



# Global Health:

Needing a multi-sectoral approach with agriculture

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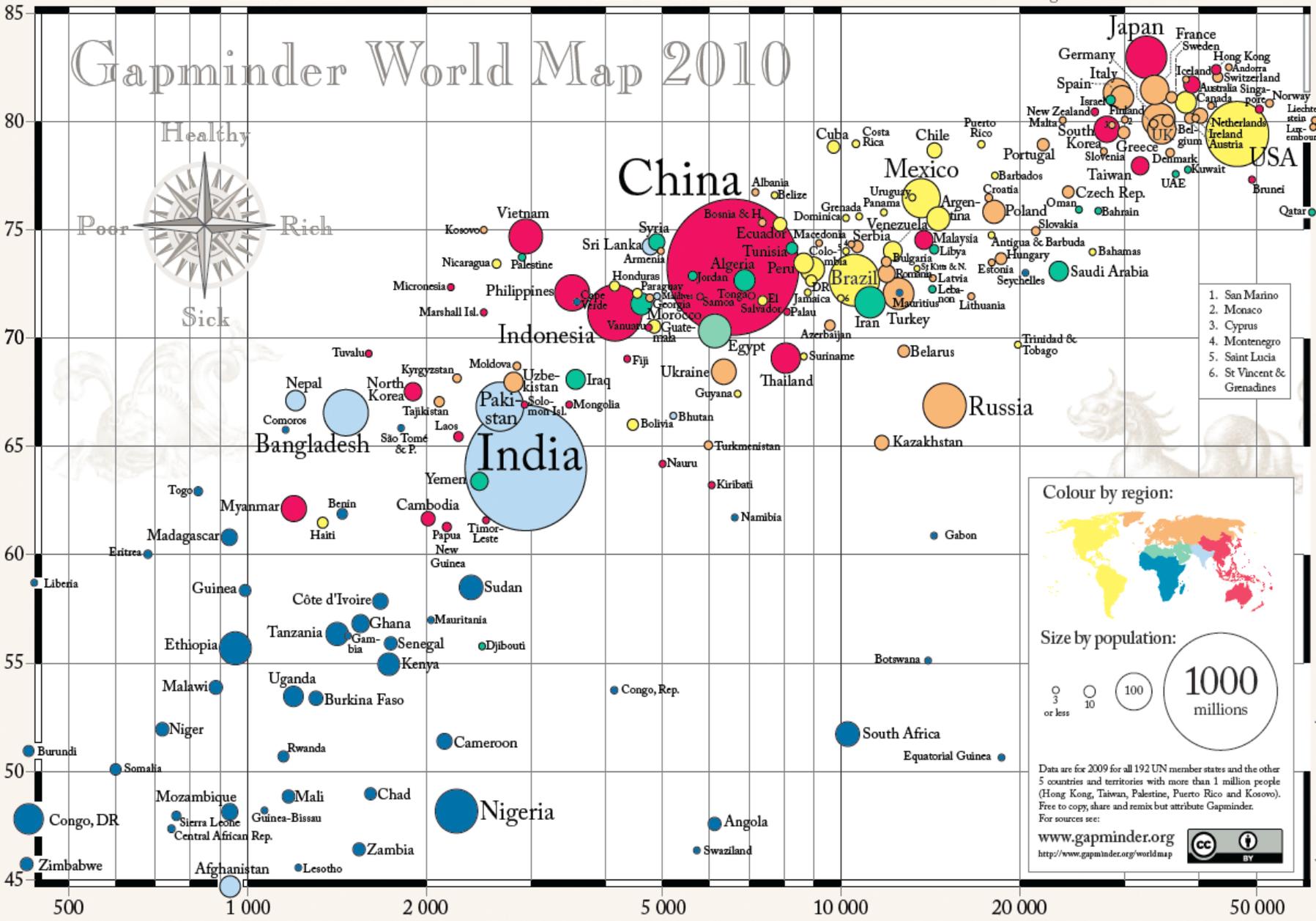
Low-income countries

Middle-income countries

High-income countries

# Gapminder World Map 2010

Health Life expectancy at birth (years)



1. San Marino
2. Monaco
3. Cyprus
4. Montenegro
5. Saint Lucia
6. St Vincent & Grenadines

Colour by region:

Size by population:

1000 millions

Data are for 2009 for all 192 UN member states and the other 5 countries and territories with more than 1 million people (Hong Kong, Taiwan, Palestine, Puerto Rico and Kosovo). Free to copy, share and remix but attribute Gapminder. For sources see: [www.gapminder.org](http://www.gapminder.org) <http://www.gapminder.org/worldmap>

Money GDP per person in US dollars (purchasing power adjusted) (log scale)

GAPMINDER

# RELATIONSHIP BETWEEN HEALTH AND AGRICULTURE

Evidence  
base

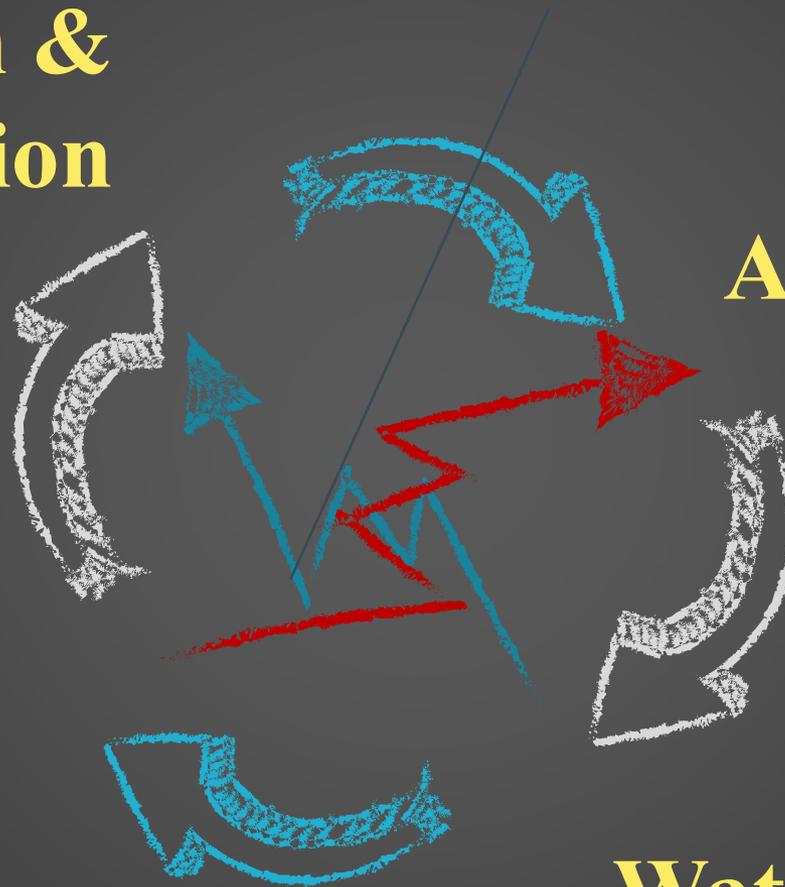
# Health and agriculture: connected sectors

**Health &  
Nutrition**

**Agriculture**

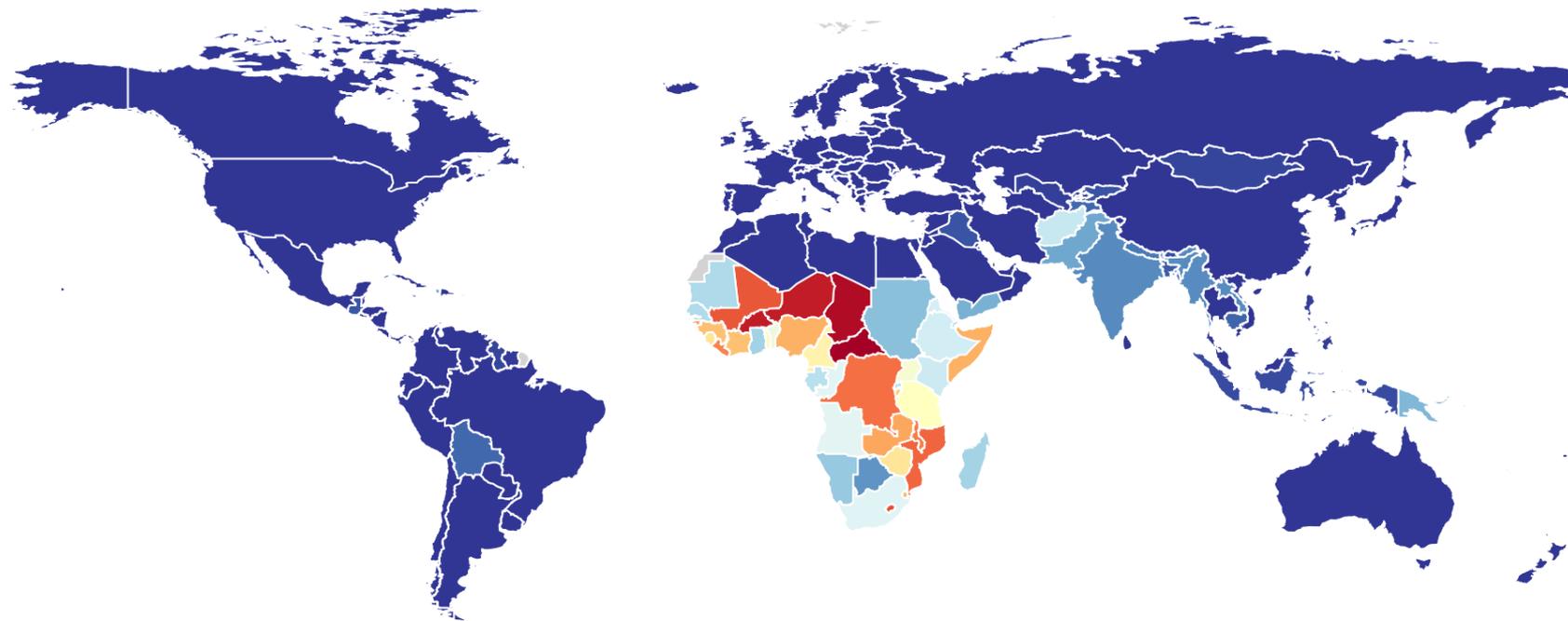
**Education**

**Water**



# Communicable, maternal, neonatal and nutritional disorders, 2010

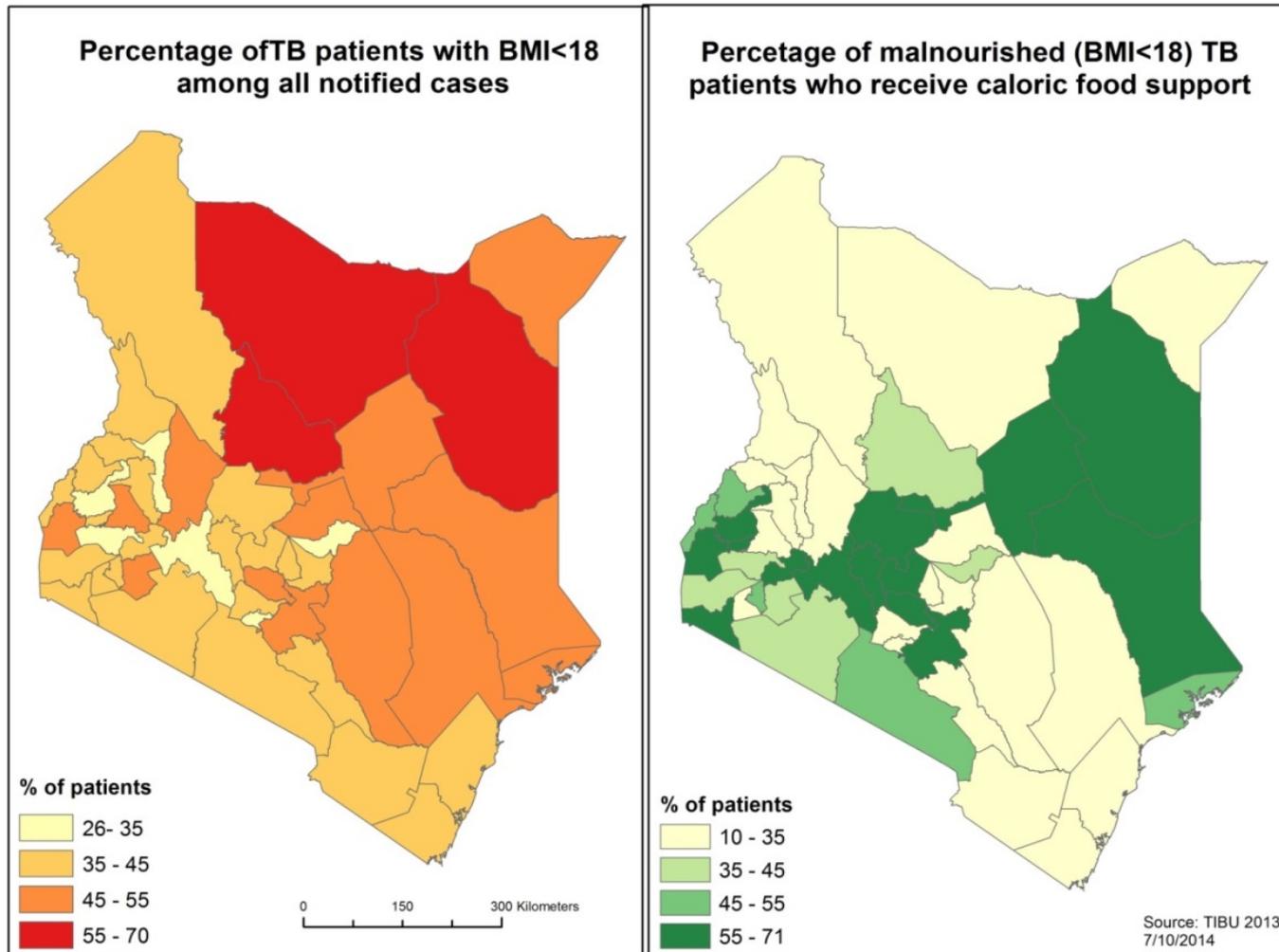
Years of Life Lost per 100,000



Source: IHME 2013

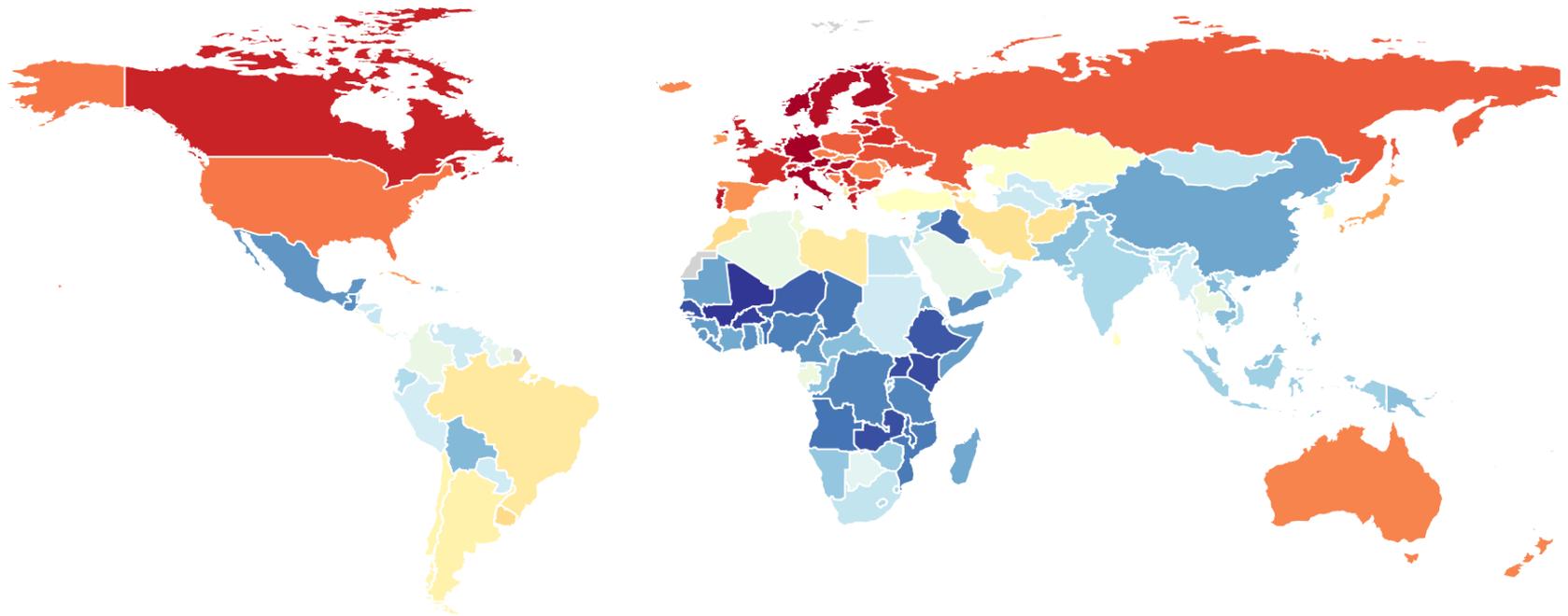


# MALNUTRITION AND TB

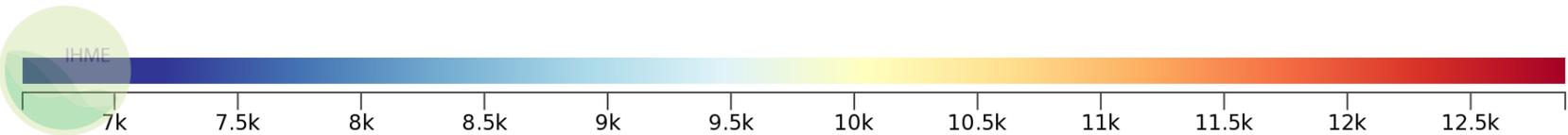


# Non-communicable diseases, 2010

Years of Life Lost to Disability per 100,000



Source: IHME 2013



# SHIFTING GLOBAL BURDEN OF NUTRITION-RELATED ILLNESS

	<i>DALY Ranking</i>	
	1990	2010
Childhood underweight	1	8
Sub-optimal breastfeeding	5	14
Iron deficiency	11	13
Vitamin A deficiency	17	29
Zinc deficiency	19	31
High blood pressure	4	1
Low fruit	8	5
High sodium	12	11
High BMI	10	6
High fasting plasma glucose	9	7

# LONG-TERM SOCIAL AND ECONOMIC IMPACTS

- 1. Reduced school performance and cognitive development**
  - 1. Iron deficiency**
  - 2. Soil transmitted helminthes**
  - 3. General malnutrition**
  - 4. Cretinism – preventable mental retardation (lack of iodine)**
- 2. Reduced health outcomes: Blindness from vitamin A deficiency**
- 3. Reduced productivity: Income loss due to iron deficiency – close to 8% of GDP in Bangladesh**

[map of child mortality](#)

# **MOUNTING A GLOBAL RESPONSE**

# TIME IS RIPE FOR COLLABORATION THROUGH A MULTI-SECTORAL APPROACH

- **Successes of Millennium Development Goals being recognized**
  - Need for broader focus and partnerships
- **2014 Rome Declaration on Nutrition**
  - Joint WHO and FAO leadership: sustainable food systems through programs, research and policy development
- **2015 Sustainable Development Goals**



