Zero Hunger – A work in progress

Daniel Mason-D’Croz
CSIRO | Agriculture and Food
Global Food and Nutrition Security
Significant Progress on Ending Hunger

The depth of the food deficit in Sub-Saharan Africa nearly halved between 1990 and 2015.

Source: Food and Agriculture Organization, World Development Indicators (SN.ITK.DFCT).
Moving into the Anthropocene

• Global food production has continued to grow allowing us to meet global demand
• But it has come at an environmental cost
• Sustaining progress towards hunger reduction will require sustainable intensification
Sources of past increases in agricultural production

Source: Ramankutty et al. (2018) *Annual Review of Plant Biology*
Progress is complicated - the Double Burden Looms

Malnutrition is manifested in multiple ways. In lower-middle-income countries 12 percent of children suffer from wasting, while 5 percent are overweight. Prevalence of different types of malnutrition, children under age 5, 2016 (%)

- Stunting
  - South Asia
  - Sub-Saharan Africa
  - Middle East & North Africa
  - East Asia & Pacific
  - Latin America & Caribbean
  - North America
  - Low income
    - Lower middle income
    - Upper middle income
    - High income

- Wasting
  - Severe wasting

- Overweight
  - In richer countries more children are overweight than wasted.

- SDG 2.2
  - Child Stunting
  - Child Wasting
  - 159 million children worldwide
  - 50 million children worldwide

MICRONUTRIENT DEFICIENCY mostly results from consuming an insufficient variety of foods and/or consuming foods that are low in nutrients.

- Child Overweight
  - Adult Overweight & Obesity
  - 41 million
  - 2 billion

NONCOMMUNICABLE DISEASES including obesity, diabetes, cardiovascular disease, and cancer have increased significantly in recent decades and currently pose the greatest threat to global health.


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More people + More Wealth = ?
Population growth will slow, but not peak
Poorest regions will see fastest growth

Source: Mason-D’Croz, Cenacchi, Dunston, Sulser, et al. (in draft)
Diets will shift with growing incomes

Food expenditure as a share of per capita GDP in 2010

Source: Mason-D'Croz, Cenacchi, Dunston, Sulser, et al. (in draft)
Still progress is likely to be too slow. Additional investments in agriculture are needed.
Income growth important but alone will not ensure food security or healthy diets.

Income growth effect on adequacy, 2010-2050, (percent)

Nelson et al. (2018) *Nature Sustainability*
Unbalanced diets - insufficient fruits & vegetables

<table>
<thead>
<tr>
<th>Region</th>
<th>Fruit &amp; Vegetable Supply (g/capita/day)</th>
<th>Ratio of Supply to Recommended Consumption</th>
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<tr>
<td></td>
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<td>No Waste 15 percent waste 33 percent waste</td>
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<td>2010 2030 2050</td>
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<td>EAP</td>
<td>789 959 959</td>
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<td>538 658 780</td>
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Source: Mason-D’Croz, Cenacchi, Dunston, Sulser, et al. (in draft)
### Food waste a challenge, household waste tends to increase with income

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Thank you

Daniel Mason-D’Croz
Senior Research Scientist
CSIRO | Agriculture and Food
Global Food and Nutrition Security

Follow our group on twitter: @GlobalFoodTeam
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website: https://research.csiro.au/foodglobalsecurity/
References


• Mason-D’Croz, D., N. Cenacchi, S. Dunston, ... K. Wiebe (in draft). 2050 Climate Change Monograph. Washington, DC: IFPRI

• Mason-D’Croz, D., T.B. Sulser, K. Wiebe, ... R. Robertson (submitted) Agricultural investments and ending hunger in Africa; Modeling potential contributions to SDG 2. World Development


