

Sierra Leone National Malaria Survey

Catholic Relief Services

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Who We Are

Catholic Relief Services is the official international agency of the Catholic church in the US and organizes programs including emergency response, HIV, health, agriculture, education, microfinance, and peacebuilding in 93 countries in five continents.



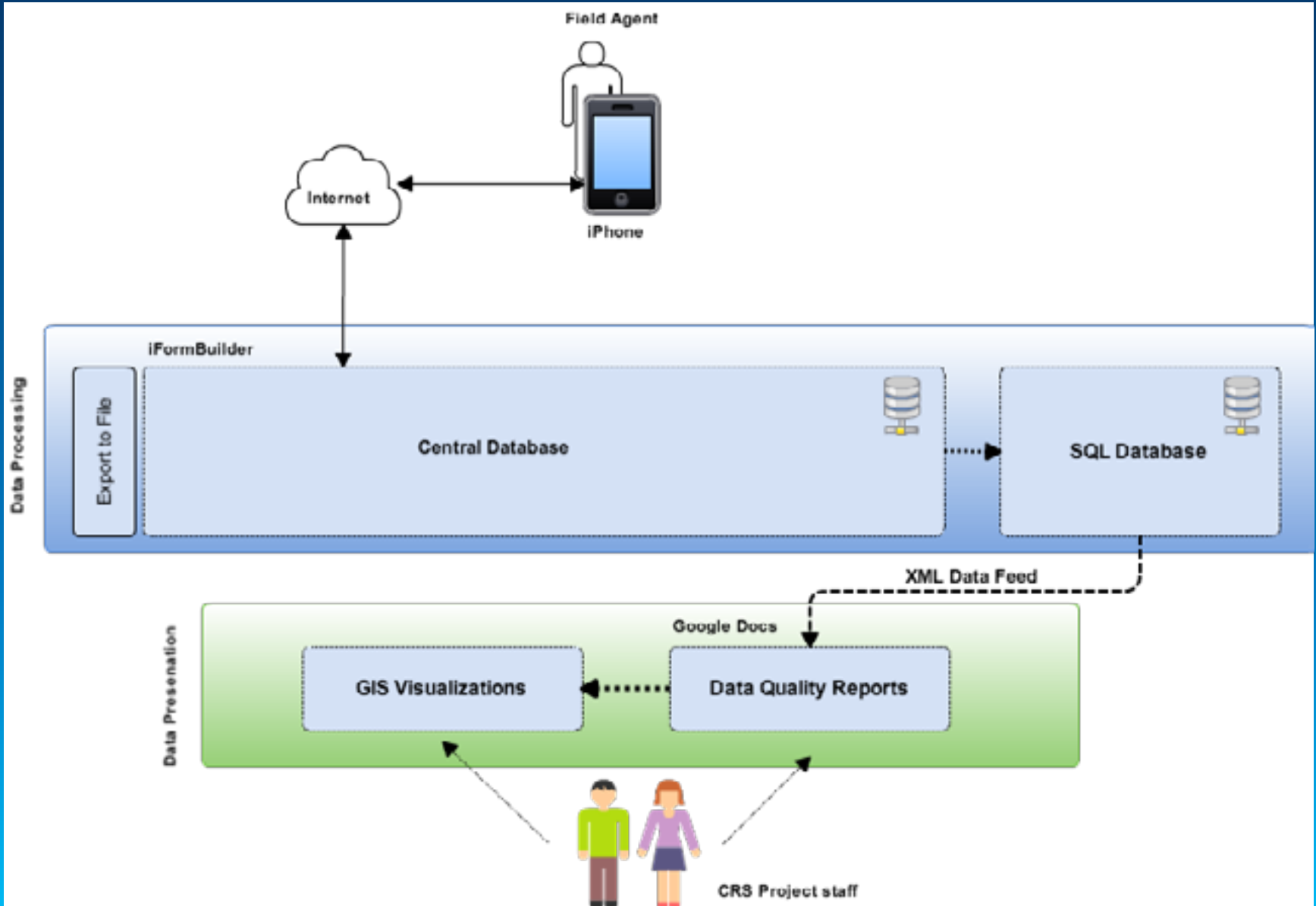
Context

Malaria is the leading cause of death for children under 5 years of age in Sierra Leone. Preventative measures, such as sleeping under a bed net and IRS, can protect against malaria. Improving access to health care can reduce the disease burden.

Background and Objectives

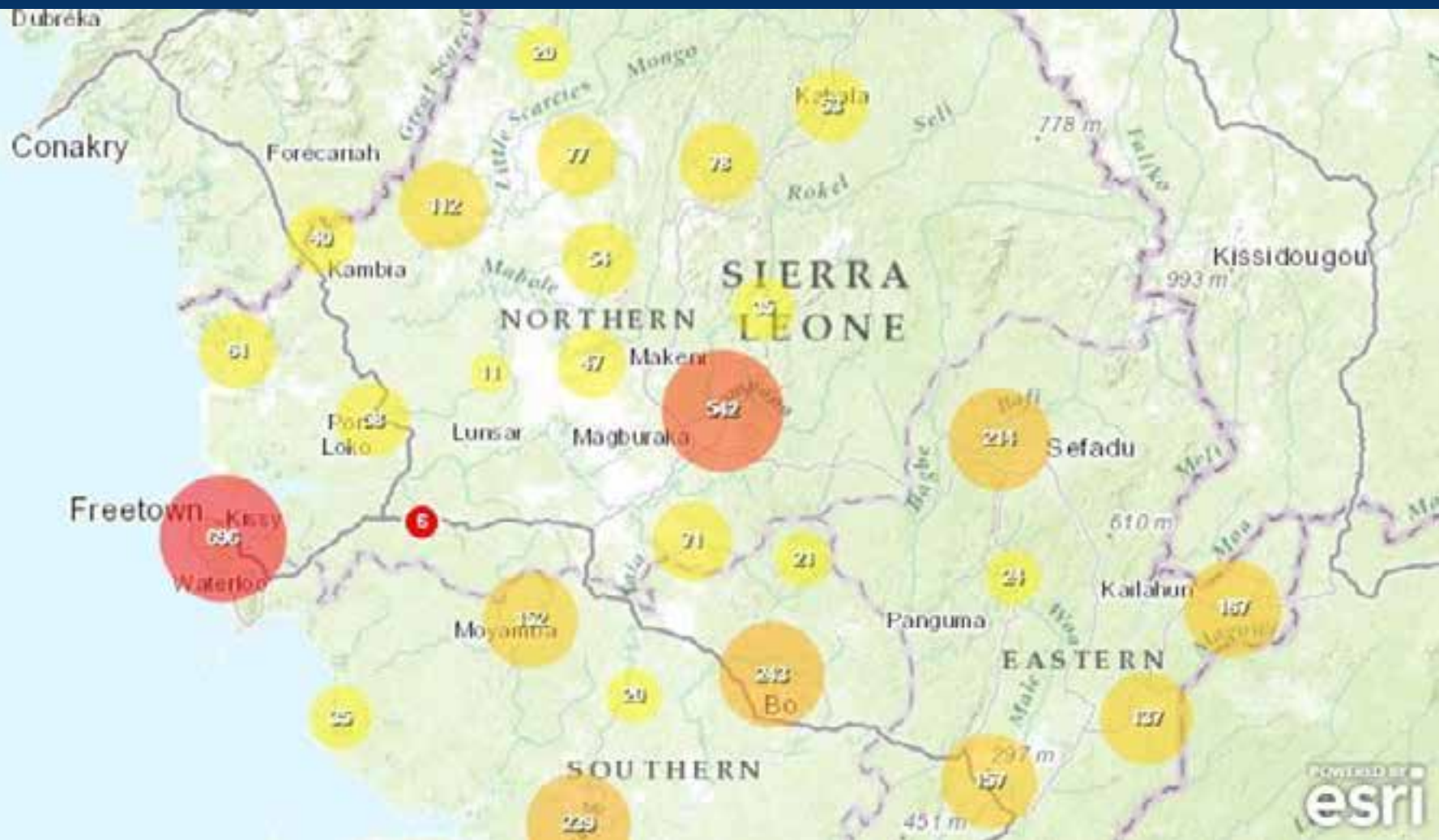
- 2013 Sierra Leone Malaria Indicator Survey: CRS, NMCP, SSL, ICF
- 2012 Knowledge, Attitudes, Practices survey
- Objectives:
 - Measure use of mosquito nets
 - Assess coverage of preventative treatment programs protecting pregnant women
 - Identify malaria treatment practices among children under five
 - Measure prevalence of malaria and anemia among children age 6 months to 5 years
 - Assess knowledge, attitudes, and behaviors of malaria in the general population

