

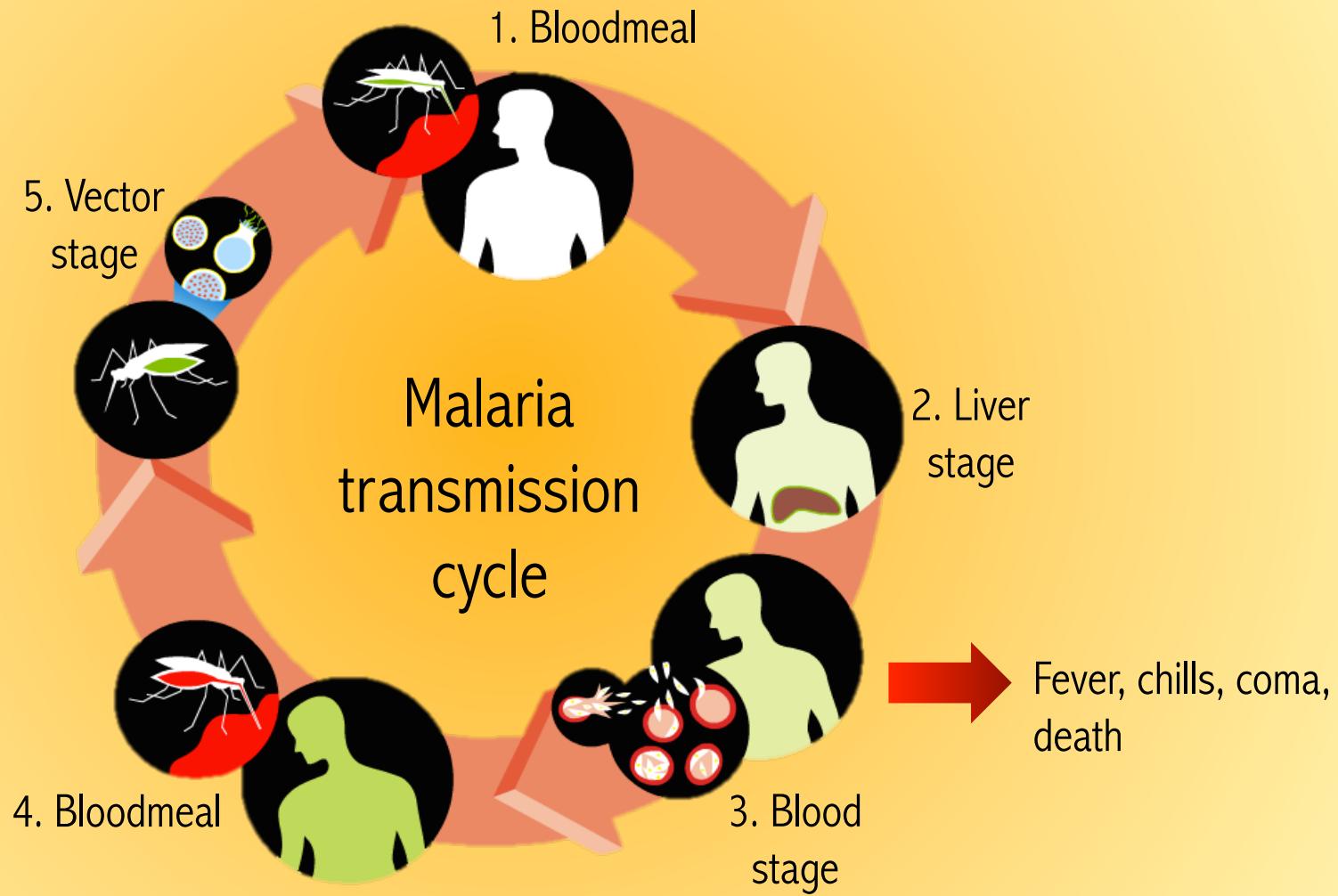
Evaluation of outdoor insecticide-impregnated barriers: a new intervention for malaria control in the Solomon Islands



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University of Notre Dame
MENTOR: Neil Lobo

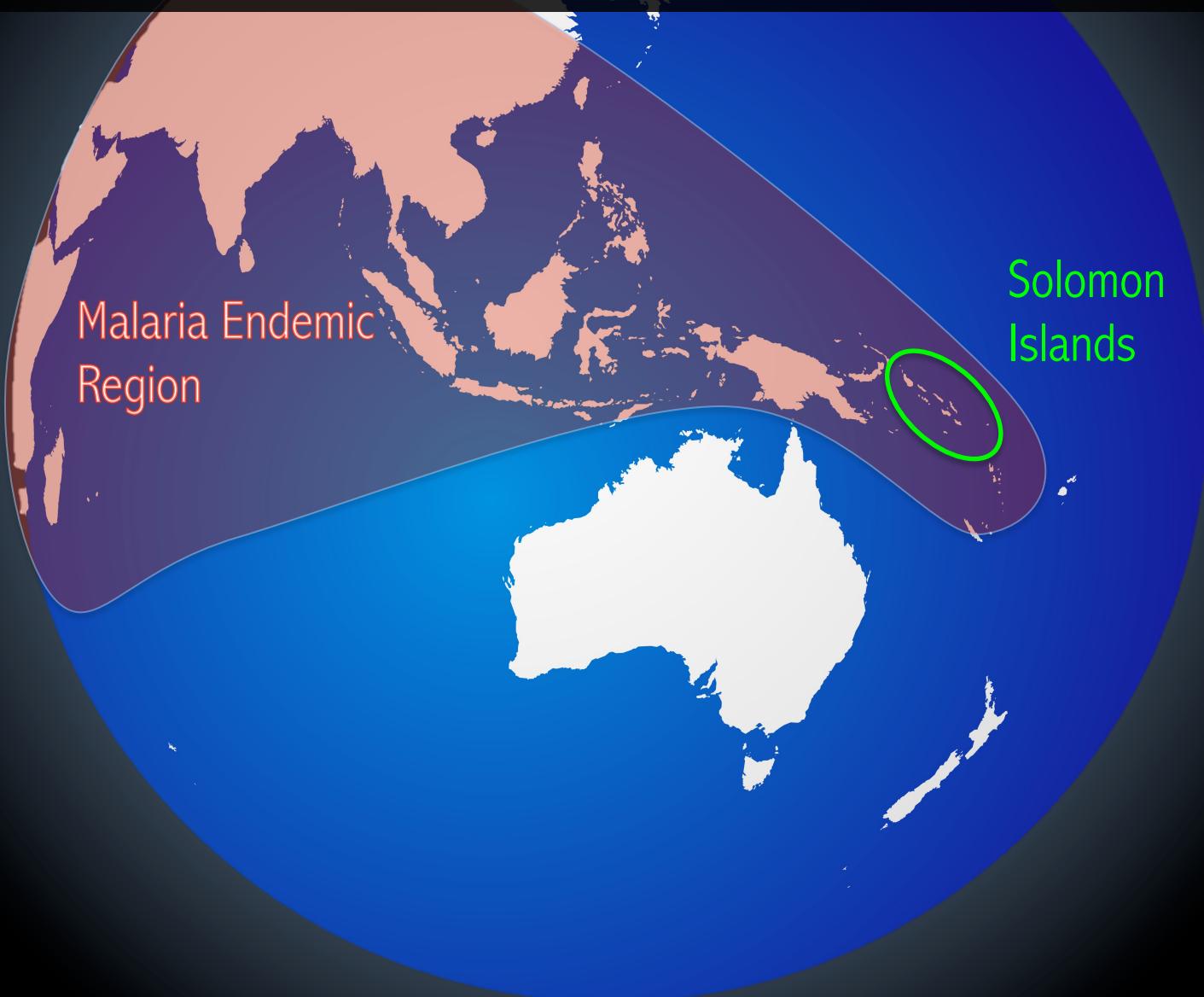
Photograph by Neil Lobo

MALARIA



MALARIA

in the Solomon Islands

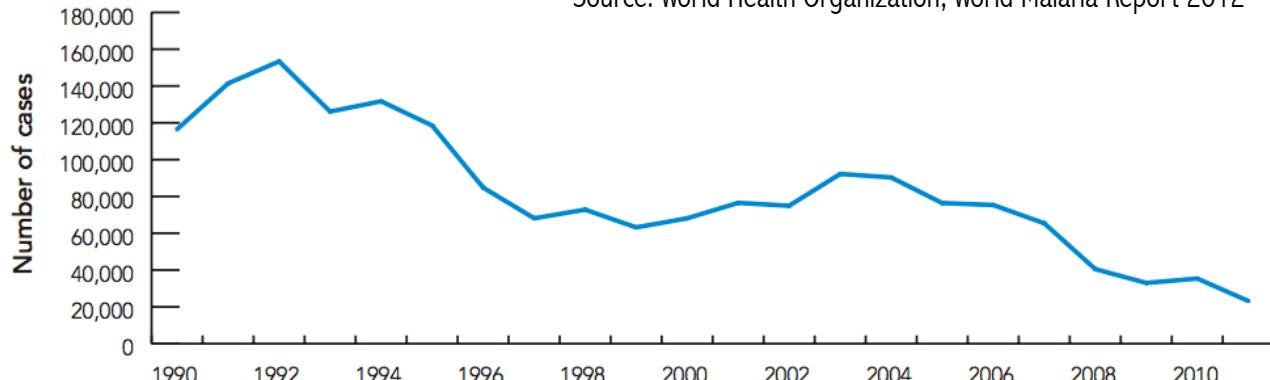


MALARIA

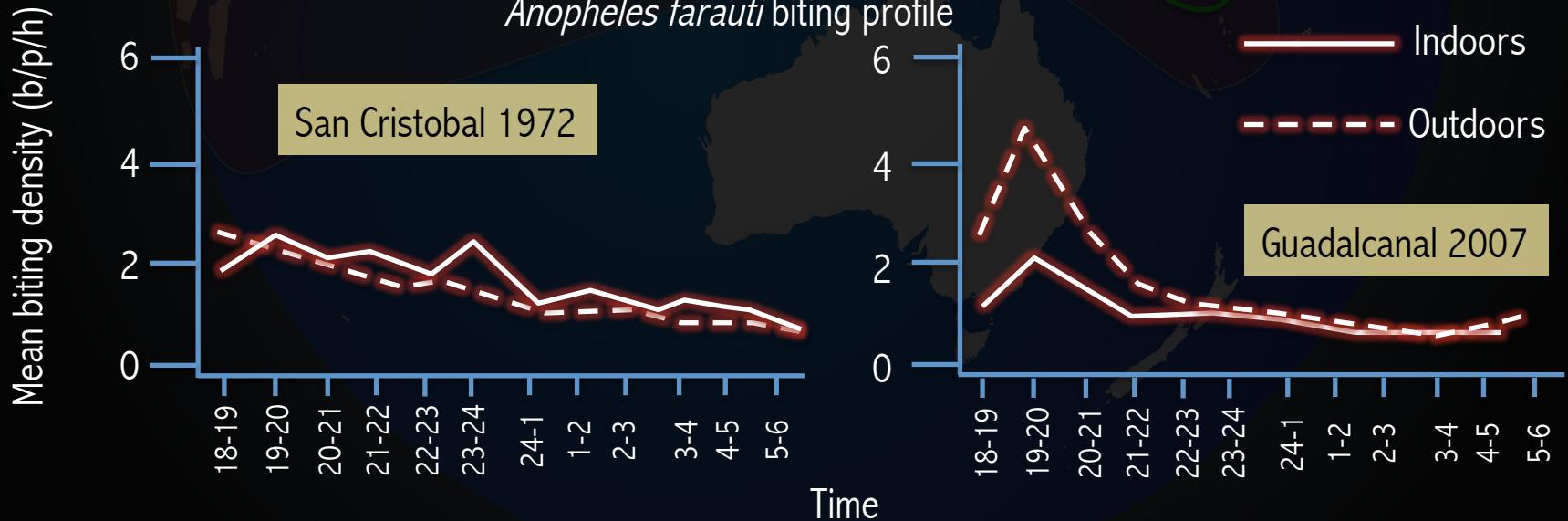
in the Solomon Islands

Reported Malaria Cases

Source: World Health Organization, World Malaria Report 2012



Anopheles farauti biting profile



Source: Taylor (1975) and Malaria Transmission Consortium

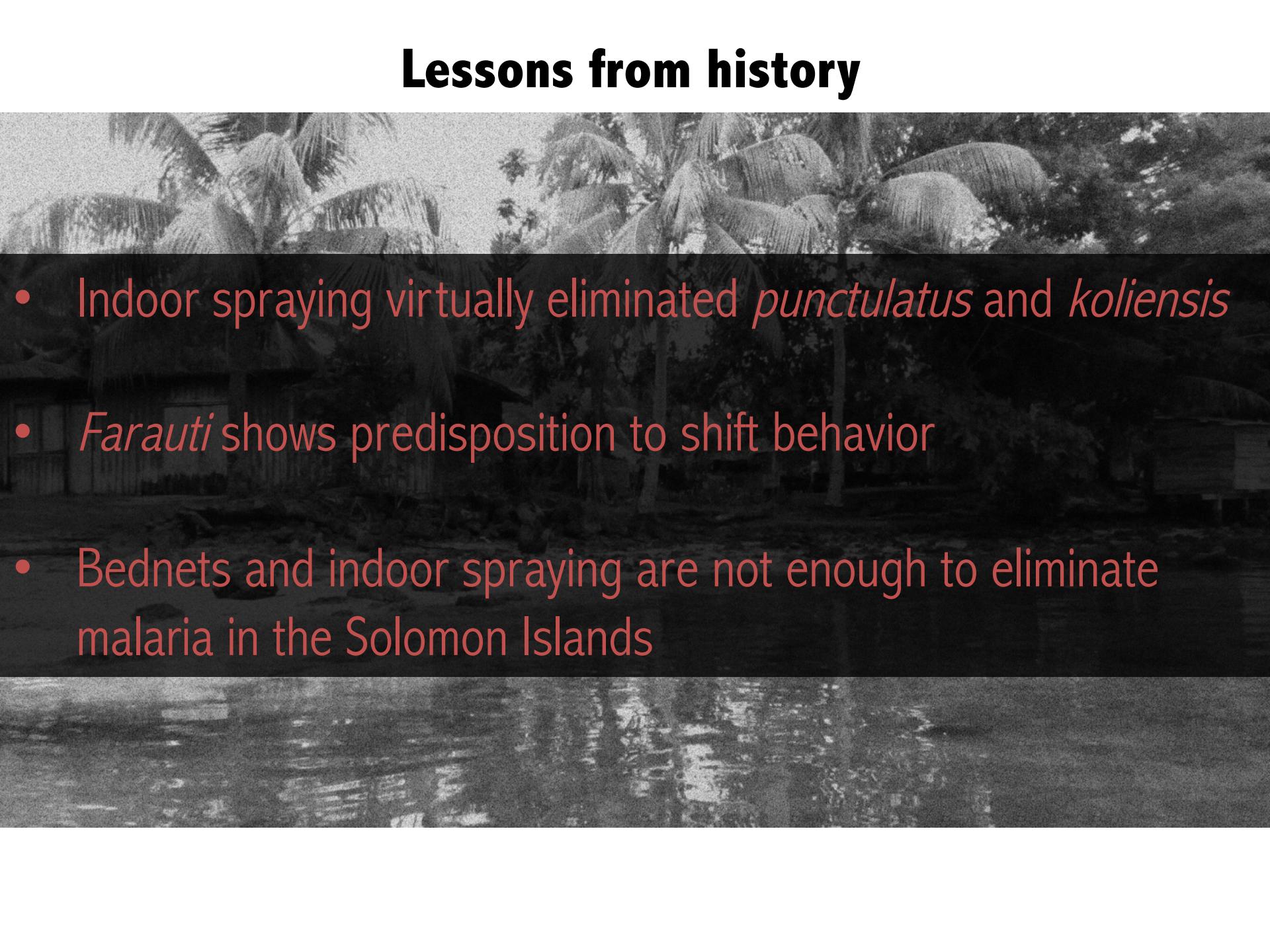
Current methods of vector control

1. Insecticide-treated bednets
2. Indoor residual spraying



Modified from illustration by Neil Lobo

Lessons from history

A black and white photograph showing a tropical scene. In the foreground, there's a dark, textured surface, possibly a paved area or a large rock. Behind it, several palm trees stand tall, their fronds reaching upwards. Further back, there are rolling hills or mountains covered in dense vegetation. The sky is clear and blue. The overall atmosphere is one of a natural, undisturbed environment.

- Indoor spraying virtually eliminated *punctulatus* and *koliensis*
- *Farauti* shows predisposition to shift behavior
- Bednets and indoor spraying are not enough to eliminate malaria in the Solomon Islands

RESEARCH GOAL

Design and evaluate an intervention to reduce malaria in the Solomon Islands while avoiding the limitations of traditional vector control.

Our intervention:

Insecticide-impregnated barriers

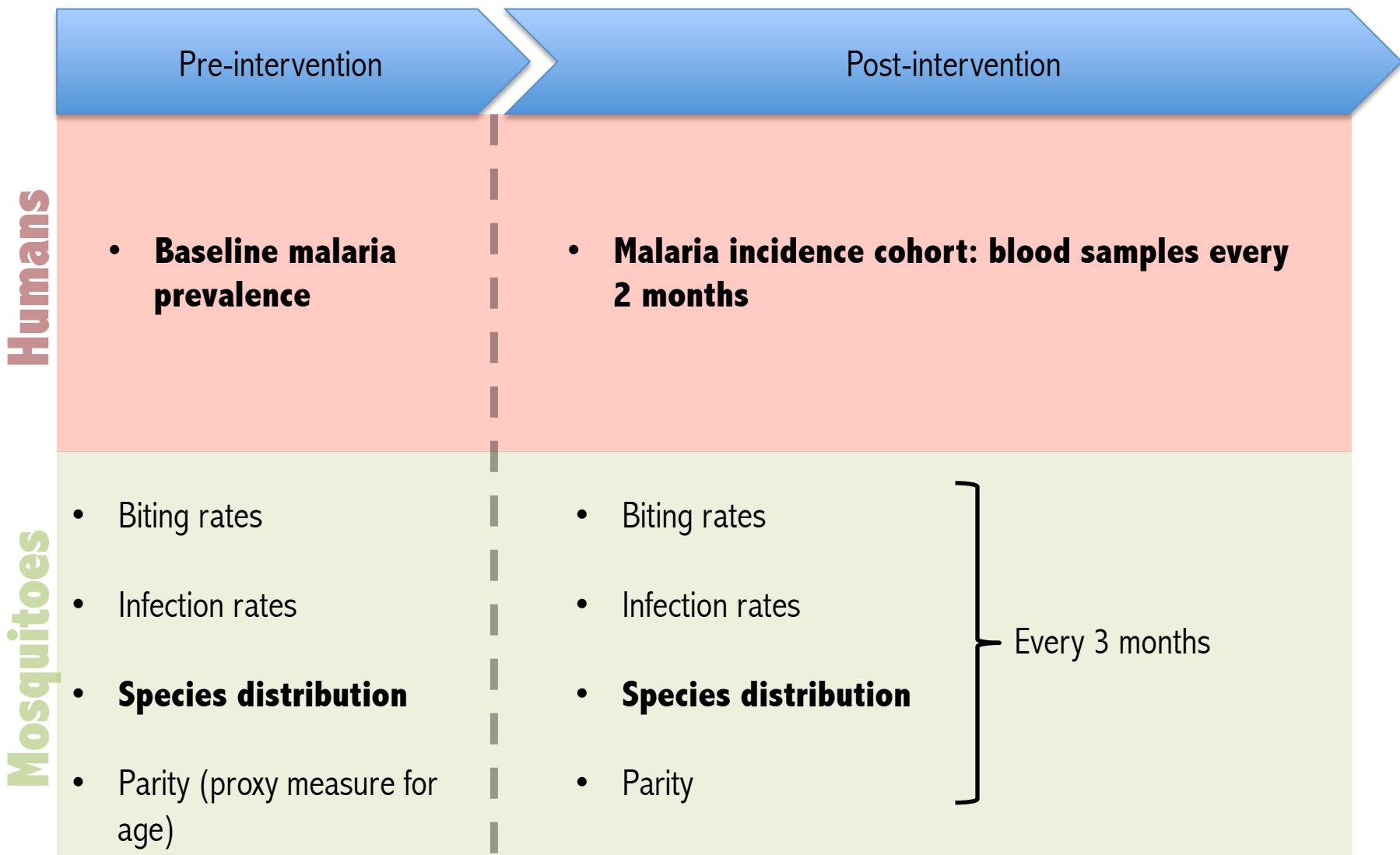


Edge of village

IIB

Breeding site

Our study



Field Work





Blood collection for baseline prevalence

Photograph by Neil Lobo



Recruiting incidence cohort

Photograph by Tom Burkot



Human landing catches

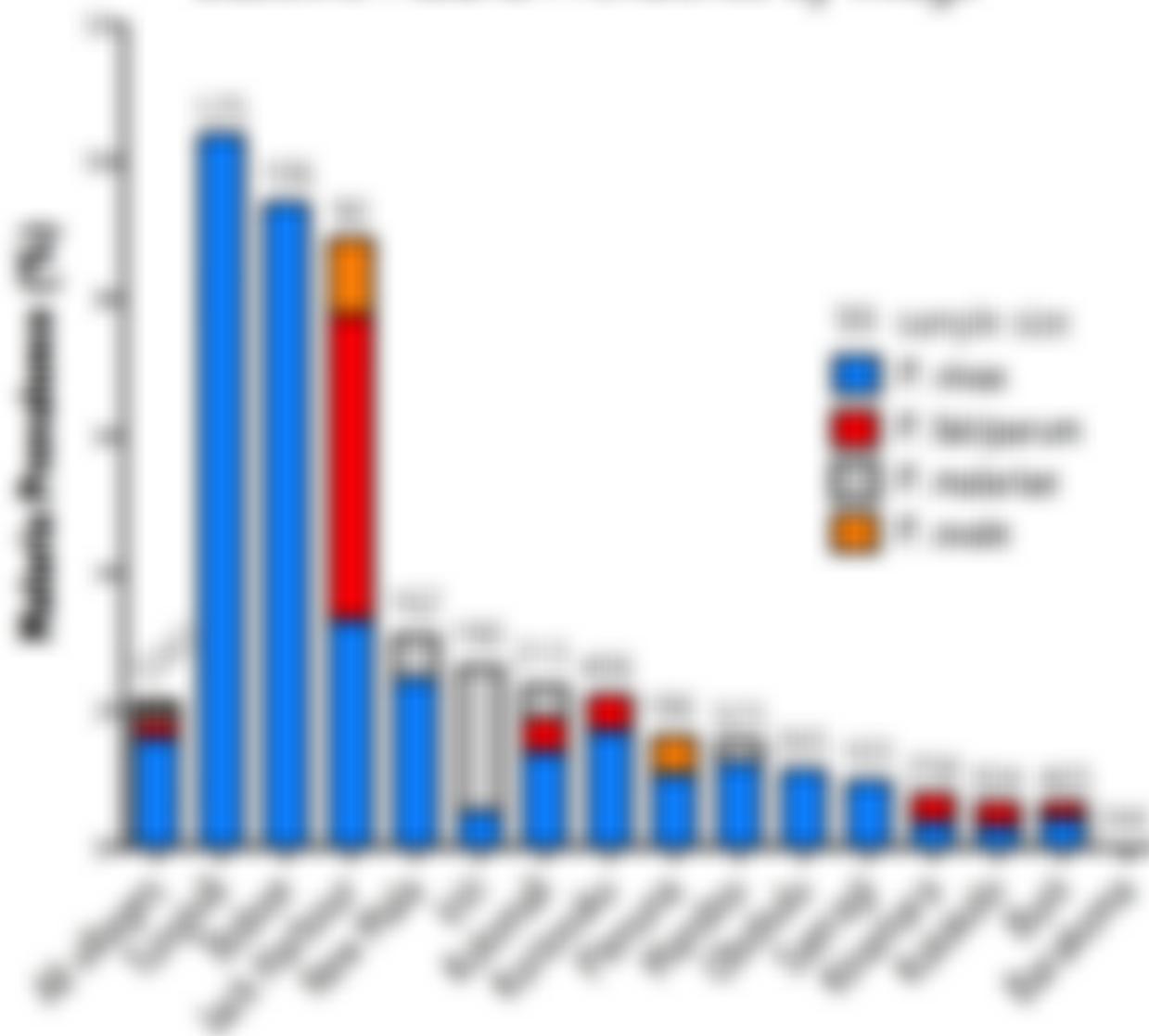
Photograph by Danyal Odabassi

Constructing insecticide barriers



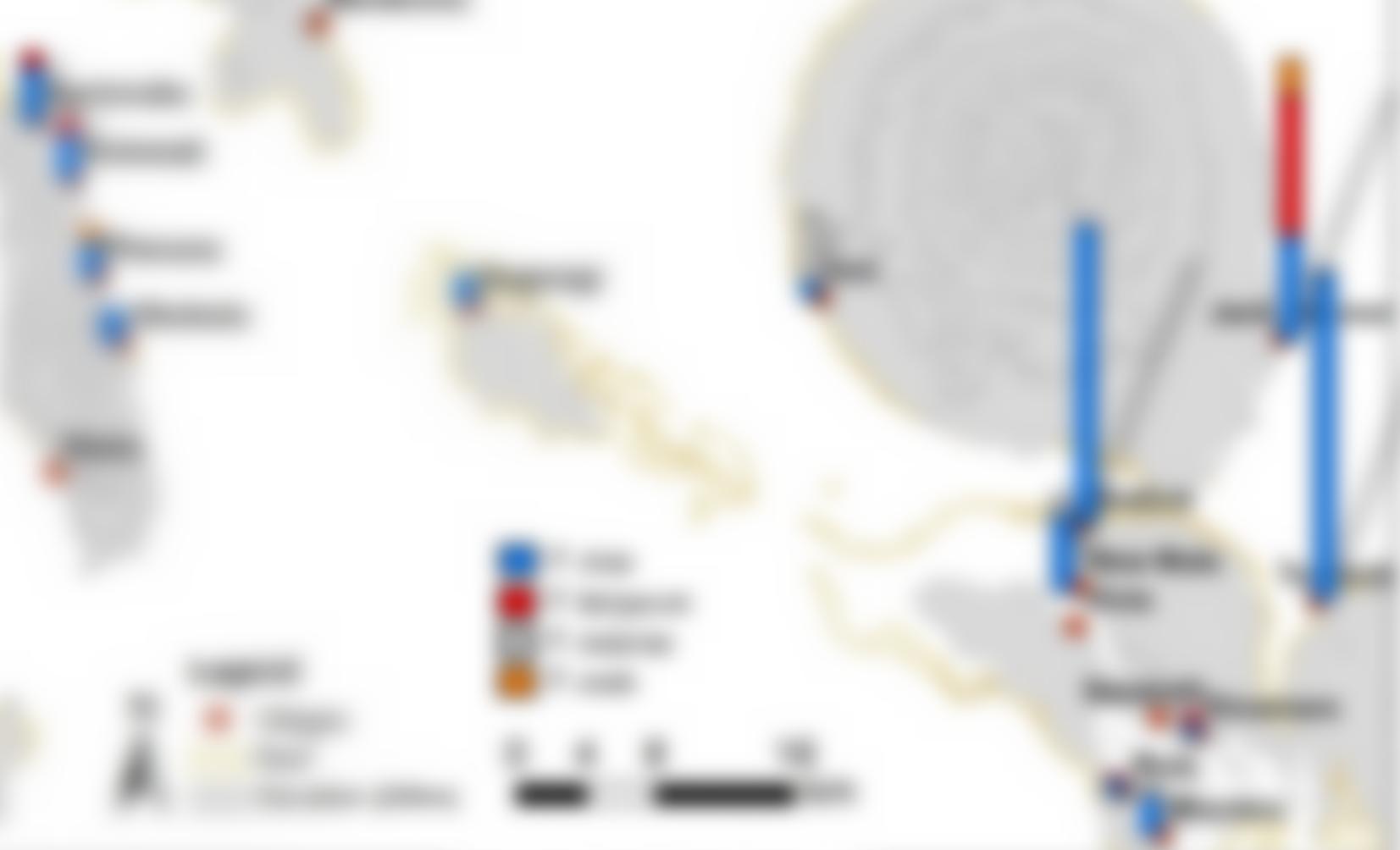
Results:

Smoker Patterns: Proportion by Village



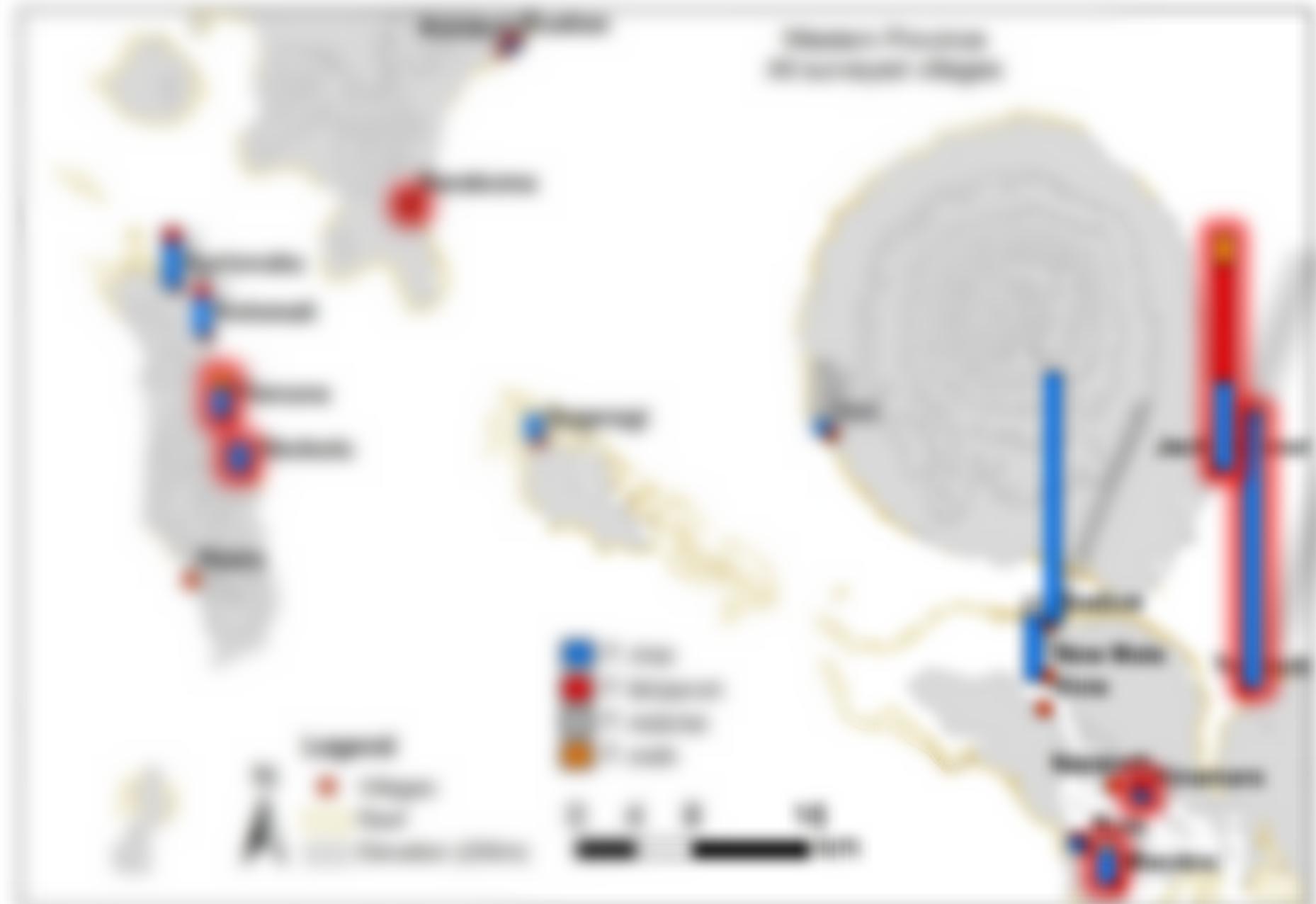
Results Summary of results presented

Summary



Top right corner

Top right corner



Results:

Mosquito collections

- Collected in Human Landing Catches
- Identified by ITS2 ribosomal gene sequence

Category	Sub-Category	Item	Description
Electronics	Smartphones	iPhone 12 Pro	High-end smartphone with 5G support and advanced camera system.
Electronics	Smartphones	Samsung Galaxy S21	Competitor to iPhone 12 Pro, featuring a powerful processor and a sleek design.
Electronics	Smartphones	Google Pixel 6	Mid-range smartphone with a focus on AI photography and a long battery life.
Electronics	Smartphones	Huawei Mate 40 Pro	Flagship smartphone from Huawei, known for its excellent camera performance.
Electronics	Laptops	Dell XPS 15	High-performance laptop with a large screen and a powerful processor.
Electronics	Laptops	HP Spectre x360	Thin and light laptop with a convertible screen and a long battery life.
Electronics	Laptops	MacBook Pro	Iconic laptop from Apple, known for its sleek design and performance.
Electronics	Laptops	Acer Swift 3	Affordable laptop with a slim profile and good battery life.
Electronics	Tablets	Apple iPad Pro	Powerful tablet with a high-resolution screen and a range of accessories.
Electronics	Tablets	Samsung Galaxy Tab S7+	Competitor to iPad Pro, offering a similar feature set at a lower price point.
Electronics	Tablets	Microsoft Surface Pro 7	Tablet with a built-in keyboard cover and a range of productivity apps.
Electronics	Tablets	Lenovo Tab M10 FHD+	Entry-level tablet with a large screen and basic functionality.
Peripherals	Keyboards	Razer BlackWidow V3 Pro	RGB背光机械键盘，提供舒适的打字体验。
Peripherals	Keyboards	Logitech G915 TKL	RGB背光机械键盘，紧凑型设计，适合游戏玩家。
Peripherals	Mice	Razer DeathAdder V2 Pro	高性能光学鼠标，提供精准的定位和舒适的握持感。
Peripherals	Mice	SteelSeries Rival 650	RGB背光光学鼠标，适用于日常办公和游戏。
Peripherals	Monitors	Dell S2721QS	4K分辨率显示器，支持G-Sync，适合图形设计和游戏。
Peripherals	Monitors	ASUS ROG Strix XG27AQ	144Hz刷新率显示器，支持G-Sync，适合电竞游戏。
Peripherals	Speakers	JBL Quantum 2.0	便携式扬声器，提供清晰的音质和良好的低音表现。
Peripherals	Speakers	Harman Kardon Esquire 2	时尚便携式扬声器，适合户外使用。
Peripherals	Headphones	Beats Studio 3	无线降噪耳机，提供舒适的佩戴体验和清晰的通话质量。
Peripherals	Headphones	Logitech G433	7.1声道环绕声耳机，适合游戏爱好者。

