From Food Security to Nutrition Security

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Scope of This Presentation:

Complexity of the Nutrition Challenge

• SDG 1
  • End Poverty in All Its Forms Everywhere

• SDG 2
  • End Hunger, Achieve food security and Improved nutrition and promote sustainable agriculture;

• 17 SDGs, 169 Targets and 232 Indicators

• SDG 2 includes 8 (5+3) Targets and 13 (9+4) Indicators

• Obesity has been missing in action in SDG 2—Child obesity is one of the sub-targets in World Health Assembly (WHA) targets for 2025 and

• Adult Obesity is a growing menace
Issues Not Covered In this Presentation - Particularly Solutions

- Impacts of Food Price Policies on Food Production & Consumption
- Information to consumers
- Safety-nets-Cash, Food, Employment, School Feeding Programs
- Role of Markets/Value Chains
- Dealing with the Food Wholesalers, Retailers, Sugary beverage industry—CSR Not enough.
- Foreign Direct Investment
- Food Safety
- Food Wastage
- Role of regulation.

The number of undernourished people in the world has been on the rise since 2014, reaching an estimated 821 million in 2017.

Multiple Measures of Hunger and Malnourishment and Life Cycle Effects on Health

- 821 million or 1 in every 9 people hungry in the world in 2017
  - in Asia: 515 million
  - in Africa: 256.5 million
  - in Latin America and the Caribbean: 39 million
- Children under 5 affected by stunting (low height-for-age): 150.8 million (22.2%)
- Children under 5 affected by wasting (low weight-for-height): 50.5 million (7.5%)
- Children under 5 overweight (high weight-for-height): 38.3 million (5.6%)
- Percentage of women of reproductive age affected by anaemia: 32.8%
- Percentage of infants aged below 6 months who were exclusively breastfed: 40.7%
- Adult obese: 672 million (13% or 1 in 8 adults)
- Diabetes
- Heart
- Cancer

The Evolving Concepts of Food Security and Nutrition
From Macro (Global and National) to Micro (Household) and Individual
FAO’s Macro Picture: Four pillars of food and nutrition security with interactions across pillars

1. Food Availability
   - Transport and Distribution
   - Storage and Processing of Food
   - Food Production
   - Food Trade

2. Food Access
   - Intra-household Distribution of Food
   - Income
   - Markets

3. Food Utilization
   - Food Preparation
   - Nutrition Knowledge
   - Cultural Traditions
   - Health Care
   - Child Care
   - Illness Management
   - Clean Drinking Water
   - Sanitation and Hygiene
   - Energy-saving Cookstoves

4. Stability
   - Stability in Food Availability: Natural and Man-made Disasters
   - Accumulation of Stocks
   - Diversification
   - Stability in Food Access: Season vs. Constant Job
   - Diversification
   - Livelihood and Coping Strategies
   - Safety Nets
   - Stability in Food Utilization: Constant Access to Health Care
   - Clean Drinking Water and Sanitation

Focus on cereals

Focus on Diet Diversity

Early Warning Systems

Source: Adapted from Burchi, Fanzo and Frison (2011).
The UNICEF framework focused on Women and Children of causality in malnutrition

Source: Adapted from UNICEF (1990).
Towards An Integrated Framework for Food and Nutrition Security

**“Direct” (Nutrition-specific) Interventions**
- Adolescent health and preconception nutrition
- Maternal dietary supplementation
- Micronutrient supplementation or fortification
- Breastfeeding and complementary feeding
- Dietary supplementation for children
- Dietary diversification
- Feeding behaviours and stimulation
- Treatment of severe acute malnutrition
- Disease prevention and management
- Nutrition interventions in emergencies

**“Indirect” (Nutrition-sensitive) Interventions**
- Agriculture
- Health
- Social Welfare & Social Protection
- Education
- Water and Sanitation
- Infrastructure
- Development & Poverty Reduction

**Effective Demand/Consumption of Food**
- Household Food consumption
- Capita Income • Market Access • Cell Phone • Access to Finance

**Gender**
- Women's Empowerment • Women's Knowledge and Power in Household Decision Making • Women's Time Allocation

**Many Sources of Income for People**
- Access to Employment • Non-Agricultural Income • Remittances • Social Safety Net

**Public Sector Interventions**
- Prices and Price Variability Matters • Roads and Rail Connections Matters

**Illustrative Outcomes**
1. Triple burden of Malnutrition (1.1: Undernutrition—i.e., energy and protein inadequacy, undernourishment, stunting (low height for age), wasting (low weight for height), low birthweight, underweight; 1.2: Micronutrient Deficiencies—i.e., vitamin A, iron (anaemia), iodine, zinc, folic acid below healthy thresholds; 1.3: Overnutrition—i.e., overweight and obesity, and Associated diet-related noncommunicable diseases (diabetes, high cholesterol, high blood pressure, heart disease, and some cancers); 2. Unsafe drinking water, poor sanitation and hygiene related diseases; and 3. Child mortality, maternal mortality, disability and premature death because of unhealthy diet

**External Shocks**
- Climate Change • Ad hoc Steps by Member Countries—e.g., trade restriction, biofuel policies

**Underlying Causes**
- Population Growth • Political Commitment • Domestic Priorities • Socio-cultural Factors • Information and Knowledge • Global, National and Local Governance (Community Nutrition—how good community organizations are)

**Supply**
- Overall Supply Level
- Climate • Extent of Irrigated Land
- Domestic Storage • Import Capacity • Prices
- Composition of Supply
- Diversification of Domestic Production or Import • Value Chains
- Crop Agriculture
- Fisheries
- Forestry
- Livestock

Source: Authors’ own creation
The socioecological approach to food and nutrition security measurement

Source: Lele and Masters’s et al (2016, 8, Figure 1)
There is still a long road ahead to achieve the 2025 and 2030 targets for stunting, wasting, overweight, exclusive breastfeeding, anaemia in women of reproductive age and adult obesity.

