

Targeted Top-Up of LLINs Bioko Island, Equatorial Guinea

Medical Care Development International



Wonder Philip Phiri

Bioko Island, Equatorial Guinea

- Small volcanic Island about 2,000km²
- Main Island of Equatorial Guinea with a population of ~250,000
- Malaria endemic, year-round malaria transmission setting; primary health burden prior to control

Strata	Description	Parasite Prevalence
1	High Endemicity	20% or more
2	Medium Endemicity	10-<20%
3	Low Endemicity	5-<10%
4	Very Low Endemicity	1-<5%
5	Non Endemic	<1%

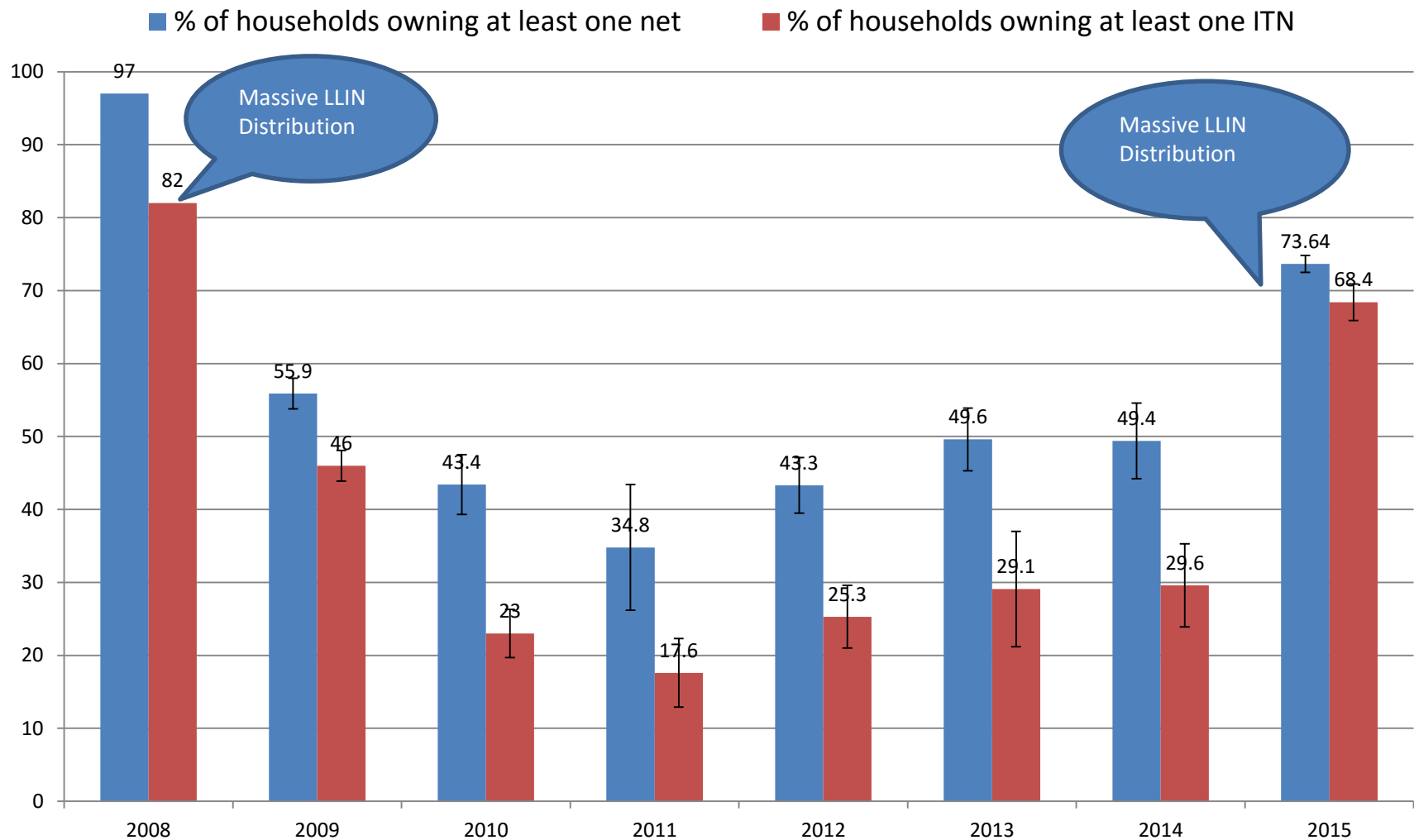


Vector Control Strategy in Bioko Island

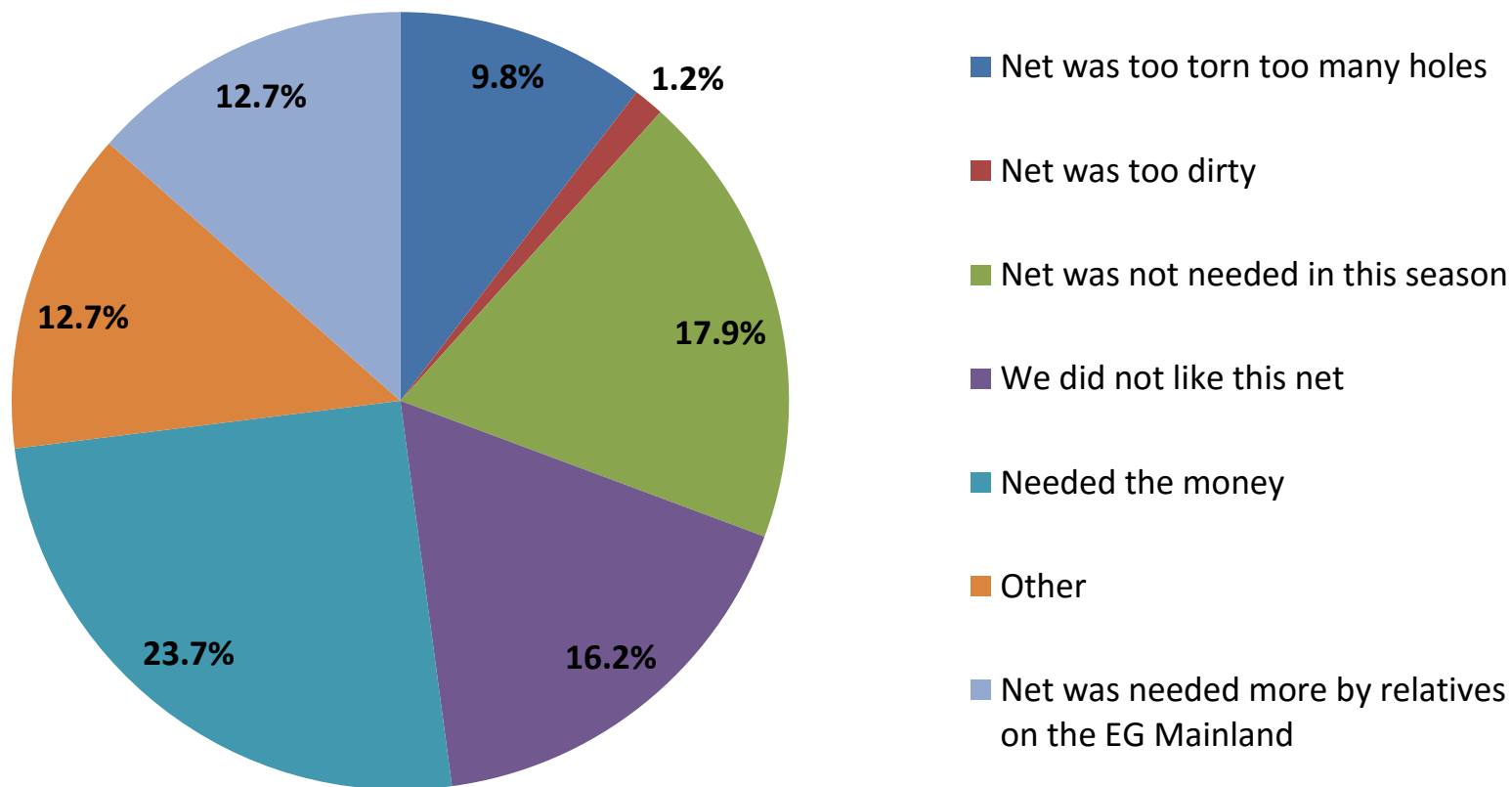
- Island-wide IRS from 2004 -2014
 - 2015: Targeted IRS
- LLIN distribution
 - Mass distributions in 2008, 2015, planned in 2018
 - Routine keep-up through antenatal clinics
 - Planned Top-up campaigns through primary schools
 - **Targeted top-up campaign in high risk communities**
 - 4th -23rd of July 2016



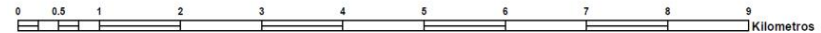
Bed Net Ownership In Bioko Island



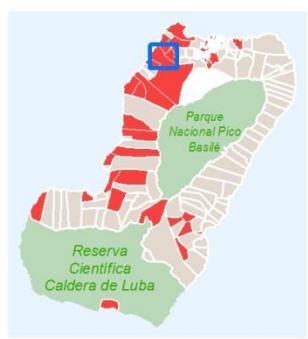
Why Households Did Not Keep Nets



- Households georeferenced with unique building identifiers
- Communities delimited according to local Government structures
- Ability to track different activities down to the household level over time (LLINs, IRS, etc.)

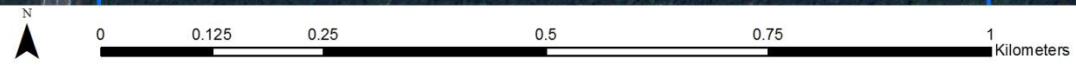
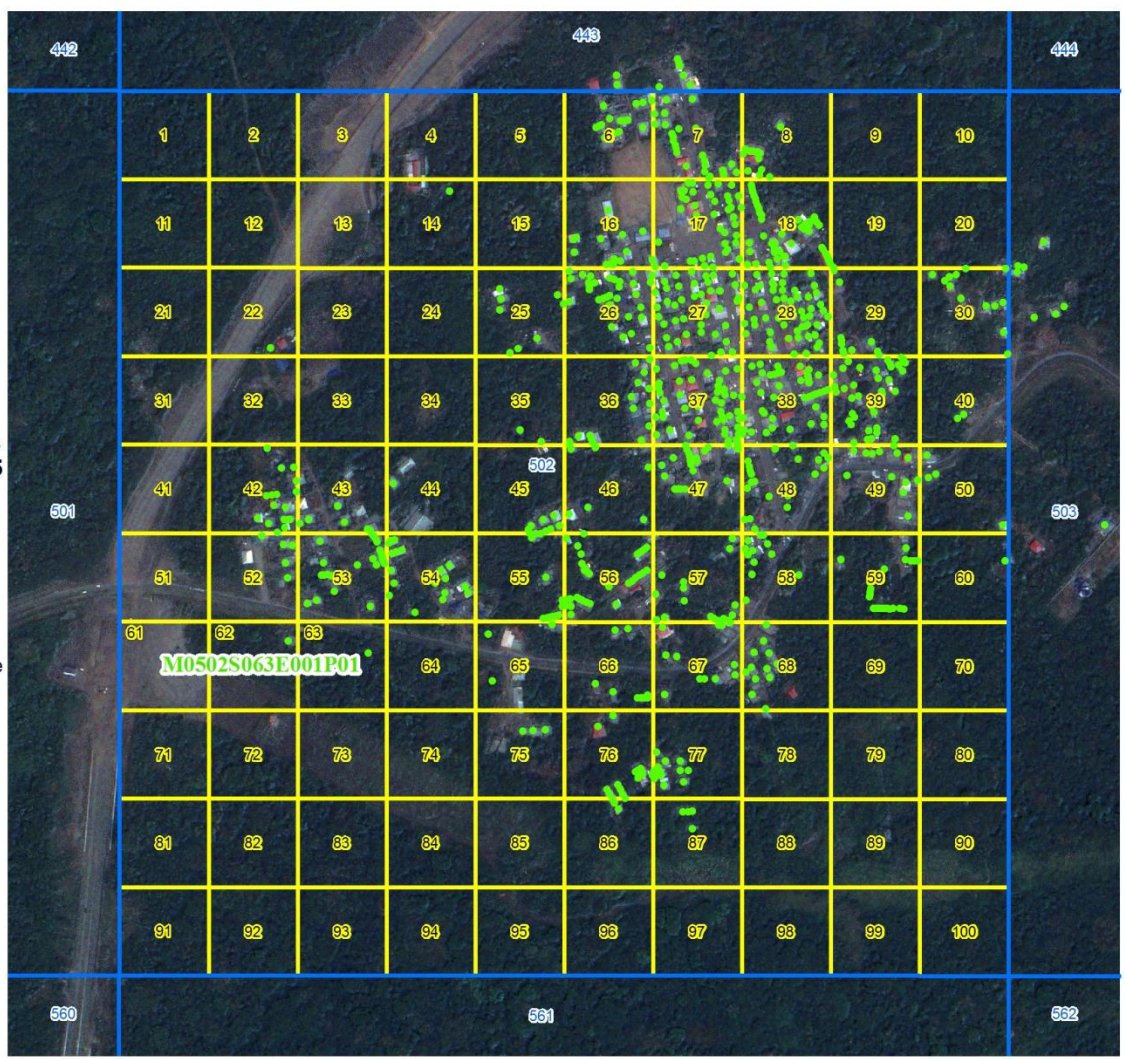


Community Household Enumeration



High prevalence communities
Malaria Indicator Survey, 2015

- Prevalence $\geq 20\%$
- Parks
- 1 km² grid areas
- 100 m² grid sectors
- Uniquely identified structure



