spreading, determine where prevention interventions for these groups will have the greatest impact, and provide essential information for monitoring programme coverage. Size estimation of the MARP is the key information programme managers require to plan and implement preventive programs for these populations, determine resource allocation and advocate for obtaining donor funds.

# 2. RESEARCH OBJECTIVES AND METHODS

## 2.1. Key Objectives

The overall goal of the national size estimation was to provide accurate information on the size, locations and characteristics of most at risk populations for HIV (MARPs) in all the urban and other town areas in DS divisions of Sri Lanka, with a view to improving the scale, quality and impact of HIV prevention programmes among these populations.

**Box 1: Objectives of the size estimation study**

1. To identify the locations of FSWs, DU/IDUs, MSMs and Beach Boys, where they operate
2. To estimate the population sizes of the MARPs
3. To describe the operational typology of the MARPs
4. To conduct a knowledge translation and capacity building workshop for HIV program managers and NGOs on program scaling up, based on the mapping, and micro-planning for program implementation.

This research was conducted through the National STI and AIDS Control Program to generate a national size estimation of most-at-risk populations (MARPs) in Sri Lanka, a precursor to effective prevention interventions with most-at-risk populations. The proposed size estimation aimed at paving the way for supporting the government's Round 9 Global Fund proposal, with its principle focus on prevention for most-at-risk populations.

In addition to the mapping per se, the technical team of the University of Manitoba also incorporated a process of capacity building for scaling up targeted interventions for MARPs. The specific objectives of the research are provided in Box 1.

## 2.2. Collaborating institutions

The national response to HIV in Sri Lanka is spearheaded by the National STD and AIDS Control Program, which plays a key role in coordinating the response to the challenge of HIV/AIDS among all stakeholders in the country, and is the Health Ministry focal point for the implementation of HIV/AIDS policy in Sri Lanka. The program also coordinates policy implementation through the National AIDS Committee. The national program is aimed to strengthen its program for high risk group interventions in the prevention of HIV transmission, to strengthen the multi-sectoral involvement, and to develop a program monitoring & evaluation framework and management information systems.

This research was conducted through the support of the NSACP. Strong support for the project was expressed at all levels of the Ministry of Health, as well as other government ministries and agencies, including those associated with the legal system.

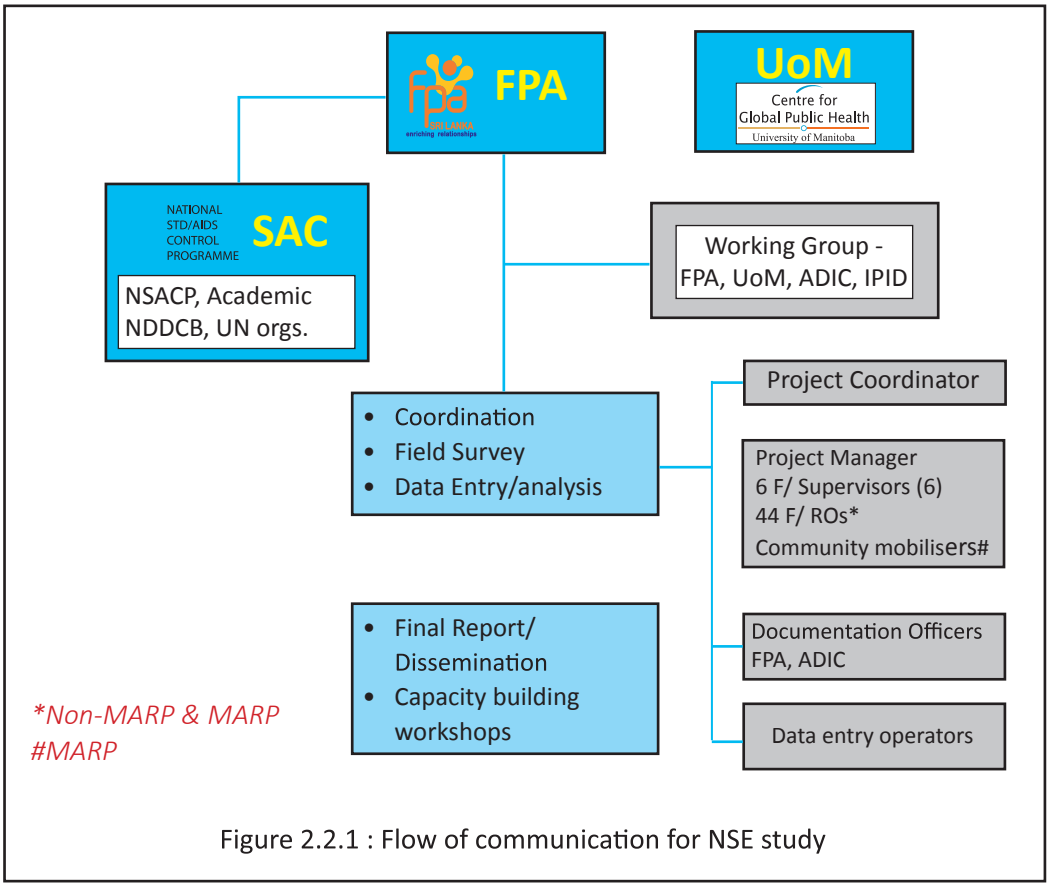



Figure 2.2.1 : Flow of communication for NSE study

## 2.2.1 The National STD and AIDS Control Program

The National STD and AIDS Control Program, of the Ministry of Health spearhead the multi-sectoral response to HIV in Sri Lanka, based on the National AIDS Policy. Oversight is provided by the National AIDS Committee, chaired by H.E. the President. The NSACP functioned as the Project Coordinating agency and Director NSACP chaired the Surveillance Advisory Committee.

## 2.2.2 Family Planning Association of Sri Lanka (FPA SL) – Management lead

The FPASL is the pioneer and national level non-governmental organization in Sri Lanka working in the sphere of sexual and reproductive health. As a member association of the International Planned Parenthood Federation (IPPF), FPASL provides services, education and awareness on reproductive health, and leads advocacy related to the promotion of sexual and reproductive health rights, especially among vulnerable sexually diverse groups and people living with HIV/AIDS (PLHIV). FPA Sri Lanka has long experience in partnering with the Government, corporate sector, donor agencies, NGOs, INGOs, and national and international universities.

As the lead consultant for this activity, FPASL was responsible for supporting the University of Manitoba (technical consultant) in the development of the study protocol and instruments, recruitment and training of field teams, data entry, logistics and overall coordination.

### 2.2.3 University of Manitoba (UoM)– The technical lead

The University of Manitoba (UoM) has extensive experience in HIV/AIDS prevention programming with MARPs, and with the design and implementation of mapping and surveys with MARPs in South Asia and Africa. Specifically, the UoM has been implementing a program of research and focused prevention programming with sex workers in Kenya since the early 1980s. Since 2001, the UoM has been implementing programs for sex workers in several districts of India reaching more than 130,000 female sex workers and high risk MSM. In this context, the UoM has implemented mapping and situation assessments for multiple MARPs (sex workers, MSM and IDUs) in more than 250 Indian towns and cities in southern India. The UoM has been implementing integrated biological and behavioural surveys among FSWs, clients and MSM in 5 districts of Karnataka under the India AIDS Initiative (*Avahan*) funded by the Bill & Melinda Gates Foundation. The UoM is also a technical partner of the Canadian International Development Agency (CIDA)-funded HIV/AIDS Surveillance Project (HASP) in Pakistan. More recently, the UoM has conducted a mapping study of MARPs in Afghanistan, China (Sichuan Province), Nigeria and Ukraine.

As technical partner, UoM was responsible for providing technical support in developing protocol, tools, training of field team, data analysis and report writing.

### 2.2.4 The Institute for Participatory Interaction in Development (IPID)

IPID is a non-sectarian NGO engaging in development of communities through participatory approaches. IPID is a local and international consultant/service provider in the spheres of participatory rural development, learning and action, development of technology, monitoring and evaluation, and social assessment methodologies.

As project manager, IPID was responsible for implementation and supervision of the field research, and worked closely with FPASL to ensure the timely completion of the activities.

### 2.2.5 Alcohol & Drug Information Centre (ADIC)

ADIC Sri Lanka is a leading NGO working at community level to facilitate and sustain behavioural changes related to use/abuse of alcohol, tobacco and lifestyle substances, especially among young people. ADIC's successes have been recognized locally and internationally. As an Associate partner of FPA, ADIC provided human resource for the field study and data entry.

## 2.3 Guidance and Oversight

### 2.3.1 The Surveillance Advisory Committee (SAC)

The Surveillance Advisory Committee (SAC) is chaired by the Director National STD/AIDS Control Program (NSACP) and includes representatives of the NSACP (Consultant Venereologists, Head of the Strategic Information Management Unit, and Epidemiologist), Universities (Public Health specialists) and civil society organizations (CSOs) working with MARPs and PLHIVs. The SAC Coordinator is the Epidemiologist/NSACP.

As the core decision making body for this activity, the SAC was responsible for reviewing and approving the study protocol, monitoring the progress and quality of the field study, liaising between FPA and GFATM and ensuring the timely completion of all activities.

### 2.3.2 The Working Group (WG)

The Working group (WG) was constituted to oversee the day to day activities of the size estimation. The Working group (WG) comprised representatives of the FPASL, UoM, IPID and ADIC and was chaired by the FPA. The WG was responsible for daily monitoring of activities, and met regularly to review progress and update the SAC.

## 2.4 Pre-mapping activities

The following activities were completed before the field study started. Ethical approval for the study was granted by the Ethics Review Committee, Faculty of Medicine, University of Colombo.

2.4.1 Involvement of stakeholders
2.4.2 Identifying target groups (MARPs) for study
2.4.3 Deciding the study methodology
2.4.4 Identifying the geographical unit area for data collection
2.4.5 Identifying key informants
2.4.6 Development of data collecting instruments -
2.4.7 Recruitment of staff / development of TORs for staff categories
2.4.8 Training
2.4.9 Field Teams

### 2.4.1 Involvement of stakeholders

As HIV Prevention is a multi-sectoral activity, FPA as lead consultant actively engaged with representatives of Government departments, Health, Law enforcement, local NGOs and CSOs working with MARPs, to brief them on the study objectives, methodology, and the desired roles and responsibilities of individual stakeholders. All stakeholders confirmed their support for the activity.

The Inspector General of Police Sri Lanka, issued a letter to facilitate the support of law enforcement officials during the implementation of the field study. The Deputy Director-General of Health Services (Public Health Services) similarly notified the Medical officers of Health (MOHs) to support field data collection. Further, members of the NSE field team met with each MOH to brief them on the objectives and data collection process. In most study areas, the MOH clinic staff helped the field teams to demarcate the DS divisions within the MOH areas and acted as tertiary informants on possible locations where MARPs may be found.

### 2.4.2 Identifying target groups (MARPs) for the study

The Surveillance Advisory Committee (SAC), recommended that Female Sex Workers (FSWs), Men having Sex with Men (MSMs), Drug Users (DUs) and Beach Boys (BB) be prioritized for mapping as national data pointed to them being at highest risk for transmission of HIV in Sri Lanka.

The definitions and typologies of the four groups of MARPs as used for data collection are described below.

- Female sex workers
- Men who have sex with men
- Drug users
- Beach boys

**Female sex workers (FSW)**

*Definition : Any female, who is selling sex in exchange of money or goods*.

FSWs are categorized as the following typologies based on their site of operation:

**(i)** ***Street-based FSWs*** solicit clients on the street or in public places such as parks, railway stations, bus stands, markets and cinema halls.

**(ii)** ***Lodge/hotel-based FSWs*** reside and receive clients in the lodge. These FSWs do not solicit publicly for the clients and usually depend on the lodge owner, manager or any other employee of the lodge to bring in the clients. The profits are shared between the FSW and the lodge owner. In some instances, lodge-based FSWs may also be contracted by the lodge owners through agents who supply FSWs. FSWs may move from one lodge to the other at the behest of the agents.

**(iii)** ***Home/shanty-based FSWs*** usually operate from their homes, contacting their clients on the phone, through word of mouth or through network operators and pimps. This group may be further sub-divided as shanty based and home based FSWs.

**(iv)** ***Brothel based FSWs*** live in the brothel, which is a place where a small group of FSWs is managed by a Madam (auntie) or an agent. These FSWs do not go out of the brothel to solicit their clients, instead are sought by clients at the brothel.

**(v)** ***Karaoke bar/Casino/Night club/Massage parlor-based FSWs*** are those who operate in these settings. A large proportion of them are known to provide sexual services to clients.

**(vi)** ***Vehicle based FSWs*** are those who solicit clients from vehicles. Usually, they wait in a vehicle on the streets and clients approach the FSWs.

**High risk MSMs**

*Definition : The term "men who have sex with men" is used to denote all men who have sex with other men as a matter of preference or practice, regardless of their sexual identity or sexual orientation, and irrespective of whether they also have sex with women or not.*

The term does not refer to those men who might have had sex with other men as part of sexual experimentations or very occasionally depending on special circumstances.

This study focused men who have sex with other men, including male sex workers, Nachchi's and other MSMs as this behavior is linked to the risk of HIV transmission and acquisition. The three identified groups in this category are:

(i) ***Nachchi***: Effeminate males who have sex with other males

(ii) ***Male Sex Workers (MSW)***: Males who get paid in cash or kind for having sex with another male

(iii) ***Other MSM***: Males who have sex with other males but who cannot be classified under above two categories (eg: Gay men)

**Drug users**

This study assessed the number of **current users** (oral and injecting) rather than ever users.

The definitions used in the study are as follows;

- *A current user is a person using drugs during the 3 months preceding the study.*
- *An injecting drug user is a person who injects drugs, for non-therapeutic purposes, irrespective of the type of drug injected.*
- *A current injecting user is a person who has been injecting drugs during the 3 months preceding the study*.

In addition, the study assessed the number of the persons using drugs during the 6 months preceding the study to understand the changing patterns of drug use, in particular,

switching from inhaling to injecting or vice versa, if any as well as the number of injecting users who share needles.

**Beach boys**

Beach boys are a group of males (homosexual, heterosexual or bisexual) who cruise in and around beach areas, and associate with tourists as guides, animators or providers of any form of gratification including insertive and receptive sex. This group is found in select coastal areas where tourism is a mainstay of the economy. This study focused on identifying and estimating number of beach boys in these areas.

### 2.4.3 Deciding the study methodology

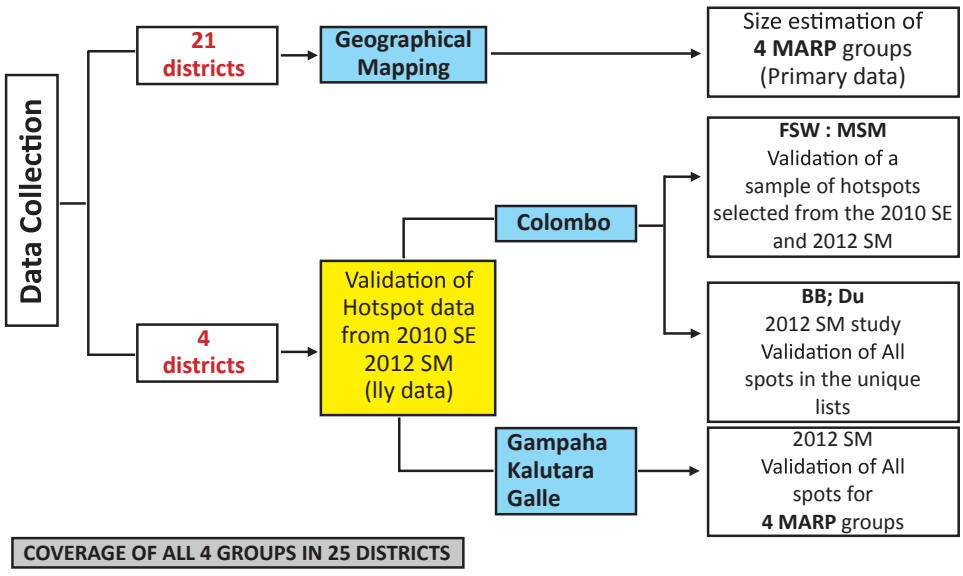



Figure 2.4.3.1 : Data collection methodologies for field study

*Geographical mapping* has been widely used as the preferred methodology to identify the operational locations and provide estimates of MARPs (Emmanual *et al,* 2013)[1]. It is epidemiologically similar to a cross sectional survey and provides point estimates of the target population/s under study. As rapidly changing HIV risk situations fuel the mobility of MARPs, geographical mapping needs to be conducted rapidly within a relatively short period of time to avoid double counting of MARPs.

In Sri Lanka, the two previous studies provided validated lists of hotspots in a select number of districts where MARPs operate. The 2010 Size Estimation study identified hot spots for FSWs and MSMs based on MOH areas in 4 districts (Colombo, Anuradhapura, Batticoloa, Nuwara Eliya) (NSACP Sri Lanka, 2010)[2] while the Social Mapping of MARPs (NSACP Sri Lanka, 2012) [3] generated hotspot lists for the 4 groups of MARPs in the a select number of districts – FSW (13), MSM (5), DU (9) and BB (7) based on DED divisions.

As time and resources were constrained, it was decided that the 2013 National Size Estimation study would be conducted in all 25 districts, and target the 4 groups of MARPs using a combination of Geographical mapping in 21 districts and Validation of data from the 2010 and 2012 studies (secondary data) in 4 districts (Colombo, Gampaha, Kalutara and Galle).

### 2.4.4 Identifying the geographical unit area for data collection

The Divisional Secretariat division (DS division) is the smallest administrative division under the decentralized provincial administration and has defined boundaries. The DS Division or 'zone' was selected as the unit area for data collection for geographical mapping. Geographical mapping was done in 21 districts and covered 272 of the 331 DS divisions. Standard government codes were used to identify district, town and zone to avoid confusion and facilitate the linking of study data with other information such as census data.

Table 2.4.4.1 Suggested secondary key informants (Level 1 respondents)*

| | |
|---|---|
| • Female Sex workers (SW)<br>• MSM<br>• DU/IDU<br>• BB<br>• Taxi driver<br>• Local food sellers<br>• Pimp/brothel owner/madams<br>• Watchmen/security staff<br>• Hotel/lodge workers<br>• Bar workers/owners/patrons<br>• Porters<br>• Petty shop owners<br>• Pharmacist | • Lottery sellers<br>• Sanitary workers on the streets/ toilets<br>• Networks of MARPs<br>• NGO staff<br>• Health care service providers<br>• Gov./law enforcement officials (police etc)<br>• Street families<br>• Beggars<br>• Public/private transport staff<br>• Construction workers/labourers<br>• *Others* |

**The list was developed in consultation with community members, program managers, and program designers*

### 2.4.5 Identifying Key respondents

The study identified Key informants (KIs) - persons who are likely to have information on the profiles of the locations and estimates of number of persons engaging in high-risk activity (Table 2.4.4.1).

***Primary Key Informants:*** MARPs themselves, e.g. commercial sex workers, men who have sex with men, and injecting drug users.

***Secondary Key informants:*** Persons who are in direct contact with MARPs, e.g. pimps, network operators, taxi drivers etc. and other such as police, STI service providers, and NGO workers who interact with MARPs in their professional capacities.

Secondary KI's, were respondents in Level One while Primary KIs were respondents in Level Two. All key informants were probed to ensure accurate information was collected.

## 2.4.6 Development of data collecting instruments

Data collection was two –tiered and used 2 questionnaires, Level 1 questionnaire and Level 2 questionnaire for each category of MARPS.

### 2.4.6.1. Level 1 Questionnaire ( Annexure 1)

This questionnaire was used to collect information from secondary key informants on possible locations (spots) where MARPs tend to gather to solicit clients.

### 2.4.6.2. Level 2 Questionnaire ( Annexure 2)

This questionnaire was used to collect information from primary key informants**,** *i.e. members of the MARP communities.*

## 2.4.7 Recruitment of staff / development of TORs for roles and responsibilities of different staff categories

The roles and responsibilities of the different categories of staff involved in the field study are summarized in Table 2.4.7.1

## 2.4.8 Training

Training was conducted in two stages.

### 2.4.8.1. Training of Trainers (TOT)

UoM facilitated a 2-day TOT workshop for representatives of the NSACP (Consultant Venereologists, Public Health Inspectors), provincial MO/STI and select members of the TWG. The training manual focused on the geographical methodology, data collecting instruments, practical aspects of field data collection including the challenges in accessing /interacting with MARPs during data collection.

### 2.4.8.2. Training of field research teams

UoM supported by NSACP and IPID conducted a 5-day residential training workshop comprising of both classroom and field training for field supervisors, field research officers, community mobilisers, data management personnel and associate partners of FPA and representatives of NSACP. Training content included i) HIV /AIDS: facts and myths ii) basic concepts and methodology of geographic mapping, concept of Level 1, and Level 2 mapping iii) recording information on data collection formats iv) data collation v) how to identify/access high risk individuals to explain the rationale/objectives of the study vi) skilled interviewing, especially interviewing about sex and injecting drug use vii)

communication skills –building rapport, interviewing, probing viii) getting informed consent ix) completing data collection formats x)Map reading and map making techniques xi) ethical issues and maintaining confidentiality. The need to adhere to the field protocol when collecting data was stressed.

### 2.4.9 Field Teams

Each of the 6 field teams consisted of six FROs and one FS.

**Level One –** Each team consisted of 6 FROs representing non-MARP and MARP individuals to facilitate interaction with the secondary key informants. In Level 1, all teams engaged in data collection simultaneously.

**Level Two** - FROs were re-organized into 4 teams - FSW team, MSM team, DUs and BB team to target the primary key informants. During data collection, the teams were supported by Community mobilisers (current or former members of local MARP communities).

Community mobilisers are trusted by the MARP communities and played a critical role in enhancing participation of primary key informants in the study. Ethnicity and language ability of FROs was considered when assigning teams to the different provinces.

Table 2.4.7.1 Roles and responsibilities of staff categories

| Staff category | Responsibilities |
|---|---|
| **Project Manager (01)** | Overall supervision of all field activities to ensure quality of data<br>• Brief teams about the data collection process<br>• Provide lists of places to be visited for the Level 1 interviews with secondary key informants<br>• Supervise /monitor field data collection through random field visits<br>• Meet regularly with field teams to monitor progress<br>• Be in regular contact with/receive feedback through Field supervisors<br>• Ensure smooth and timely conduction of data collection<br>• Ensure maintenance of confidentiality and security of collected data |
| **Project Coordinator (01)** | Overall coordination of field activities and office/documentation activities and logistics<br>• Monitoring of timelines and budgets<br>• Keep abreast of field work and field based documentation.<br>• Maintain liaison between the field team and Working Group<br>• Coordinate with Finance Unit/FPASL<br>• Ensure the quality and ethical standards of the study. |
| **Documentation officers (02)** | Overall documentation of field work and quality assurance of field data. Each DO was assigned 3 field teams.<br>• Monitor adherence to the data collection protocol<br>• Monitor submission of completed signed field data forms by FSs<br>• Forward all completed data forms to the data entry teams after checking quality.<br>• Conduct random checks on data<br>• Report to the Project Manager and Project Coordinator on the progress of each team.<br>• Share updated data bases with UoM |
| **Field Supervisors (06)** | Supervision of data collection by FROs in the field<br>• Ensure that data collection is done according to the protocol<br>• Close supervision of field data collection through on-site visits.<br>• Conduct daily meetings (morning and evening) to brief the team of FROs<br>• Compile a unique list of spots based on L1 questionnaires for conduction of L2 interviews at the end of each day<br>• Report to Project Manager and Project Coordinator<br>• Ensure adequate supply of stationery / transport available Plan daily field activities to ensure completion of data collection within allotted timelines |
| **Field Research Officers (44)** | Accurate collection and recording of field data.<br>• Adhere to the data collection protocol<br>• Interact cordially and establish rapport with all respondents to ensure collection and recording of quality data<br>• Assist the FS in compiling the unique spot lists for L2 interviews<br>• Maintain team spirit. |
| **Community mobilisers* ( former or current members of MARP groups)** | Enhance response rate in Level 2 of the field study<br>• Access genuine members of their respective MARP group and encourage their greater participation as respondents in the survey.<br>*The number of CMs /area may vary.* |
| **Data entry operators (04)** | Accurate and timely entry of data. |

.

## 2.5 Data Collection

Data collection used two methodologies Figure **2.4.3.1**

2.5.1. Geographical mapping (primary data collection)

2.5.2. Validation of data on existing hotspots reported in previous studies

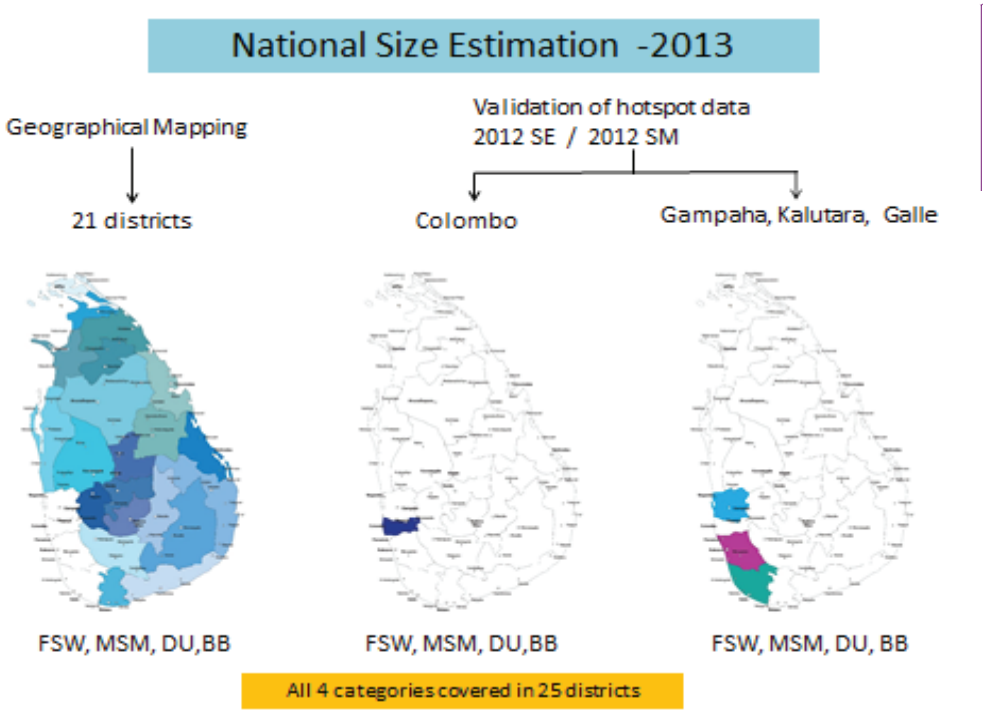



Figure: Overview of Geographical mapping

### 2.5.1 Geographical mapping

Geographical mapping (Figure **2.4.3.1**) of FSWs, MSM, DU, and BBs was carried out over a period of 3 months in 21 districts, excluding Colombo, Gampaha, Kalutara and Galle.

Data was collected from secondary key informants using the L1 and L2 questionnaires in a two-tiered approach. Six field teams collected data simultaneously and were closely supervised by field supervisors under the direction of the Project manager.

#### ***2.5.1.1 Data collection at Level 1***

The L1 Questionnaire was used to collect the following key information –

- Key geographic locations where MARPs are found
- MARP typologies
- Minimum and maximum estimates of MARP individuals involved in high risk activities at each spot.

L1 interviews were continued until new secondary key informants stopped providing information on new hotspots. i.e. saturation of all the hotspots within the zone had been achieved. In addition, FROs developed a contact list of people who could assist in validation of spots in Level 2 if required.

A total of 5784 secondary key informants in 272 DS divisions of the 21 districts, (an average of 24 secondary key informants per district) provided information on the locations of MARPs.

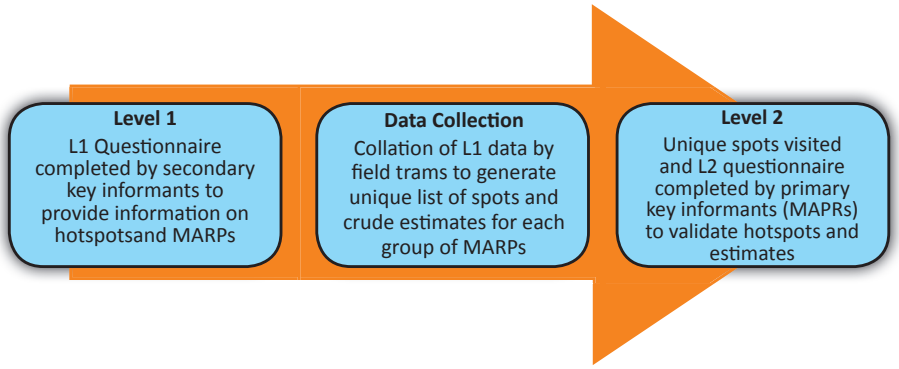



Figure 2.5.1.1 : Overview of Geographical mapping

***2.5.1.2 Data collation***

At the end of each day, the Field Supervisor led the team in reviewing and collating the data in the L1 questionnaires to generate unique lists of hotspots and estimates for each MARP group. Collation of data in L1 questionnaires was based on the frequency of mention of spots and the estimated number of MARP members present at each spot. Estimates were expressed as minimum and maximum for all identified spots. This information was entered into collation sheets. Spots were clearly identified by address and/or a landmark/s to avoid duplication and reduce over/under estimation.

***2.5.1.3. Data collection at Level 2***

Level Two validated information collected in Level One. FROs visited each location included in the unique list of spots and interviewed MARPs (primary key informants) present at the location using the L2 questionnaire. FROs were supported by community mobilisers.

Key information recorded in the L2 questionnaire included the typology and estimate of MARPs engaged in high risk activity at a given spot and the type of activity taking place at the spot (seeking risk eg. looking for a partner or drugs, or taking risk eg. engaging in sex or injecting drug use)

Hotspot validation provided the following information-

- Whether spots still exist, existed previously or were currently inactive

- The MARP typologies present at the given spot, the estimated number of each MARP typology present at usual and peak times and the operational dynamics of MARPs including the time of day when the spot is active.

If primary KIs were not identified after two visits, the field team interviewed a secondary key informant at the spot to validate the spot.

### 2.5.2 Data Validation of spots

The objectives in this activity were to;

2.5.2.1. Conduct a literature review to identify existing lists of hotspots

2.5.2.2. Validate the existing lists of hotspots and estimates in 4 districts

2.5.2.3. Identify new spots

*As lists of hotspots were available from previous studies, the validation component did not require collection of Level 1 data. Therefore, only the Level 2 tool was administered in those spots validated.*

The study adopted validation of existing spots to arrive at the list of hotspots and estimates in 4 districts (Colombo, Kaluthara, Gampaha and Galle).

#### 2.5.2.1 Literature review

The first stage of the data validation process was to review all the relevant literatures/documents in the country, particularly those of the districts of interest. The literature revealed that two studies had previously been conducted in the country, but were restricted to few districts. The previous studies conducted included a 1) geographic mapping of FSWs and MSMs in 4 districts and 2) a social mapping of MARPs in 13 districts. Given that all four MARP groups were mapped only in Colombo, Gampaha, Kalutara and Galle, only Level 2 was conducted in these districts. For all remaining districts the study conducted both a Level 1 key informant interview and Level 2 to identify the spots of any MARP group that had not been mapped previously.

#### 2.5.2.2 Hotspot identification

The above steps provided an estimate of existing hotspots in the selected geographic location. However, it did not capture any hotspots which were missed during the previous studies in 2010 or 2012, if any. Therefore, efforts were made to capture hotspots that may have been missed in the 2012 SM study.

(i) Primary key informants interviewed at each hotspot were asked to list down all the hotspots they were aware of. This information was compared to the available list of spots to identify any new hotspots that may have emerged. FROs then visited all spots and validated them by administering the L2 questionnaire to primary key informants.

(ii) Focus group discussions were held with members of civil society organizations who are Sub-Recipients (SRs) and Sub-sub Recipients(SSRs) for the Global Fund to identify any new hotspots.

The newly identified hotspots and the estimated MARPs in the respective spots were accounted while listing the active hotspots and estimated MARPs in the districts.

### 2.5.2.3 Hotspot validation

The study used two approaches to validate the hotspots,

i) Validating all the FSW, MSM, DUs and BB spots previously identified in Gampaha, Kalutara, Galle and all the DUs and BBs spots in Colombo
ii) Validating a sample of FSW and MSM hotspots in Colombo.

During the validation of the hotspots, the team met with MARPs members at the spot and validated that each spot existed and that high risk activity was taking place. If these indicators were confirmed the spots were considered as active. Alternatively, the was classified as inactive.

*Validating hotspots in Gampaha, Kalutara and Galle*

In these 3 districts, *all hotspots* listed in the 2012 social mapping study for the 4 MARP groups were validated by administering the L2 questionnaire to relevant primary key informants.

*Colombo District:*

*Validating all the DUs and BBs hotspots in Colombo*

All DU and BB spots identified through the Social Mapping conducted in 2012 were validated by the administration of Level 2 questionnaires. Information on the active/inactive nature of the spot and current estimates of MARPs at the spot on usual and peak days was collected.

Validating a sample of FSW and MSM hotspots in Colombo

Geographic mapping conducted in 2010 identified 1066 FSW hotspots and 652 MSM hotspots in Colombo. In contrast, the social mapping conducted in 2012 identified 171 FSW and 179 MSM hotspots in Colombo. In addition, review of this literature showed very little overlap of hotpots between the two studies (12 FSW and 2 MSM spots). Therefore, the study sampled a list of hotspots from the cumulative total of FSW (1225) and MSM (829) spots identified during the 2010-12 period and validated these. A total of 317 FSW spots and 277 MSM spots respectively were sampled (Table 2.5.2.1). Hotspots were validated by administering the L2 questionnaire to the 2 groups of primary key informants.

The following criteria were used to decide on the sample size needed to provide a reliable estimate. The number of hotspots required to validate was decided at 95% confidence and

at 80% power accounting for the Margin of Error of the mean estimate of previous social mapping. This approach was to adequately represent hotspots to validate and refine the estimates. The sample hotspots were then selected from the list of hotspots using stratified random sampling method, where geographic area (town) and type of hotspots was used as the two stratification criteria.

Table 2.5.2.1 Total enumerated FSW and MSM hotspots from previous studies and the number of sample hotspots selected to be validated.

| MARP | Geographical mapping 2010 | | Social mapping 2012 | | Total sampled |
|---|---|---|---|---|---|
| | No. of existing spots listed | No. sampled | No. of existing spots listed | No. sampled | |
| FSW | 1066 | 283 | 171 | 34 | 317 |
| MSM | 652 | 242 | 179 | 35 | 267 |

## 2.5.2.4 Validation of estimates

The next step in validation was to confirm the estimated MARPs in all the active spots. A Level 2 form was administered to respective MARP member in the spot and was asked to provide the estimated MARPs in that spot. This was recorded in the Level 2 format and used for generating the estimate as below.

*Validated all the hotspots*

Wherever all the hotspots were validated, the new estimate generated through interviewing primary key informant in the spot and administering a level 2 form was considered as the final estimate.

*Validated sample of hotspots*

A correction factor was derived using the extent of under/over estimation and the margin of error of the validated estimates and applied to the 2010/2012 estimate to provide the new estimate.

Detailed estimation process is discussed in the data management/analysis section.

## 2.6 Monitoring and Quality Assurance

A monitoring and a quality assurance system was designed and a timeline was developed to complete the data collection activities within the due time frame.

Quality assurance protocol included the following:

### 2.6.1 Quality assurance at field level

Field supervisors (FS) assured quality of data collected by conducting morning and evening meetings with the team. The morning meeting was focused on planning the day's activities including deciding on which spots would be visited, what activities would be carried out, providing the codes of different geographical locations and ensuring that the FROs were correctly recording in the formats. The evening meetings were focused on discussing and sharing the experiences from the field including issues and challenges faced, reviewing each format the FROs completed on the day and addressing the gaps or discrepancies in the formats. FS ensured that the hotspot names were recorded consistently. FS visited the field and understood the local context and carried out quality checks by interviewing the key informants in some of the randomly identified hot spots. FS reviewed the list of key informants that the FROs identified to ensure the quality of key informants recruited within the zone. The FS also monitored and ensured a minimum number of interviews were conducted per day.

FROs assured that they used the correct codes for the districts/DS divisions and for the hotspots in the format. FROs completed the given format as and when the interview happened or soon after the interview (which was also be ensured by the FS). The FRO also validated the hotspot name and the type of hotspot as well as the estimate of MARPs in the hotspot. If the estimate reported was very high or if the range (min-max) was very high, FRO rechecked or probed with the KI to gather an accurate estimate.

The Project Manager and the team of consultants attended daily meetings/progress meetings and carried out random checks of filled in formats in the field (random check of 5% of filled in formats). They also accompanied the field teams to ensure that they identified the right KIs and are following the mapping protocols.

### 2.6.2 Quality assurance at documentation level

The Documentation Officer in coordination with the FS received all the filled in formats, reviewed the formats and passed it on to the data entry operator for the data entry. She also ensured that the data entry operator carefully reviewed each format and correctly entered it in to the database developed for the purpose. She recorded a summary report of all computerized data by different geographical units (by DS division/district) and reviewed the quality of data. Any quality issues with the data were referred back to the FSs through the project manager to address subsequently.

The database itself included internal consistencies of data to minimize the gaps in the data entry level and to an extent at the field level.

## 2.7 Data Management and Analysis

### 2.7.1 Data management

Pre-set data forms were reviewed by the field team on a daily basis and corrected for names of zones, missing KI typology, and any missing estimates of spots, (i.e. spot without any estimates of key sub-population size). While manual data collation was done, the entire data set was also entered on a Microsoft Access database at the respective DS/district level. The computerized data was reviewed, cleaned and used for generating final estimates and lists of spots. The technical team analyzed the data to arrive the final estimate, which then shared with the Technical Working Group as and when it was ready for each district. To obtain this information, the estimate ranges for each spot and location were rolled up for a zone and city to produce minimum and maximum estimates. To arrive at a single "best" estimate, the mid-point ("mean") of the minimum and maximum estimates was used.

Two databases were developed to computerize the important data gathered from the study. These include, 1) List of Key Informants interviewed, and ii) Level 2 format of validation of spots. The following figures demonstrate the databases developed and used for computerizing the data collected;

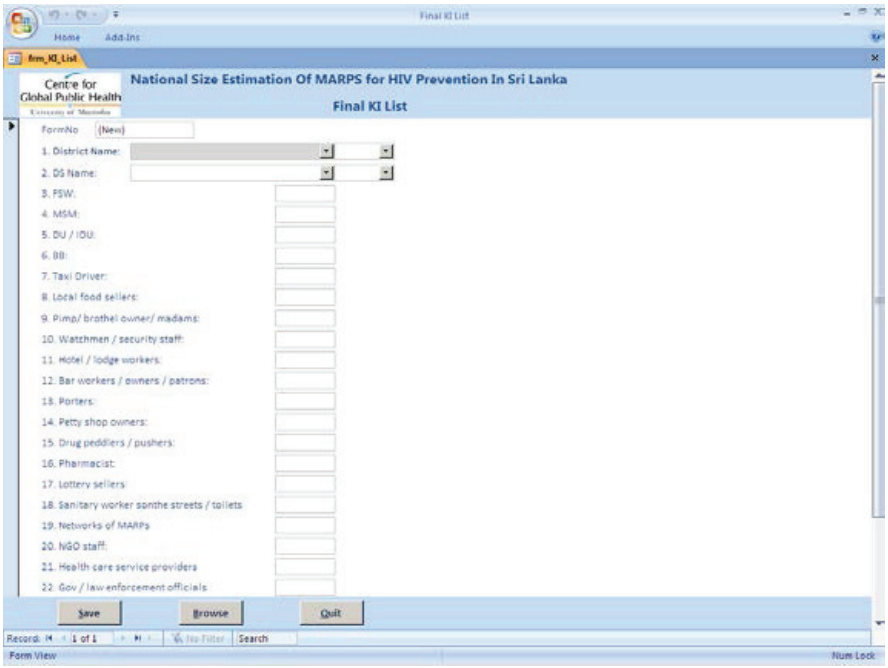



Figure 2.7.1.1 Database used to computerize level 1 key informant interviews

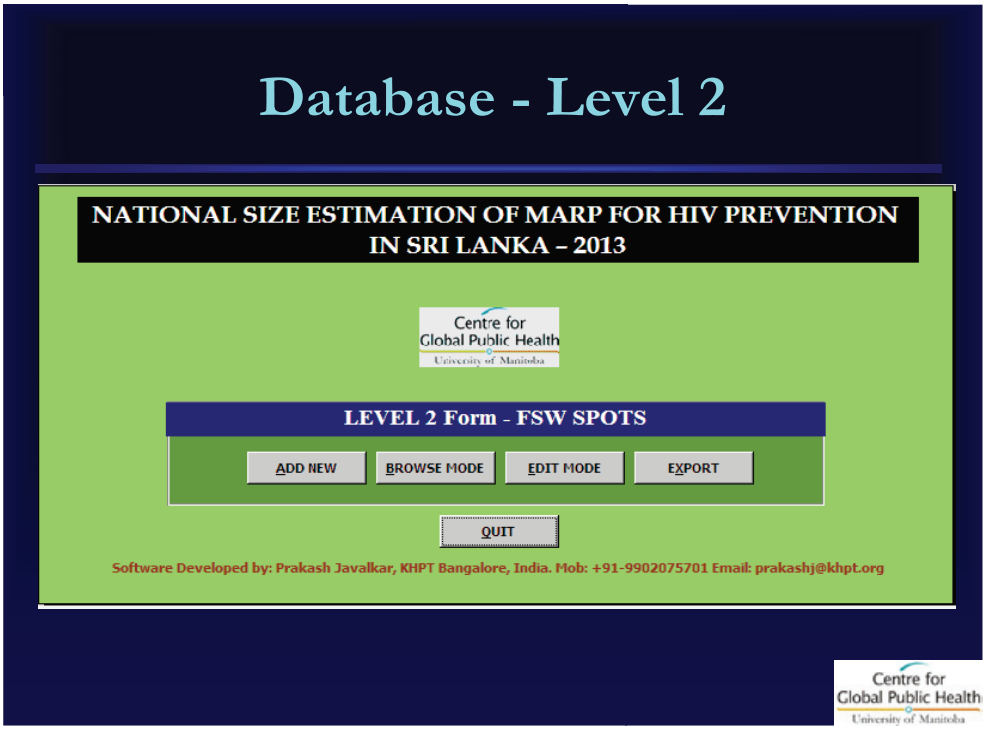



Figure 2.7.1.2: Database used to computerize level 2 data

## 2.7.2 Broad overview of analysis approach

In this section, we describe the analysis approach adopted in both geographic mapping and data validation.

### 2.7.2.1 Geographic mapping

All the spots identified in Level 1 were validated using the Level 2 format. Thus data on spots and estimates refers to only data collected through Level 2. Achieving saturation of hotspots is dependent on conducting an adequate number of key informant interviews. Thus the L1 key informant lists were analysed to determine the total number of informants, and the sub-totals of the different types by district, province and national levels.

*Data analysis – adjusting duplication*

Since all the hotspots were validated, only Level 2 data was used to identify the list of active hotspots and its estimate in the study district. However, since MARPs often visit multiple hotspots for the high risk activity, there is a tendency for duplication of the estimate. Thereby, the overall estimate accounting for the mobility of MARPs can be considered as a function of multiple factors as follows.

Let E*i* be the overall estimate, then *Ei* is a function of;

- Estimate at the site level (*si*)
- Proportion of MARPs solicit in other spots (*pi*)

- Mean number of places a MARP solicit (*mi*)

In other words, it can be described as a mathematical function as below;

$$Ei = si(1-pi)+ (si*pi/mi)$$

The adjustment was made at the DS, city, type of spot, district and country level depending upon the level of variability in mobility.

The active list of hotspots and estimates are presented by district, province and national level for each MARP groups.

### 2.7.2.2 Data validation

The analysis of data validation involves different approaches for universal validation and sample validation. Where universal validation of hotspot was conducted (in all the districts, except FSW and MSM in Colombo), the analysis involves a similar process as that was followed for geographic mapping.

As far as FSW and MSM estimates in Colombo are concerned, the analysis involved;

- extent of sample spots become inactive during validation
- extent of new spots identified during the validation
- extent of changes in the estimates in sampled hotspots at validation from the previous mapping

The analysis is based on a set of assumptions as described below;

- Extent of new/inactive hotspots identified from the sampled hotspots holds the same for the rest of the hotspots
- Estimates of MARPs in the new/inactive hotspots arrived using sampled hotspots and rest follow the same pattern
- The extent of over/under estimates from the previous mapping remains same in both sampled and rest of the hotspots
- Extent of new hotspots and its estimates holds same both in sampled and rest of the hotspots

The study used an approach predominantly a ratio estimates approach assuming that the estimate is a function of the following;

- 'ei' be the survey estimates of the sampled active hotspots
- 'Et' be the estimates of all spots from the previous mapping
- 'Es' be the estimates of all sampled spots from the previous mapping
- 'ri' be the ratio of over/under estimates of MARPs size in the sampled and active hotspots from the previous estimates

- ‘rr’ be the ratio of reduction in estimates from the previous estimates as a result of hotspots became inactive
- ‘rn’ be the proportion of total estimates as a result of new hotspots emerged from the sampled hotspots
- Let ‘mi’ be the margin of error of estimates of sampled hotspots
  $mi = z * \sigma/\sqrt{n}$

The crude estimates (Cr) of MARPs in the geographic unit are;
$Cr = ei + (Et-Es)*ri – (Et-Es)*rr + (Et-Es)*rn$
Therefore, the final estimate (Fe) accounting for margin of error is;

$$Fe = Re \pm mi$$

## 2.8 Ethical Considerations

This survey was designed to meet international ethical guidelines, specifically addressing the following ethical issues:

- ***Ethical clearance:*** The study obtained ethical clearance from the Institutional Ethics Board, Faculty of Medicine, University of Colombo.

- ***Safety of researchers:*** Meetings were held with the police and law enforcement agencies in each district before the project started to inform them of the nature and the purpose of the survey, so that any queries from the local police during the project could be addressed. The Chief of Police participated as a member of the Project Steering Committee, and was provided updates at all times about the study.

- ***Consent and voluntary participation:*** Recruitment of participants was conducted only after describing the study procedures and obtaining consent. During the process of obtaining consent, prospective participants were clearly informed that participation was voluntary and that non-participation would have no negative consequences in terms of access to programs or services.

- ***Confidentiality:*** Considerable effort was taken to maintain the confidentiality of participants. This included non-disclosure of participants’ identity and the use of a non-identifying coding system to track study data. No names of respondents were recorded anywhere in the data. The electronic data was password protected and only authorized officials of NSACP, FPA and UoM had access to the data files. The final report does not contain information which can lead to identification of spots and places where MARPs congregate. This information was provided separately to the NSACP and service providing organizations.

# 3. FEMALE SEX WORKERS

Information regarding where FSWs congregate was collected through key informant interviews and data validation. The field teams identified persons who were likely to have information on high-risk activity (HRA) in a geographical setting (see Box 4). These interviews were referred to as Level 1 interviews. Members of the community (FSWs) were asked for specific details about a spot and numbers of FSWs at that spot, and these were referred to as Level 2 interviews.

## 3.1 Profile of Key Informants

A total number of 5,784 interviews were conducted in the country during the L1 process. It may be mentioned here that Level 1 key informant interviews were carried out in all the districts except in 4 districts where data validation was carried out. Over 1000 key informant interviews were carried out in central and north western provinces each, and a significant number of interviews were conducted (Figure 3.1.1) in all the provinces except in northern province,. This indicates that the study conducted a large number of key informant interviews to identify the hotspots in the country.

**Box 3: KEY INFORMANTS**

**Key informants (KIs)** are persons who are likely to have information on the profiles of the locations and estimates of number of participants engaging in high-risk activity. Based on their involvement in HRA and HRGs, KIs were classified into three types:

- ***Primary key informants:*** Persons engaged in HRA themselves, e.g. commercial sex workers MSM, etc.
- ***Secondary key informants:*** Persons who are involved in the network of HRA or intimately acquainted with persons directly engaged in HRA, e.g. pimps, network operators, etc.
- ***Tertiary key informants:*** Persons involved with high risk activity in a professional capacity, e.g. police, STI service providers, and NGO workers.

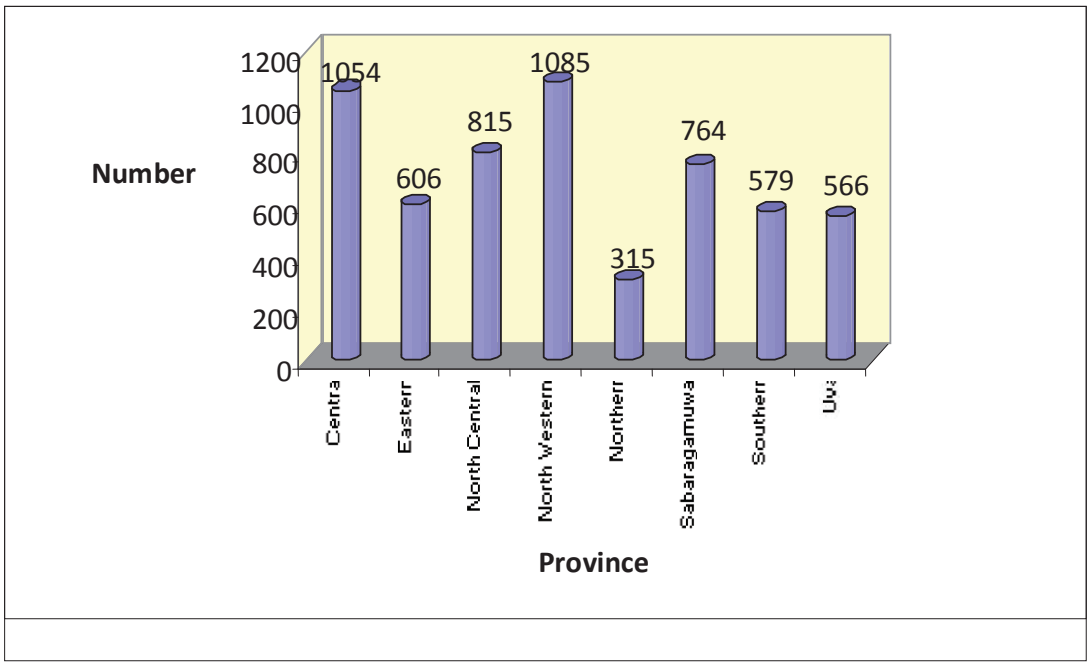



Figure 3.1.1: Total number of key informants interviewed by province, Sri Lanka (N=5784)

As far as the distribution of key informant interviews are concerned, on an average 275 interviews were conducted per district, though the number of key informant interviews were over 500 in a number of districts including, Kandy, Anuradhapura, and Kurunegala (Table 3.1.1). The number of interviews in few districts of Trincomalee, Killinochchi, Mannar and Vavuniya were significantly low.

The distribution of primary, secondary and tertiary KIs interviewed during L1 along with the type of KIs is given in Table 3.1.2. Figures 3.1.2 presents the distribution of KI interviews conducted by type of key informant. Though 5784 KIs were interviewed during level 1, information on the type of key informant is available only in case of 5737. Among them, 1578 KIs were taxi drivers (27.5%), followed by 570 local food sellers (9.9%), 538 petty shop owners (9.4%) and 506 lottery sellers (8.8%). In addition, about 420 government/law enforcement officials were also interviewed during level 1 stage of size estimation.

Table 3.1.1: Number of key informant interviews conducted by province and by district, Sri Lanka (N=5784)

| Province | District Name | Number |
|---|---|---|
| Central | Kandy | 611 |
| | Matale | 317 |
| | Nuwara Eliya | 126 |
| Eastern | Ampara | 356 |
| | Batticaloa | 162 |
| | Trincomalee | 88 |
| North Central | Anuradhapura | 574 |
| | Polonnaruwa | 241 |
| North Western | Kurunegala | 588 |
| | Puttalam | 497 |
| Northern | Jaffna | 178 |
| | Killinochchi | 47 |
| | Mannar | 14 |
| | Mullativu | 32 |
| | Vavuniya | 44 |
| Sabaragamuwa | Kegalle | 361 |
| | Rathnapura | 403 |
| Southern | Hambantota | 239 |
| | Matara | 340 |
| Uva | Badulla | 359 |
| | Monaragala | 207 |
| **Total 8** | **21** | **5784** |

Table 3.1.2: Number of key informants interviewed by type of key informants, Sri Lanka (N=5737)

| Data | Number |
|---|---|
| 1. MARPs/Networks/madams | 238 |
| 2. Taxi driver | 1578 |
| 3. Local food sellers | 570 |
| 4. Watchmen/security staff | 191 |
| 5. Hotel/lodge workers | 120 |
| 6. Bar workers/owners/patrons | 74 |
| 7. Porters | 72 |
| 8. Petty shop owners | 538 |
| 9. Pharmacist | 91 |
| 10. Lottery sellers | 506 |
| 11. Sanitary workers on the streets/toilets | 119 |
| 12. NGO staff | 63 |
| 13. Health care service providers | 73 |
| 14. Gov/law enforcement officials | 420 |
| 15. Street families | 62 |
| 16. Public/private transport staff | 331 |
| 17. Construction workers/labourers | 274 |
| 18. Others | 417 |
| **Total** | **5737** |

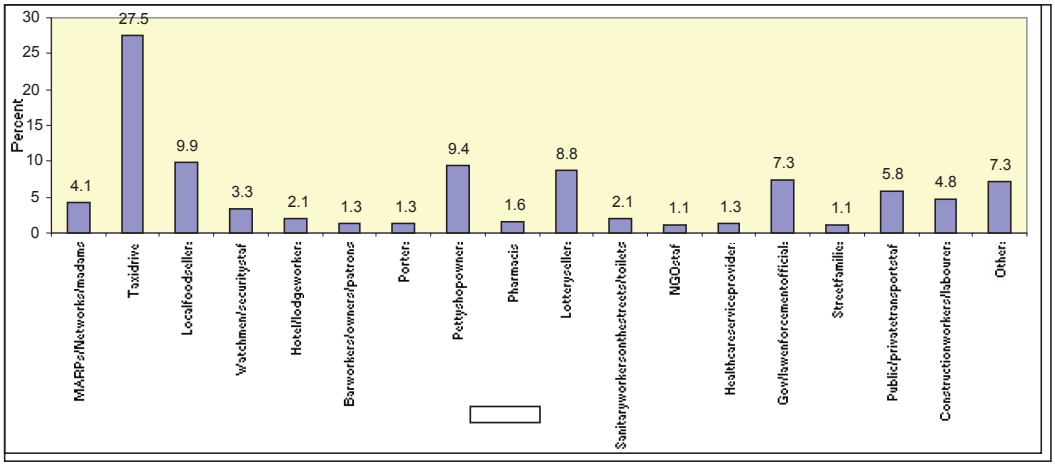



Figure 3.1.2: Percent distribution of key informant interviewed by type of key informant, Sri Lanka (N=5737)

Table 3.1.3 presents the type of key informants interviewed by provinces in Sri Lanka. The table shows that almost all the types of key informants were interviewed in all the provinces to a varying degree. While a large proportion of the key informants interviewed were taxi drivers across the provinces, a significant number of local food vendors, petty shop owners and lottery sellers were also interviewed. MARPs members, their networks and people who are closely linked (pimps, madams etc) were also interviewed in significant number in all the provinces, except in Eastern, Northern and Uva provinces.

Table 3.1.3: Number of key informants interviewed by type of key informants and by province, Sri Lanka (N=5737)

| | Province | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Type of Kis | Central | Eastern | North Central | North Western | Northern | Sabaragamuwa | Southern | Uva | Total |
| MARPs/Networks/madams | 31 | 3 | 47 | 100 | 1 | 33 | 15 | 8 | 238 |
| Taxi driver | 279 | 193 | 209 | 230 | 117 | 213 | 176 | 161 | 1578 |
| Local food sellers | 95 | 81 | 98 | 116 | 46 | 33 | 16 | 85 | 570 |
| Watchmen/security staff | 34 | 17 | 31 | 39 | 6 | 22 | 24 | 18 | 191 |
| Hotel/lodge workers | 19 | 11 | 10 | 20 | 7 | 9 | 13 | 31 | 120 |
| Bar workers/owners/patrons | 23 | 1 | 15 | 16 | 0 | 8 | 3 | 8 | 74 |
| Porters | 6 | 20 | 9 | 9 | 11 | 9 | 2 | 6 | 72 |
| Petty shop owners | 95 | 35 | 101 | 134 | 13 | 61 | 52 | 47 | 538 |
| Pharmacist | 39 | 1 | 8 | 19 | 4 | 15 | 1 | 4 | 91 |
| Lottery sellers | 114 | 33 | 79 | 84 | 22 | 80 | 57 | 37 | 506 |
| Sanitary workers on the streets/toilets | 23 | 11 | 13 | 27 | 1 | 16 | 14 | 14 | 119 |
| NGO staff | 5 | 6 | 12 | 8 | 1 | 10 | 19 | 2 | 63 |
| Health care service providers | 19 | 14 | 9 | 7 | 0 | 8 | 13 | 3 | 73 |
| Gov/law enforcement officials | 79 | 36 | 42 | 56 | 4 | 75 | 85 | 43 | 420 |
| Street families | 10 | 3 | 22 | 15 | 5 | 2 | 1 | 4 | 62 |
| Public/private transport staff | 107 | 19 | 39 | 55 | 2 | 52 | 19 | 38 | 331 |
| Construction workers/labourers | 31 | 48 | 39 | 59 | 33 | 27 | 14 | 23 | 274 |
| Others | 40 | 74 | 20 | 78 | 31 | 88 | 55 | 31 | 417 |
| **Total** | **1049** | **606** | **803** | **1072** | **304** | **761** | **579** | **563** | **5737** |

## 3.2 Estimates of FSWs

Based on the data collected during L1 and validated during L2, the study identified a total of 3683 spots with an average of 14,132 (range from 12,329 to 15,935) FSWs in the country (Figure 3.2.1). While a large number of spots in the country are identified in Western Province (46%), the second largest number is found in North Central Province.

Table 3.2.1: Number and percent of active FSW spots by province, Sri Lanka

| Province | Total | Percent |
|---|---|---|
| Central | 240 | 6.5 |
| Eastern | 208 | 5.6 |
| North Central | 502 | 13.6 |
| North Western | 351 | 9.5 |
| Northern | 67 | 1.8 |
| Sabaragamuwa | 237 | 6.4 |
| Southern | 195 | 5.3 |
| Uva | 199 | 5.4 |
| Western | 1684 | 45.7 |
| **Total** | **3683** | **100.0** |

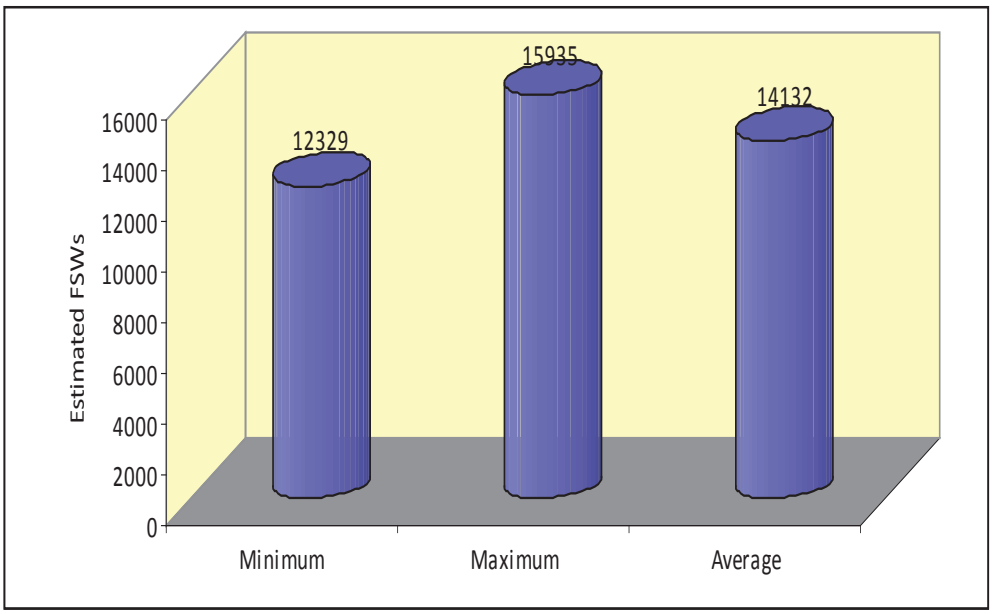



Figure 3.2.1: Estimated number of FSWs on a peak day Sri Lanka

## 3.3 Estimated FSWs by province

The size estimation aimed to generate estimated number of FSWs by district and by province in Sri Lanka. The study estimated as high as 7278 FSWs in Western province (range 6437-8118), followed by 1436 in North central province (range 1242-1629) (Figure 3.3.1 and Table 3.3.1). The estimated number of FSWs in other provinces is relatively low compared to these two provinces. Table 3.3.1 also shows that the peak day (estimate) is significantly higher in all the provinces compared to usual day estimate.

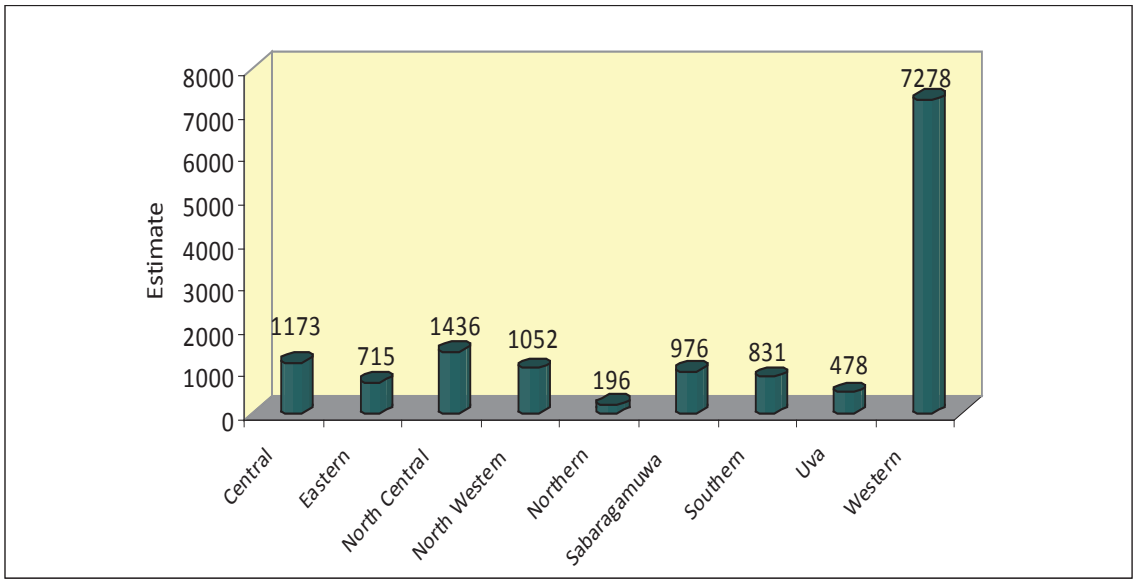



Figure 3.3.1: Average estimated number of FSWs on a peak day by province, Sri Lanka

Table 3.3.1: Estimated number of FSWs on usual and peak day by province, Sri Lanka

| | Usual day estimate | | | Peak day estimate | | |
|---|---|---|---|---|---|---|
| **Province** | **Minimum** | **Maximum** | **Average** | **Minimum** | **Maximum** | **Average** |
| Central | 716 | 946 | 831 | 1034 | 1312 | 1173 |
| Eastern | 447 | 656 | 552 | 601 | 829 | 715 |
| North Central | 954 | 1272 | 1113 | 1242 | 1629 | 1436 |
| North Western | 750 | 1011 | 881 | 904 | 1199 | 1052 |
| Northern | 139 | 197 | 168 | 168 | 223 | 196 |
| Sabaragamuwa | 613 | 846 | 730 | 834 | 1117 | 976 |
| Southern | 489 | 682 | 586 | 721 | 941 | 831 |
| Uva | 249 | 374 | 312 | 388 | 567 | 478 |
| Western | 4170 | 5382 | 4776 | 6437 | 8118 | 7278 |
| **Total** | **8527** | **11366** | **9947** | **12329** | **15935** | **14132** |

The distribution of FSWs in the country shows that a majority were estimated in the Western province (52%), followed by 11% in North Central Province (Figure 3.3.2). Less than 10% of the FSWs in the country solicit in each of the other provinces.

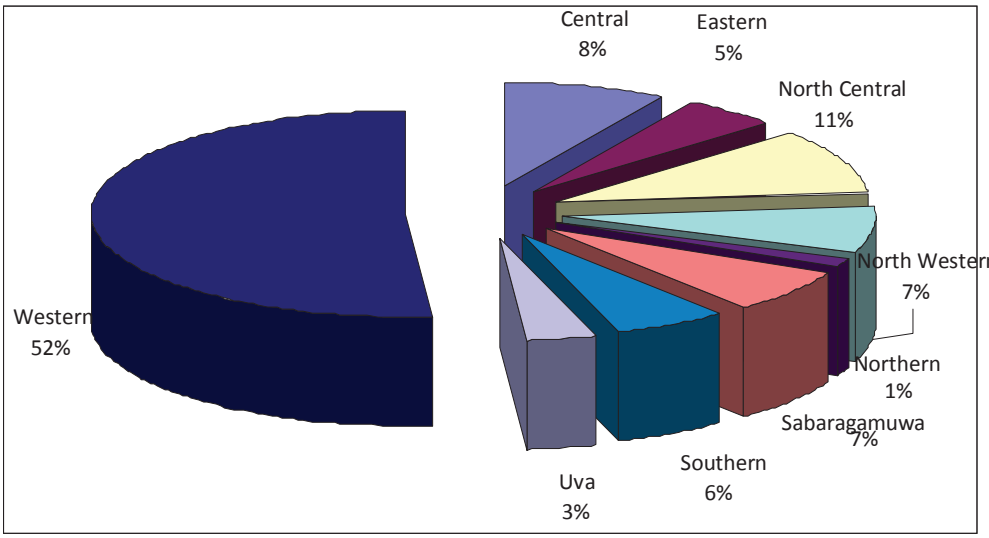



Figure 3.3.2: Percent distribution of FSWs by province, Sri Lanka

## 3.4 Estimated FSWs by type of spot

Figure 3.4.1 further shows that large number FSWs in the country solicit at streets/public places (6000 FSWs) followed by 3356 FSWs who solicit at Shanty/home. Nearly 3000 sex workers solicit their clients from hotel/lodge and another 1100 FSWs get their clients from night clubs/massage parlors etc.

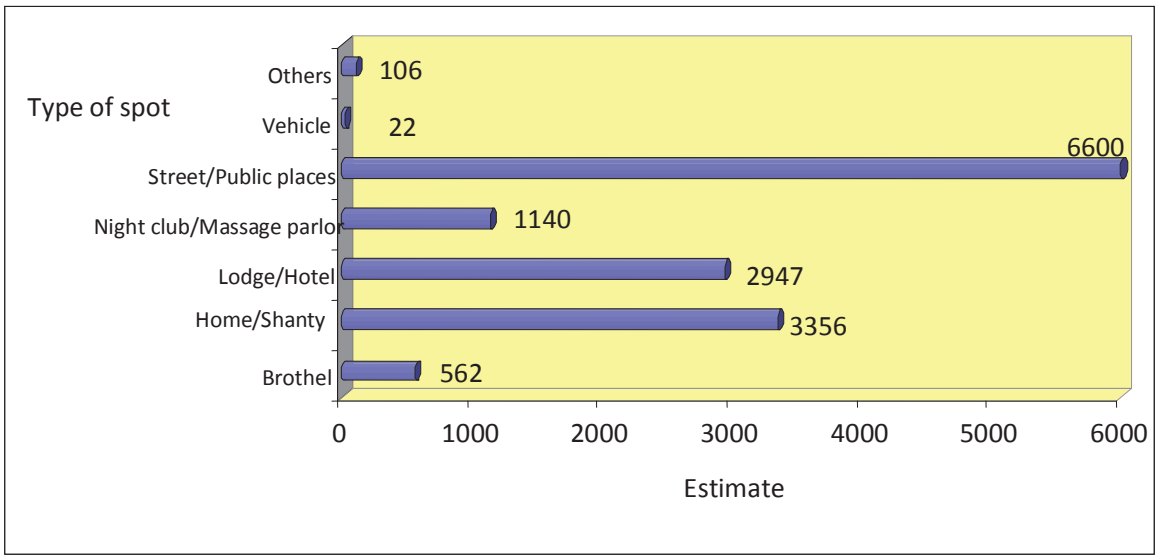



Figure 3.4.1: Estimated number of FSWs by type of spot, Sri Lanka, Sri Lanka

Figure 3.4.2 shows the percent distribution of FSWs by type of spot. Over 42% of the FSWs in the country solicit their clients at public places, including streets, followed by 28% and 22% respectively at lodge/hotel and home/shanty. Only about 2% of the FSWs solicit their clients at brothels, though 6% get their clients at night clubs/massage parlors.

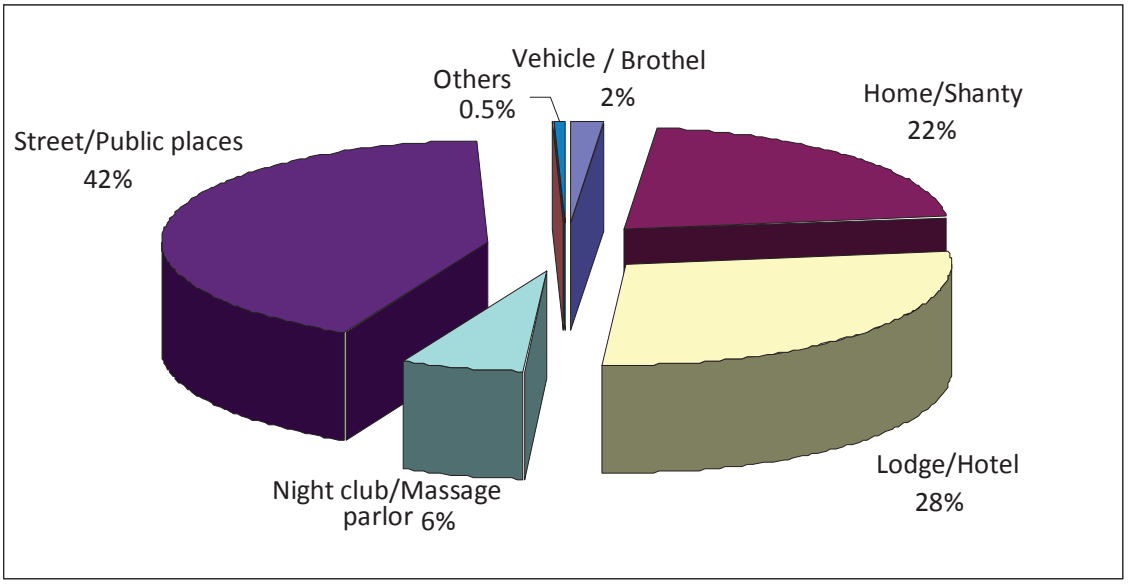



Figure 3.4.2: Percent distribution of FSWs by type of spot, Sri Lanka, Sri Lanka

The study shows a large majority of the estimated FSWs are either based in public places, home/shanty or hotel/lodge in the country (Table 3.4.1). Almost all the provinces show a similar pattern, though the Western province also accounts for large number of FSW soliciting in other types of spots.

Table 3.4.1: Estimated number of FSWs by type of spot and by province, Sri Lanka

| Province | Brothel | Home/ Shanty | Lodge/ Hotel | Night club/ Massage parlor | Street/ Public places | Vehicle | Others | Total |
|---|---|---|---|---|---|---|---|---|
| Central | 0 | 257 | 311 | 49 | 546 | 4 | 8 | 1173 |
| Eastern | 20 | 251 | 121 | 0 | 320 | 0 | 4 | 715 |
| North Central | 44 | 430 | 382 | 48 | 513 | 15 | 5 | 1436 |
| North Western | 0 | 226 | 304 | 1 | 512 | 0 | 10 | 1052 |
| Northern | 0 | 50 | 20 | 0 | 127 | 0 | 0 | 196 |
| Sabaragamuwa | 26 | 49 | 397 | 20 | 475 | 4 | 6 | 976 |
| Southern | 8 | 188 | 245 | 5 | 386 | 0 | 0 | 831 |
| Uva | 0 | 141 | 196 | 23 | 112 | 0 | 7 | 478 |
| Western | 464 | 1766 | 973 | 995 | 3011 | 0 | 68 | 7278 |
| **Total** | **562** | **3356** | **2947** | **1140** | **6000** | **22** | **106** | **14132** |

As seen from the previous table, Table 3.4.2 presents the distribution of FSWs by type of spots in each of the provinces in Sri Lanka. In terms of the percent of FSWs by type of spot, between 35-50% of the FSWs are street/public place based in all the provinces, except Northern (65%) and Uva (23%). The next prominent typology is lodge/hotel and home/shanty across all the provinces.

Table 3.4.2: Percent distribution of estimated FSWs by type of spot and by province, Sri Lanka

| Province | Brothel | Home/ Shanty | Lodge/ Hotel | Night club/ Massage parlor | Street/ Public places | Vehicle | Others | Total |
|---|---|---|---|---|---|---|---|---|
| Central | 0.0% | 21.9% | 26.5% | 4.1% | 46.6% | 0.3% | 0.6% | 1173 |
| Eastern | 2.8% | 35.0% | 16.9% | 0.0% | 44.8% | 0.0% | 0.5% | 715 |
| North Central | 3.1% | 30.0% | 26.6% | 3.3% | 35.7% | 1.0% | 0.4% | 1436 |
| North Western | 0.0% | 21.5% | 28.9% | 0.1% | 48.6% | 0.0% | 1.0% | 1052 |
| Northern | 0.0% | 25.3% | 10.0% | 0.0% | 64.7% | 0.0% | 0.0% | 196 |
| Sabaragamuwa | 2.7% | 5.0% | 40.7% | 2.1% | 48.6% | 0.4% | 0.6% | 976 |
| Southern | 0.9% | 22.6% | 29.5% | 0.6% | 46.5% | 0.0% | 0.0% | 831 |
| Uva | 0.0% | 29.4% | 40.9% | 4.8% | 23.4% | 0.0% | 1.5% | 478 |
| Western | 1.9% | 17.0% | 25.1% | 17.6% | 38.2% | 0.0% | 0.1% | 7278 |
| **TOTAL** | **1.6%** | **21.6%** | **27.9%** | **6.1%** | **42.2%** | **0.2%** | **0.5%** | **14132** |

## 3.5 Estimated FSWs by districts

The study assessed the female sex work networks by districts and Table 3.5.1 presents the estimated number of FSWs by districts in Sri Lanka. As indicated, nearly half of the total estimated 14132 FSWs in the country are from Colombo district. The Colombo and

Gampaha districts report over 1000 FSWs each while Polonnaruwa, Kurunegala and Rathnapura also account for a significant number of FSWs.

As far as the distribution of FSWs by type of spot is concerned, the distribution pattern follows same for almost all the districts, with street/public place based FSWs dominates, followed by hotel/lodge and home/shanty based FSWs.

Table 3.5.1: Usual and peak day estimates of FSWs by province and by district, Sri Lanka

| | | Usual day estimate | | | Peak day estimate | | | |
|---|---|---|---|---|---|---|---|---|
| **Province** | **District** | **Minimum** | **Maximum** | **Ave.** | **Minimum** | **Maximum** | **Ave.** | **No. of spots** |
| **Central** | Kandy | 426 | 566 | 496 | 624 | 794 | 709 | 129 |
| | Matale | 246 | 310 | 278 | 341 | 415 | 378 | 68 |
| | Nuwara Eliya | 44 | 70 | 57 | 69 | 103 | 86 | 43 |
| **Eastern** | Ampara | 347 | 512 | 430 | 491 | 675 | 583 | 159 |
| | Batticaloa | 71 | 101 | 86 | 76 | 106 | 91 | 34 |
| | Trincomalee | 29 | 43 | 36 | 34 | 48 | 41 | 15 |
| **North Central** | Anuradhapura | 396 | 546 | 471 | 516 | 676 | 596 | 222 |
| | Polonnaruwa | 558 | 726 | 642 | 726 | 953 | 839 | 280 |
| **North Western** | Kurunegala | 508 | 684 | 596 | 588 | 786 | 687 | 261 |
| | Puttalam | 242 | 327 | 285 | 316 | 413 | 364 | 90 |
| **Northern** | Jaffna | 63 | 89 | 76 | 81 | 106 | 93 | 34 |
| | Killinochchi | 26 | 38 | 32 | 31 | 43 | 37 | 12 |
| | Mannar | 5 | 7 | 6 | 5 | 7 | 6 | 2 |
| | Mullativu | 19 | 29 | 24 | 21 | 29 | 25 | 10 |
| | Vavuniya | 26 | 34 | 30 | 30 | 38 | 34 | 9 |
| **Sabaragamuwa** | Kegalle | 168 | 208 | 188 | 225 | 269 | 247 | 62 |
| | Rathnapura | 445 | 638 | 542 | 609 | 848 | 728 | 175 |
| **Southern** | Galle | 175 | 244 | 210 | 283 | 364 | 324 | 65 |
| | Hambantota | 125 | 173 | 149 | 188 | 243 | 215 | 51 |
| | Matara | 189 | 265 | 227 | 250 | 334 | 292 | 79 |
| **Uva** | Badulla | 134 | 205 | 170 | 227 | 317 | 272 | 103 |
| | Monaragala | 115 | 169 | 142 | 161 | 250 | 205 | 96 |
| **Western** | Colombo | 3492 | 4475 | 3984 | 5444 | 6870 | 6157 | 1421 |
| | Gampaha | 604 | 804 | 704 | 893 | 1113 | 1003 | 227 |
| | Kaluthara | 74 | 103 | 89 | 100 | 135 | 118 | 36 |
| **Total 9** | **25** | **8527** | **11366** | **9947** | **12329** | **15935** | **14132** | **3683** |

Table 3.5.2: Estimated FSWs by province, district and by type of spot, Sri Lanka

| Province | District | Brothel | Home/ Shanty | Lodge/ Hotel | Night club/ Massage parlor | Street / Public places | Vehicle | Others | Total |
|---|---|---|---|---|---|---|---|---|---|
| **Central** | Kandy | - | 177 | 143 | 11 | 371 | 4 | 5 | **709** |
| | Matale | - | 40 | 148 | 31 | 161 | - | - | **378** |
| | Nuwara Eliya | - | 41 | 20 | 8 | 15 | - | 3 | **86** |
| **Eastern** | Ampara | 20 | 234 | 94 | - | 233 | - | 4 | **583** |
| | Batticaloa | - | 15 | 11 | - | 66 | - | - | **91** |
| | Trincomalee | - | 3 | 17 | - | 22 | - | - | **41** |
| **North Central** | Anuradhapura | - | 130 | 225 | 48 | 188 | 6 | - | **596** |
| | Polonnaruwa | 44 | 300 | 157 | - | 325 | 9 | 5 | **840** |
| **North Western** | Kurunegala | - | 174 | 197 | 1 | 315 | - | 1 | **687** |
| | Puttalam | - | 52 | 107 | - | 197 | - | 9 | **365** |
| **Northern** | Jaffna | - | 27 | 7 | - | 61 | - | - | **94** |
| | Killinochchi | - | 7 | 7 | - | 24 | - | - | **37** |
| | Mannar | - | - | - | - | 6 | - | - | **6** |
| | Mullativu | - | 17 | - | - | 9 | - | - | **25** |
| | Vavuniya | - | - | 6 | - | 28 | - | - | **34** |
| **Sabaragamuwa** | Kegalle | 21 | 15 | 122 | 20 | 65 | 2 | 2 | **247** |
| | Rathnapura | 5 | 34 | 275 | - | 410 | 2 | 4 | **729** |
| **Southern** | Galle | - | 94 | 125 | 5 | 100 | - | - | **324** |
| | Hambantota | 8 | 38 | 45 | - | 126 | - | - | **216** |
| | Matara | - | 57 | 75 | - | 161 | - | - | **292** |
| **Uva** | Badulla | - | 57 | 119 | 21 | 76 | - | - | **272** |
| | Monaragala | - | 84 | 77 | 3 | 36 | - | 7 | **206** |
| **Western** | Colombo | 453 | 1574 | 512 | 933 | 2617 | 0 | 68 | **6157** |
| | Gampaha | 11 | 145 | 430 | 62 | 356 | - | - | **1003** |
| | Kaluthara | - | 48 | 32 | - | 39 | - | - | **118** |

# 4. MEN HAVING SEX WITH MEN

The term “men who have sex with men” denotes all men who have sex with other men as a matter of preference or practice, regardless of their sexual identity or sexual orientation. The term does not refer to those men who might have had sex with other men as part of sexual experimentations or very occasionally depending on special circumstances. Men who sell sex for money or material benefits have also included in the study. All MSM that have anal sex, which has got the highest potential of HIV transmission and acquisition has also been included in this study. The three identified groups in this category are:

- Male Sex Workers (MSW): Males who have got paid in cash or kind for having sex with another male
- Nachchi: Effeminate males who have sex with other males
- Other MSM: Group of males having sex with other males and who cannot be classified under above two categories (eg: Gay men)

## 4.1 MSM Spots in Sri Lanka

As far as the MSM group is concerned, the study conducted Level 1 interviews to identify MSM hotspots and validated the hotpots identified in all the districts, except in Colombo. In Colombo, sample of spots were randomly selected from the previous mappings and validated. Based on the results of validation, the expected number of active spots was calculated. The three criteria considered to assess the MSM spots in Colombo was; i) number of sample spots remained active, ii) number of sample spots became inactive; and iii) number of new spots emerged during validation of sample spots.

The study listed a total of 1438 MSM hotspots in the country. As has seen in Figure 4.1.1, the highest number of hotspots is identified in Western province (900), followed by 125 in Southern province and 100 in Central province. All other provinces together account for 313 MSM hotspots in the country.

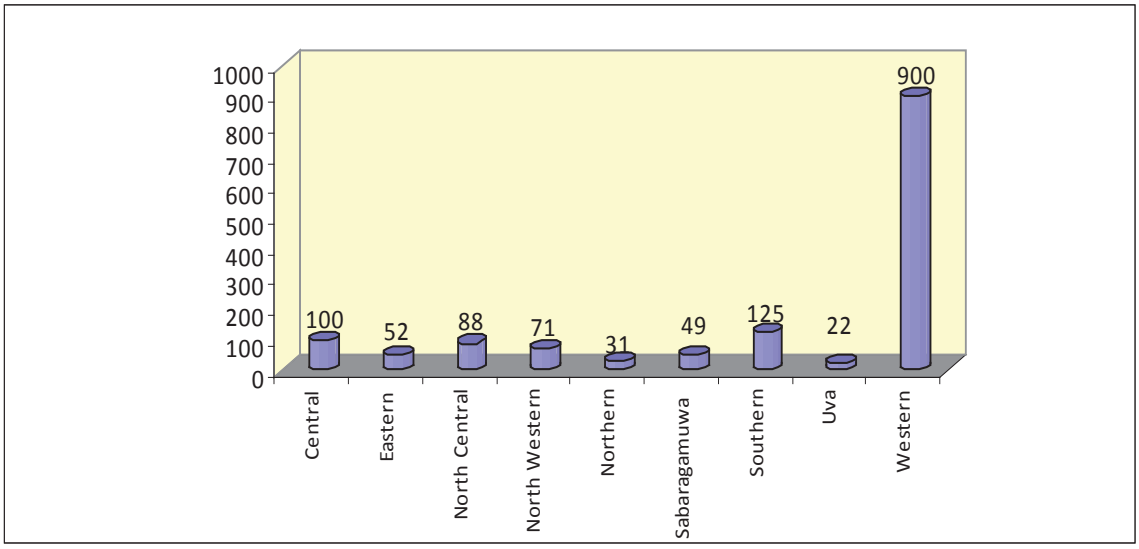



Figure 4.1.1: Total number of MSM hotspots by province, Sri Lanka

A maximum number of MSM hotspots were identified in Colombo district (717), followed by Gampaha (155), Anuradhapura (64), Matara (57), Kandy (54) and Kurunegala (45). The number of MSM spots in other districts is quite small as evident from Table 4.1.1.

Table 4.1.1: Total number of MSM hotspots by province and by district, Sri Lanka

| Province | District | No of hotspots |
|---|---|---|
| Central | Kandy | 54 |
| | Matale | 40 |
| | Nuwara Eliya | 6 |
| Eastern | Ampara | 28 |
| | Batticaloa | 13 |
| | Trincomalee | 11 |
| North Central | Anuradhapura | 64 |
| | Polonnaruwa | 24 |
| North Western | Kurunegala | 45 |
| | Puttalam | 26 |
| Northern | Jaffna | 21 |
| | Killinochchi | 3 |
| | Mannar | 2 |
| | Mullativu | 1 |
| | Vavuniya | 4 |
| Sabaragamuwa | Kegalle | 13 |
| | Rathnapura | 36 |
| Southern | Galle | 39 |
| | Hambantota | 29 |
| | Matara | 57 |
| Uva | Badulla | 14 |
| | Monaragala | 8 |
| Western | Colombo | 717 |
| | Gampaha | 155 |
| | Kaluthara | 28 |

## 4.2 Estimates of MSMs

Figure 4.2.1 presents the estimated number of MSMs in Sri Lanka. The study estimated a total of 7551 MSMs in the country with a minimum of 6547 to a maximum of 8554. This further suggests that on an average of 5.2 MSMs per identified hotspots in the country. Examining the estimated MSMs on a usual and peak day, the study showed that the estimated MSM on a peak day is about 71% higher than the estimated MSMs on an average day in the country.

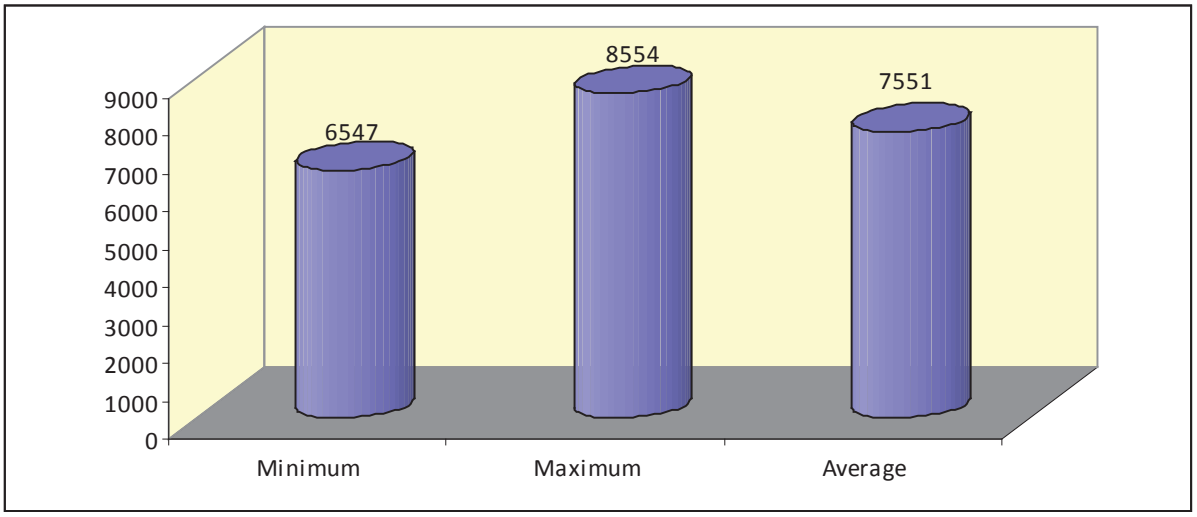



Figure 4.2.1: Estimated MSMs in Sri Lanka

The study further showed that on an average there are 2672 MSWs in the country (range=2317-3027). Figure 4.2.2 also presents that the number of Nachchis and other MSMs in the country are respectively 2693 (range=2335-3051) and 2186 (range=1895-2476). Figure 4.2.3 presents the percent distribution of MSMs by identity. Slightly over one-third each of the MSMs in the country is MSWs and Nachchis and the remaining 29% belong to other MSMs. While predominant group in most of the provinces are MSWs (Central, Eastern, North-western, Sabaragamuwa , Southern and Uva), it is Nachchis in north central province and other MSMs in northern province (Figure 4.2.4). Only 13% of the MSMs in Northern province is MSWs and another 37% in the same province belongs to Nachchis. In case of North-central province, about 46% MSMs are Nachchis, followed by 31% belongs to MSWs. In the central province, MSMs are more or less equally distributed among MSWs, Nachchis and Other MSMs.

