Food systems and diets: Facing the challenges of the 21st century
16 March 2017 | World Bank

Emmy Simmons, Panel Member, and Co-Chair of AGree
Prof. Patrick Webb, Global Panel Technical Adviser, and Professor at Tufts University
Who we are

The Global Panel is an independent group of experts committed to tackling global challenges in food, diets and nutrition.
Panel Members

Akinwumi Adesina
President, African Development Bank

Tom Arnold
Director General, Institute of International and European Affairs (IIIEA)

John Beddington
Co-Chair
Former United Kingdom Government Chief Scientific Advisor

José Graziano da Silva
Director General, Food and Agriculture Organisation (FAO)

Agnes Kalibata
President, Alliance for a Green Revolution in Africa (AGRA)

John Kufuor
Co-Chair
Former President of Ghana

Rachel Kyte
Special Representative of the UN Secretary General for Sustainable Energy, and CEO of Sustainable Energy for All (SE4All)

Maurício Antônio Lopes
President, Brazilian Agricultural Research Corporation (Embrapa)

Srinath Reddy
President, Public Health Foundation of India

Emmy Simmons
Board Member, Partnership to Cut Hunger and Poverty in Africa/AGree

Rhoda Peace Tumusiime
Commissioner for Rural Economy and Agriculture, African Union Commission
# 2017 Global Panel’s Activities

<table>
<thead>
<tr>
<th>2017</th>
<th>Event</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>3 May</td>
<td>Event on Foresight and food environment brief launch with Panel Member Dr Mauricio Lopes, Embrapa</td>
<td>Brasilia, Brazil</td>
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<tr>
<td>9-10 May</td>
<td>High-level event in Nigeria with launch of consumer behaviour brief + Federal Ministry of Agriculture and Rural Development launch of Nigeria’s Agricultural Sector Food and Nutrition Strategy 2016-2025</td>
<td>Abuja, Nigeria</td>
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<tr>
<td>22-26 May</td>
<td>African Development Bank Group Annual Meeting</td>
<td>Ahmedabad, India</td>
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<tr>
<td>July</td>
<td>High-level in-country engagement event in Mozambique and launch of urbanisation brief</td>
<td>Mozambique</td>
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<tr>
<td>October</td>
<td>Attendance of the World Food Prize event and tentative launch of fifth Global Panel brief</td>
<td>Des Moines, Iowa, US</td>
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<tr>
<td>November</td>
<td>High-level in-country engagement event in Bangladesh, with Panel Member Srinath Reddy, Public Health Foundation of India</td>
<td>Dhaka, Bangladesh</td>
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</table>
The Foresight project aims

- To inform planning, policies and investments
- To strengthen ability of food systems to support high quality diets & hence nutrition
Added value of *this* