Rwanda Biomedical Centre

Healthy People, Wealthy Nation

Rwanda Malaria Control Efforts Coordination

Thirty-Third Meeting of the RBM Partnership (SMERG)

Venue: Marriot Hotel, Kigali Rwanda

Dr. Aimable MBITUYUMUREMYI
MOPD Division Manager
HDPC/MOPDD

17/05/2022

Rwanda Health Sector Structure

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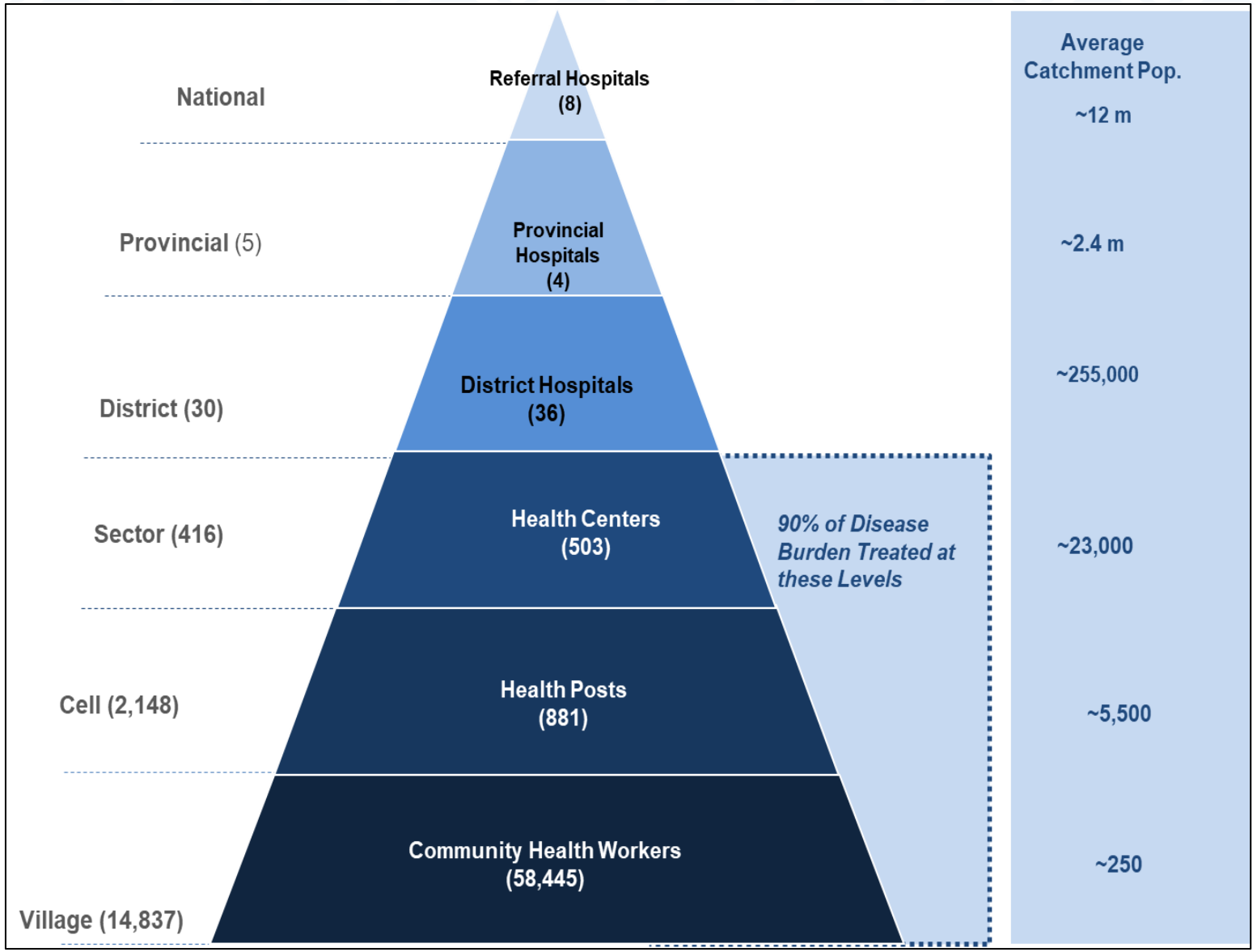

Organizational Structure of MOPDD

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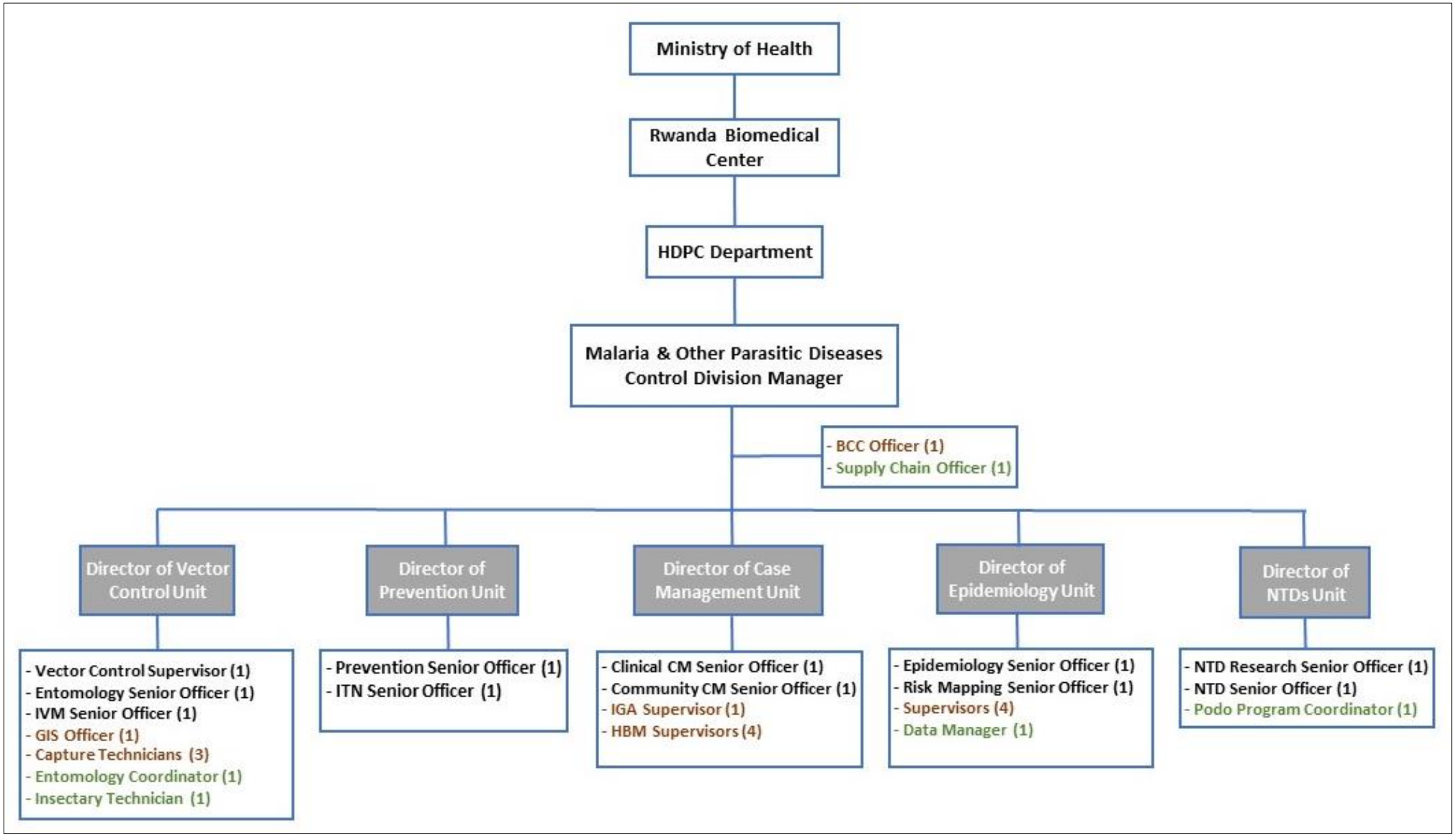

Total: 36

- CS: 17
- Contractual: 14
- Seconded Staff: 5

National Strategic Plan 2020-2024- Goal

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GOAL

By 2024, reduce malaria morbidity and mortality by at least 50% of the 2019 levels

OBJECTIVES

1. By 2024, at least 85% of population at risk will be effectively protected with preventive interventions;
2. All suspected malaria cases are promptly tested and treated in line with the national guidelines;
3. By 2024, strengthen surveillance and reporting in order to provide complete, timely and accurate information for appropriate decision making at all levels;
4. Strengthen coordination, collaboration, procurement & supply management and effective program management at all levels;
5. By 2024, 85% of the population at risk will have correct and consistent practices and behaviors towards malaria control interventions.

Key National Malaria Control Interventions, FY21/22

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1. Malaria Prevention with LLINs
2. Indoor Residual Spraying (IRS)
3. Malaria Case Management (CHWs and HFs)
4. SBCC
5. Surveillance-M&E
6. Other Tools

Malaria Control Program Implementation

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Malaria Prevention with LLINs

- **Central Level**
  - Planning/Policy/Guidelines
  - Resources Mobilization
  - Procurement
  - Quality Control
  - Coordination of Distribution
- **District/HFs/CHWs**
  - Needs Assessment
  - Distribution
  - Monitor Use

Malaria Control Program Implementation

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Indoor Residual Spraying-Entomo

- **Central Level**
  - Planning/Policy/Guidelines
  - Resources Mobilization
  - Procurement
  - Quality Control of IRS/Surveillance
  - Coordination of IRS Implementation
- **Districts/HFs/CHWs**
  - Needs Assessment
  - Implement IRS
  - Community Mobilization
  - Surveillance

Malaria Control Program Implementation

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Malaria Case Management (CHWs and HFs)

- **Central Level**
  - Planning/Policy/Guidelines
  - Resources Mobilization
  - Procurement (Anti-malarial drugs, Tests)
  - Quality Control of Drugs and Tests/Surveillance
  - Coordination of Services at all levels
  - Coordinate Supply Chain
- **Districts/HFs/CHWs**
  - Diagnosis and Treatment

Malaria Control Program Implementation

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Surveillance-M&E

- **Central Level**
  - Planning/Policy/Guidelines
  - Resources Mobilization
  - Indicators Definition
  - Reporting Systems
  - ISS-DQA
  - Feedback
- **Districts/HFs/CHWs**
  - Data collection
  - DQA
  - Reporting

Key National Malaria Control Interventions, FY21/22

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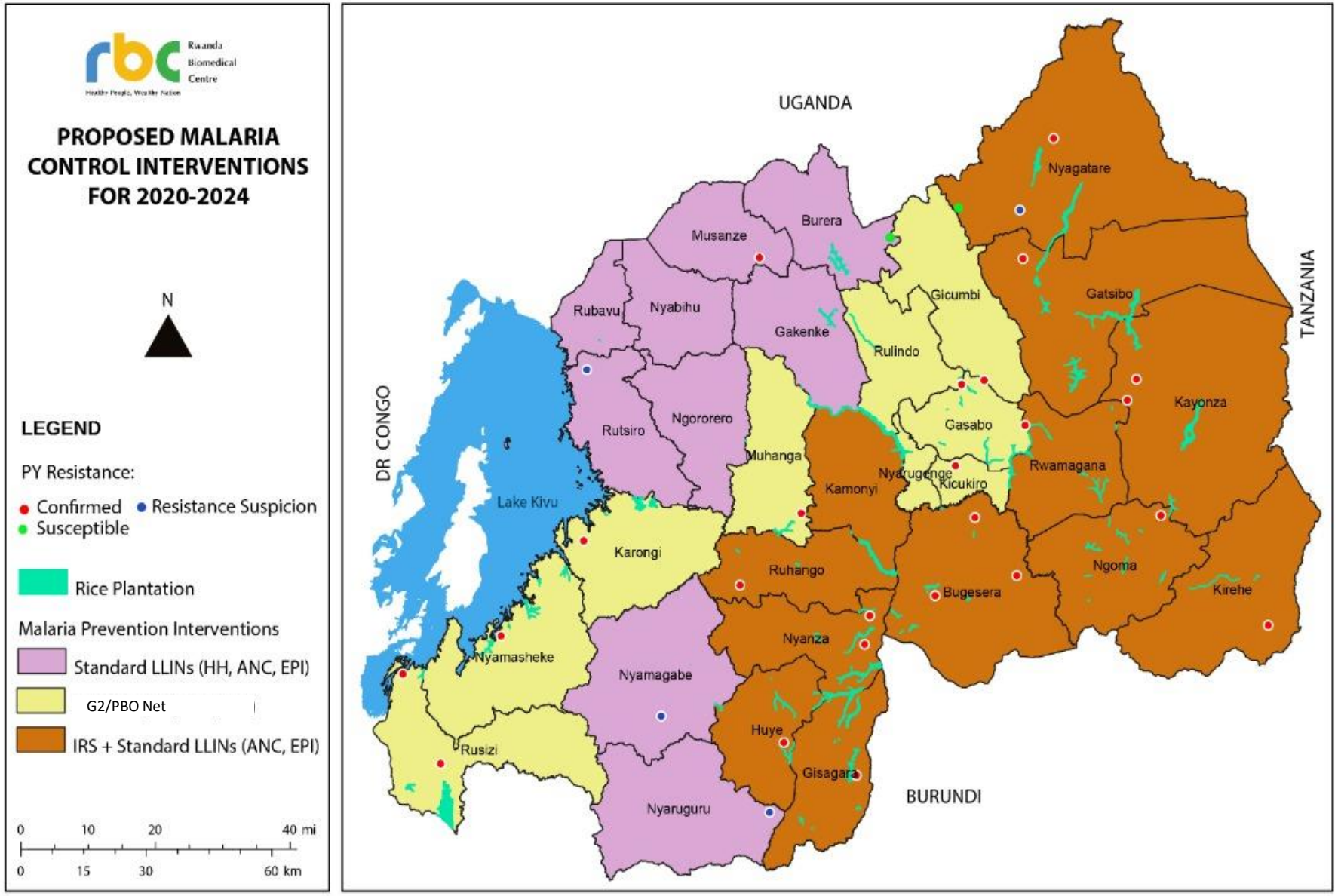

Core Interventions

- Malaria Case Management (HFs, HPs, HBM)
- IRS in **12** Districts (with Targeted IRS in few Sectors)
- LLINs (Routine Distribution, Last Mass Campaign in **2020**)
- SBCC with Support from CSOs

Supplemental

- Drone Based Larviciding
- Mosquito Repellents
- Community Based IVM

Malaria Cases from 2014-March 2022

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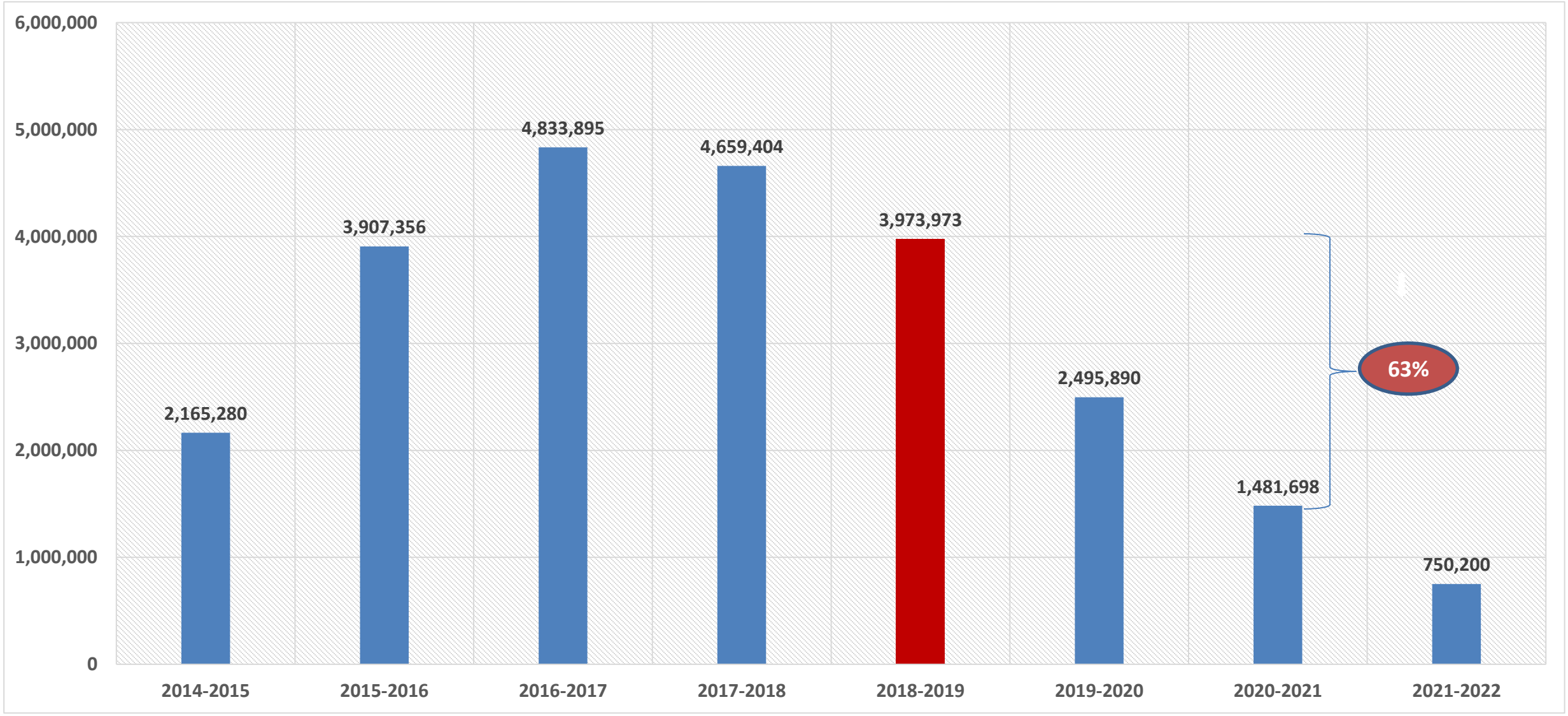

Severe Malaria Cases from 2014-March 2022

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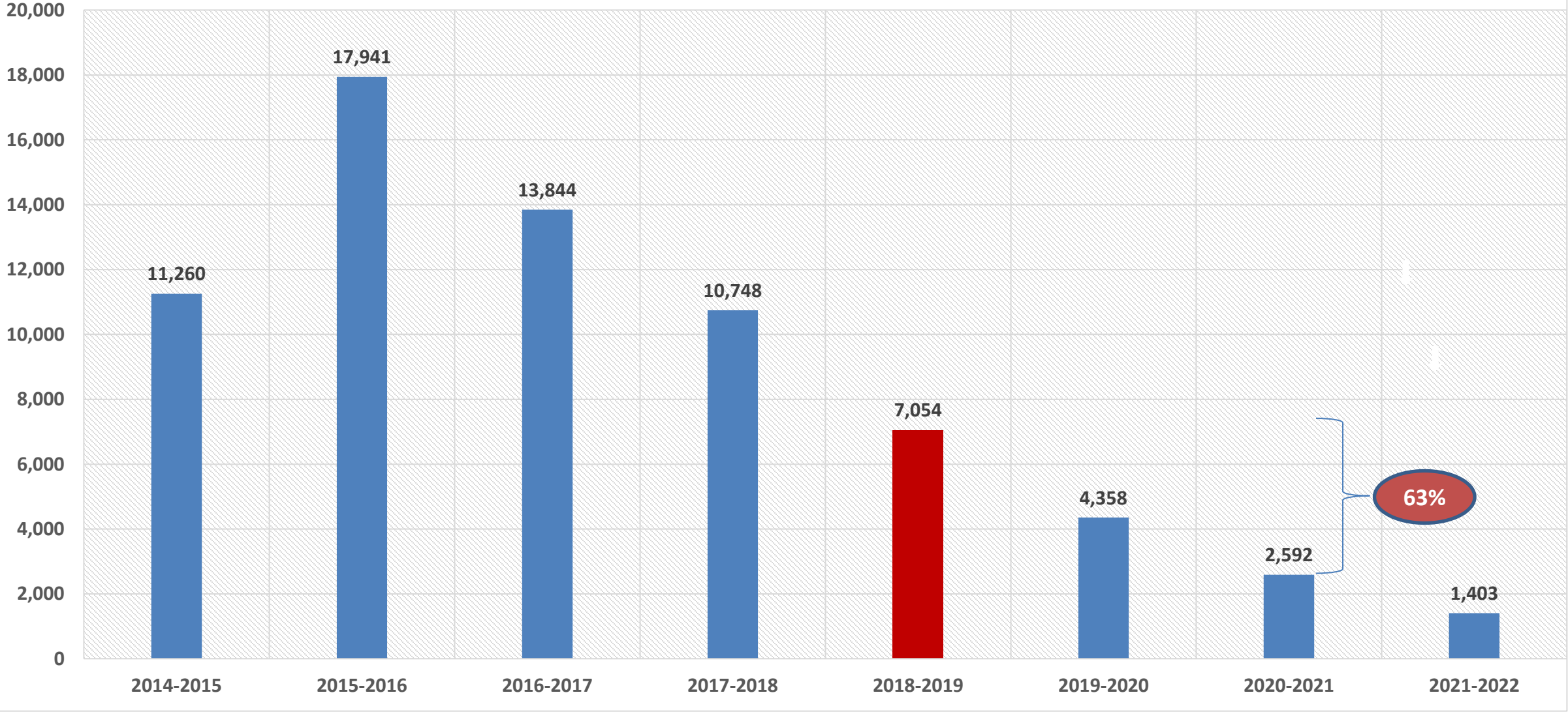

Malaria Related Deaths from 2014-March 2022

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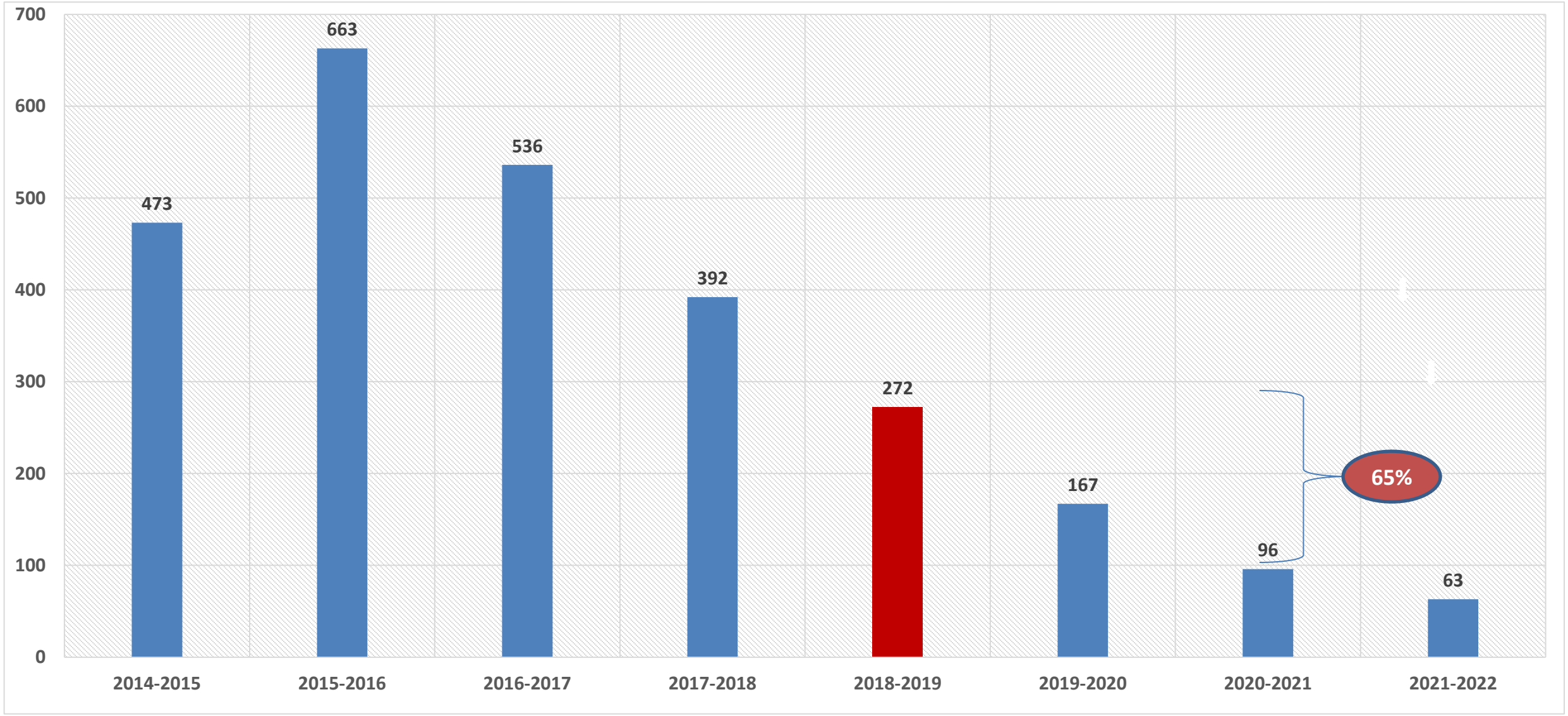

Proportion of Malaria HBM 2014-March 2022

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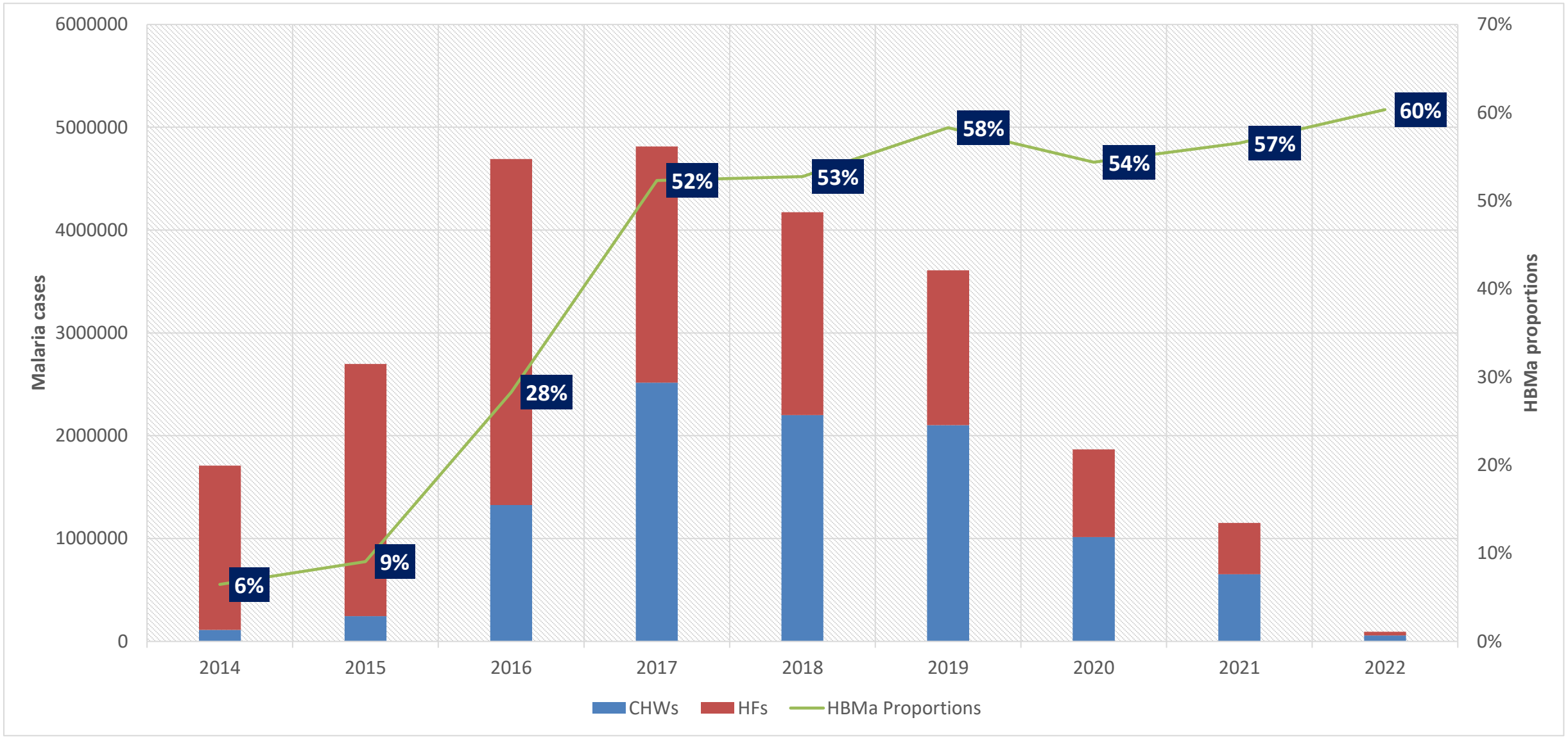

Malaria Cases and Incidence from 2014 to 2021 in Rwanda

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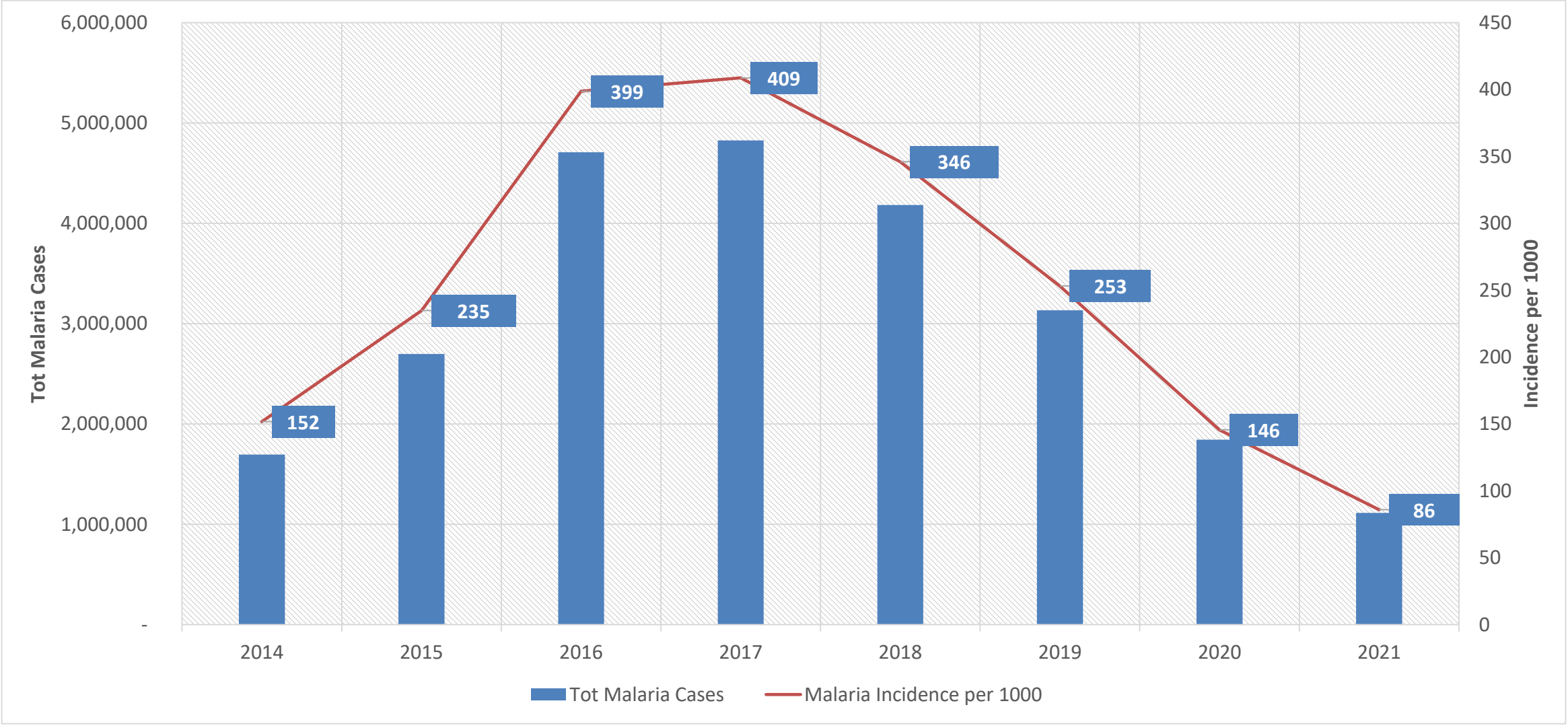

Malaria Cases by Province, January to December 2021

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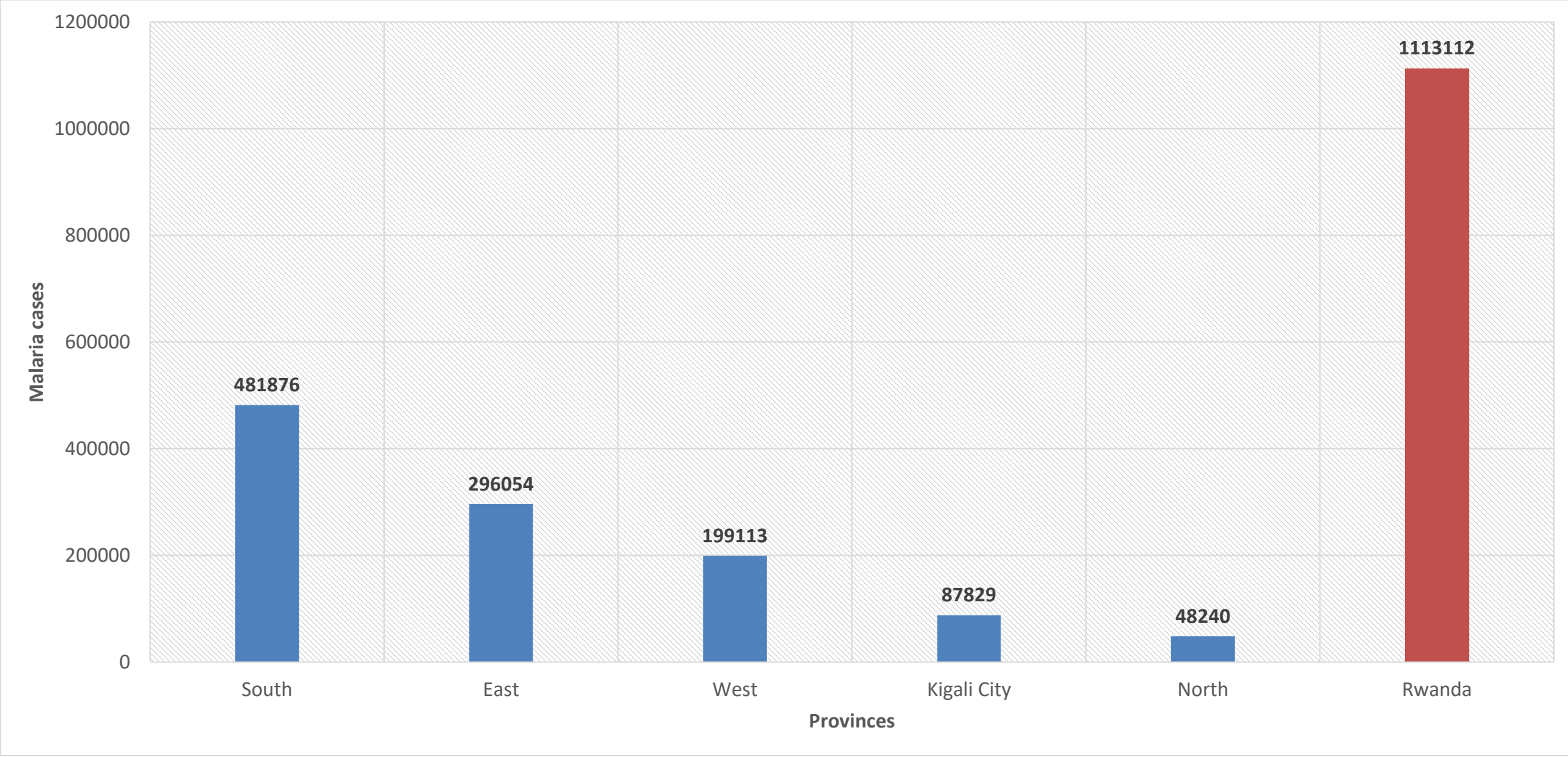

Malaria Incidence per 1000 by Province, 2021

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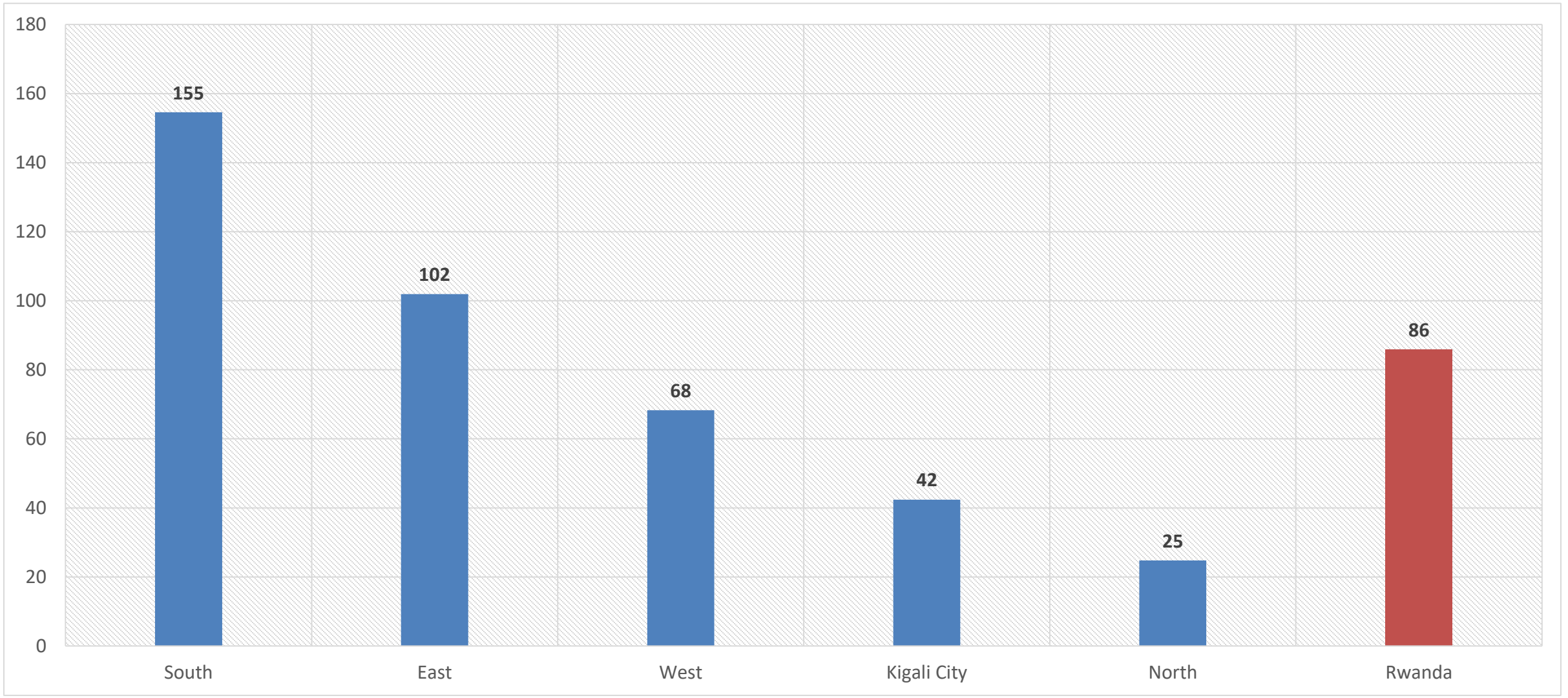

Severe Malaria Cases by Province, 2021

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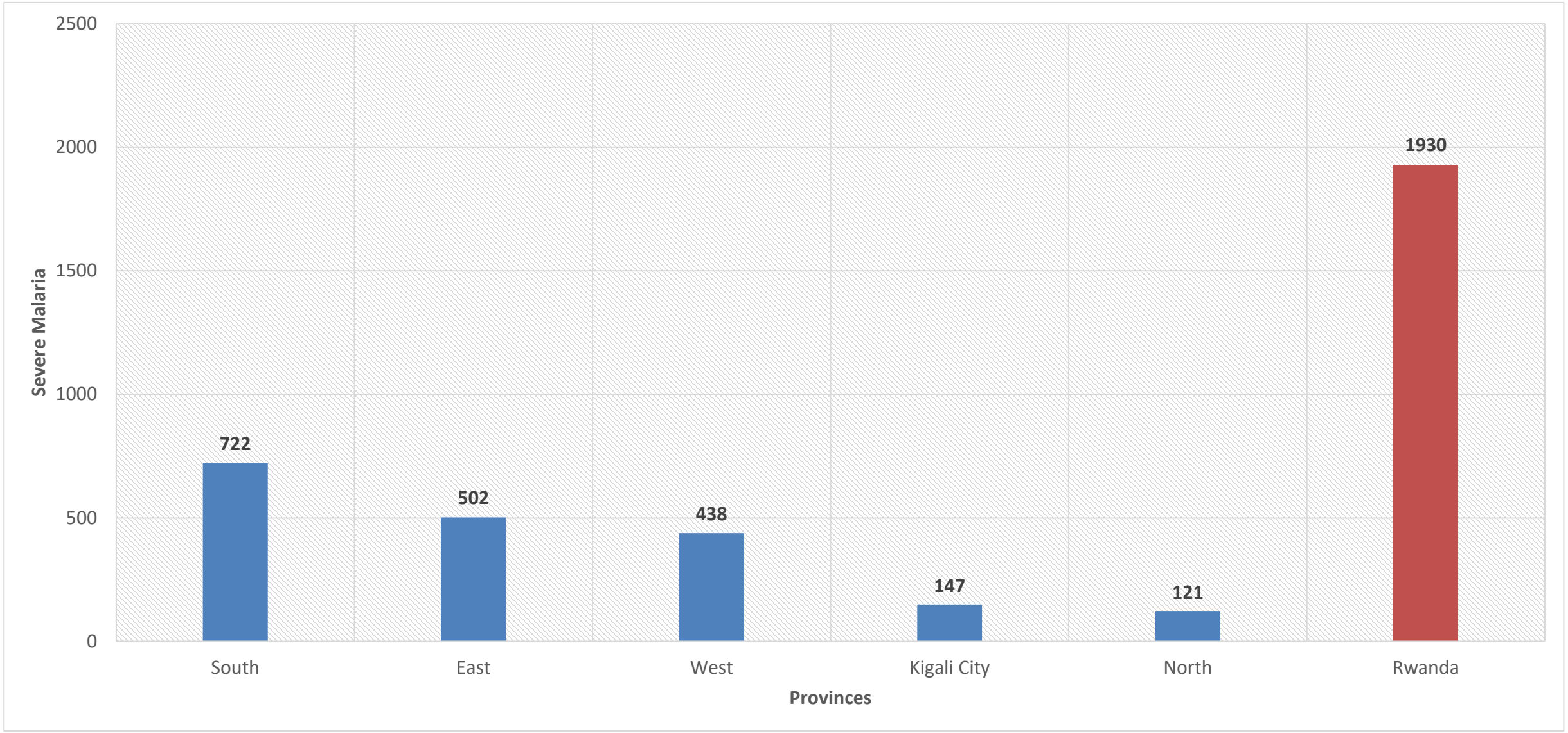