1

**ERADICATE  
EXTREME POVERTY  
AND HUNGER**



2

**ACHIEVE UNIVERSAL  
PRIMARY EDUCATION**



3

**PROMOTE GENDER  
EQUALITY AND  
EMPOWER WOMEN**



4

**REDUCE  
CHILD MORTALITY**



5

**IMPROVE MATERNAL  
HEALTH**



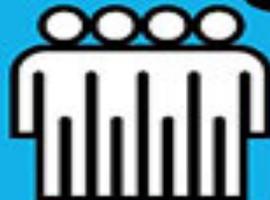
6

**COMBAT HIV/AIDS,  
MALARIA AND OTHER  
DISEASES**



7

**ENSURE  
ENVIRONMENTAL  
SUSTAINABILITY**

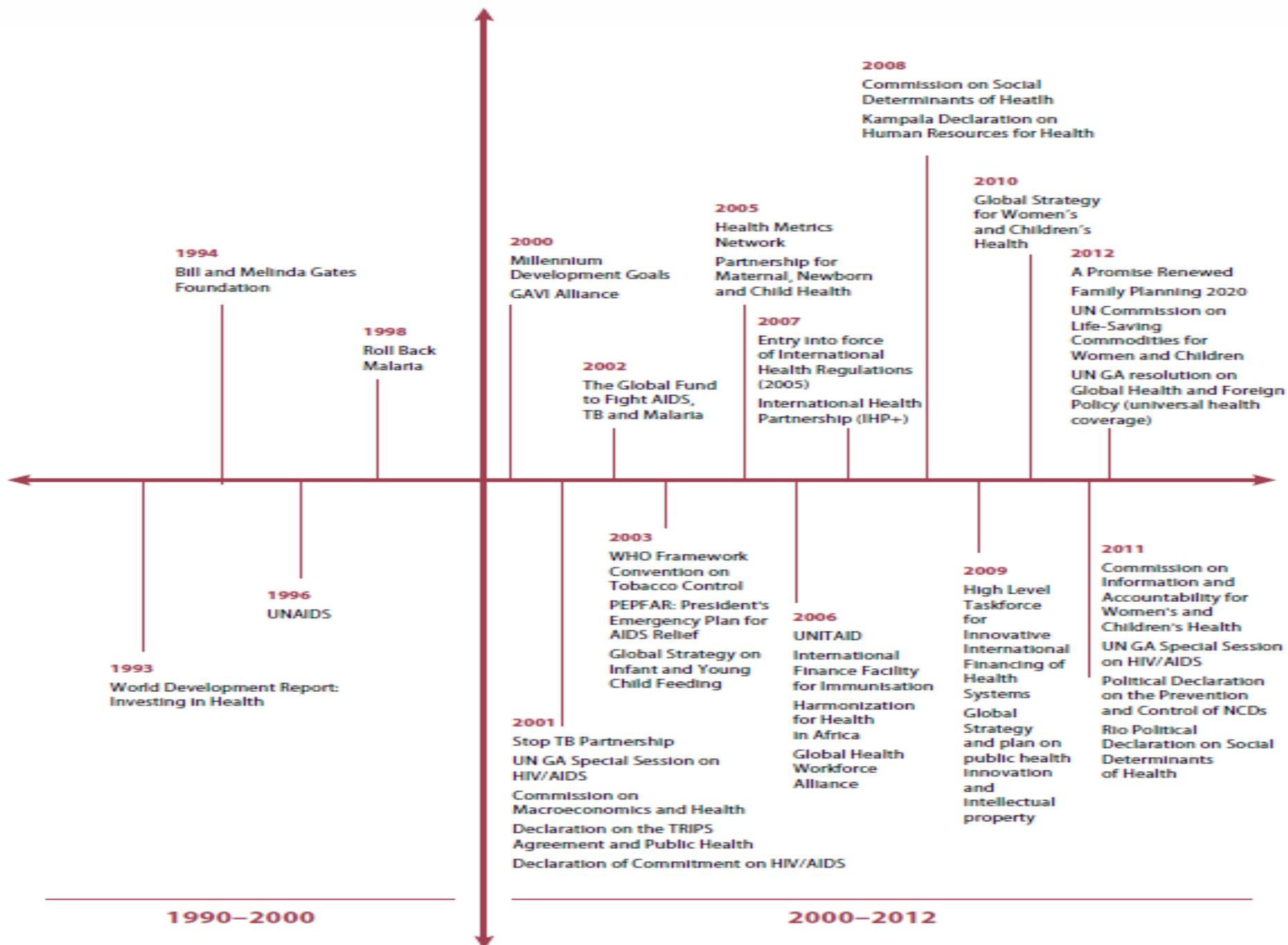


8

**A GLOBAL  
PARTNERSHIP FOR  
DEVELOPMENT**

# Millennium Development Goals

**Figure 1. Global health architecture milestones, 1990-2012**

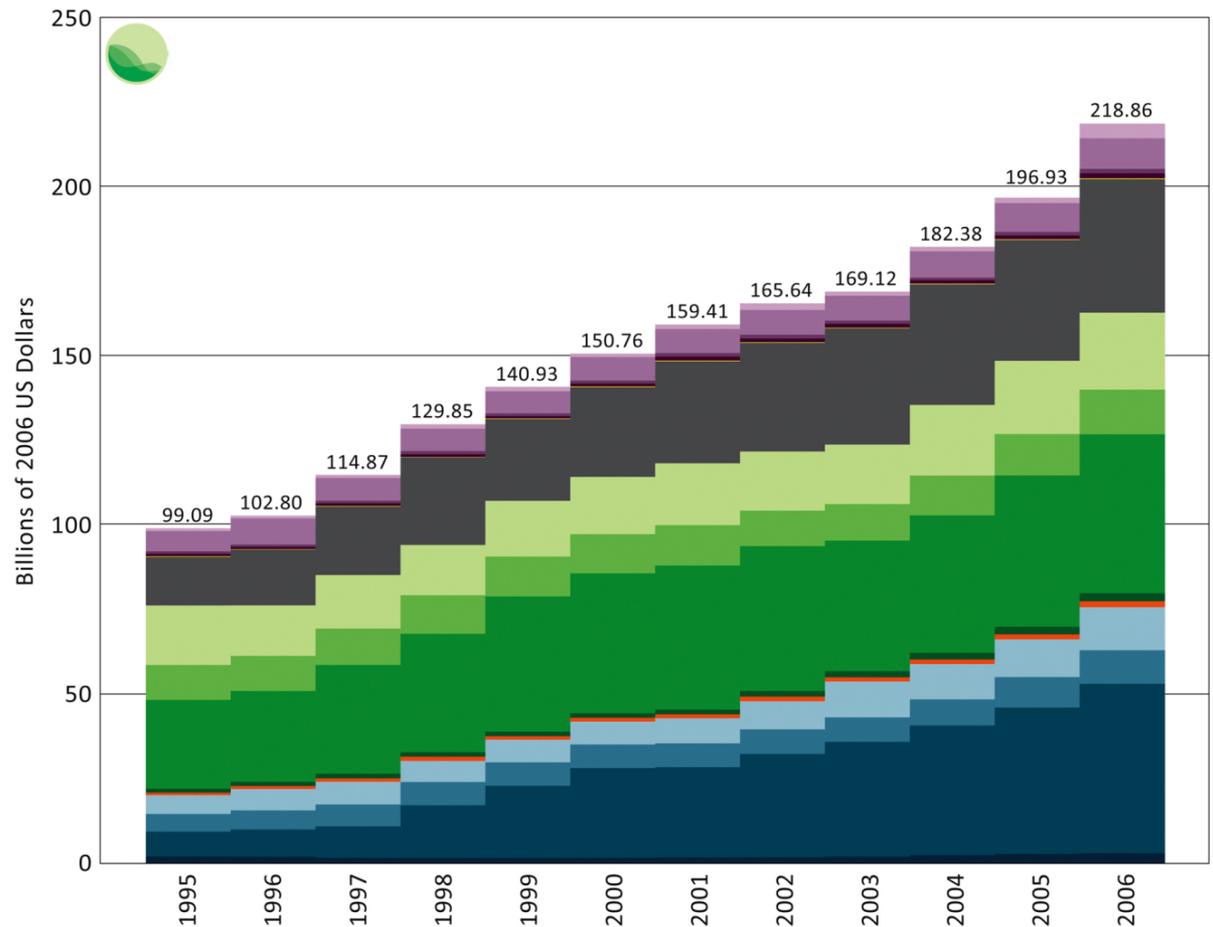


# FINANCING OF HEALTH BY GOVERNMENTS HAS BEEN INCREASING

- Sub-Saharan Africa, West
- Sub-Saharan Africa, South
- Sub-Saharan Africa, East
- Sub-Saharan Africa, Central
- Oceania
- North Africa / Middle East
- Latin America, Tropical
- Latin America, South
- Latin America, Central
- Latin America, Andean
- Caribbean
- Asia, Southeast
- Asia, South
- Asia, East
- Asia, Central

Source: IHME Government Health Spending Database (Developing Countries) 2010

Note: Government health expenditure as source (GHE-S).



# PROGRESS TOWARD MDGS

- # of undernourished people down: 24% (1990-1992) to 14% (2011-2013)
- Maternal mortality has dropped 45% since 1990
- 9.5 million people on ART for HIV
- 2 billion gained access to water and sanitation
- Stunting in childhood: decreased from 40% to 25%
- Between 1995-2012, TB treatment saved 22 million lives
- In India, % of TB cases detected increased from 30% (2000) to 75%

Revitalize global partnerships

Goal 17

Inclusive societies, accountable institutions

Goal 16

Responsible consumption and production

Goal 12

Decent work and economic growth

Goal 8

Water & sanitation

Goal 6

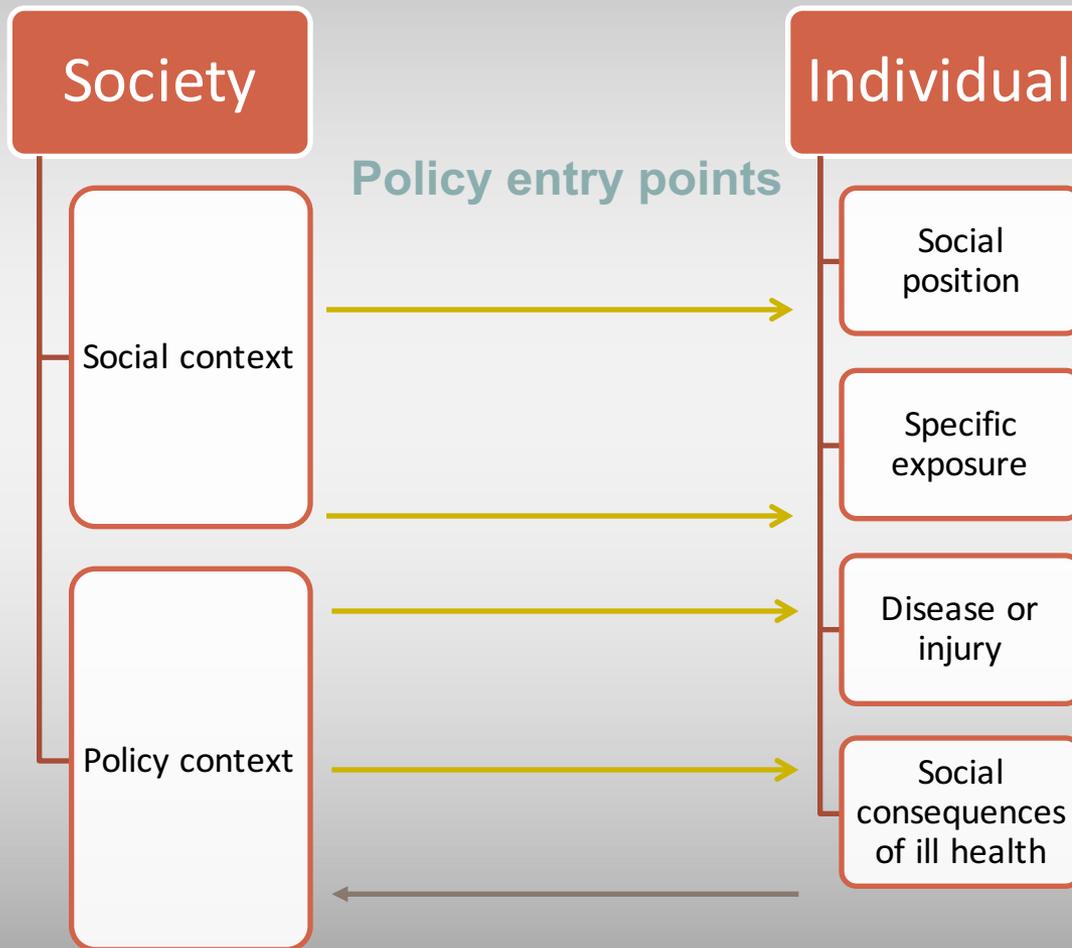
Ensure health lives and promote well being

