



# Personal Repellents For Public Health

**PUBLIC HEALTH**

**PRODUCT OVERVIEW**

**USE CASES**

**RESEARCH**



# Personal repellents as public health tools

Personal repellents offer protection from mosquito bites in situations where core interventions may be constrained. They can be a leading tool for outdoor protection, especially for vulnerable populations.

 Available in spray, lotion, and aerosol applications

 Offered with a variety of duration (hrs of efficacy), driven by active ingredient level

 Proven efficacy and recommended by WHO\*

 Targeted for at-risk populations where the use of core interventions is constrained

\*DEET and Picardin have been evaluated by the World Health Organization as active ingredients for personal protection in public health settings.  
Photo: Field Worker, Myanmar. SC Johnson

As the largest global manufacturer of personal repellents, at SC Johnson we keep people's needs in mind. We have leveraged our expertise in developing effective repellents to determine which products fit the needs of the most vulnerable populations.

OUR PERSONAL REPELLENT BRANDS



# Personal repellents can offer a solution where core interventions fall short.

SC Johnson's repellent portfolio is tailored to best meet the needs of people across a variety of use cases. Our personal repellents use one of two active ingredients: DEET and Picardin. Both ingredients are registered with the United States Environmental Protection Agency and are regularly used in personal repellent products around the world.



Where a high proportion of residual malaria transmission occurs outdoors, after the rollout of core interventions



Occupationally-exposed forest workers, laborers and itinerant farmers



Refugees and internally displaced persons in humanitarian emergencies

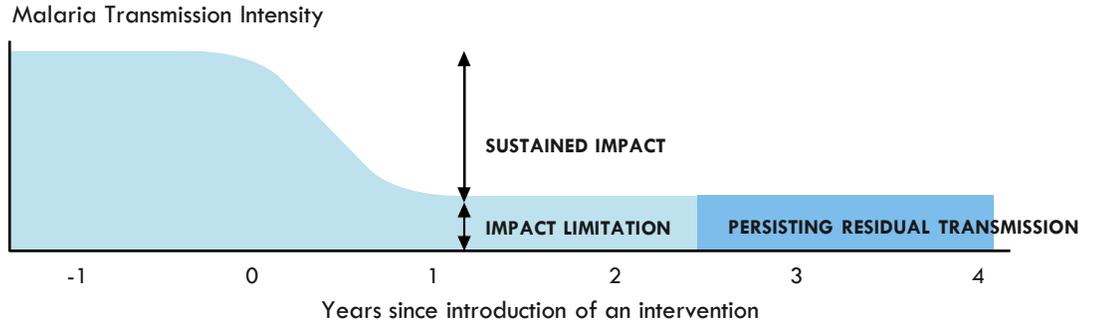
Photos: SC Johnson

# Personal repellents to combat residual malaria transmission

Mosquito-borne illnesses like malaria can persist after implementation of core interventions at “universal coverage” levels. This residual transmission occurs both indoors and outdoors with some geographies seeing over 60% residual malaria transmission occurring outdoors.

Personal repellents are an important tool in the effort to target and control outdoor transmission of mosquito-borne illnesses.

Charts adapted from:  
 Killeen, Gerry. “Characterizing, Controlling and Eliminating Residual Malaria Transmission.” Malaria Journal, vol. 13, no. Suppl 1, 2014, doi:10.1186/1475-2875-13-s1-p53.  
 WHO, Update on the E-2020 initiative of 21 malaria-eliminating countries



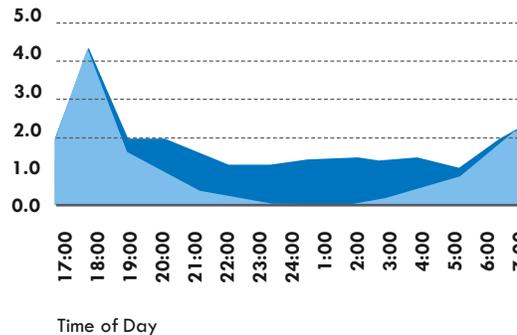
In some locations, even after long-lasting insecticide nets (LLINs) are in wide use, people remain at-risk from exposure outdoors. This can vary significantly by geography.

- Indoor Exposure not prevented by using LLINs Indoor
- Exposure prevented by using LLINs
- Outdoor Exposure

## BITING EXPOSURE AFTER SCALE-UP OF LLINs:



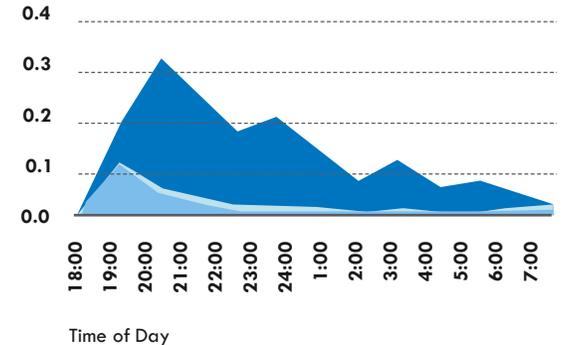
Bites per person per hour



## BITING EXPOSURE AFTER SCALE-UP OF LLINs:



Bites per person per hour



# Working together: Partnerships to enable access

SC Johnson forms lasting partnerships to achieve common goals. We work closely with NGOs, universities, and governments to help us investigate, understand, and address some of the most critical use cases for personal repellents in public health settings. Together, we can deliver personal repellents through public health channels to the people that need them most.

## RESEARCH PARTNERS:

- Cambodia National Center for Parasitology, Entomology, and Malaria Control (CNM)
- Clinton Health Access Initiative (CHAI)
- East African Community (EAC) and the Great Lakes Malaria Initiative (GLMI)
- Liverpool School of Tropical Medicine (LSTM)
- University of California San Francisco, Malaria Elimination Initiative (UCSF – MEI)
- Society for Family Health Rwanda (SFH)
- World Wildlife Fund (WWF)

## CASE STUDY

 CAMBODIA WORLD WIDE FUND FOR NATURE

# Protecting local rangers

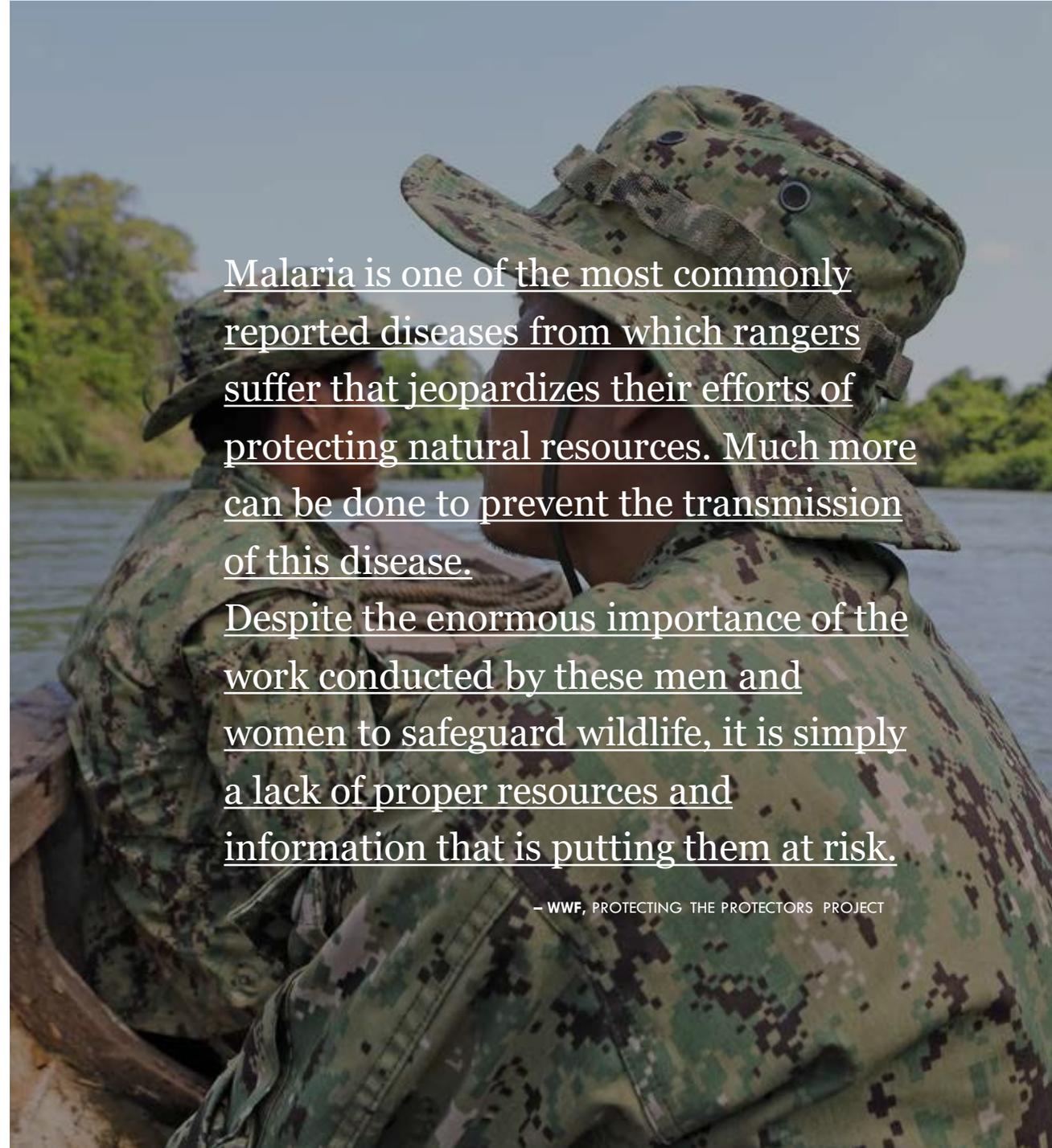
~45%

Rangers reported having malaria in Cambodia

In Cambodia, we worked with the World Wide Fund (WWF) for Nature to research best practices for personal repellent use amongst rangers, who represent a high-risk population through occupational exposure.

Rangers patrol in protected areas against unsustainable illegal use of endangered fauna and flora. Their multi-day patrols put them at high risk of being infected with malaria and other vector-borne diseases. In Cambodia, 71% of the population live in areas with malaria transmission (WHO, 2018). Cambodian rangers are not different—45% of rangers