

**Measuring Products and Services  
Performance through GIS  
Application:  
A Pilot Study in Kinondoni, Dar Es  
Salaam, Tanzania**

AED/T-MARC Company/MITRA Samaj

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## Study Team

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- Joel Francis – Local Consultant
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## General Objectives

- Build knowledge of high-risk areas in Tanzania and increase use of GIS in mapping those areas to influence evidence-based programmatic decisions
- Map product coverage in high-risk HIV zones to:
  - Monitor product (condoms) and service performance (outlets and availability)
  - Measure coverage, quality of coverage and access to condoms

## Pilot Objectives

- This pilot study measures:
  - Product availability in risk zone:
    - Condom coverage of any condom as well as by condom brand in or around Hot zone
  - Quality of coverage:
    - Proportion of geographic areas in which minimum product/services meet minimum standards
  - Access:
    - Proportion of hot-spots in a geographically defined area situated within the catchments area of a product or service delivery point

## Study development process

- AED/T-MARC Company liaised with staff from its sister project in Nepal, N-MARC, to investigate a pilot in Dar es Salaam.
- AED/T-MARC Company developed the pilot scope featuring the Kinondoni District in Dar es Salaam.
- T-MARC Company partnered with Nepalese colleagues to conduct the pilot and AED facilitated and participated in the pilot.
- A local consultant was hired to provide training and expertise in GPS and geographical information systems (GIS) software.

## Operational definitions

- Hot spot: Place where sex negotiation or sexual activity takes place:
  - Bajaji Stand, Bar, Brothel, Bus stop, Disco, Food vendor/ Mama Lishe, Guest house, Hotel, Market, Mitumba selling place, Restaurant, Street/CSW, Taxi stop, Timber selling place, Truck stop, Vijana Center, etc.
- Hot zone: Defined area with cluster of hot spots
  - Buffer area covering a minimum distance of 100m
- Outlet: Any vendor or retail seller of condoms including pharmacies, kiosks, restaurants, bars, hotels, discos, shops, etc.

# Operational definitions

- Coverage: Presence of at least one outlet per two hot spots in a hot zone
- Quality of coverage: Hot zones with a condom delivery system conforms to minimum quality standards measured by:
  - Stock availability in 6 out of ten outlets in a hot zone at time of survey
  - Condom stocked in the visible location in 6 out of ten outlets in a hot zone
  - Condom promotional materials visible at location in 6 out of ten outlets in a hot zone
  - Incidence of condom stock outs in last month in 6 out of ten outlets in a hot zone
  - Night time service (condom available after 10 PM) in 6 out of ten outlets in a hot zone
- Access: Proportion of hot-spots that have a condom delivery point within its catchments area [a radius of 100m]

## Study Area and Tools

- Of the 27 wards in Kinondoni District, 17 were covered in the pilot study
- GPS was used to collect coordinates of hot spots and condom selling outlets
- Retail outlet audit sheet was used to collect information on quality of coverage including background information of the outlets such as type, address, brands sold, hours of operation, and other relevant information



# Pilot Process, Methods, and Outputs

- 1 Enumerate all hot spots within study area (to establish sampling frame)**
- 2 Prepare hot-zones from hot-spot information**
- 3 Use LQAS method to sample hot-zones**
- 4 Enumerate condom-selling outlets in sampled hot-zones**
- 5 Calculate condom coverage, quality of coverage & access**
- 6 Produce GIS maps showing condom coverage & access**