Methods: Data Collection





Source: National Malaria Survey. Or Dashevsky. ICT4D Conference. Accra, Ghana. 20 Mar 2013



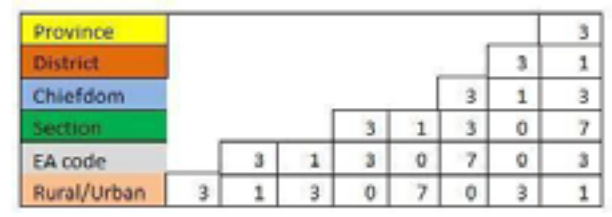
Source: National Malaria Survey. Or Dashevsky. ICT4D Conference. Accra, Ghana. 20 Mar 2013

Methods: Data Processing

Cluster no: 311307031



District	Unique Codes	Children who tested + for Malaria	Total Children Tested	Prevalence (%)
Kailahun	11	208	478	44%
Kenema	12	213	451	47%
Kono	13	194	392	49%
Bombali	21	289	534	54%
Kambia	22	330	529	62%
Koinadugu	23	206	361	57%
Port Loko	24	233	443	53%
Tonkolili	25	307	583	53%
Bo	31	173	394	44%
Bonthe	32	178	597	30%
Moyamba	33	273	533	51%
Pujehun	34	187	505	37%
Western Rural	41	168	372	45%
Western Urban	42	99	327	30%



This is preliminary data, prior to review by the Sierra Leone National Malaria Control Program

ArcGIS tools used

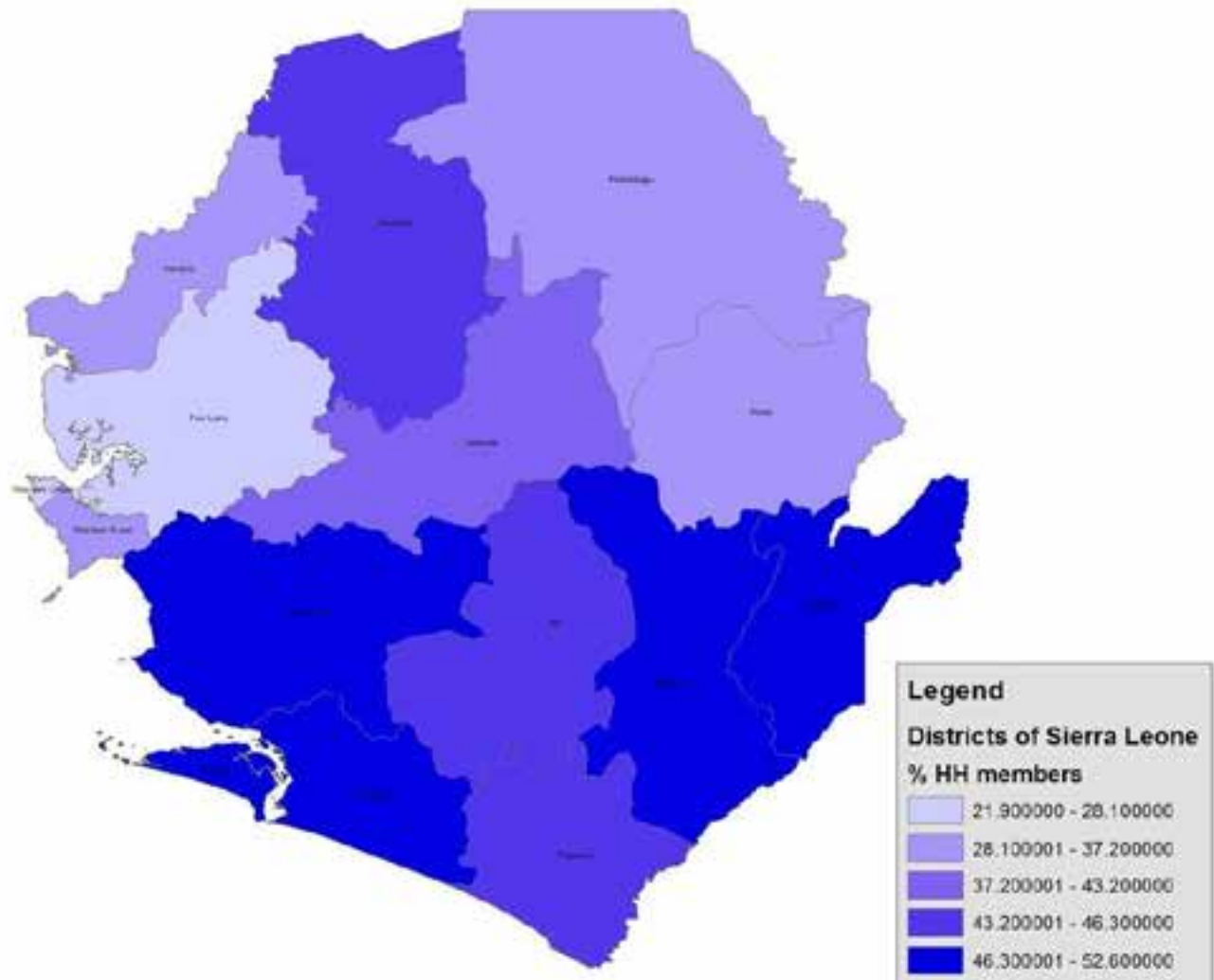
- Base maps
- Choropleth maps to visualize Province and District-level data
- Displaying XY data from an imported table with Lat/Long points and creating shapefiles
- Geocoding
- Digitizing smaller roads
- Kernel density and point density