Malaria Related Deaths by Province, 2021

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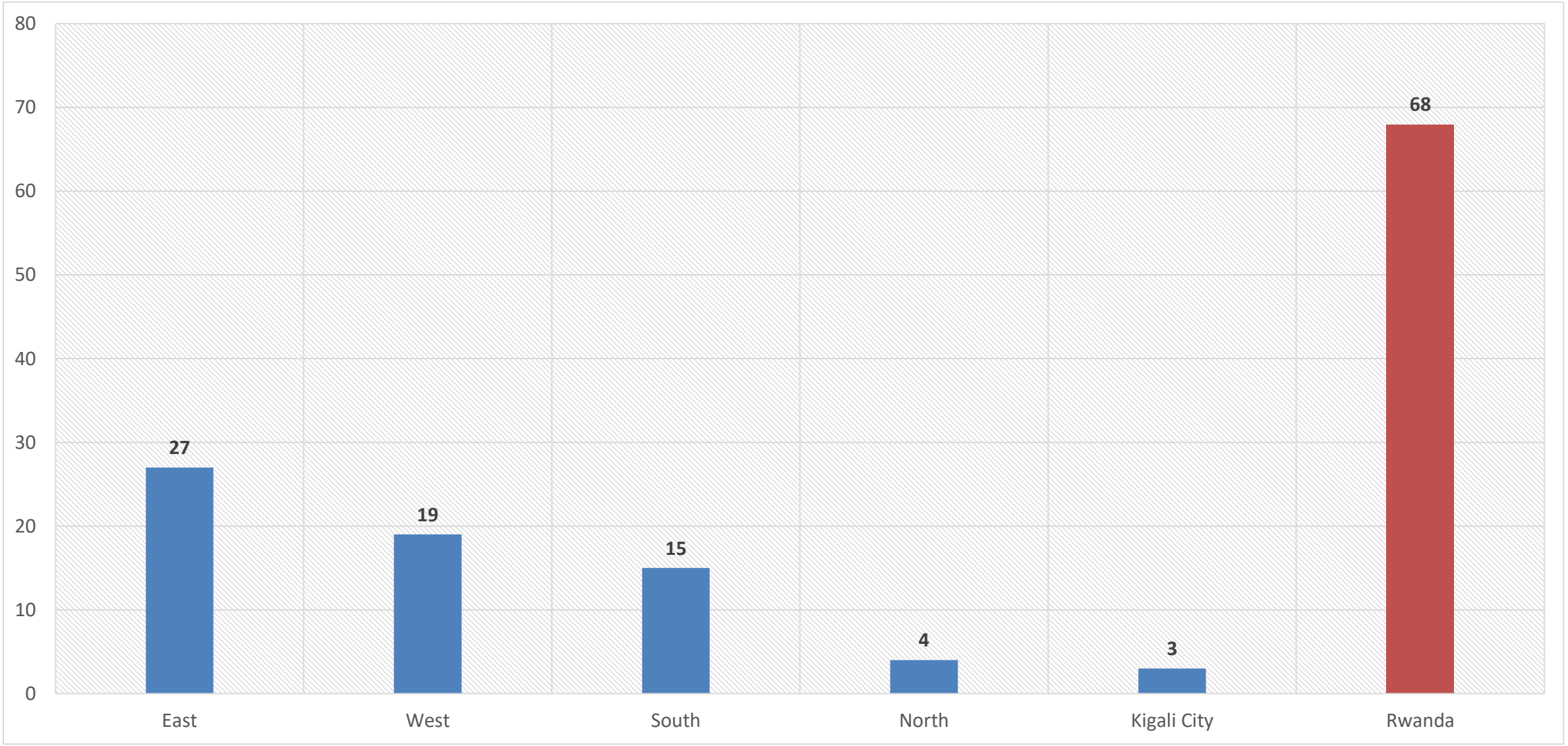

Malaria Incidence per Sector, 2016 vs 2021

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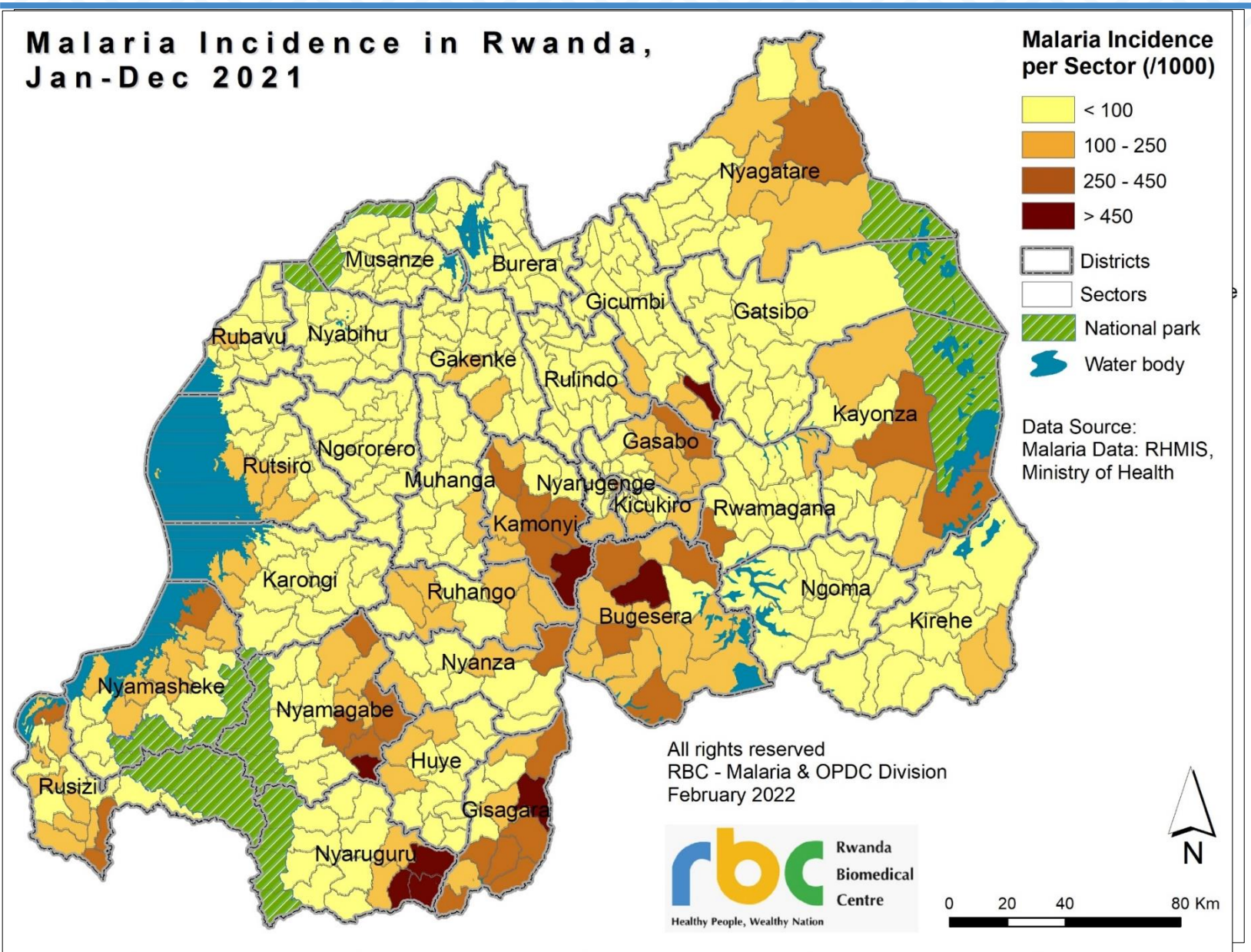

Are We Ready to Eliminate?

- Role of Strong Surveillance
- Stratification of Data (Cell or Village Level)
- Rapid District Response
- Use of Data at the Lowest Level
- Innovative Tools

Summary of Program Successes

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- **Drop in Malaria Burden from 2016 to 2021:**
  - Incidence from 408 to 86 per 1,000
  - Malaria cases from 4.6 M to 1.1M
  - Severe malaria cases from 18K to 2K
  - Deaths from 700 to 69
- **Innovations**
  - Multi-Sector Collaboration (MINAGRI, MINEDUC, MOE, MINALOC, Private Sector, Local NGOs,..)
  - Community Engagement in IVM (CHWs, Farmers, Mining Company Staff,..)
  - Drone-based Larviciding targeted areas
- **Data Use for Decision Making**
  - Malaria burden (Incidence): guiding the Central level for interventions deployment
  - Mosquito Resistance : Guiding the Central level for interventions deployment)
  - Scorecards: Guiding Local NGOs and HFs efforts

Key Malaria Program Challenges

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- **Funding Gaps and Sustainability of Interventions**
  - IRS in 12 Districts
  - Dependance on External Funding
- **Mosquito and Parasite Resistance**
  - Insecticides (LLINs and IRS)
  - AL
- **Capacity Building**
  - Staff
  - Lab Equipment
  - Molecular Biology
  - Quality Control Tests
  - Surveillance
- **Needs for New Interventions**
  - Lack of Operational Researches to inform design of new interventions
  - Addressing Residual Infection (Foci)
  - Community Based Surveillance and Response
- **Impact of COVID-19 on Products Unit Cost (LLINs, Insecticide, Bti)**
- **Non availability of Data at the Lowest Levels (Stratification and Individual Data)**

