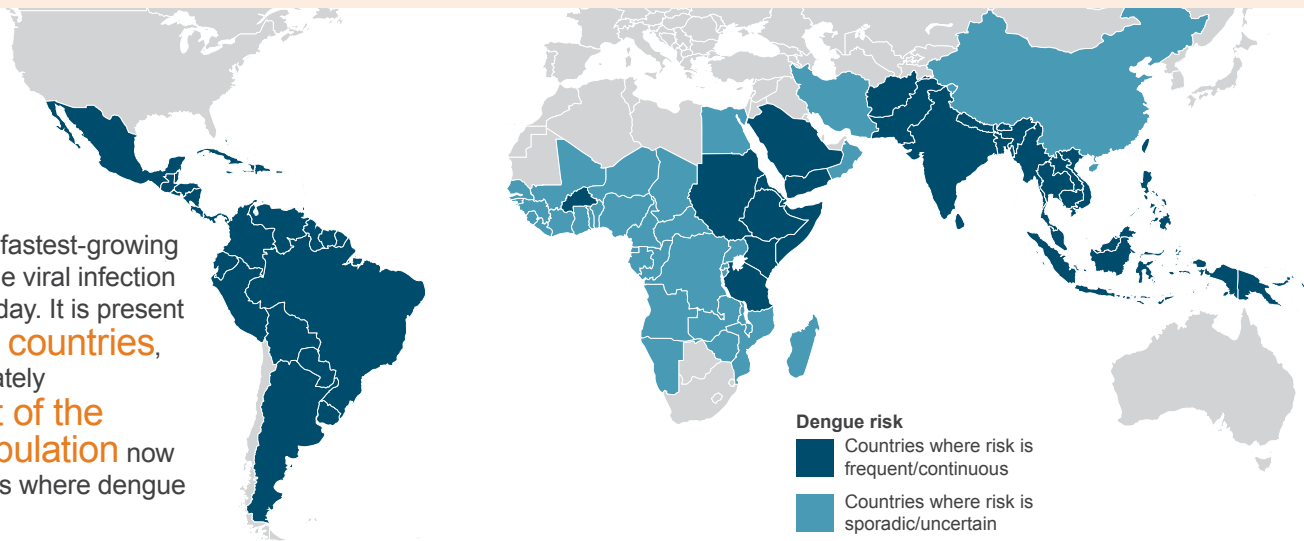




D-MOSS

Dengue forecasting **MO**del Satellite-based **S**ystem

Dengue is the fastest-growing mosquito-borne viral infection in the world today. It is present in **over 150 countries**, and approximately **40 percent of the world's population** now live in countries where dengue is a daily risk.



Dengue risk
 Countries where risk is frequent/continuous
 Countries where risk is sporadic/uncertain

Map based on: <https://www.cdc.gov/dengue/areaswithriskaround-the-world.html>

Our Vision: To see D-MOSS become a key factor in reducing dengue fever worldwide.

Dengue costs are greater than other major infectious diseases

Dengue
\$8 billion

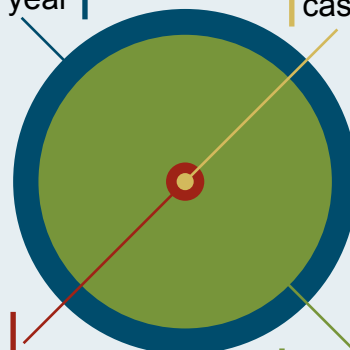
Chagas
\$7 billion

Cholera
\$3 billion

Rotavirus gastroenteritis
\$2 billion

Dengue
Estimated **390 million** cases per year

Yellow fever
Estimated **200,000** cases per year



Zika
Estimated **466,815** cases per year

Malaria
Estimated **214 million** cases per year

Overview: The Dengue forecasting MOdel Satellite-based System (D-MOSS) project is developing a dengue fever early warning system. The tool generates several months advance warning of likely dengue outbreaks. One of the key components is a water assessment module that provides the additional benefit of improving water management in transboundary river basins.



D-MOSS will be the first fully integrated dengue fever forecasting system incorporating EO data and seasonal climate forecasts to issue warnings on a routine basis.