in Cambodia self-reported having malaria in the past 12 months during the time of survey conducted by WWF titled “Life on the Frontline 2019”.

Source: Life on the Frontline 2019, A Global Survey of the Working Conditions of Rangers, WWF



Malaria is one of the most commonly reported diseases from which rangers suffer that jeopardizes their efforts of protecting natural resources. Much more can be done to prevent the transmission of this disease.

Despite the enormous importance of the work conducted by these men and women to safeguard wildlife, it is simply a lack of proper resources and information that is putting them at risk.

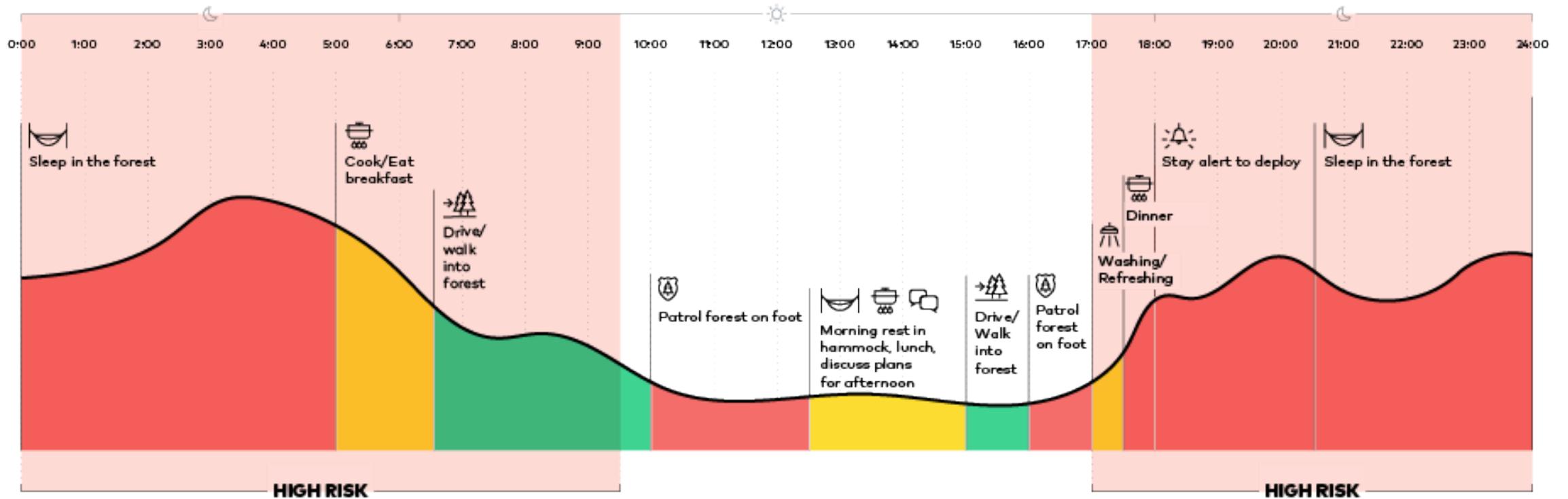
— WWF, PROTECTING THE PROTECTORS PROJECT

