

**WHO initiative to  
stop the spread of  
*Anopheles stephensi*  
in Africa**



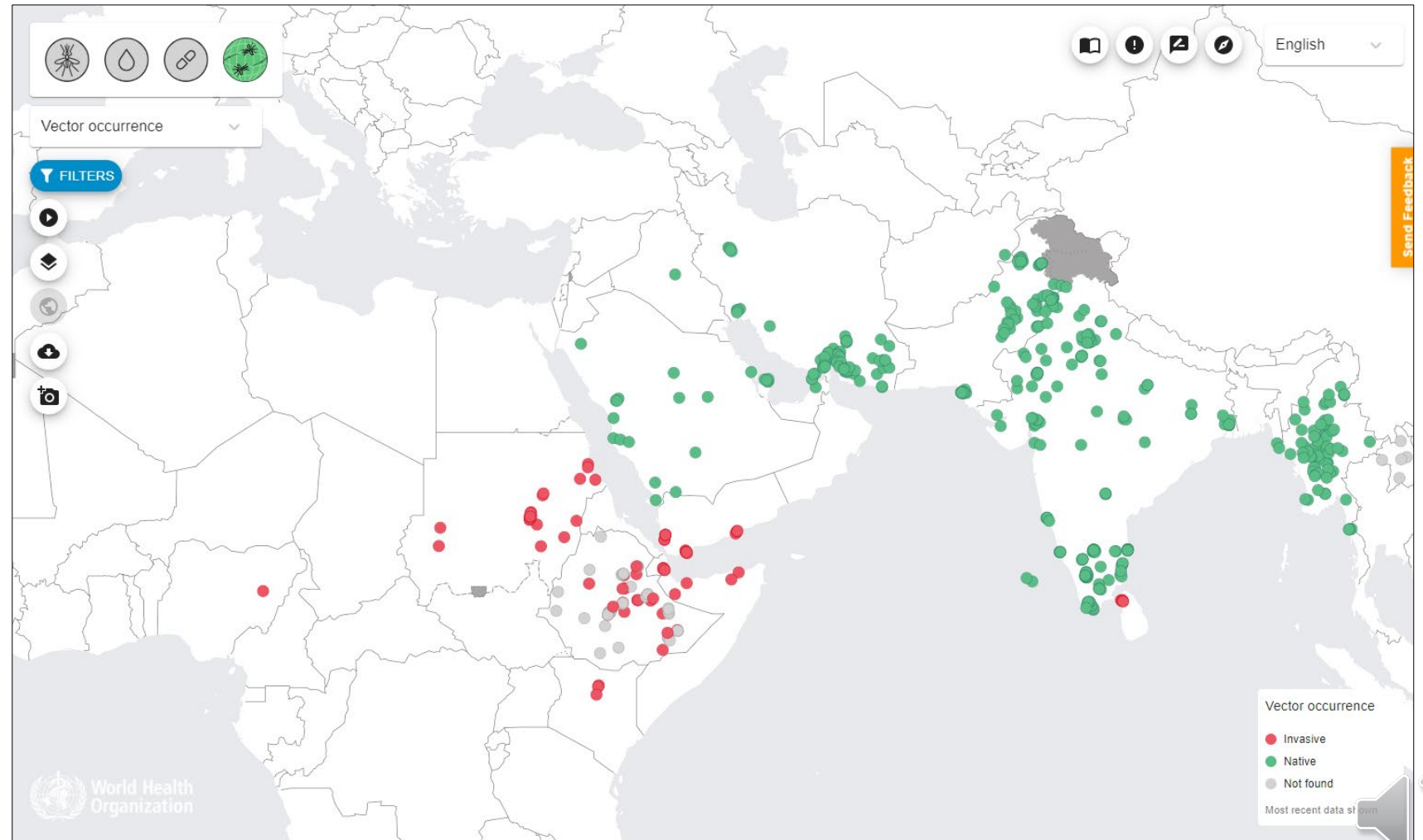
# *Anopheles stephensi*

- Major malaria vector from south Asia
- First reported finding in Africa in 2012
- Flexibility in larval site choice, especially able to use urban larval sites
- Host preference for cattle/goats
- Good biological vector for *P. falciparum* and *P. vivax*
- Resistant to many insecticides used for public health



# Tracking the spread

- Malaria Threats Map
  - Native occurrences
  - Invasive occurrences
  - Negative findings