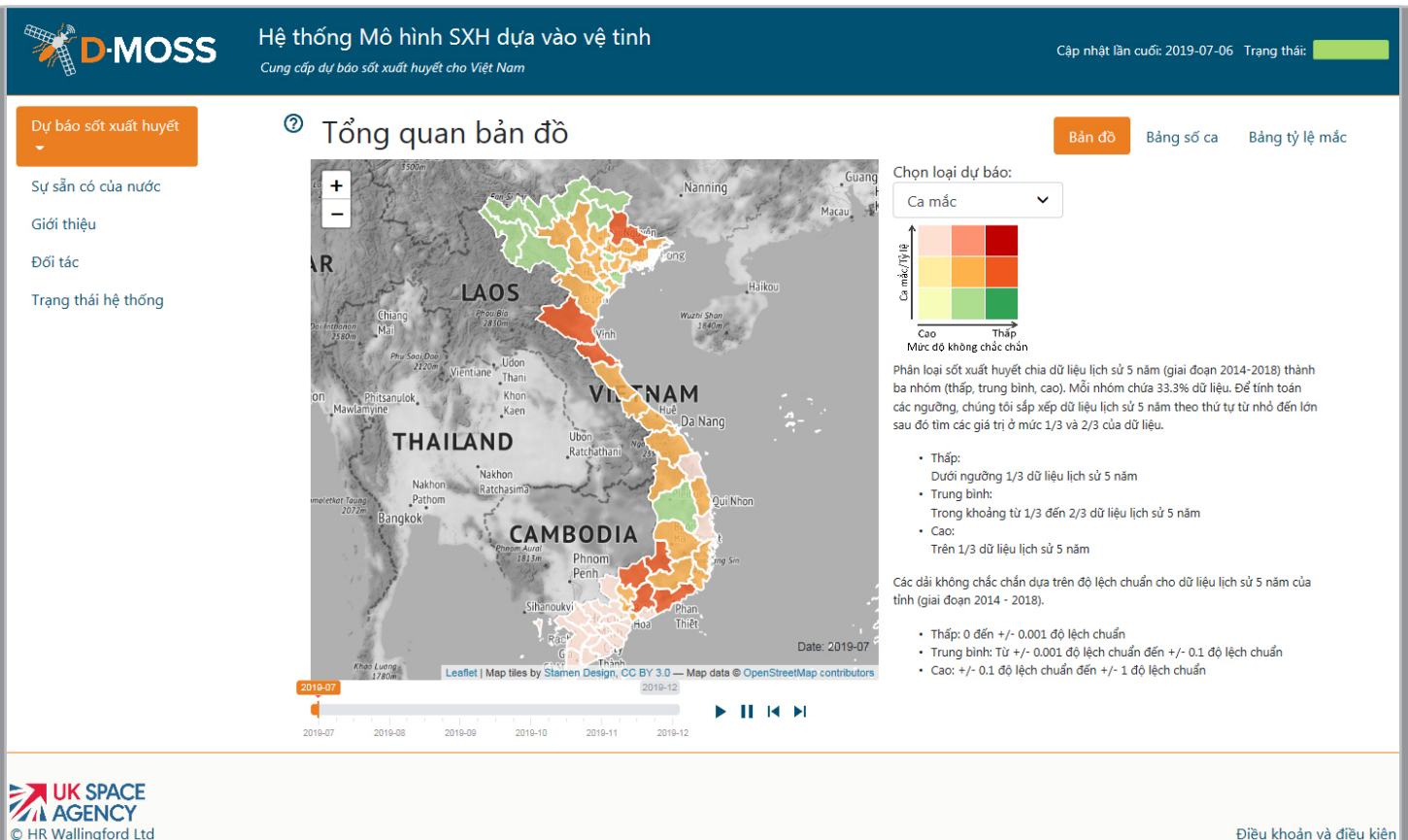
D-MOSS became live in Vietnam in June 2019. It is now being made available to an additional six countries in the region.

D-MOSS benefits:

- > Probabilistic forecasts of dengue outbreaks issued every month, up to seven months in advance.
- > Seasonal forecasts of water availability, at a catchment scale.
- > Portrayal of forecast number of dengue cases, disease incidence, transmission months, probability of exceeding outbreak thresholds and water availability indicators presented in both English and the local language.
- > Supporting information on recommended actions to be taken, provided by the decision makers.

Key technical features

- > Incorporation of a variety of Earth observation (EO) data products ranging from historical observations to the latest state-of-the-art missions.
- > Hydro-meteorological and societal parameters are analysed in order to infer dengue fever outbreaks.
- > A new forecast is issued every month and during outbreaks the forecast can be issued on a weekly basis.
- > Web-based portrayal system and numerical model forecasting engine deployed on commercial cloud services which can be accessed via desktop/laptop devices with an internet connection.
- > Open-source solutions are employed where possible together with widely known development languages and tools.
- > Built in capability to replicate anywhere in the world and for a variety of other diseases.



D-MOSS Vietnam map portrayal showing an example dengue fever forecast based on unverified test data.

Funder:



Partners:

