



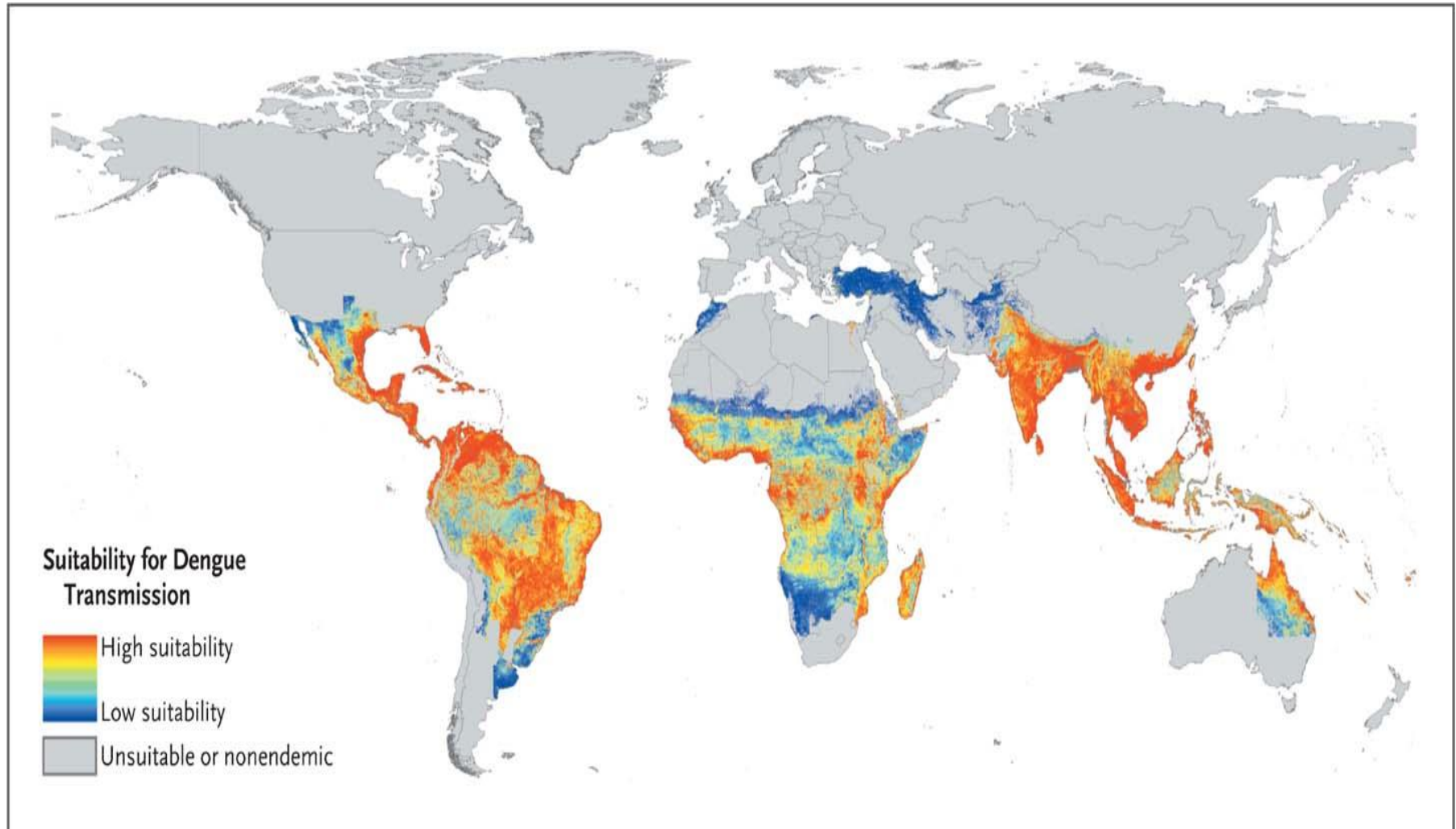
***Global dengue  
situation and  
strategy for  
prevention and  
control 2012-2020***

The cover of the WHO report 'Global Strategy for Dengue Prevention and Control 2012-2020' is shown. It features a grid of red squares. The top row has three squares, the second row has three, the third row has three, and the fourth row has four. The bottom-left square of the fourth row contains a photograph of a mosquito. The text 'GLOBAL STRATEGY FOR DENGUE PREVENTION AND CONTROL' is centered below the grid, with '2012-2020' to its right. The WHO logo and name are in the bottom right corner of the cover.