Goal 3

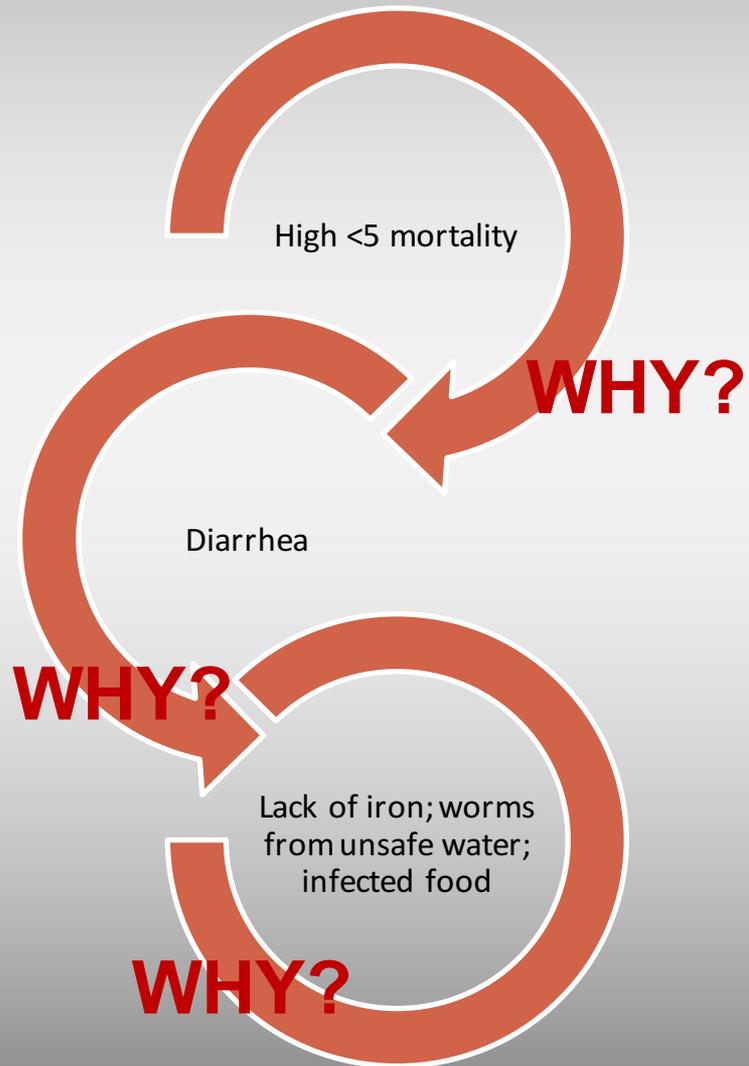
End hunger, achieve food security and improve nutrition

Goal 2

# Social context to health outcomes

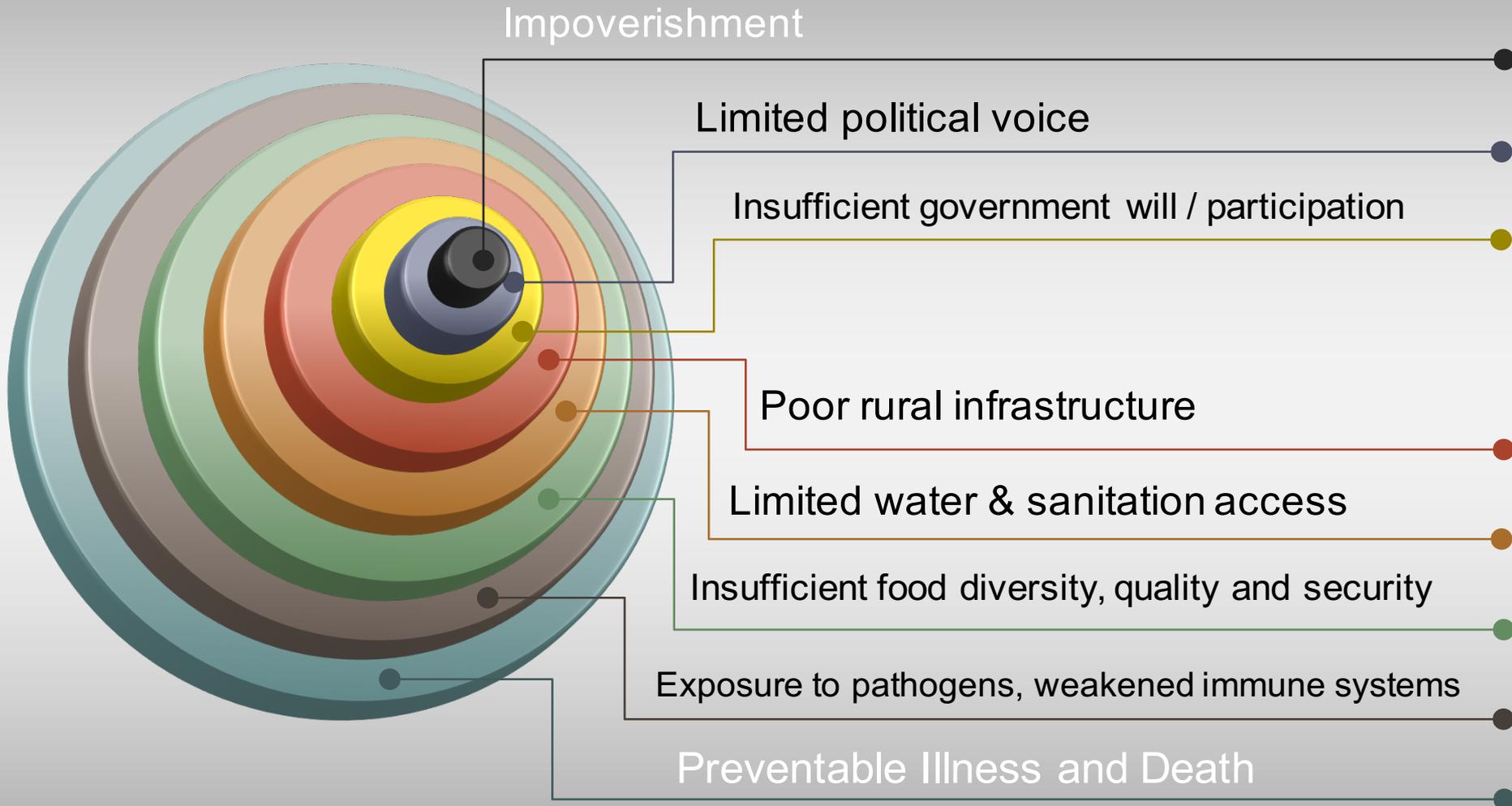


# Building an onion model



Finding solutions by understanding the layers of the issue

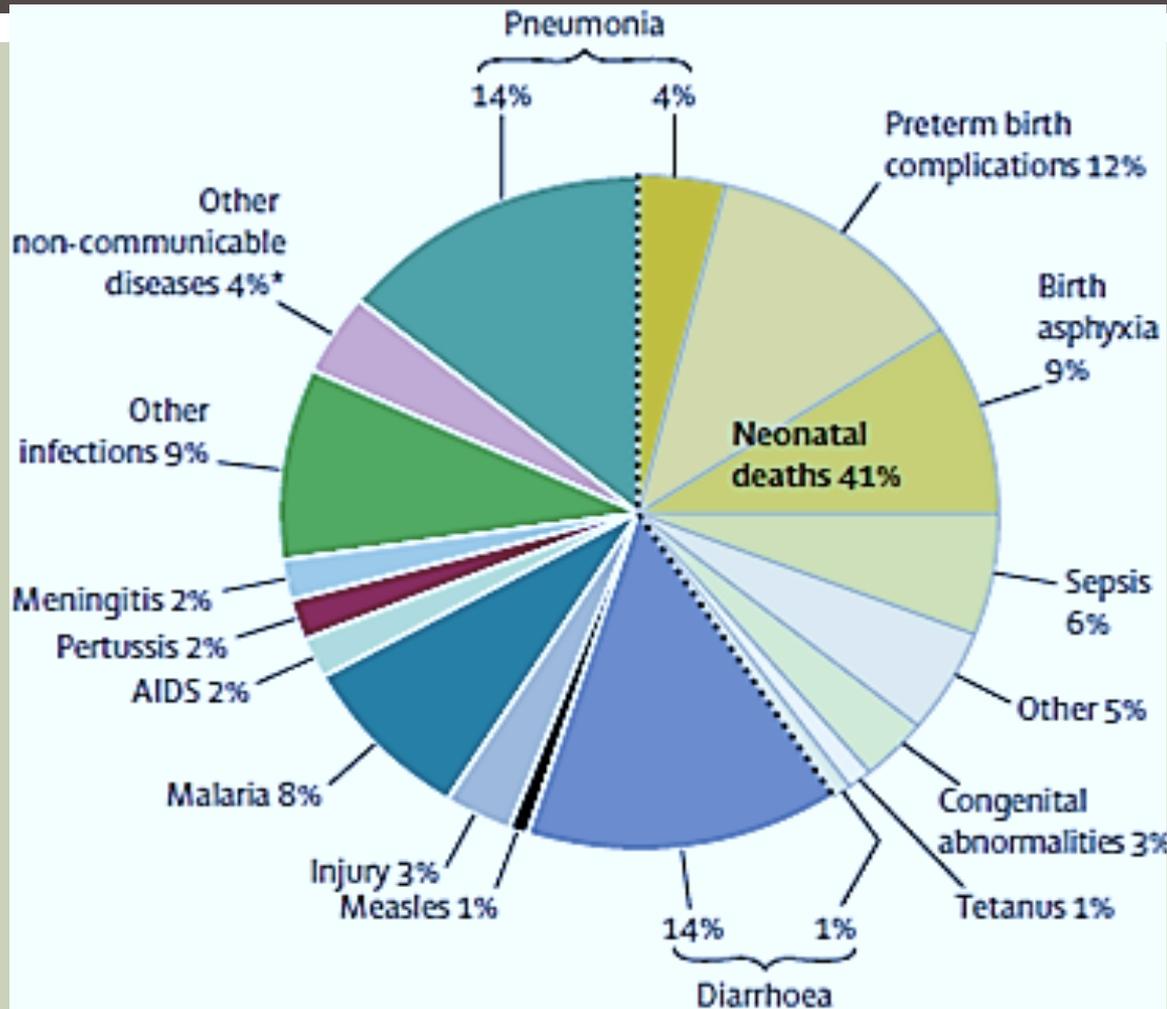
# Shared “root causes” for stalled progress



# YIELDING SUCCESS

Case  
studies

# WE KNOW THE CAUSES OF NEWBORN, INFANT AND CHILD MORTALITY IN LOW INCOME COUNTRIES



- Diarrheal disease and pneumonia still claim the most lives among older infants and children under age five
- Among newborns, preterm birth complications, birth asphyxia and infection pose the greatest dangers
- Undernutrition / low birth weight are major contributors to newborn, infant and child deaths

Based on: Black RE et al. Global, regional, and national causes of child mortality in 2008: a systematic analysis

[www.thelancet.com](http://www.thelancet.com), May 12, 2010 (DOI10.1016/50140-6736(10)60549-1)

