

Emerging & Re-emerging Vector Borne Diseases in the Americas

**Climate Change and the Health Benefits
of the Sustainable Development Goals.**

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Population at risk for Arboviruses in the Americas



- Climate (Köppen-Geiger)
- Af - Equatorial Rainforest, fully humid
 - Am - Equatorial monsoon
 - Aw - Equatorial savannah with dry winter - summer rain
 - As - Equatorial savannah with dry summer - winter rain
 - Cw - Warm temperate clima dry winter-summer rain
 - Cfa - Warm temperate fully humid hot summer
 - BS - Steppe climate

- 2015 pop at risk:
- > 5,919,246
 - 4,500,000
 - 3,000,000
 - 1,500,000
 - < 0

Legend

- Isotherm 10 degrees Celsius July
- Isotherm 10 degrees Celsius January

Countries with confirmed cases of Zika virus

- Autochthonous Transmission
- No reported cases

Adm subdivisions

Population sites located < 2000 m classified by climate type

- Af- Equatorial/ Tropical Rainforest, fully humid
- Am- Equatorial/Tropical monsoon
- Aw - Equatorial/Tropical savannah with dry winter - summer rain
- As - Equatorial/Tropical savannah with dry summer - winter rain
- Cw - Warm temperate clima dry winter- summer rain
- Cfa - Warm temperate fully humid hot summer

Data Source:

Zika presence by country:
Reported from the IHR National Focal Points and through the Ministry of Health websites.

Digital Cartography Sources:

Population: CIESIN NASA SEDAC Gridded Population of the World
 Isotherms: Hydronet
 Altitude: USGS Digital Elevation Model
 Climate: Köppen-Geiger climate classificatio
 Rubel, F., and M. Kottek, 2010: Observed and projected climate shifts 2001-2025
 Temperature: WorldClim. Hijmans, R.J., et al, VHR climate surfaces for global land areas

Mosquitoes: Kramer et al. The global compendium of *Ae aegypti* and *Ae. albopictus* occurrence. Scientific Data 1960-2014
 Adm Subdivisions: PAHO-WHO SALB

