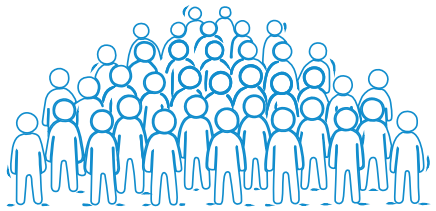
Regional and country experience: impact and challenges of arbo virus

Dr Raman Velayudhan
Head
Veterinary Public Health, Vector Control and Environment unit (VVE)
Dept of Control of Neglected Tropical Diseases, WHO, Geneva

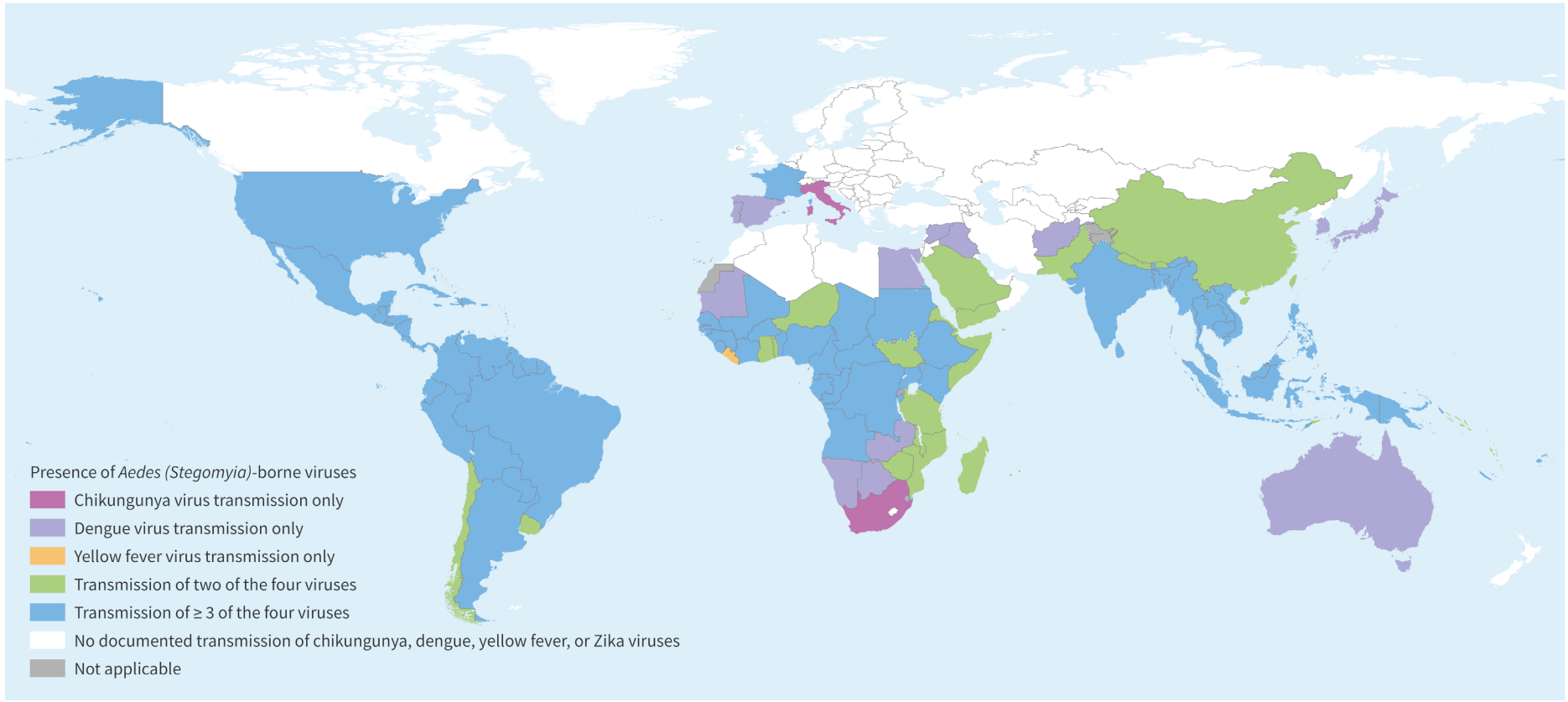
Countries reporting cases of *Aedes*-borne diseases