# MALNUTRITION:

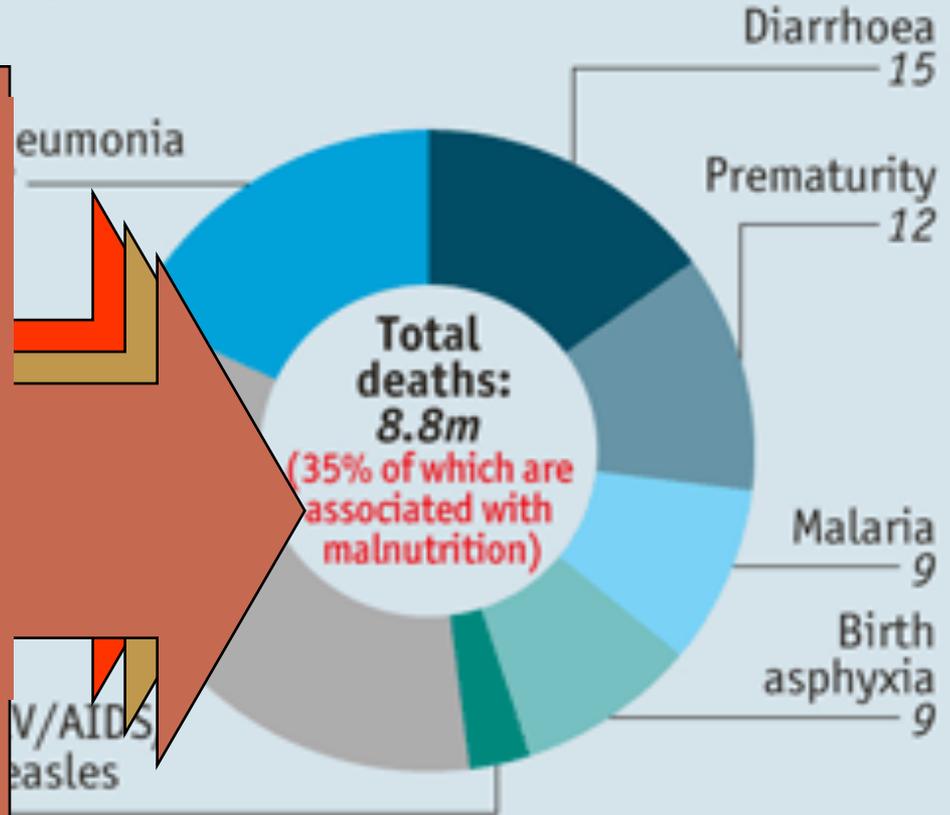
Attributable  
cause of 35% of

m  
c  
m  
  
I  
e  
g  
m  
d

Immunizations  
save 2-3 million  
lives per year

## The toll of malnutrition

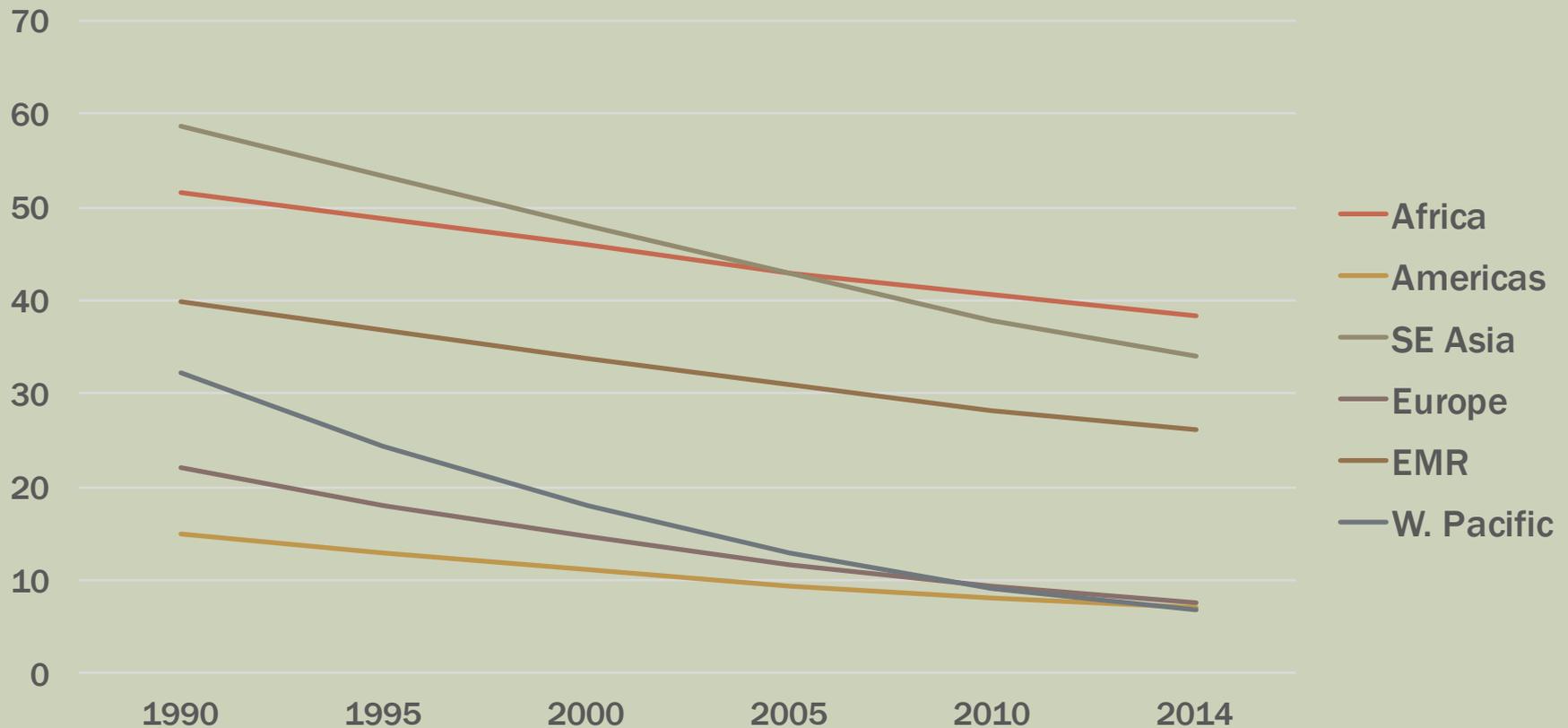
Global deaths of children under 5 by cause  
2008, % of total