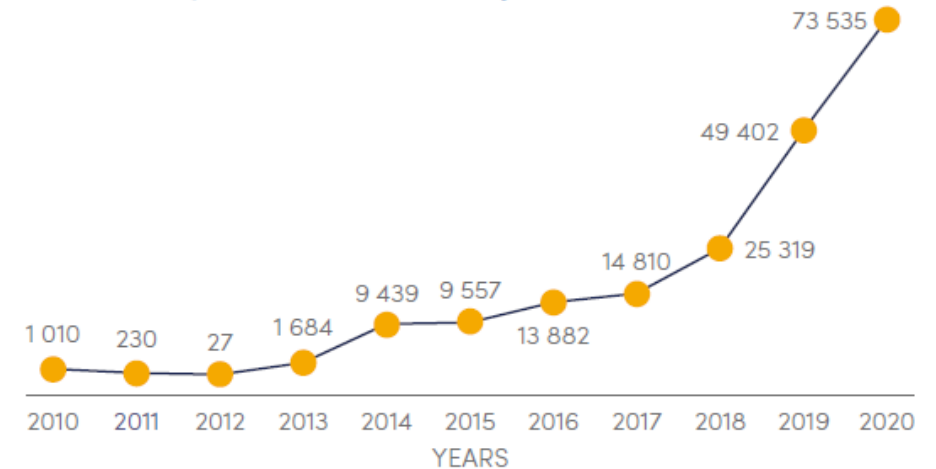


# Impact – monitored and modelled

## Epidemiological impact

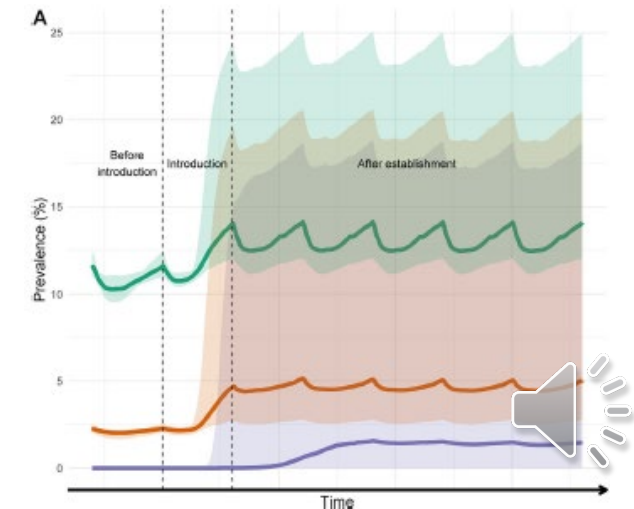
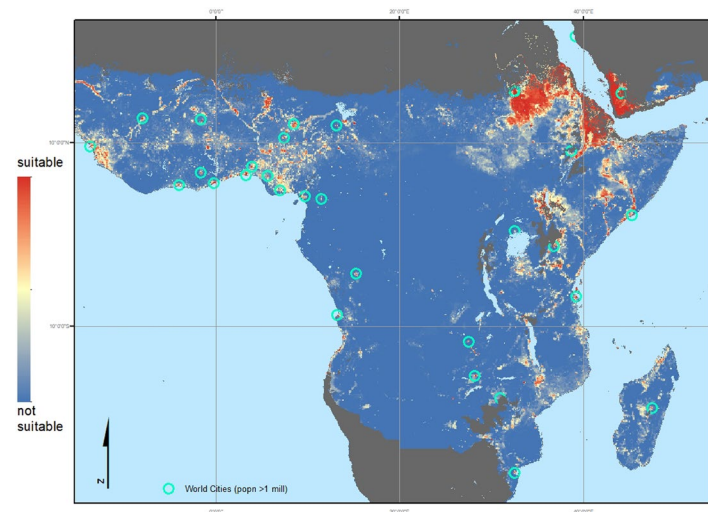
- Djibouti – increase in cases since 2012
- Dire Dawa – outbreak in 2022

Number of Reported Malaria Cases in Djibouti, 2010 - 2020



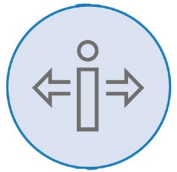
## Modelled impact

- Modeled spread of *An. stephensi* in Africa – 126 million at increased risk
- If *An. stephensi* spread to all suitable areas in Ethiopia, there could be a 50% increase in cases (95% CI: 14-90%)





# *WHO initiative*



Information exchange



Increasing collaboration



Strengthening surveillance



Prioritizing research



Developing guidance



# *Appropriate response*

## Risks

- Too much investment
  - Reduced funds/attention for malaria in rural areas
- Too little investment
  - Delay in determination of appropriate control tools, leading to increased spread across Africa
  - Increased malaria in urban settings



# Next steps

- Update of Vector Alert (2023)
- Partners convening in Ethiopia (March 2023)
- Quarterly *An. stephensi* calls
- Deep dive into past successes and failures of *An. stephensi* control (2023)



Global Malaria Programme 

## Vector alert: *Anopheles stephensi* invasion and spread

Horn of Africa, the Republic of the Sudan and surrounding geographical areas, and Sri Lanka

AUGUST 2019 (UPDATED DECEMBER 2019) INFORMATION NOTE

### IDENTIFIED THREAT

*Anopheles stephensi*, a highly competent vector of *Plasmodium falciparum* and *P. vivax*, is considered an efficient vector of urban malaria. In parts of India, two biological forms of *An. stephensi* – “type” and “intermediate” – have also emerged as efficient vectors in rural areas, due to changing agricultural and water storage practices and urbanization. The third form – “mysorensis” – is considered to be a poor vector, although it has been involved in malaria transmission in certain rural areas in Afghanistan and Iran. Until 2011, the reported distribution of *An. stephensi* was confined to certain countries in South-East Asia and large parts of the Arabian Peninsula. Since then, the vector has been reported from Djibouti (2012), Ethiopia (2016), Sri Lanka (2017) and most recently from the Republic of the Sudan (2019). In the Horn of Africa, the vector seems to be spreading from its first site of detection (Djibouti) to neighbouring countries. *An. stephensi* typically breeds in containers or cisterns with clean water, and the vector appears to quickly adapt itself to the local environment (including cryptic habitats such as deep wells); it also survives extremely high temperatures during the dry season, when malaria transmission usually reaches a seasonal low. In addition, the genetic background of introduced *An. stephensi* seems to confer resistance to multiple insecticide classes, posing potential challenges to its control.

The World Health Organization (WHO) considers the spread of *An. stephensi* to be a major potential threat to malaria control and elimination in Africa and southern Asia. This vector alert has been developed to urge WHO Member States and their implementing partners – especially those in and around the Horn of Africa, the Republic of the Sudan and surrounding geographical areas, and in Sri Lanka – to take immediate action, as outlined below.

 World Health Organization

