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Networking to address
global health challenges

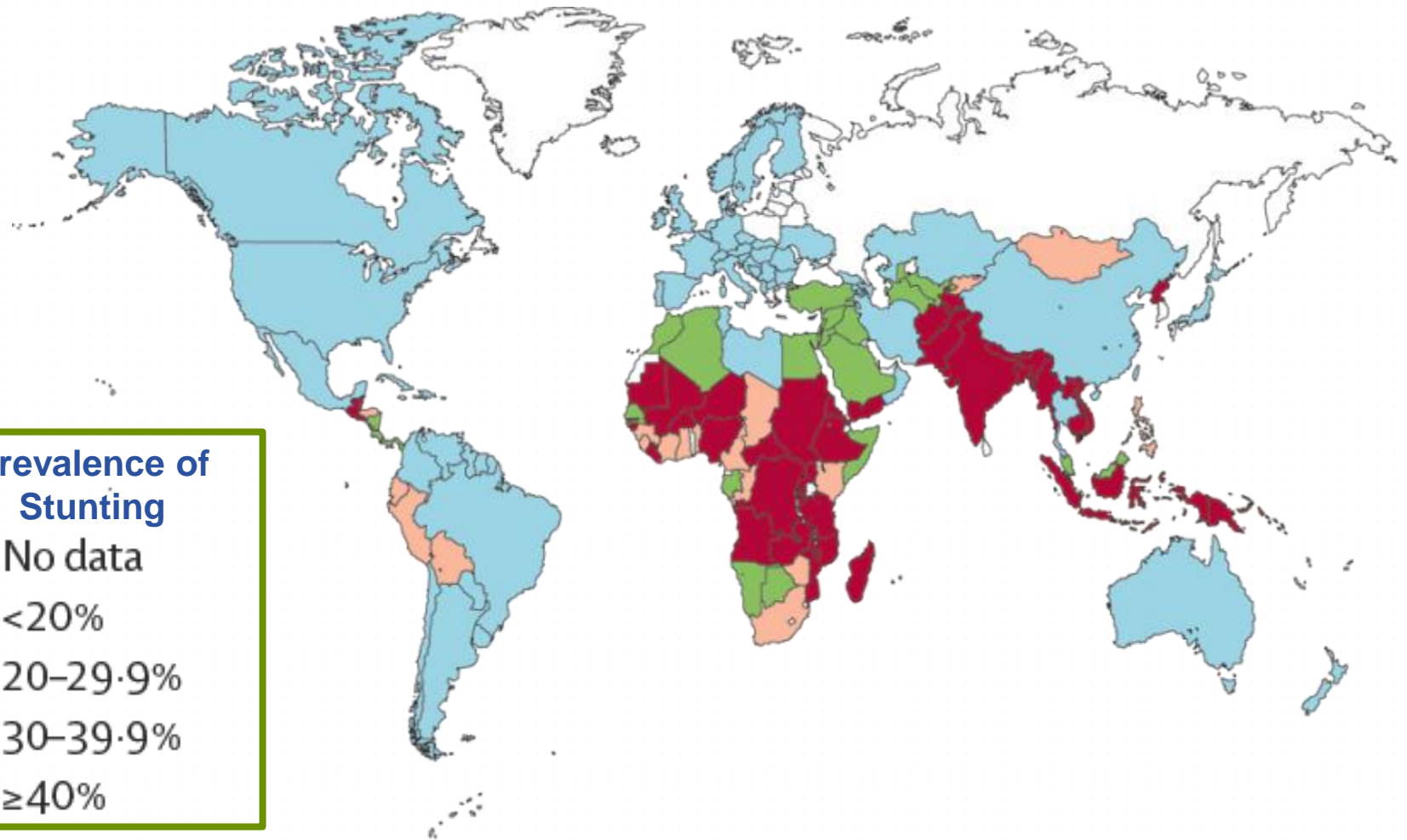
Mexico 2012

Tracking Undernutrition and Obesity

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Instituto Nacional de Salud Pública

178 Million Children Under 5 Suffer from Stunting



Black RE, Allen L H, Bhutta Zq A, Caulfi eld LE, de Onis M, Ezzati M, Mathers C, Rivera JA.
Lancet January, 2008.

High Prevalence of IUGR, Stunting and Severe Wasting in Children Under 5 years of age



13 million babies are born each year with intrauterine growth restriction

178 million children are stunted; 32% of all children

19 million children are severely wasted

Black RE, Allen L H, Bhutta Zq A, Caulfi eld LE, de Onis M, Ezzati M, Mathers C, Rivera JA. Lancet January, 2008.

Attributing Deaths and Disease Burden to Undernutrition and Suboptimal Breastfeeding

Health consequences measured in deaths, contribution to overall rates of disease, and number of life years diminished by disease or disability

Disability-adjusted life years (DALYs): burden of disease measures the gap between the current health of population and ideal situation (living into old age w/ full health)

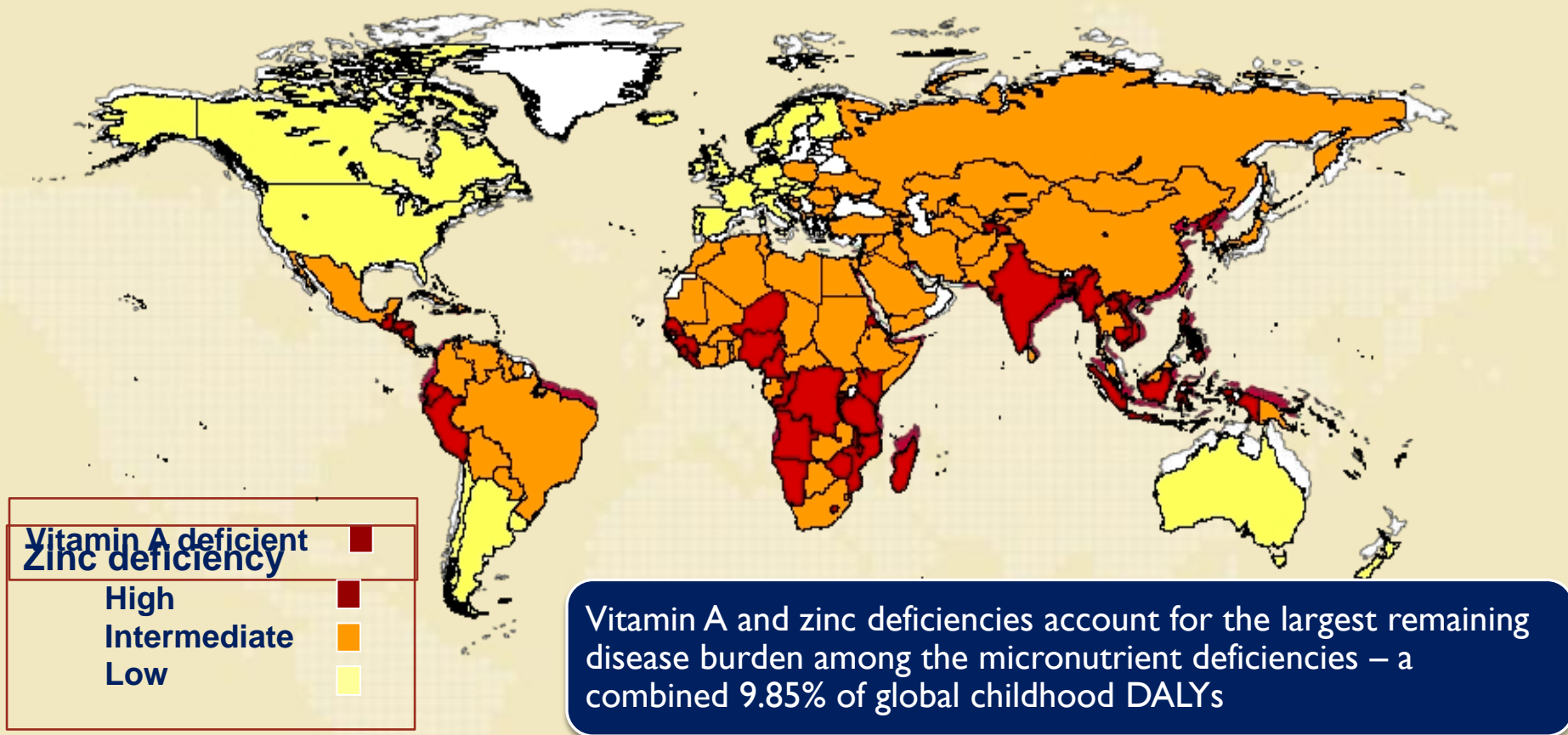
One DALY = one lost year of “healthy” life