GLOBAL STRATEGY  
FOR DENGUE PREVENTION AND CONTROL  
2012-2020

The World Health Organization logo, featuring a caduceus inside a laurel wreath, with the text 'World Health Organization' to its right.

# Global Dengue Risk 2012.

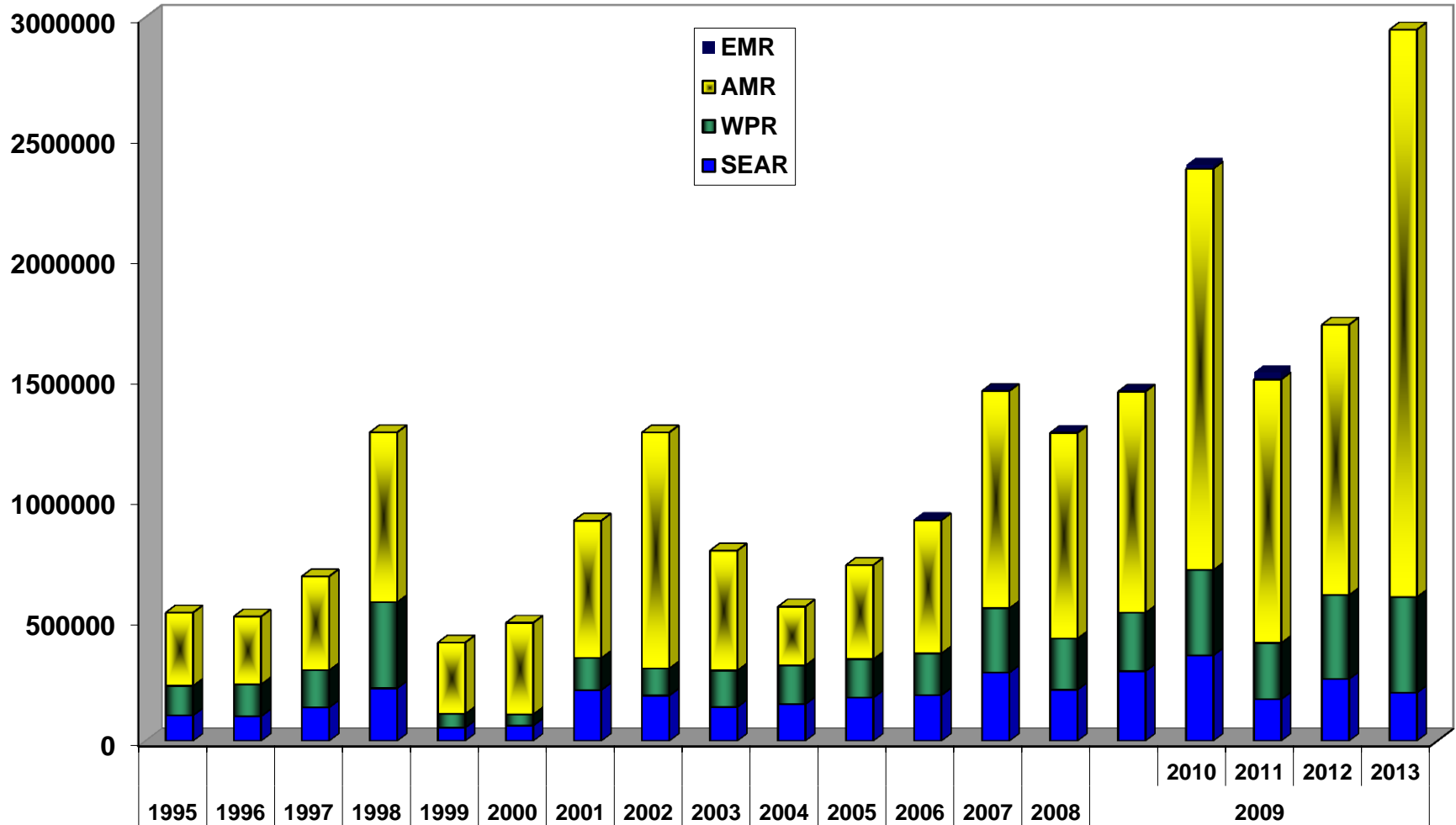


Simmons CP et al. N Engl J Med 2012;366:1423-1432

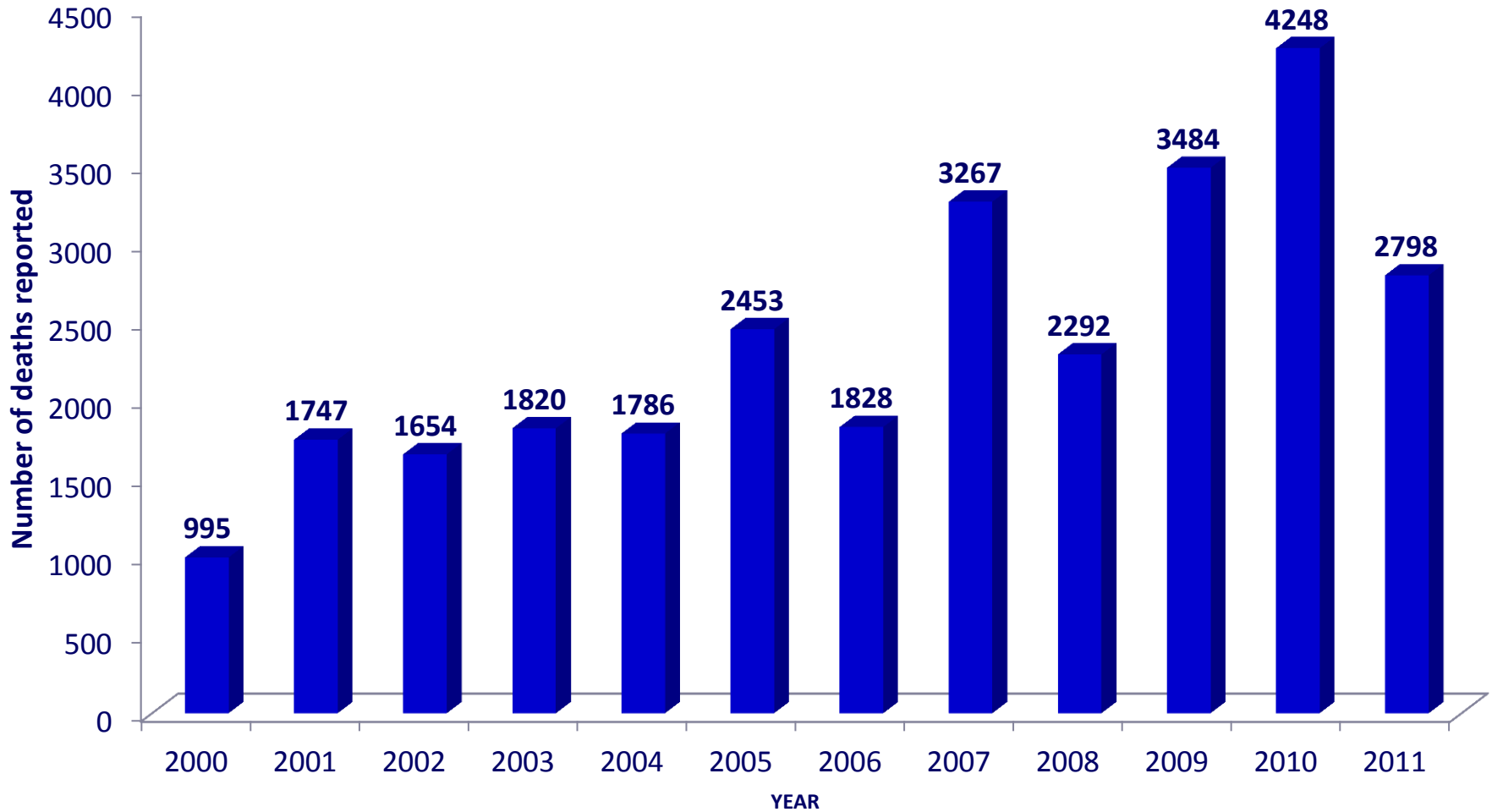


# Average /number of Dengue cases reported to WHO per year

Number of cases recorded from four WHO regions



# Number of Dengue deaths reported to WHO per year



# Rationale for New global strategy

Significant changes in the last 17 years:-

1. Improved diagnosis and case management
  1. Increase in severe dengue (mainly in Americas)
2. Case classification
3. Integrated Vector Management
  1. New tools - vector control;
4. Vaccine candidate
5. Decentralisation
  1. Program management (reactive to sustained)
6. Global spread vector & pathogens
  1. climate?
  2. demographics



# Commitment

**Chronological list of World Health Assembly resolutions and Regional Committee resolutions adopted since 2000**

## **World Health Assembly**

**2002 - WHA 55:- Dengue fever and dengue haemorrhagic fever prevention and Control. WHA 55.17**

**2005 - WHA 58:- Revision of the International Health Regulations. WHA 58.3**

## **Regional Committee Resolutions (RCM):-**

- 2001 – PAHO:           Dengue and Dengue Haemorrhagic fever. CD43.R4**
