Mapping and modelling vulnerability to dengue in Viet Nam and the Philippines using geospatial and time-series approaches

Nga T. T. PHAM1*, Cong T. NGUYEN1, Kenji NAKAMURA2, and Maria Ruth B. Pineda-Cortel1

1 Vietnam National Space Center, Vietnam Academy of Science and Technology, Viet Nam; 2 Faculty of Economics, Dokkyo University, Japan; * Corresponding author. Email: pttnga@vnsc.org.vn; Tel.: +84-37917675; Address: Build. A6, 18 Hoang Quoc Viet, Hanoi, Viet Nam

The objective of the project is to improve the knowledge of the above vector-borne diseases and their vulnerability to climate variability for rural populations in both countries by using advanced geospatial technology. The study gathered and analyzed data on disease exposure in the period 2000-2016. We developed a geospatial database on dengue including temperature, precipitation, land cover, and socio-environmental conditions. Data analyses helped in identifying trends in epidemiological patterns, high-risk locations and factors, and mapping vulnerability to dengue. In addition, two mathematical approaches were applied to predict dengue in the most disease exposed regions in the two countries.

The outputs of the project including the database of climate-related diseases with the analyses and maps of vulnerability to dengue are accessible at the webGIS, http://apn-climateandhealth.com. Project results are expected to contribute to building science-based knowledge for adaption planning and decision making in health sector via informing risk and vulnerability.

©2019 Asia-Pacific Network for Global Change Research (APN).

APN is an intergovernmental network of 22 countries working towards pursuing an Asia-Pacific region that is successfully addressing the challenges of global change and sustainability.

Since its establishment in 1996, APN has provided funding support of over USD 30 million to more than 500 projects, a majority of which were led by researchers and practitioners from developing countries in the Asia-Pacific region. APN contributes to UNFCCC activities through its active participation in Subsidiary Body for Scientific and Technological Advice (SBSTA), including the Nairobi Work Programme (NWP) and the International Warsaw Mechanism; and support for capacity building in its member countries related to Nationally Determined Contributions (NDCs) under the Paris Agreement.

This poster is prepared for the Earth Information Day at UNFCCC COP 25 under the theme "Earth observation for science, policy and practice: retooling global cooperation to respond to future climate risk."