The Burden of Maternal and Child Undernutrition

IUGR, stunting and severe wasting together are responsible for **2.2 million deaths and 91 million DALYS**, 21% of the total for children under 5

Represents **7% of the total global disease burden for any age group**, the highest for any risk factor for disease burden

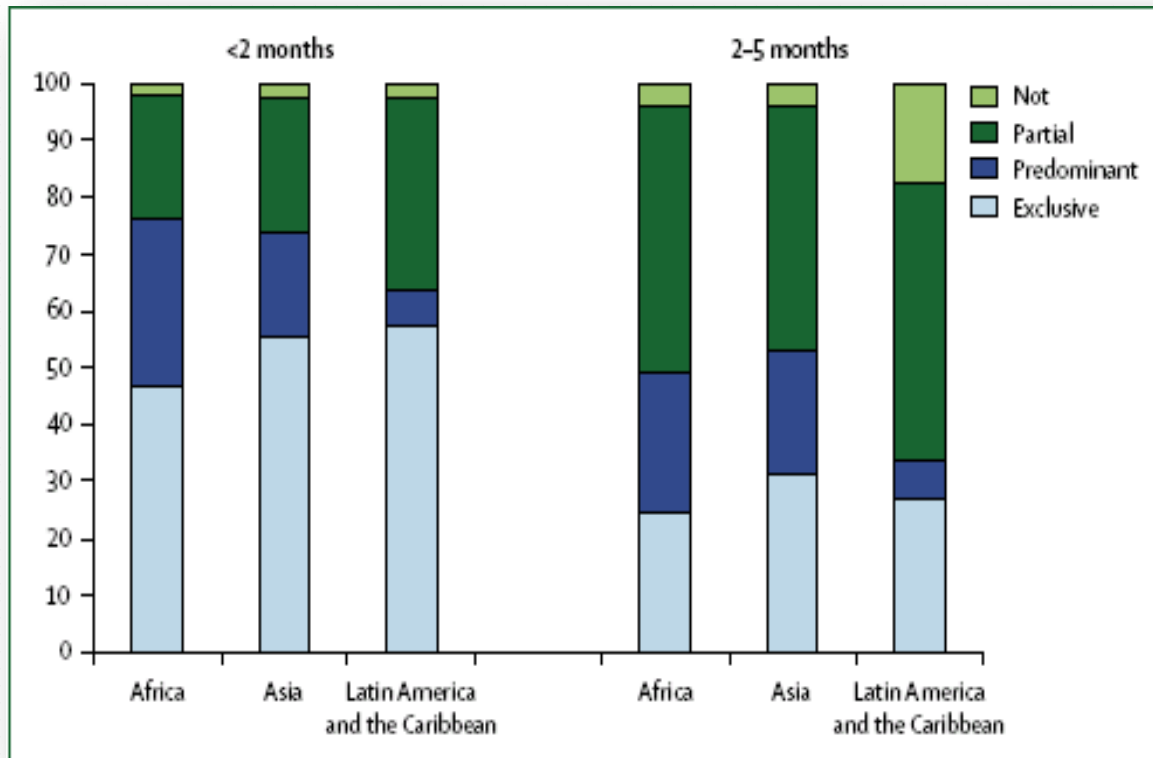
Micronutrient Deficiencies



Vitamin A and zinc deficiencies account for the largest remaining disease burden among the micronutrient deficiencies – a combined 9.85% of global childhood DALYs

Iron deficiency is a risk factor for maternal mortality, responsible for 115,000 deaths per year, 20% of maternal mortality

Suboptimal Breastfeeding



Increases the risk of poor nutrient intake and illness

Estimated to be responsible for 1.4 million child deaths and 44 million global childhood DALYs (10% of all childhood DALYs)

Black RE, Allen L H, Bhutta Zq A, Caulfield LE, de Onis M, Ezzati M, Mathers C, Rivera JA. Lancet January, 2008.

Nutrition Surveillance



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- ▶ The ACC/SCN report focuses on the use of length and weight measures
- ▶ The areas of potential application discussed in the report are:
 - ▶ *Screening: Individual Level - One Time Assessment*
 - ▶ to immediately decrease case fatality (emergency situations) b. in non-emergency situations
 - ▶ *Growth Monitoring: Individual Level - Assessment Of Trends One Time Assessment At Population Level*
 - ▶ under circumstances of food crisis b. for long term planning
 - ▶ *Nutritional Surveillance: Population Level - Trend Assessment*
 - ▶ for long term planning
 - ▶ for timely warning
 - ▶ for program management

The burden of Non-Communicable Diseases



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- ▶ In 2008 of the 57 million deaths globally, 36 million (~2/3) due to NCDs: cardiovascular diseases, cancers, diabetes and chronic lung diseases.
- ▶ The combined burden of these diseases is rapidly increasing in lower-income countries.
- ▶ About one fourth of the global NCD-related deaths occur before the age of 60
- ▶ A large proportion of NCDs are preventable
- ▶ They share modifiable behavioral risk factors: tobacco use, unhealthy diet, lack of physical activity, and the harmful use of alcohol.

