

# SORA Malaria Control

Anti-Malaria Infrastructure in Africa  
with Fixed-wing Drone and AI

固定翼ドローンとAIを活用したアフリカにおけるマラリア対策

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# About SORA Technology



## Mission: Transform People's Way of Life through "SORA" (=the Sky in Japanese)

As One of Japanese Private Representatives for Global Health

### Welco Lab Initiative Supported by BMGF Japan

SORA Technology

2022.04.30

Realize UHC by establishing drone infrastructure for public health and medical care

SHARE



<https://welcolab.org/en/commitments/detail/44>



*"Bill Gates, Evaluated Japanese Start-up that Aims for Eradication of Malaria with Drones as "Cool Example""*

ビル・ゲイツ、ドローンでマラリア撲滅を目指す日本のベンチャーに「カッコいい事例」 4年ぶり来日で「世界の健康」訴え

2022年4月30日 19時00分

共有

GreenIQ導入人口「累計」突破、API「フロント」の実現から学ぶ

アジアのデジタルトランスフォーメーションの加速を促す

4年ぶりに来日した米Microsoft創業者のビル・ゲイツ氏は8月19日、日本が主催する「TICAD6」（アフリカ開発会議）に向けたプレイベントの中で、豊田通商やNECなど国内11社から取り組みの紹介を受けた。新舞臺実演を続けるビル・ゲイツ氏は各企業の取り組みに賛同するとともに、「グローバルヘルス」（健康的な生活の世界的な実現）の重要性を訴えた。



# What is SORA Malaria Control?

## Drone X AI Approach to Combat Malaria by Highly Efficient Detection of High-Risk Breeding Sites of Mosquito Larvae

Three vector controls recommended by World Health Organization

Long-Lasting Insecticide Nets



(Wikipedia Commons)

Indoor Residual Spraying



(Wikipedia Commons)

Larval Source Management (LSM)



(<https://citinewsroom.com/2020/10/>)

# What are Barriers against LSM?

## Inefficiency of Detection and Treatment of Waterbodies Hinders LSM Implementation in SSA

- Small waterbodies for malaria mosquito are difficult to detect by satellite data
- Spray larvicides even for larvae has not been occurred

### Preference Difference



Mosquito A:  
Prefer to breed in  
permanent  
waterbodies

*Anopheles funestus*

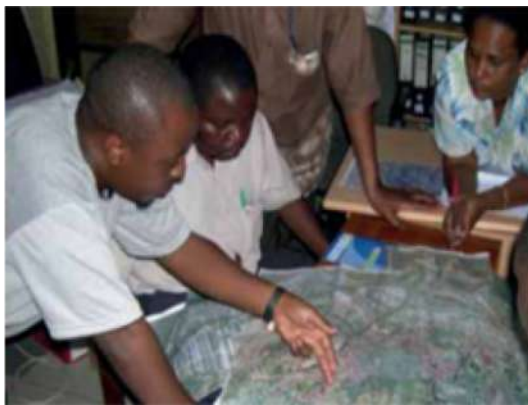
Strictly Confidential



**Mosquito B:**  
**Prefer transient,**  
**smaller pools**

*Anopheles gambiae*  
*Anopheles arabiensis*

### Human-based Survey



[https://apps.who.int/iris/bitstream/handle/10665/85379/9789241505604\\_eng.pdf](https://apps.who.int/iris/bitstream/handle/10665/85379/9789241505604_eng.pdf)

### Manual Larvae Checking



<https://www.montcopa.org/563/Mosquito-Surveillance>

# Solution by SORA Malaria Control (1)

- Provide **highly cost-effective whole package of LSM** from detection of waterbodies to treatment mainly by spraying larvicide
- Reduce total costs in **40%** compared with existing LSM program in SSA

Detect waterbodies

Classify waterbodies

Treat waterbodies

AS-IS  
(Issue)