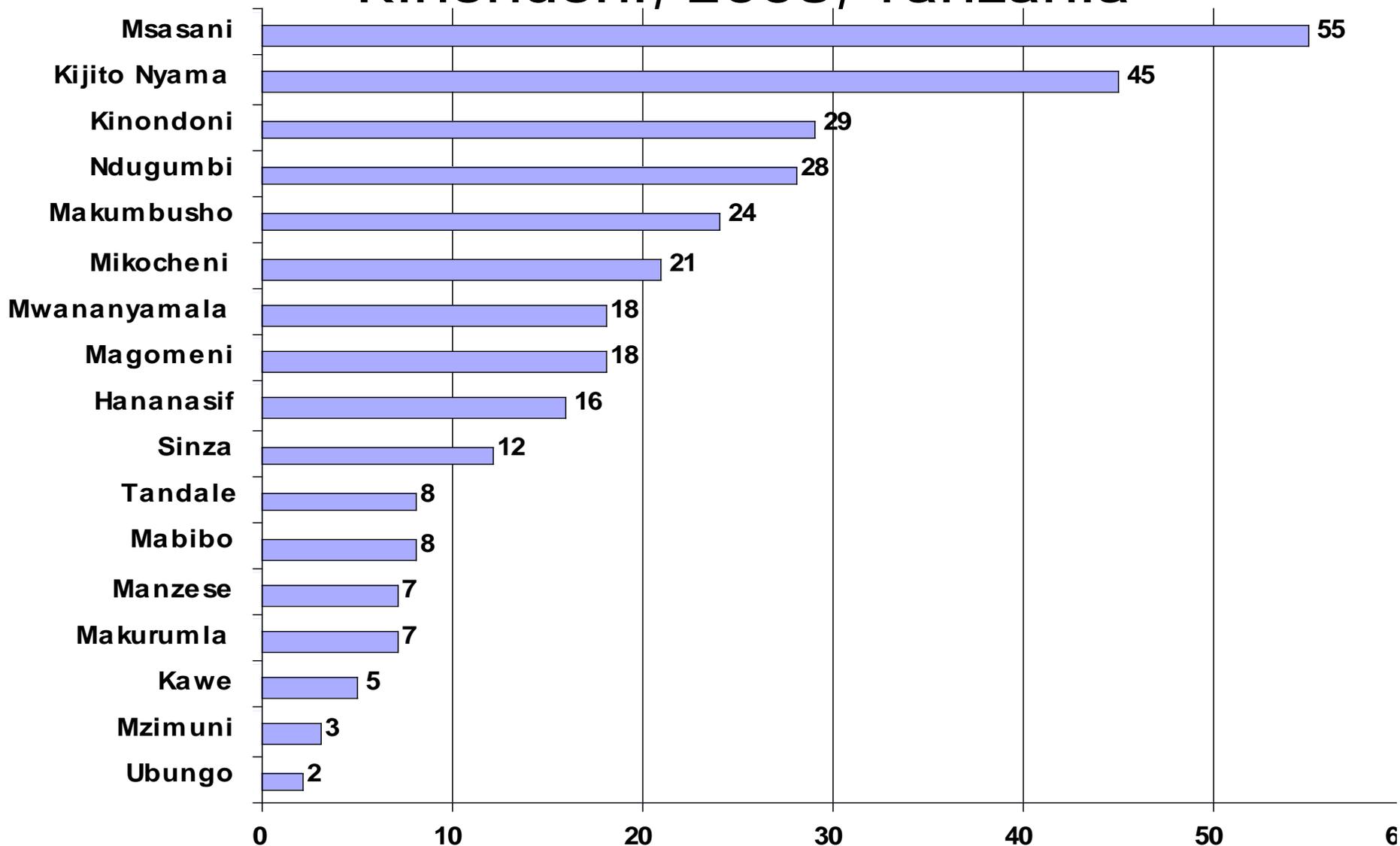


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# Study Findings

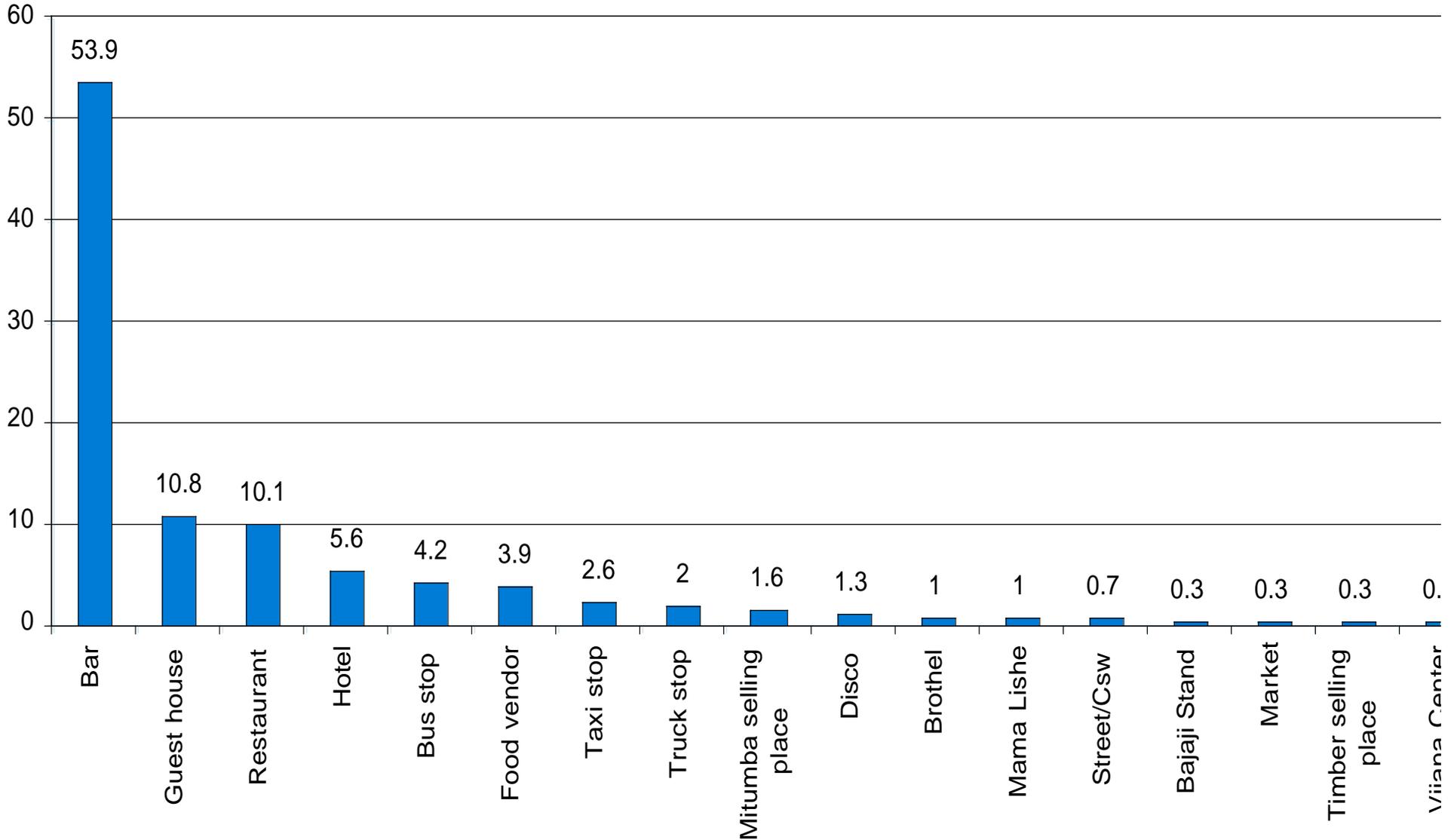