The burden of Non-Communicable Diseases



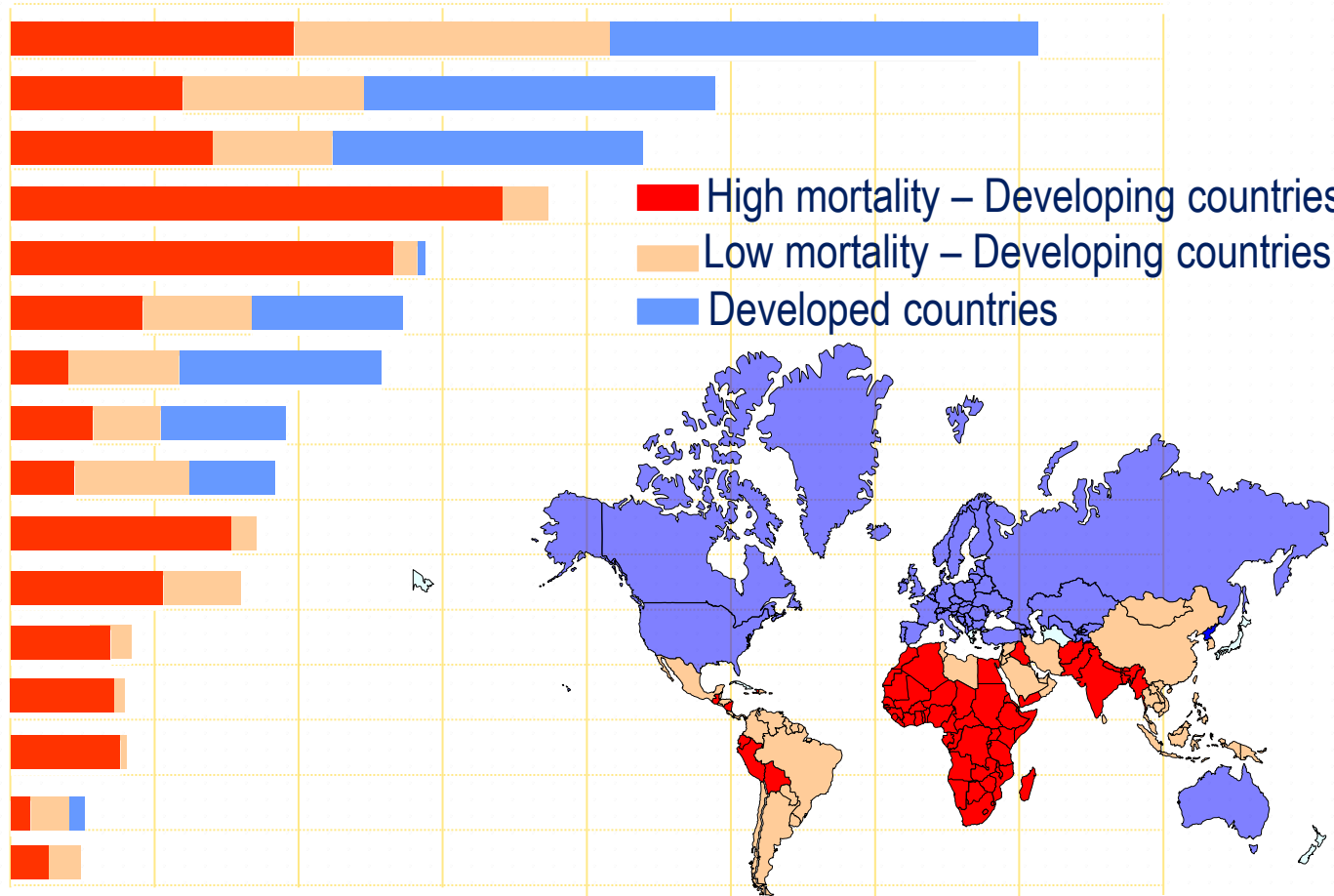
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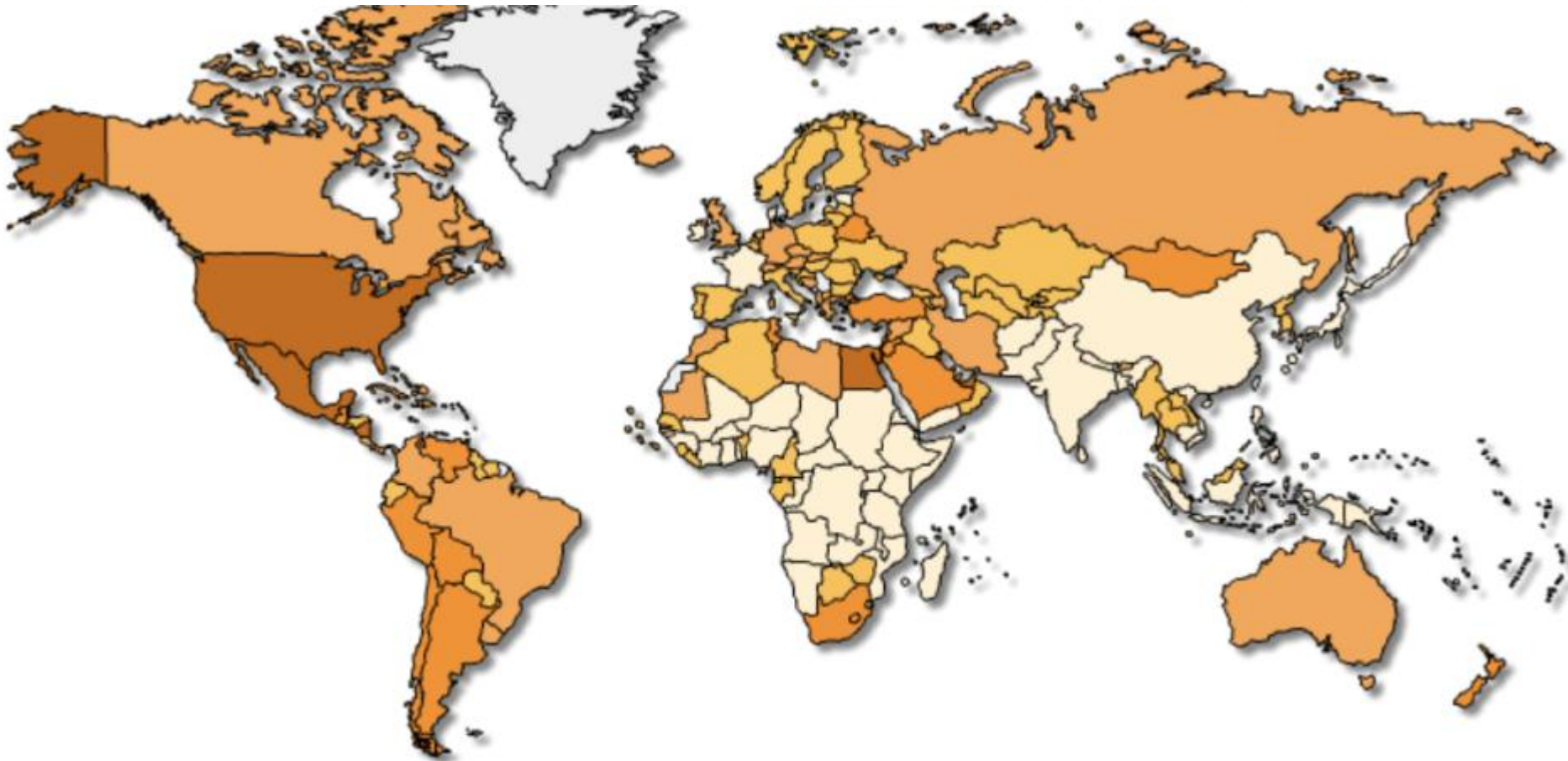
- ▶ These risk factors lead to overweight and obesity, raised blood pressure and raised cholesterol
- ▶ If no action is taken, over the next three decades, the cost of NCD burden will amount to trillions of dollars of lost resources
- ▶ Feasible and cost-effective interventions to reduce the burden and impact of NCDs exist, and sustained action to prevent risk factors and improve health care can avert millions of preventable premature deaths

Deaths attributable to 16 leading risk factors: all countries, 2007

Blood pressure
 Tobacco Use
 Cholesterol
 Underweight
 Unsafe sex
 Fruit & vegetable
 High body mass Index
 Physical inactivity
 Alcohol
 Unsafe water, hygiene
 Indoor smoke/fuels
 Vitamin A deficiency
 Zinc deficiency
 Urban air pollution
 Iron deficiency
 Unsafe health/injections

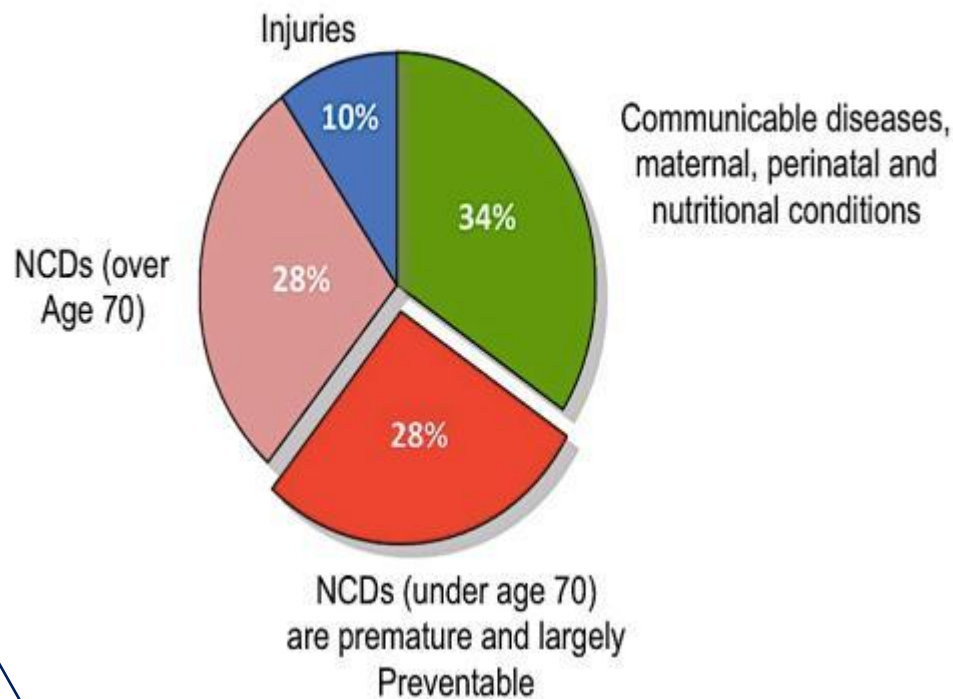
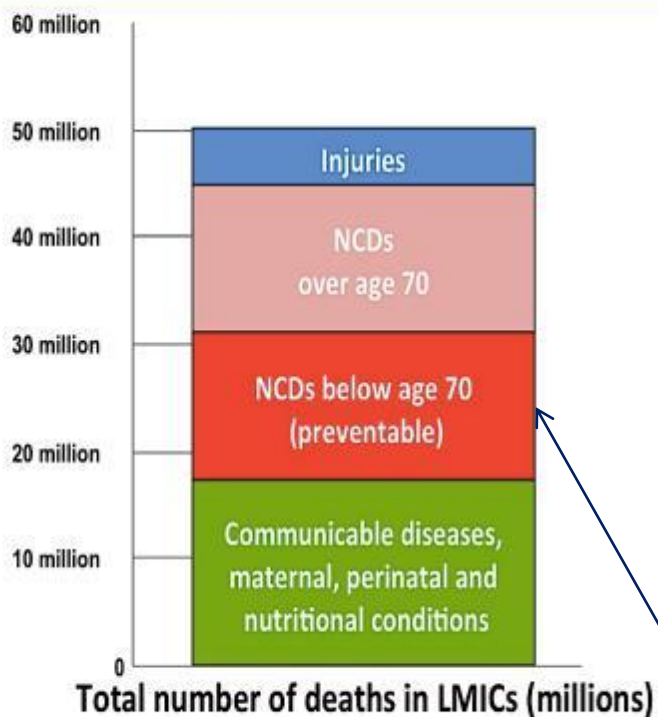


Female Prevalence of Obesity (Percent of Adults, Aged 15 and Older, with a Body Mass Index ≥ 25) 2010



