

# **Using GIS to map condom coverage, quality of coverage and access in hot-zones in Nepal**

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# Introduction

- This presentation will focus on following:
  - Background
  - Objectives
  - Key definitions
  - Methods and materials
  - Study findings
  - Summary of Findings
  - Future Directions



# Background

- Nepal progressed from “low HIV prevalence” to concentrated HIV epidemic in certain sub-groups.
- Integrated bio-behavioral surveys (IBBS) 2005 showed that HIV prevalence is
  - 2% among female sex workers (FSWs)
  - 15.6% injecting drug users
  - 3.6% among men who have sex with men
  - 12.4% in other categories that include spouses of most at risk population



# Background

- **WHY GIS ?**

- As it gets darker Thamel gets brighter and livelier. More than bars and restaurants, in this fabricated atmosphere, there is something extra going on – the dance restaurants where heavily made-up young girls, high on Bollywood tunes, take off their cloths one after another almost to the nudity.
- Soon the trade crosses the boundary of food and drinks to flesh. Thamel is one example. This scenario is visible in many other parts of the Kathmandu valley as well as in other main cities of the country.
- The sex is traded almost equally actively in this country, always in combination with food and drink, also in the broad daylight in *cabin restaurants* where girl as young as 14 are engaged in the business.



# Background

- And if one looks closely, this underground business is rampant in bars and eateries along the major highway routes and transport stations.
- The worrying part is not about the oldest profession in the world but the risky behaviour that people engage into it.
- The unprotected sex in Nepal is persistently contributing to the increase in HIV infection among masses.
- Targeted interventions in fighting against HIV transmission was difficult as there was no account of *hot-spots* where sex negotiation or sexual activities occurred.



# Background

- Geographic Information Systems (GIS) mapping of these geographic locations was piloted in Nepal in 2003
- Since 2006, two rounds of studies have **objectively examined** product performance measures such as product coverage, quality of product coverage and access to product/services
- Study findings are intended for evidence based marketing decisions

# Objectives

- To increase the availability and usage of condoms among most-at-risk groups (FSWs and clients of FSWs), this study seeks to:
  - Assist evidence-based programmatic decisions
  - Monitor product and service performance
  - Measure condom coverage, quality of condom coverage and access to condom



# Key Definitions

## *Coverage*

- Presence of at least one condom selling outlet per five hot spots in a hot zone
  - **Hot spot**: Place where sex negotiation or sexual activity takes place
    - Dance Restaurants, Hotel, Lodge, Bhatti, Dohori, Massage parlors, Streets
  - **Hot zone**: Cluster of hot spots defined as
    - Buffer area covering a minimum distance of 100m

# Key Definitions

## *Quality of Coverage*

- Hot zones with a condom delivery system that conforms to minimum quality measured by:
  - Condom stocked in the visible location at outlet
  - Promotional material available at point of purchase
  - No incidence of condom stock outs in last month
  - Sell condoms at night after 8.00 PM

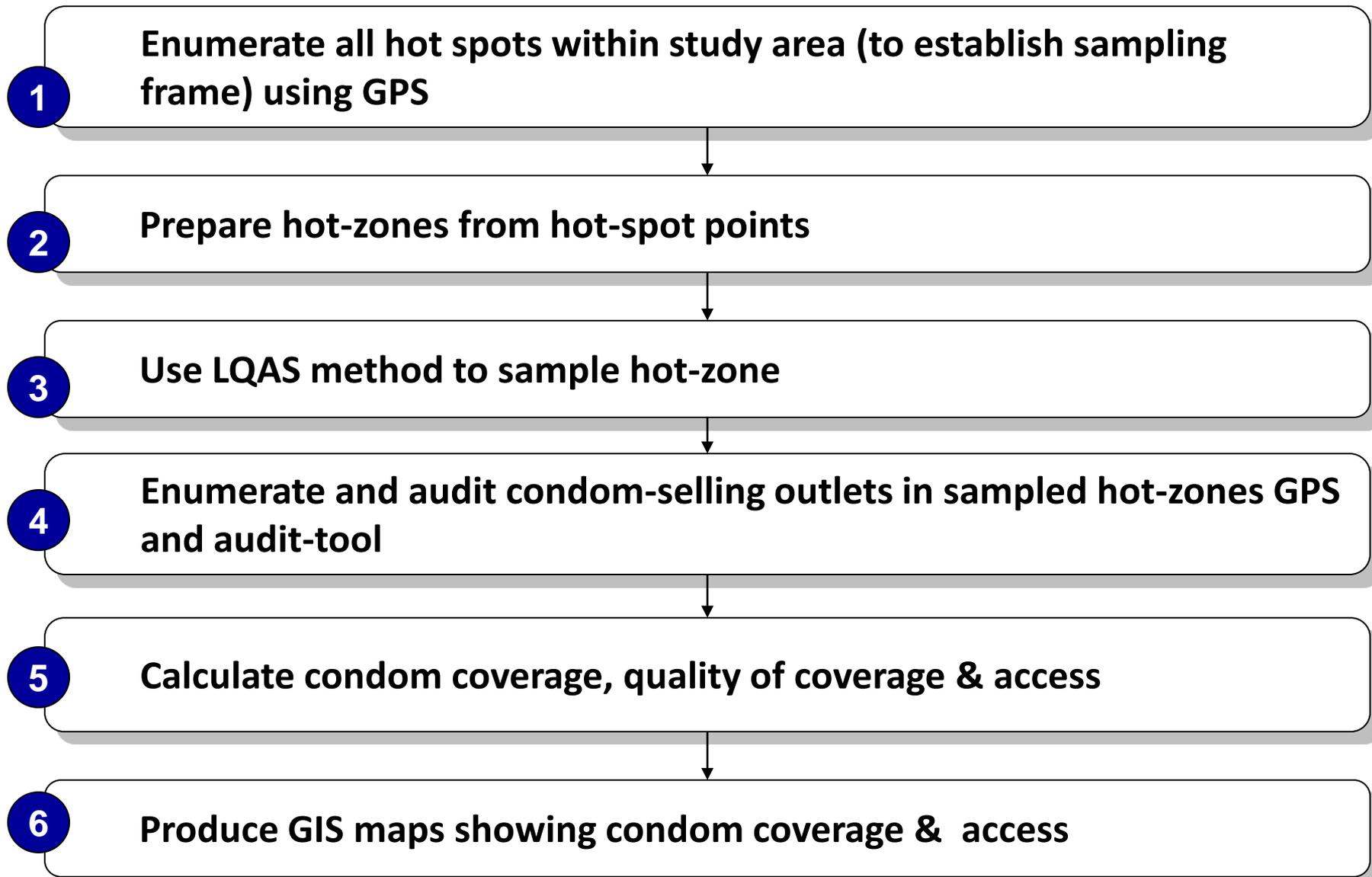
# Key Definitions

## *Access*

- Proportion of hot-spots that have a condom delivery point within its catchments area: a radius of 100m



# Methods and Materials



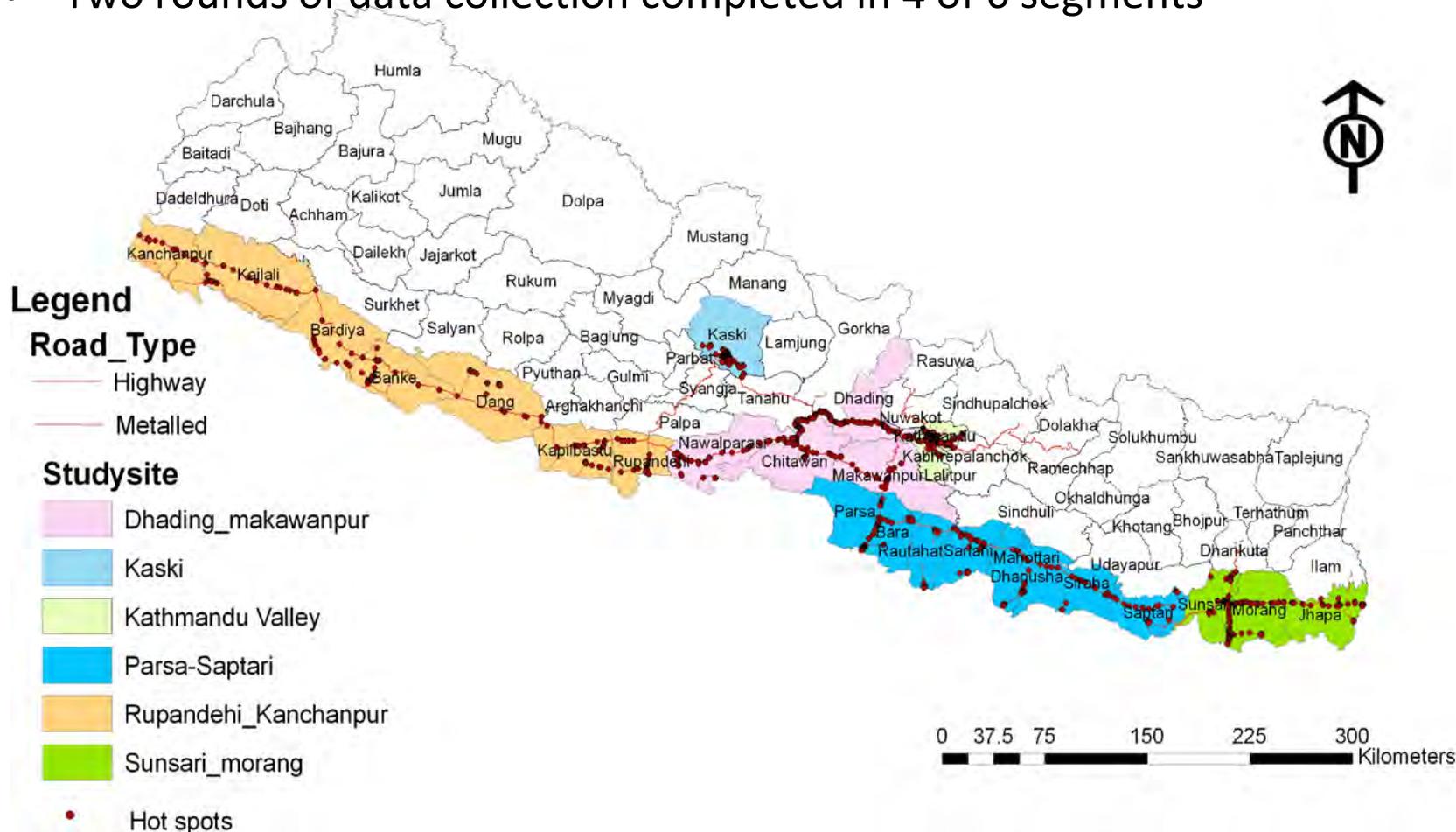
# **Study Findings**

## **Condom Coverage** **Quality of Condom Coverage** **Access to Condoms**



# Study Regions with Commercial Sex Activities

- 26 of 75 districts were identified with commercial sex activities.
- 26 districts are divided into six segments for GIS study
- Two rounds of data collection completed in 4 of 6 segments