- 2008 – SEAR:**           Dengue prevention and control. SEA/RC61/R5
- 2008 – WPR:**           Dengue fever and dengue haemorrhagic fever prevention and Control. WPR/RC59.R6
- 2011 – EMR:**           Dengue: call for urgent interventions for a rapidly expanding emerging Disease. EM/RC/58.R4
- 2012 – PAHO.....       Technical update**
- 2013 – EURO**.....       Framework on Invasive species surveillance and control



# Global Strategy

## Goal

**TO REDUCE THE BURDEN OF  
DENGUE**



# Specific objectives

- 1. To reduce dengue deaths by at least 50% by 2020\*.**
- 2. To reduce dengue morbidity by at least 25% by 2020\*.**
- 3. To better ascertain the true burden of the disease by 2015.**

**\*2010 as baseline**





## The global strategy for dengue prevention and control (2012- 2020)

### Goal: To reduce the burden of dengue

#### Objectives:

- To reduce dengue mortality by at least 50% by 2020\*
- To reduce dengue morbidity by at least 25% by 2020\*
- To estimate the true burden of the disease by 2015

Technical element  
1: Diagnosis and  
case management

Technical element  
2:  
Integrated  
surveillance and  
outbreak  
preparedness

Technical  
element 3:  
Sustainable  
vector control

Technical  
element 4:  
Future  
vaccine  
implementation

Technical  
element 5:  
Basic  
operational and  
implementation  
research

#### Enabling factors for effective implementation of the global strategy:

- Advocacy and resource mobilization;
- Partnership, coordination and collaboration;
- Communication to achieve behavioral outcomes;
- Capacity building; and
- Monitoring and evaluation



# Diagnosis & Case Management

Activities	Progress so far
Develop guidelines for clinical outbreak management	Handbook published
Standardize core case management curricula <ul style="list-style-type: none"><li>▪web-based &amp; alternative CME</li></ul>	
Support global/regional networks of laboratories & clinical consultants	In progress
QA for Dengue Diagnostics	



# Integrated Surveillance & Outbreak Preparedness

Activities	Progress so far
Determine key indicators for routine surveillance	In progress (June 2014)
Establish M&E performance indicators	In progress (June 2014)
Link entomological and clinical surveillance, lab, case management & rapid response	Partners ?
Outbreak preparedness	