# A ranger's day

Throughout a ranger's day there are activities where exposure to mosquitoes is high and the rangers are at risk of contracting a vector-borne disease.

The goal of this project was to identify those times and provide personal repellents and education to fill these gaps in mosquito bite protection.

- Mosquito Abundance
- Biting Periods (*Anopheles* Mosquitoes)
- Perceived Bite Risk:
  - High
  - Medium
  - Low





CASE STUDY

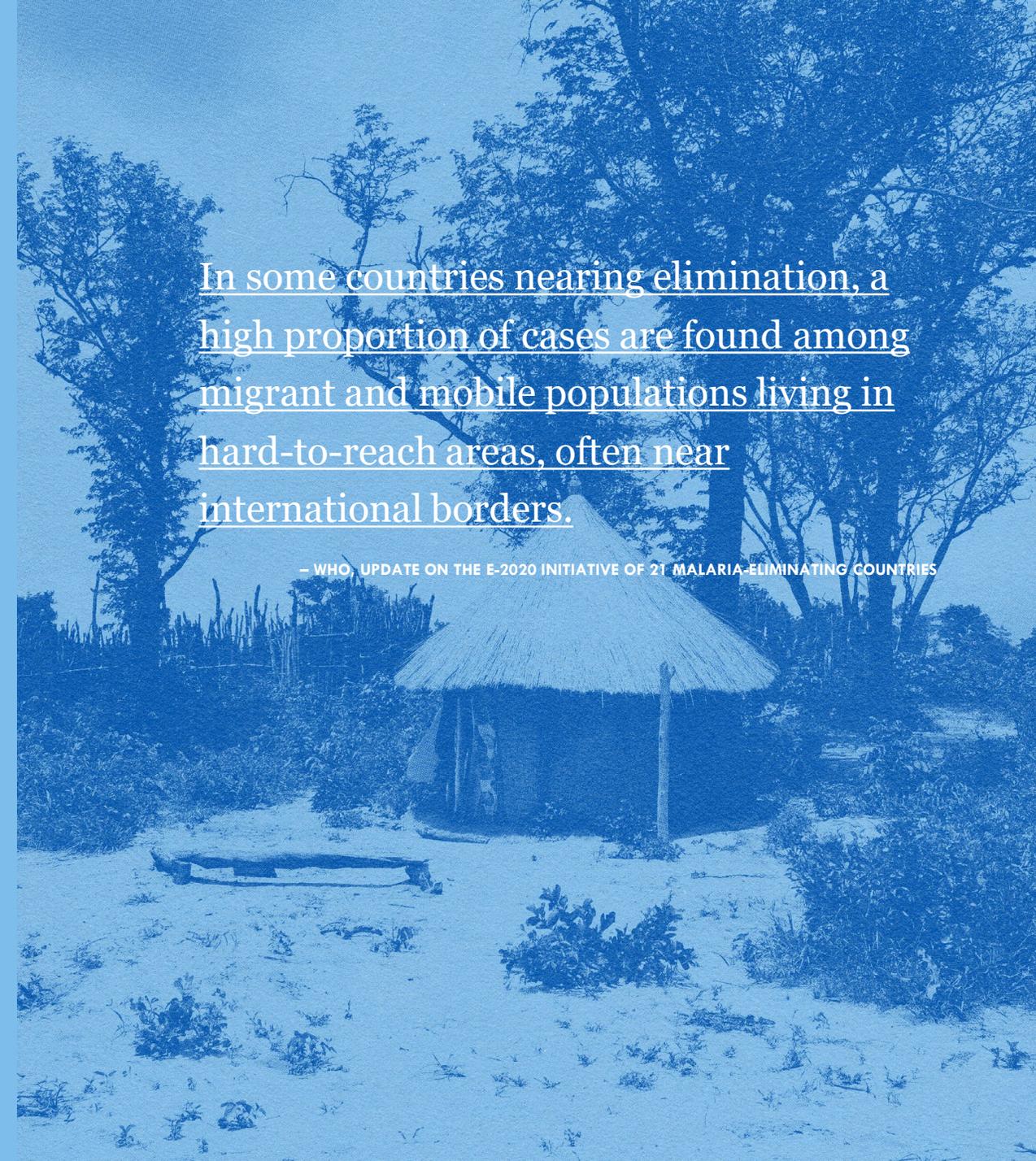
NAMIBIA UCSF, UNAM, AND THE MINISTRY OF HEALTH AND SOCIAL SERVICES NAMIBIA

# Preventing mobile and cross-border malaria transmission

Led by UCSF, UNAM, and the Ministry of Health and Social Services Namibia, we focused on reducing malaria transmission in populations with mobility and cross-border movement within the Zambezi Region in Namibia

The research focused on the feasibility and effectiveness of targeted delivery malaria interventions to high-risk cattle herders and agriculture workers. The goal was to improve intervention coverage and reduce the prevalence of malaria.

SC Johnson's involvement included providing guidance on screening product formats, a product donation of personal repellents for large-scale placement (3,000- 5,000 study participants), and technical guidance on educational material/social and behavioral change communication (SBCC).



In some countries nearing elimination, a high proportion of cases are found among migrant and mobile populations living in hard-to-reach areas, often near international borders.

— WHO, UPDATE ON THE E-2020 INITIATIVE OF 21 MALARIA-ELIMINATING COUNTRIES

# Understanding outdoor habits

Up to half of residual malaria transmission across Africa happens outdoors, yet outdoor protection remains a neglected area of study in malaria research.

To help address this lack of knowledge, we partnered with the Liverpool School of Tropical Medicine to better understand the outdoor habits of people in Burkina Faso.

Our research indicated people have a positive perception of personal repellents, but many have never used them due to lack of access or cost barriers. We also identified key habits to leverage when introducing personal repellents. We believe distribution of personal repellents can be successful with seamless integration into everyday lives and existing habits.

When we know how daily life looks for vulnerable populations, we can select and develop products that fit into their lives with the least amount of disruption. We can also focus communication efforts around the times they're most at risk.

PHOTO: WOMEN COLLECTING WATER, BURKINA FASO. ANTON WAGNER



SC Johnson is committed  
to protecting people in vulnerable,  
difficult-to-reach places  
from vector-borne diseases.

SC Johnson's Base of the Pyramid group is focused on public health, specifically delivering low-cost, accessible mosquito-borne disease prevention tailored to the world's poorest four billion people.



SC Johnson is a privately held family owned global consumer brands company. We say we are “a family company at work for a better world” and for five generations our company has developed and produced products that make our customers’ lives better. With more than 13,000 employees globally and operations in over 70 countries, SC Johnson’s famous brands focus primarily on air care, home cleaning, personal care, and pest/mosquito control. SC Johnson’s pest control brands include OFF!®, Raid®, Baygon® and Autan®. As the leading manufacturer of household pest control products with one of the world’s largest private entomology research center, SC Johnson is uniquely positioned to fight mosquito-borne disease.