Questions to focus on for analysis

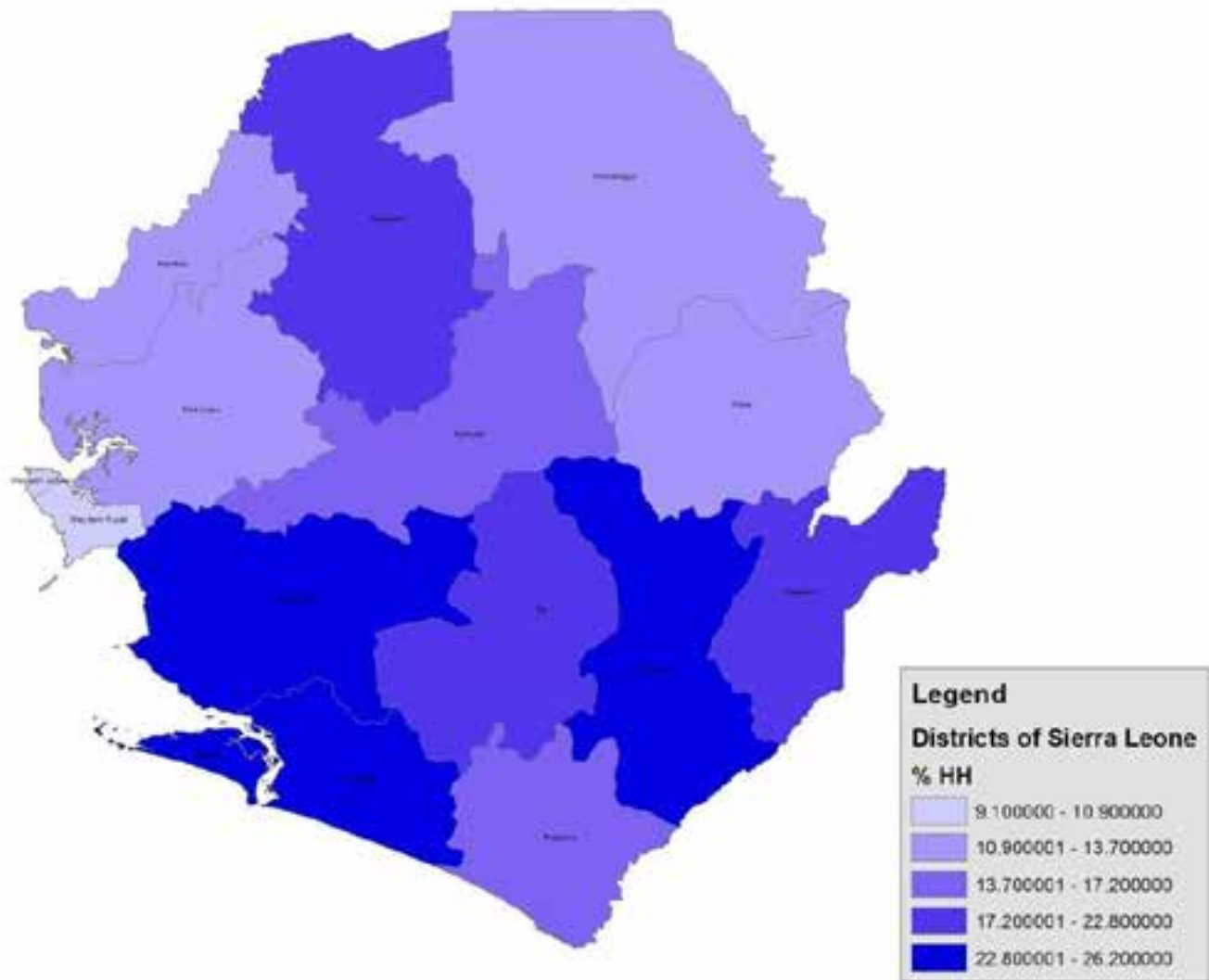
- Prevalence of malaria
- Access to care: proximity to roads and health facilities
- Assess knowledge, attitudes, and behaviors toward malaria
 - Use of bed nets
 - IRS

Results

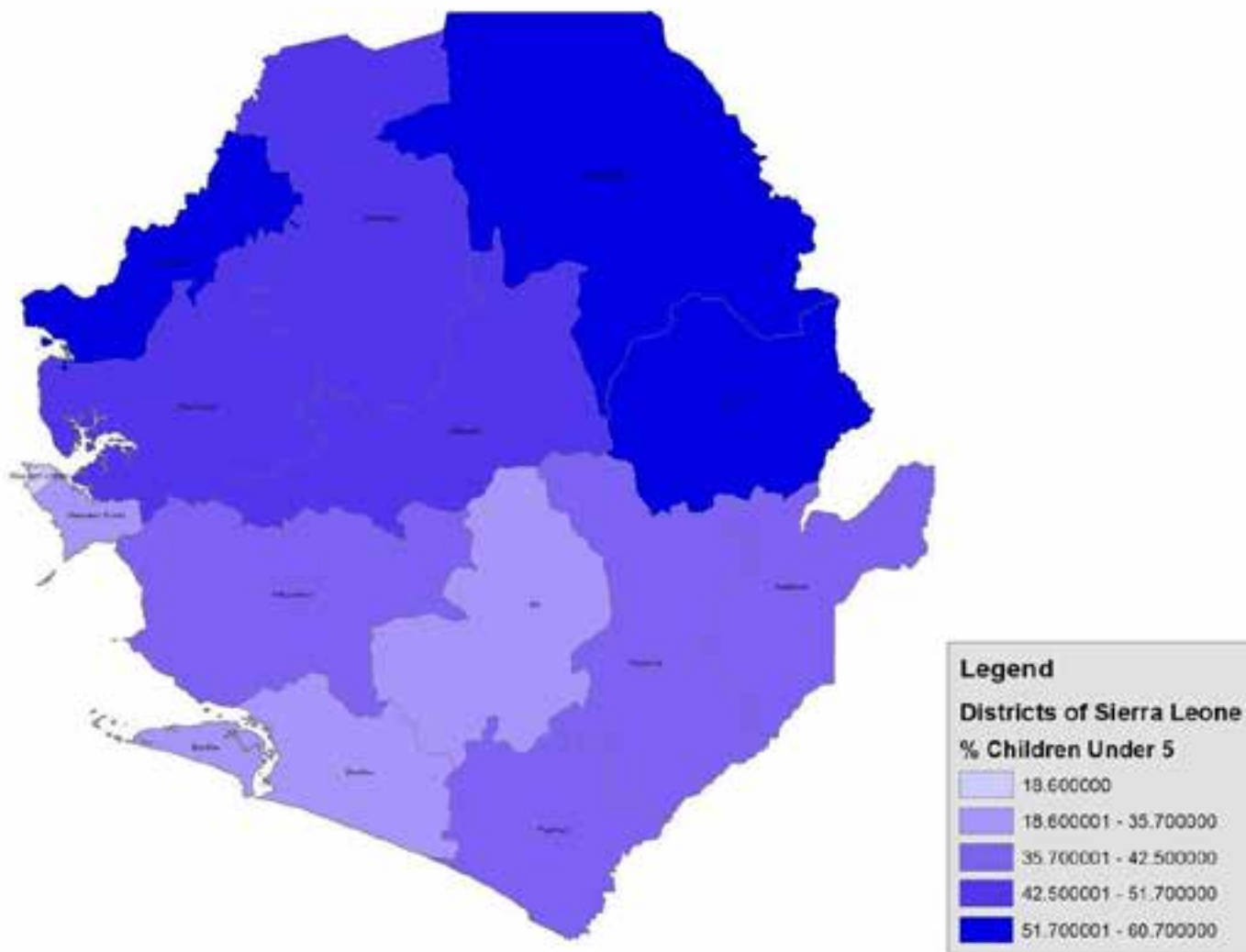
Percentage of household members that slept under any net the night preceding the survey according to table 3.4