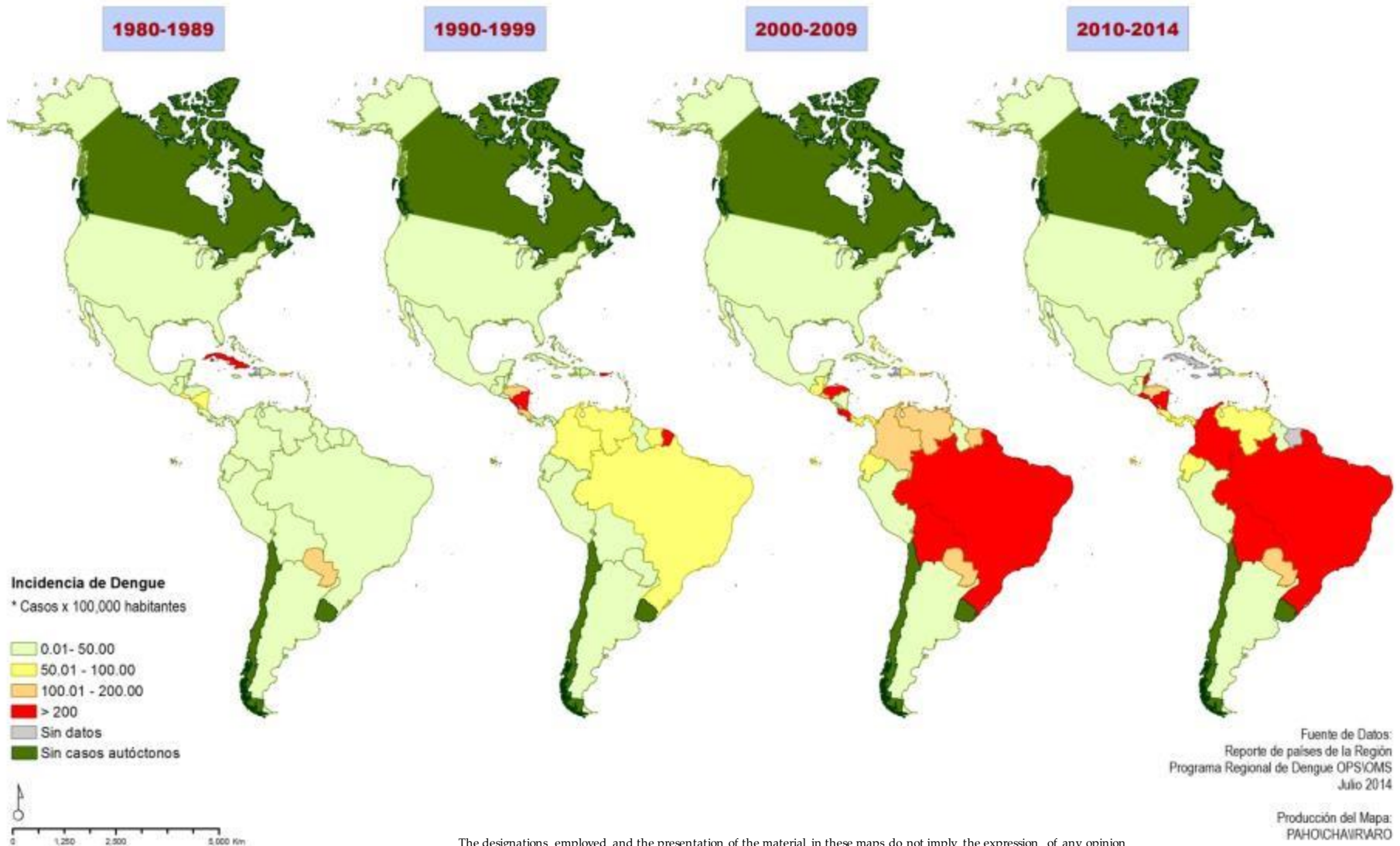
Map Production:
PAHO-WHO AD CHA

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Incidencia* del dengue en las Américas, 1980-2014



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Chikungunya spread 2014-2016



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Sub-national areas with reported autochthonous transmission
 Countries/Territories with autochthonous transmission