# Distribution of hot spots numbers by wards, Kinondoni, 2008, Tanzania



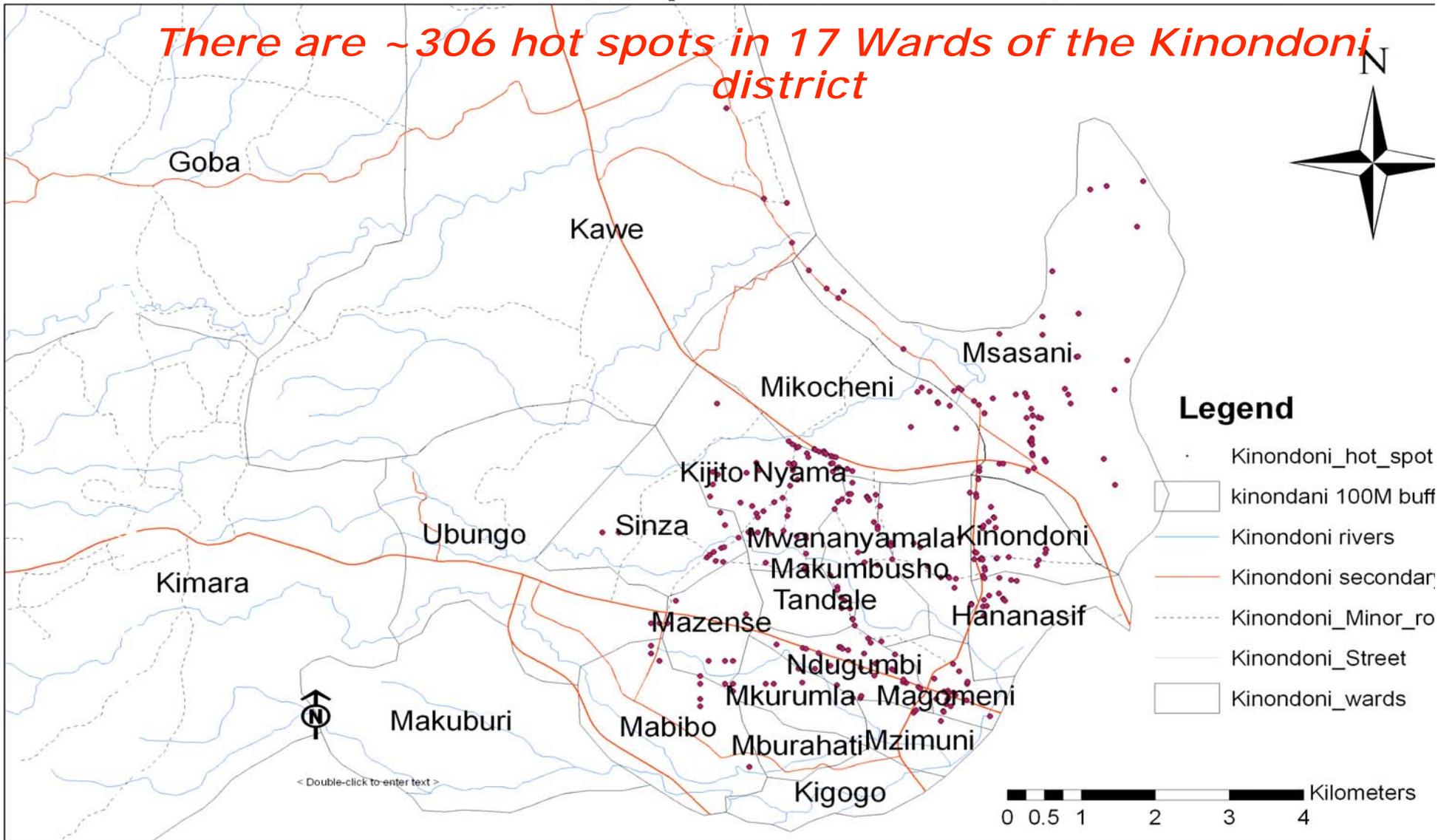


# Percent distribution of