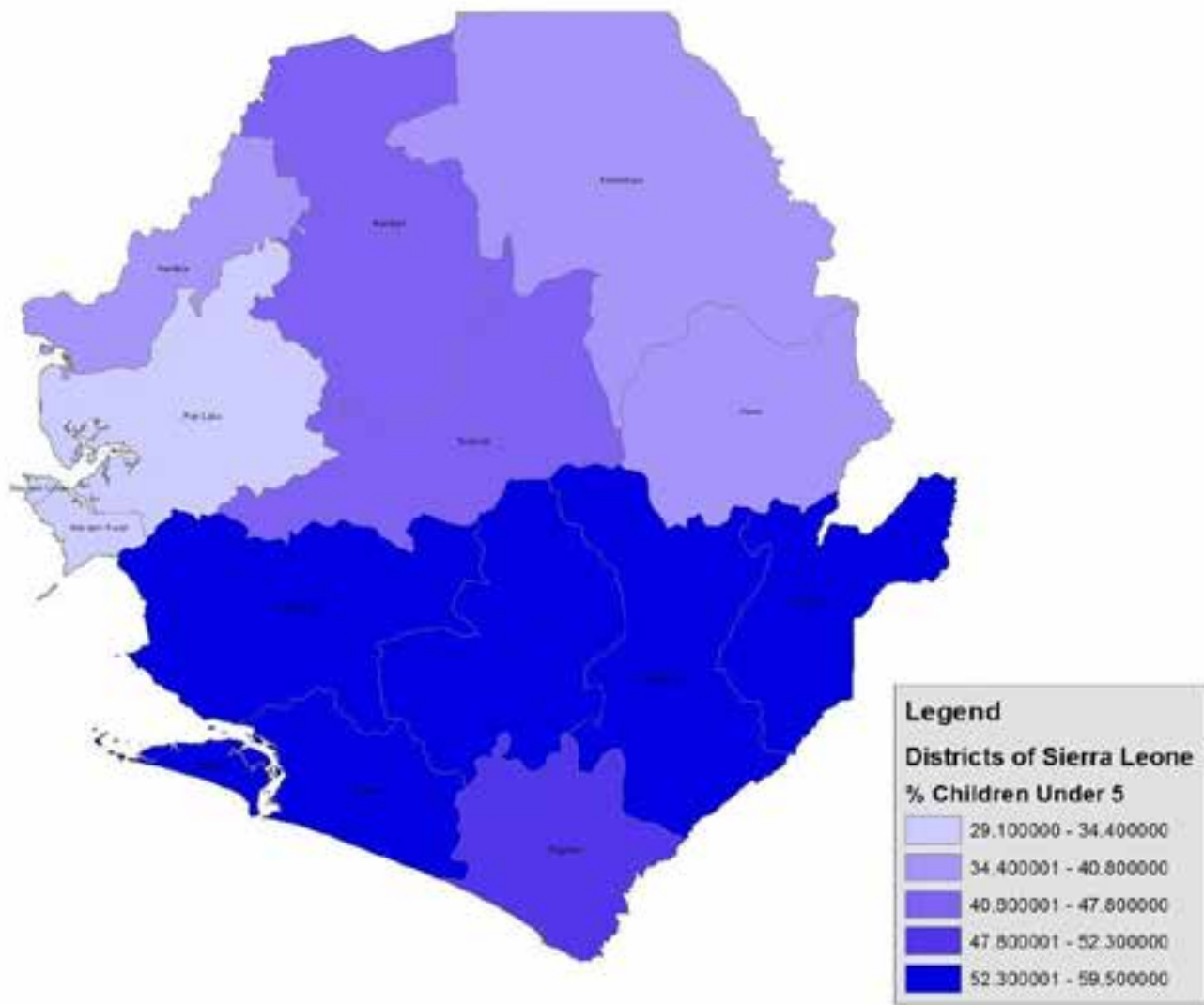
Percentage of households that own one net per every two people according to table 3.1



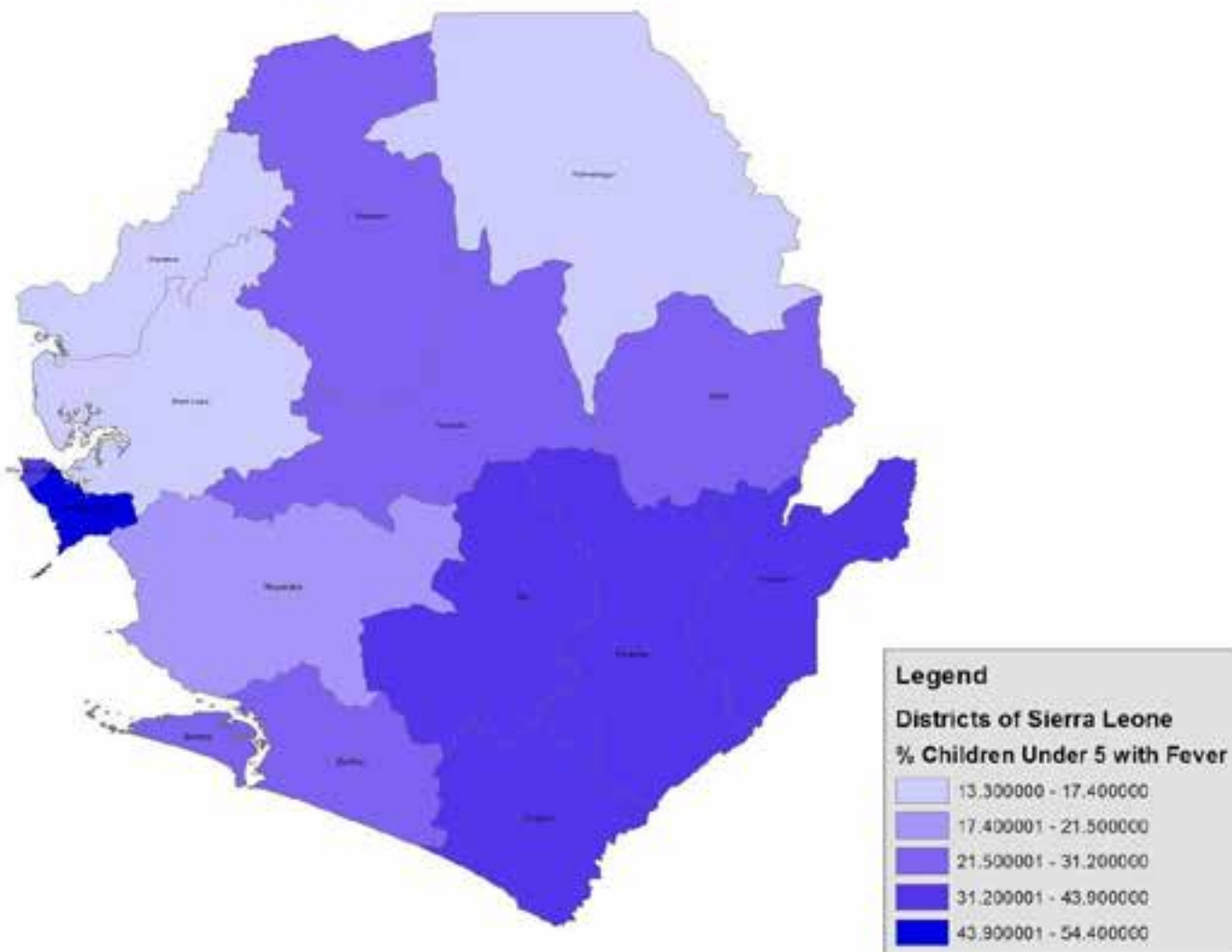
Percentage of children under 5 that had tested positive for malaria using microscopy according to table 4.5



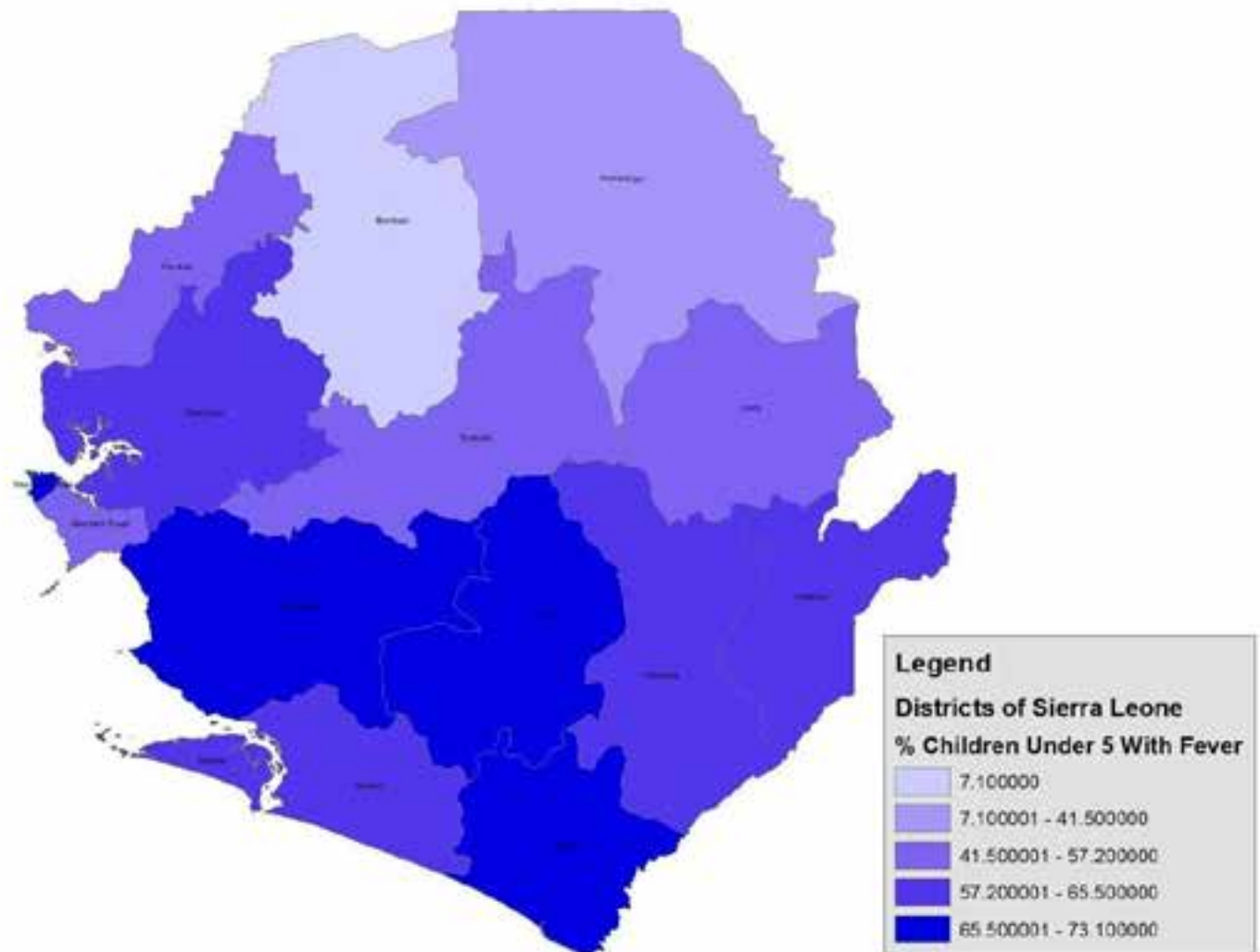
Percentage of children under 5 that slept under any net the night preceding the survey according to table 3.6