Foundation for Targeted Top-Up in Bioko

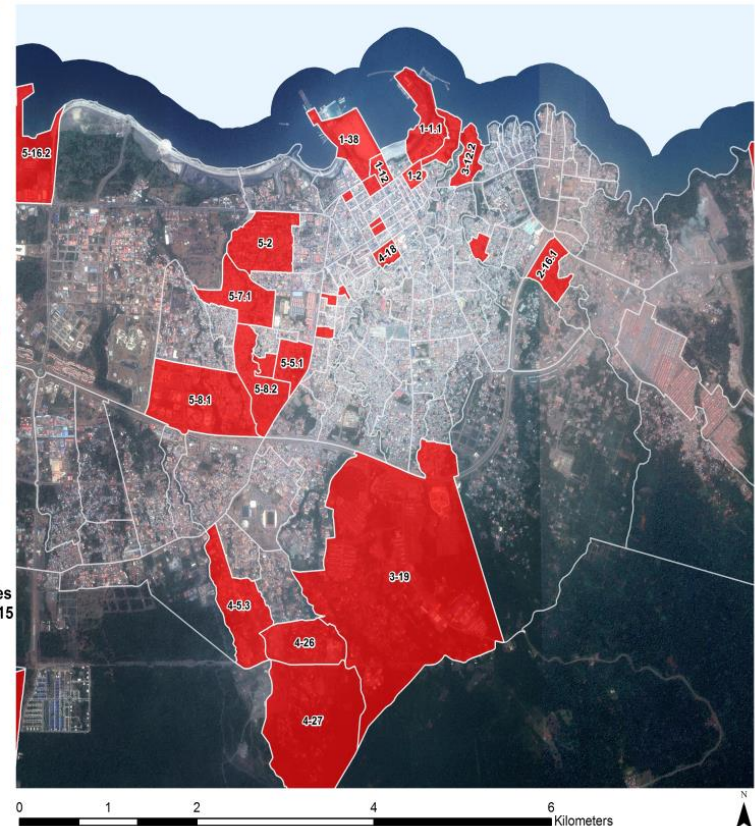
Data Sources:

- MIS
 - Carried out annually from August-October
 - Provides us with up-to-date community-level indicators
 - Use of prevalence data to stratify, identify high risk communities
- HIS
 - Will in the near future permit year-round risk assessment
 - Use of incidence data to identify high risk communities



High prevalence communities
Malaria Indicator Survey, 2015

Prevalence $\geq 20\%$
Parks



Community Mobilization

- **Involvement of Community leadership**
 - Community Presidents
 - Community Counsellors
 - Women's groups
- **Domiciliary visits to promote the following:**
 - Net usage and care
 - Early treatment seeking behavior
 - IPT for Pregnant women



Si te quieres y te cuidas



Duerme bajo
mosquitera
todas las noches

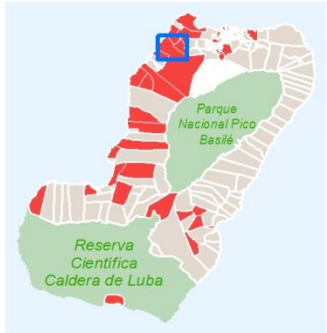


Acude al Centro de Salud
Si tienes síntomas de
Paludismo



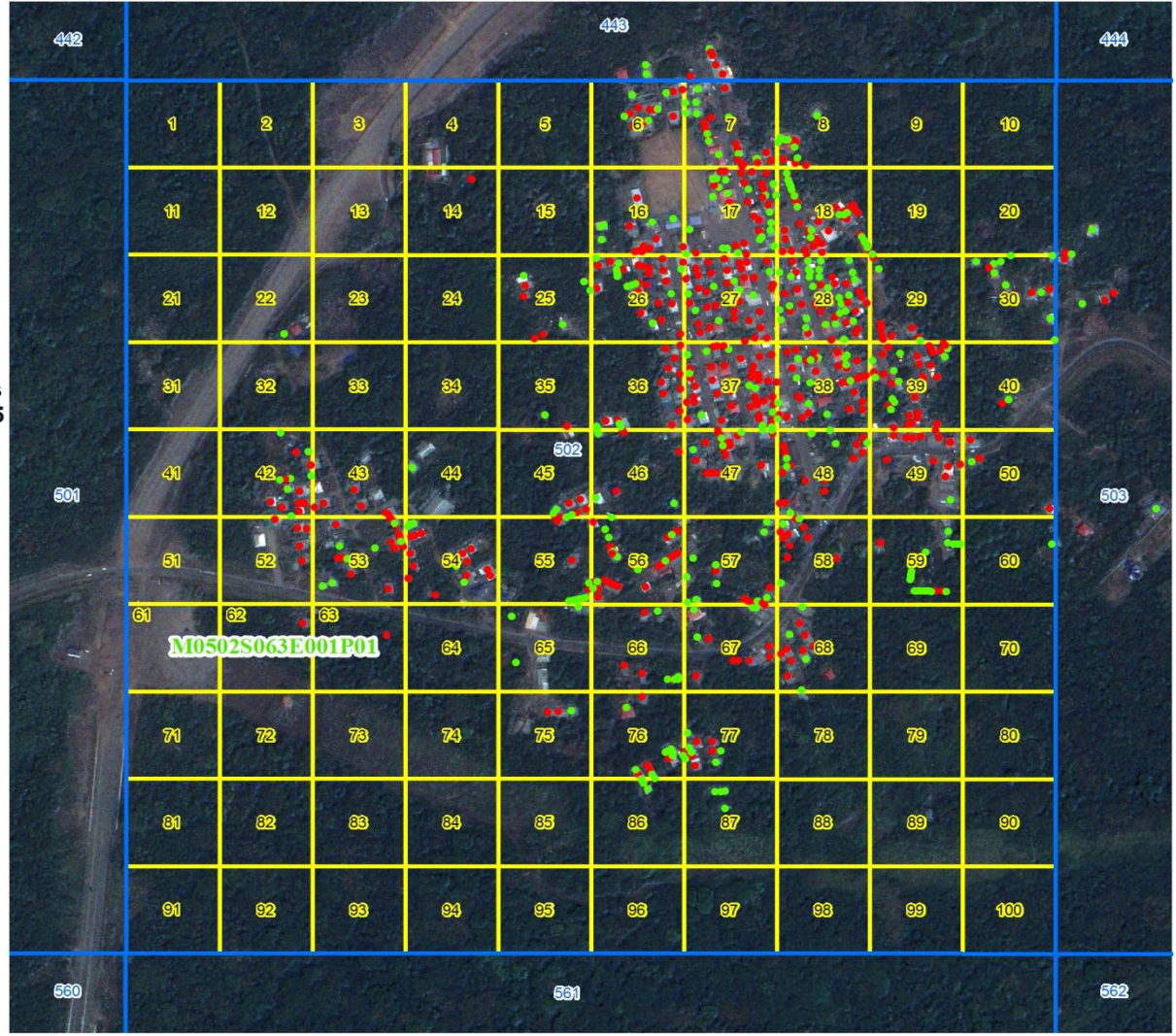
Las embarazadas
deben hacer su control
prenatal cada mes