Hunger Reduction By Regions since 1990-92 to 2014-16

Number of People Undernourished (millions) by Developing Region (1990-92 to 2014-16)

Prevalence of Undernourishment (%) by Developing Region (1990-92 to 2014-16)

Source: Lele and Goswami; based on SOFI 2015; Note: *Data for 2014–16 refer to provisional estimates.
Poverty in Developing Regions has Declined Rapidly: Performance and Projections by Region, 1990–2030

Panel A: Number of Poor (Millions) by Region and Projections (using 2011 PPP and $1.9/day) (1990-2030)

Panel B: Percentage of Poor by Region and Projections (using 2011 PPP and $1.9/day) (1990-2030)

Source: Authors’ construction. Based on data from Cruz et al. (2015)

Women More Food insecure than men in every region
Prevalence of severe food insecurity among men and women aged 15 years and older (2015–17 three-year averages)

Share of Population Living in Multidimensional Poverty

Proportion of people who are poor according to the Multidimensional Poverty Index (MPI). The MPI weights ten indicators of deprivation in the context of education, health and living standards. Individuals are considered poor if deprived in at least one third of the weighted indicators. Since some observations for 2014 are not available the map displays the closest available data (2005 to 2014).
Share of the Population Living in Extreme Poverty

Extreme poverty is defined as living with per capita household consumption below 1.90 international dollars per day (in 2011 PPP prices). International dollars are adjusted for inflation and for price differences across countries. Since some observations for 2014 are not available, the map displays the closest available data (2008 to 2014).

Data source: Poverty - WORLD BANK (WDI - 2017/02)

Note: Consumption in each country is adjusted for inflation over time and for price differences between countries and expressed in 2011 PPP international dollars.
Child and Adult Deprivations in Ten MPI Indicators

Source: Alkire and Robles (2017, 4, Figure 2)
Multidimensional Poverty vs Prevalence of Stunting (86 countries)

y = 0.3238x + 14.964
R² = 0.55

Multidimensional Poverty vs Prevalence of Underweight (86 countries)

We Need A Dynamic View of Food Security Because of Nutrition Transition

- Popkin’s “nutrition transition”: Changing diet, activity, body composition and disease, in both the developing and developed world, the past half century.

- Factors underlying these trends at all levels include food prices, urbanization, global trade, and technological change, changing life styles.

- Dietary behaviors and changes in LMICs, include excessive snacking, weekend eating, increased consumption of edible oils, and the global sweetening of the world’s diet, particularly its acceleration in LMICs.

- Some outcomes include: (1) increased waist circumferences at the same BMI level; (2) obesity burden in the developing world shifting to the poor and to rural.

Source: Data provided by William Masters. Based on FAO Food Balance Sheet estimates.
Obesity Prevalence Among Adults (18+ years), BMI ≥ 30, WHO regions (%) (2010-2016)


Obesity Prevalence Among children and adolescents (aged 5-19 years), BMI>+2 standard deviation, crude
Percentage of Energy from Non-staple Foods and Total Dietary Energy per Capita by Region (1961–2011)

Source: Data provided by William Masters. Based on FAO Food Balance Sheet estimates.
Prevalence of obesity*, ages 18+, 2016 (age standardized estimate)
Female

Prevalence (%)
- <10.0
- 10.0–19.9
- 20.0–29.9
- ≥30.0
- Data not available
- Not applicable

Note: For mapping purposes, the map shows identical values for Sudan and South Sudan. These values concern the former Sudan as it existed prior to July 2011.

* Body Mass Index ≥30 kg/m2

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization 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: Information Evidence and Research (IER)
World Health Organization

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Prevalence of obesity*, ages 18+, 2016 (age standardized estimate)
Male

Prevalence (%)
- <10.0
- 10.0–19.9
- 20.0–29.9
- ≥30.0
- Data not available
- Not applicable

Note: For mapping purposes, the map shows identical values for Sudan and South Sudan. These values concern the former Sudan as it existed prior to July 2011.
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New Indicators and Analysis of Obesity Needed

- Measure waist circumference not just BMI level.
- Measure obesity burden Among Poor and in Rural Areas.
- Measure excessive snacking, weekend eating, increased global consumption of palm oil, Increased sweetening of the world’s diet, particularly its acceleration in LMICs.
- Study Consumption Impacts of shifts in food prices, urbanization, global trade, value chains, foreign director investment and technological change.
Number of Indicators in Each SDG That Are Highly Relevant for Nutrition

Source: GNR 2016.
Case of Mexico and Government Response

- Mexico has one of the highest prevalence rates for diabetes, overweight, and obesity in the world

- Reducing the consumption of sugar sweetened beverages has been an important target for obesity and diabetes prevention efforts

- Mexico implemented an excise tax of 1 peso/L on sugar sweetened beverages from 1 January 2014

- Purchases of taxed beverages decreased by an average of 6% (-12 mL/capita/day), and decreased at an increasing rate up to a 12% decline by December 2014. Reductions were higher among the households of low socioeconomic status, averaging a 9% decline during 2014, and up to a 17% decrease by December 2014 compared with pretax trends.
THANK YOU