Conclusions

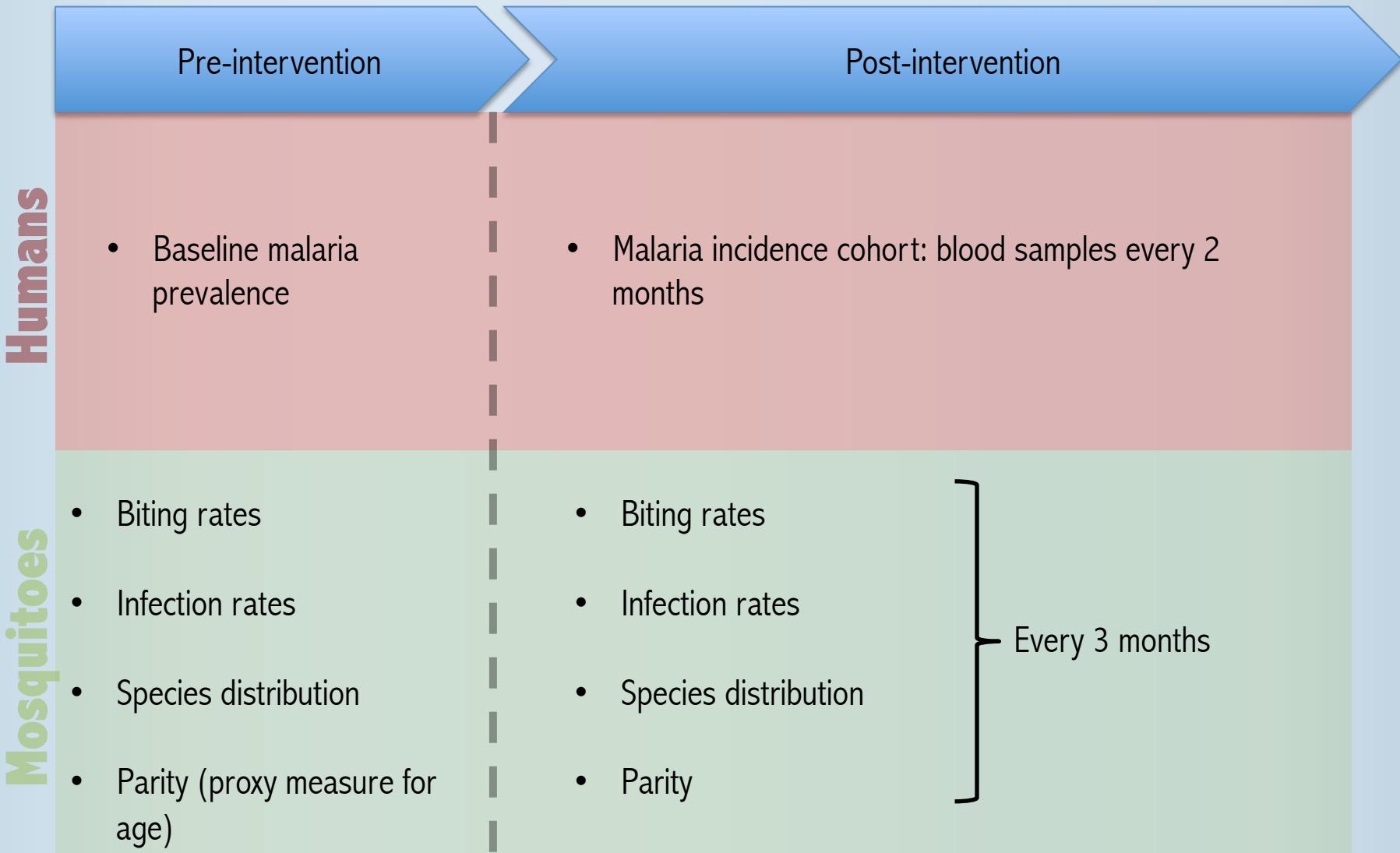
Positive

- More countries are less but present in Boston Process
- A group of new members has been formed
- The need for the group to make stronger cooperation between old and new members

Negative

- A diversity of approaches. Some will be only formal while others are more informal or less formal, which has higher rates of participation and more of cooperation

Future Work





ND

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Victoria Makuru
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Eck Institute for Global Health
Michelle Whaley

Dominic Chaloner
Biology REU Program
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Solomon Islands Ministry of Health
Hedrick Reuben

Hugo Bugoro

Field team

Oscar, Spencer, Halo, George, Leni, Colson

Ento team

Bob, Allen, Lesli, Hata, Edi

Questions?