Net Ownership Prior to Top-up - Basupu



High prevalence communities
Malaria Indicator Survey, 2015

- Prevalence $\geq 20\%$
- Parks
- 1 km² grid areas
- 100 m² grid sectors
- Reported needing LLIN
- Not needing LLIN

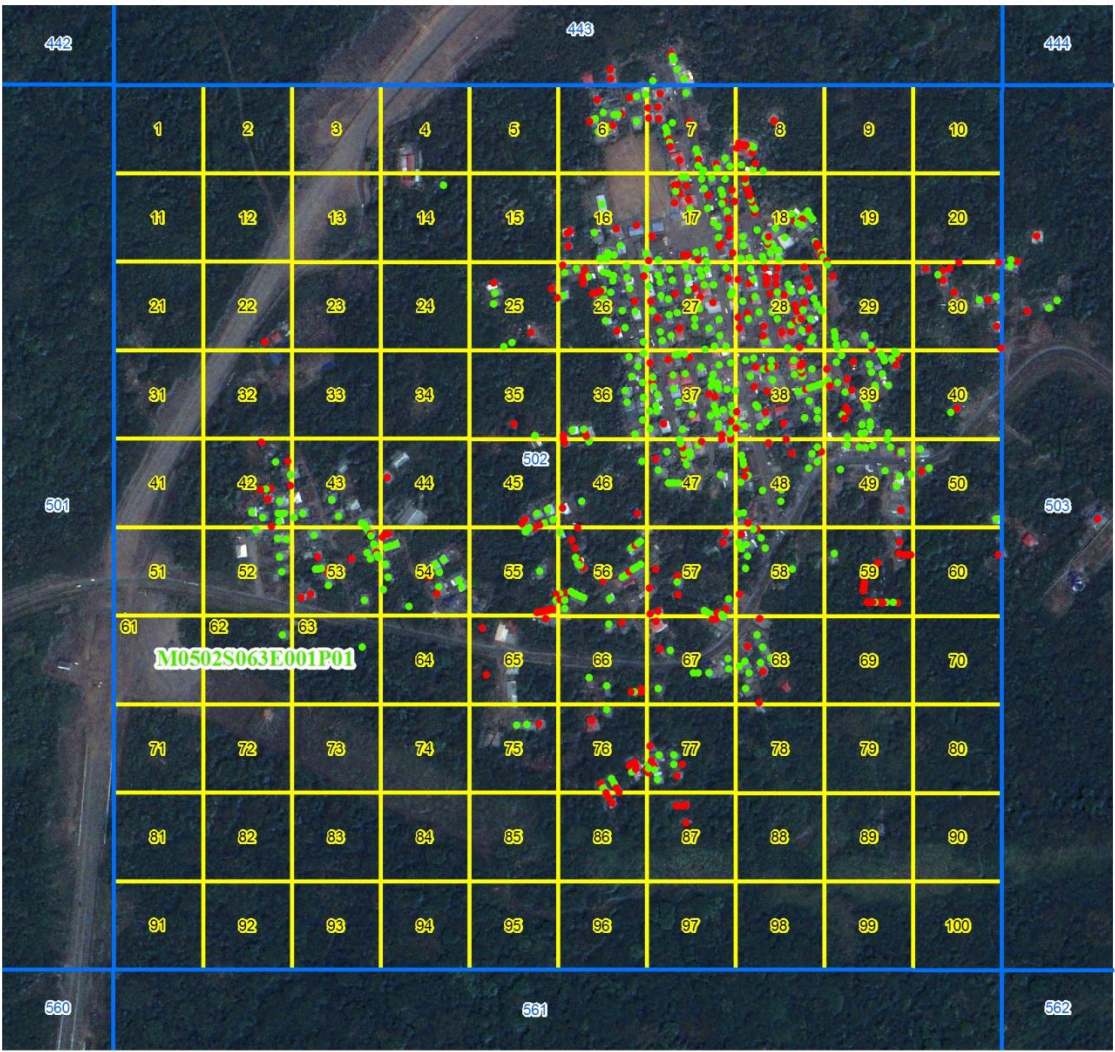


Net Ownership Post Top-up - Basupu



High prevalence communities
Malaria Indicator Survey, 2015

- Prevalence $\geq 20\%$
- Parks
- 1 km² grid areas
- 100 m² grid sectors
- Did not receive LLIN
- Received LLIN



Distribution Results-High Risk Areas – 4th - 23th July 2016

Community Name	Total Houses	Houses that Received bed nets	Total Bednets Distributed	% Houses that received at least 1 LLIN	Average nets Distributed per House	Population Protected	Persons per LLINs ratio
Granos de Oro	17	17	62	100%	3.6	121	1.95
Botonos Sur	29	27	86	93%	3.2	129	1.50
1-38 Manzana INSESO y Ministerio de Infraestructuras	44	40	106	91%	2.7	175	1.66
4-27 Perez V" Canteras"	100	91	288	91%	3.2	359	1.25
1-1.1 Zona Presidencial A	189	162	360	86%	2.2	701	1.95
1-12 Manzana Cine Jardin y Policia	103	88	178	85%	2.0	250	1.41
4-5.3 Parroquia Maravillas de Jesus	200	167	388	84%	2.3	440	1.13
Basupu	635	527	1,136	83%	2.2	1,824	1.61
2-5 Sumco V	229	186	450	81%	2.4	958	2.13
4-16 Bioko Norte II	185	145	352	78%	2.4	576	1.64
Sacriba Fang	134	105	277	78%	2.6	349	1.26
5-8.2 Santa Maria V	843	652	1,433	77%	2.2	2,509	1.75
1-18 Manzana Camara de Comercio y Ayuntamiento	20	15	35	75%	2.3	41	1.16
5-6.2 Santa Maria III	234	174	410	74%	2.4	654	1.60
5-16.1 Mongola I	634	458	1,081	72%	2.4	1,239	1.15
5-8.1 Santa Maria V	932	646	1,462	69%	2.3	2,109	1.44
Potao	132	83	240	63%	2.9	259	1.08
1-2 Zona Presidencial B	47	26	56	55%	2.2	109	1.95
Total	4,707	3,609	8,400	77%	2.3	12,803	1.52