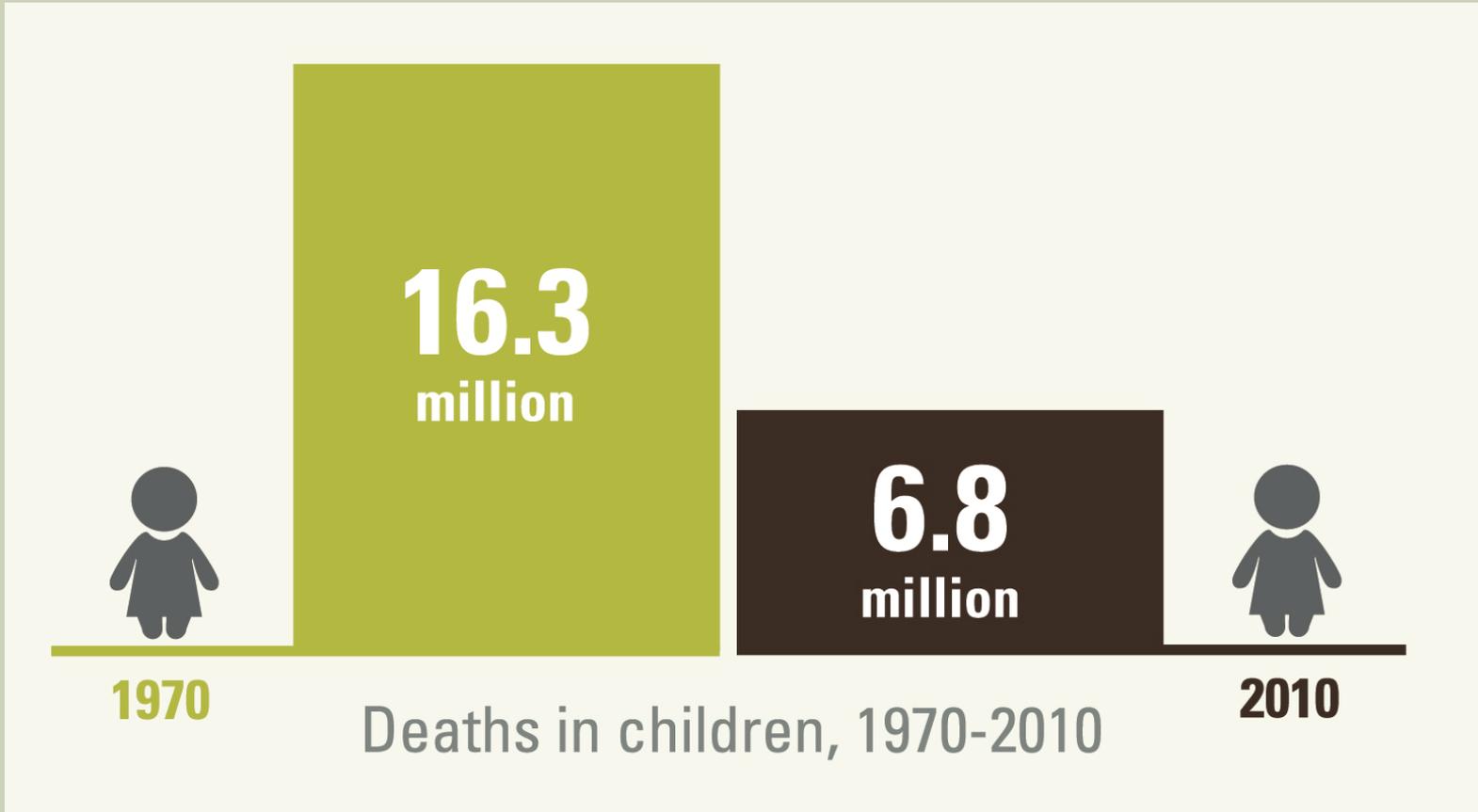


Sources: WHO; IFPRI

# DECLINING PREVALENCE OF STUNTING IN ALL REGIONS OF THE WORLD

Prevalence of Stunting 1990-2014



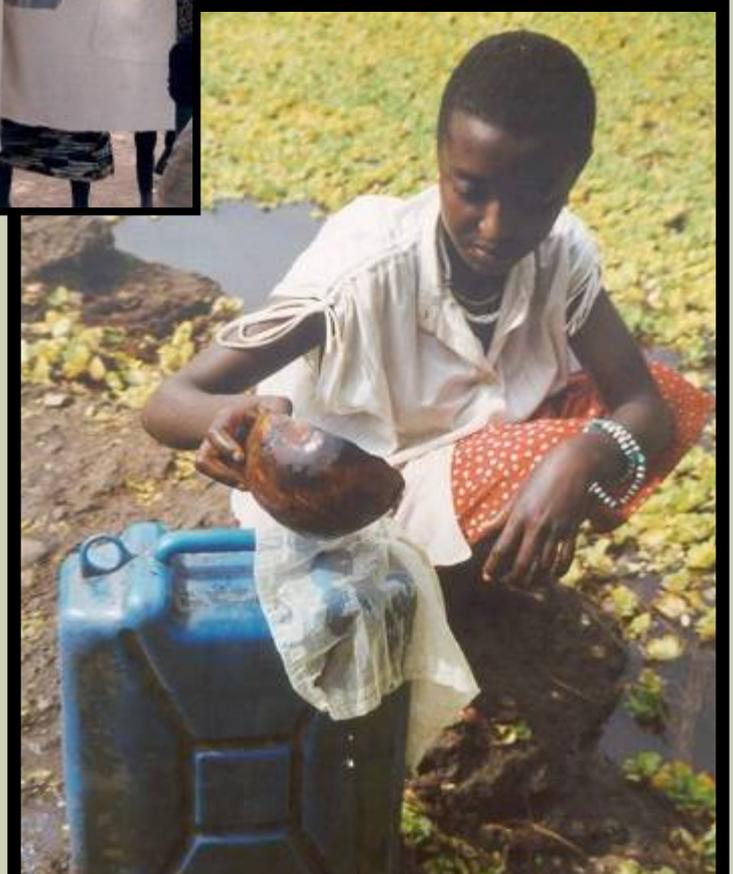


Source: Lancet, 2013 report of IHME results



# GUINEA WORM





# Health Education/Water Filtration

# Pipe Filters



Courtesy of: Carter Center

© 2003 Mark Pelletier Photography



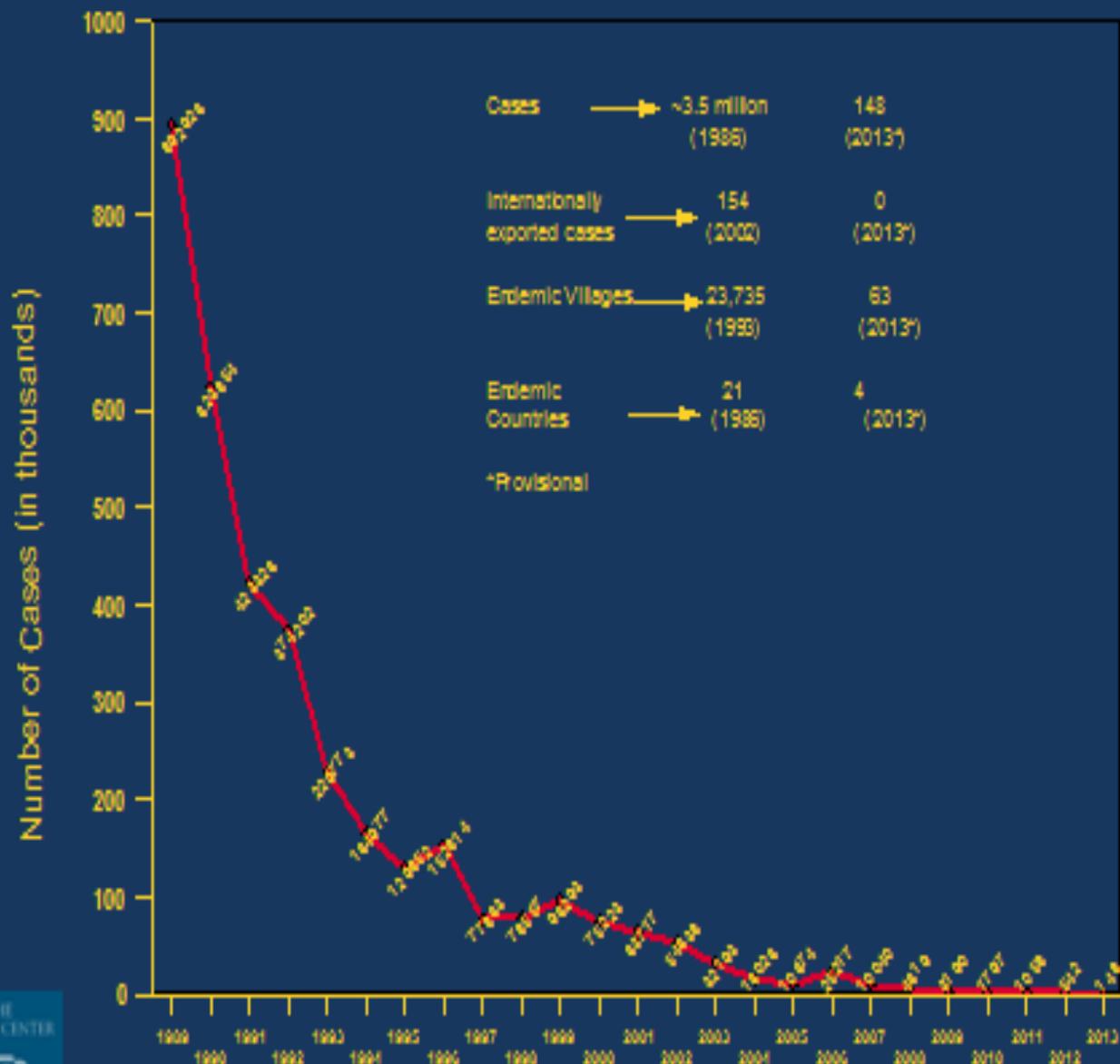
Courtesy of: Carter Center

# Village-based Surveillance and Case Containment



Courtesy of: Carter Center

## Number of Reported Cases of Guinea Worm Disease by Year: 1989 -2013\*



Cases	→ ~3.5 million (1986)	148 (2013*)
Internationally exported cases	→ 154 (2002)	0 (2013*)
Endemic Villages	→ 23,735 (1993)	63 (2013*)
Endemic Countries	→ 21 (1986)	4 (2013*)

\*Provisional



# GUINEA WORM

Lesson: Build on community platforms,  
engage communities in their own solutions