Almost 4 billion people

at risk for *Aedes*-borne infections

Countries and territories with current or previous transmission of chikungunya, dengue, yellow fever, or Zika viruses
(as of 25/10/2023)



The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of WHO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: World Health Organization
Map Production: WHO Health Emergencies Programme
Request ID: RITM00065

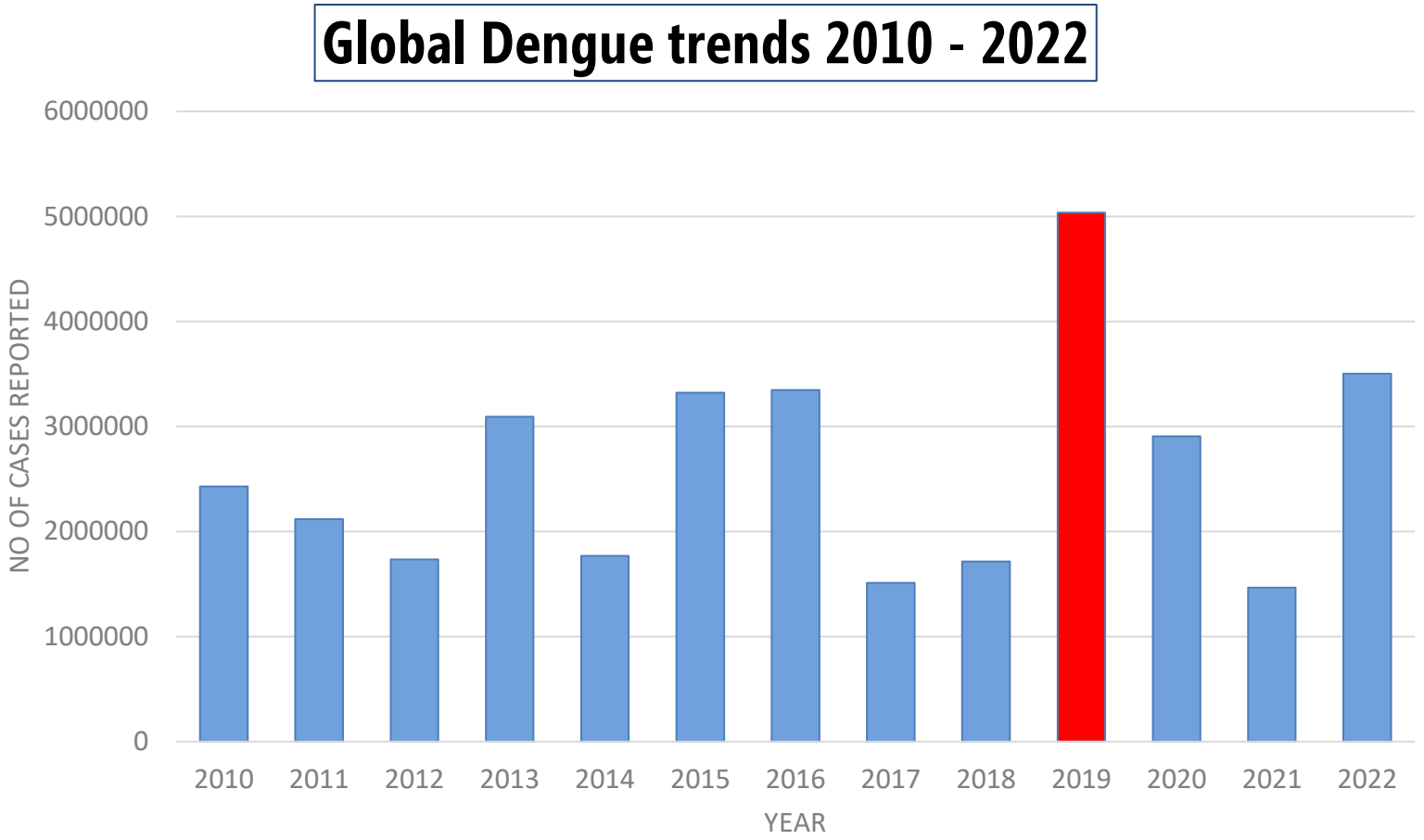
0 1,500 3,000 Km

World Health Organization

World Health Organization

A growing worldwide public health threat

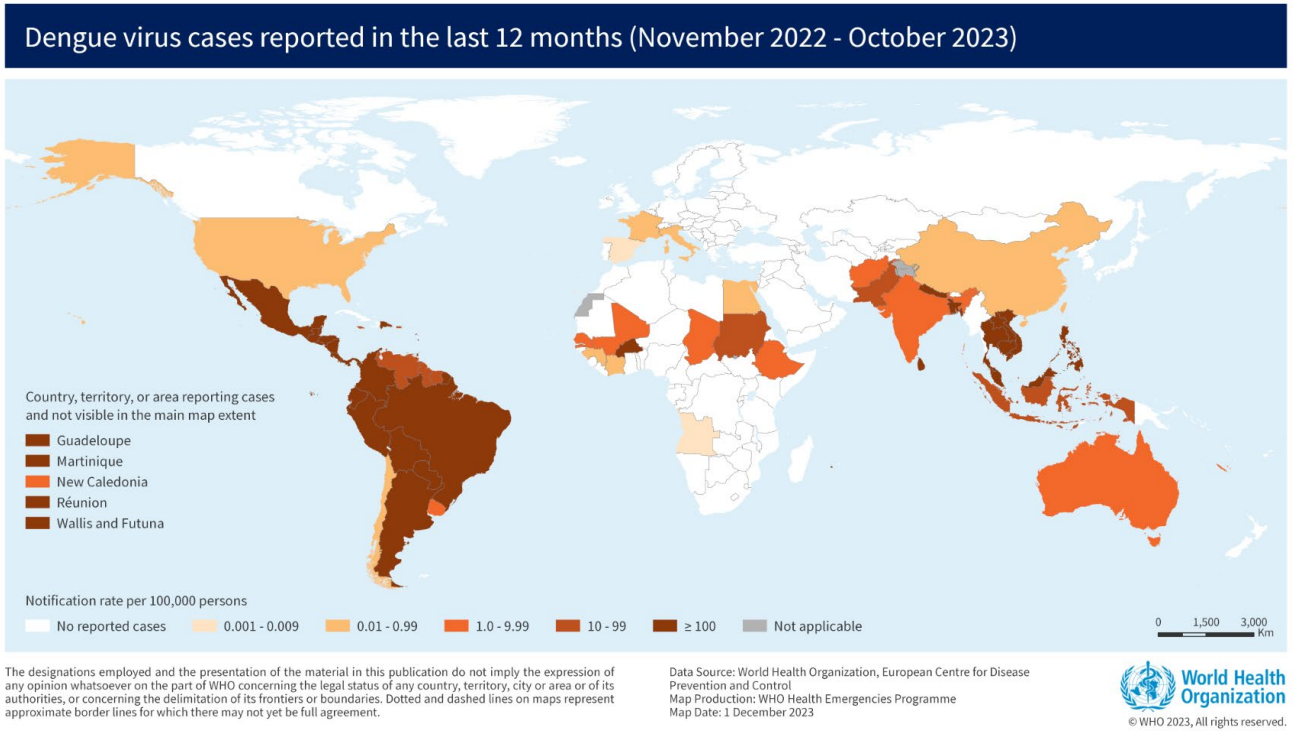
- Worldwide incidence of dengue has increased over the past 2 decades (8-fold increase)
- **All-time-record in 2019 with 5.2M cases reported in 129 countries**