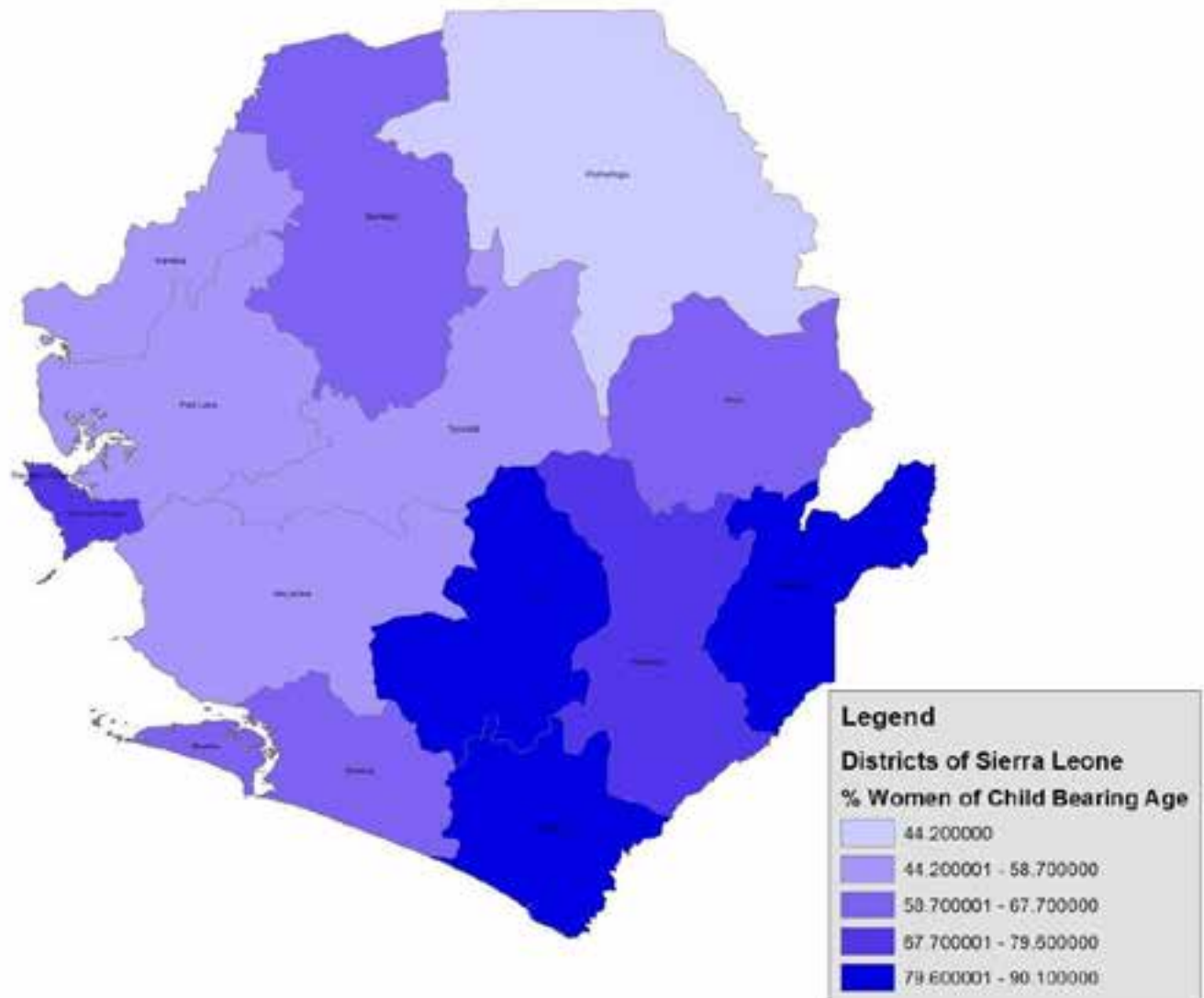
Percentage of caregivers of children under five that had experienced fever in the two weeks preceding the survey that received ACT the same of the next day according to table 4.1



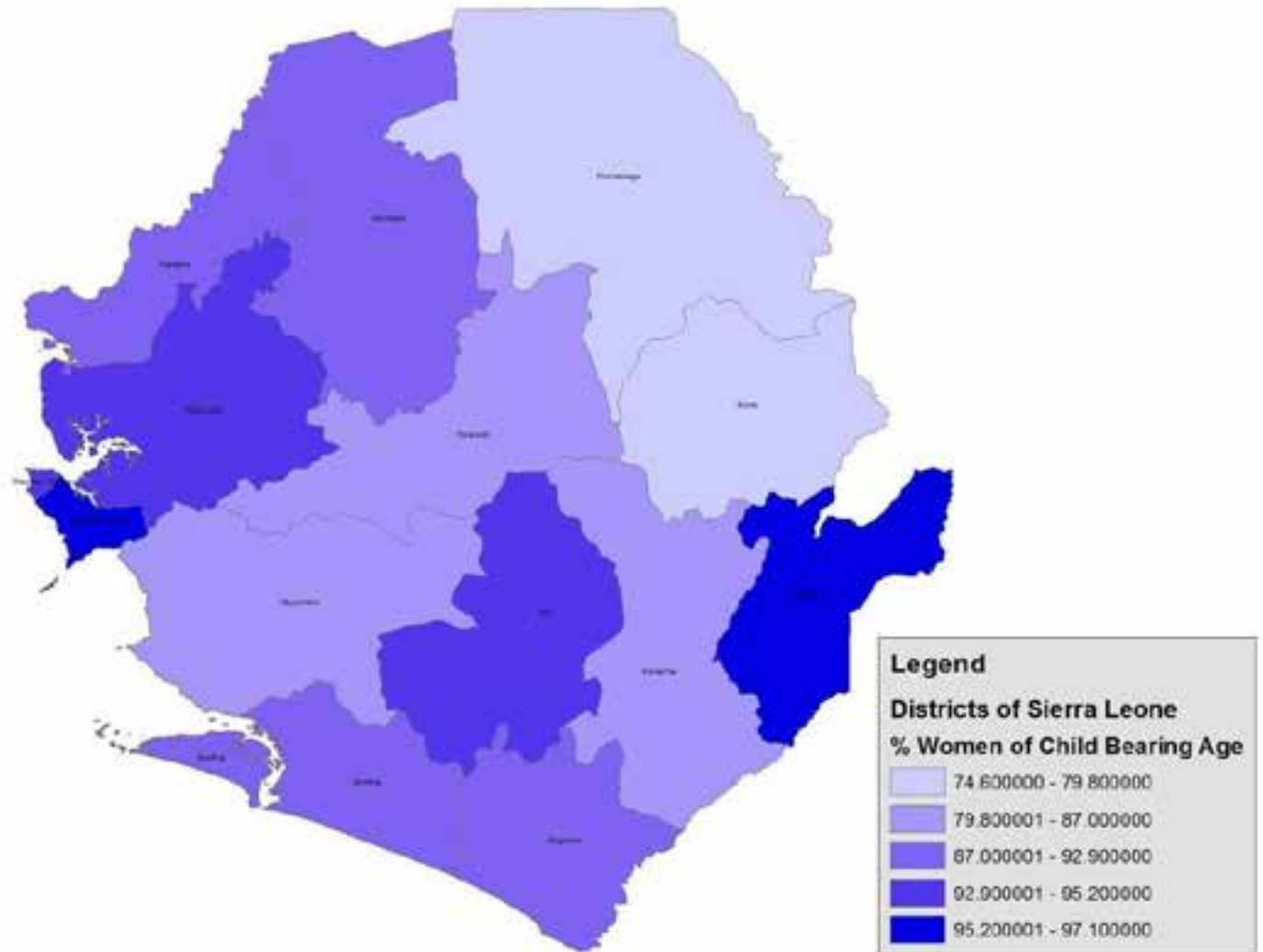
Percentage of caregivers of children under five that had experienced fever in the two weeks preceding the survey that sought treatment according to table 4.1