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Overview of the Rwanda Malaria Surveillance System – Including Community

Dr. Aimable MBITUYUMUREMYI
MOPD Division Manager
HDPC/MOPDD

Key Reporting Systems/Platforms for Malaria Related Data

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- HMIS
- SISCOM
- RapidSMS
- eLMIS
- RHAP

Key Surveillance Components

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- Routine Data Collection and Reporting (HMIS, SISCOM, RHAP)
- Real Time Notification through RapidSMS (Stock, Severe Malaria)
- Therapeutic Efficacy Study (TES)
- Health Facility Surveys
- Entomological Surveillance (Vectors, Insecticides)
- Meteo Sites

Malaria Program Surveillance Capacity

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- 12 Entomological Monitoring Sites
- 30 Insecticide Resistance Sites
- 4-5 Therapeutic Efficacy Study (TES) Sentinel Sites
- Experimental Huts
- Entomology Lab with Insectarium
- Meteo Sites

Quality Control and Entomo Monitoring Sentinel Sites

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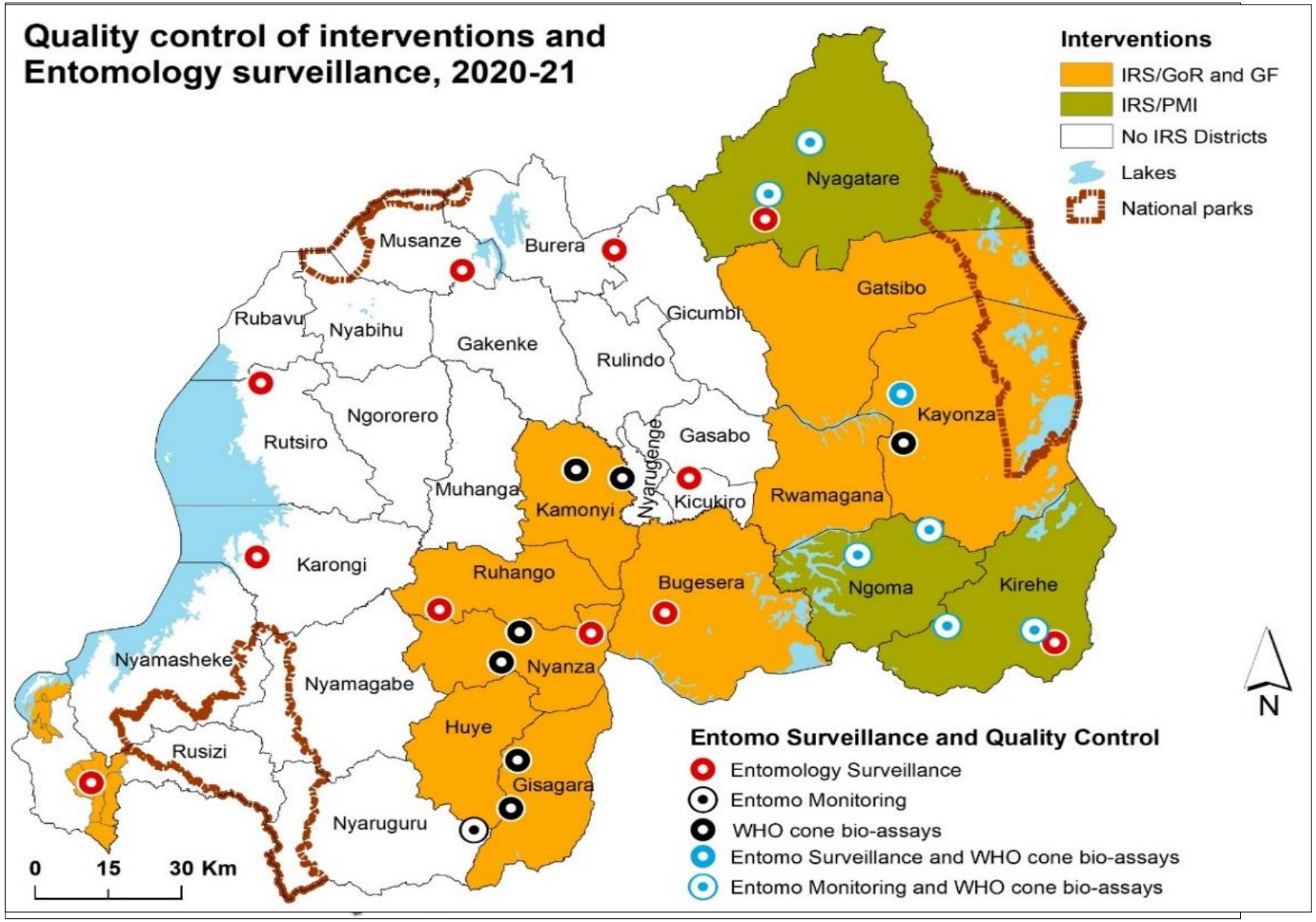

- LLINs Monitoring
- IRM
- Insecticide Rotation
- Bio-assay

Meteo Sites and Entomology Lab/Insectarium

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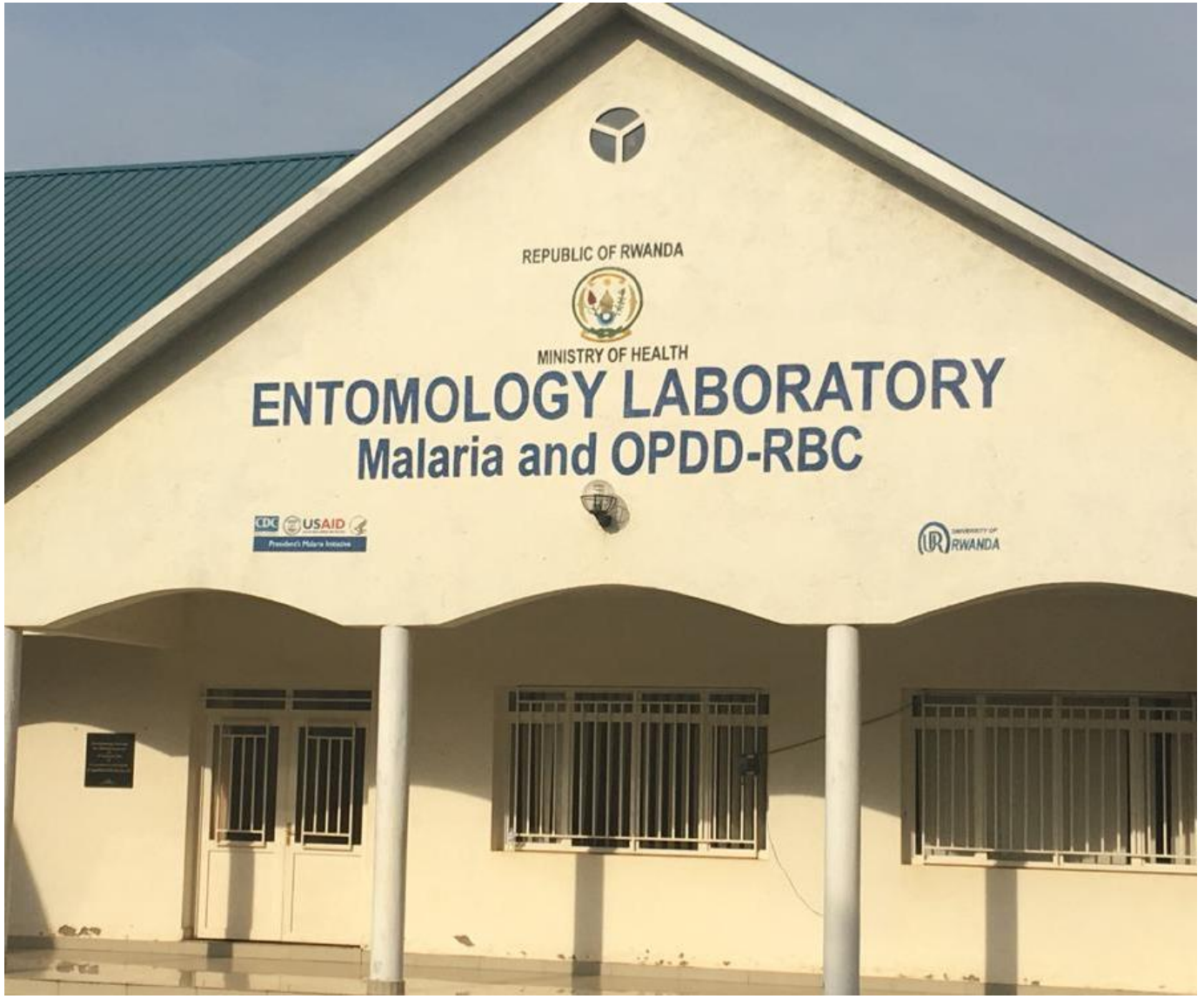

Guinea Pigs Raised for Daily Feeding of Mosquito

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Mosquitos Collected by CDC LT Waiting to Be Identified