World Health Organization

Upsurge of cases and deaths in 2023

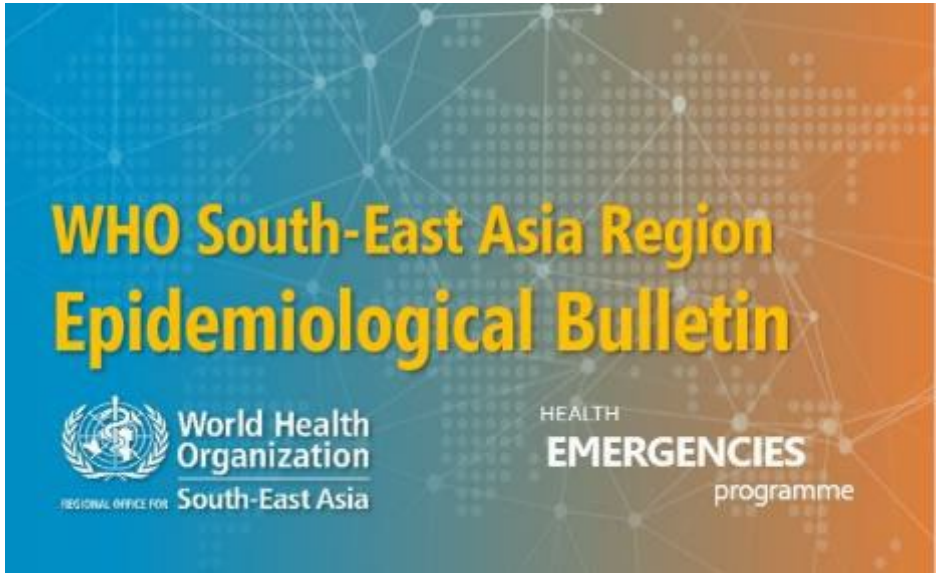
- Since early 2023, increase dengue transmission and further spread to areas previously free of dengue
- **Cases reported in all 6 WHO Regions**
- **More than 5M cases and over 5,000 dengue-related deaths reported from 80 countries/territories**
- **Active monitoring of outbreaks in 23 countries** (17 in the Americas)
- **Average CFR in 2023 below the target rate <1%**
  - PAHO: 0.049%
  - SEARO: 0.51%



World Health Organization

Dengue situation in SEARO

- **10/11 member states are known to be endemic by dengue**
- **Surge in cases in several countries compared to previous years**
  - Bangladesh: 62 382 cases (2022) -> 308 167 cases (2023)
  - Thailand: 46 678 cases (2022) -> 135 655 cases (2023)
- CFR ranged from 0.04% in Nepal to 0.72% in Indonesia
- Data reporting focus on hospitalized cases or severe cases



World Health Organization

SEARO – G2 Dengue Outbreak in Bangladesh

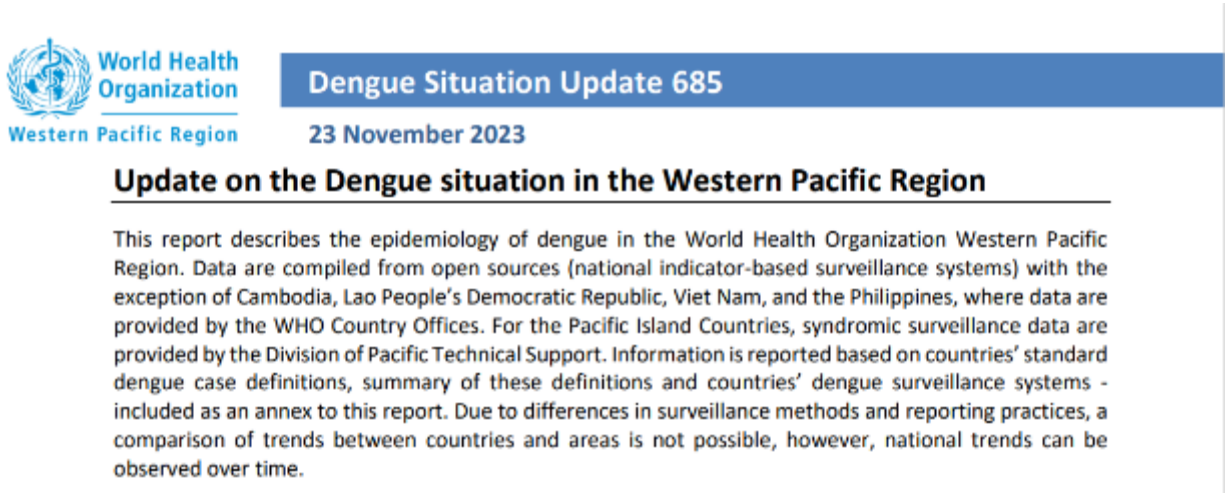
- **For the ninth week, the number of reported cases has decreased in the country.** This week, 6 912 cases were reported, compared to 9 423 in the previous week, a 26.6% reduction.