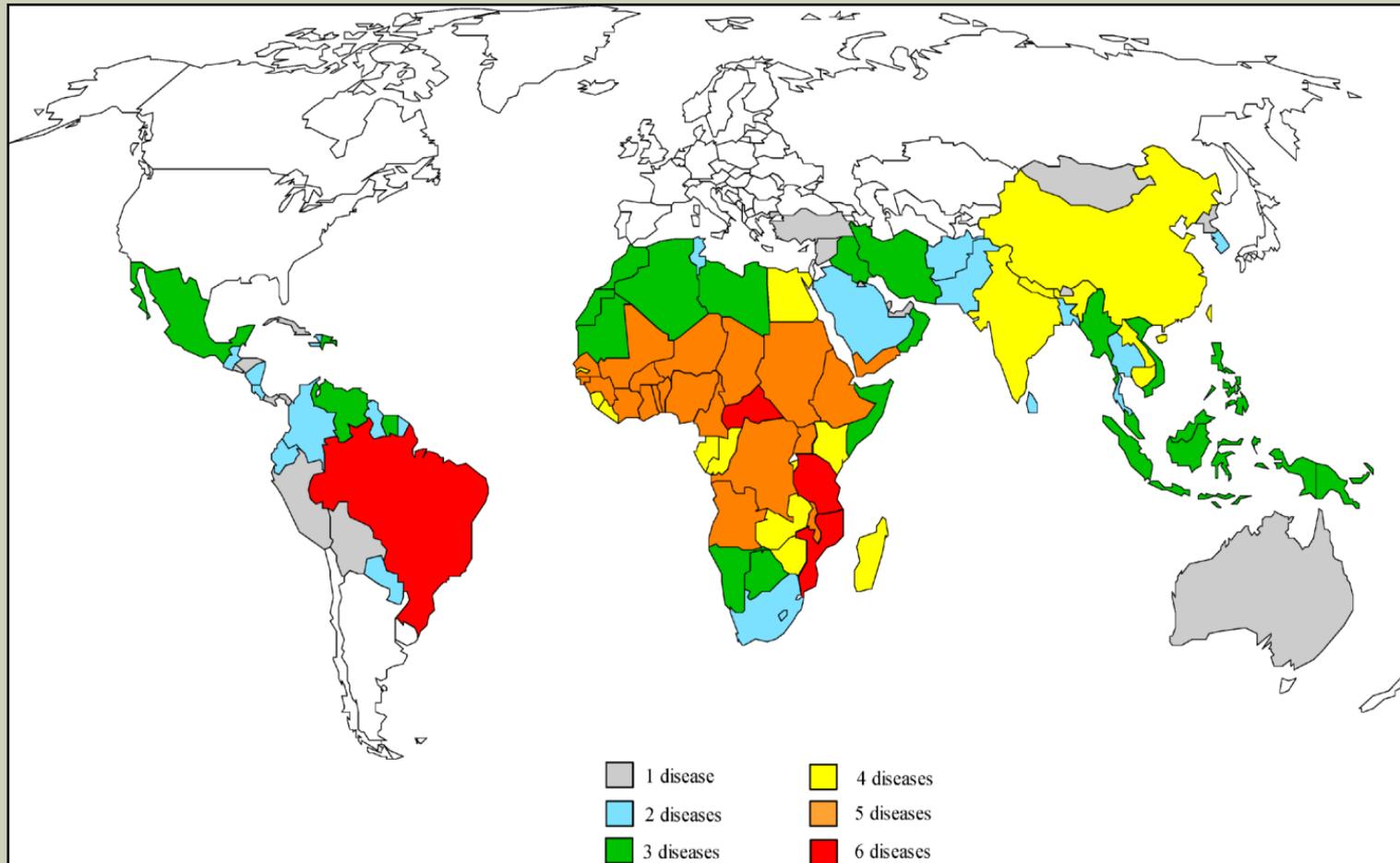
# NEGLECTED TROPICAL DISEASES

# Neglected Tropical Diseases

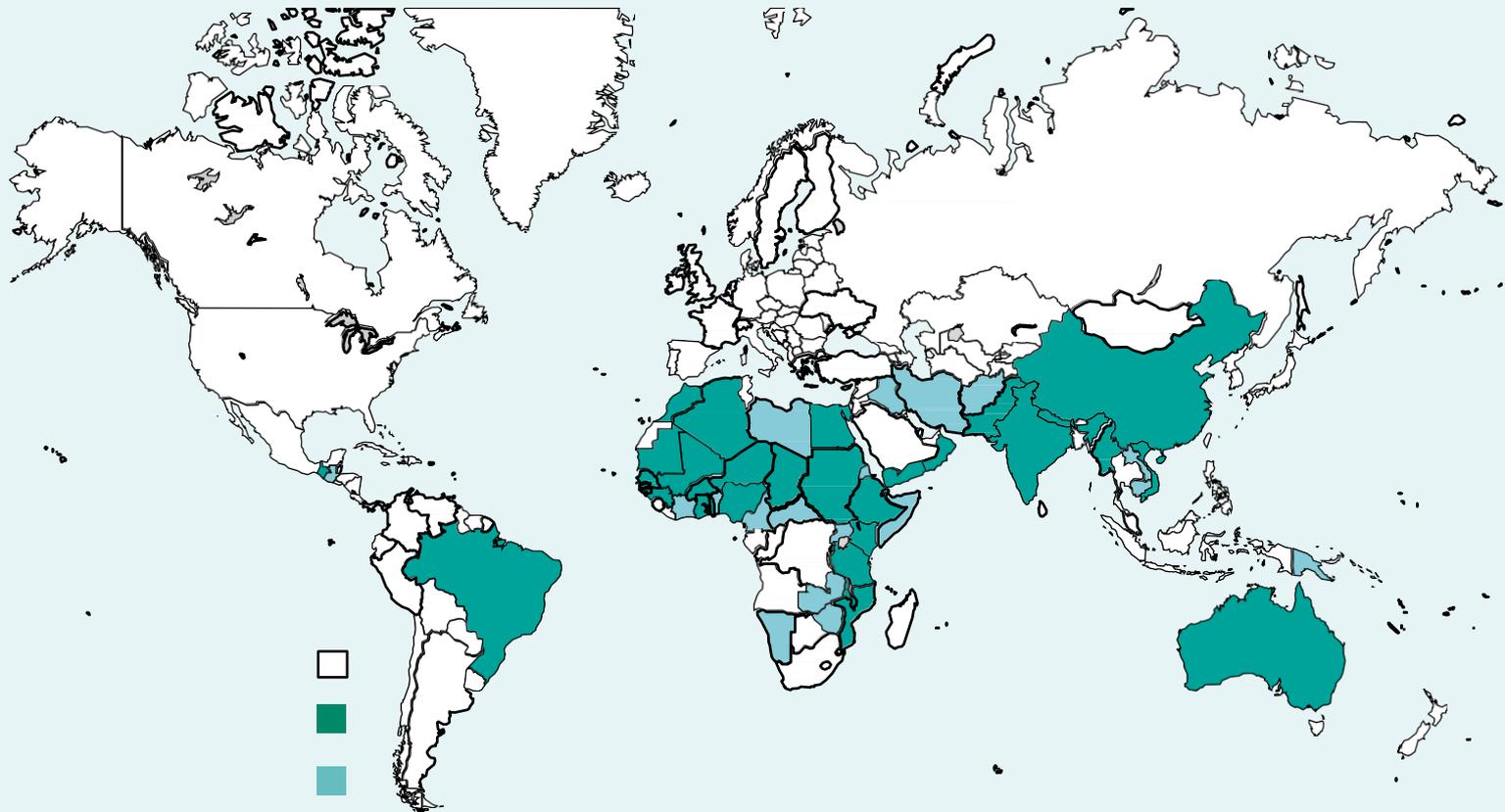


LF	Oncho	Schisto	STH	Trachoma
<p>120 Million <i>Infected</i></p> <p><b>1.2 Billion at risk</b></p>	<p>37 Million <i>Infected</i></p> <p><b>0.15 Billion at risk</b></p>	<p>200 Million <i>Infected</i></p> <p><b>0.7 Billion at risk</b></p>	<p>800 Million <i>Infected</i></p> <p><b>1.2 Billion at risk</b></p>	<p>84 Million <i>Infected</i></p> <p><b>1.2 Billion at risk</b></p>
<ul style="list-style-type: none"> <li>• Painful disfiguring</li> <li>• Stigmatizing</li> <li>• Permanent disability</li> <li>• Loss of productivity and income</li> </ul>	<ul style="list-style-type: none"> <li>• Severe visual impairment, including blindness</li> <li>• Severe itching</li> <li>• Loss of productivity and income</li> </ul>	<ul style="list-style-type: none"> <li>• Anemia, stunting in children</li> <li>• Reduced ability to learn</li> <li>• Chronic diseases in adults (e.g., liver damage, bladder cancer, kidney failure)</li> </ul>	<ul style="list-style-type: none"> <li>• Growth retardation</li> <li>• Malnutrition and iron deficiency anaemia</li> <li>• Impaired cognitive development</li> </ul>	<ul style="list-style-type: none"> <li>• Untreated leads to irreversible blindness</li> </ul>

# OVERLAP OF THE 7 NTDS WORLDWIDE



# BURDEN OF TRACHOMA



# APPROACH TO CONTROLLING TRACHOMA

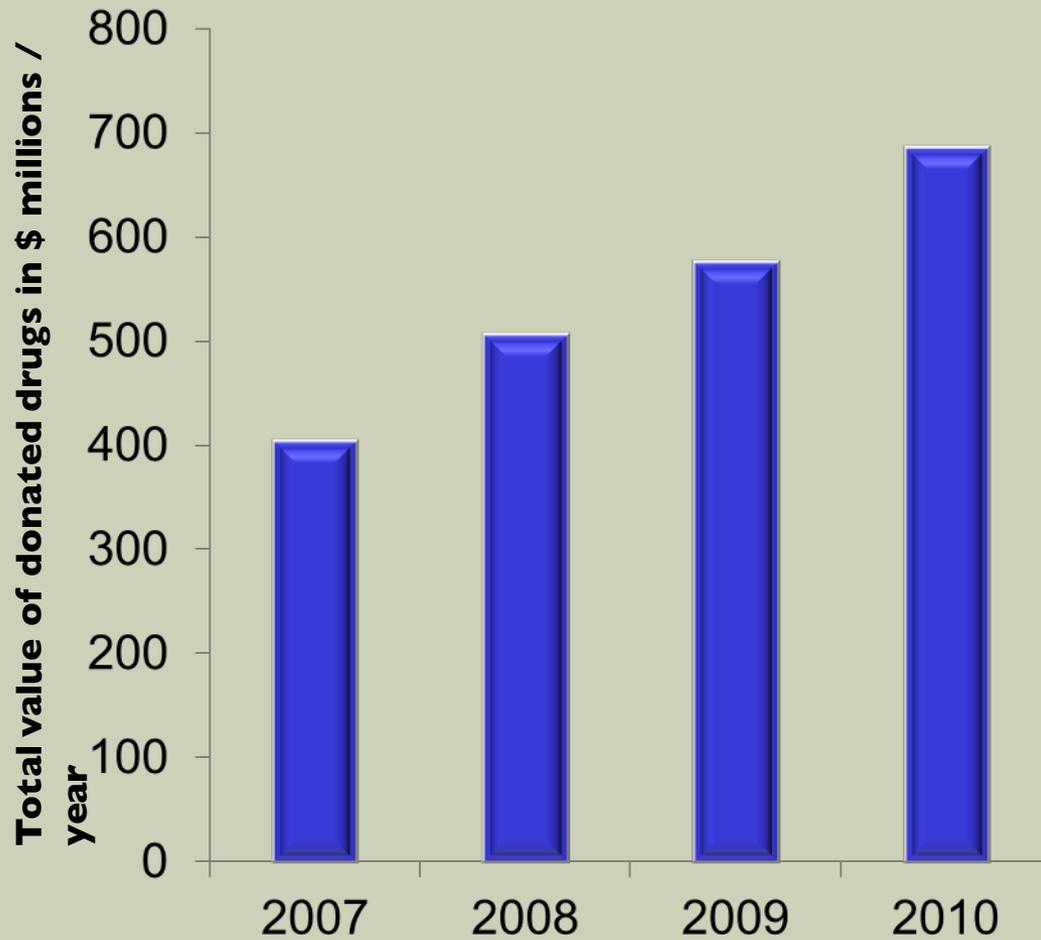
**S**      **Surgery**

**A**      **Antibiotics**

**F**      **Face Washing**

**E**      **Environmental improvements**

**Public private partnerships – significant and growing contribution from the pharmaceutical sector to NTD elimination**



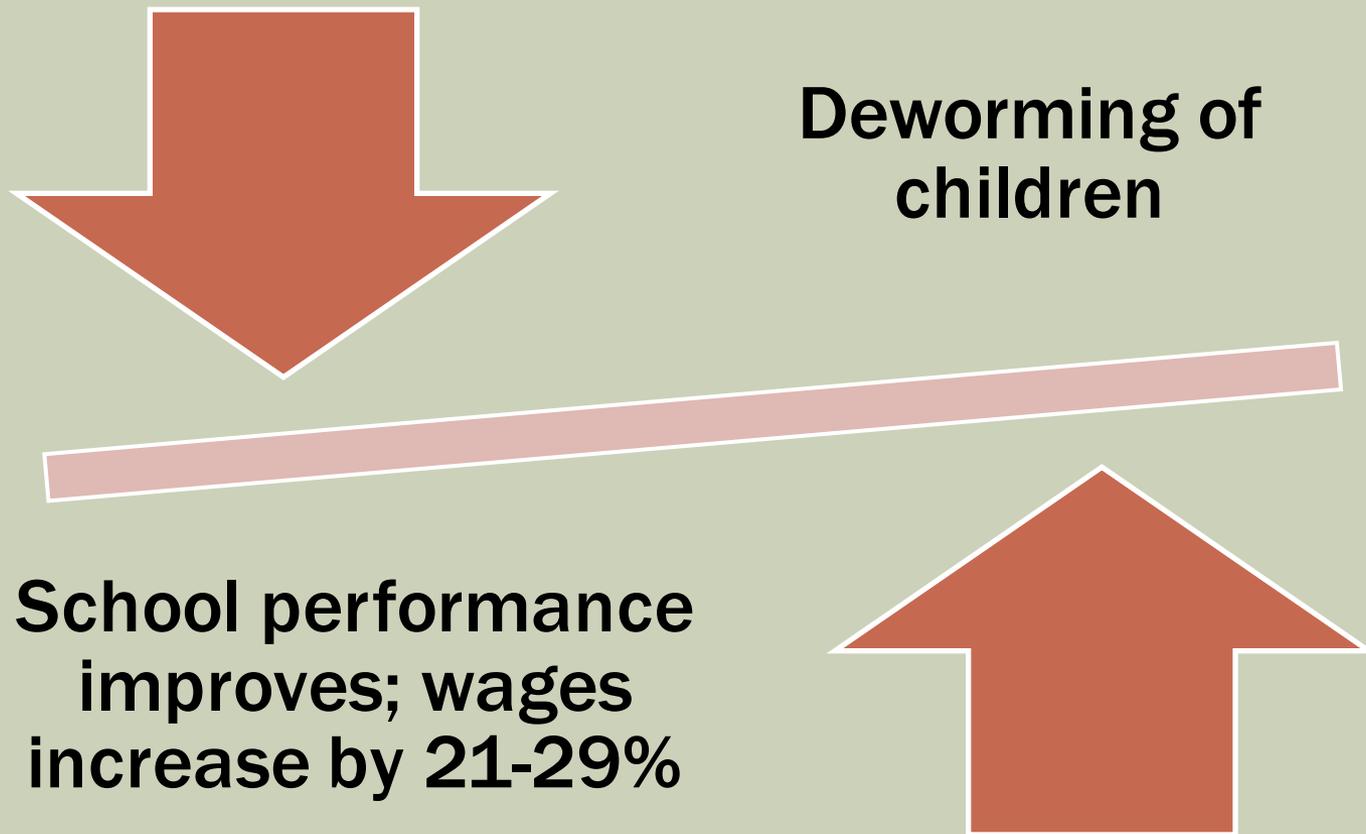
**Pfizer donated its 500 millionth azithromycin dose in November 2015**