hot spots by type, Kinondoni study, 2008, Tanzania



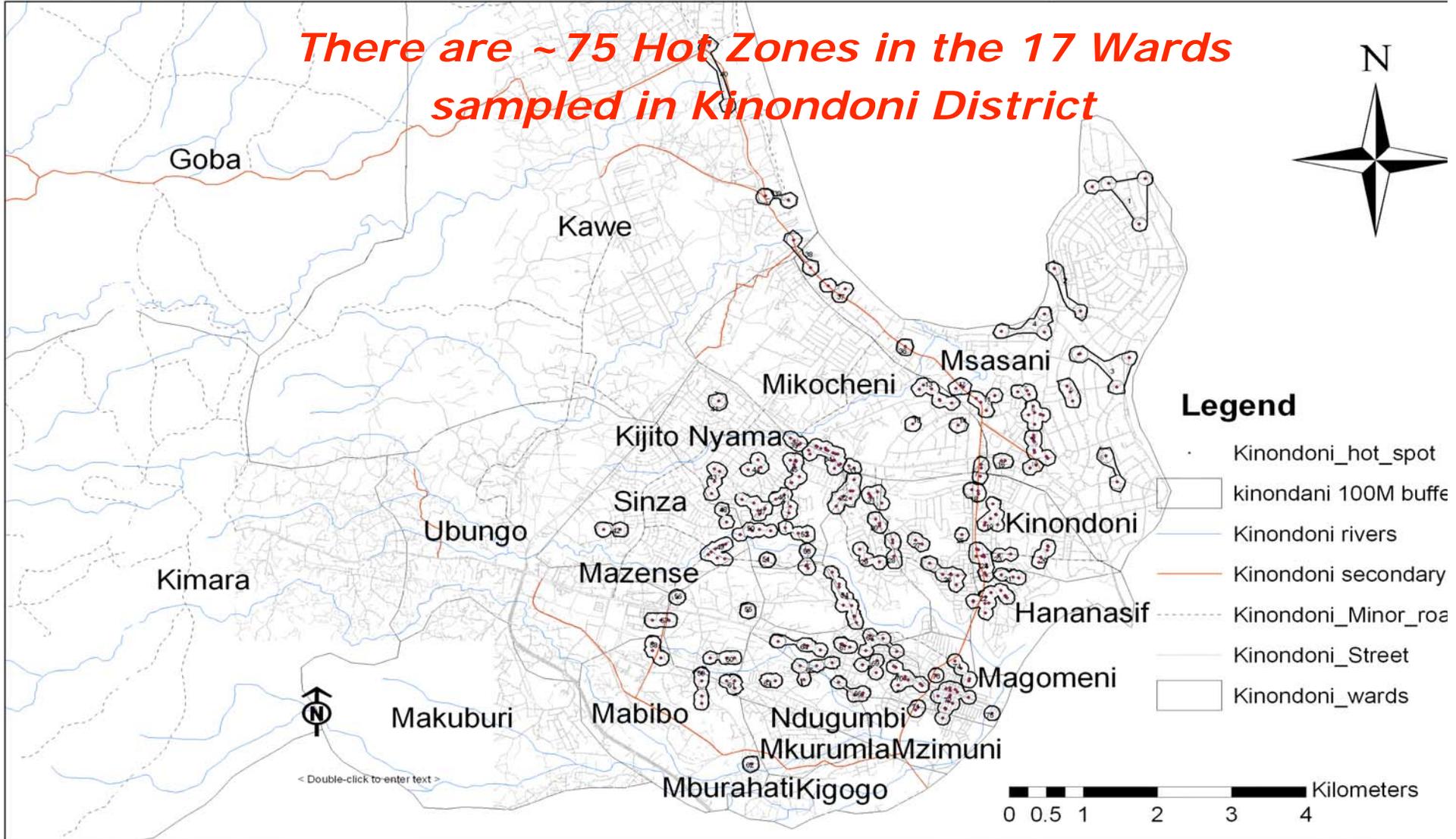
## Distribution of hot spots in Kinondoni, Pilot 2008

*There are ~306 hot spots in 17 Wards of the Kinondoni district*



# Hot Zones in the Kinondoni District

*There are ~75 Hot Zones in the 17 Wards sampled in Kinondoni District*

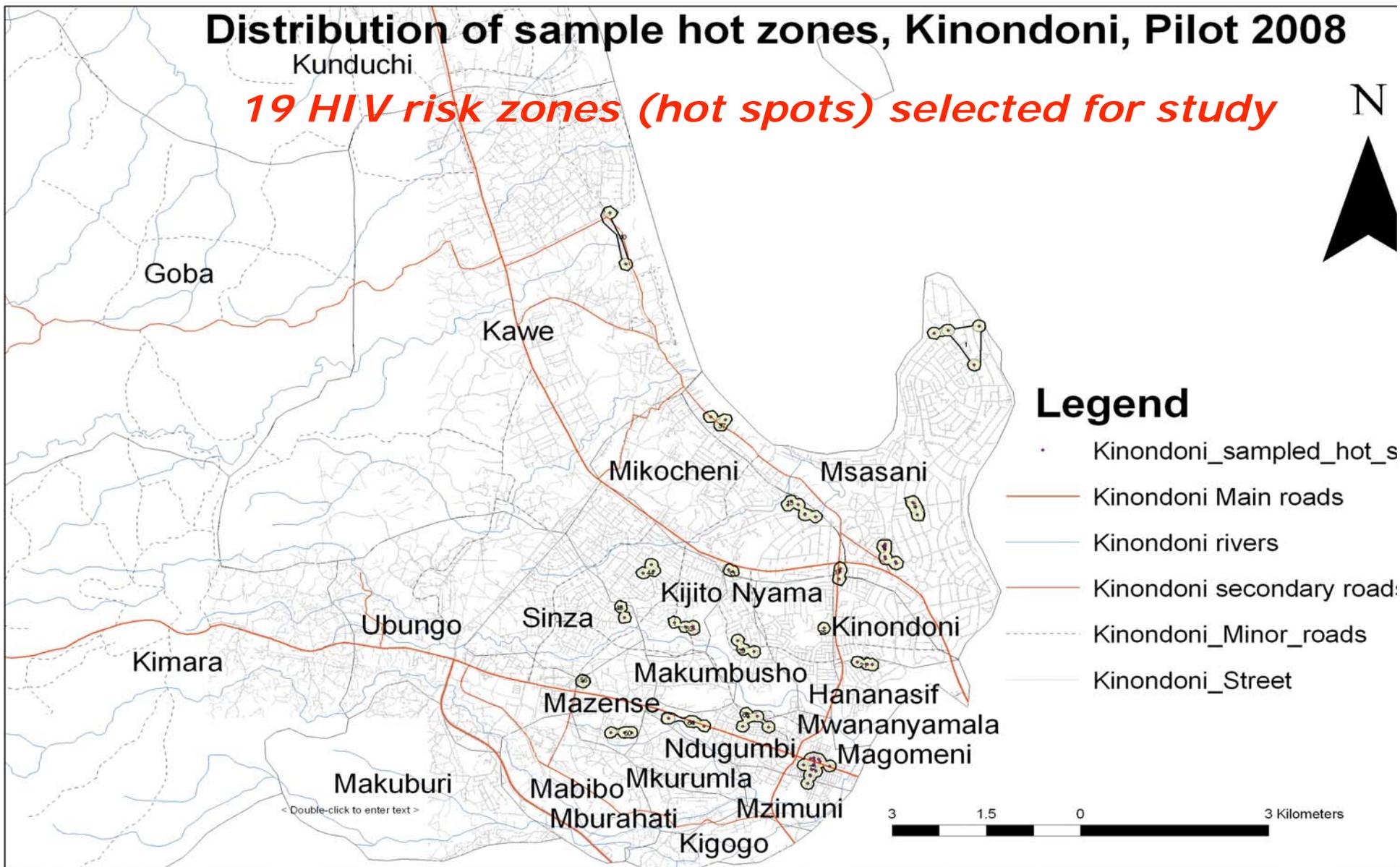




# Selected HIV Hot Zones

**Distribution of sample hot zones, Kinondoni, Pilot 2008**

*19 HIV risk zones (hot spots) selected for study*