- **The number of deaths reported this week was 49, a decrease from 73 in the previous week.** The number of weekly deaths goes below 50 after 18 weeks since week 28 (10 – 16 July 2023).

World Health Organization

Dengue situation in WPRO

- **In 2023, 8 countries have reported dengue cases**
- **Philippines :** 167 355 cases and 575 deaths (CFR 0.34%)
- **Vietnam:** 135 879 cases and 35 deaths (CFR 0.02%)
- **In Pacific islands, dengue reported in 9 countries/territories (28% increase)**
- **Fiji (37% increase in cases):**
  - In 2022: 8418 cases
  - In 2023: 11 522 cases



World Health Organization
Western Pacific Region

Dengue Situation Update 685

23 November 2023

Update on the Dengue situation in the Western Pacific Region

This report describes the epidemiology of dengue in the World Health Organization Western Pacific Region. Data are compiled from open sources (national indicator-based surveillance systems) with the exception of Cambodia, Lao People's Democratic Republic, Viet Nam, and the Philippines, where data are provided by the WHO Country Offices. For the Pacific Island Countries, syndromic surveillance data are provided by the Division of Pacific Technical Support. Information is reported based on countries' standard dengue case definitions, summary of these definitions and countries' dengue surveillance systems - included as an annex to this report. Due to differences in surveillance methods and reporting practices, a comparison of trends between countries and areas is not possible, however, national trends can be observed over time.

World Health Organization

Dengue situation in EMRO

- **In 2023**: 8 countries reported 10 dengue outbreaks
- **Reports in FCV countries and in middle- and high-income countries (unusual rainfalls)**
  - Pakistan : 20 072 cases
  - Saudi Arabia: 14 055 cases
  - Oman: 2 016 cases
- **Endemic countries:** Egypt, Djibouti, Somalia and Sudan, Oman, Saudi Arabia and Yemen, Afghanistan and Pakistan
- Lack of detailed and timely information due to ongoing armed hostilities

World Health Organization

Dengue situation in EURO

- Dengue is not endemic in the region, cases are mainly travel-related
- **Autochthonous cases reported in 3 countries**
- No systematic data collection for dengue cases -> probable underestimation of dengue cases in 2023

Autochtonous cases reported in Europe

ITALY (81) **FRANCE (43)** **SPAIN (3)**

World Health Organization

Dengue situation in AFRO

- Among the top 4 regions most affected , although the exact burden of dengue is not well known yet
- Evidence of circulation in local population and/or travelers returning from more than 30 countries
- **Since beginning 2023, 11 countries have reported outbreaks of dengue**
  - **Burkina Faso:** 123 804 suspected cases, 6829 probable cases and 570 deaths (CFR: 0.5%)
- As of 30 November 2023, **the outbreak is ongoing in nine of these countries** and was closed in Guinea, where a single case was reported, and in São Tomé and Príncipe.


SANTÉ | BURKINA FASO

Epidémie de dengue au Burkina Faso

Charles Bako

08/11/2023

Transmise par la piqûre d'un moustique, la dengue fait de plus en plus de morts à Ouagadougou et Bobo Dioulasso.