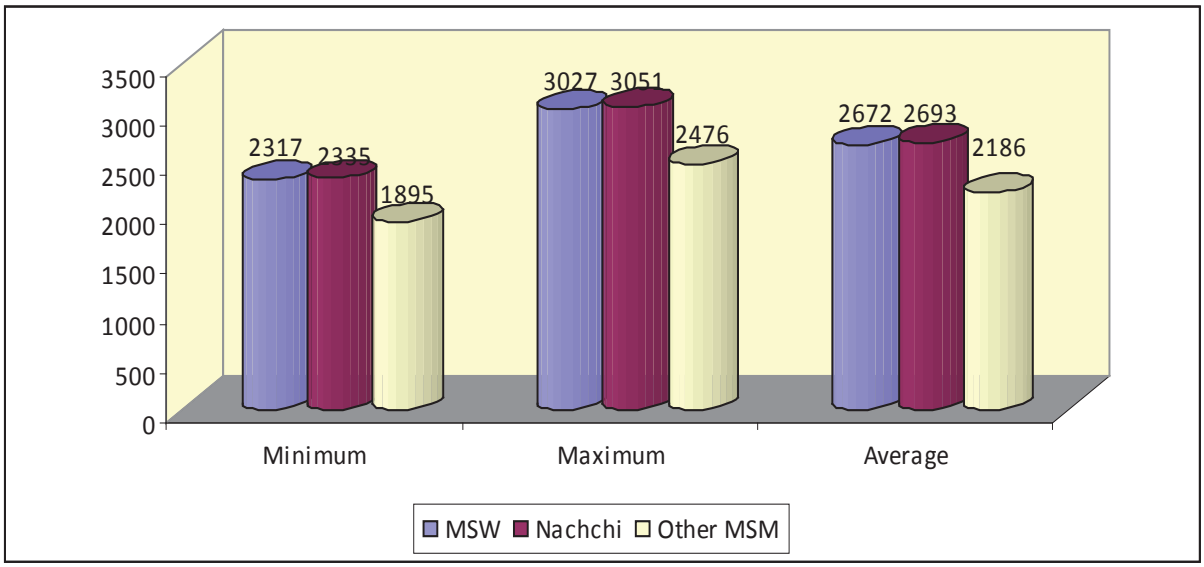



Figure 4.2.2: Estimated MSMs by identity in Sri Lanka

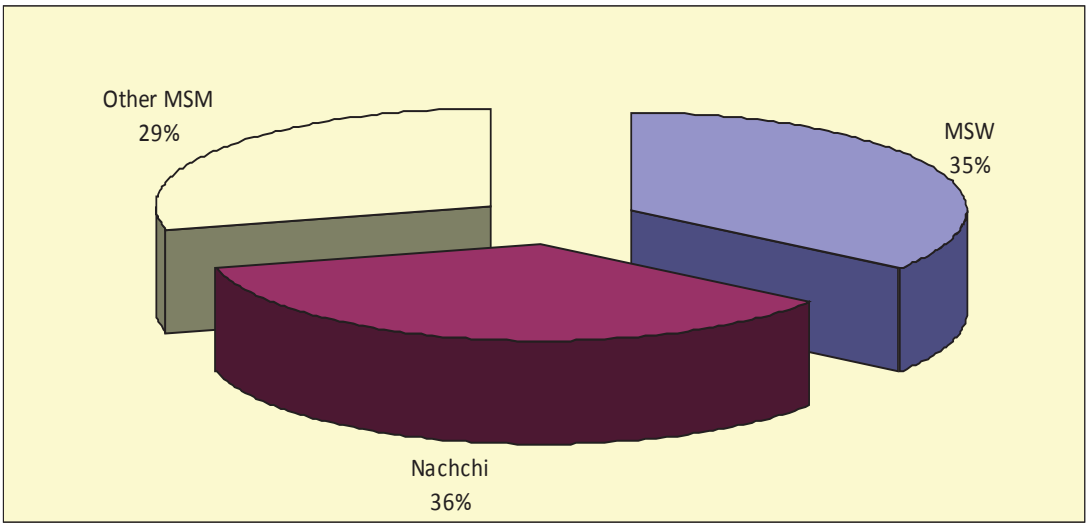



Figure 4.2.3: Percent distribution of MSMs by identity in Sri Lanka

## 4.3 Estimates of MSMs by province

The MSMs are identified in all the provinces with varying numbers (Table 4.3.1). Majority of the MSMs are in Western Province (4925), followed by 611 in Southern Province and 560 in Central Province. The Uva Province has the least number of MSMs and is as low as 46. On an average, there are 5.3 MSMs per spot in the country which ranges from a maximum of 9.8 in Northern Province to a minimum of 2.1 in Uva Province

Table 4.3.1: Estimated number and mean per spot of MSMs by province, Sri Lanka

| Province | No of spots | Minimum | Maximum | Average | Mean/spot |
|---|---|---|---|---|---|
| Central | 100 | 502 | 617 | 560 | 5.6 |
| Eastern | 52 | 207 | 284 | 246 | 4.7 |
| North Central | 88 | 326 | 405 | 366 | 4.2 |
| North Western | 71 | 251 | 328 | 290 | 4.1 |
| Northern | 31 | 266 | 342 | 304 | 9.8 |
| Sabaragamuwa | 49 | 186 | 227 | 207 | 4.2 |
| Southern | 125 | 525 | 696 | 611 | 4.9 |
| Uva | 22 | 37 | 54 | 46 | 2.1 |
| Western | 900 | 4247 | 5601 | 4925 | 5.5 |
| **Total** | **1438** | **6547** | **8554** | **7551** | **5.3** |

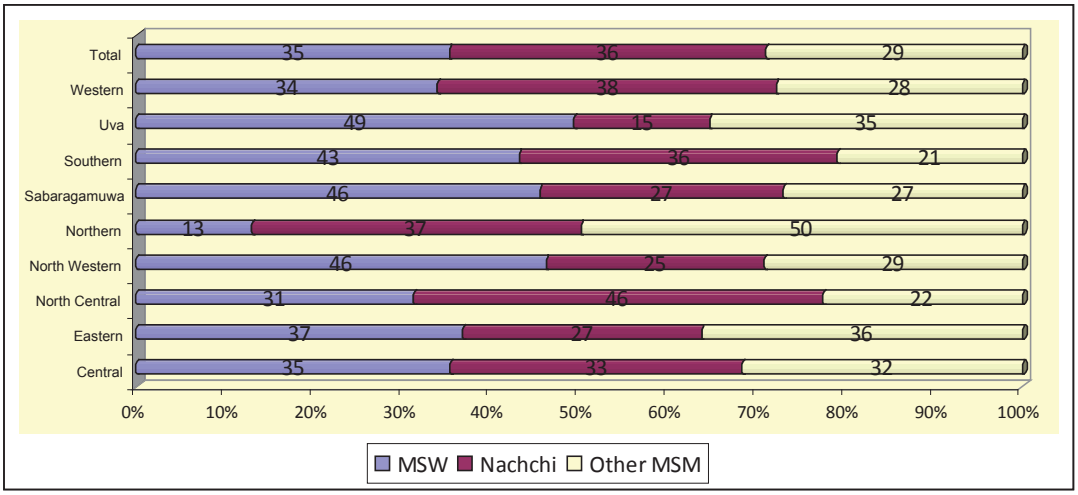



Figure 4.3.1: Percent distribution of MSMs by their identity and by province, Sri Lanka

## 4.4 Estimates of MSMs by districts

Estimated MSMs by district is presented in Table 4.4.1 along with number of active MSM spots in these districts. Out of the total 7551 MSMs in the country, almost 4000 (range=3418-4563) are from Colombo district. A significant number of MSMs (more than 500)were also identified in Gampaha district. The estimated MSMs in all other districts are less than 500 and few districts in Northern Province has less than 30 MSMs (Mannar, Mullativu and Vavuniya).

Table 4.4.1: Estimated MSMs by districts, Sri Lanka

| Province | District | # of spots | MSMs | | |
|---|---|---|---|---|---|
| | | | Min | Max | Avg |
| **Central** | Kandy | 54 | 292 | 359 | 326 |
| | Matale | 40 | 203 | 247 | 225 |
| | Nuwara Eliya | 6 | 7 | 11 | 9 |
| **Eastern** | Ampara | 28 | 148 | 212 | 180 |
| | Batticaloa | 13 | 29 | 36 | 33 |
| | Trincomalee | 11 | 30 | 36 | 33 |
| **North Central** | Anuradhapura | 64 | 260 | 324 | 292 |
| | Polonnaruwa | 24 | 66 | 81 | 74 |
| **North Western** | Kurunegala | 45 | 145 | 192 | 169 |
| | Puttalam | 26 | 106 | 136 | 121 |
| **Northern** | Jaffna | 21 | 211 | 271 | 241 |
| | Killinochchi | 3 | 25 | 34 | 30 |
| | Mannar | 2 | 8 | 10 | 9 |
| | Mullativu | 1 | 5 | 6 | 6 |
| | Vavuniya | 4 | 17 | 21 | 19 |
| **Sabaragamuwa** | Kegalle | 13 | 28 | 32 | 30 |
| | Rathnapura | 36 | 158 | 195 | 177 |
| **Southern** | Galle | 39 | 195 | 256 | 226 |
| | Hambantota | 29 | 109 | 146 | 128 |
| | Matara | 57 | 221 | 294 | 258 |
| **Uva** | Badulla | 14 | 17 | 25 | 21 |
| | Monaragala | 8 | 20 | 29 | 25 |
| **Western** | Colombo | 717 | 3418 | 4563 | 3991 |
| | Gampaha | 155 | 700 | 881 | 791 |
| | Kaluthara | 28 | 129 | 157 | 143 |
| **Total** | | **1438** | **6547** | **8554** | **7551** |

Table 4.4.2 presents the estimated MSWs, Nachchis and other MSMs by districts of Sri Lanka. The distribution of these groups is more or less same pattern as that of all the MSMs with highest number seen in Colombo district, followed by Gampaha district.

Table 4.4.2: Estimated MSWs, Nachchis and other MSMs by districts, Sri Lanka

| Province | District | Number of spots | MSW | | | Nachchi | | | Other MSMs | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Min | Max | Avg | Min | Max | Avg | Min | Max | Avg |
| **Central** | Kandy | 54 | 111 | 137 | 124 | 79 | 108 | 94 | 92 | 126 | 109 |
| | Matale | 40 | 62 | 73 | 68 | 76 | 104 | 90 | 60 | 72 | 66 |
| | Nuwara Eliya | 6 | 5 | 8 | 7 | 1 | 1 | 1 | 1 | 2 | 2 |
| **Eastern** | Ampara | 28 | 61 | 81 | 71 | 33 | 45 | 39 | 48 | 66 | 57 |
| | Batticaloa | 13 | 3 | 3 | 3 | 9 | 14 | 12 | 13 | 15 | 14 |
| | Trincomalee | 11 | 9 | 11 | 10 | 9 | 13 | 11 | 11 | 12 | 12 |
| **North Central** | Anuradhapura | 64 | 72 | 87 | 80 | 111 | 145 | 128 | 60 | 70 | 65 |
| | Polonnaruwa | 24 | 24 | 32 | 28 | 29 | 32 | 31 | 11 | 13 | 12 |
| **North Western** | Kurunegala | 45 | 83 | 111 | 97 | 28 | 37 | 33 | 34 | 46 | 40 |
| | Puttalam | 26 | 34 | 41 | 38 | 34 | 44 | 39 | 38 | 51 | 45 |
| **Northern** | Jaffna | 21 | 20 | 34 | 27 | 78 | 100 | 89 | 114 | 141 | 128 |
| | Killinochchi | 3 | 3 | 5 | 4 | 5 | 7 | 6 | 13 | 16 | 15 |
| | Mannar | 2 | 2 | 2 | 2 | 4 | 6 | 5 | 2 | 2 | 2 |
| | Mullativu | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 1 | 1 | 1 |
| | Vavuniya | 4 | 4 | 5 | 5 | 8 | 11 | 10 | 5 | 5 | 5 |
| **Sabaragamuwa** | Kegalle | 13 | 27 | 35 | 31 | 4 | 4 | 4 | 1 | 1 | 1 |
| | Rathnapura | 36 | 61 | 73 | 67 | 48 | 62 | 55 | 48 | 66 | 57 |
| **Southern** | Galle | 39 | 54 | 76 | 65 | 87 | 110 | 99 | 23 | 34 | 29 |
| | Hambantota | 29 | 44 | 56 | 50 | 29 | 39 | 34 | 36 | 51 | 44 |
| | Matara | 57 | 113 | 156 | 135 | 68 | 81 | 75 | 40 | 57 | 49 |
| **Uva** | Badulla | 14 | 8 | 13 | 11 | 2 | 2 | 2 | 5 | 8 | 7 |
| | Monaragala | 8 | 8 | 13 | 11 | 3 | 6 | 5 | 7 | 10 | 9 |
| **Western** | Colombo | 717 | 1048 | 1468 | 1258 | 1509 | 2029 | 1769 | 861 | 1067 | 964 |
| | Gampaha | 155 | 249 | 323 | 286 | 225 | 280 | 253 | 225 | 280 | 253 |
| | Kaluthara | 28 | 46 | 58 | 52 | 32 | 42 | 37 | 35 | 43 | 39 |

## 4.5 Estimates of MSMs by type of spot

Though MSMs visits different types of spots (Figure 4.5.1), they appear to mostly frequent street/public places. As many as 5500 MSMs visit public places, while over 1200 operate from home/shanty and an additional 488 seek their partner in places other than public and home/shanty. As presented in Figure 4.5.2, three-fourth of the MSMs cruises in public places, followed by 16% at home/shanty and another 4% at hotel/lodge and remaining 6% in other places.

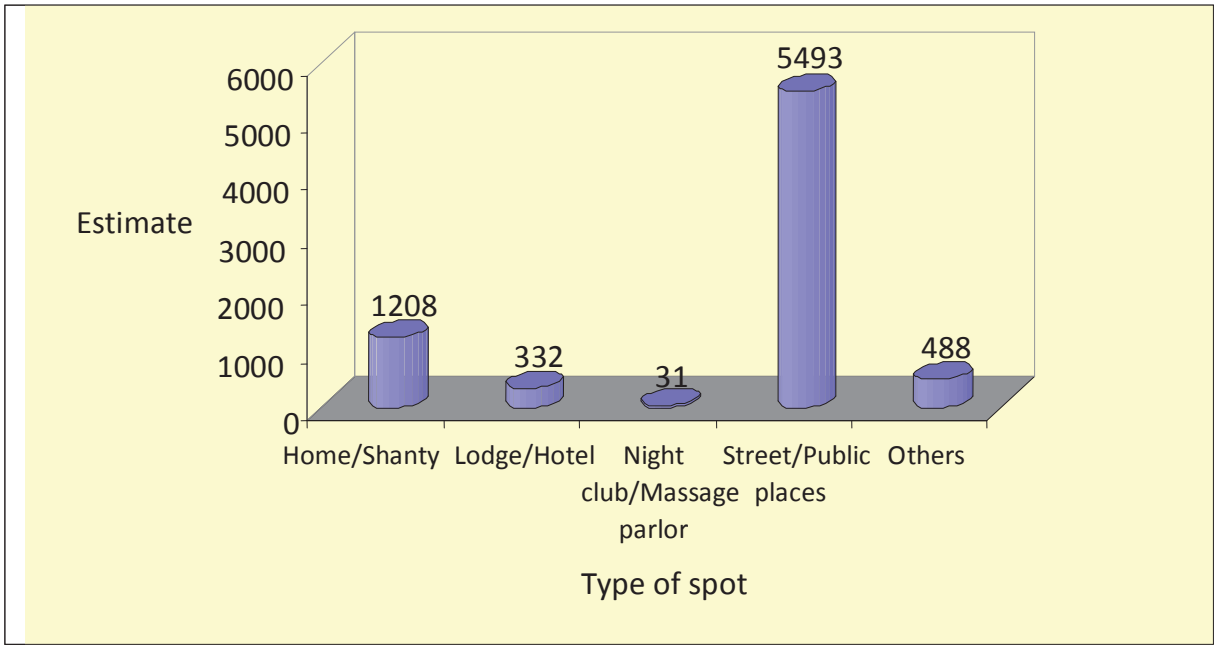



Figure 4.5.1: Estimated MSMs by type of spot, Sri Lanka

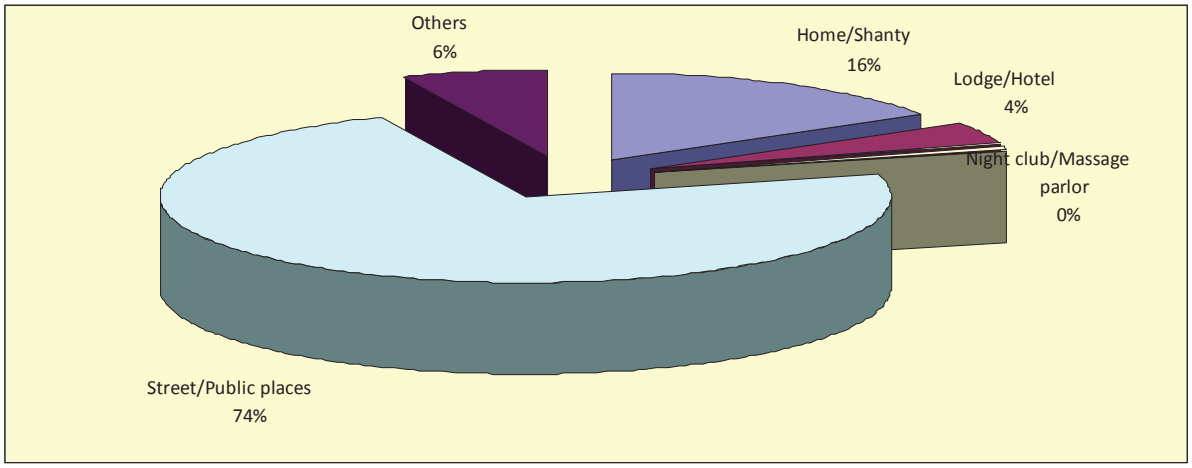



Figure 4.5.2: Percent distribution of MSMs by type of spot, Sri Lanka

The distribution of MSMs by districts shows that the number of MSMs per districts is low. A significant number of MSMs were identified in Colombo, Gampaha, Kandy, Matara and Jaffna Districts. In almost all the districts, street/public places, followed by Home/Shanty were the main places where MSMs cruise (Table 4.5.1)

Table 4.5.1: Estimated MSMs by type of spot and by district, Sri Lanka

| Province | District | Type of spot | | | | | Total |
|---|---|---|---|---|---|---|---|
| | | Home/ Shanty | Lodge/ Hotel | Night club/ Massage Palor | Public places Street/ | Others | |
| Central | Kandy | 34 | 0 | 0 | 279 | 14 | 326 |
| | Matale | 14 | 4 | 0 | 204 | 4 | 225 |
| | Nuwara Eliya | 5 | 0 | 0 | 4 | 0 | 9 |
| Eastern | Ampara | 10 | 77 | 0 | 78 | 16 | 180 |
| | Batticaloa | 3 | 6 | 0 | 22 | 2 | 33 |
| | Trincomalee | 8 | 0 | 0 | 26 | 0 | 33 |
| North Central | Anuradhapura | 92 | 5 | 1 | 195 | 0 | 292 |
| | Polonnaruwa | 39 | 0 | 9 | 20 | 6 | 74 |
| North Western | Kurunegala | 67 | 7 | 1 | 78 | 17 | 169 |
| | Puttalam | 15 | 9 | 0 | 57 | 40 | 121 |
| Northern | Jaffna | 69 | 5 | 0 | 165 | 4 | 241 |
| | Killinochchi | 0 | 0 | 0 | 25 | 5 | 30 |
| | Mannar | 0 | 0 | 0 | 9 | 0 | 9 |
| | Mullativu | 6 | 0 | 0 | 0 | 0 | 6 |
| | Vavuniya | 0 | 0 | 0 | 19 | 0 | 19 |
| Sabaragamuwa | Kegalle | 4 | 1 | 0 | 16 | 10 | 30 |
| | Rathnapura | 19 | 0 | 0 | 81 | 77 | 177 |
| Southern | Galle | 37 | 7 | 0 | 176 | 7 | 226 |
| | Hambantota | 13 | 0 | 0 | 86 | 29 | 128 |
| | Matara | 9 | 0 | 0 | 249 | 0 | 258 |
| Uva | Badulla | 8 | 4 | 2 | 4 | 4 | 21 |
| | Monaragala | 7 | 0 | 0 | 12 | 6 | 25 |
| Western | Colombo | 585 | 48 | 7 | 3286 | 65 | 3991 |
| | Gampaha | 120 | 73 | 6 | 509 | 83 | 791 |
| | Kaluthara | 30 | 0 | 0 | 112 | 2 | 143 |

# 5. DRUG AND INJECTING DRUG USERS

DUs including injecting drug users in the study are defined as someone who is currently using drugs (oral or injecting). In the context of HIV, the study assessed the number of current users (oral and injecting) rather than ever users. While assessing the current users, standard protocol was to identify DU during a specified reference period. The study considered a 3 month reference period to maintain the consistency. The study also assessed number of the DU prior to 3 months period within the past 6 months during level 2 to understand the changing drug use practices, particularly those switching from inhaling to injecting or vice versa, if any. Along with DU, the mapping assessed Injecting drug users and those sharing needles as well. An injecting drug user is defined as "a person who injects drugs, for non-therapeutic purposes, irrespective of the type of drug injected."

## 5.1 Drug and Injecting Drug Use Spots

The study identified a total of 1923 hotspots, where DUS visit to take drugs (oral or injection) (Figure 5.1.1). Among the 1923 spots, injecting practices take place only in 125 hotspots, whereas DU share needles in 74 hotspots. It may be mentioned here that while injecting practices occur only in 6% of the total DU hotspots, sharing of needles takes place in as high as 59% of the injecting hotspots.

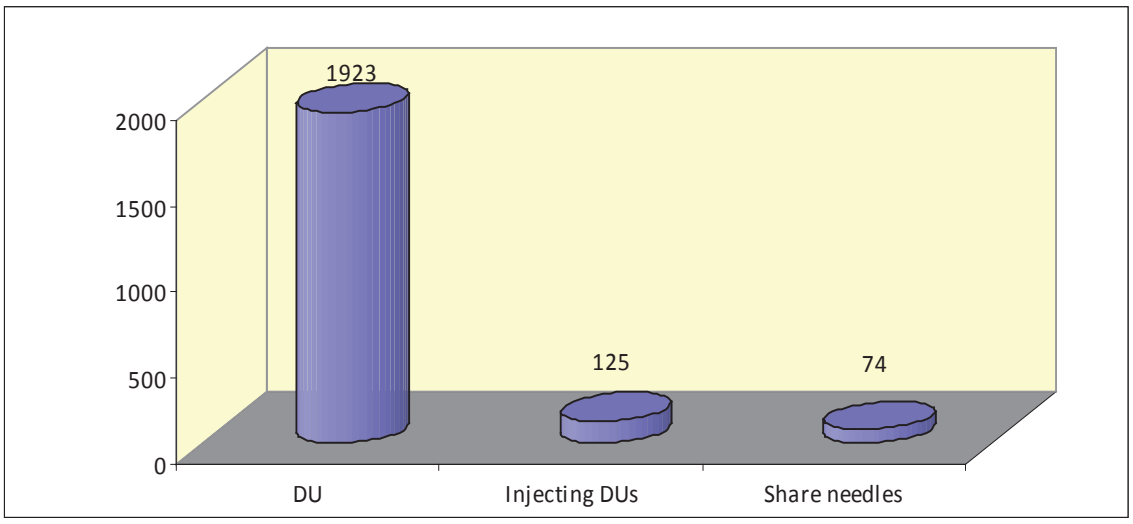



Figure 5.1.1: Number of active spots of DU, injecting drug users and those sharing needles, Sri Lanka

Of the total 1923 DU spots, 659 are from the Western province, 402 in North Western province, 244 in Southern province, 241 in Central province and 232 in Sabaragamuwa province. Very few drug use spots were identified in Northern, Eastern and Uva provinces. A similar pattern is noticed as far as the injecting drug use and sharing needles use spots are concerned. That is, a large majority of the injecting and sharing spots are from Western province, followed by North Western province.

Table 5.1.1: Number of active spots of DU, injecting drug users and those share needles by province, Sri Lanka

| Province | Number of spots | | |
|---|---|---|---|
| | DUs | Injecting DU | Share needles |
| Central | 241 | 7 | 1 |
| Eastern | 24 | 0 | 0 |
| North Central | 67 | 2 | 0 |
| North Western | 402 | 22 | 12 |
| Northern | 1 | 0 | 0 |
| Sabaragamuwa | 232 | 5 | 4 |
| Southern | 244 | 2 | 0 |
| Uva | 53 | 0 | 0 |
| Western | 659 | 87 | 57 |
| **Total** | **1923** | **125** | **74** |

## 5.2 Estimates of Drug users, Injecting drug users and those sharing needles

The study estimated an average of 12,618 DUs in the country on a usual day, ranging from 11,009 to 14,214. On a peak day, it is estimated at an average of 17,459 drug users ranging from 15,338 to 19,542. This suggests that about 38% more DUs visit the spots on a peak day as compared to usual day.

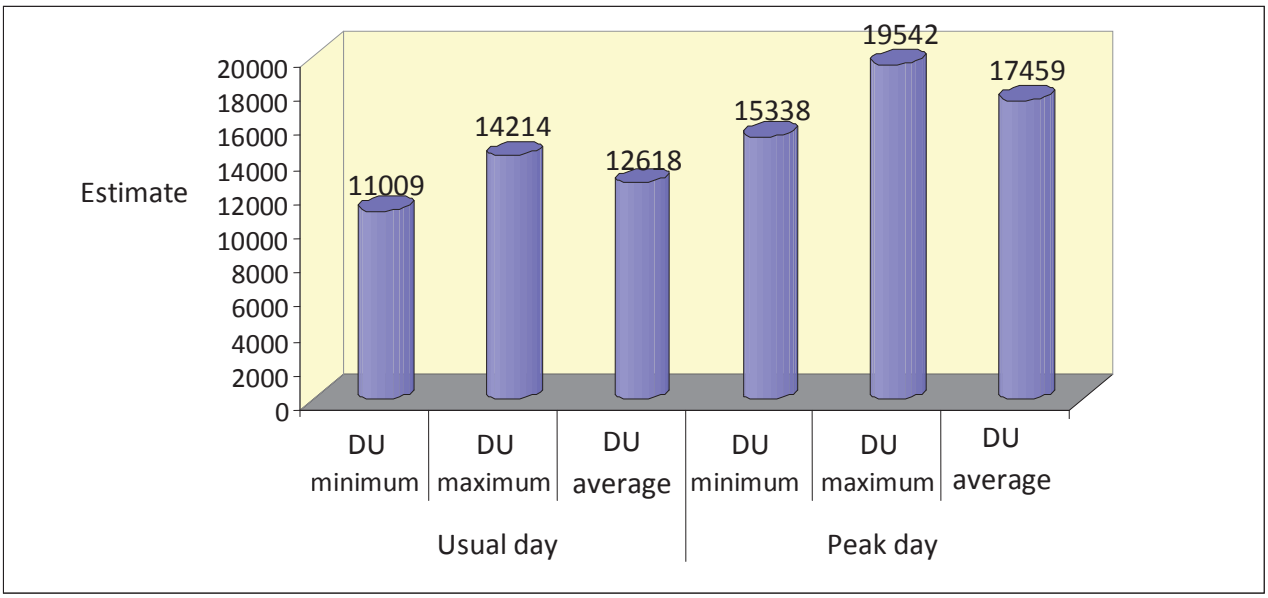



Figure 5.2.1: Estimated drug users, injecting drug users and those sharing needles on a usual and peak day, Sri Lanka

Previous studies have identified a limited number of spots where injection or sharing needle practices takes place. Figure 5.2.2 also presents a similar pattern as far as the estimated injecting drug users and those sharing needles are concerned. While on a usual day, there are 218 injecting drug users (IDUs) in the country, ranging from a minimum of 164 to a maximum of 271, it is about 423 on a peak day (range 328-516). The figure further shows that those sharing needles is quite small in the country and is about 210, ranging from a minimum of 144 to a maximum of 275.