MOPDD Vector Control Expert Analysing Mosquitos

Anti-Malaria Drugs Resistance Sites in Rwanda

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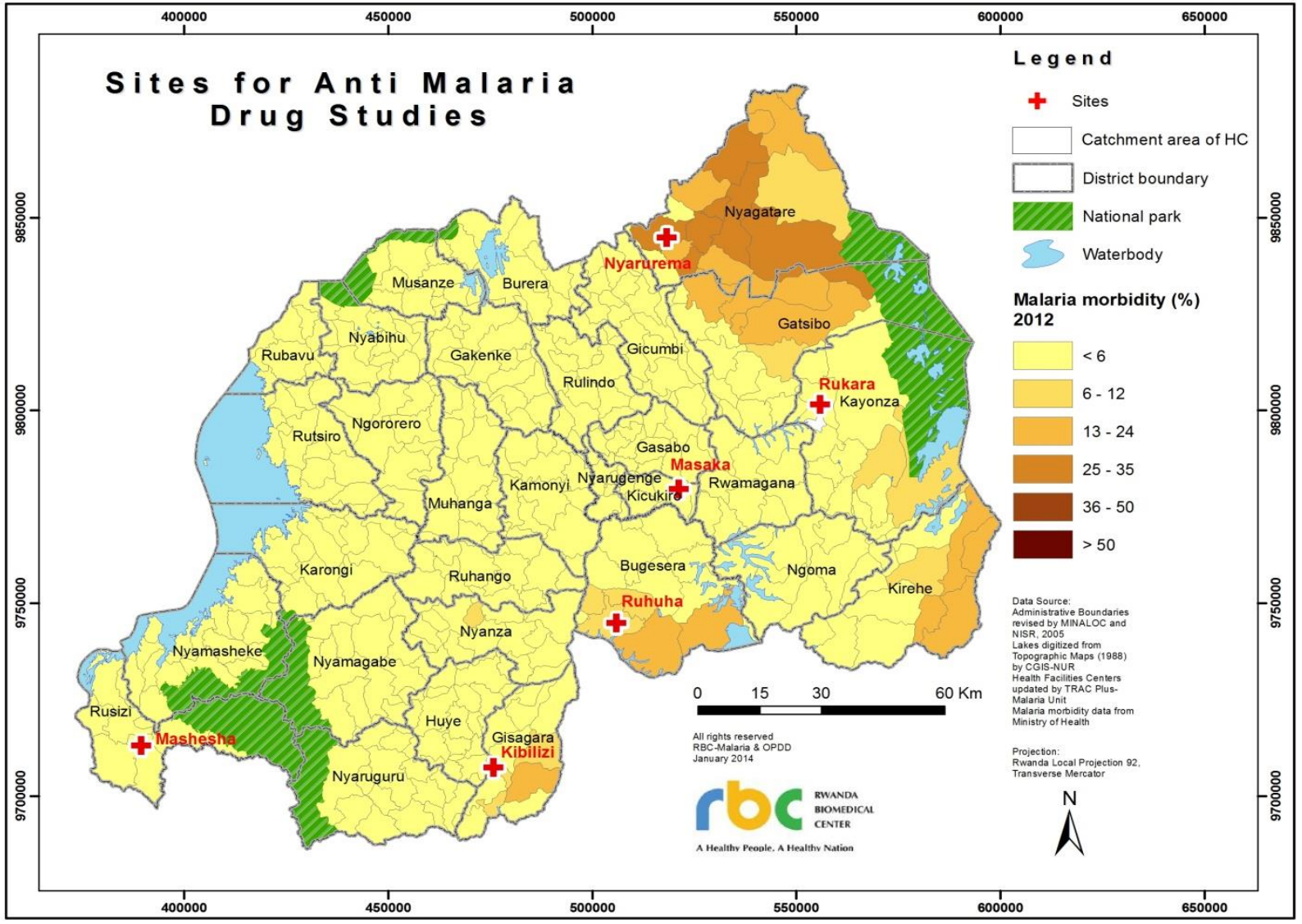

- First TES in 2003
- Artemisinin Combination Therapeutic (ACT)
- Now more drugs included

Community Based Surveillance

Community Based Surveillance

Peri-domestic Breeding Sites identification and education on appropriate management (NGOs, Communities)

Experimental Huts of RBC (Semi-field Evaluation), Ruhuha Sector-Bugesera

Community Based Surveillance

THANK YOU

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Data Use for Programmatic Decision Making

Experience from Rwanda

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MOPD Division Manager
HDPC/MOPDD

IRS and LLNIs Deployment Plan 2022-2024

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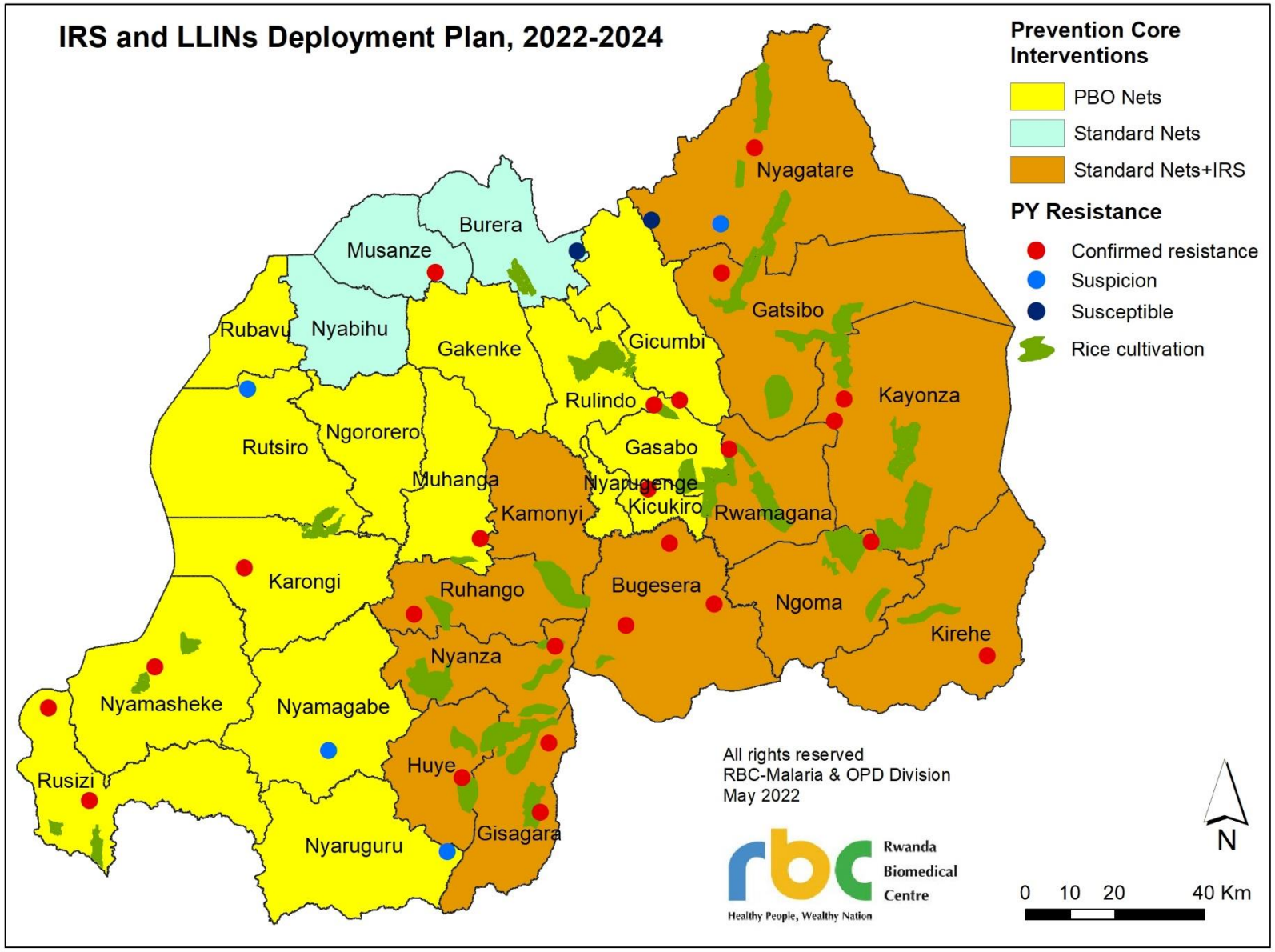

Deployment Principles

- Malaria Incidence
- Mosquito Resistance
- Deployment per Block
- Now shifting from G2 Nets to PBO Nets in 2022 (Cost and Impact)

Impact of PBO Nets on Malaria Cases April 2018-March* 2022

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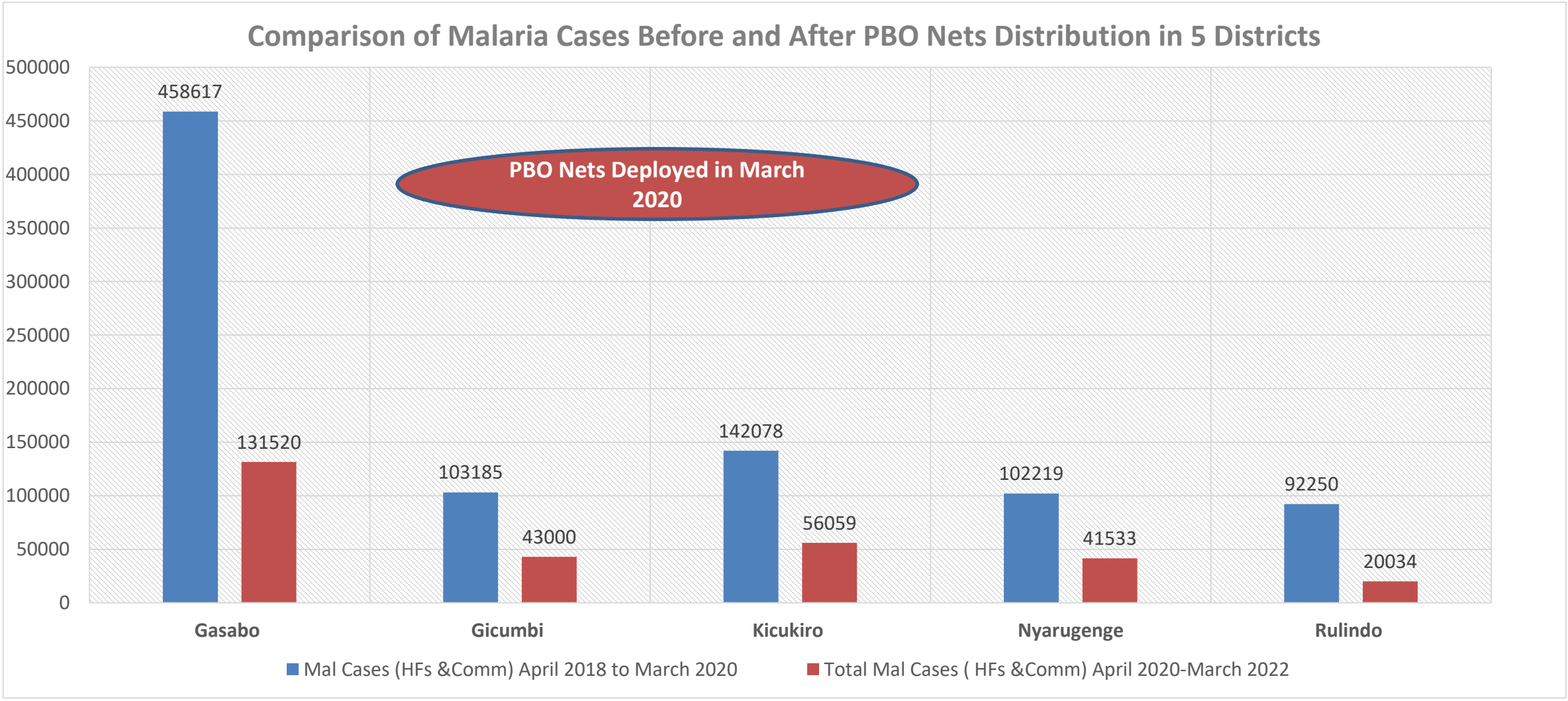