World Health Organization

Upsurge of cases due to a combination of factors

- **Continuous risk of spread:** high movement of population, increased global travel following the COVID-19 pandemic
- **Consequences of climate change**, El Niño phenomenon: rainfall, humidity, drought and increasing temperatures
- **Environmental and social factors:** urbanization, population growth, consequences of globalization
- **Complex humanitarian crises and armed conflicts** : fragilized health systems, destruction of healthcare facilities, late access to healthcare facilities
- **Co-circulation of multiple dengue serotypes:** may result in an increased number of severe dengue and deaths due to the effect of antibody-dependent enhancement following secondary infection

Challenges

- **Insufficient multisectoral coordination for dengue response at national and local level**
- **Dengue is a tool-deficient** disease with no drugs, limited effective vaccines and without sustainable vector control tools.
- **Simultaneous outbreaks across regions** strain the capacity for epidemic response (COVID-19, humanitarian crises, G3 global cholera…)
- **Capacity building**: Lack of trained clinical, entomologist and vector control staff
- **Clinical diagnosis**: asymptomatic, non-specific symptoms potentially leading to inadequate case management
- **Laboratory testing:** limited laboratory capacity and inadequate supplies

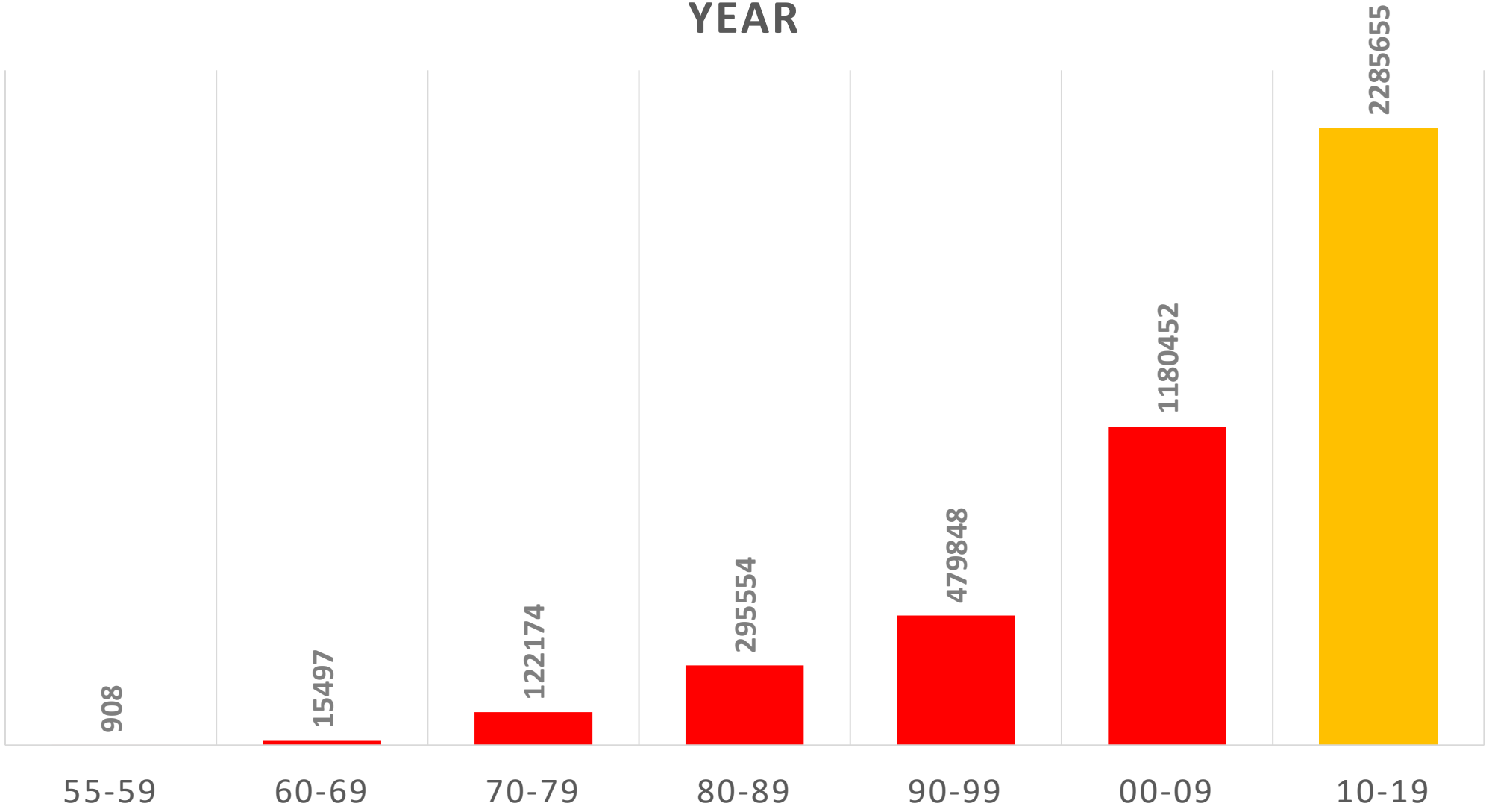
Thinking out of the box

- Water storage containers need to be better adapted to prevent mosquito breeding
- Water Stress will affect more urban pockets
- During outbreaks concerted efforts should focus on potential peripheral areas where the disease is expected to spread, and control activities should focus on these areas.
- RCCE should focus on one key message every year to remind the population of the need to act.
- Targeted interventions are needed to protect the vulnerable population

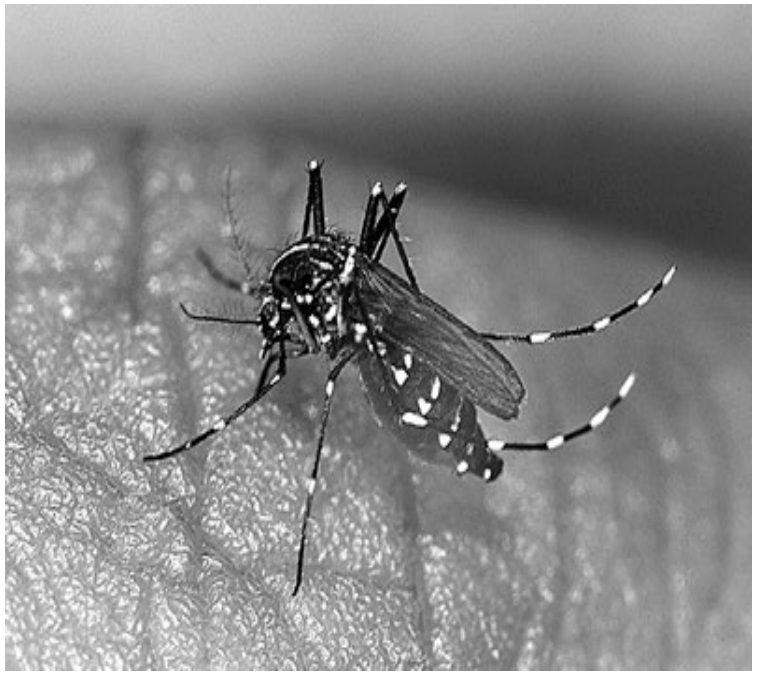
Conclusion

- Enhanced real-time Integrated surveillance will be essential to prevent outbreaks
- Vectors are continuing to get established and expand into more countries
- Prevention should be a priority and wherever possible the vector population should be reduced to low levels.
- Programmatic approaches are more sustainable than outbreak response
- Urban environments are hot spots for the rapid spread of the diseases (high population and density)
- Tailored interventions with infrastructure and capacity development

AVERAGE NUMBER OF DENGUE CASES REPORTED PER YEAR



Driven by climatic changes, urbanisation, and human movement, cases of dengue have doubled every decade since 1990, and almost half of the world population is now at risk of this life-threatening disease. (Lancet Countdown 2023)



Thank you

VelayudhanR@who.int

World Health Organization