Data source: PAHO/WHO. Number of reported cases of Chikungunya Fever in the Americas
 Map production PAHO-WHO Health Emergencies Department (PHE)



0 1,750 3,500 7,000 km

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Zika spread 1947-2016



Historical Transmission of Zika Virus (human cases and/ or mosquito carriage reports)



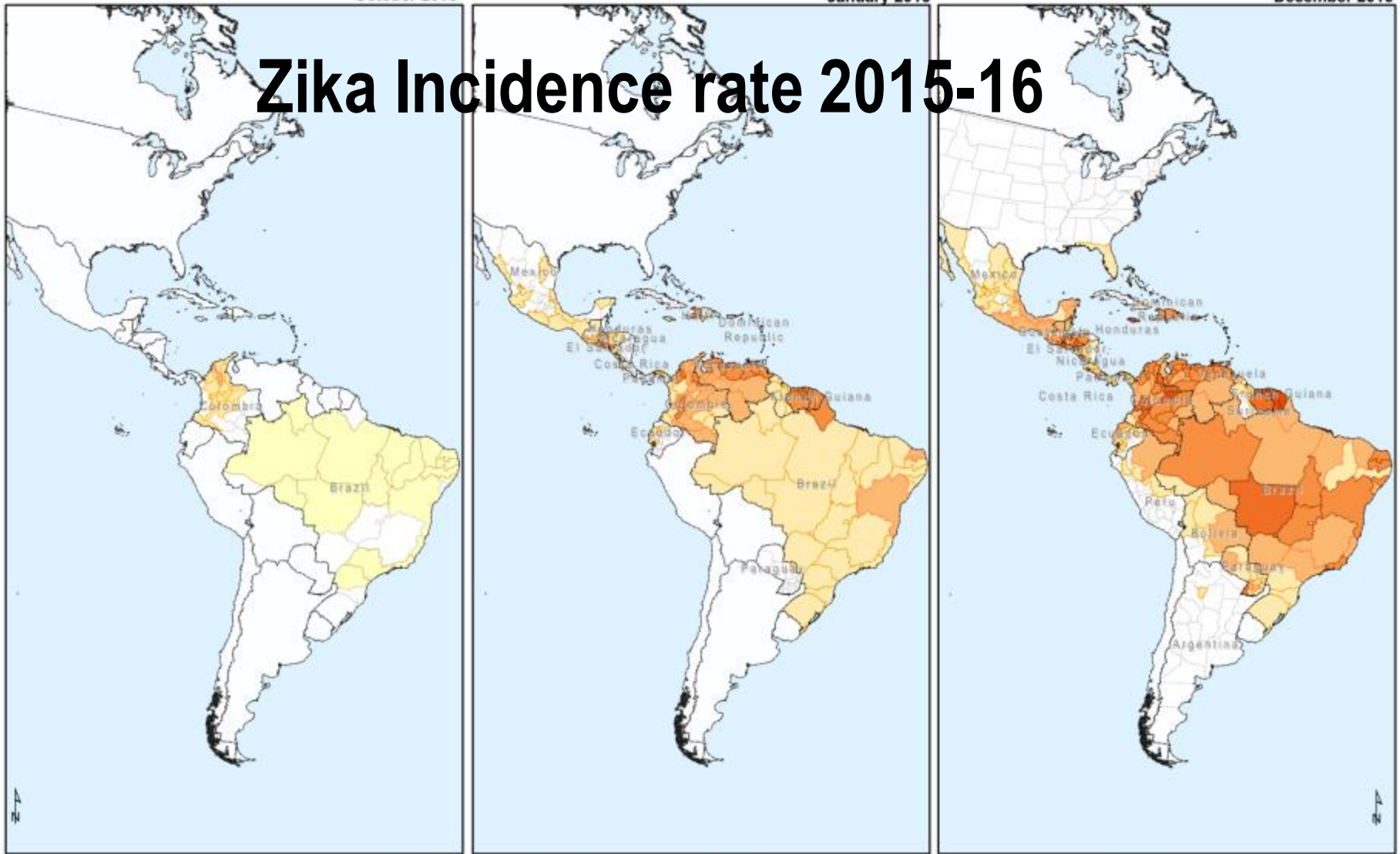
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October 2015