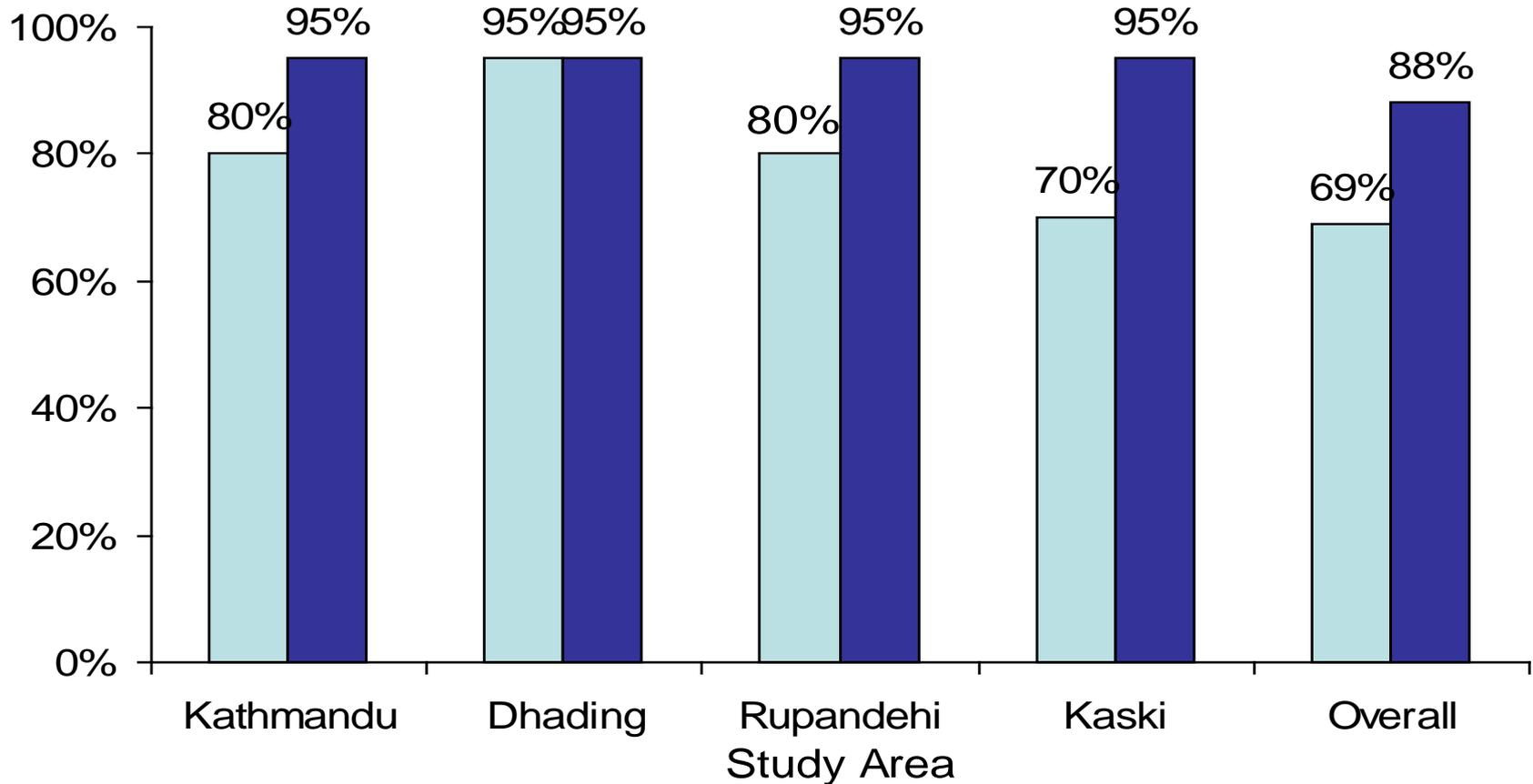


# Programmatic Interventions

- Round 1 provided baseline measures of the key indicators
- Key programmatic interventions included
  - Dissemination of hot zone maps to condom-selling partners
  - Targeted distribution activities by partners in the hot zones
  - Focused marketing and branding activities in hot zones
- Round 2 serves as an intermediate point to assess progress and refine interventions

# Condom coverage

- Condom coverage increased in all four study area. Average coverage between round 1 and 2 has increased from 69% to 88 %