Percentage of women of child bearing age who recognize ACT as malaria treatment according to table 5.6



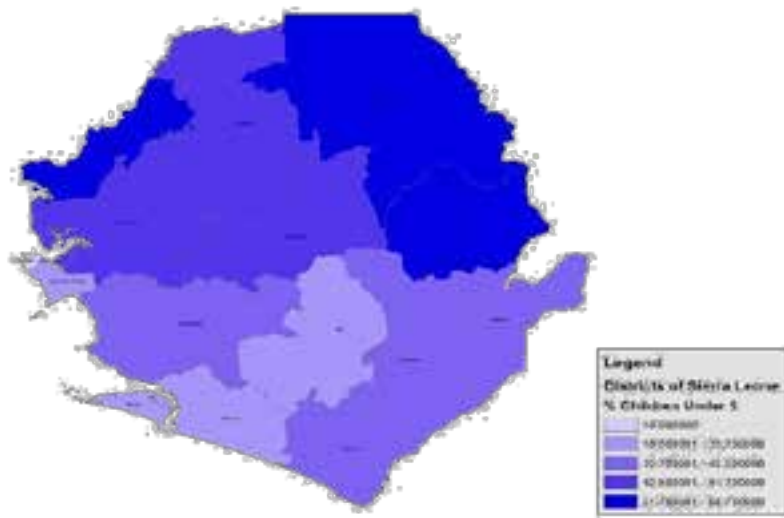
Percentage of women of child bearing age who recognize mosquito bites as a cause of malaria according to table 5.1



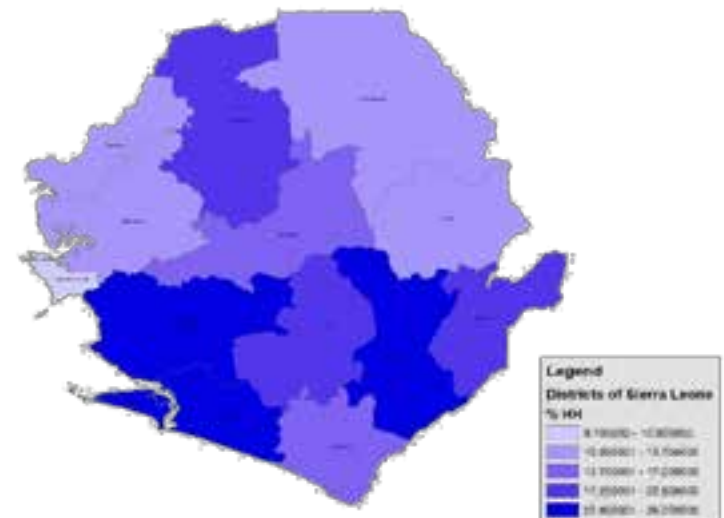
Observations

Prevalence of Malaria vs. % who own a bed net

Percentage of children under 5 that had tested positive for malaria using microscopy according to table 4-5

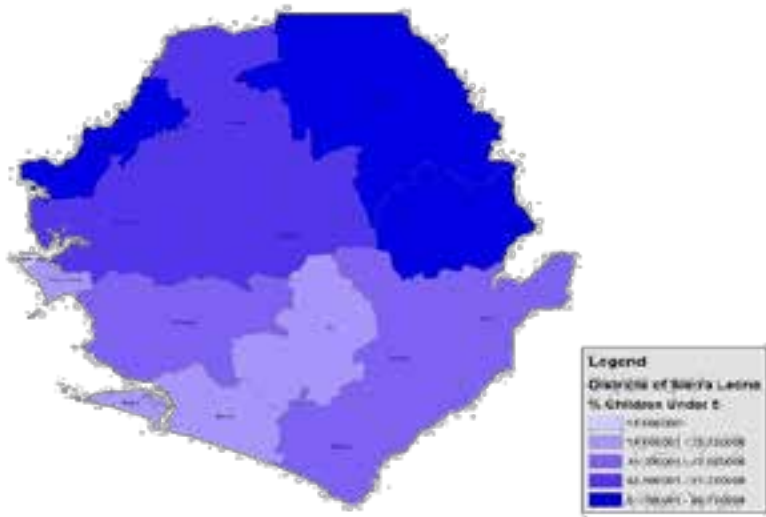


Percentage of households that own one net per every two people according to table 3,1



Prevalence of Malaria vs. Sleeping under a net

Percentage of children under 5 that had tested positive for malaria using microscopy according to table 4.5

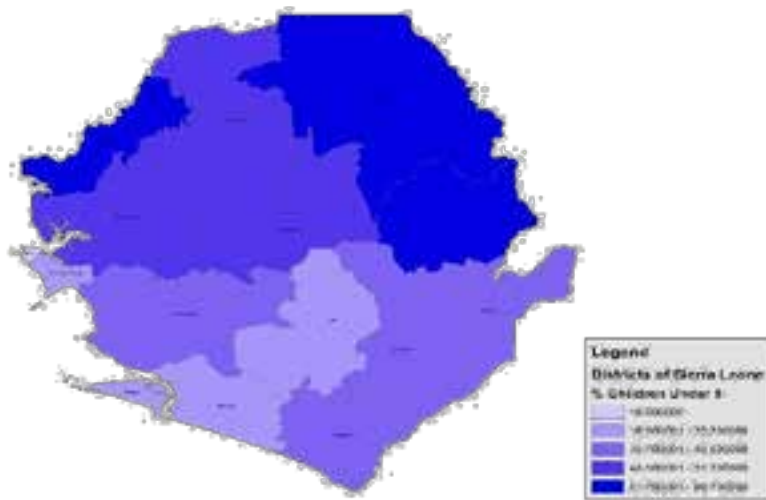


Percentage of children under 5 that slept under any net the night preceding the survey according to table 3.6



Prevalence of Malaria vs. Knowledge of Recommended Treatment

Percentage of children under-5 that had tested positive for malaria using microscopy according to table 4.5.