Premature deaths from Non communicable Diseases in Developing Countries

Deaths in – low and middle-income countries

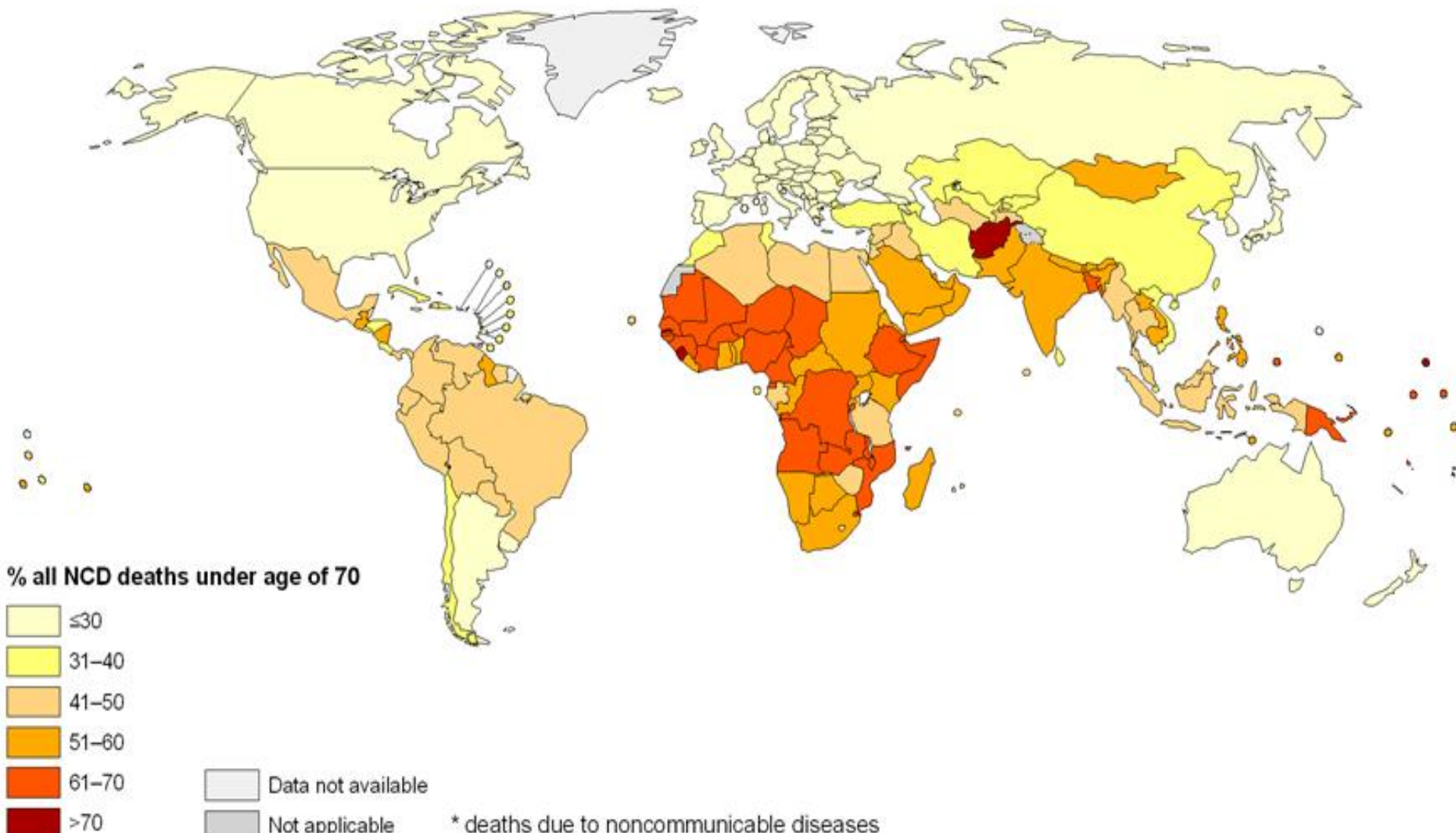


14 million premature deaths due to NCDs

Global Distribution of Premature deaths due to NCDs (women)

Source: WHO, 2011 <https://apps.who.int/infobase/CountryProfiles.aspx>

Public Health Statistics of the World



The Political Declaration on NCDs (66/2)



- Clear focus on 4 NCDs and 4 common risk factors for NCDs

	Tobacco use	Unhealthy diets	Physical inactivity	Harmful use of alcohol
Heart disease and stroke	✓	✓	✓	✓
Diabetes	✓	✓	✓	✓
Cancer	✓	✓	✓	✓
Chronic lung disease	✓			



Action plan for the Global Strategy for prevention and control of NCDs



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- ▶ The Action Plan for the Global Strategy for the Prevention and Control of Non communicable Diseases addresses key components:
 - ▶ surveillance
 - ▶ prevention
 - ▶ and health care
- ▶ Surveillance aims to monitor NCDs, and to analyze their social, economic, behavioral and political determinants in order to provide guidance for policy, legislative and financial measures.

Global monitoring framework for NCDs.

Outcomes

- Cancer incidence, by type
- Premature mortality from CVD, cancer, diabetes, or CRD

Exposures

- Alcohol
- Fat intake
- Low fruit and vegetable intake
- Overweight and obesity
- Physical inactivity
- Raised blood glucose
- Raised Blood pressure
- Raised total cholesterol
- Salt/sodium intake
- Tobacco

Health system response

- Cervical cancer screening
- Drug therapy to prevent heart attacks and strokes
- Essential NCD medicines and technologies
- Palliative care
- Policies to eliminate PHVOs from food supply
- Policies to reduce marketing of foods to children
- Vaccination against infectious cancers

Indicators for NCD surveillance within the global monitoring framework

Main indicators of under- and over- nutrition and NCDs at population level

Undernutrition

- ▶ Anthropometric Indicators
 - ▶ Height-for-age (Stunting)
 - ▶ Weight-for-height (Wasting)
- ▶ Blood/serum
 - ▶ Hemoglobin (anemia)
 - ▶ Serum Zinc (Zn deficiency)
 - ▶ Serum Vitamin A (VAD)
 - ▶ Serum ferritin (Iron deficiency)
- ▶ Diet
 - ▶ Breast feeding (WHO Indicators)
 - ▶ Complementary feeding (WHO Indicators)
 - ▶ Food quality and variety (FFQ)

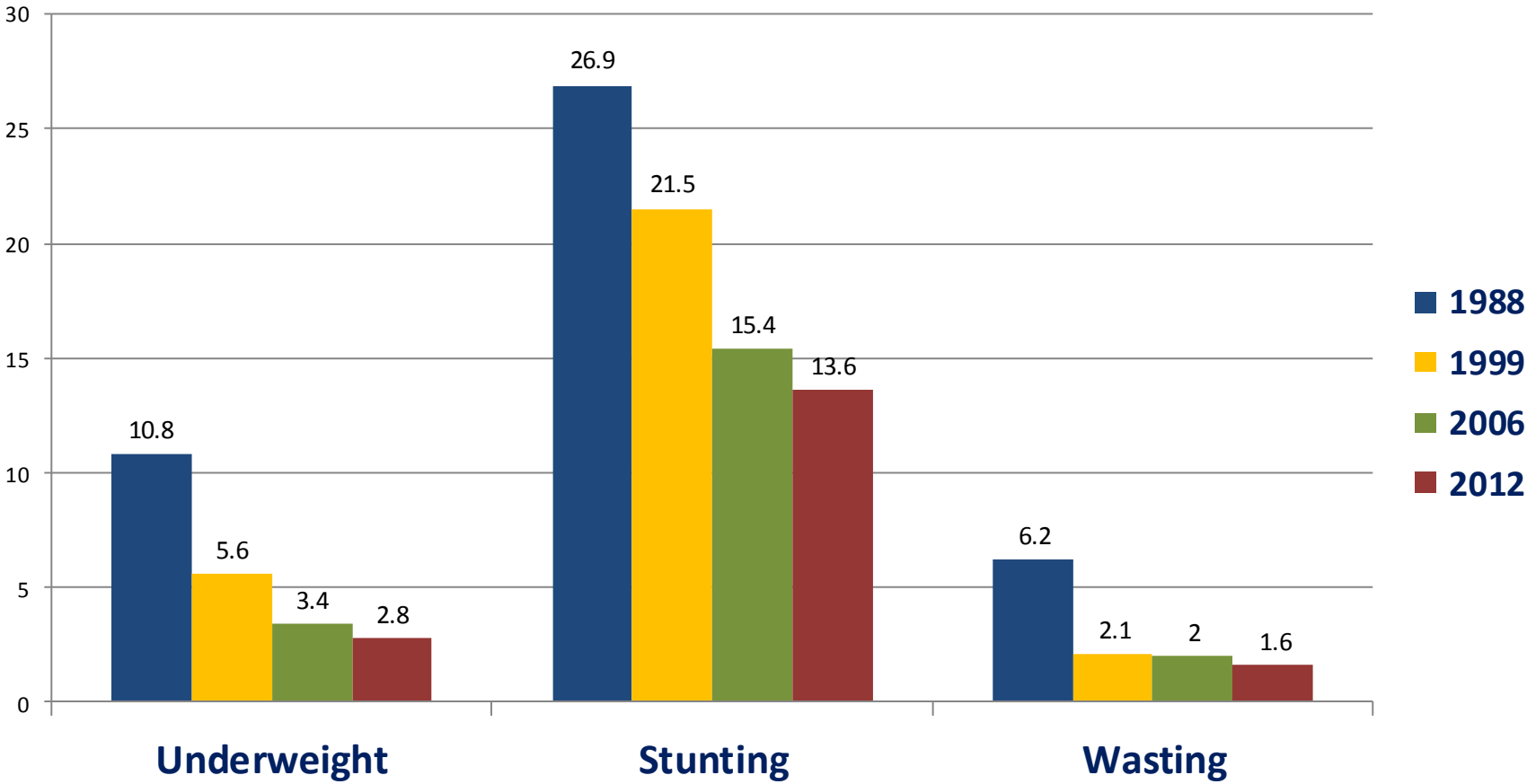
Overnutrition and NRCD

- ▶ Morbidity and mortality statistics
- ▶ Anthropometric Indicators
 - ▶ BMI ($Wt/(ht)^2$)
 - ▶ Waist circumference
 - ▶ Hip circumference
- ▶ Diet
 - ▶ Fruit/vegetable, fat, SSB, energy density of foods
- ▶ Physical Activity (PA)
 - ▶ TV viewing
 - ▶ Moderate to Vigorous PA
- ▶ Clinical
 - ▶ Blood Pressure
- ▶ Biochemical
 - ▶ Glucose, Cholesterol, Triglycerides, HDL-c, LDL-c, Insulin, CRP