Impact of G2 Nets on Malaria Cases July 2018-June* 2022

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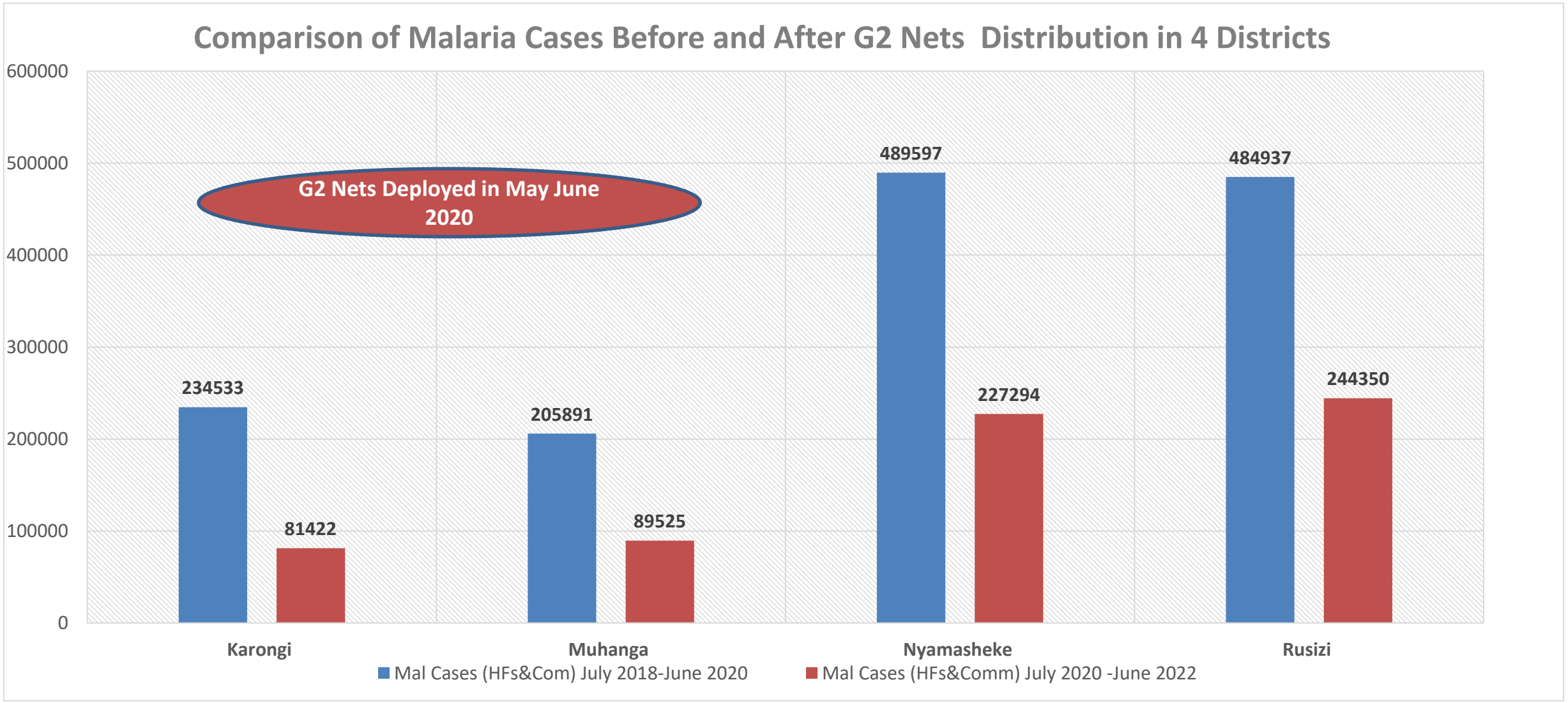

*** Data from April 2022 to June 2022 were estimated based on the average on previous months to have the same period of comparison**

Malaria Incidence per Sector, 2016 vs 2021-Hotspots?

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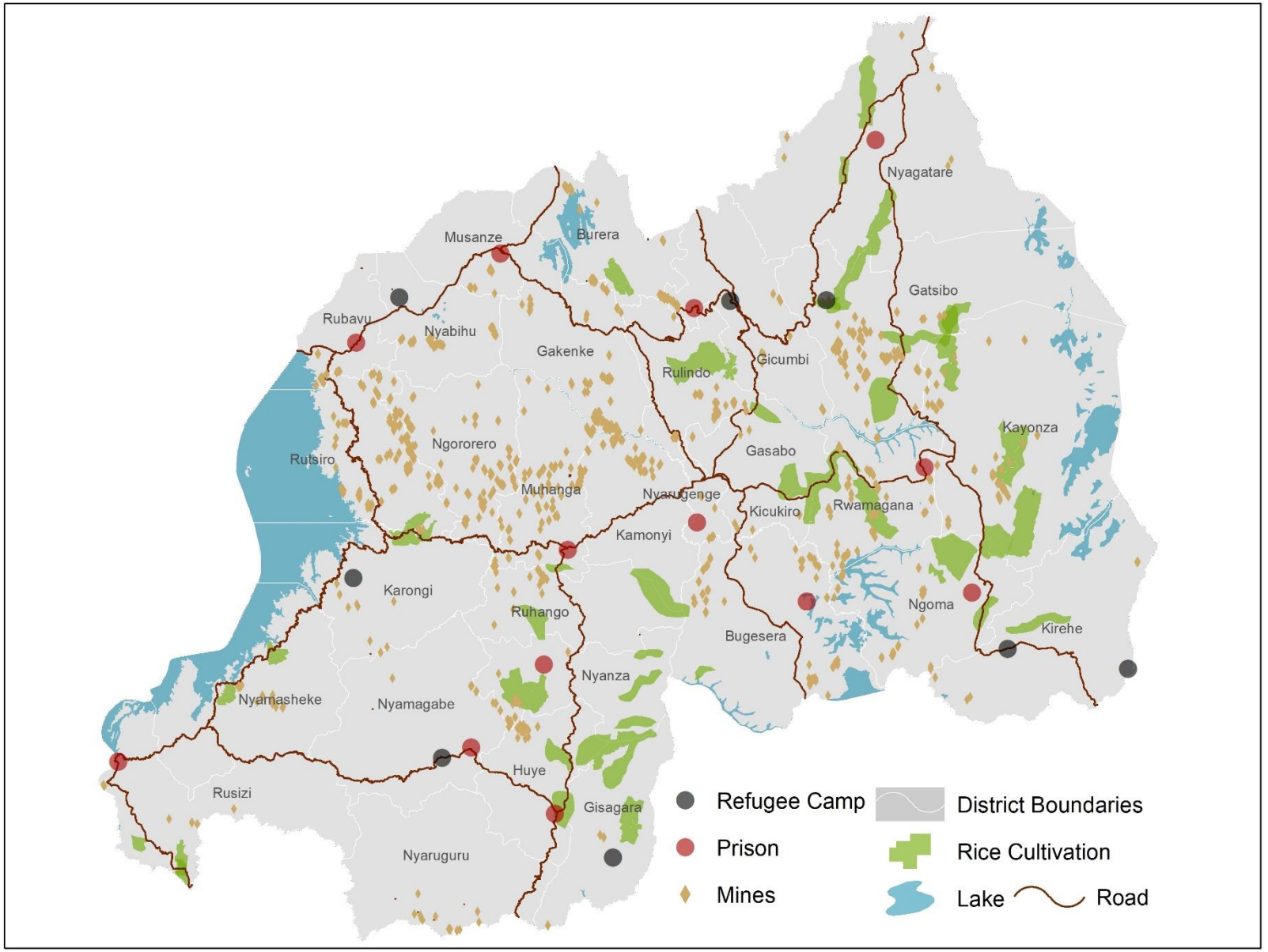

Are We Ready to Eliminate?

- Role of Strong Surveillance
- Stratification of Data (Cell or Village Level)
- Rapid District Response
- Use of Data at the Lowest Level
- Innovative Tools
- Why Malaria Hotspots
  - Which groups
  - Which interventions
  - Local NGOs

Summary of Key Areas of Data Use for Decision Making

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- Malaria Burden to deploy intervention
- Data use for resource mobilization
- Mosquito Resistance to deploy IRS, PBO Nets, IG2 Nets or Standard Nets
- Mapping water bodies for Larviciding
- Use of Dashboards and Scorecards from HMIS or RHAP to guide Supervisions
  - Central level
  - Local NGOs
- Bio-assays to guide IRS Products Selection and Timing/Frequency
- Etc.

Example: Rwanda Scorecard per Province-Q4 2020

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Target achieved / on track

Progress, but more effort required

Not on track

N/A

No data

▲ Increase from last period ▼ Decrease from last period

	Proportion (%) of malaria cases_new	Coverage (%) of LLINs in EPI_new	Malaria Total OPD Cases at Health Facility_New	Coverage (%) of LLINs in ANC_new	total severe malaria_2020	Malaria_total_ deaths_2020	Number of schistosomiasis cases	number snake bites cases
Rwanda	5.8	▲ 80.08	▲ 245437	▲ 74	▲ 896	▼ 28	215	▲ 743
East	5.1	▲ 68.77	▲ 54925	▲ 71.7	▲ 175	8	▼ 17	▲ 206
Kigali City	2.6	▲ 36.15	▲ 14152	36.3	▲ 51	1	4	▲ 96
North	0.72	84.4	▲ 5009	89.2	21	5	27	▲ 157
South	▲ 12.9	▲ 99.38	▲ 143347	▲ 89	▲ 450	10	▲ 35	▲ 179
West	3.3	▲ 97.95	▼ 28004	▲ 80.9	▼ 199	▼ 4	132	▲ 105

Example: Rwanda Scorecard per District-Q4 2020

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3/1/2021

Scorecard

Target achieved / on track | Progress, but more effort required | Not on track | N/A | No data

▲ Increase from last period ▼ Decrease from last period

	Proportion (%) of malaria cases_new	Coverage (%) of LLINs in EPI_new	Malaria Total OPD Cases at Health Facility_New	Coverage (%) of LLINs in ANC_new	total severe malaria_2020	Malaria_total_ deaths_2020	Number of schistosomiasis cases	number snake bites cases
Bugesera District	▲ 14.8	60.79	▲ 27531	61.9	▲ 122	6	▼ 9	▲ 54
Gatsibo District	1.3	▲ 43.73	▲ 2040	▲ 59.2	1	0	3	▼ 3
Kayonza District	9.9	▲ 59.02	▲ 11844	▲ 57.8	▼ 19	0	0	▲ 25
Kirehe District	1.6	▲ 82.59	▼ 2432	86.4	▼ 13	0	0	▲ 31
Ngoma District	0.51	89.48	▼ 663	99.2	8	0	1	▲ 72
Nyagatare District	1.2	▲ 81.15	▼ 2069	▲ 77.2	2	1	4	▼ 11
Rwamagana District	5.8	▲ 68.37	▲ 8344	▲ 64.7	10	1	0	10

THANK YOU