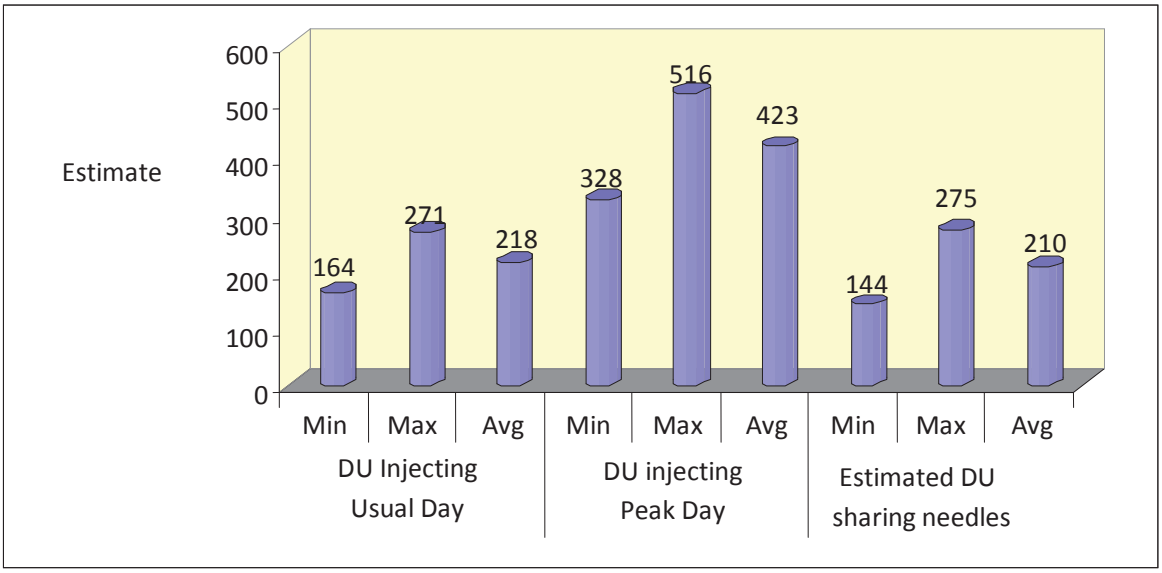



Figure 5.2.2: Estimated number of injecting and sharing needles drug users, Sri Lanka

The study further shows that only 2.4% and 1.2% of the total drug users respectively inject drugs and share needles while injecting drug. In other words, though overall only about one percent share needles it is as high as 50% of the total injecting drug users.

In order to assess the changing patterns of drug use behaviour in Sri Lanka, the DU Level 2 form inquired into how many drug users there were in the country before 3 months, but within 6 months prior to the Size Estimation study. The study revealed that the estimated drug users prior to 3 months was 11% higher than the current estimate suggesting that it is possible that some of them shifted to injecting practices, unless they stop using drugs.

## 5.3 Estimates of Drug users, Injecting drug users and those sharing needles by province

Table 5.3.1 presents the estimated DUs on a usual and peak day by province in Sri Lanka. As explained, the total number of drug users in the country is about 17,459, ranging from a minimum of 15,338 to a maximum of 19542. As far as the estimated DUs across the provinces are concerned, a large number of DUs are seen in Western province (average 7372), followed by North Western (3168), Southern (2157) and Central (2144). The estimated drug users in Northern and Eastern province are marginal in numbers and are less than 100 DUs.

It may be further analyzed from the table that the peak day estimate is 38% higher in the country as compared to the usual day estimate, and which ranges from 7% in Northern Province to as high as 64% in Uva Province.

Table 5.3.1: Estimated drug users on a usual and peak day by province, Sri Lanka

| | Usual day | | | Peak day | | |
|---|---|---|---|---|---|---|
| Province | Minimum | maximum | average | minimum | maximum | average |
| Central | 1484 | 1843 | 1664 | 1956 | 2331 | 2144 |
| Eastern | 68 | 90 | 79 | 74 | 96 | 85 |
| North Central | 236 | 315 | 276 | 287 | 382 | 335 |
| North Western | 2259 | 2908 | 2584 | 2795 | 3540 | 3168 |
| Northern | 3 | 4 | 4 | 3 | 4 | 4 |
| Sabaragamuwa | 1112 | 1427 | 1270 | 1633 | 2070 | 1852 |
| Southern | 1220 | 1647 | 1434 | 1876 | 2438 | 2157 |
| Uva | 168 | 251 | 210 | 296 | 394 | 345 |
| Western | 4459 | 5729 | 5100 | 6418 | 8287 | 7372 |
| Total | 11009 | 14214 | 12618 | 15338 | 19542 | 17459 |

Table 5.3.2 and Figure 5.3.1 presents the estimated DUs, IDUs and those sharing needles by provinces in Sri Lanka. As explained, a large number of DUs, IDUs and those sharing needles is seen in Western province, followed by North Western province. At least in three provinces, namely Eastern, Northern and Uva we were unable find any IDUs or those sharing needles.

We have seen that slightly over 2% of the total DUs inject drugs and the pattern more or less remains same across provinces and ranges from less than one percent to a maximum of 2%.

Table 5.3.2: Estimated DUs, IDUs and those sharing needles by province, Sri Lanka

| Province | DU | IDU | IDUs share needles |
|---|---|---|---|
| Central | 2144 | 34 | 13 |
| Eastern | 85 | 0 | 0 |
| North Central | 335 | 9 | 0 |
| North Western | 3168 | 87 | 30 |
| Northern | 4 | 0 | 0 |
| Sabaragamuwa | 1852 | 27 | 10 |
| Southern | 2157 | 10 | 0 |
| Uva | 345 | 0 | 0 |
| Western | 7372 | 256 | 157 |
| **Total** | **17459** | **423** | **210** |

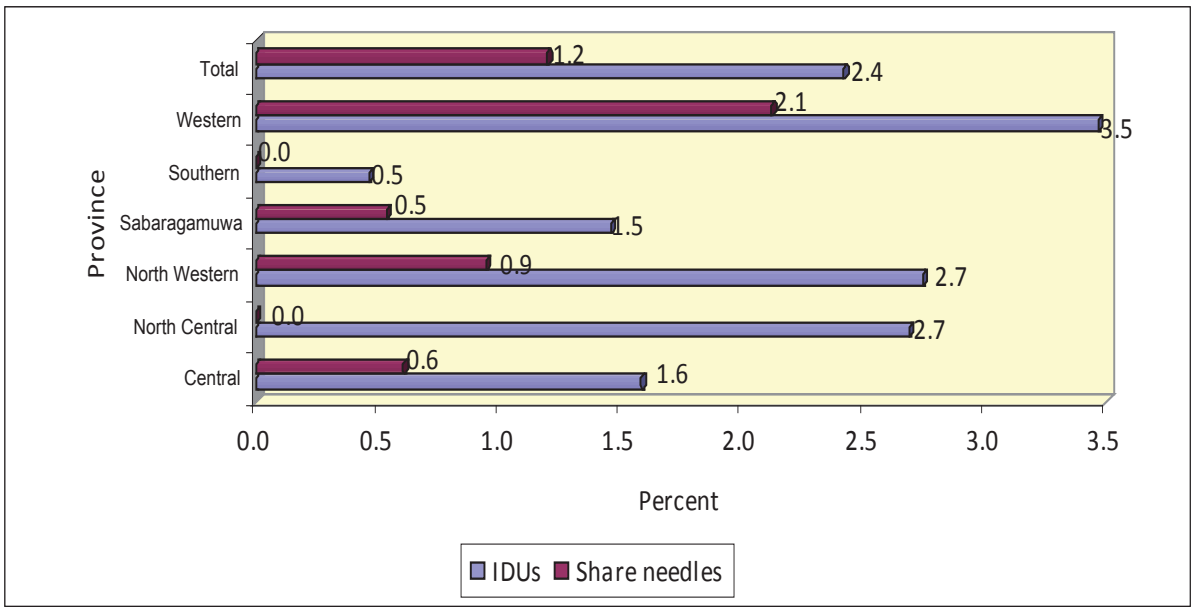



Figure 5.3.1: Percent of drug users engaged in injection practices by province, Sri Lanka

As far as the distribution of DUs, IDUs and IDUs sharing needles is concerned a large proportion of the DUs, IDUs and those sharing needles are from Western province (Figure 5.3.2). For instance, while 42% DUs are from Western province 60% are IDUs and 75% respectively IDUs and those sharing needles are from Western province.

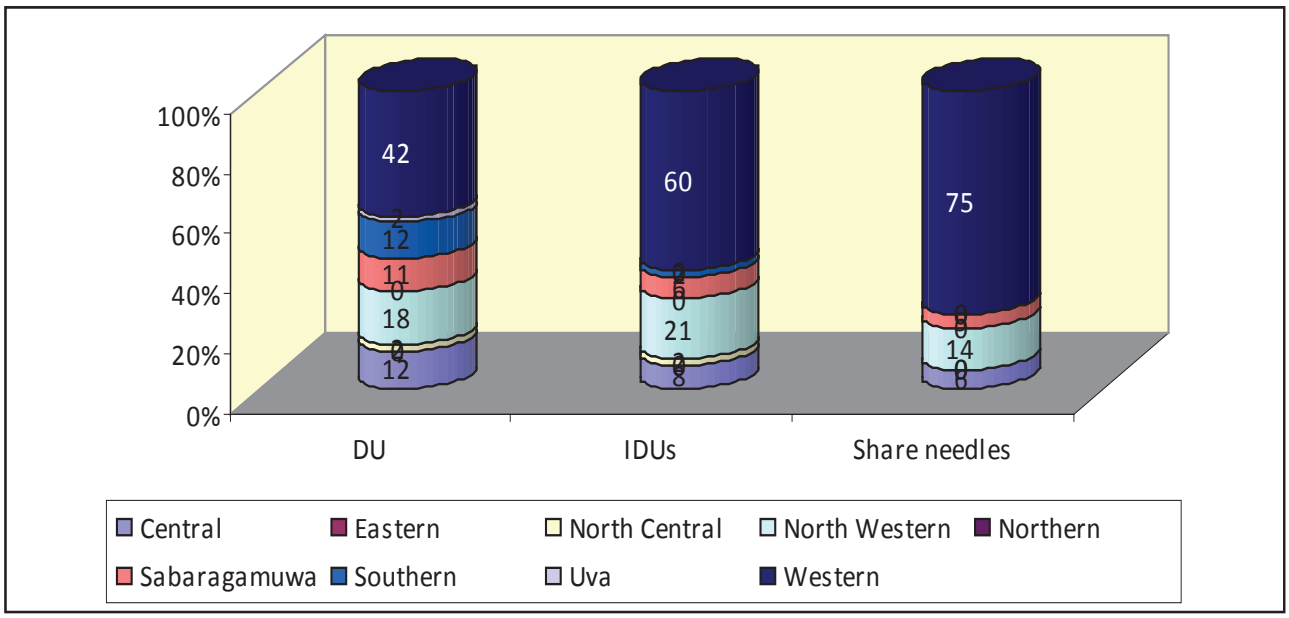



Figure 5.3.2: Percent distribution of DUs, IDUs and those sharing needles by type of spot, Sri Lanka

## 5.4 Estimates of Drug users, Injecting drug users and those sharing needles by type of spot

As seen previously, the estimated DUs in the country is about 17,459 (range 15338-19542). Further assessing them by type of spot, we see that a large majority are street based (average=12,927, range=11,385-14,540), followed by home/shanty (average=3599, range=3123-4075). Though there are DUs in other type of spots as well, it is negligible in numbers.

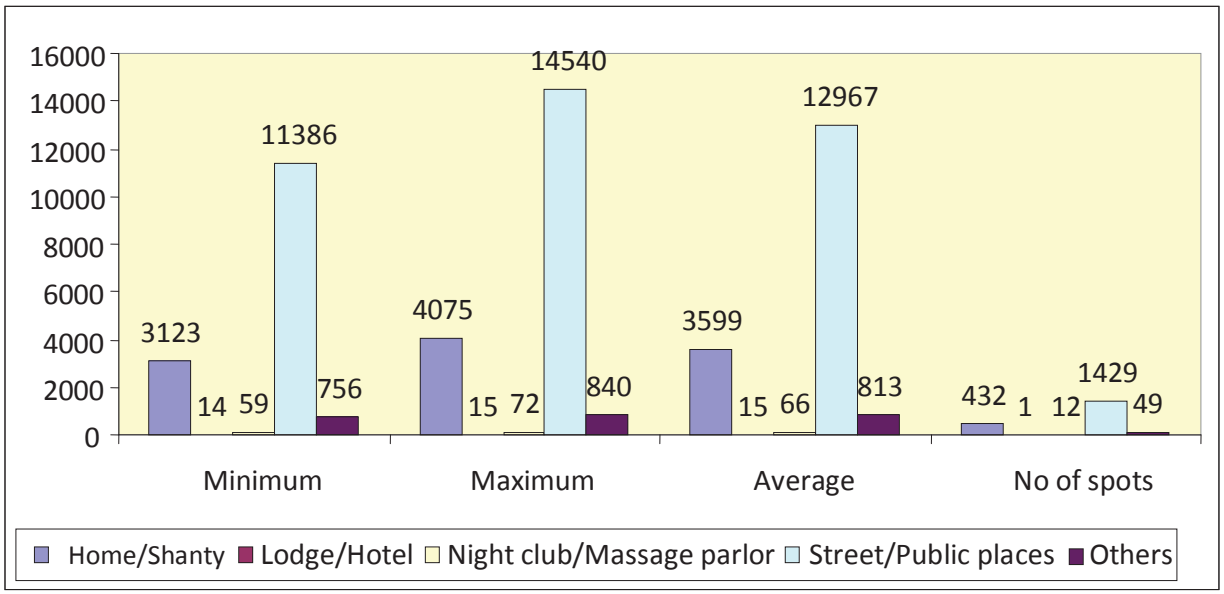



Figure 5.4.1: Estimated DUs by type of spot, Sri Lanka

The data shows that a very large proportion of DUs, IDUs and IDUs who share needles by type of spot visit street/public places for drug use (Figure 5.4.2). While three-fourth (74%) of the DUs visit street/public places, another 21% use drugs at home/shanty. As far as the IDUs are concerned, over two-third (68%) visit public places including streets, an additional 19% inject at home/shanty and 13% visit other locations. While 59% of the IDUs share needles at public places/streets, another 29% share needles at home/shanty's and a marginal proportion (12%) inject in places other than the one mentioned above.

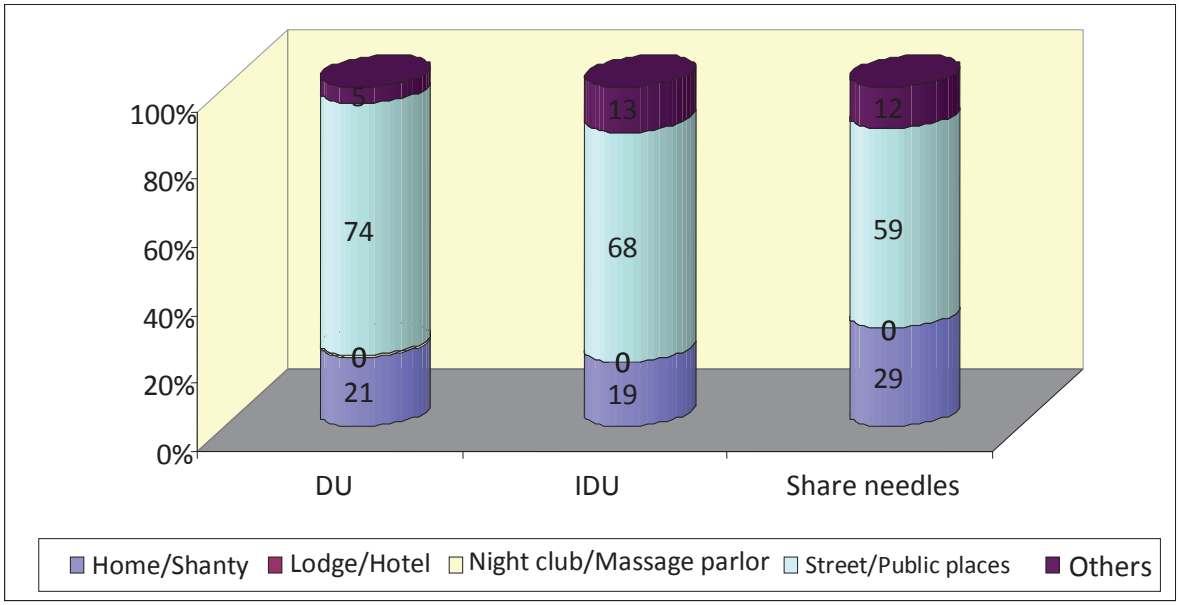



Figure 5.4.2: Percent distribution of DUs, IDUs and those sharing needles by type of spot, Sri Lanka

The size estimation exercise further estimated the estimated number of DUs by province and by type of spot (Table 5.4.1). As shown, a large proportion of the DUs are either from the Western Province or from street/public places, followed by Home/shanty based DUs in Western Province. The distribution of DUs by type of spot remains more or less the same distribution across provinces as well.

Table 5.4.1: Estimated DUs by province and by type of spot, Sri Lanka

| | Type of spot | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Home/Shanty | | Lodge/Hotel | | Night club/Massage parlor | | Street/Public places | | Others | |
| Province | Estimate | No of spots | Estimate | No of spots | Estimate | No of spots | Estimate | No of spots | Estimate | No of spots |
| Central | 430 | 52 | 0 | 0 | 6 | 1 | 1667 | 185 | 41 | 3 |
| Eastern | 9 | 3 | 0 | 0 | 0 | 0 | 75 | 20 | 2 | 1 |
| North Central | 75 | 22 | 0 | 0 | 3 | 1 | 255 | 43 | 3 | 1 |
| North Western | 833 | 114 | 0 | 0 | 32 | 8 | 1892 | 259 | 412 | 21 |
| Northern | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 0 |
| Sabaragamuwa | 257 | 29 | 15 | 1 | 26 | 2 | 1492 | 190 | 63 | 10 |
| Southern | 380 | 66 | 0 | 0 | 0 | 0 | 1742 | 173 | 36 | 5 |
| Uva | 136 | 24 | 0 | 0 | 0 | 0 | 190 | 26 | 19 | 3 |
| Western | 1481 | 122 | 0 | 0 | 0 | 0 | 5652 | 532 | 239 | 5 |
| **Total** | **3599** | **432** | **15** | **1** | **66** | **12** | **12967** | **1429** | **813** | **49** |

A large number of both IDUs and those sharing needles visit public places in Western Province (Table 5.4.2). The number of IDUs and those sharing needles are lower in other type of spots across other provinces.

Table 5.4.2: Estimated IDUs and those sharing needles by province and by type of spot, Sri Lanka Did Shajy give this format for the table ? Yes, I merely colored boxes

| Province | Type of spot | IDUs | Sharing needles |
|---|---|---|---|
| **Central** | Home/Shanty | 13 | 13 |
| | Street/Public places | 21 | 0 |
| ***TOTAL*** | | ***34*** | ***13*** |
| **North Central** | Street/Public places | 9 | 0 |
| ***TOTAL*** | | ***9*** | ***0*** |
| **North Western** | Home/Shanty | 15 | 11 |
| | Street/Public places | 32 | 10 |
| | Others | 40 | 10 |
| ***TOTAL*** | | ***87*** | ***31*** |
| **Sabaragamuwa** | Home/Shanty | 3 | 3 |
| | Street/Public places | 24 | 7 |
| | Others | 1 | 1 |
| ***TOTAL*** | | ***27*** | ***11*** |
| **Southern** | Home/Shanty | 4 | 0 |
| | Street/Public places | 6 | 0 |
| ***TOTAL*** | | ***10*** | ***0*** |
| **Western** | Home/Shanty | 45 | 35 |
| | Street/Public places | 196 | 107 |
| | Others | 15 | 15 |
| ***TOTAL*** | | ***256*** | ***157*** |
| | ***TOTAL*** | **423** | **212** |

## 5.5 Estimates of Drug users, Injecting drug users and those sharing needles by district

Reviewing the spread of DUs, IDUs and those sharing needles, the study showed that both Colombo and Gampaha district reported similar number of DUs (about 3400). A significant

number of DUs were also seen in districts of Kurunegala, Puttalam, Kandy and Rathnapura (over 1000 DUs). Less than 100 DUs were seen in the districts of Nuwara Eliya, Ampara, Batticaloa, Polonnaruwa, Jaffna and Monaragala.

Table 5.5.1: Estimated DUs, IDUs and those sharing needles by province and by districts, Sri Lanka

| Province | District | DU | IDU | Sharing needles |
|---|---|---|---|---|
| **Central** | Kandy | 1347 | 17 | 13 |
| | Matale | 754 | 18 | 0 |
| | Nuwara Eliya | 43 | 0 | 0 |
| ***TOTAL*** | | ***2144*** | ***34*** | ***13*** |
| **Eastern** | Ampara | 52 | 0 | 0 |
| | Batticaloa | 33 | 0 | 0 |
| ***TOTAL*** | | ***85*** | ***0*** | ***0*** |
| **North Central** | Anuradhapura | 306 | 9 | 0 |
| | Polonnaruwa | 29 | 0 | 0 |
| ***TOTAL*** | | ***335*** | ***9*** | ***0*** |
| **North Western** | Kurunegala | 1759 | 27 | 16 |
| | Puttalam | 1409 | 60 | 14 |
| ***TOTAL*** | | ***3168*** | ***87*** | ***30*** |
| **Northern** | Jaffna | 4 | 0 | 0 |
| ***TOTAL*** | | ***4*** | ***0*** | ***0*** |
| **Sabaragamuwa** | Kegalle | 801 | 0 | 0 |
| | Rathnapura | 1051 | 27 | 10 |
| ***TOTAL*** | | ***1852*** | ***27*** | ***10*** |
| **Southern** | Galle | 649 | 4 | 0 |
| | Hambantota | 858 | 0 | 0 |
| | Matara | 651 | 6 | 0 |
| ***TOTAL*** | | **2157** | **10** | **0** |
| **Uva** | Badulla | 262 | 0 | 0 |
| | Monaragala | 83 | 0 | 0 |
| ***TOTAL*** | | ***345*** | ***0*** | ***0*** |
| **Western** | Colombo | 3488 | 179 | 109 |
| | Gampaha | 3428 | 72 | 48 |
| | Kaluthara | 456 | 6 | 0 |
| ***TOTAL*** | | ***7372*** | ***256*** | ***157*** |
| ***TOTAL*** | | **17459** | **423** | **210** |

Table 5.5.2 presents the percent distribution of DUs, IDUs and those sharing needles by district. Three districts (Colombo, Gampaha and Kurunegala) alone account for about 50% of the DUs and 82% of the injecting drug users sharing needles. On the other hand, three districts including Colombo, Gampaha and Puttalam account for 73% of IDUs in the country. The DUs, IDUs and those sharing needles are relatively low in all the other districts as seen in the table.

Table 5.5.2: Percent distribution of DUs, IDUs and those sharing needles by districts, Sri Lanka

| District | DU (%) | IDU (%) | Sharing needles (%) |
|---|---|---|---|
| Colombo | 20.0 | 42.3 | 51.8 |
| Gampaha | 19.6 | 16.9 | 22.9 |
| Kurunegala | 10.1 | 6.4 | 7.6 |
| Puttalam | 8.1 | 14.2 | 6.7 |
| Kandy | 7.7 | 3.9 | 6.2 |
| Rathnapura | 6.0 | 6.4 | 4.8 |
| Hambantota | 4.9 | 0.0 | 0.0 |
| Kegalle | 4.6 | 0.0 | 0.0 |
| Matale | 4.3 | 4.1 | 0.0 |
| Matara | 3.7 | 1.4 | 0.0 |
| Galle | 3.7 | 1.0 | 0.0 |
| Kaluthara | 2.6 | 1.3 | 0.0 |
| Anuradhapura | 1.8 | 2.1 | 0.0 |
| Badulla | 1.5 | 0.0 | 0.0 |
| Monaragala | 0.5 | 0.0 | 0.0 |
| Ampara | 0.3 | 0.0 | 0.0 |
| Nuwara Eliya | 0.3 | 0.0 | 0.0 |
| Batticaloa | 0.2 | 0.0 | 0.0 |
| Polonnaruwa | 0.2 | 0.0 | 0.0 |
| Jaffna | 0.0 | 0.0 | 0.0 |

# 6. BEACH BOYS

The fourth group assessed in the size estimation is the Beach Boys (BB). BB are a group of males (homosexual, heterosexual or bisexual) cruising in and around beach areas, and are associated with tourists as guides, animators or providers of any form of gratification including insertive and receptive sex. This group is mostly found in select coastal areas of the country. This chapter presents the estimated size of beach boys in the country along with their locations, where they are mostly found.

## 6.1 Beach boys spots

The study has identified a total of 102 hotspots, where beach boys cruise in and around beach areas in the country. Among the total spots, 43 are in the Southern Province, followed by 37 in the Western Province. Another 18 and 4 spots respectively are in the Eastern and the North Western Provinces. Out of the total 9 provinces, 5 provinces do not have any BB spots suggesting that they are clustered into only 4 provinces.

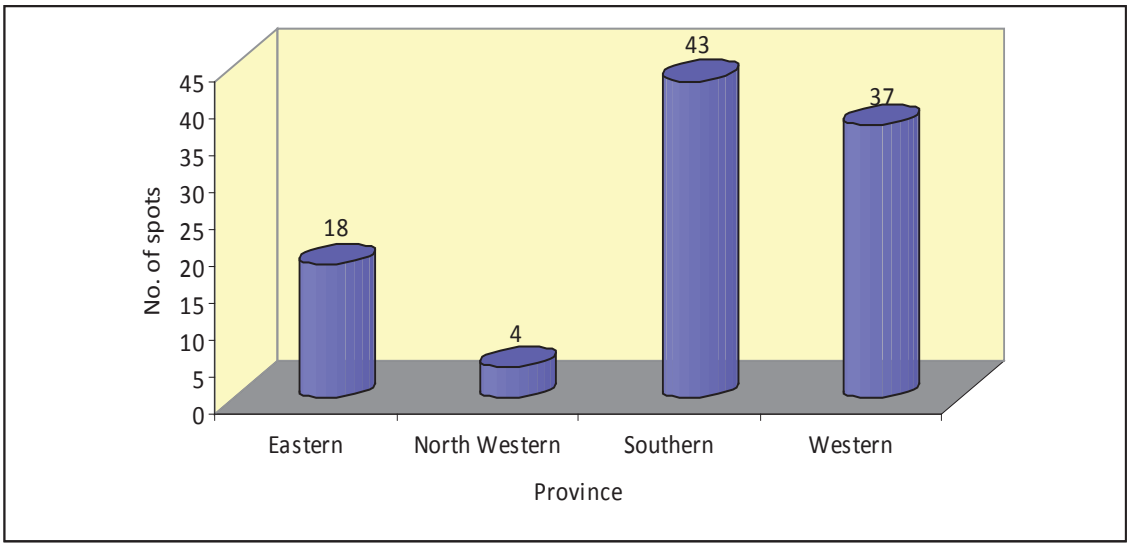



Figure 6.1.1: Number of active spots of beach boys by province, Sri Lanka

Figure 6.1.2 presents the distribution of BB spots by district in Sri Lanka. Of the total 25 districts in the country, only 10 districts reported at least one BB spot. Further, among the total 102 spots in the country, 22 are in Kalutara District, 16 in Galle District, 15 in Hambantota District and 12 each in Gampaha, Matara and Ampara Districts. Other districts which have reported between 2 and 4 BB spots are Puttalam and Trincomalee (4 each), Colombo (3) and Batticaloa (2)

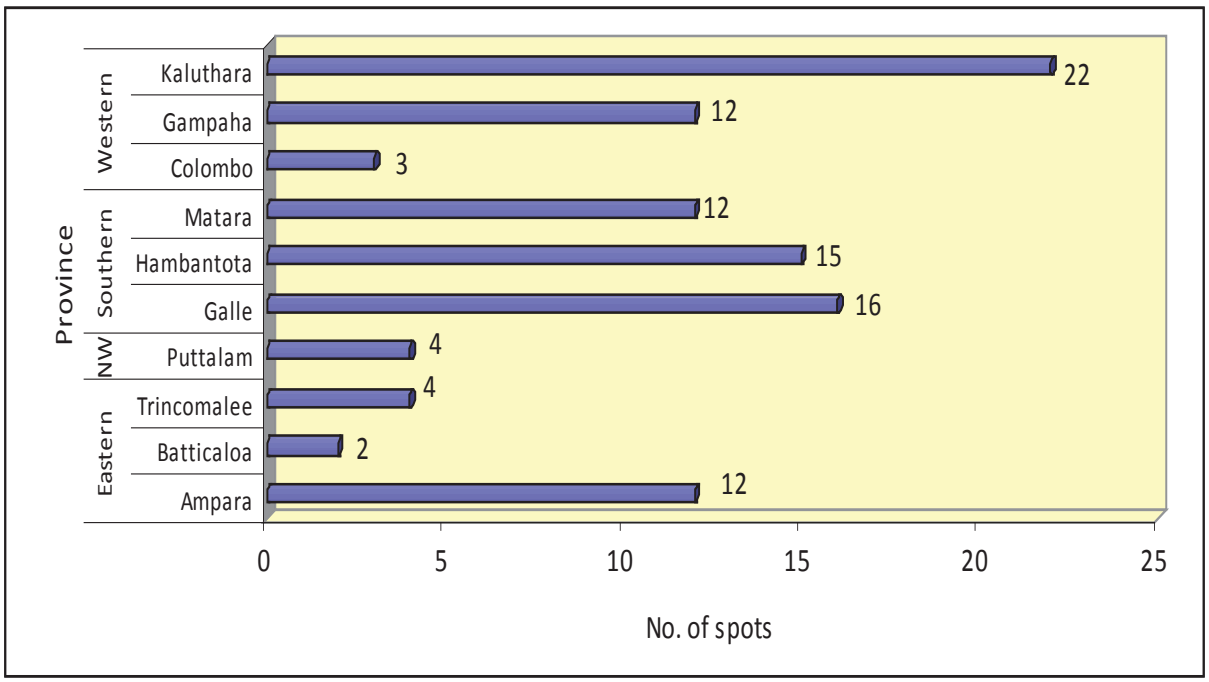



Figure 6.1.2: Number of active Beach Boy spots by district, Sri Lanka

## 6.2 Estimates of Beach Boys

On an average day, there are about 873 BBs in the country ranging from a minimum of 752 to a maximum of 993. This number increases to 1314 BBs on a peak day (range: 1142-1486), and is about 51% higher than the usual day estimate. On a peak month of the year, the number of beach boys in the country ranges from 1750 to 2251 with an average of 2001 BBs suggesting the number of BBs varies across different period of time in a year. The estimated BBs on a peak month is about 52% higher than the peak day estimate and about 229% higher than the usual day estimate.

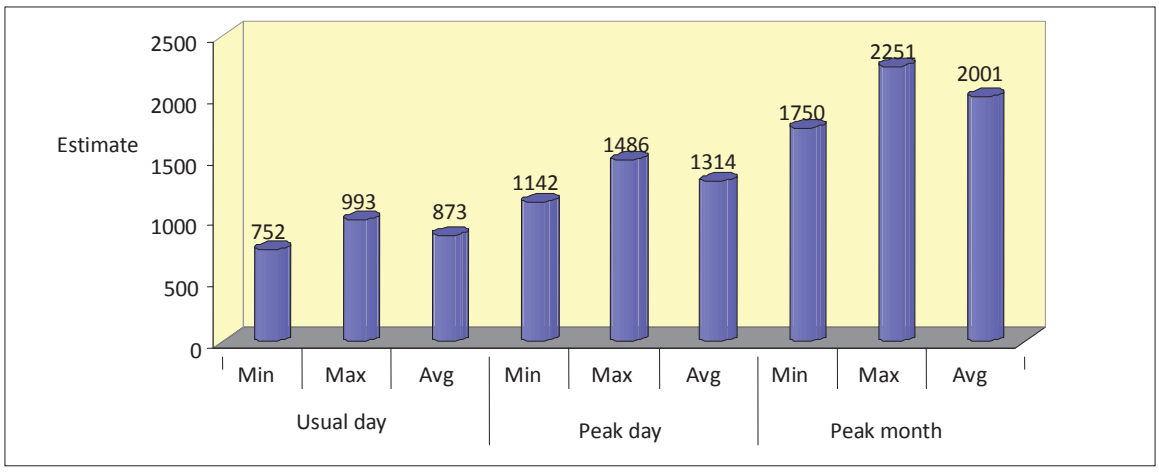



Figure 6.2.1: Estimated number of beach boys on a usual and peak day and peak month of the year, Sri Lanka

## 6.3 Estimates of Beach Boys by province

The estimated BB in Sri Lanka are presented in Figure 6.3.1 by province. Overall, there are 1314 BBs in the country with an average of about 13 BBs per spot. The highest number of BBs were identified in Southern Province (average=597) with a mean of 14 BB/spot, followed by the Western Province (average=349) with a mean of 9.4 BBs/spot. The highest concentration of BBs per spot is in Eastern Province (mean/spot=18.6), though the total number of BBs estimated here is only about 336 (range=284-387).

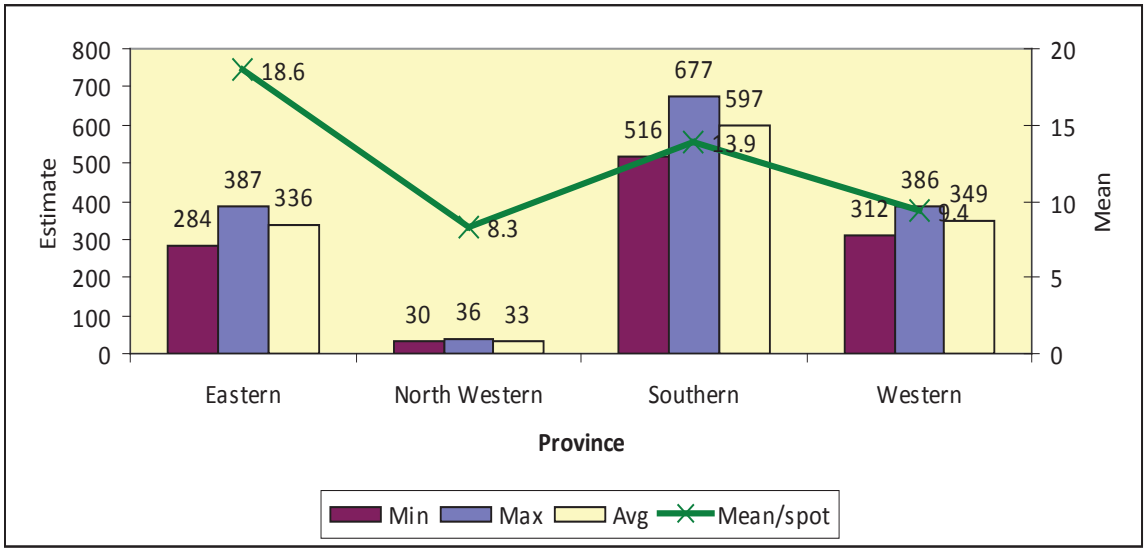



Figure 6.3.1: Estimated Beach Boys by province, Sri Lanka

While the mean number of BBs per spot on a peak day was about 13, it is as high 20 during the peak month of the year. Again, the estimated BBs during the peak month is highest in the Southern Province (849), followed by the Western (602), Eastern (508) and North Western (42) Provinces (Figure 6.3.2). As far as the mean number of BBs per spot is concerned, it is about 28 per spot in Eastern province, 20 per spot in the Southern Province and 16 per spot in the Western Province.

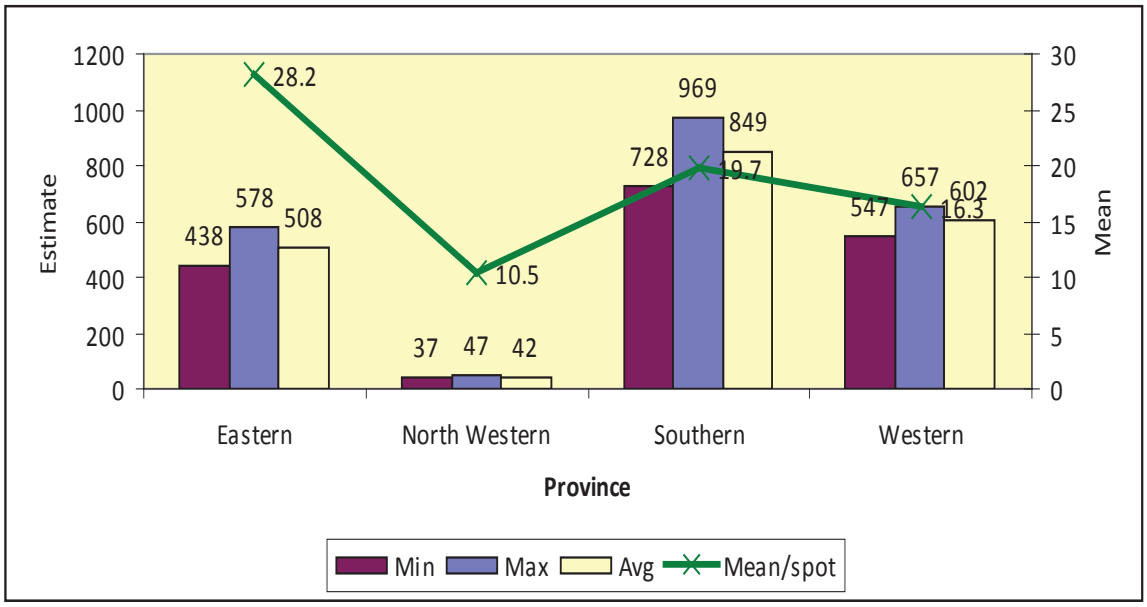



Figure 6.3.2: Estimated Beach Boys during the peak month of year by province, Sri Lanka

A large proportion of the BBs identified are from Southern Province (44%), followed by 27% in Western Province and 26% in Eastern Province. The remaining 3% of the BBs in the country are from North Western province.In short, three provinces namely Southern, Western and Eastern together account for about 97% of the BB in Sri Lanka.

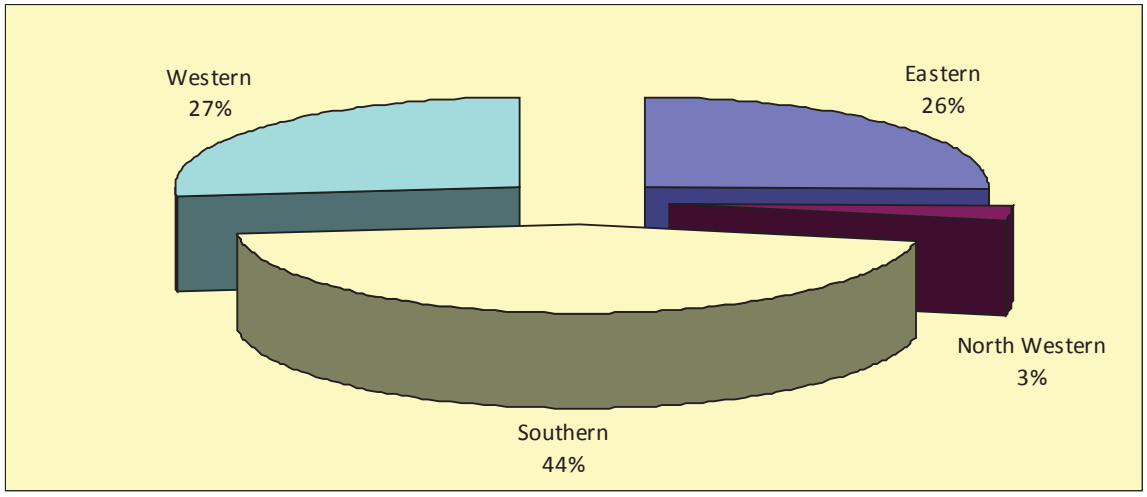



Figure 6.3.3: Percent distribution of Beach Boys by province, Sri Lanka

## 6.4 Estimates of Beach Boys by district

The study showed the highest number of BBs was found in Ampara District (312), followed by Galle District (267) and Kalutara District (218) (Figure 6.4.1). Again, the concentration is highest in Ampara District in the Eastern Province, with a mean of 26 BBs per spot, followed

by 17 BBs per spot in Galle. Figure 6.4.1 shows that the size of the BB population and their concentration is directly related.

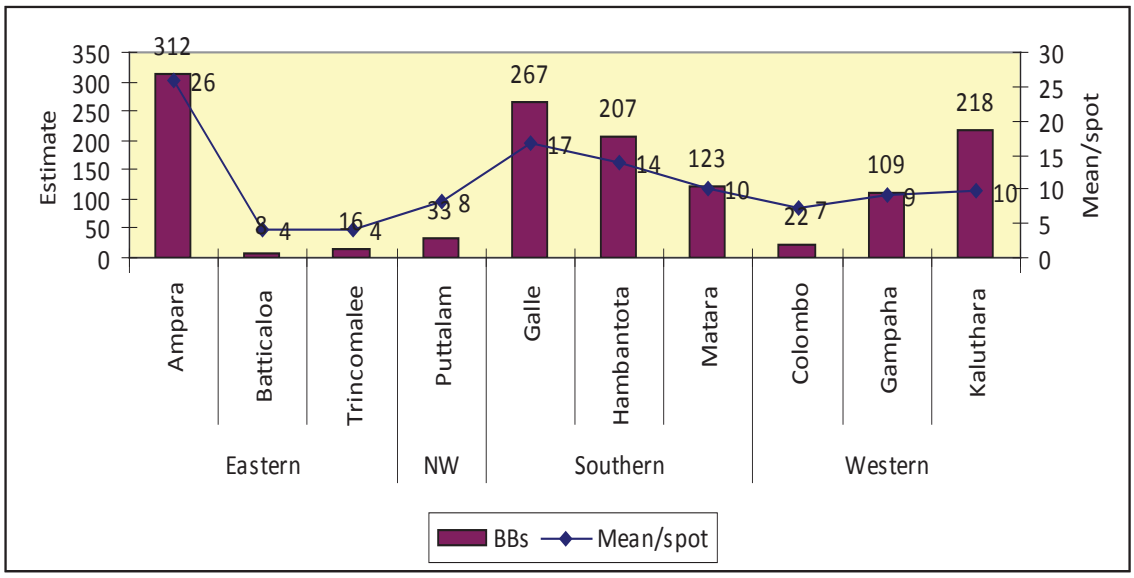



Figure 6.4.1: Estimated Beach Boys and mean BBs/spot by province and by districts, Sri Lanka

It may be noted from Figure 6.4.2 that the higher percent of BBs are in Ampara District (23%), followed by 20% in Galle District, 17% in Kaluthara District and 16% in Hampantota District. Other districts contributed less 10% each as far as the BBs are concerned. As indicated, only 10 districts of the 25 districts in the country identified as a district with BBs.

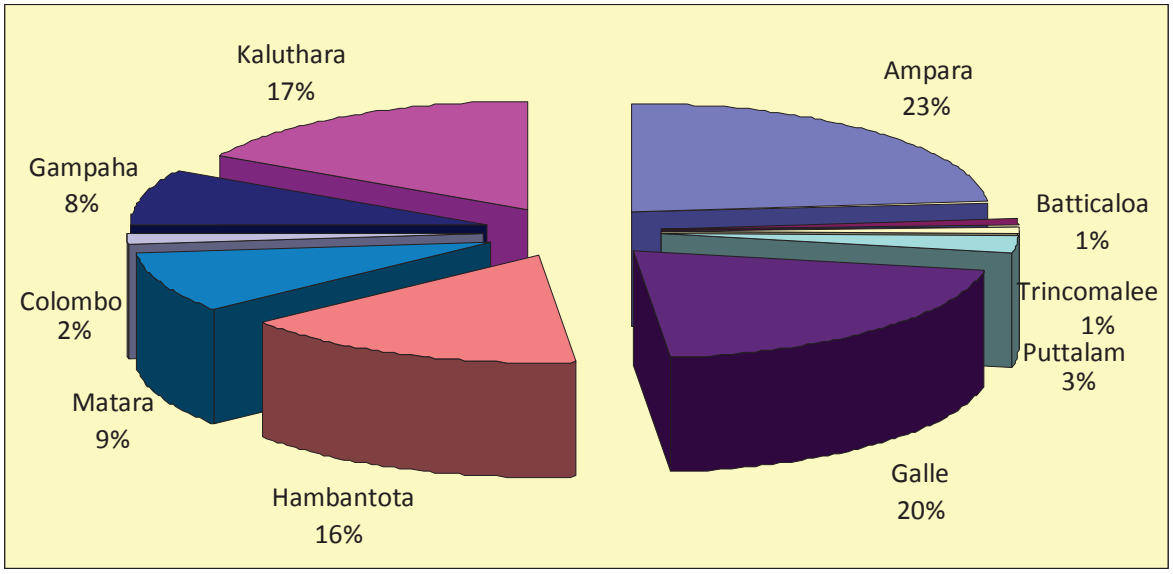



Figure 6.4.2: Percent distribution of Beach Boys by district, Sri Lanka

During the peak month of the year, three districts, namely, Ampara, Galle and Kaluthara receive more or less same number of BBs, with a mean per spot ranging from 19 in Kaluthara to 38 in Ampara. The number of BBs who visited the beaches remained low even in the peak month in the districts of Batticaloa, Trincomalee, Puttalam and Colombo.

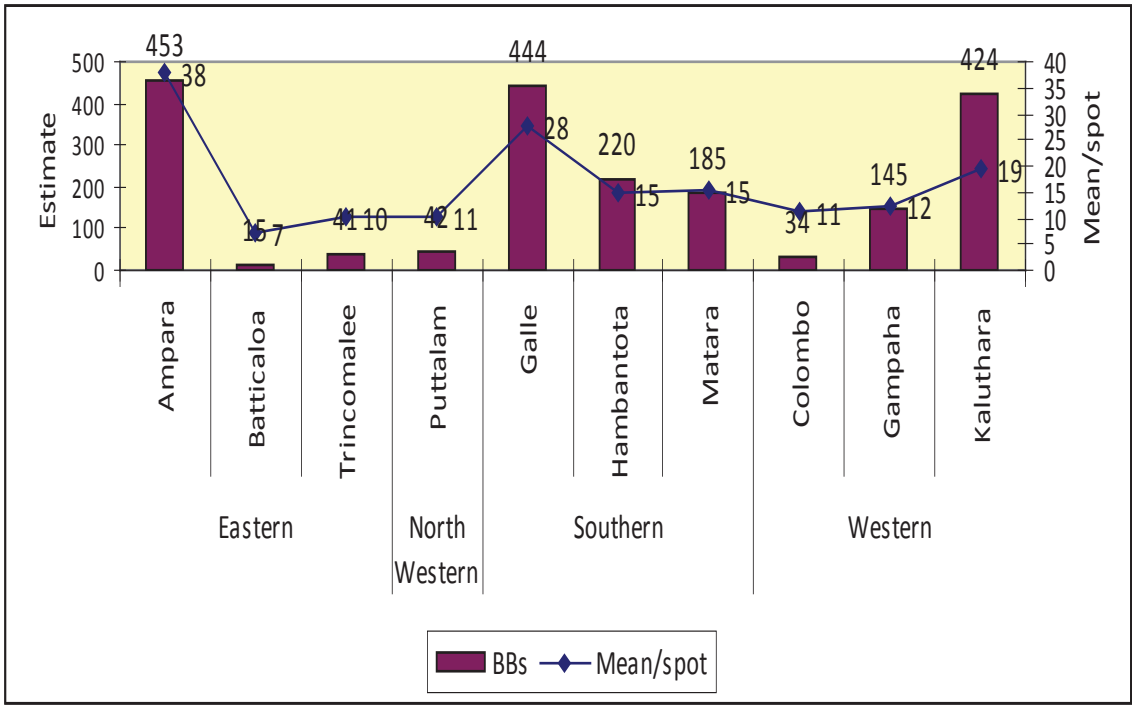



Figure 6.4.3: Estimated Beach Boys and mean BBs/spot during the peak month of the year by province and by districts, Sri Lanka

# 7. PROGRESSIVE COVERAGE

## 7.1 Introduction

The national size estimation brought evidences of MARPs population and the distribution of MARPs by geographic locations, particularly by provinces and districts. In this chapter, an analysis of progressive coverage is made by provinces and by districts to suggest the level of coverage of each MARPs group that can be reached by intervening specific geographic units.

## 7.2 Progressive coverage of Female Sex Workers

After reviewing the total estimated FSW's in order of highest number to lowest, the study assessed the coverage that could be achieved if the intervention focused each province as well as the cumulative coverage archived by intervening each additional province. Figure 7.2.1 presents the cumulative coverage of FSWs by each additional province in Sri Lanka. The Western Province alone accounts for about 51% of the total estimated FSWs. Another province, which has the second largest number of FSWs (north central) along with western province, will provide coverage of about 62% of the FSWs in the country. Five provinces, namely the Western, North Central, Central, North West and Sabaragamuwa account for coverage of about 84% of the FSWs in the country. This suggests that just five provinces account for a large proportion of the FSWs in the country.

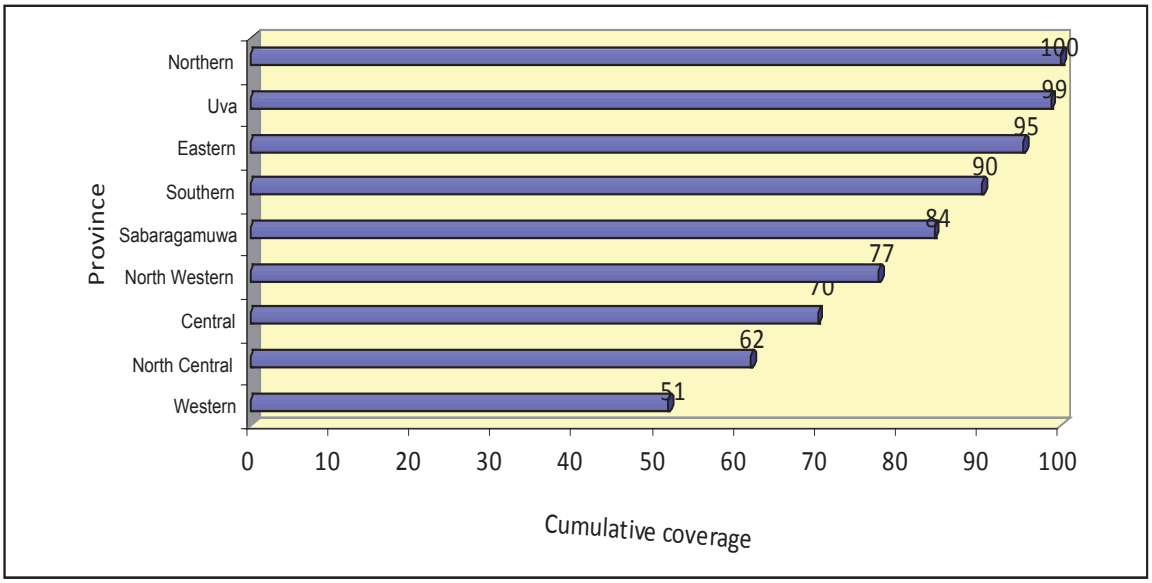



Figure 7.2.1: Progressive coverage of FSW by province, Sri Lanka

As far as the progressive coverage of FSWs by district is concerned, Colombo alone accounts for 44% of the FSWs in the country (Figure 7.2.2). Including Gampaha District provides a

reach of 51% of the total FSWs. Eight districts in the country account for 80% of the FSWs, which suggest that one-third of the total 25 districts, provide a coverage of 80% FSWs in the country. These 8 districts are namely, Colombo, Gampaha, Polonnaruwa, Rathnapura, Kandy, Kurunegala, Anuradhapura and Ampara.

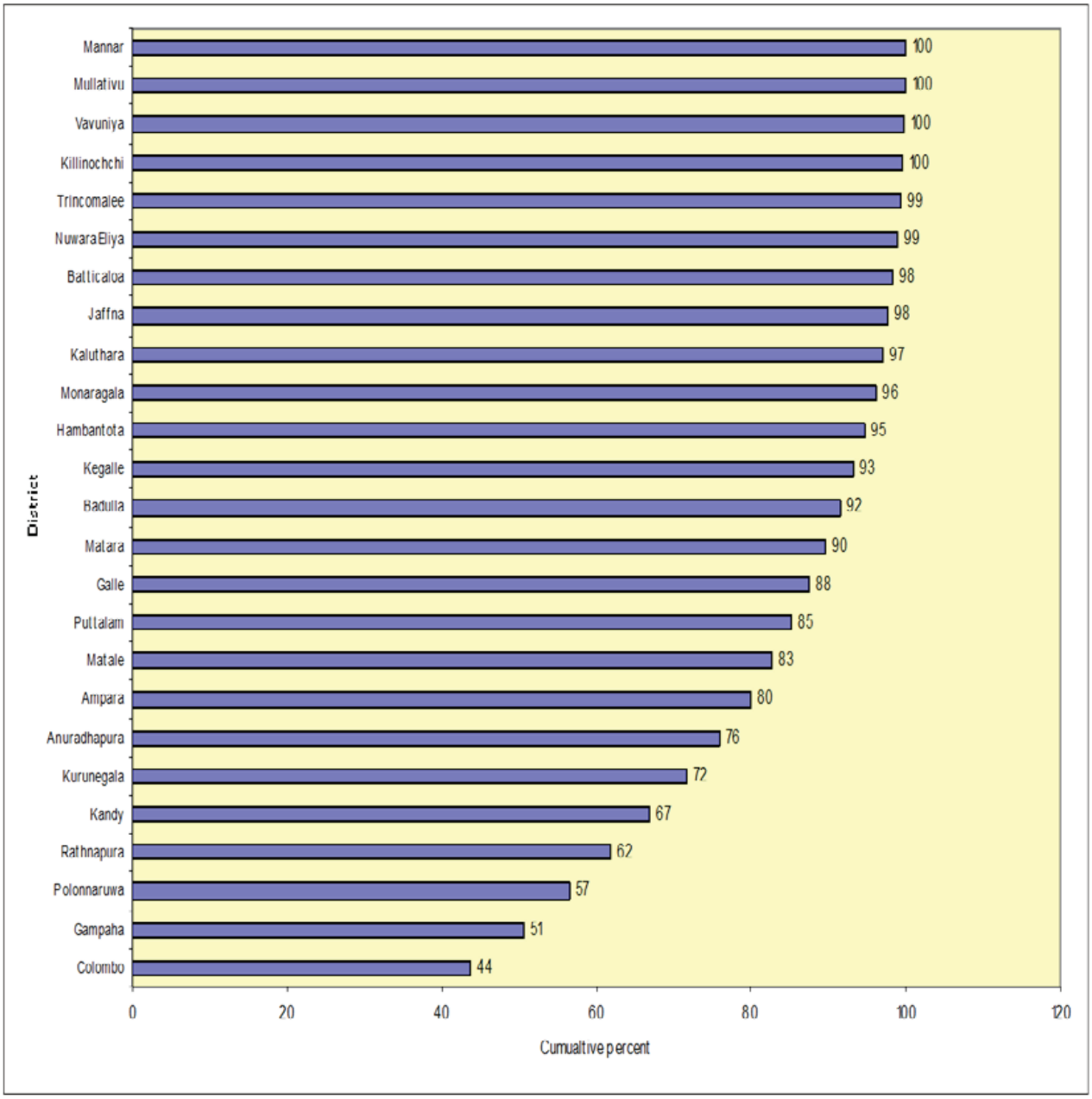



Figure 7.2.2: Progressive coverage of FSW by district, Sri Lanka

## 7.3 Progressive coverage of Men who have Sex with Men

MSM are also largely concentrated in Western Province as seen in Figure 7.3.1. The study showed that as high as 65% of the MSMs in the country cruise in the Western Province. In addition, results also showed that the Southern and Western provinces together account for 73% of the MSMs in the country. Three provinces, namely, Western, Southern and Central provinces provide coverage of about 81% of the MSMs in the country.

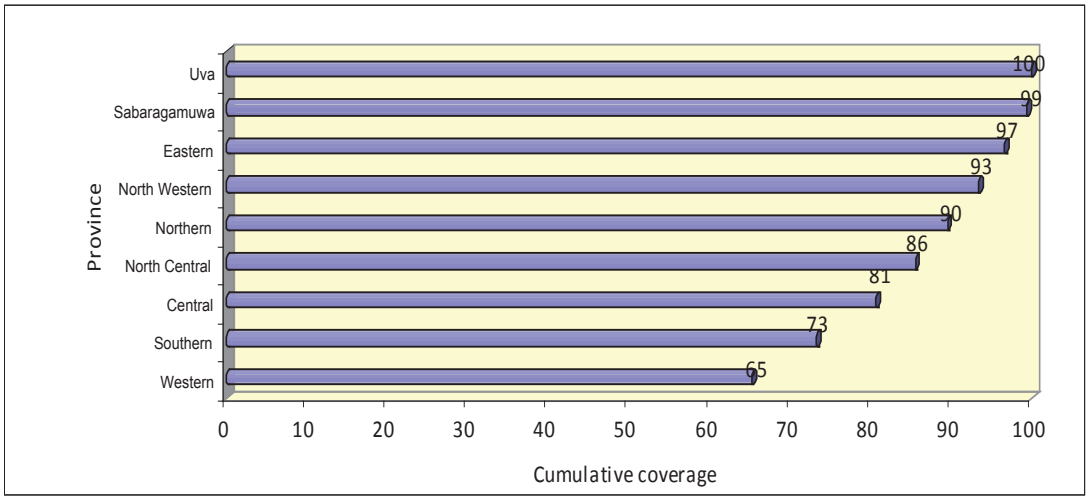



Figure 7.3.1: Progressive coverage of MSW me by province, Sri Lanka

As discussed above, the Western Province accounts for the largest proportion of MSMs; and is seen again while examining the progressive coverage by districts. Colombo District alone accounts for 53% of the MSMs in the country. Colombo and Gampaha in the Western Province account for 63% of the MSMs. Kandy is the district outside Western Province that has the highest number of MSMs. Including this district with the two districts in western province (Colombo and Gampaha) account for 68% of the total MSMs in the country. In case of MSMs as well, seven districts account for 81% of the MSMs in the country, which are Anuradhapura, Matara, Jaffna and Galle along with the above mentioned three districts.

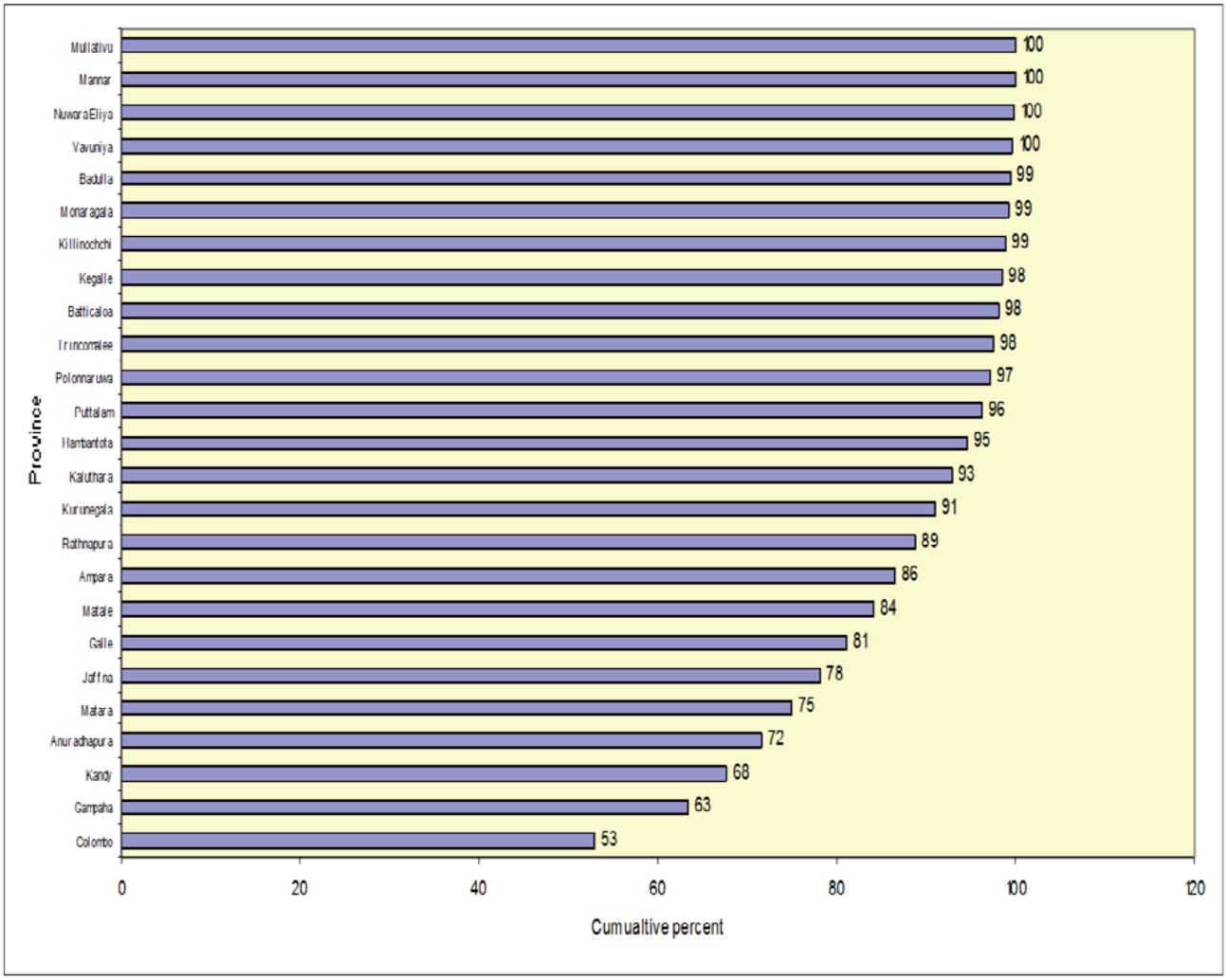



Figure 7.3.2: Progressive coverage of MSW by district, Sri Lanka

## 7.4 Progressive coverage of Drug Users

Reviewing the progressive coverage of DU, the Western Province accounts for 42% of the DUs; and including the Western province along with North Western Province will provide coverage of 60% DUs in the country (Figure 7.4.1). Four provinces, including the Western, North Western, Southern and Central accounts for as high as 85% of the DUs in Sri Lanka suggesting a very high percent of DUs in the country are identified in less than half of the provinces.

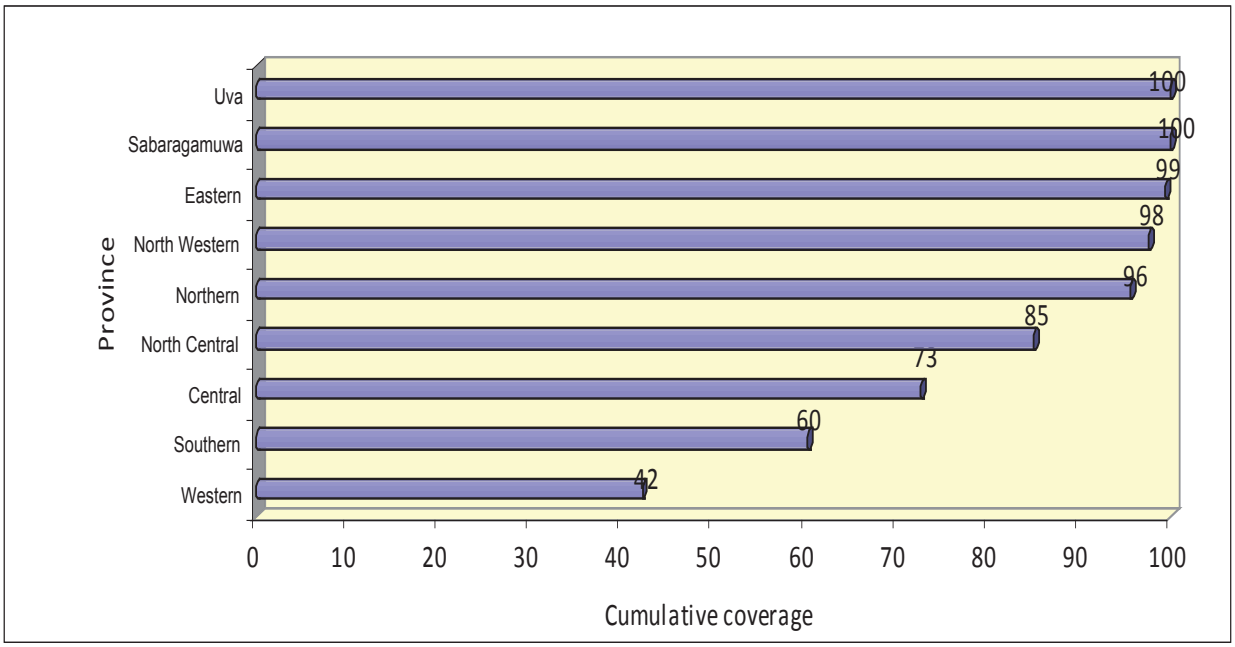



Figure 7.4.1: Progressive coverage of MSW by province, Sri Lanka

As far as the coverage of DUs by districts is concerned, 20% DUs each are from Colombo and Gampaha districts showing that these two districts provide coverage of 40% of the DUs in the country. Here as well, 8 out of 25 districts in the country provide a coverage of 81% of the DUs and are, Colombo, Gampaha, Kurunegala, Puttalam,Kandy, Rathnapura, Hambatota and Kegalle.

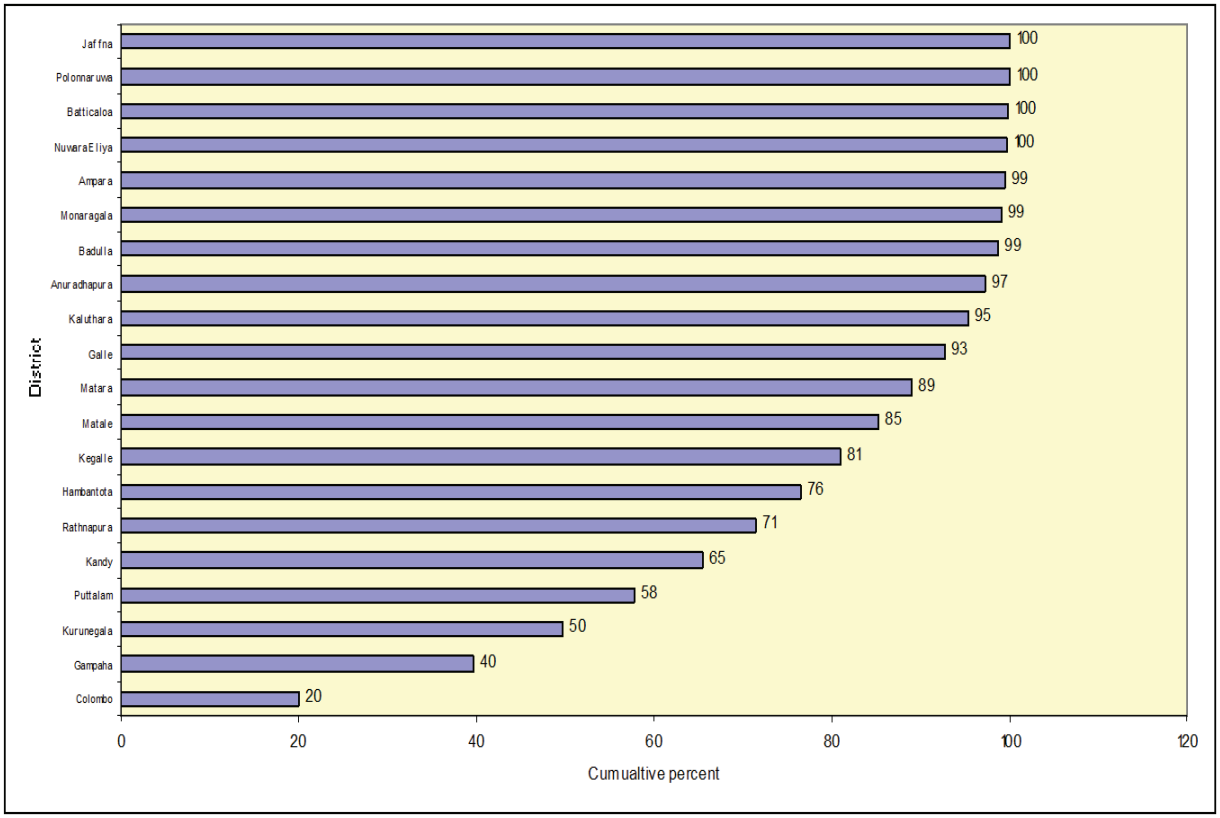



Figure 7.4.2: Progressive coverage of drug users by district, Sri Lanka

## 7.5 Progressive coverage of Beach Boys

Figure 7.5.1 shows the progressive coverage of BB by province. The Southern Province alone accounts for 45% of the BBs in the country and this along with the Western province accounts for 72% of the BBs. Further, including the Eastern Province together with the above mentioned two provinces reaches coverage of as high as 97% of the BBs in Sri Lanka.

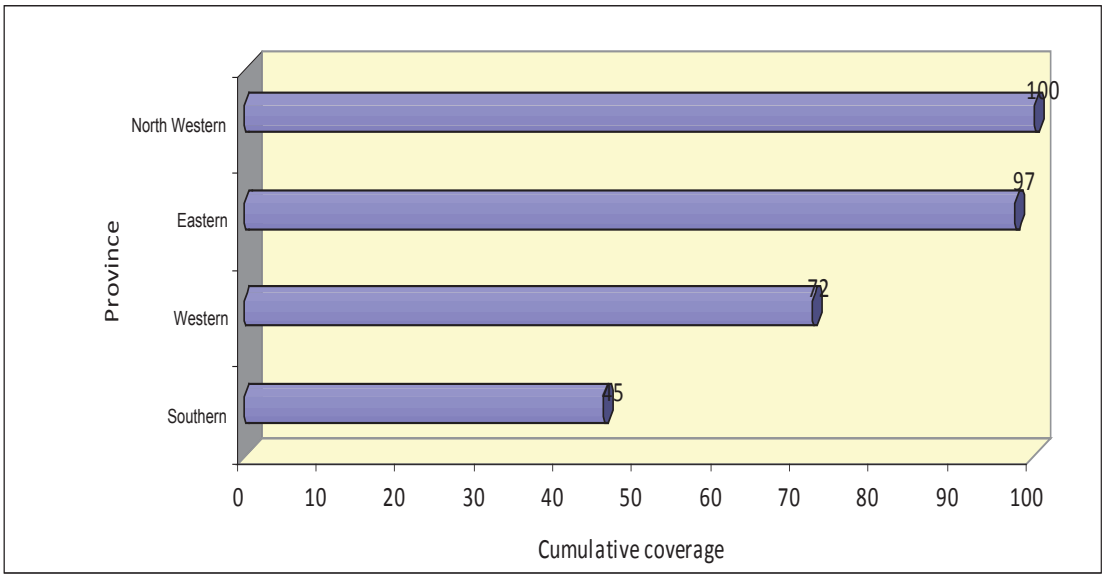



Figure 7.5.1: Progressive coverage of beach boys by province, Sri Lanka

Ampara and Galle districts together give coverage of 44% of the BBs while including Kaluthara along with these two gives a reach of about 61% of BBs. In order to reach 80% of the BBs in the country, interventions can be implemented only in 5 districts, namely, Ampara, Galle, Kaluthara, Hambatota and Matara.

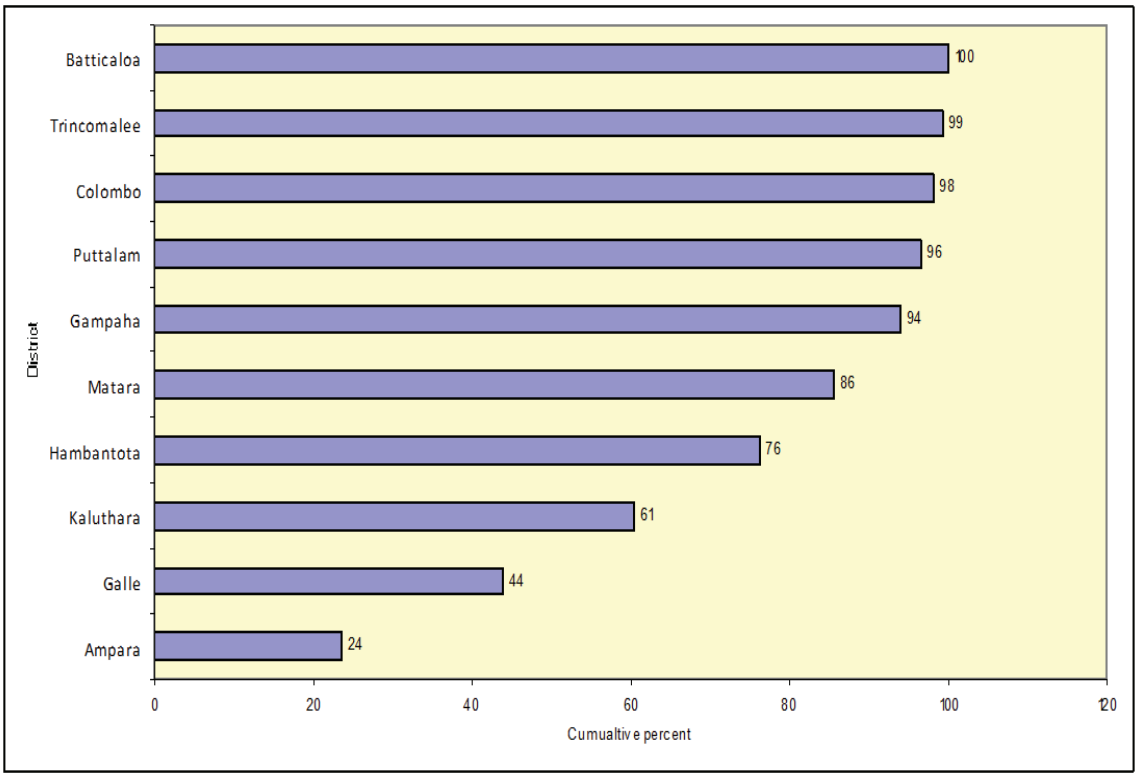



Figure 7.5.2: Progressive coverage of beach boys by district, Sri Lanka

# 8. DISCUSSION, CONCLUSION & RECOMMENDATIONS

## 8.1 Discussion

### 8.1.1 Introduction

Various approaches have been used to estimate the MARPS including direct and indirect approaches. Direct approaches involve census, enumeration, capture-recapture, multiplier methods and respondent driven sampling (WHO, 2010)[4]. Indirect methods include population surveys among general population and derive estimates based on the high risk behaviours.

Both census and enumeration methods are hampered by the hidden nature of MARPs. It is difficult to identify and capture all MARP populations, particularly in public places and it requires large resources. Respondent-driven sampling (RDS) method is used on its own or within the framework of capture-recapture methodology to estimate the population of MARPs. Respondent-driven sampling utilizes the social networks of the targeted population to facilitate the estimation of population size (Salganik and Heckathorn, 2004)[5]. On the other hand, the multiplier method relies on information from two sources that overlap in a known way and estimates are derived by multiplying the number of people who attend the institution by the reversed proportion of the population who say they attended over the same period. However, it requires good institutional record keeping and the right questions used in the survey instrument. Since it is difficult to find data for institutions and populations that correspond with one another and since no clear consistent definitions between different data sources are used, this method often was not used. Further, unless the catchment area for the services or institutions is defined well, this method leads to biased estimates.

A recent method developed and tested globally is the geographic mapping method (Karnataka Health Promotion Trust, 2010)[6]. Using a multi-level approach to identify locations and estimates of MARPs, the method provides list of hotspots, where MARPs visit to engage/network high risk behaviours. This method also provides estimates at hotspot level, which then aggregate to district, provincial and national level estimates (NACP Pakistan, 2012). [7]

One major limitation of all these methods except the geographic mapping is that it provides estimate only at the macro level for program planning (NASCP Kenya, 2012)[8]. Any interventions among MARPs providing services including education on STI and condoms, condoms distribution, STI services etc requires denominators (estimate) not only at macro level, but at micro level as well. The program may find it challenging to identify and provide services to MARPs unless they have the information about the hotspots, where MARPs solicit and the estimated size of MARPs in each hotspot. The geographic method helps in

deriving estimate at different levels from micro level to macro level as well as by different typologies of MARPs. Evidences suggest that risk of HIV vary among MARPs by typology and therefore, estimate by typology is critical for program planning and providing services as per the risk behaviours. Further, this method also helps in planning interventions at micro level and thereby monitoring the activities including assessing gaps in coverage on various services. Therefore, we propose to use a similar geographic mapping method contextualized and adapted to Sri Lanka.

Previously, two attempts were made to estimate the size of MARPs in Sri Lanka. However, this was limited to few districts and not all MARPs groups were covered. Moreover, evidences are not available to suggest the MARPs population remains stable and unless the MARPs population remains stable, a national mapping is required at a single reference period to provide a national size estimates. Though previous attempts were used globally tested methods to identify the spots and estimate, since it is restricted to few districts and groups, a national size estimation study was implemented using two distinct approaches considering the time and resources available. Where there are estimates available previously for all the MARPs groups, spot and estimate validation was carried out. In all other districts, a complete geographic mapping approach was implemented to identify all the MARPs spots and its estimates to provide national size estimates of all the four MARPs groups in the country (FSWs, MSMs, DU, including injecting drug users and Beach Boys).

The method adopted accounted for the clandestine nature of the MARPs, and also the wide varieties and geographical distribution of MARPs to obtain a more realistic estimate of MARPs. This size estimation project has significantly enhanced our understanding of the most at risk populations, including female sex workers, men having sex with other men, drug users, including injecting drug users and beach boys in Sri Lanka. It has helped us to produce national level estimates of most at risk populations in Sri Lanka, based on primary data collected in the field, validated and triangulated against multiple, independent sources of information. Using a simple and straightforward community-based approach, it ensured active involvement of the MARPs themselves in validating estimates. Not only has the study helped estimate population sizes, it also led to understanding geographical distribution of MARPs, and recognition of the various operational typologies and dynamics of these populations, which is the key to developing effective HIV prevention strategies.

### 8.1.2 Estimates of MARPs

This project has estimated a fairly high number of MARPs in Sri Lanka. The study estimated a mean of about 14,132 FSWs in Sri Lanka, ranging from a minimum of 12,329 to a maximum of 15,935. A very large proportion of FSWs is located in Western province, particularly in Colombo district and is street/public place based, hotel/lodge based or home/shanty based. Female sex work in Sri Lanka is extremely diverse and highly secretive and risky. There are a number of typologies involved, each having its own operational dynamics and prevention needs. Street based sex workers mainly operate independently and have less reliance on

other mediators, e.g. network operators or pimps. On the other hand, sex workers operating through home/shanty, brothels, hotels and lodges mainly rely on network operators, who are important players. These FSWs have two major sources of clients: those directly referred by other clients and those acquired through network operators/madams. The latter keep in touch with these FSWs and call for them whenever needed. Another typology mostly restricted to larger cities like Colombo involves the indirect sex workers who work at massage parlors, bars and night clubs. These entertainment sites indirectly provide sexual services in a discrete and hidden manner.

The estimated numbers of MSM were slightly less in the country as compared to the FSWs. A total of 7551 MSMs were estimated with a range of 6547 to 8554. While about half of the estimated MSMs engage in very high risk behaviours and are either MSWs or Nachchis. Similar to FSWs, most MSMs are from Western province, particularly from Colombo district. The estimated MSMs in all the district, except Colombo and Gampaha is less than 500. Unlike FSWs, the MSM networks were less discrete, and some typologies e.g. Nachchis are quite visible and openly solicit for sexual services. Male sex workers operate more discretely than the rest of the categories, and work mainly through high risk spots. Unlike some types of FSWs who rely a great deal on network operators for clients, the MSM tend to work independently and solicit other partners independently. This study was also able to highlight a number of other MSM who can be called “gay men”; they do not provide sexual services like MSWs and Nachchis, but buy sex from these sub-groups and can thus be called clients. Many of these MSM also have non-paid partners with other sub-types, and represent a much larger network than MSWs, but are likely at lower risk of HIV because they have fewer partners.

The number of drug users in the country is estimated around a mean of 17,459 ranging from a minimum of 15,338 to a maximum of 19,542 DUs. While around 2% of the DUs inject drugs, about 50% of those inject drugs share needles. A large proportion of the DUs (42%) are also seen in western province, followed by 18% in north western province. The estimate suggest that the current DUs has droped from the 3 months period prior to the study indicating either DUs stop using drugs or transition from DUs to injecting drug use. However, second option of transition is not really evident from the study as the number of injecting drug users is still very low in the country.

Beach boys were the fourth group of MARPs studied in Sri Lanka as this group engage with tourist and provide sexual services. The total estimated BBs ranges from 1142 to 1486 with an average of 1314 BBs in the country. During the peak month of the year, the number of BBs increases and is about 52% higher than the estimate. The BBs were seen only in 4 provinces in the country and is limited to 10 districts.

It is difficult to fully comprehend the extent and organizational dimensions of sex work without a long engagement and trust-building period with sex workers. With reasonably

high numbers of MARPs reported, there is an urgent need to implement focused HIV prevention programs for MARPs and their clients/partners. These MARPs in Sri Lanka are highly vulnerable, and without focused programs of outreach and service delivery, they will remain without the resources to protect themselves and their partners from HIV infection. They can also play a key role in the spread of the HIV epidemic, because of very high rates of partner change in both groups. Looking at the geographical distribution of these MARPs, it is interesting to note that by implementing HIV outreach and service delivery programs in few provinces or districts can reach over 80% of the coverage, suggesting limited geographic coverage to achieve a very high number of MARPs in the country. While 5 provinces account for 84% of the FSWs in the country, 3 provinces account for 81% of the MSMs. Further, four provinces provide a coverage of 85% of DUs, 3 provinces gives a coverage of 97% of BBs. Western province as a result of Colombo and Gampaha is an important province to intervene among all the MARPs groups and a large proportion of MARPs could be reached. North central, central, north western and Sabaragamawa along with western are the important provinces as far as FSWs are concerned. In case of MSMs, western province and provinces of southern and central are critical to reach a large proportion of MSMs in Sri Lanka. Over 80% of the drug users can be reached in western, southern, central and north central provinces, whereas 97% of the BBs can be reached from the 3 provinces of western, southern and eastern.

Similarly, the study showed few districts account for a very large proportion of all the MARPs groups. Particularly, the districts of Colombo and Gampaha, Kandy, Polonnoruwa, Rathnapura, Kurunegala, Anuradhapura, Ampara, Matara, Galle, Jaffna are the important districts and an intervention in these districts would provide over 80% coverage of all the 4 MARPs groups studied.

### 8.1.3 Quality of data

An important aspect commonly considered in size estimation is the quality of data generated. In this study as well the quality of data is assessed using globally tested processes. The idea of defining the key informants and interviewing adequate number of key informants were assumed to be to assess the quality of data. Experience suggest that interviewing roughly about 40-50 interviews per 70,000-90,000 general population can generate most of the hotspots in the geographic area in geographic mapping method. Secondly, interviewing various types of key informants as defined would ensure a better quality data, particularly identifying the hotspots within the study area.

We assessed the number of key informant interviews to be ideally conducted to ensure a better quality data assuming the above criteria and the number of key informant interviews actually conducted in each study districts (Table 8.1). It suggests that assuming about 40 KI interviews per 80,000 population, at least in 5 districts (Matale, Ampara, Anuradhapura, Polonnoruwa and Puttalam), the number of key informant interviews conducted were more than the ideal number required. Further, in another 6 districts, the number of KI interviews

were over 80% of the ideal number expected, suggesting that in 11 districts, the number of KI interviews conducted were reasonably high and would provide most of the hotpots within these districts. In the Mullativu and Mannar districts of the NP and in Batticaloa and Nuwara Eliya, the number of KIs interviewed were not adequate as suggested by the percent of ideal KIs interviewed during mapping. It may be mentioned here that in these districts, though many KIs were contacted and asked about the hotspots, many of them were not aware of any MARP spots and therefore was not recorded. In other words, the coverage shown in the table is not because of they are not covered, but because many KIs were not aware of the MARP spots.

Table 8.1: Ideal number of key informant interviews and number of key informant interviews conducted by districts.

| District | Ideal # of Kis | # KI interviews | % of ideal interviewed |
|---|---|---|---|
| Kandy | 690 | 611 | 88.6 |
| Matale | 239 | 317 | 132.9 |
| Nuwara Eliya | 371 | 126 | 34.0 |
| Ampara | 308 | 356 | 115.8 |
| Batticaloa | 262 | 162 | 62.0 |
| Trincomalee | 178 | 88 | 49.6 |
| Anuradhapura | 401 | 574 | 143.3 |
| Polonnaruwa | 198 | 241 | 122.0 |
| Kurunegala | 762 | 588 | 77.2 |
| Puttalam | 376 | 497 | 132.2 |
| Jaffna | 300 | 178 | 59.4 |
| Killinochchi | 73 | 47 | 64.4 |
| Mannar | 51 | 14 | 27.7 |
| Mullativu | 74 | 32 | 43.5 |
| Vavuniya | 83 | 44 | 53.0 |
| Kegalle | 401 | 361 | 90.0 |
| Rathnapura | 543 | 403 | 74.2 |
| Hambantota | 276 | 239 | 86.6 |
| Matara | 407 | 340 | 83.6 |
| Badulla | 425 | 359 | 84.5 |
| Monaragala | 213 | 207 | 97.4 |

Secondly, the analysis of key informants by type of key informants suggests that the study interviewed various types of key informants in each province/district. We expect that this would have ensured a better quality data as various types of KIs have shared their knowledge regarding hotpots. For example, at the national level in 21 districts, though 28% of the key informants were taxi drivers, 9-10% each of the KIs identified and interviewed respectively was local food sellers, petty shop owners, lottery sellers etc and a significant number of others belonged to various other types of KIs defined in the study.

The third aspect considered to assess the quality of the study was the number of FSWs per 1000 adult females. This has been an indicators globally used to validate and compare the estimate between geographic units. Studies have shown that in bigger cities in South Asia, per capita FSWs per 1000 adult population ranges between 5-15 FSWs per 1000 adult females. While overall, the estimated FSWs per 1000 adult females in Sri Lanka are about 2.8, the ratio is much higher in few districts. The study identified about 10 FSWs per 1000 adult females in Colombo and about 8.5 FSWs per 1000 adult females in Polonnoruwa districts. As expected, most of the districts in Northern Province had much smaller per capita FSW ratio in the country. At this stage, the population of mapped area is not known; however, since the mapping was conducted in urban areas and other towns of DS division only, the population in those areas would be likely to be less than 50% of the total population. Assuming the population of mapped areas of about 50%, except in urbanized districts, the MARPs per 1000 adults are going to be much higher than the one showed in the below table. This probably is likely to be in line with South Asian standards of estimates.