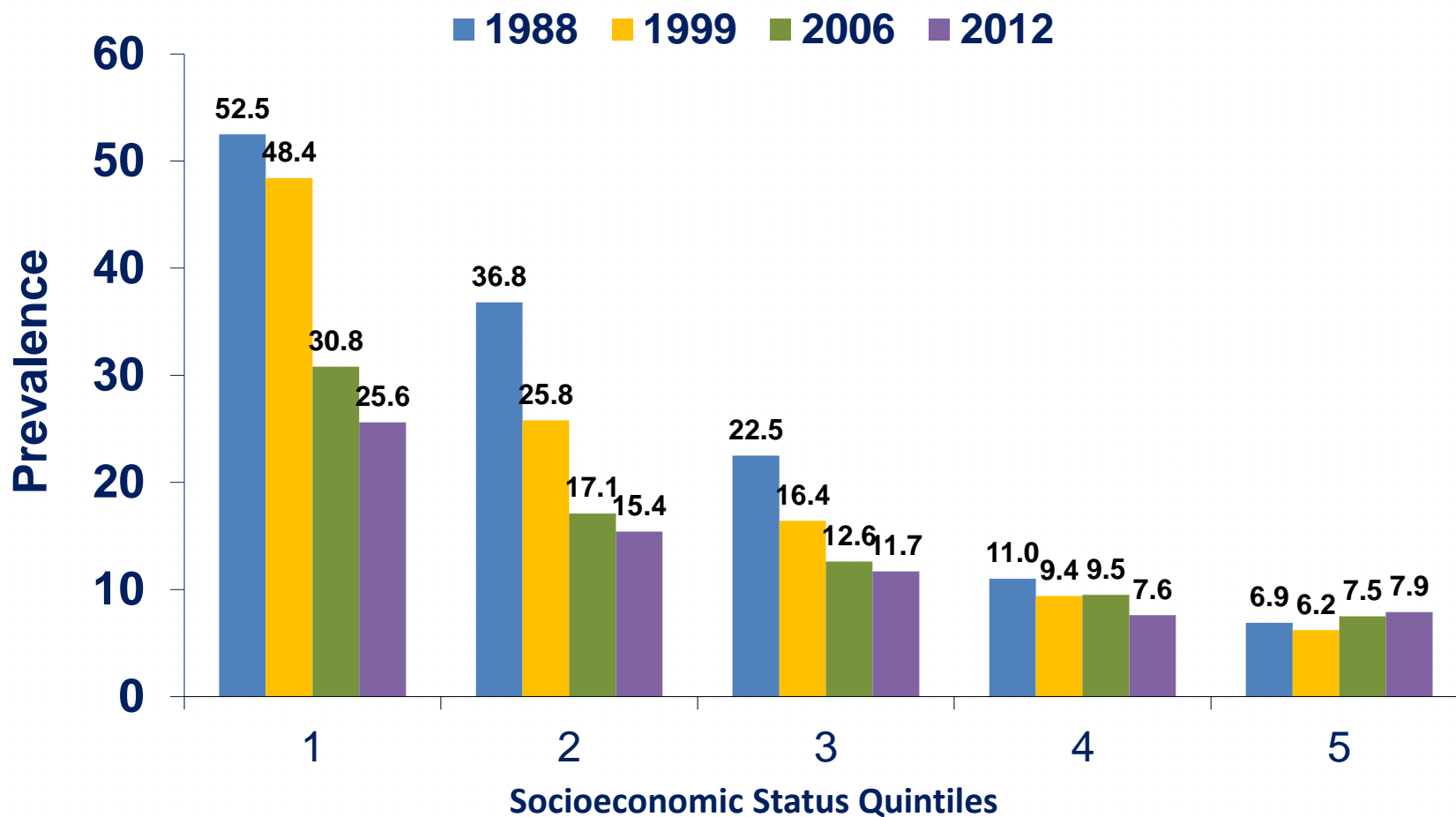
Prevalence of undernutrition in < 5 years in 1988, 1999, 2006 y 2012 in Mexico



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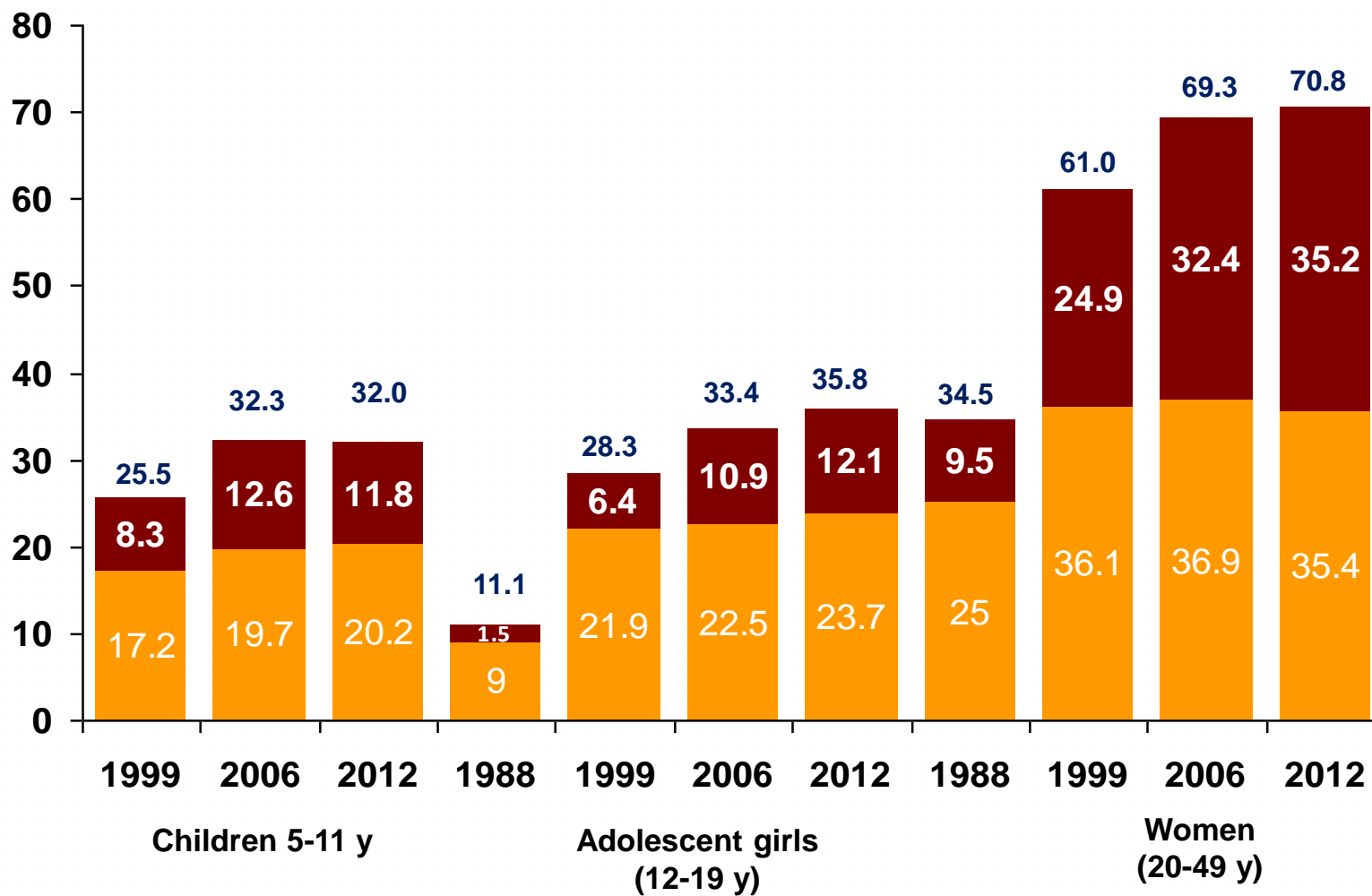
Prevalence of stunting in children < 5 y in Mexico in 1988, 1999, 2006 y 2012 by socioeconomic status