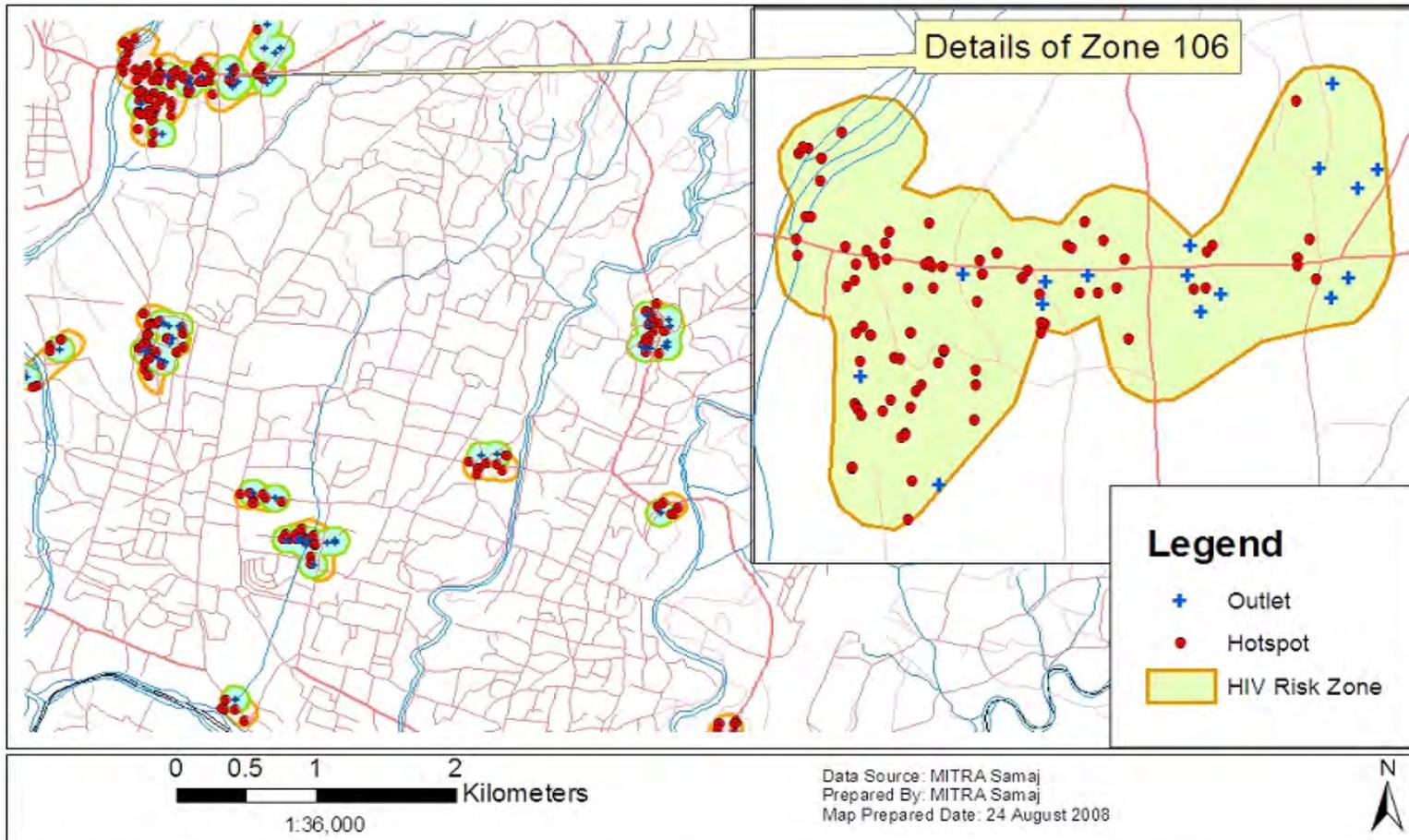


**Note: The percentages are based on LQAS table and the overall coverage is also calculated as suggested by LQAS**



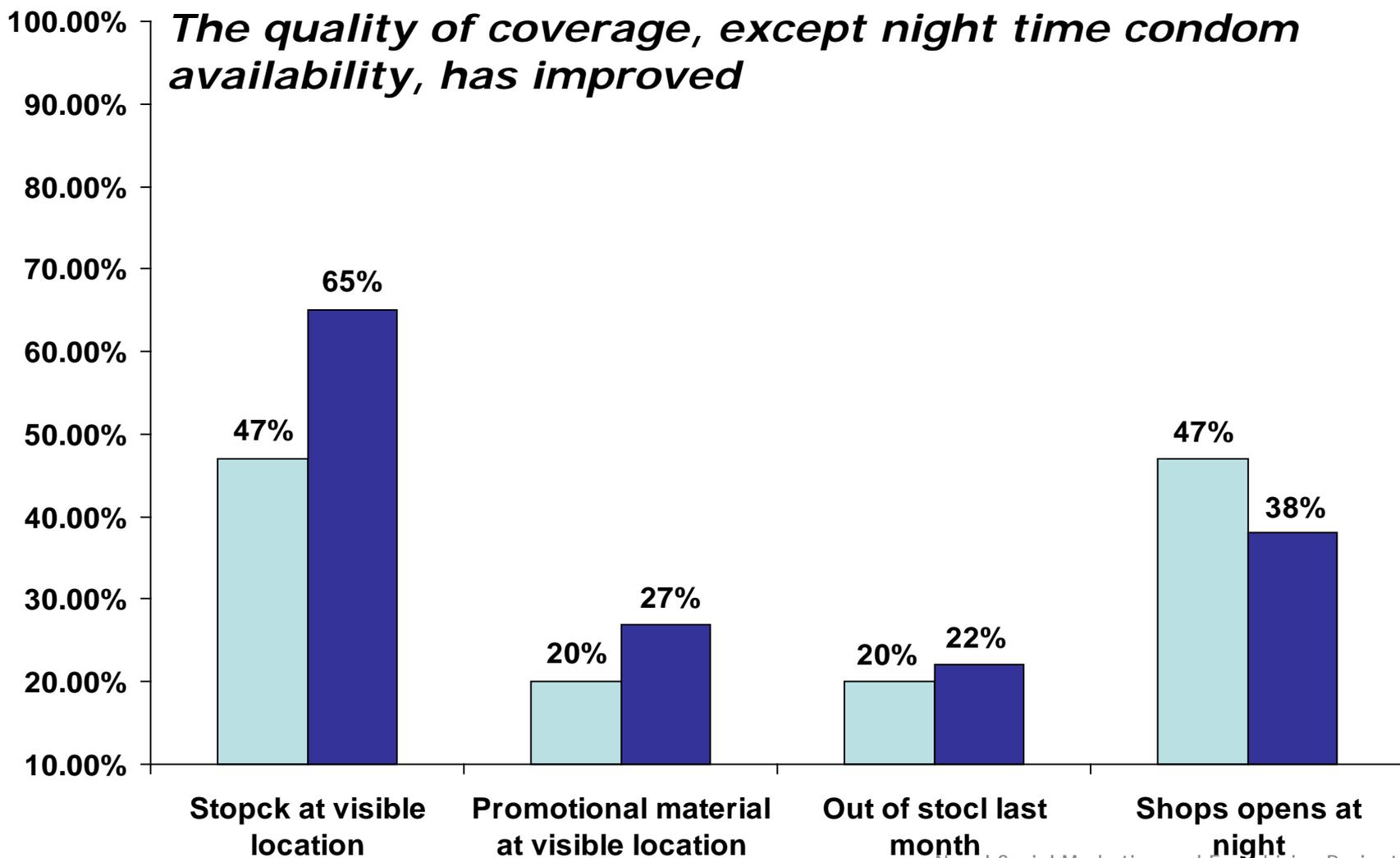
# Mapping Condom Coverage

- Zone 106: Total hotspots = 63; Total condom-selling outlets = 16
- Criteria of coverage: 1:5. Status at survey: Covered



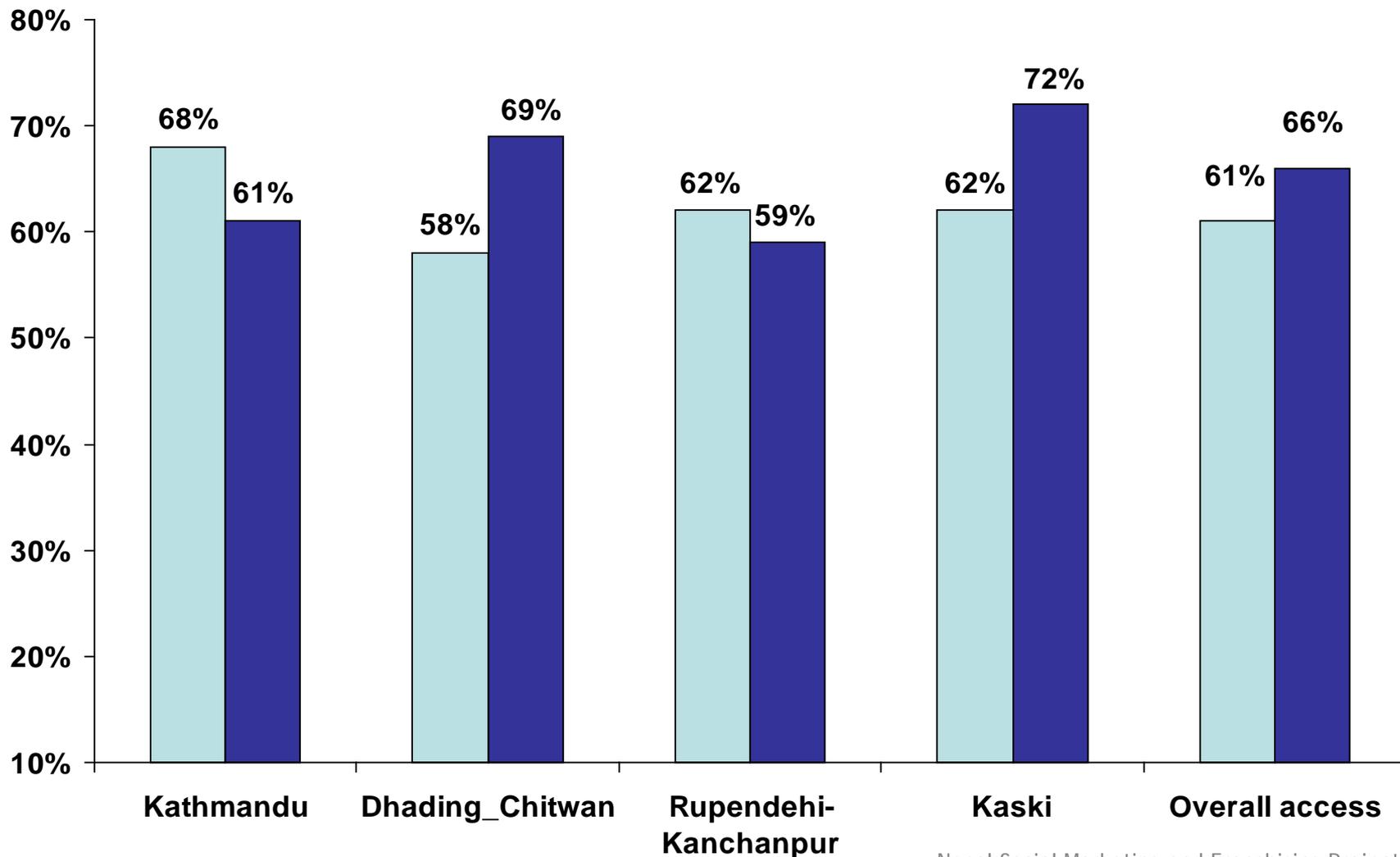


# Average quality of coverage for major project supported condom brands in Round 1 & II

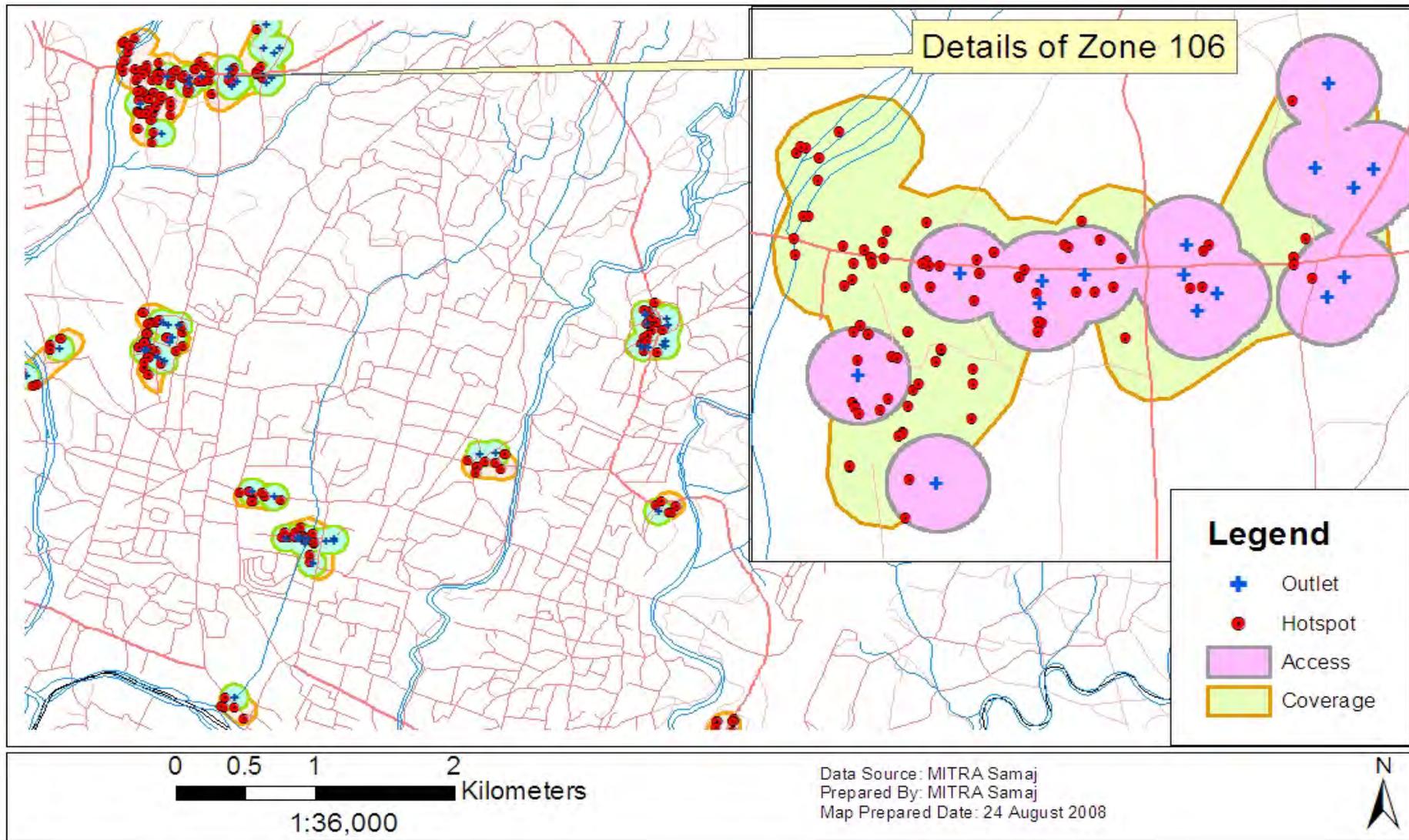


# Access of Hotspots to Condoms Across Study Segments in Round 1 & II

*Access increased overall, but decreased in Kathmandu and Rupandehi*

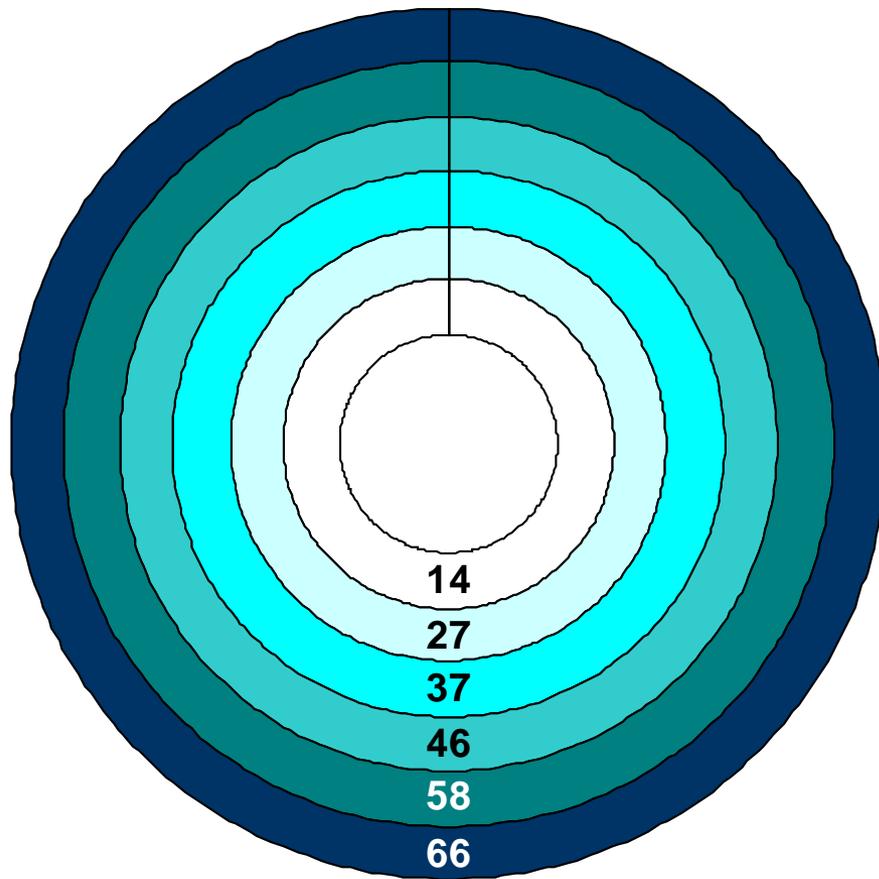


# Mapping Access to Condoms





# % of Hot Spots with Access to Condom-selling Outlets at Different Proximity Intervals, 2008



# Summary of Findings

## *Coverage*

- Overall condom coverage increased from 69 % to 88 %
- Condom coverage increased in three of the four study region, it was constant in Dhading



# Summary of Findings

## *Quality of Coverage*

- Condom stock at visible location in general has improved, but needs further effort to get better result.
- Condom promotional materials at visible location has improved only in Katmandu, and is very poor in other regions.
- Condom stock out experienced in Katmandu seems to have gotten worse. While this indicator remains constant for other study regions.
- Night time condom availability has deteriorated as compared to earlier period in all regions.



# Summary of Findings

## *Access*

- Condom access within 100 meter radius from the hotspots in Dhading and Kaski has improved
- The situation in Katmandu and Rupendehi has deteriorated.
- Overall, the access indicator has increased from 63 to 65 percent

# Program Implications

## Product

- Initiate efforts to increase condom coverage to 95%

## Place/ Distribution

- Target product distribution in those hot zones with poor coverage
- Open new outlets/motivate outlets to increase access
- Ensure condom availability round the clock in outlets that reported out-of stock last month

## Promotion

- Prioritize point-of-purchase promotional activities
- Initiate BCC/IPC activities in hot zones to reduce stigma against selling condoms

## Price

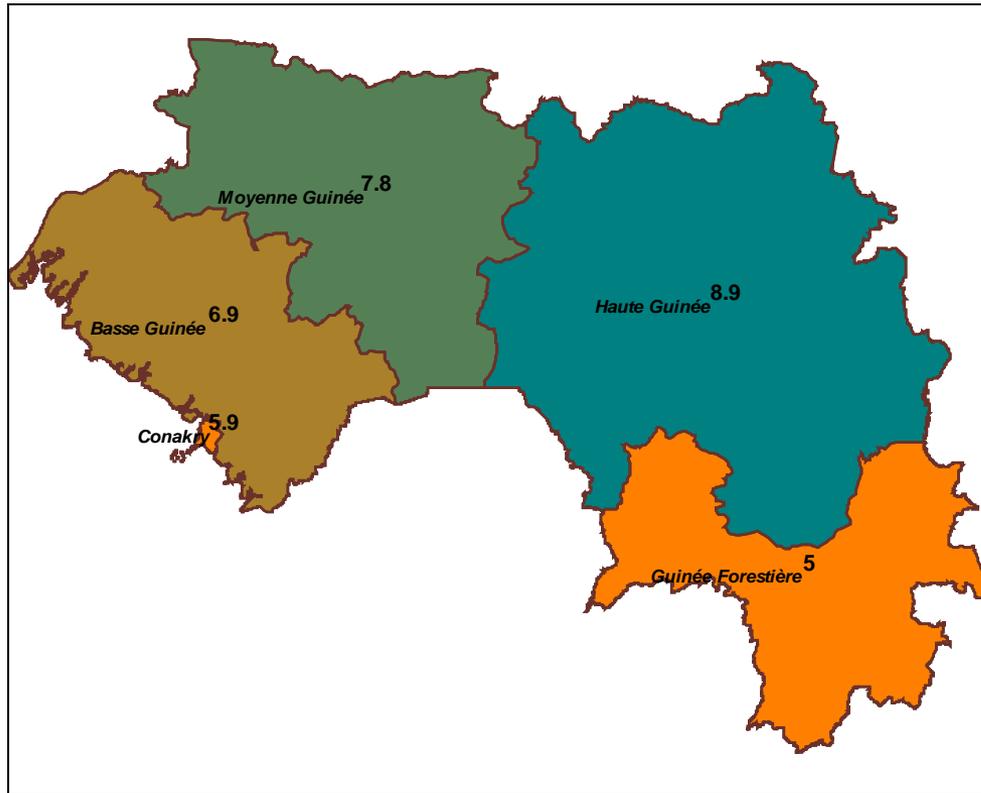
- Ensure condom brands have maximum retail price printed on packaging and encourage retailers to follow this guideline (analyzed but not shown here)

# Future Directions

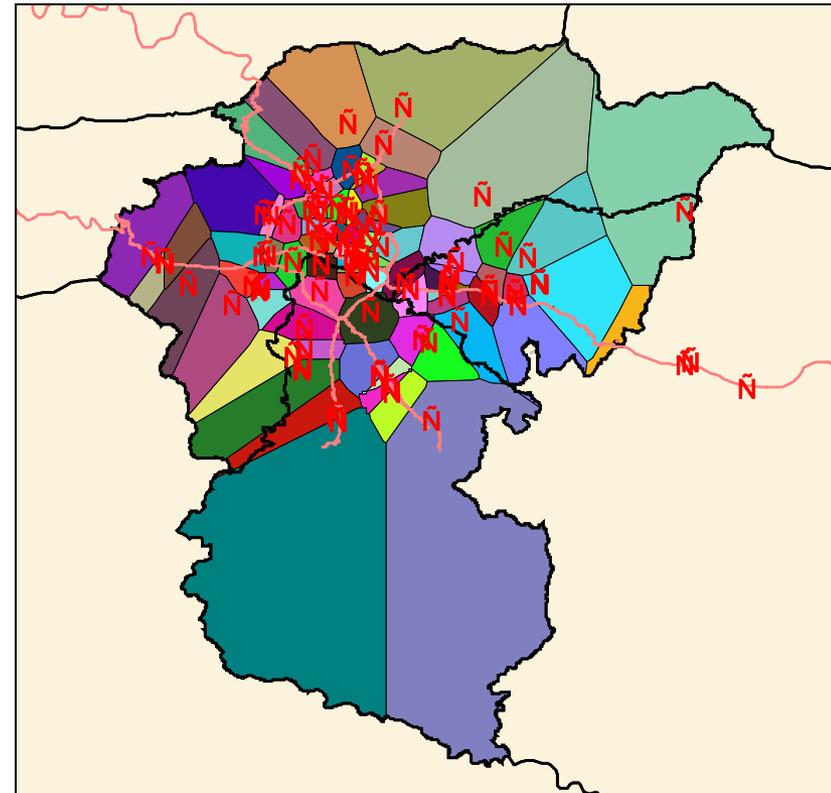
- Adaptation of GIS mapping for monitoring family planning service delivery coverage through public and private sector
- Integration of GIS mapping into Government's strategic planning activities
- Development of district-level maps to assist in decentralized programmatic decision-making