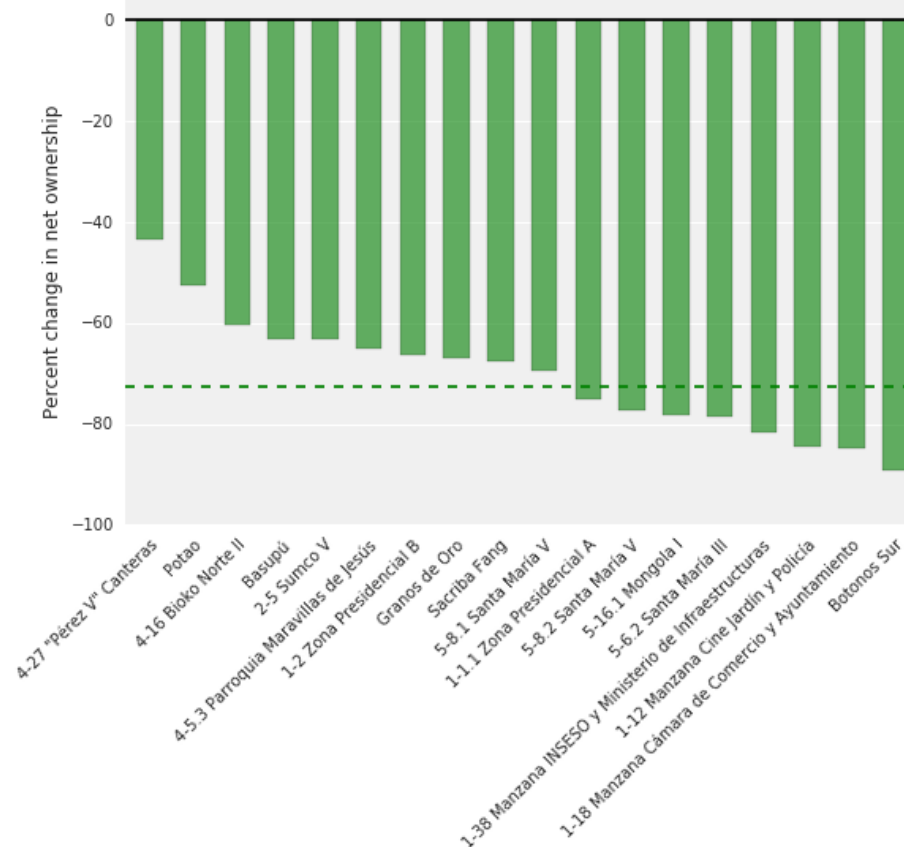
Preliminary Analysis: Ownership

- Of the 3,609 houses in high risk communities selected to receive bed nets in 2016:

Number of nets received in 2014/15	Reported Net ownership in 2016	% decrease
9,008	2,509	72%

- Average time between Distributions is about 375 days

Percent difference between nets received in 2014/15 and reported net ownership in 2016