# Sustainable Vector Control

Activities	Progress so far
<p>Prepare guidelines for outbreak control and prevention</p> <ul style="list-style-type: none"><li>▪ Review</li><li>▪ IVM</li><li>▪ Rapid response</li></ul>	In progress
<p>Vector control and vaccine implementation</p> <ul style="list-style-type: none"><li>▪ Guidelines</li><li>▪ establish role of co-dependence</li></ul>	To be addressed
<p>Management of insecticide resistance</p> <ul style="list-style-type: none"><li>▪ Database</li><li>▪ In country tests</li><li>▪ Integrated coordination</li></ul>	



# Future vaccine implementation

Activities	Progress so far
Requirements for maximising the effectiveness <ul style="list-style-type: none"><li>• Target groups</li><li>• Coverage</li><li>• Delivery</li><li>• Cost</li></ul>	In progress
Post vaccine monitoring <ul style="list-style-type: none"><li>• Effectiveness over time</li><li>• Side effects</li></ul>	In progress
Modelling impact	In progress

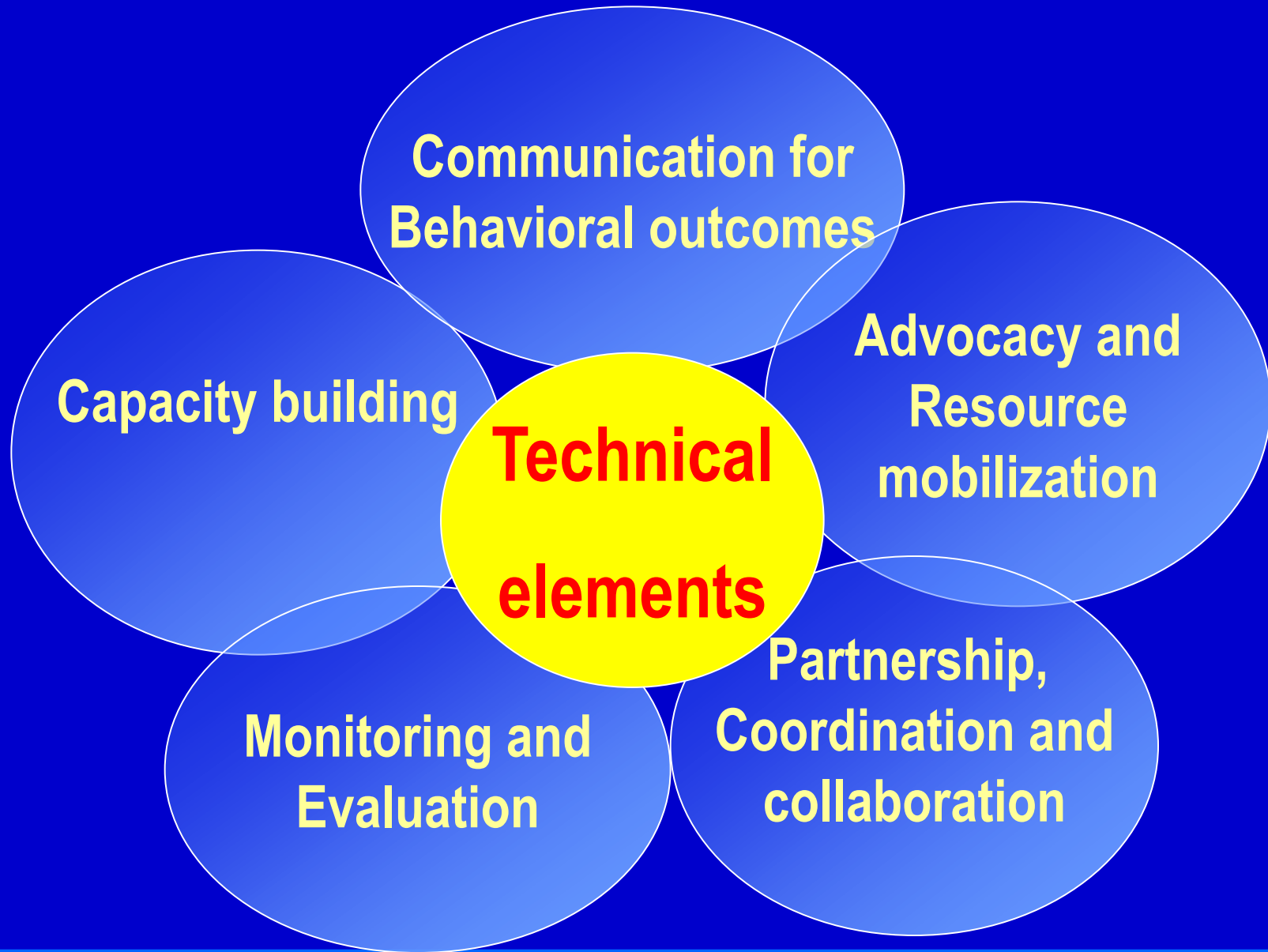


# Basic Operations & Implementation Research

<b>Activities</b>	<b>Progress so far</b>
Development of new tools for vector control VCAG	In progress
Better Burden estimation of dengue	In progress
More effective use of existing vector control tools	In progress
Assess significance of 'serotype'-specific immune succession	



# STRATEGY IMPLEMENTATION NEEDS



# Advocacy and Resource mobilization

- **Very limited resources for control and outbreak response**
- **Greater commitment and endorsement among ministries to one common goal**
- **A top priority needing global effort**
  - **ASEAN Dengue Day (June 15<sup>th</sup>)**
  - **UNITEDengue (2012)**





# Partnership, coordination and collaboration

- **Intersectoral committee**
- **Coordination between members (Intrasectoral)**
- **Resource allocation**