# OTHER APPLICATIONS OF GIS

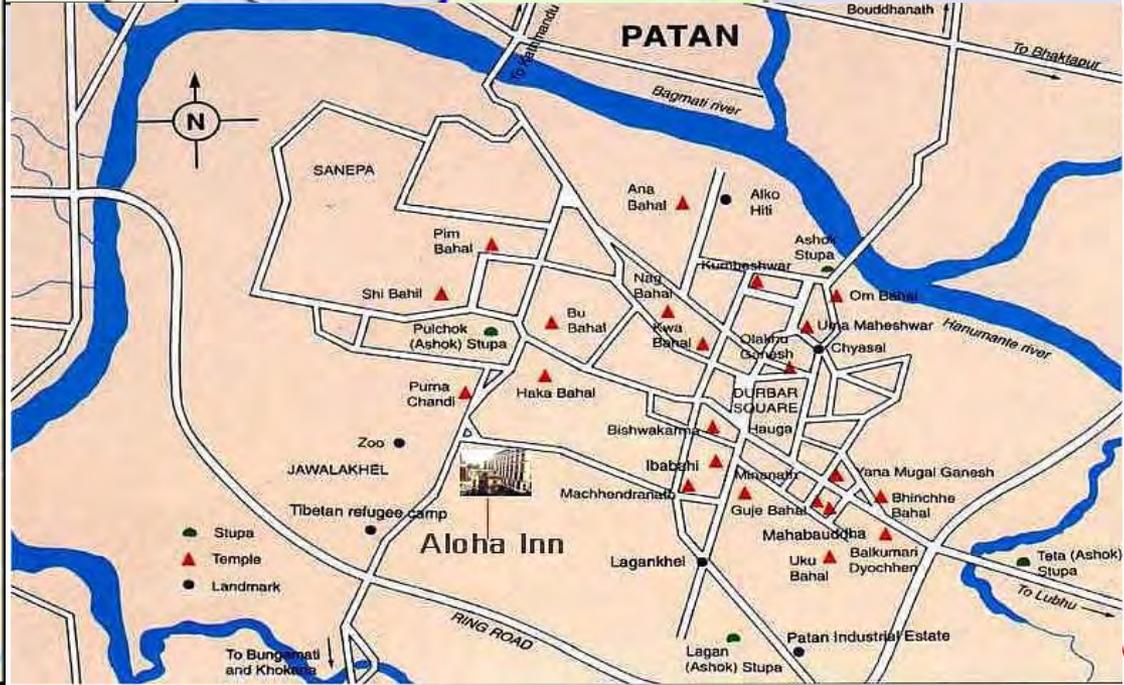
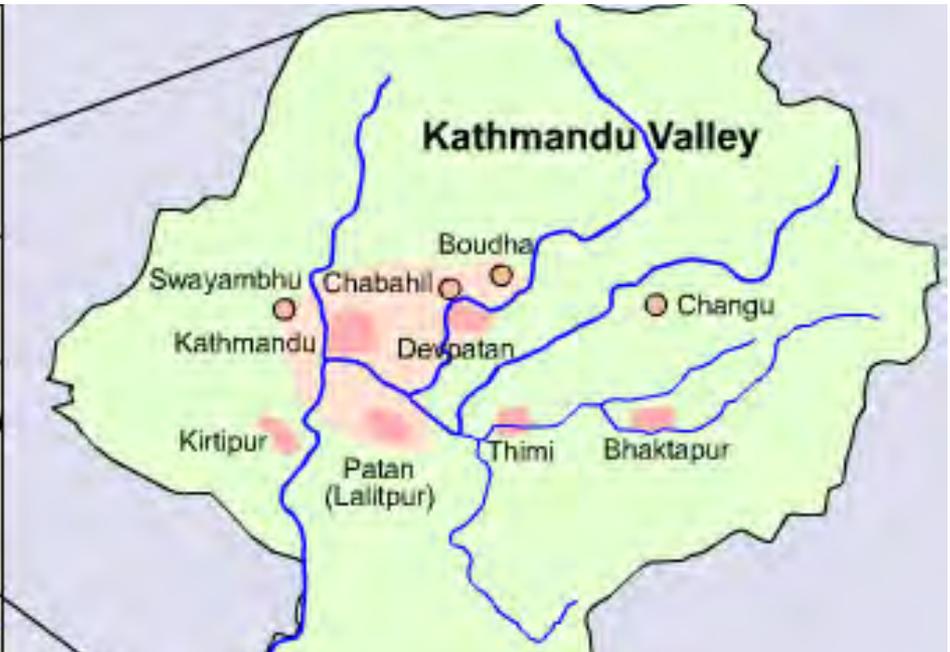
# Other applications of GIS



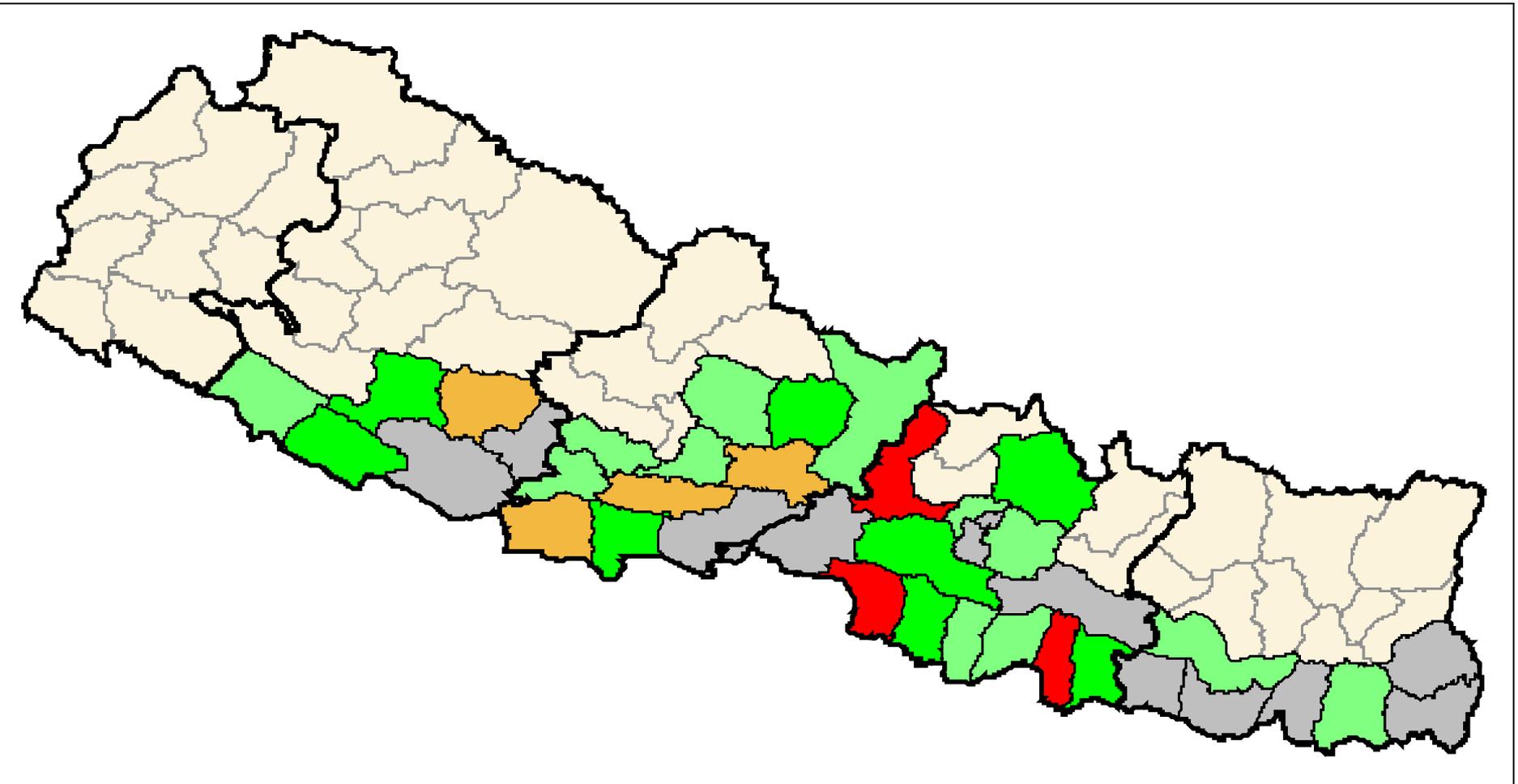
. Mapping of aggregated data from KAP Survey : « % of women having used FP



. Proximity analysis of Health facility clinics network in Kathmandu Valley (Nepal)



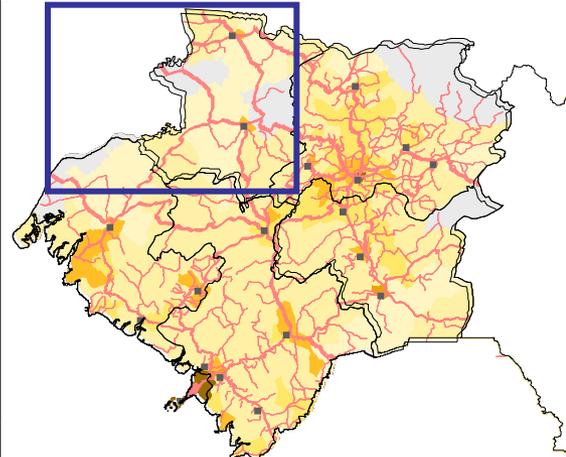
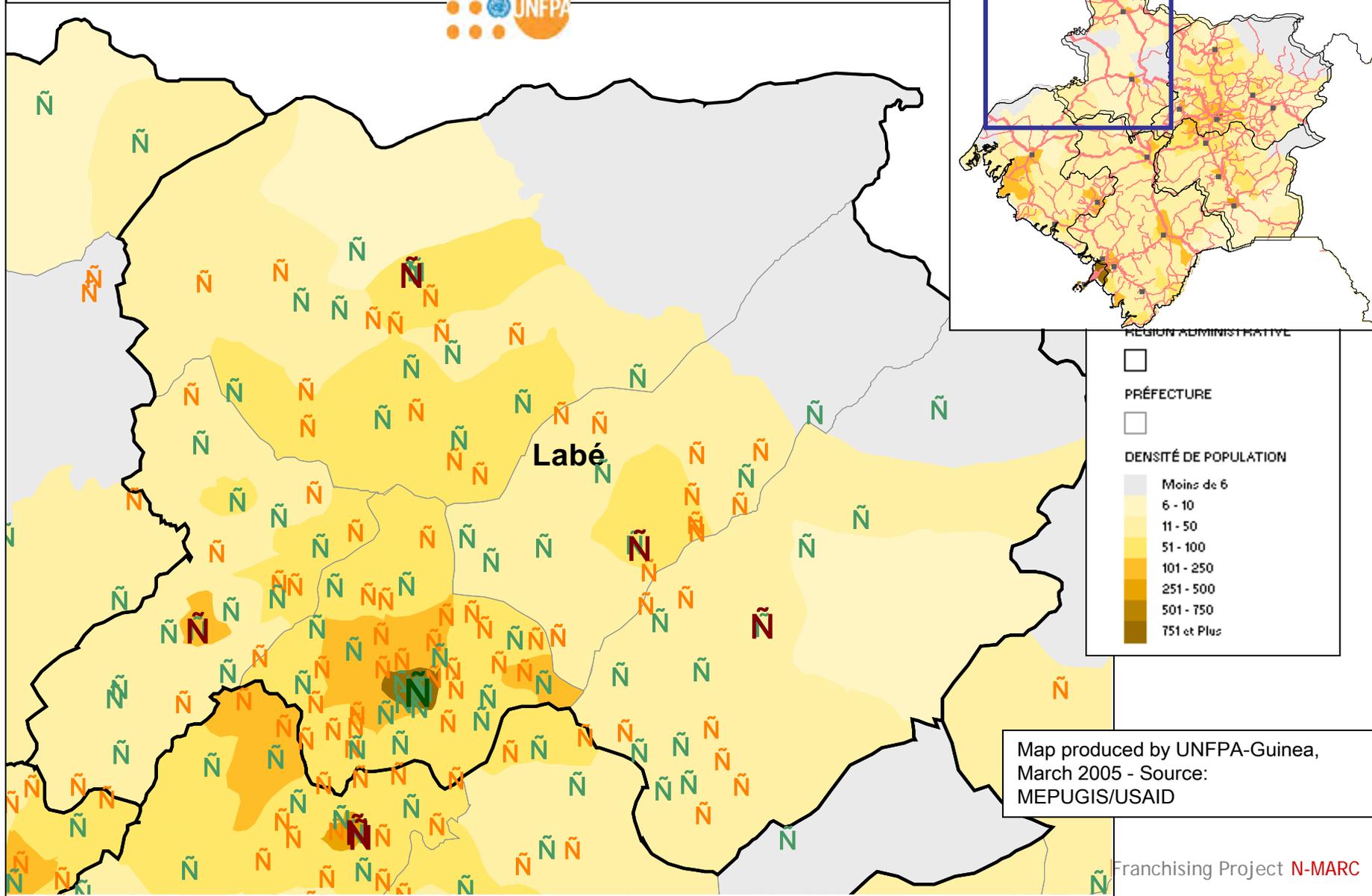
# Other applications of GIS