# MALI MASS DRUG ADMINISTRATION



# LONG-TERM IMPACT: KENYA EXAMPLE



# NEGLECTED TROPICAL DISEASES

## Lessons:

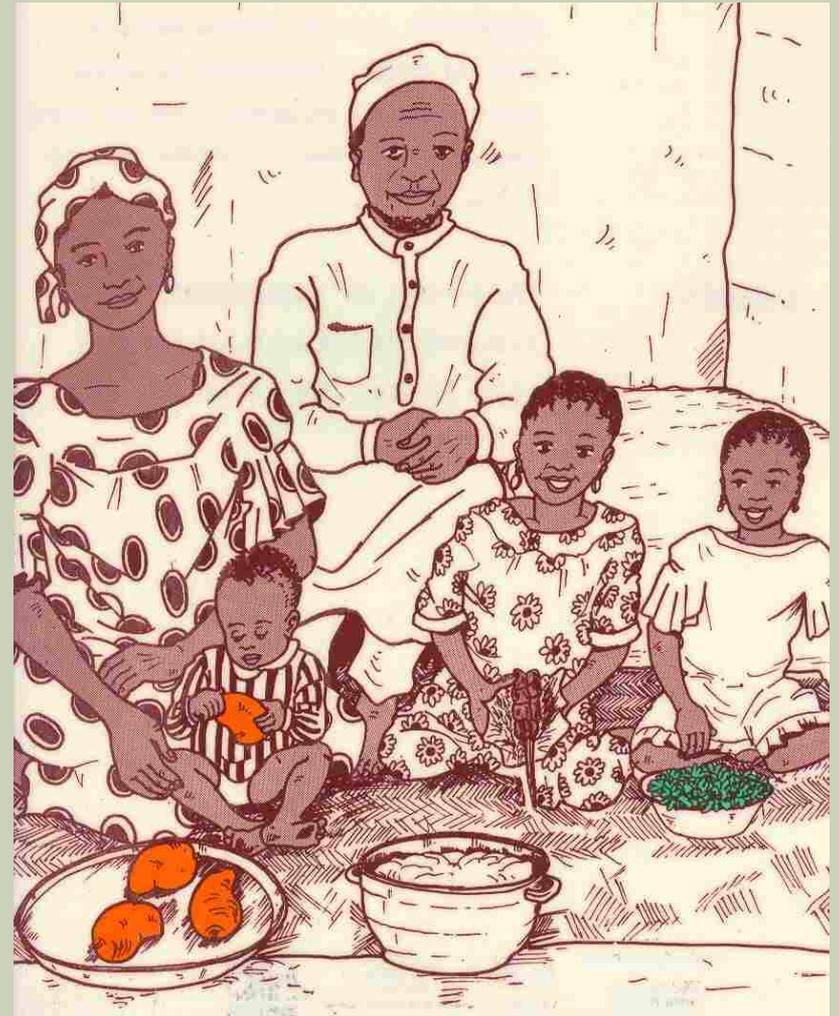
- 1) Political will can be built at global level with evidence based solutions;
- 2) Public-private partnerships can work;
- 3) Community engagement and government ownership can be synonymous, efficient and impactful

# CASE 3: THE ROLE FOR NON-GOVERNMENTAL ORGANIZATIONS

Helen Keller  
International

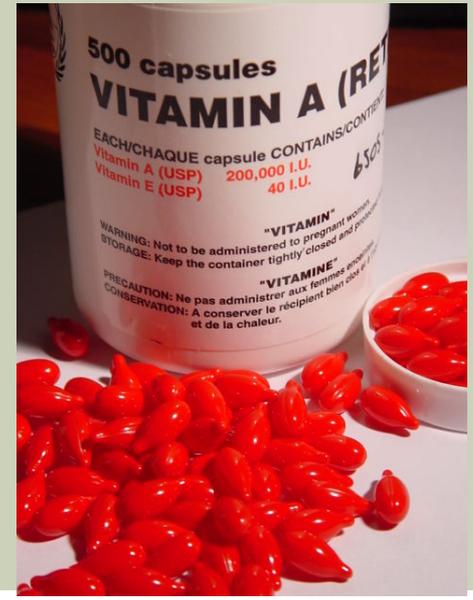
# POTENTIAL:

- Targeting problems with known solutions
- Capacity-building approach empowers individuals, communities, governments, civil society and regional organizations



# NUTRITION:

- Vitamin A Supplementation
  - > 47 million children reached twice per year
  - De-worming integrated
  - Child Health Days
- Large-scale food fortification: – over 50 million in West Africa
  - On track to reach 67 million more this year
- Essential Nutrition Actions - overarching framework



# Vitamin A Supplementation+

- VAS in Africa has become a major nutrition and public health success story
- VAS success can be the locomotive to accelerate other nutrition programs
- VAS delivery can be vehicle for other health interventions



# NUTRITION

## •Expand Essential Nutrition Actions+ for Child Survival:

- Integration of treatment and prevention of malnutrition
- Point-of-use fortification (lipid-based nutrient supplements)
- Therapeutic and preventive zinc

## •Enhanced homestead food production

— including orange-fleshed sweet potato

## •Nutrition care and support for people living with HIV/AIDS



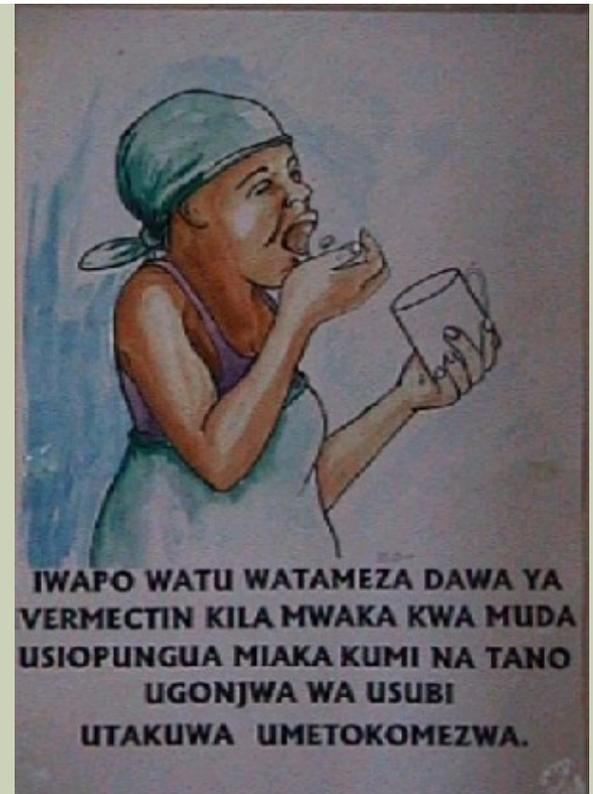
## NTDs - Pillars:

- Community-Directed Treatment with Ivermectin (CDTI)

- Over 3.6 million treatments enabled in 2008

- Trachoma: school-based and other innovative approaches for implementation of all aspects of SAFE

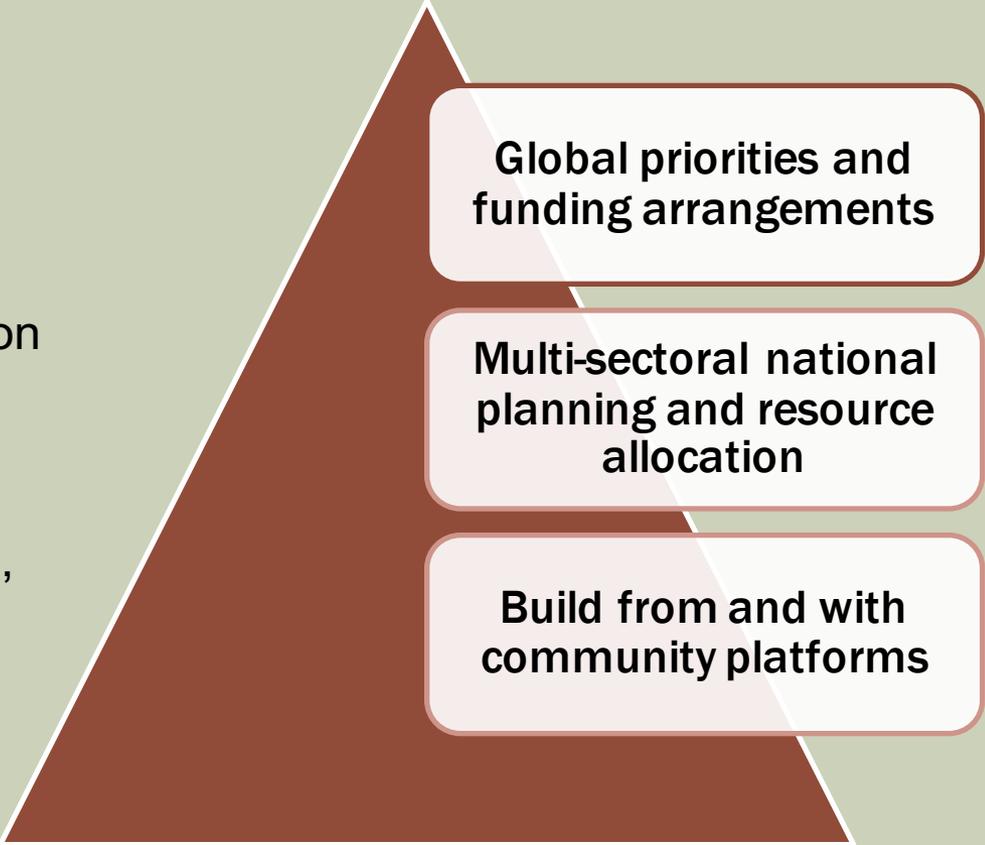
- Surgery
  - Antibiotic treatment
  - Face washing
  - Environmental change
- Integration of deworming into child health days



# WORKING TOGETHER

## Priorities:

1. Pro-poor targeting of water; linking health and agriculture needs
2. Building community-level participation in food security
3. Enhanced monitoring and priority setting based on shared needs (health, education, nutrition and water)



**Global priorities and funding arrangements**

**Multi-sectoral national planning and resource allocation**

**Build from and with community platforms**



*“Alone we can do so little;  
together we can do so much.”*

*- Helen Keller*