- **Linkage with community**
- **Feedback and routine contacts**
- **Mechanism to address problems**
- **Cross border exchange of information**
  - **UNITEDengue**



# Communication for behavioral outcomes

- **COMBI –examples to be well documented**
  - **Formative/Inquiry research - identifying existing behaviours that promote or impede outcomes;**
  - **Functional internal communication and behaviours (better coordination of each technical element's/ interventions, programme interaction with population);**
  - **For effective external communication and behaviours related to population outcomes (e.g., reduced disease, reduced deaths, crafting messages, and their dissemination through mass media and other channels).**



# Capacity building

- **The biggest challenge at all levels**
  - A neglected area
- **Local management**
  - Decision making
- **Adaptation and development of training materials**
- **Participatory approaches**
- **Negotiating skills**
  - To deal with political leaders
  - Media



# Monitoring and Evaluation

- **The weakest link**
- **Core indicators**
  - **Number of suspected dengue fever cases**
  - **Number of severe dengue cases**
  - **Number of deaths from suspected and confirmed severe dengue;**
  - **Number of cases confirmed by the laboratory**
  - **Serotype in circulation**



# Challenges for dengue control

- **Diagnosis**
- **Capacity building (case management)**
- **Integrated Surveillance**
- **Better burden estimates**
- **Sustained Control Measures**
- **Vector control**
- **Vaccine introduction**
- **Community level approaches for urban areas**
- **Universal Health Coverage**



## **A disease for the future ?**

- **Uncertain distribution and burden**
- **As malaria declines, dengue rises**
- **Impact of environmental changes**
- **Silent expansion of the vector**