3. Trend in Monthey condom sales by district (Nepal)



# Location of health facilities and population distribution in the administrative region of Labé, Guinea

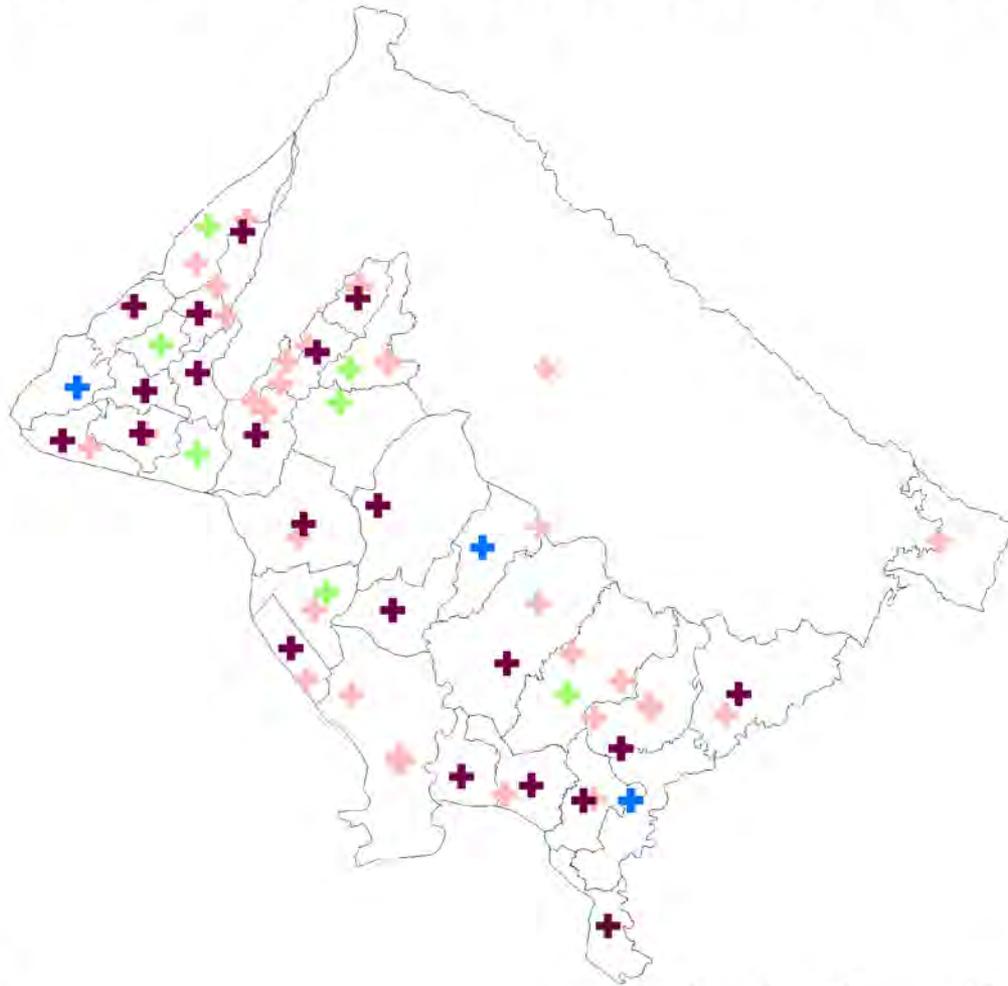


Map produced by UNFPA-Guinea, March 2005 - Source: MEPUGIS/USAID

## Distribution of MSC Outlets and Government setups, Bardiya

### Legend

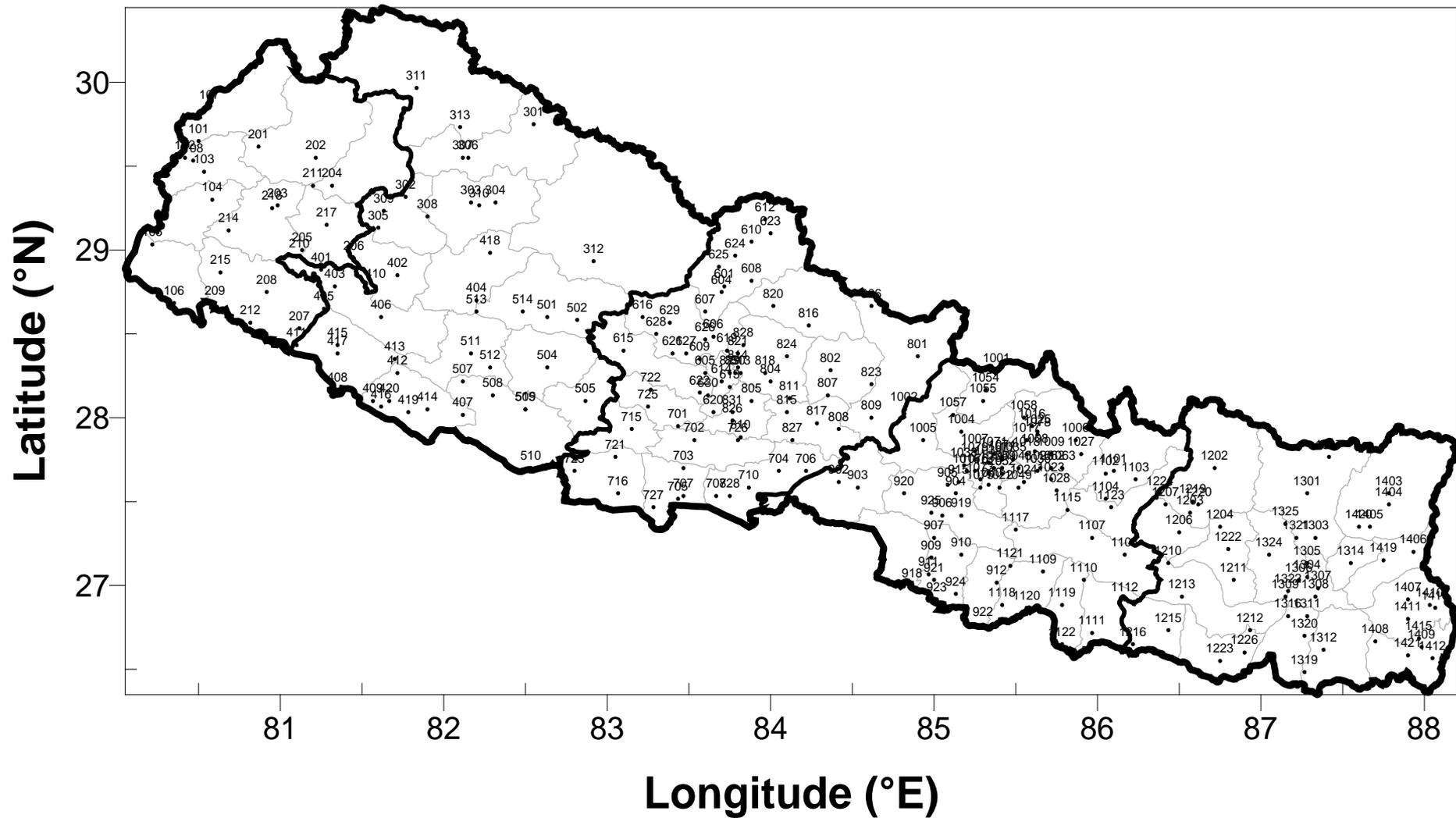
-  SHP
-  PHC
-  HP
-  MSC Outlet