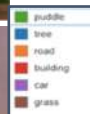
Human-based  
Manual Search

All the waterbodies are  
regarded as having risk

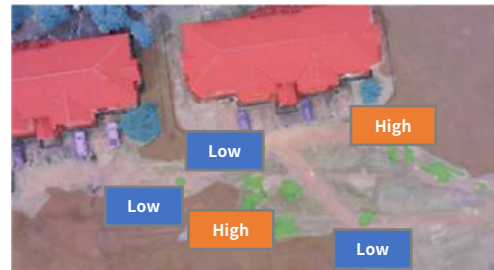
All the waterbodies  
are treated

Solution

Efficient search by drones  
and land classification AI



Targeting “high-risk” larval habitats  
by risk classification AI



Smartphone-based guiding  
only for high-risk breeding sites





# Solution by SORA Malaria Control (2)

- Provide **high-resolution larval habitat data and surrounding environments**
- Contribute to predict **spatio-temporal risk against mosquito-borne diseases** as well as efficient entomological survey of mosquito

Detect waterbodies

Classify waterbodies

AS-IS  
(Issue)



Human-based  
Manual Search

All the waterbodies are  
regarded as having risk

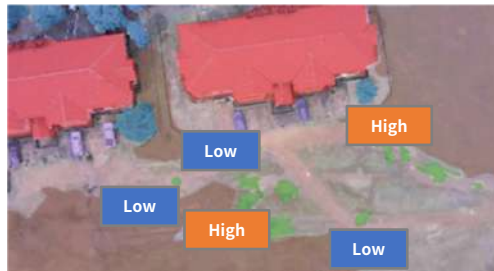
Solution

TO-BE  
(Drone  
× AI)

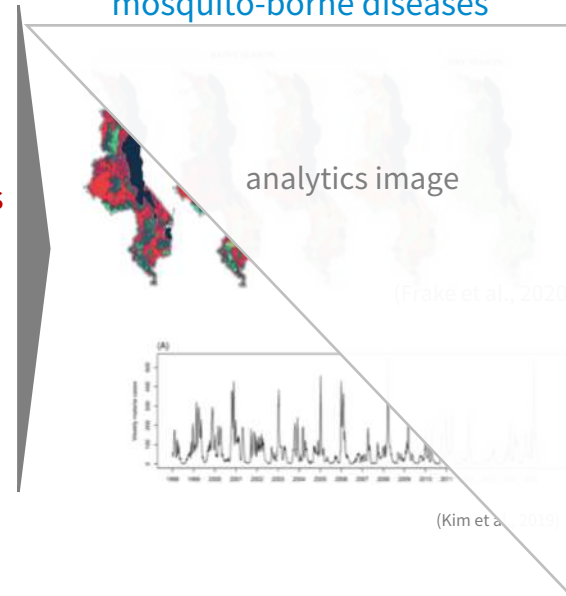
Efficient search by drones  
and land classification AI



Targeting “high-risk” larval habitats  
by risk classification AI



Early and efficient prediction of  
mosquito-borne diseases



# How Partnerships Work for SORA Malaria Control

## (1) Sierra Leone: Cooperation for Accelerating Operational Feasibility with Trust Building

- Collaboration with French Giant Institutions led to speedy trust-building with local Ministries and regulatory authority
- Joint Project with Orange Sierra Leone could guarantee reliable operations of drones, with their existing assets of internet/electricity

Agreement letter with HealthGrid Sierra Leone Consortium of Orange, Gavi, etc. under USAID



MoU with Local Authority and University



**SORA Technology Co., Ltd.**, ~~, and a member of the **HealthGrid Sierra Leone**, a consortium of private sector partners~

## (2) Senegal: Cooperation with Pasteur for Improving Service Quality/Variety

- Kick off discussion on comprehensive drone-based surveillance systems with Institut Pasteur de Dakar under MoU
- A series of dialogues with IPD, backed up by their strong Pasteur Network, is giving actual improvements on our SORA Malaria Control solution

With IPD Director /Head of Epidemiology



Pasteur Network





# Conclusion

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- Although EU countries have strong relationships in Africa, from policymaking to implementation, it is also true that investments from some EU countries are not increasing due to domestic issues
- Africa-Japan-EU cooperation is a win-win-win solution;  
For Japan: Take opportunities to enter into African market  
For EU: Keep their presence in Africa  
For Africa: Receive “leapfrogging” infrastructure and services with combined power of EU and Japan
- Many African countries are innovation-oriented, for solving complex social problems under severe financial constraints
- Co-creation of new innovative infrastructure by Africa-Japan-EU cooperation is important not only for Africa, but also for creating next-generation industry of Japan & EU

**Thank you for your kind attention**

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