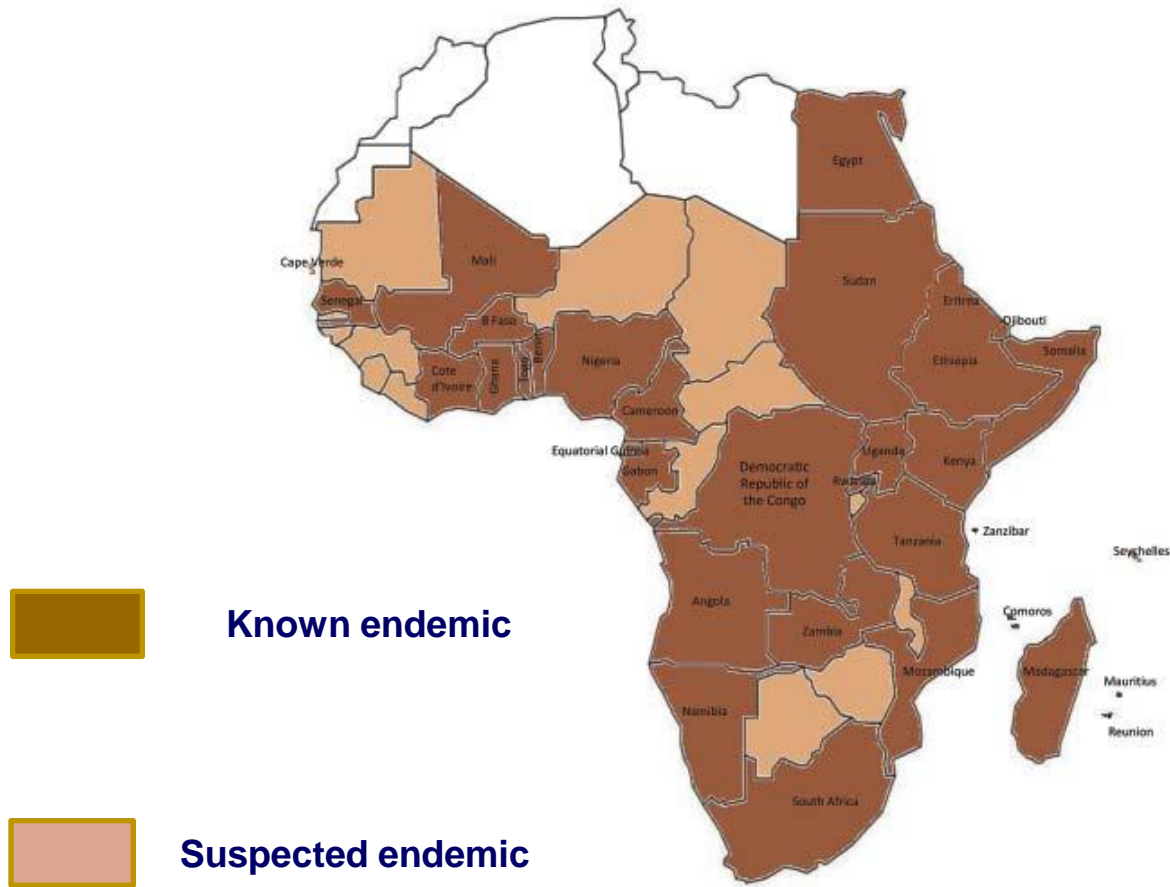
	Malaria 1	Dengue	
		WHO	RECENT 2
Population at risk	3.2 billion	2.5 billion	4 billion
Endemic countries	97 ↓	>100	128 ↑
Infections /year	219 million	50 million	70- 500 million
Severe Cases	3 million		2.1 million
Deaths/ year	627,000	20,000	21,000

1) **Global Malaria Report 2013**

2) **[http://www.pdvi.org/about\\_dengue/GBD.asp](http://www.pdvi.org/about_dengue/GBD.asp) and  
Brady et.al. PLoS Negl Trop Dis 2012; 6: e1760**