Prevalence of overweight and obesity * in children 5-11 y, adolescent girls and women (1988 a 2012)

Overweight Obesity



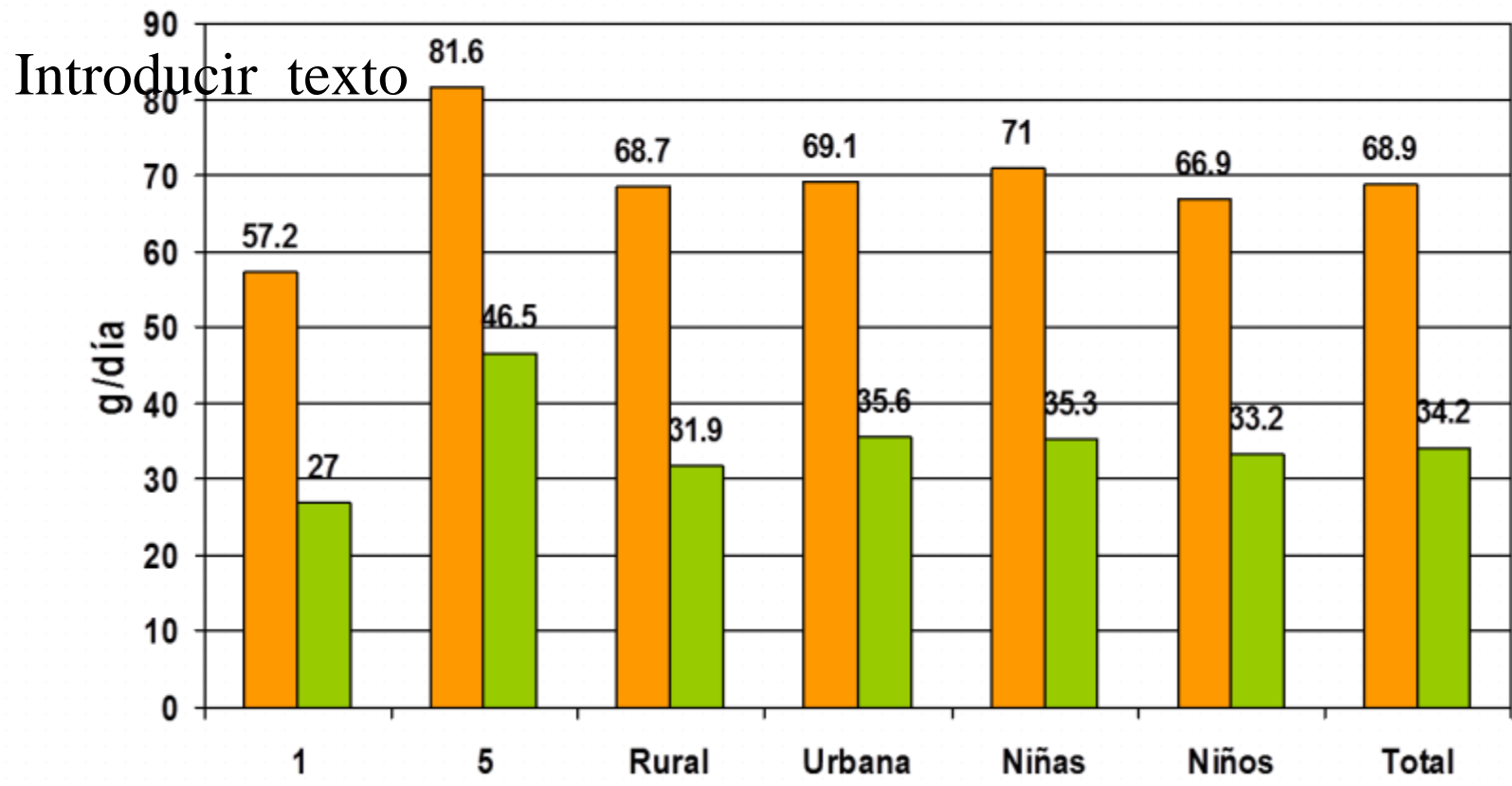
* Classification system proposed by WHO using the 2006 growth norms



Daily Intake of vegetables and fruits in school age children (5-11 y) in Mexico (MNHNS-2006)