Table 8.2: Estimated MAPRs per 1000 adults by district*, Sri Lanka

| District | FSW/1000 adult females | MSM/1000 adult males | DU/1000 adults |
|---|---|---|---|
| Kandy | 2.06 | 0.9 | 2.0 |
| Matale | 3.17 | 1.9 | 3.2 |
| Nuwara Eliya | 0.46 | 0.0 | 0.1 |
| Ampara | 3.79 | 1.2 | 0.2 |
| Batticaloa | 0.70 | 0.2 | 0.1 |
| Trincomalee | 0.46 | 0.4 | 0.0 |
| Anuradhapura | 2.98 | 1.5 | 0.8 |
| Polonnaruwa | 8.50 | 0.7 | 0.1 |
| Kurunegala | 1.80 | 0.4 | 2.3 |
| Puttalam | 1.94 | 0.6 | 3.7 |
| Jaffna | 0.62 | 1.6 | 0.0 |
| Killinochchi | 1.01 | 0.8 | 0.0 |
| Mannar | 0.24 | 0.4 | 0.0 |
| Mullativu | 0.68 | 0.1 | 0.0 |
| Vavuniya | 0.82 | 0.5 | 0.0 |
| Kegalle | 1.23 | 0.1 | 2.0 |
| Rathnapura | 2.68 | 0.7 | 1.9 |
| Galle | 1.23 | 0.9 | 1.2 |
| Hambantota | 1.56 | 0.9 | 3.1 |
| Matara | 1.44 | 1.3 | 1.6 |
| Badulla | 1.28 | 0.1 | 0.6 |
| Monaragala | 1.93 | 0.2 | 0.4 |
| Colombo | 10.03 | 6.5 | 2.8 |
| Gampaha | 1.87 | 1.5 | 3.2 |
| Kaluthara | 0.42 | 0.5 | 0.8 |
| **Total** | **2.82** | **1.5** | **1.7** |

**The population of mapped area is not exactly known. Therefore, the figures here refers to MARPs in the mapped area, and population of the total district.*

The fourth quality aspect considered in the study was the number of primary key informants interviewed in Level 2 of geographic mapping. We expect that information from primary key informants ensures a better quality estimate and therefore studied the number of primary key informants interviewed in Level 2. The study interviewed primary key informants (FSWs) in about 47% of the hotspots identified. Similarly, in about 60% and 47% respectively of the active MSM and DU hotspots, a primary KI was interviewed. It is usually not very easy to contact and interview primary key informants and therefore, interviewing primary KIs in a large proportion of the active hotspots suggest a better quality data than otherwise would have been.

### 8.1.4 Limitations

A few limitations of this project should to be acknowledged. The study was conducted only in the urban areas and other towns of DS divisions of the country. Therefore, the estimate provided here reflects these study areas only. If a significant number of MARPs exists in rural areas outside the study area that is not reflected in this study. In a geographic mapping, the methodology initially identifies hotspots frequented by MARPs by interviewing secondary key informants, there is the possibility of missing some spots and either over- or under-estimating some MARP groups depending on the extent of their visibility. However, the method refined and incorporated questions in Level 2 to identify hotspots that might have been missed in the Level 1 and thereby would have addressed this gap to a certain extent. Given the very short time available for the study, there was a possibility that the study might have missed some spots and thereby could have underestimated the MARPs. The number of KIs interviewed in a majority of the districts were ideal in size, however, the number of KI interviews in certain districts, particularly in Mullativu, Mannara and Killinochchi were not as per the desired/ideal number and was as a result of the very short time available to complete the work. This would have probably under enumerated the spots and thereby underestimated the MARPs.

The methodology used was not individual based and therefore did not count each individual visiting the spot for risky behaviour. In a study of this nature, while arriving at estimates of participants involved in high-risk activity, there is a possibility of double counting because of the movement of the participants. For example, if MARPs work in multiple locations, it is possible that the same MARP could contribute to estimated numbers at multiple spots, and thereby inflating the estimates. However, since the methodology is rapid and focuses on the minimum, maximum and usual number of MARPs at a spot on a given day, the range of estimates (minimum to maximum) is unlikely to be skewed substantially. Moreover, the study tried to address this issue by collecting the mobility of MARPs from the primary key informants while validating the spots and addressing such mobility during analysis.

MARPs members were identified and interviewed to validate the hotspot and its estimate. If the MARPs member interviewed in the spots were not representing the group, this may give biased results. Further, if the MARP member interviewed in the spot has incomplete

knowledge of the spot, then the information provided by him/her would have affected the quality, particularly the estimates.

The methodology relies on identifying locations, where HIV prevention programs can be set up to reach MARPs population. Therefore, this methodology identifies those spots, where MARPs visits for high risk behaviour. Hence, the estimates provided in this study is only those MARPs who visit the hotspots for high risk behaviour and would not have captured those engaging in risky behaviour through other modes, such as networks, one-on-one interaction etc. For example, sex workers who primarily contact clients through cell phones or through network operators are likely to be underrepresented in geographically based mapping. Similarly, DUs who usually inject by themselves, or MSM who do not frequent defined locations to find new partners, will not be well-represented in geographically based mapping studies. However, it should be noted that in the context of planning HIV prevention programmes for MARPs, individuals who are disconnected from larger networks or congregations of other MARPs (e.g. solitary IDUs or MSM with low rates of partner change) tend to be at lower risk, and less strategically important for HIV prevention.

The methodology relies on estimates rather than a count of MARPs at the spots identified, and this may lead to variability in the estimates derived. The methodology addresses this limitation through providing a range within which the estimate would be by averaging estimates for hotspots identified and validated by interviewing MARPs members. It is possible, however, that some secondary and primary key informants may still over- or under-estimate MARP numbers depending on their numeric orientation and competence.

The systematic process of level 1 and reaching and identifying the KIs across the entire DS divisions/zone is a critical approach in the mapping. As a result of diverse nature of the district, the mapping could not follow the systematic approach in certain districts, particularly Batticaloa and Nuwara Eliya. Though, re-visits were made in Batticaloa to ensure complete coverage, such aspects still remains in certain districts. The study excluded the closed location such as prisons etc as that was not the scope the national size estimation. Evidence suggest that 60% of the drug users are in custodial setting/prisons and thereby the estimated DUs in the study could be an under estimate (NDDCB, Sri Lanka).

It should be noted that the size estimation is meant primarily to: 1) identify key locations where MARPs congregate and can be reached for HIV prevention; 2) describe the typology of MARPs (e.g. brothel-, street- and venue-based FSWs); and 3) estimate the size of MARPs. In this regard, it is meant to be an important starting point for micro-level planning of MARPs programmes, including the prioritization of cities/towns and locations for establishing MARPs programmes and determining the initial volume of services required. Therefore, the tools used for geographic mapping are kept short to enhance response rates among both secondary and primary key informants. Consequently, detailed data on HIV risk behavior, and access to and utilization of HIV preventive services among MARPs, which are

of programmatic relevance, are not collected as part of the mapping process. Even when elements of such data are captured during the mapping exercise, they may not be representative of the overall most at risk populations. Detailed programme related data would normally be collected subsequently, through programme management information systems, as programmes are developed to serve the MARPs with outreach and medical services. Behavioral and biological surveys could also be administered after the mapping is completed to obtain more detailed information on behavioral parameters and on STIs and HIV infection. The mapping exercise, with subsequent programmatic enhancement, provides a scientifically valid sampling frame for such surveys. To take into account the rapidly changing nature of FSW, MSM, DU and BB spots and populations, prevention programmes should update MARPs estimates on at least an annual basis, and national mapping could be conducted with an interval of four to five years to track changes in the MARPs.

### 8.1.5 Comparison of present and previous estimates

Reviewing the estimates of previous study (2010), where similar method was used, the current study estimated less number of FSWs and MSMs in the 4 districts compared to previous study. The reduction in estimate has seen in all the districts with varying degree. The trend shows that there is a decline in the number of MARPs in Sri Lanka compared to 3 year prior period. Previously, we examined the quality of the data, and it is unlikely that the reduction is as a result of quality. Common reasons for changes in the estimates are; i) hotspots previously active became inactive and the extent to which the new hotspots identified are less than those became inactive, and ii) decline in the mean number of MARPs per spot. Both in Colombo and Anuradhapura, the number of hotspots remained more or less same in both the studies; however, the mean number of MARPs per hotspot has significantly reduced. Therefore, the reduction in estimate is unlikely to be because of not identifying the hotspots, but because of MARPs visiting the hotspots declined over the 3 year period.

Experiences elsewhere also suggested that as a result of technology boom, more and more MARPs transition from conventional hotspot based solicitation to an approach of using mobile phones and internet to network their sexual partners. This might be reason for finding a reduction in mean number of MARPs per hotspot.

Other probably reason for the reduction in estimate might be due to growing economy in Sri Lanka since the civil war ended, and many MARPs would have started engaging in economic activities to support their livelihood. This needs further investigation and future studies may investigate whether end of the war has contributed to the declining MARPs population.

As a result of short time to complete the entire mapping in the country, there might be some quality concerns as far Batticaloa and Nuwara Eliya districts are concerned. As discussed earlier, only 62% and 34% respectively of the ideal number of key informants

were interviewed in Batticaloa and Nuwara Eliya districts. This suggests that probably the present study has not saturated the interviews to identify all the spots. This might have reflected in under estimating the number of spots in these districts and thereby under estimated the number of FSWs and MSMs. However, in these districts as well, the mean MARPs per hotspots shown a declining trend, suggesting that the overall estimate would have has declined, mostly for the reasons discussed earlier.

## 8.2 Conclusions and recommendations

Though previous attempts were made to estimate the MARPs in Sri Lanka these were limited to few districts in the countryi. This study has for the first time in Sri Lanka identified the hotspots of MARPs and provided an estimated number of MARPs in all the districts and has provided valuable information on high-risk activities in these locations. Although estimates from this study may challenge some of the previous estimates available, particularly in certain districts, it is important to study the reasons for such differences. Experience from South Asia and other countries show that the MARPs hotspots likely change from time to time due to various reasons, it is important to assess changing MARPs structure in Sri Lanka for effecting HIV prevention programming. It is important to note that there is still much left to learn about the behaviours of each of these MARP groups.

Lack of systematic and strategic information is a barrier to a successful HIV prevention and control response. The program needs to make sure that activities such as mapping and size estimation are not conducted at a one-off level, but are a regular feature of ongoing surveillance activities.

While efforts need to be focused on learning more about the epidemic and its driving forces, scaling-up of the current national HIV/AIDS response should be the key objective to contain HIV at its present level. Experience has shown that in countries with low-level and concentrated epidemics, well-designed and adequately funded HIV prevention programs among key populations have proven decisive in slowing or even stopping the epidemic in its tracks (Karnataka Health Promotion Trust, 2012) [9]. They would have to be reached with high coverage, and provided with services specific enough to meet their requirements in order to reduce transmission of HIV to and from other key population members and the general population. Over the past few years, a number of NGOs and CBOs have done commendable work with high-risk groups, but the capacity required for the fully scaled-up design and delivery of appropriate HIV prevention services is far from adequate. Scaling-up will not only require an expansion in NGO and CBO capacity, but a more refined and focused effort to address the HIV prevention challenge. A sufficient number of suitably qualified, trained and experienced personnel will be required, as well as strong organizational structures which could take up the responsibility for targeted HIV preventive interventions on a long term

basis. Understanding the extent and organizational dimensions of MARPs requires a long period of engagement and trust-building with vulnerable communities. .

Other than providing reliable estimates, the approach provides contextual milieu and draws information on group operational characteristics based on which sub-typologies can be categorized. Information regarding the geography of a spot along with the number of key populations attached to each spot serves as a valuable tool for planning services and intervention. Sex worker programs in India have benefited tremendously from the data gathered from geographical mapping and have used this information to plan and deliver services in finest details (NSACP Kenya, 2012).

This study has given strong data as far as the hotspots are concerned. Any scientific study among the MARPs groups is a challenge since it lacks a sampling frame. The list of hotspots generated from the study can be used for all the scientific researches in the country, including the Integrated Behavioural and Biological Survey (IBBS) in future. In addition, the data generated from this study can help in a) identification and allocation of peer educators in programme locations; b) project implementation planning, including micro-planning at hotspot level; c) setting up individualized tracking systems for MARPs; and d) as baseline figures for monitoring and evaluation purposes.

## BIBLIOGRAPHY


1. Emmanual, Isac, Blanchard (2013), Using geographical mapping of key vulnerable populations to control the spread of HIV epidemics, *Expert Rev. Anti Infect. Ther.* 11(5), 451–453 (2013)

2. National STD & AIDS Control Program (NSACP). *Mapping Key Populations for HIV Prevention in Sri Lanka*. Ministry Of Health, Sri Lanka (2010).

3. Social mapping of most at risk populations in selected districts for HIV prevention in Sri Lanka (2012)

4. WHO. *Guidelines on Estimating the Size of Populations Most at Risk to HIV*. UNAIDS/WHO Working Group on Global HIV/AIDS and STI Surveillance. WHO, Geneva, Switzerland (2010).

5. Salganik, M. J. and Heckathorn, D. G. (2004). Sampling and estimation in hidden populations using respondent driven sampling. *Sociological Methodology, 34*: 193-293

6. Karnataka Health Promotion Trust. *Mapping of HRG in Karnataka. Karnataka State Report.* Karnataka Health PromotionTrust, Bangalore, India (2010).

7. National AIDS Control Program (NACP).*Mapping of Key Populations at Higher Risk of HIV*. *Round IV.* Ministry of Health, Islamabad, Pakistan (2012).

8. National AIDS and STI Control Program (NASCP). *Most at Risk Populations: Unveiling New Evidence for Accelerated Programming*. Ministry of Health, Kenya (2012).

9. Karnataka Health Promotion Trust. *A Systematic Approach to the Design and Scale-up of Targeted Interventions for HIV Prevention Among Urban Female Sex Workers*. Karnataka Health Promotion Trust, Bangalore, India (2012).

# Annexures

## Annexure 1: Questionnaire for Level 1

### NATIONAL SIZE ESTIMATION OF MARPS FOR HIV PREVENTION IN SRI LANKA 2013

### *LEVEL 1 FORM*

FORM NO ☐☐☐☐ DATE: ☐☐ ☐☐ ☐☐☐☐

DISTRCIT: _____ ☐☐ DS:_____ ☐☐ TOWN _____ ☐☐

FRO1 NAME : _____ FRO1 ID :____ ☐☐ FRO2 NAME_____FRO2 ID : ☐☐

FIELD SUPERVISOR NAME : _____ FS ID : ☐☐

| S. N | Spot name | Spot Address | Type of MARP | Type of spot | Time of operation | Number of MARPs | |
|---|---|---|---|---|---|---|---|
| | | | | | | Min | Max |
| 1. | | | FSW ☐ | | | | |
| | | | MSM ☐ | | | | |
| | | | DU/IDU ☐ | | | | |
| | | | BB ☐ | | | | |
| 2. | | | FSW ☐ | | | | |
| | | | MSM ☐ | | | | |
| | | | DU/IDU ☐ | | | | |
| | | | BB ☐ | | | | |
| 3. | | | FSW ☐ | | | | |
| | | | MSM ☐ | | | | |
| | | | DU/IDU ☐ | | | | |
| | | | BB ☐ | | | | |
| 4. | | | FSW ☐ | | | | |
| | | | MSM ☐ | | | | |
| | | | DU/IDU ☐ | | | | |
| | | | BB ☐ | | | | |
| 5. | | | FSW ☐ | | | | |
| | | | MSM ☐ | | | | |
| | | | DU/IDU ☐ | | | | |
| | | | BB ☐ | | | | |

KI NAME & CONTACT INFORMATION (optional): _____

_____

GENDER: Male ☐ Female ☐ Transgender/ Transvestite ☐

PROFESSION:_____

TYPE OF KI: ☐☐

**Type of spot**: *1-Street;/ public places 2-Lodge/hotel; 3-Home/shanti; 4-Brothel;5-Karaoke/night club/casino/massage parlor; 6-Vehicle based; 7-Others (Specify)*

_____

**Time of Operation**: *A-Morning (Before 12 noon); B-Afternoon(12 pm -5 pm); C-Evening(5 pm -9 pm); D-Night (*9 Pm-Late Night*)*

**Type of KI:** *1-FSW; 2- MSM; 3-DU/IDU; 4-BB; 5-Taxi driver; 6- Local food sellers; 7-Pimp/brothel owner/madams; 8-Watchmen/security staff; 9-Hotel/lodge workers; 10-Bar workers/owners/patrons; 11-Porters; 12-Petty shop owners; 13-Drug peddlers/pushers; 14-Pharmacist;15-Lottery sellers; 16-Sanitary workers on the streets/ toilets;17-Networks of MARPs; 18-NGO staff; 19-Health care service providers; 20-Gov./law enforcement officials (police etc); 21-Street families; 22-Beggars; 23-Publi/private transport staff; 24-Construction workers/labourers; 25-Others(Specify)*_____

**NATIONAL SIZE ESTIMATION OF MARPS IN SRI LANKA 2013**

**CODE LIST**

| Description | Code List |
|---|---|
| Type of spot | 1 Street/ public places<br>2 Lodge/hotel<br>3 Home/shanti<br>4 Brothel;5-Karaoke/night club/casino/massage parlor<br>6 Vehicle based<br>7 Others (Specify) |
| Time of Operation | *A* Morning ( Before 12 Noon)<br>*B* Afternoon (12 Pm-5 Pm)<br>*C* Evening (5 Pm-9 Pm)<br>*D* Night (9 Pm-Late Night) |
| Type of KI | 1 FSW<br>2 MSM<br>3 DU/IDU<br>4 BB<br>5 Taxi driver<br>6 Local food sellers<br>7 Pimp/brothel owner/madams<br>8 Watchmen/security staff<br>9 Hotel/lodge workers<br>10 Bar workers/owners/patrons<br>11 Porters<br>12 Petty shop owners<br>13 Drug peddlers/pushers<br>14 Pharmacist<br>15 Lottery sellers<br>16 Sanitary workers on the streets/ toilets<br>17 Networks of MARPs<br>18 NGO staff<br>19 Health care service providers<br>20 Gov./law enforcement officials (police etc)<br>21 Street families<br>22 Beggars<br>23 Public/private transport staff<br>24 Construction workers/labourers<br>25 Others |

## Annexure 2: Questionnaires FSW, MSM, DU and BB at Level 2

**NATIONAL SIZE ESTIMATION OF MARP FOR HIV PREVENTION IN SRI LANKA – 2013**

***FEMALE SEX WORKERS (FSW) - LEVEL 2 FORM***

DISTRICT:_____ DS DIVISION:_____

TOWN:_____

HOTSPOT NAME/CODE:_____ SPOT TYPE: _____

FRO1 NAME/CODE:_____; FRO2 NAME:_____FS NAME/CODE:_____

DATE: START TIME:

TYPE OF VALIDATION: INTERVIEWED PRIMARY KI INTERVIEWED SECONDARY KI

SPOT CURRENTLY ACTIVE: ACTIVE INACTIVE TOTAL NO OF VISIT:

| **A. Spot Profile** | | |
|---|---|---|
| 1 | Code the hotspot with the response which best describes it. | STREET/PUBLIC PLACES ..... 1<br>LODGE/HOTEL ..... 2<br>HOME/SHANTI ..... 3<br>BROTHEL ..... 4<br>KARAOKE/NIGHT CLUB/CASINO/MASSAGE PARLOR ..... 5<br>VEHICLE BASED ..... 6<br>OTHERS (SPECIFY) _____ ..... 7 |
| 2 | What is the peak day in a given week for FSW in this spot? | SUNDAY ..... A<br>MONDAY ..... B<br>TUESDAY ..... C<br>WEDNESDAY ..... D<br>THURSDAY ..... E<br>FRIDAY ..... F<br>SATURDAY ..... G |
| 3 | What is the peak time in a given day for FSW in this spot? | MORNING ( BEFORE 12 NOON) ..... A<br>AFTERNOON (12 PM-5 PM) ..... B<br>EVENING (5 PM-9 PM) ..... C<br>NIGHT (9 PM-LATE NIGHT) ..... D |
| 4 | On an average day, how many FSW work here?: Min – Max* | MIN MAX |
| 5 | On a peak day, how many FSW work here? Min – Max* | MIN MAX |
| 6 | What kind of sexual activities takes place in this spot? READ THE RESPONSES AND CODE | SEXUAL ACTIVITIES TAKES PLACE AT THIS SPOT ..... 1<br>SOLICITATION TAKES PLACE AT THIS SPOT ..... 2<br>BOTH ..... 3 |

| 7 | Do you know any other hotspot like this, where sex workers solicit clients? | ESTIMATE (MIN) | ESTIMATE (MAX) | Do you solicit in that spot? | CHECK: L1 LIST, IDENTIFIED IN L1 OR NOT |
|---|---|---|---|---|---|
| A | | | | YES ☐ NO ☐ | YES ☐ NO ☐ |
| B | | | | YES ☐ NO ☐ | YES ☐ NO ☐ |
| C | | | | YES ☐ NO ☐ | YES ☐ NO ☐ |
| D | | | | YES ☐ NO ☐ | YES ☐ NO ☐ |
| E | | | | YES ☐ NO ☐ | YES ☐ NO ☐ |

**NATIONAL SIZE ESTIMATION OF MARP FOR HIV PREVENTION IN SRI LANKA – 2013**

***MEN SEX WITH MEN (MSM) - LEVEL 2 FORM***

DISTRICT:_____ DS DIVISION:_____

TOWN:_____

HOTSPOT NAME/CODE:_____ SPOT TYPE: _____

FRO1 NAME/CODE:_____; FRO2 NAME:_____FS NAME/CODE:_____

DATE: START TIME:

TYPE OF VALIDATION: INTERVIEWED PRIMARY KI INTERVIEWED SECONDARY KI

SPOT CURRENTLY ACTIVE: ACTIVE INACTIVE TOTAL NO OF VISIT:

| **A. Spot Profile** | | |
|---|---|---|
| 1 | Code the hotspot with the response which best describes it. | STREET / PUBLIC PLACES ..... 1<br>LODGE/HOTEL ..... 2<br>HOME/SHANTI ..... 3<br>KARAOKE/NIGHT CLUB/CASINO/MASSAGE PARLOR ..... 5<br>OTHERS (SPECIFY) _____ ..... 7 |
| 2 | What is the peak day in a given week for MSM in this spot? | SUNDAY ..... A<br>MONDAY ..... B<br>TUESDAY ..... C<br>WEDNESDAY ..... D<br>THURSDAY ..... E<br>FRIDAY ..... F<br>SATURDAY ..... G |
| 3 | What is the peak time in a given day for MSM in this spot? | MORNING ( BEFORE 12 NOON) ..... A<br>AFTERNOON (12 PM-5 PM) ..... B<br>EVENING (5 PM-9 PM) ..... C<br>NIGHT (9 PM-LATE NIGHT) ..... D |
| 4 | On a peak day, how many MSMs visit this spot?: Min – Max* | MIN MAX |
| 5 | On a peak day, how many MSWs visit this spot?: Min – Max* | MIN MAX |
| 6 | On a peak day, how many NACHCHIs visit this spot?: Min – Max* | MIN MAX |
| 7 | On a peak day, how many MSMs other than MSWs and NACHCHIs visit this spot?: Min – Max* | MIN MAX |
| 8 | On an average day, how many MSMs visit this spot? | MIN MAX |
| 6 | What kind of sexual activities takes place in this spot? READ THE RESPONSES AND CODE | SEXUAL ACTIVITIES TAKES PLACE AT THIS SPOT ..... 1<br>SOLICITATION TAKES PLACE AT THIS SPOT ..... 2<br>BOTH ..... 3 |

| | | | | | |
|---|---|---|---|---|---|
| 7 | Do you know any other hotspot like this, where MSMs visit for picking their clients/partners? | ESTIMATE (MIN) | ESTIMATE (MAX) | Do you visit in that spot? | CHECK L1 LIST: SPOT IDENTIFIED IN L1 |
| A | | | | YES ☐ NO ☐ | YES ☐ NO ☐ |
| B | | | | YES ☐ NO ☐ | YES ☐ NO ☐ |
| C | | | | YES ☐ NO ☐ | YES ☐ NO ☐ |
| D | | | | YES ☐ NO ☐ | YES ☐ NO ☐ |

**NATIONAL SIZE ESTIMATION OF MARP FOR HIV PREVENTION IN SRI LANKA – 2013**

***DRUG USERS/INJECTING DRUG USERS (DU/IDU) - LEVEL 2 FORM***

DISTRICT:_____ DS DIVISION:_____

TOWN:_____

HOTSPOT NAME/CODE:_____ SPOT TYPE: _____

FRO1 NAME/CODE:_____; FRO2 NAME:_____FS NAME/CODE:_____

DATE: START TIME:

TYPE OF VALIDATION: INTERVIEWED PRIMARY KI INTERVIEWED SECONDARY KI

SPOT CURRENTLY ACTIVE: ACTIVE INACTIVE TOTAL OF VISIT:

| **A. Spot Profile** | | |
|---|---|---|
| 1 | Code the hotspot with the response which best describes it. | STREET / PUBLIC PLACES ..... 1<br>HOME / SHANTI ..... 3<br>KARAOKE/NIGHT CLUB/CASINO/MASSAGE PARLOR ..... 5<br>OTHERS (SPECIFY) _____ ..... 7 |
| 2 | What is the peak day in a given week for DRUG USE in this spot? | SUNDAY ..... A<br>MONDAY ..... B<br>TUESDAY ..... C<br>WEDNESDAY ..... D<br>THURSDAY ..... E<br>FRIDAY ..... F<br>SATURDAY ..... G |
| 3 | What is the peak time in a given day for DRUG USE in this spot? | MORNING ( BEFORE 12 NOON) ..... A<br>AFTERNOON (12 PM-5 PM) ..... B<br>EVENING (5 PM-9 PM) ..... C<br>NIGHT (9 PM-LATE NIGHT) ..... D |
| 4 | On an average day, how many DRUG USERS visit this spot?: Min – Max* | MIN MAX |
| 5 | On an average day, how many INJECTING DRUG USERS visit this spot?: Min – Max* | MIN MAX |
| 6 | On a peak day, how many DRUG USERS visit this spot?: Min – Max* | MIN MAX |
| 7 | On a peak day, how many INJECTING DRUG USERS visit this spot?: Min – Max* | MIN MAX |
| 8 | On a peak day, how many of INJECTING DRUG USERS share needles? | MIN MAX |
| 9 | How many DRUG USERS were in this spot 3 months before, but within the last 6 months? | MIN MAX |

| 10 | Do you know any other hotspot like this, where DRUG USERS visit for drug use? | ESTIMATE (MIN) | ESTIMATE (MAX) | Do you visit in that spot? | CHECK L1 LIST: SPOT IDENTIFIED IN L1 |
|---|---|---|---|---|---|
| A | | | | YES ☐ NO ☐ | YES ☐ NO ☐ |
| B | | | | YES ☐ NO ☐ | YES ☐ NO ☐ |
| C | | | | YES ☐ NO ☐ | YES ☐ NO ☐ |
| D | | | | YES ☐ NO ☐ | YES ☐ NO ☐ |

**NATIONAL SIZE ESTIMATION OF MARP FOR HIV PREVENTION IN SRI LANKA – 2013**

***BEACH BOYS (BB) - LEVEL 2 FORM***

DISTRICT:_____ ☐☐ DS DIVISION:_____ ☐☐

TOWN:_____ ☐☐

HOTSPOT NAME/CODE:_____ ☐☐☐ SPOT TYPE: _____ ☐_____

FRO1 NAME/CODE:_____ ☐☐ ; FRO2 NAME:_____ ☐☐ FS ☐☐
NAME/CODE:_____

DATE: ☐☐ ☐☐ ☐☐☐☐ START TIME: ☐☐ ☐☐

TYPE OF VALIDATION: INTERVIEWED PRIMARY KI ☐ INTERVIEWED SECONDARY KI ☐

SPOT CURRENTLY ACTIVE: ACTIVE ☐ INACTIVE ☐ TOTAL # OF VISIT: ☐

| **A. Spot Profile** | | |
|---|---|---|
| 1 | What is the peak day in a given week for BEACH BOYS in this spot? | SUNDAY ..... A<br>MONDAY ..... B<br>TUESDAY ..... C<br>WEDNESDAY ..... D<br>THURSDAY ..... E<br>FRIDAY ..... F<br>SATURDAY ..... G |
| 2 | What is the peak time in a given day for BEACH BOYS in this spot? | MORNING ( BEFORE 12 NOON) ..... A<br>AFTERNOON (12 PM-5 PM) ..... B<br>EVENING (5 PM-9 PM) ..... C<br>NIGHT (9 PM-LATE NIGHT) ..... D |
| 3 | What is the peak month in an year, when BEACH BOYS are more compared to other months? | _____ |
| 4 | On an average day, how many BEACH BOYS visit this spot?: Min – Max* | MIN ☐☐ MAX ☐☐ |
| 5 | On an peak day, how many BEACH BOYS visit this spot?: Min – Max* | MIN ☐☐ MAX ☐☐ |
| 6 | On a peak month, how many BEACH BOYS visit this spot?: Min – Max* | MIN ☐☐ MAX ☐☐ |

| | | | | | |
|---|---|---|---|---|---|
| 7 | Do you know any other places like this, where BEACH BOYS operate in this District? | ESTIMATE (MIN) | ESTIMATE (MAX) | Do you visit in that spot? | CHECK: L1 LIST: SPOT IDENTIFIED IN L1 |
| A | | | | YES ☐ NO ☐ | YES ☐ NO ☐ |
| B | | | | YES ☐ NO ☐ | YES ☐ NO ☐ |
| C | | | | YES ☐ NO ☐ | YES ☐ NO ☐ |
| D | | | | YES ☐ NO ☐ | YES ☐ NO ☐ |
| E | | | | YES ☐ NO ☐ | YES ☐ NO ☐ |