# Known or Suspected Dengue Endemic Countries: Africa



Amarasinghe *et alia*, Emerging Infectious Diseases (2011) 17:1349-1354





# Current distribution maps of invasive mosquitoes in Europe

- Recently present
- Absent
- No data
- Unknown

## ➤ *Aedes albopictus*

Southern Europe, since 1979

## ➤ *Aedes japonicus*

FR 2000 (†), BE 2002 (localized), CH 2008, DE 2008

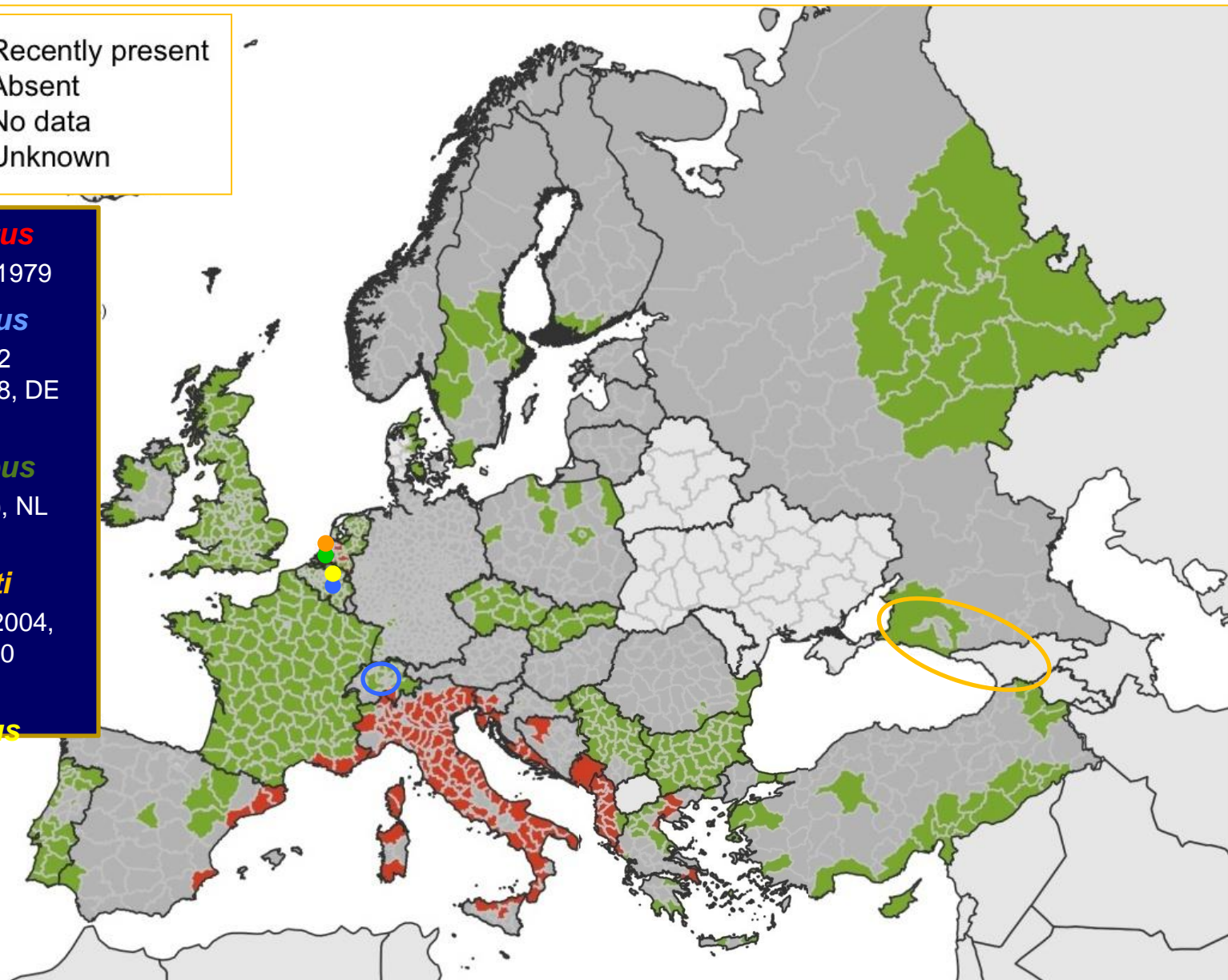
## ➤ *Aedes atropalpus*

IT 1996 (†), FR 2003 (†), NL 2009 (localized)

## ➤ *Aedes aegypti*

RU 2001, PT (Madeira) 2004, GE 2007, NL 2010 (localized)

## ➤ *Aedes koreicus*



# Key areas of work

**WHO needs to further coordinate activities, including quality assurance of dengue diagnostics; strengthen capacity for case management and vector control; develop an evidence base for integration of preventive strategies; enhance surveillance; and work closely with health and other relevant ministries.**

**Dengue in the African Region is of serious concern and efforts must be made to include the disease in surveillance systems and policy development.**

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