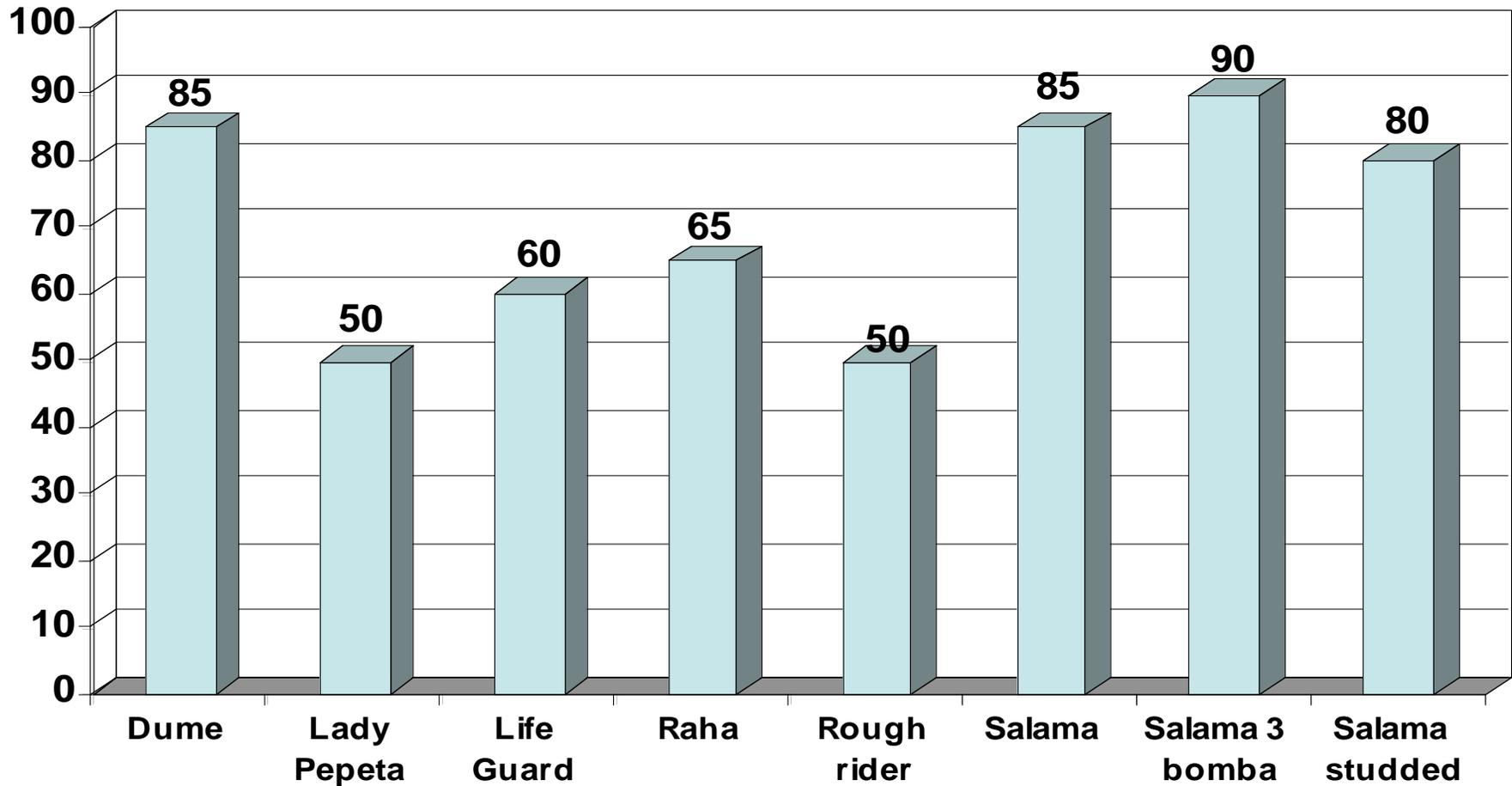
# Condom coverage

*86 % of Hot Zones in Kinondoni had adequate condom coverage*

## Condom Coverage



# Brand wise condom coverage



## Quality of condom coverage in hot zones by selected brands

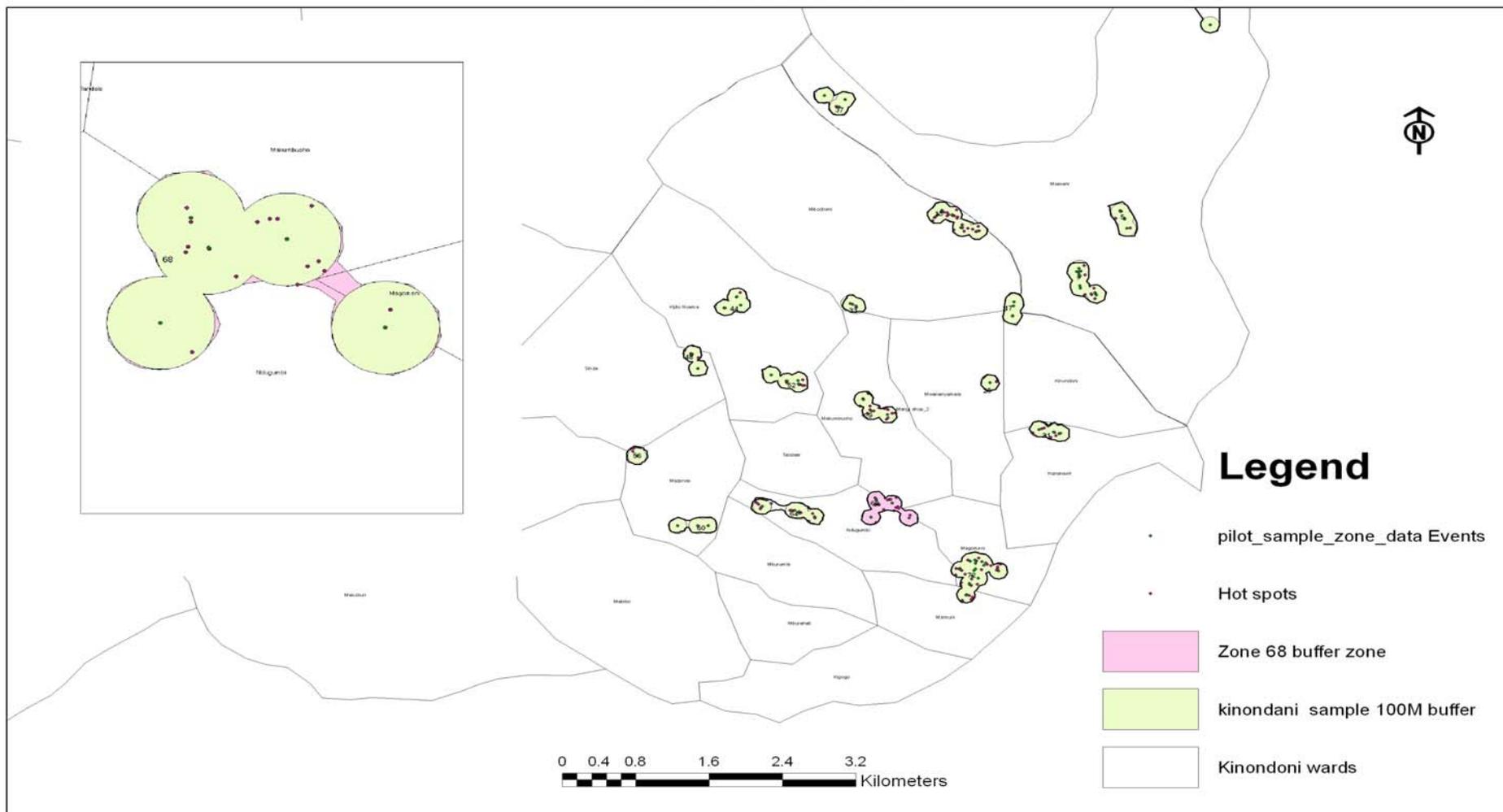
Brand name	Status of Condom stock at survey	Condoms In outlet at Visible location	Promotional Material in and around outlet at visible location	Condom Out of stock in the outlet last month	Outlets Selling condoms during night
Dume	85	65	25	30	90
Lady Pepeta	50	60	30	15	55
Life Guard	65	60	15	15	55
Raha	65	70	20	15	50
Rough rider	75	65	15	15	50
Salama	75	55	15	20	70
Salama 3 bomba	75	70	20	15	65
Salama studded	90	85	15	20	80