January 2016

December 2016

Zika Incidence rate 2015-16



Cases / 100,000 population



Note : The maps show first-level administrative divisions (states, departments, provinces) with circulation of Zika virus, as officially reported by national health authorities. When data on the incidence of Zika virus disease at the subnational level was not available, the national incidence rate was used for the entire country/territory. Zika virus is not necessarily present throughout the areas shaded in the maps.

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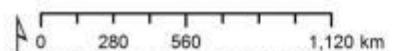
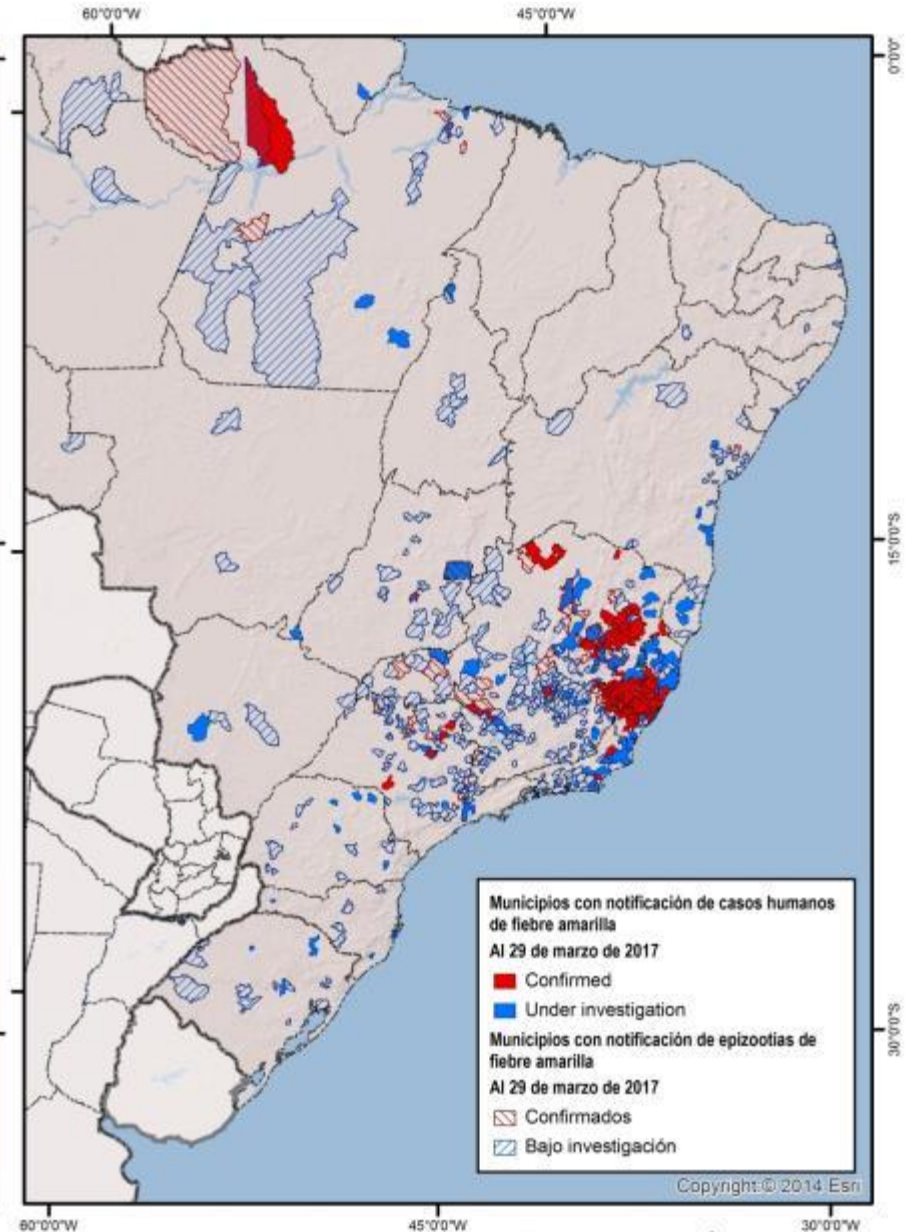
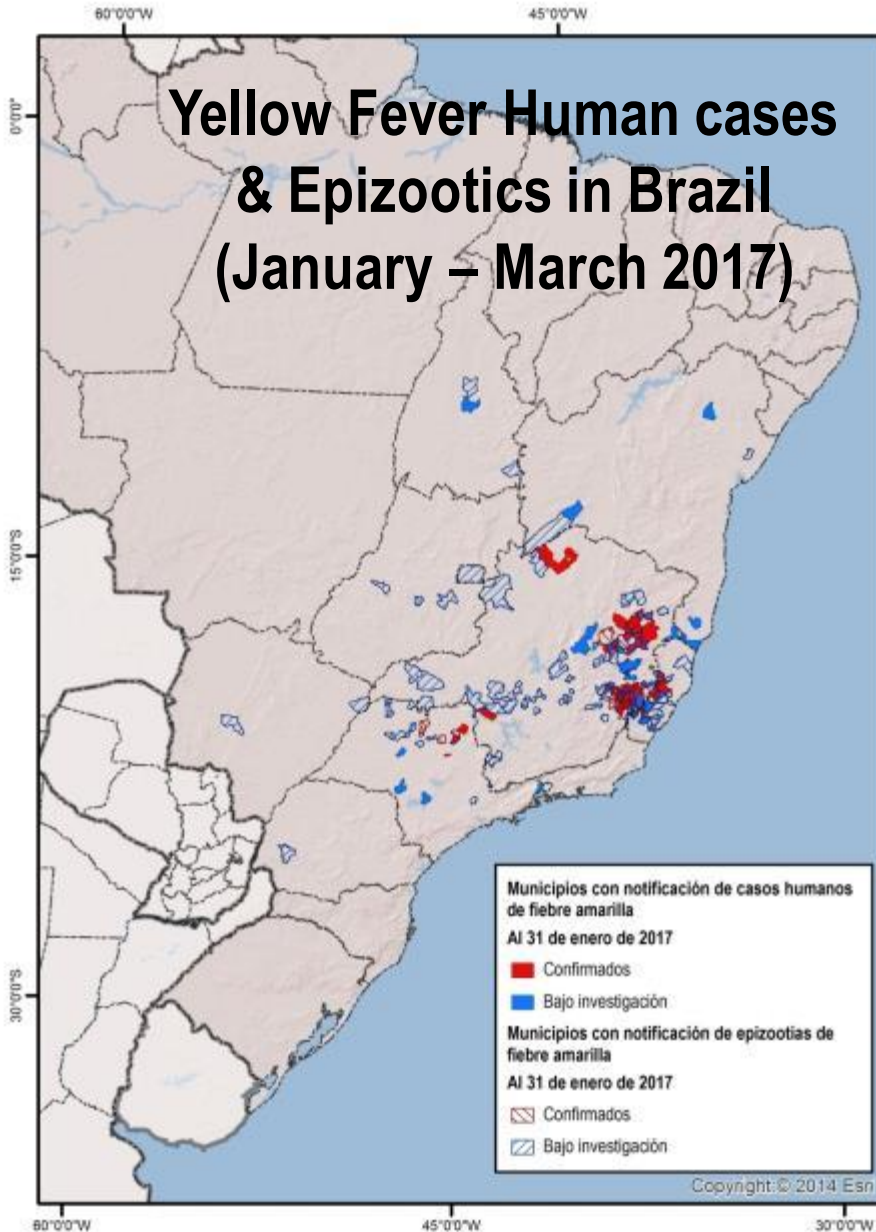


Data Sources:
 Ministry of Health Countries' Websites
 National Statistics Census Offices' Websites
Map production:
 PAHO/WHO Health Emergencies

Yellow Fever Human cases 2000-15



Yellow Fever Human cases & Epizootics in Brazil (January – March 2017)



Fuente de datos: Ministerio de Salud de Brasil
 Producción del mapa: Información de Emergencias en Salud & Evaluación de riesgo (HIM),
 OPS Departamento de Emergencias en Salud (PHE)
 Fuentes cartográficas digitales: SALB-OPS; ESRI shaded relief



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