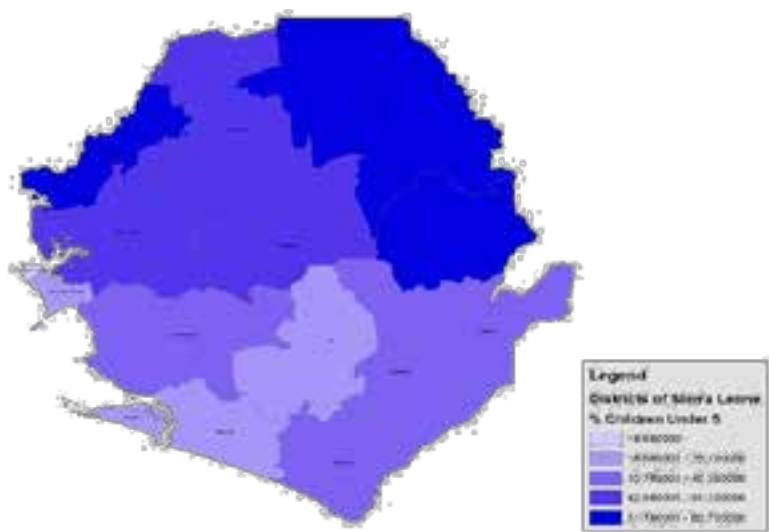


Percentage of women of child bearing age who recognize ACT as malaria treatment according to table 5.9.

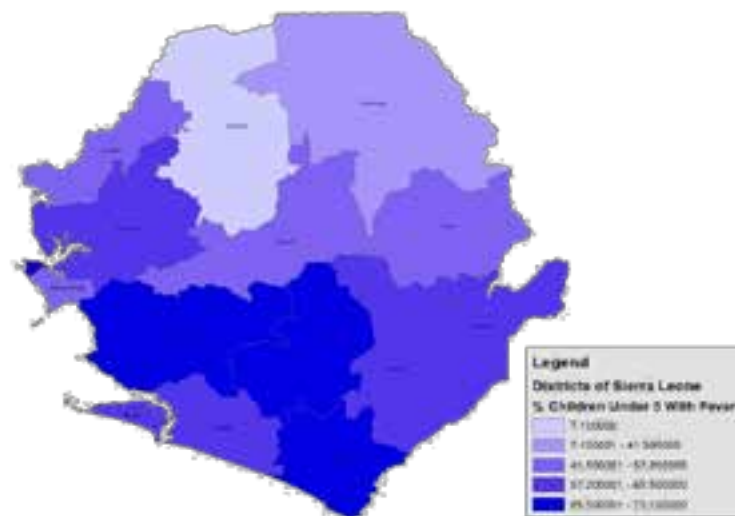


Prevalence of Malaria vs. % who sought treatment

Percentage of children under 5 that had tested positive for malaria using microscopy according to table 4.5:

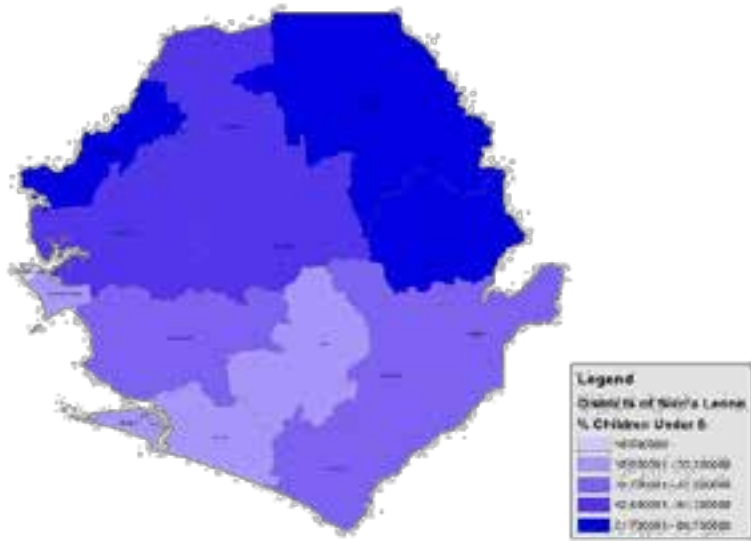


Percentage of caregivers of children under five that had experienced fever in the two weeks preceding the survey had sought treatment according to table 4.5:

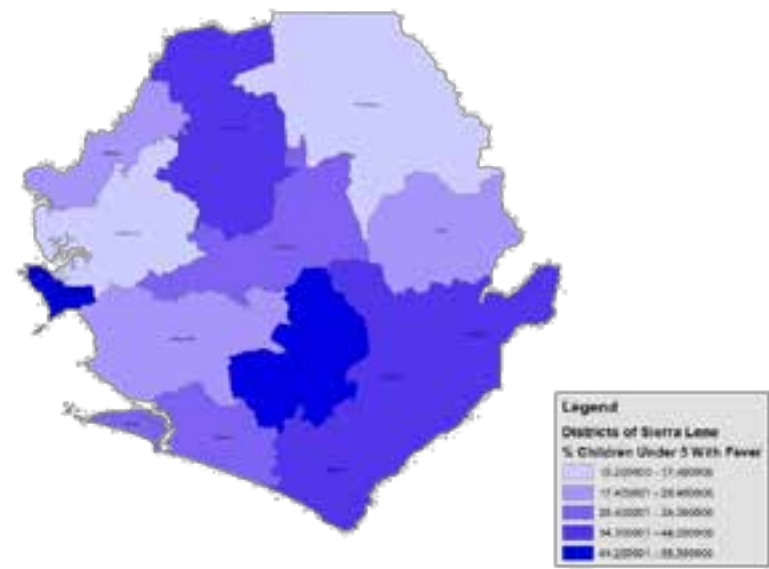


Prevalence of Malaria vs. Receiving Recommended Treatment

Percentage of children under 5 that had tested positive for malaria using microscopy according to table 4.5.