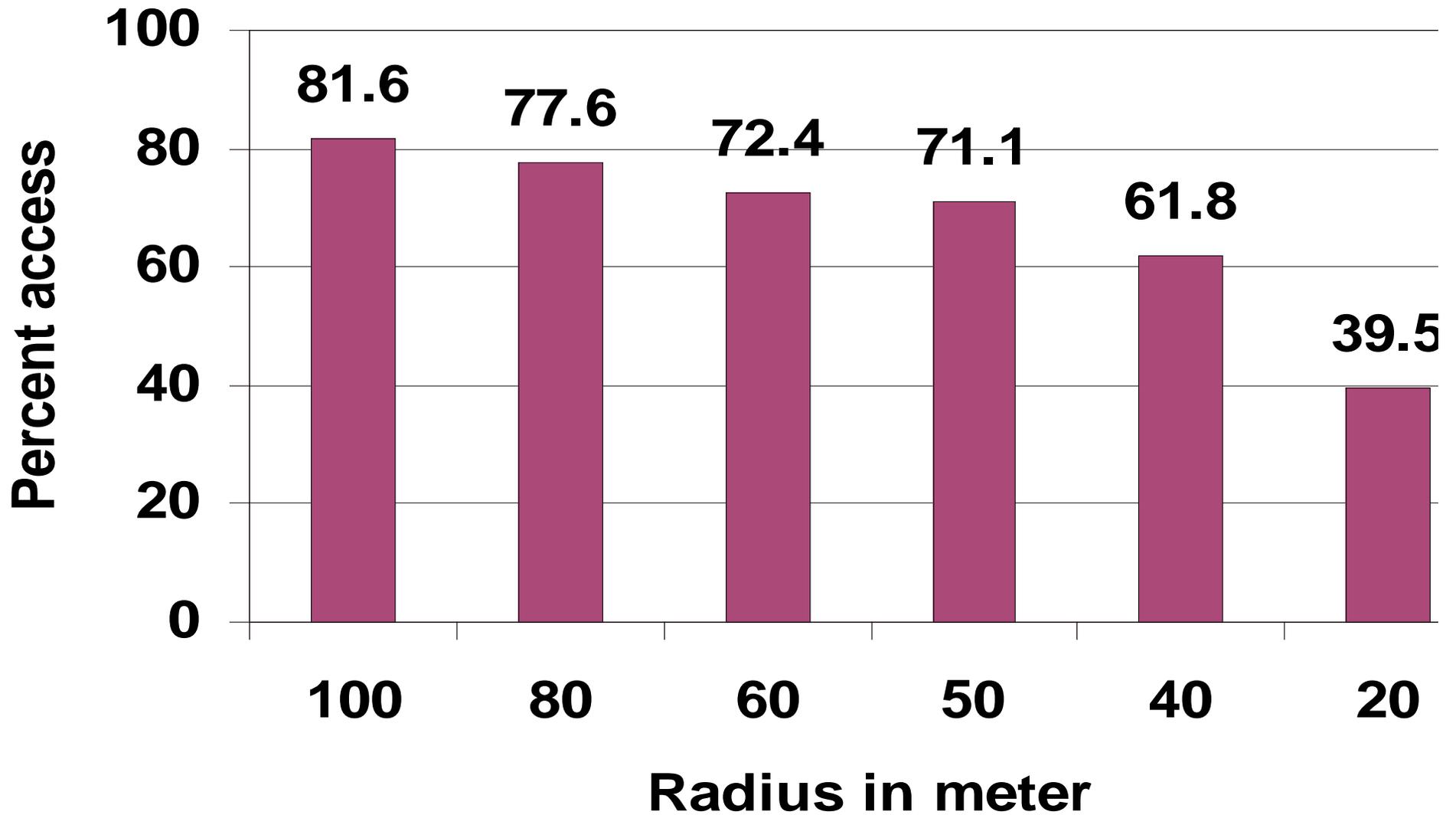
# Access to condom

*81 % of hot spots in Kinondoni are located in an area of within 100 m of a condom selling outlet*

## Condom Access



# Access to any condom selling outlets by different radius, Kinondoni





## Key Findings

- 86 percent of the hot zones have adequate condom coverage, that is two hot spot covered by one outlet.
- The brand wise condom coverage shows highest coverage of Salama 3 Bomba (90 %) followed by Salama and Dume (85 %), Salama Studded (80 %). Other brands measured have less than 66 percent coverage.
- With respect to quality of condom coverage, Salama studded was found to be performing well (95 %) as compared to Dume (85 %) in condom stocking in the outlet. For other brands this figure is less than 75 percent.
- Product visibility in the outlet for Salama studded was (85 %) followed by Salama 3 bomba (70 %) and Raha (70 %). This figure for outlets selling Dume was only 65 %.

# Key Findings

- Promotional materials in and around outlets was found to be better outlets selling Dume (25 %) and Lady Pepeta (30 %). However, this figure is very low and needs further effort for improvement.
- Performance of Dume was relatively poor in terms of condom supply as the majority of the outlets reported stock outs.
- Night time condom availability was better for Dume (90%) as compared to all Salama brands.
- 81 percent of the hot spots in Kinondoni were within a radius of 100 meter of a condom selling outlet.



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# Program Implications

## Improve coverage and access to condoms through:

### Product

- Initiating efforts to increase condom coverage to 95 %

### Place/ Distribution

- Emphasize product distribution in hot zones that have poor coverage
- Maintaining current level of access in high coverage areas while increasing access to condoms in poor coverage areas
- Focus on improving efficient distribution systems to avoid condom stock out situations in the future
- To ensure condom availability around the clock, promote increase night time access to condoms

### Promotion

- Initiate activities to motivate condom selling outlets to place condoms in highly visible locations within the store
- Increase promotional materials visibility in and around outlets
- Initiate BCC activities in hot zones to increase condom awareness and use and reduce condom stigma

# Challenges

- Adapting the model to the Tanzanian and T-MARC's needs:
  - Lack of geographical data – Wards are not clearly defined, roads are not named, and many hot spots and outlets do not have an address
  - Weather – Hot and rainy weather makes enumerating difficult and inaccurate.
- Time constraints – Conducting the pilot in three weeks was difficult:
  - Security for the enumerators in some areas, like Manzese and Tandale, led to teams enumerating instead of individuals.
  - Distance between hot spots was greater than expected which added to the time necessary to gather data.

## Successes

- Achieve first program objective of reaching the most at-risk groups to improve key populations' access to affordable health products related to HIV/AIDS prevention and cost-effectively building on existing marketing, sales and distribution networks.
- Address the key findings of the recent data quality assessment audit in order to improve outlet knowledge, tracking, and penetration

## Successes

- Collaboration, capacity building, and information exchange between two PSP One projects:
  - Enhanced understanding of similar projects on different continents
  - Increased knowledge on GPS/GIS application and software for market research and other programmatic studies
- Collection of substantial data to be used for many years:
  - Identified hundreds of outlets in Kinondoni for future tracking purposes
  - Collected higher quality, objective data for program implementation

## Next Steps

- Disseminate findings to stakeholders and partners
- Use research findings to improve programmatic implementation by determining outlets geographical spread demonstrate trends and determining gaps.
- Plan for further study covering additional high risk areas within our 10 target regions and seek supplementary funds
- Utilize GPS/GIS information to develop effective condom marketing strategy
- Initiate routine annual follow-up study for monitoring product performance

# Pre study team training



# GPS Pre test



# Enumerator training on GPS



# Enumerator training on outlet audit form





# Hot Spot