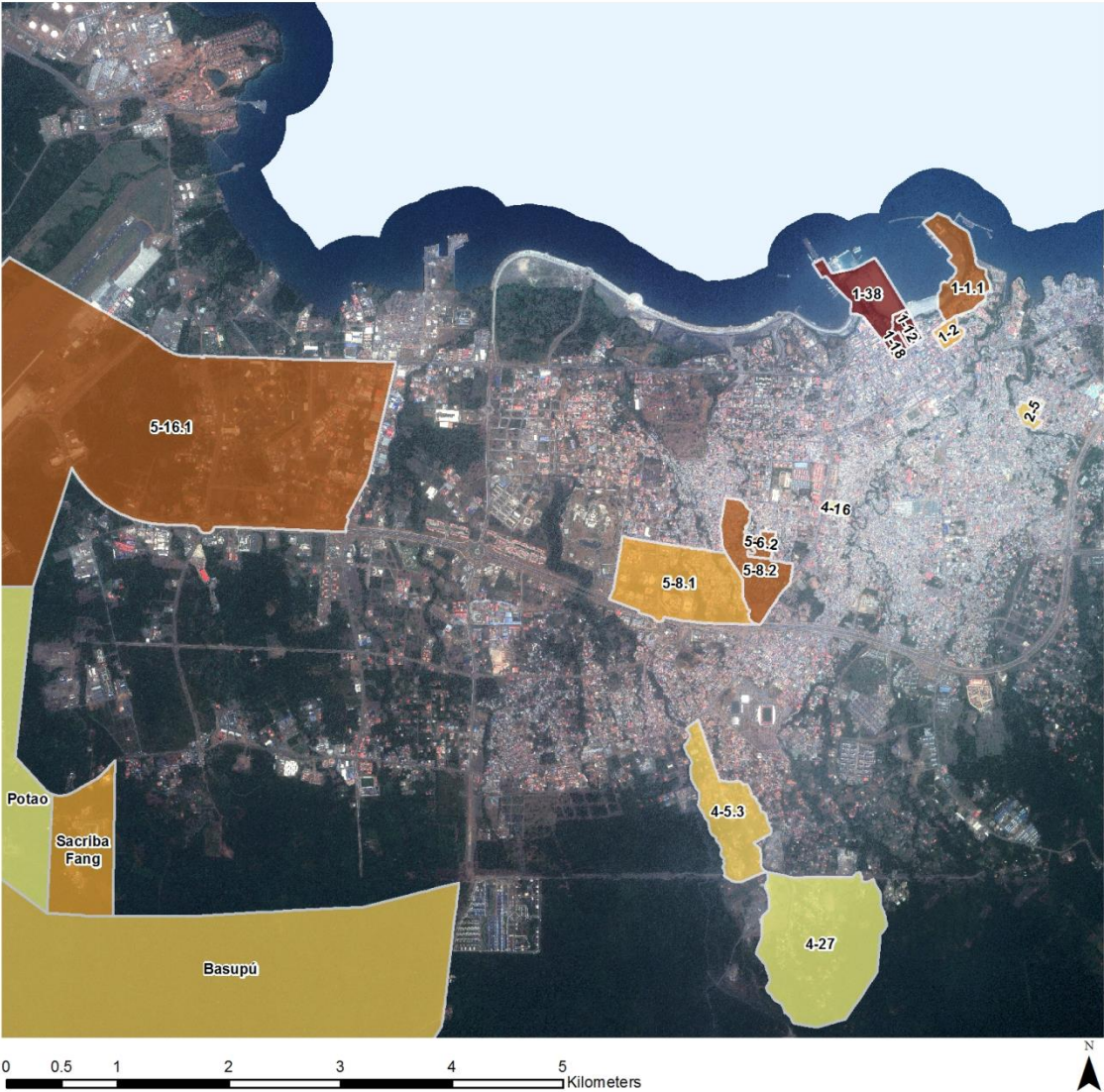
Visualizing Ownership



Communities receiving LLINS during top-up campaign

Percent decrease by community in reported net ownership

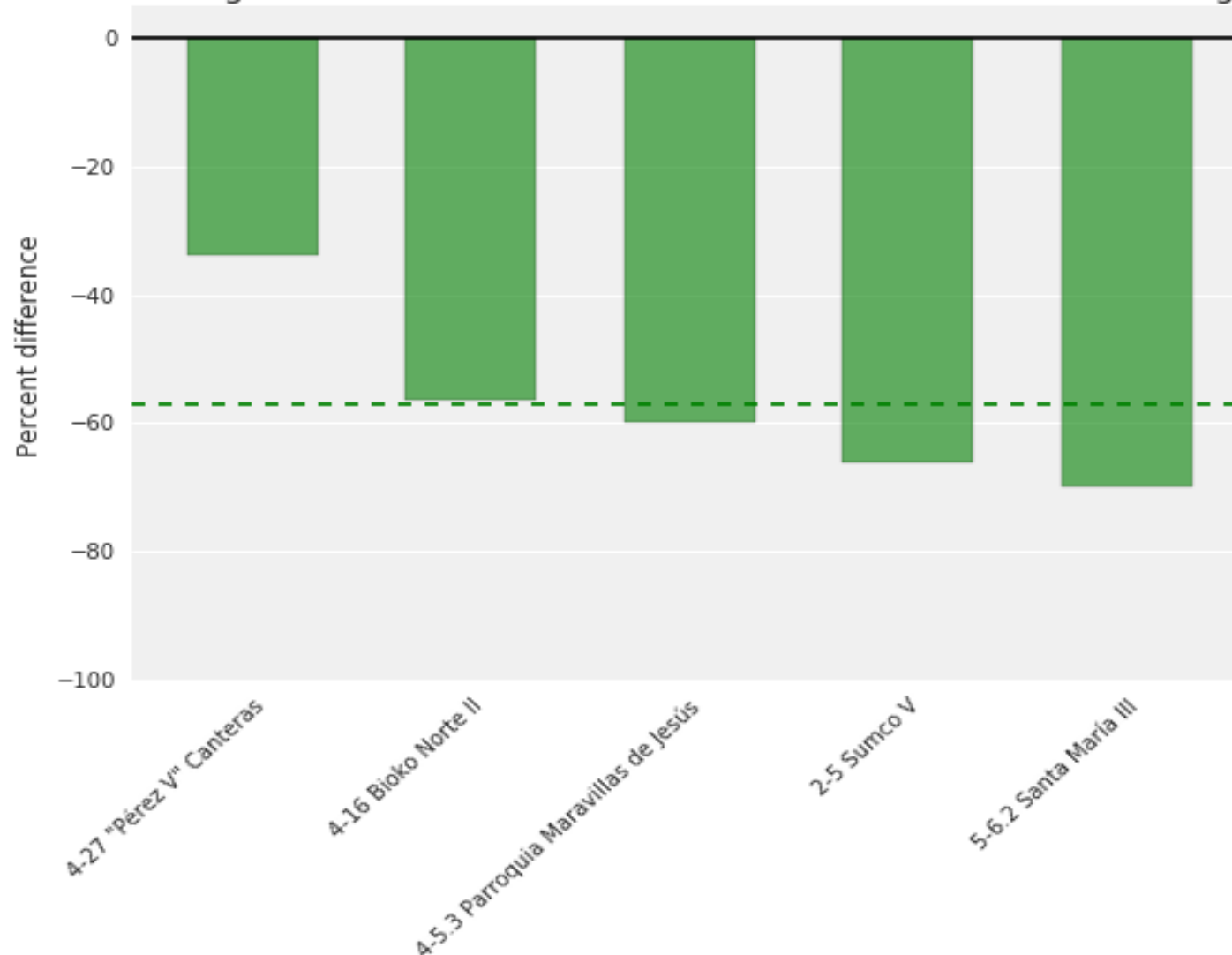
- 63.1% - 43.45%
- 66.5% - 63.11%
- 75.1% - 66.51%
- 81.78% - 75.11%
- 89.24% - 81.79%
- Parks





Nets Observed during Spraying Activities 8th Aug -12th Sept 2016

Percent change between nets received in 2016 and nets observed during IRS R23



Thank you



**The
struggle
continues**



Questions?