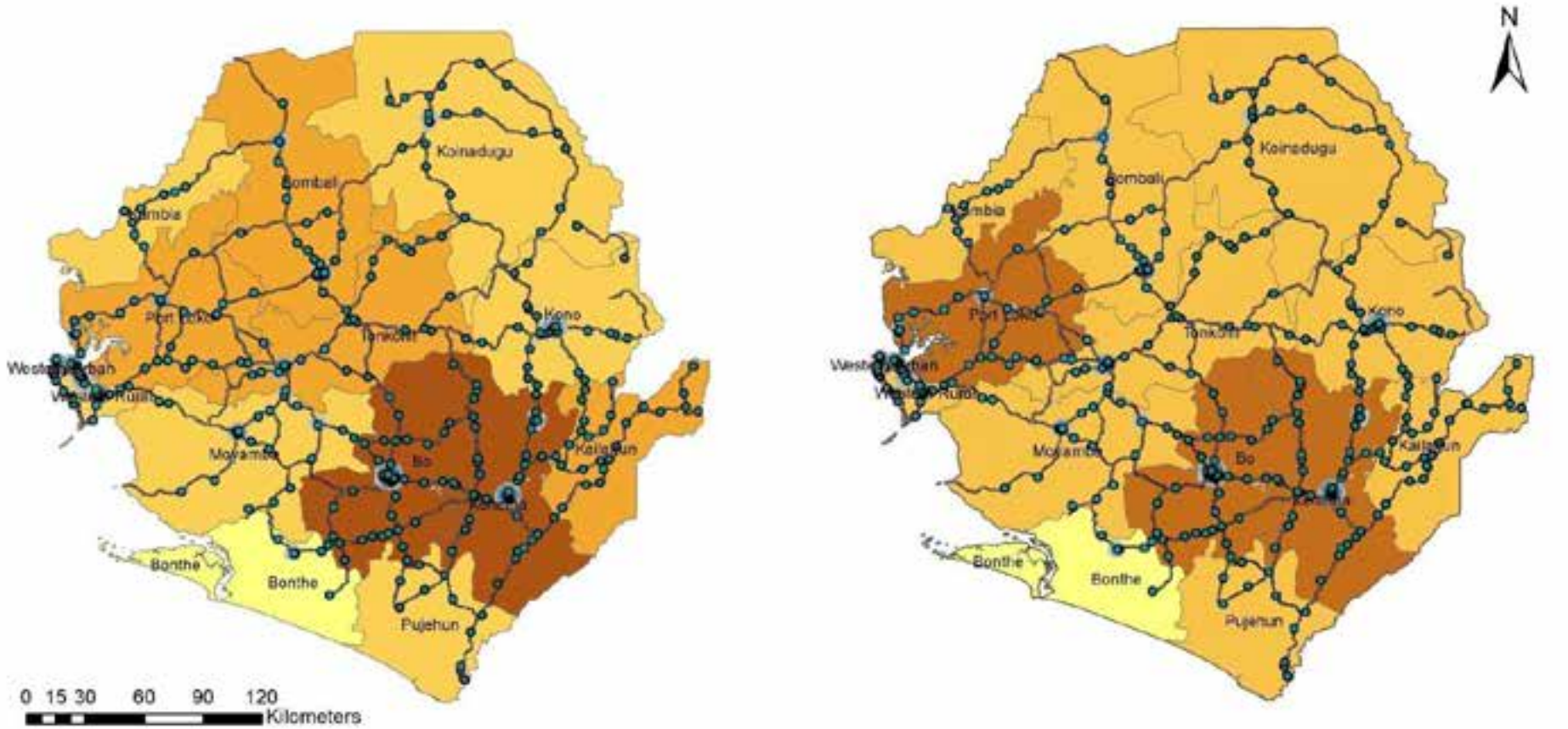


Percentage of caregivers of children under five that had experienced fever in the two weeks preceding the survey that received ACT according to table 6.8

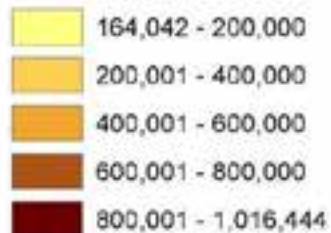


Sierra Leone

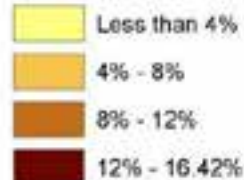
Density of Health Facilities and Population Distribution



Total Population per District



Population Distribution As a percent of national population



Density of Facilities

Point Density

This is preliminary data, prior to review by the Sierra Leone National Malaria Control Program

Data Source: Sierra Leone Malaria Indicator Survey 2013
Statistics Sierra Leone

Challenges

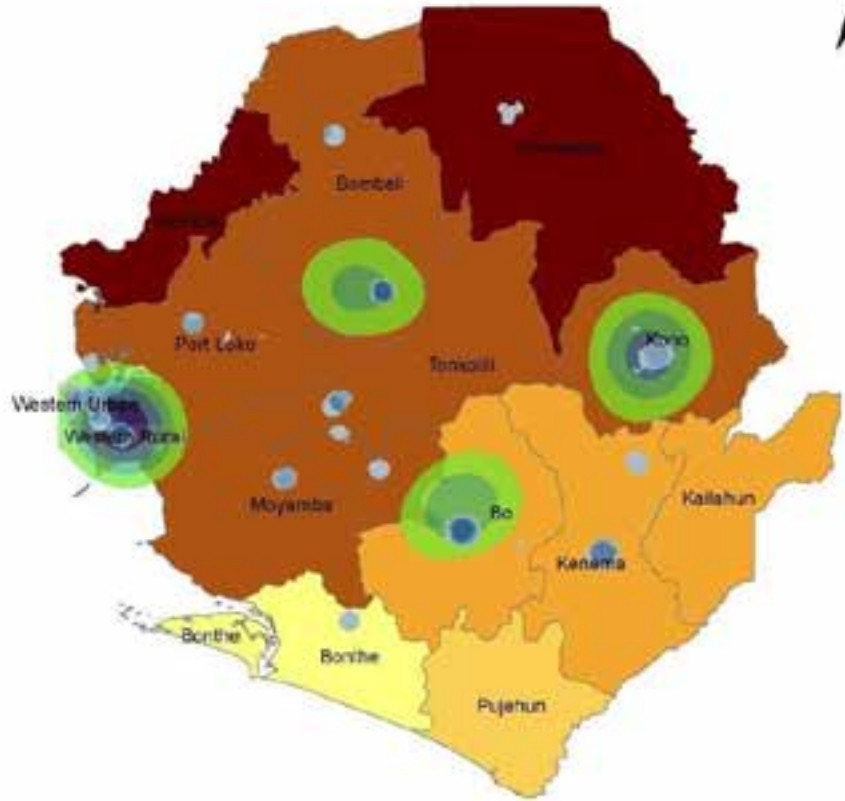
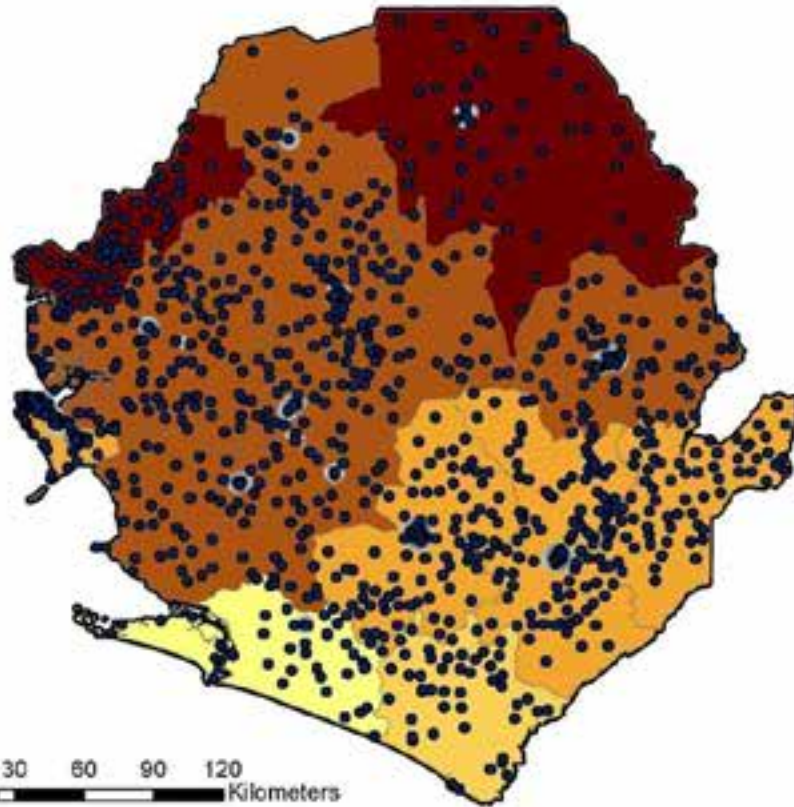
- Standardization of data to join different tables together
 - Names of chiefdoms
 - Updated administrative boundary shapefiles online
- Availability of data
- Background information in interpreting data and maps
- Keeping it simple


Potential for Further Analysis

- Using density maps to highlight high concentration areas for variable of interest
 - Does not average over an entire administrative boundary
- Comparing the MIS data to the 2008 Demographic Health survey and additional comparisons with the Knowledge, Attitudes, and Practices survey can provide interesting information on trends over time
- Incorporating more the context of Sierra Leone in the data analysis (particularly access to care)

Sierra Leone

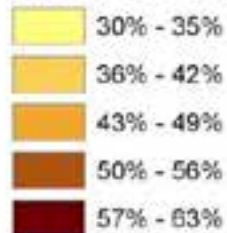
Density of Health Facilities and Homes with Indoor Residual Spraying and Prevalence of Malaria




 Point Density of Health Facilities

• Health Facilities

Prevalence of Malaria



 Density of Homes Sprayed

This map is based on preliminary data, prior to review by the Sierra Leone National Malaria Control Program

Data Source: Sierra Leone Malaria Indicator Survey 2013

Conclusion

Pattern of high prevalence of malaria in the north and low percentages of owning and sleeping under bed nets and knowledge of and access to recommended treatment.

GIS can be used to analyze patterns in relation to geographic location, identify areas of need and where to pilot initiatives

Thank you!