Título

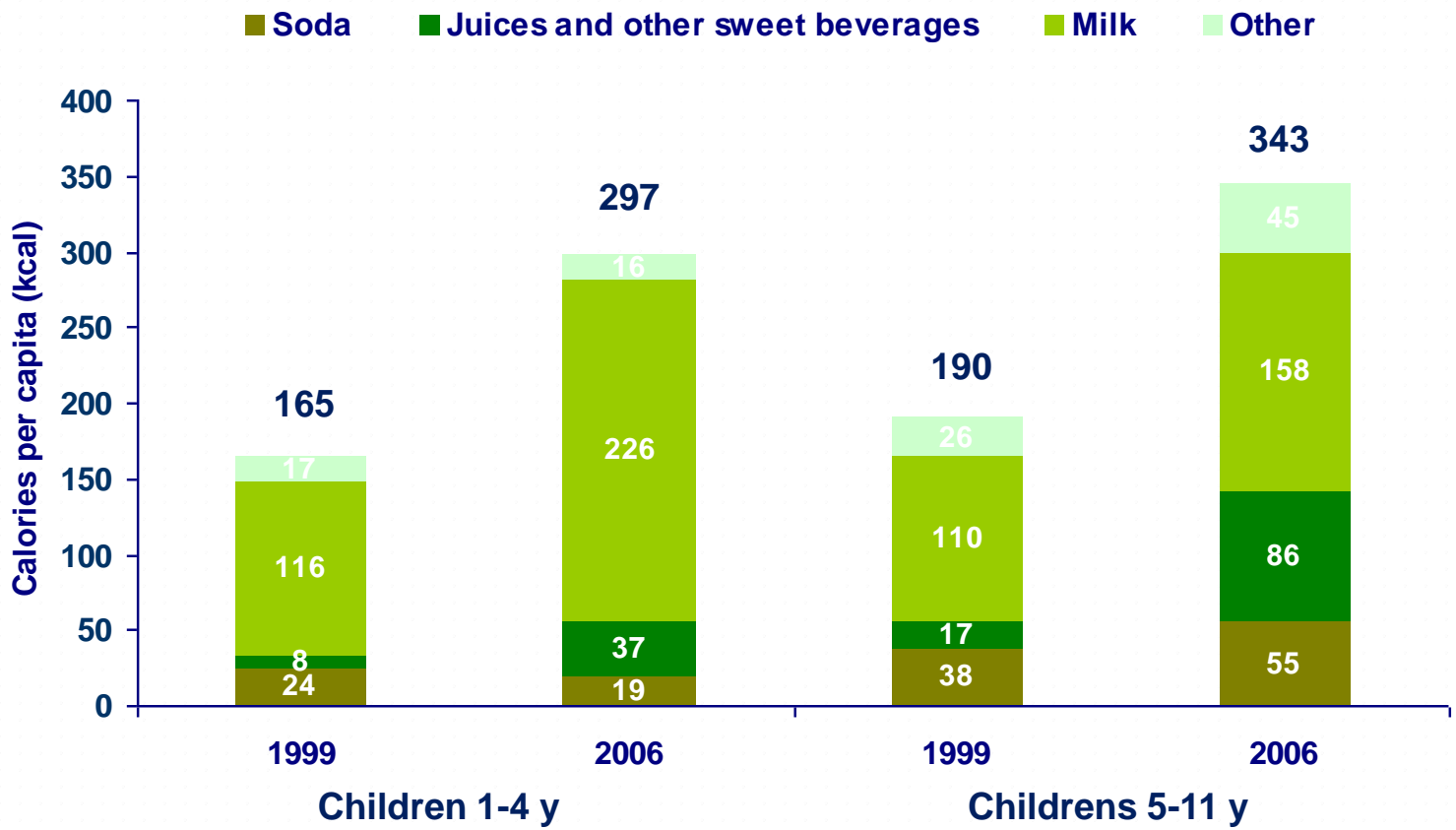
Frutas Verduras



Fuente: Ramírez-Silva I, Rivera J A, Ponce X, Hernández-Avila M. Salud Pub Mex 2009.
 * Medias ajustadas por sexo, edad, nivel social y diseño

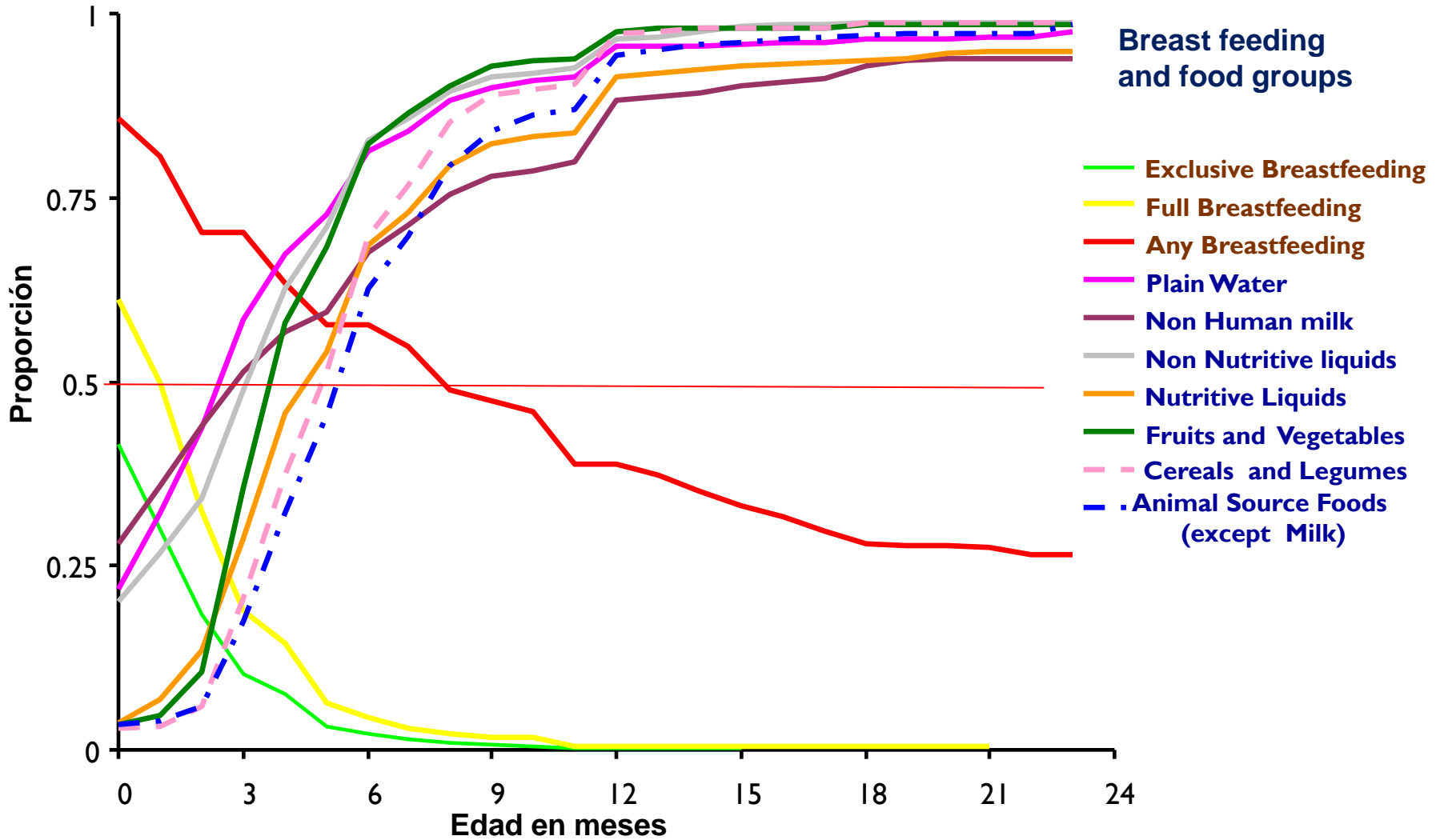


Trends of SSB Inakes in Mexican Children from 1999 to 2006





Age at which food groups were regularly consumed by Mexican children <2 years of age



MAIN INDICATORS OF UNDER- AND OVER-NUTRITION AND NRCDD AT POPULATION LEVEL

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Discussion about possible
Networking between
NPHIs for Tracking Under
And Overnutrition