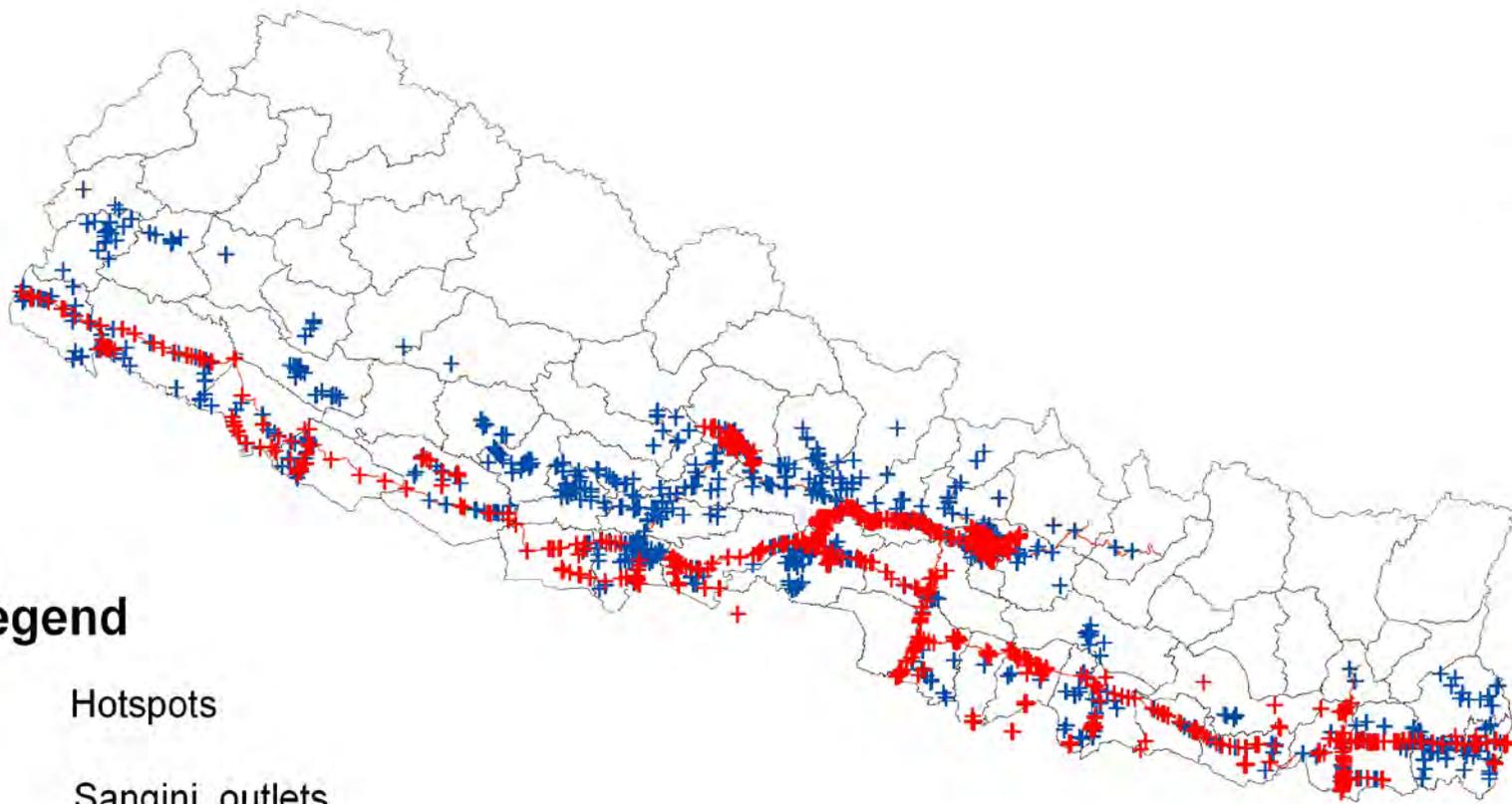


0 5 10 20 30 40 Kilometers



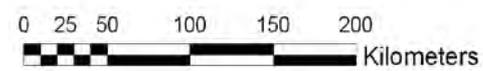
# Meteorological Station Network



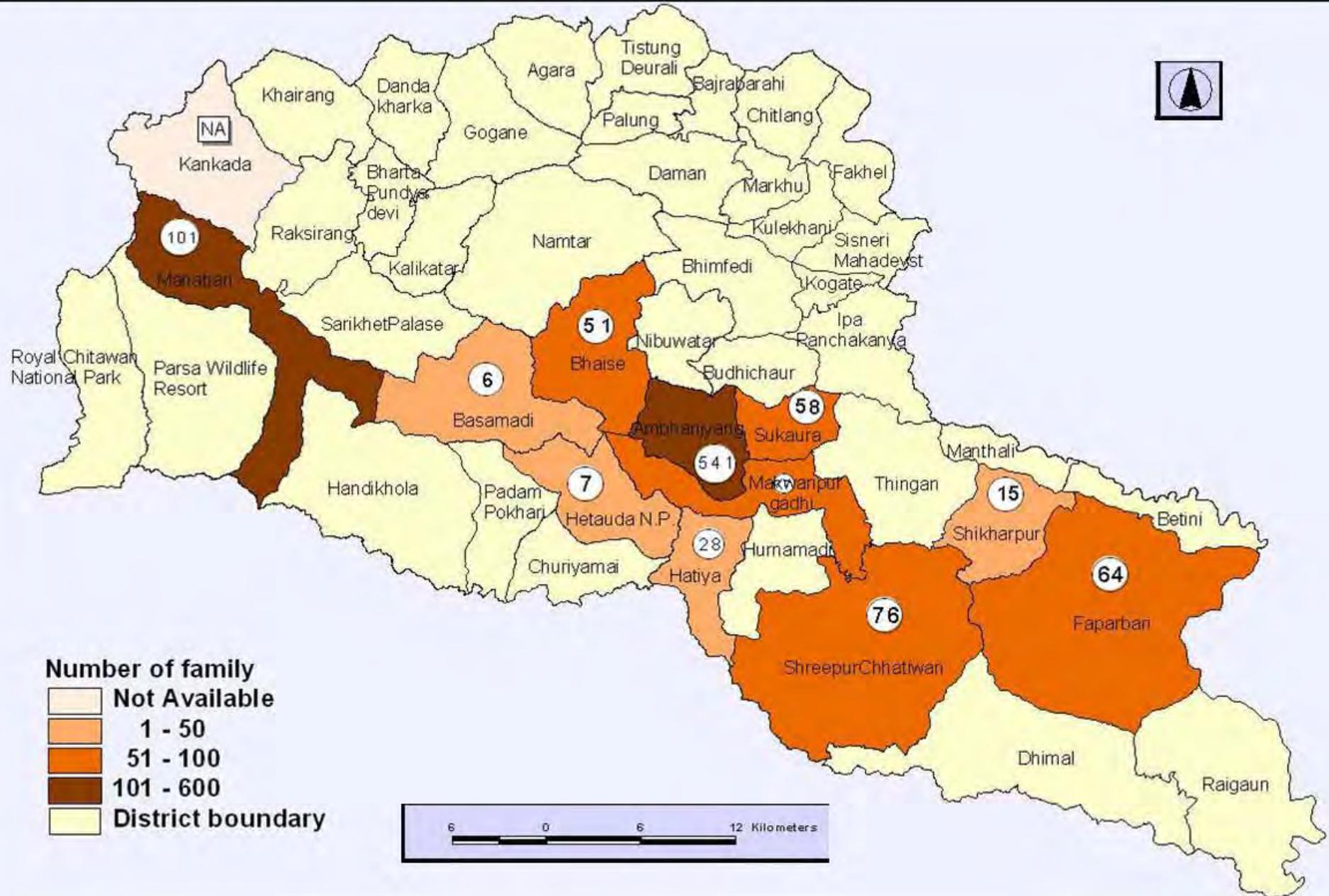


### Legend

- + Hotspots
- + Sangini\_outlets
- Highway



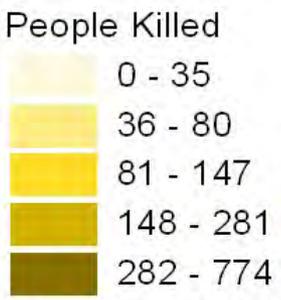
# MAKWANPUR Family loss household property



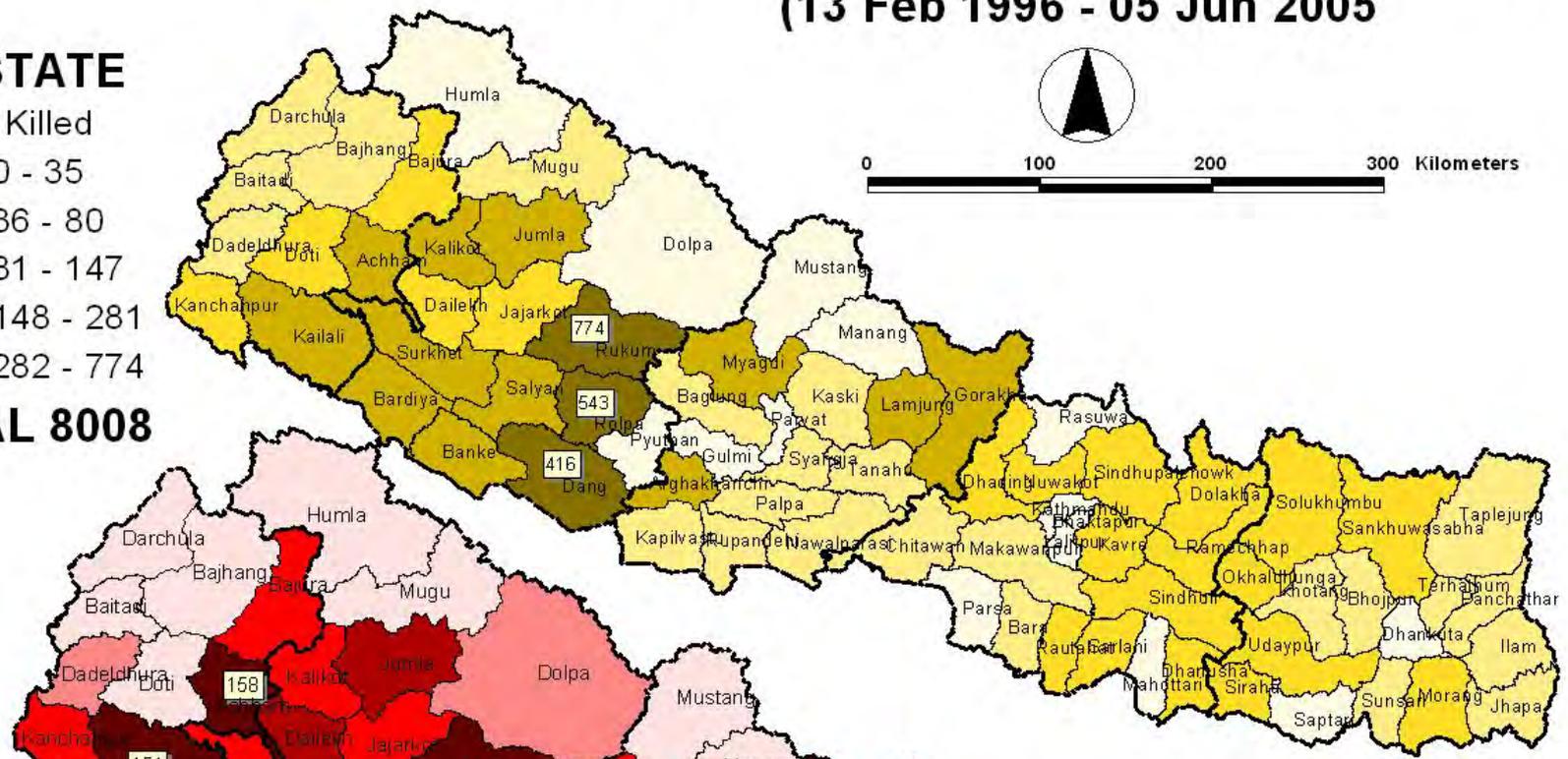
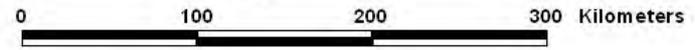
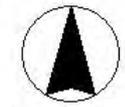


# PEOPLE KILLED DUE TO POLITICAL CONFLICT (13 Feb 1996 - 05 Jun 2005)

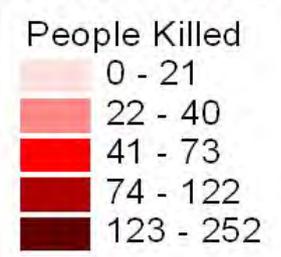
## BY STATE



**TOTAL 8008**



## BY MAOIST



**TOTAL 4312**

**DATA SOURCE: [www.inseconline.org](http://www.inseconline.org)**

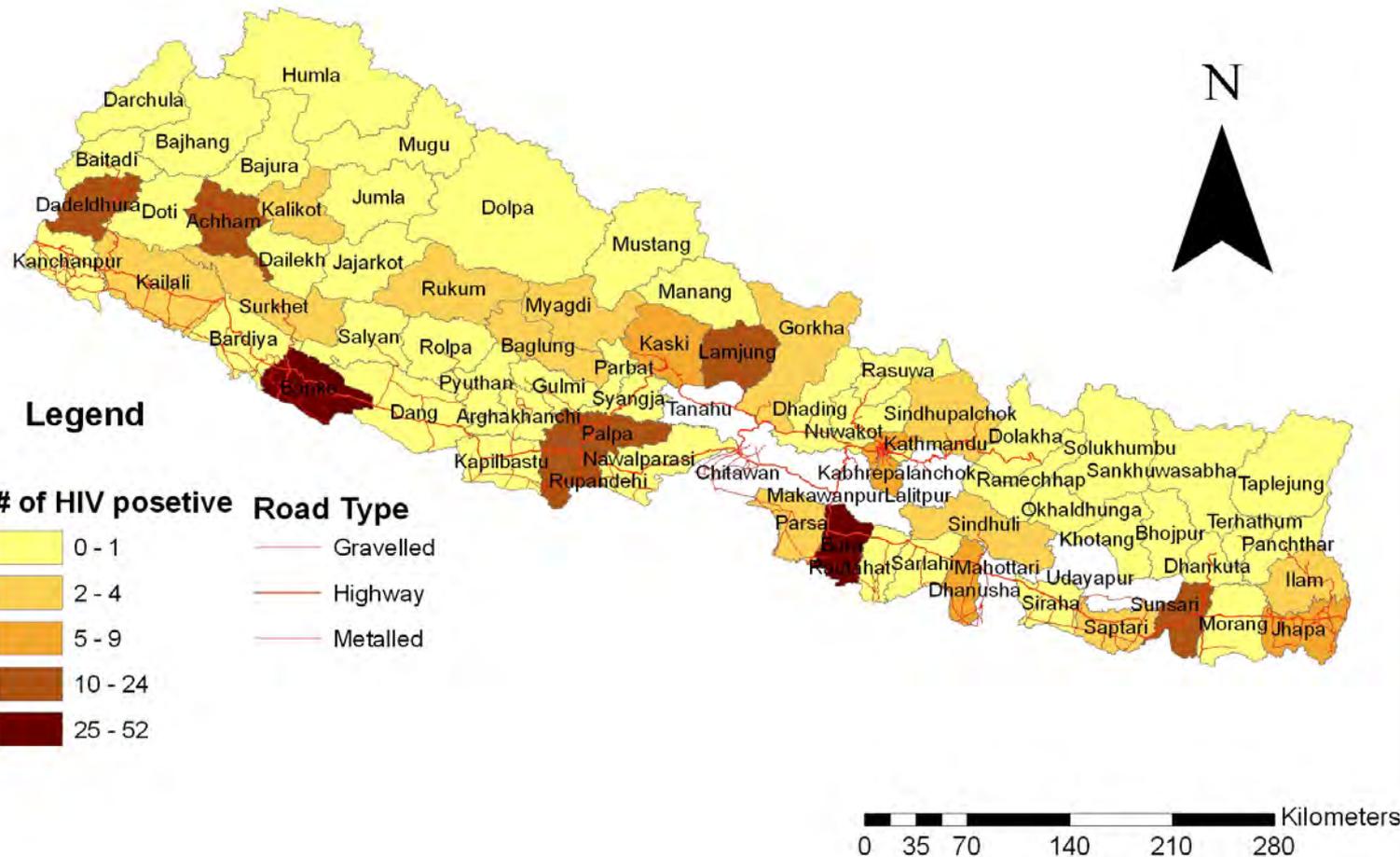
# Nepal Social Marketing and Franchising Project, N-MARC

## *Generic OCP Communications Campaign 2009 - Focus Districts*





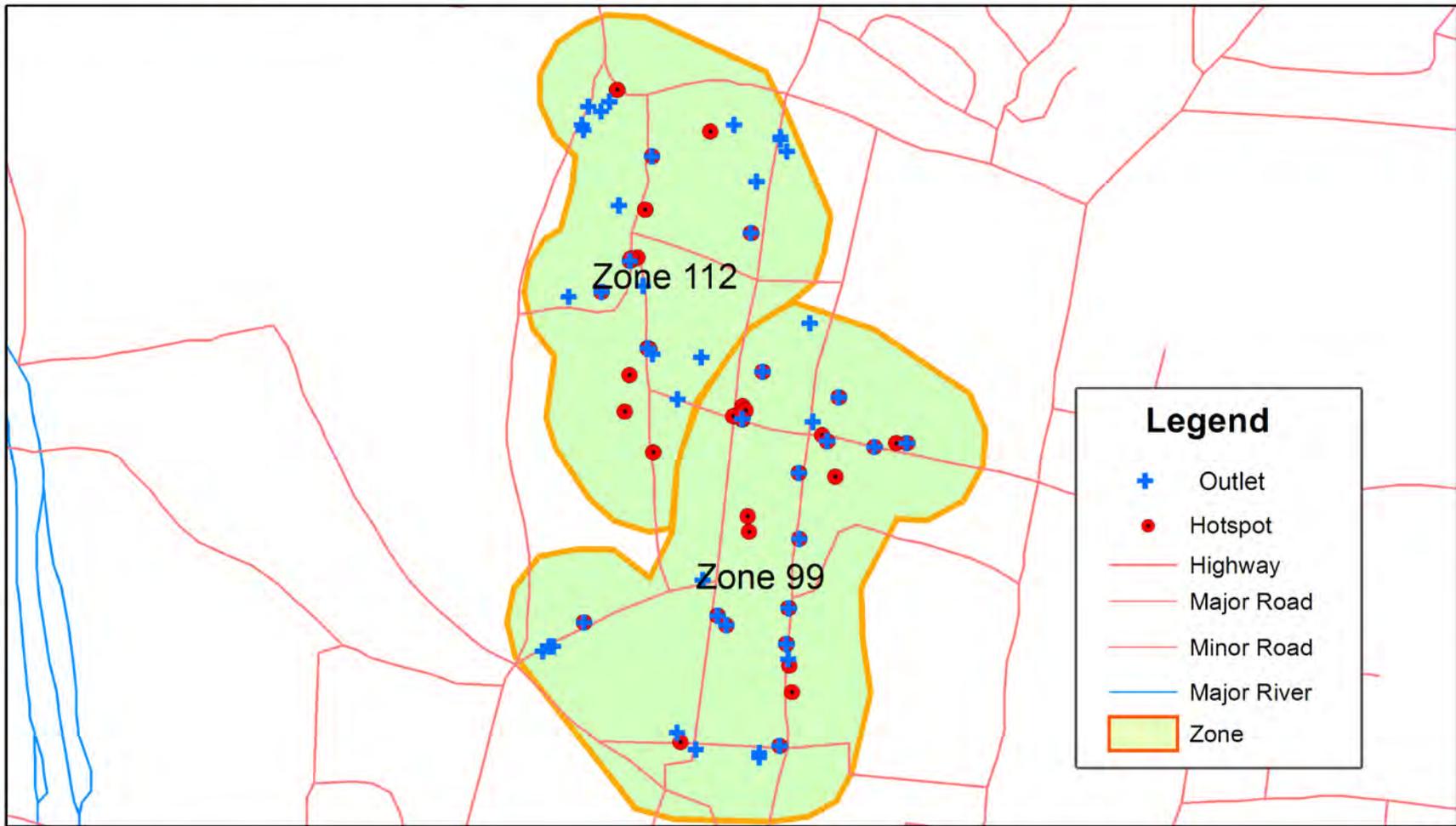
# HIV Epidemiology in Nepal, DoHS, 2005





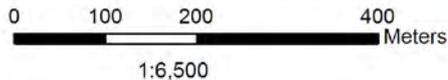


## HotZone in the Thamel, Kathmandu



**Legend**

- + Outlet
- Hotspot
- Highway
- Major Road
- Minor Road
- Major River
- Zone



Data Source: Mitra Samaj  
Prepared By: Mitra Samaj  
Map Prepared Date: 08 Sept 2007





**Thank you**  
**Hope you are not confused**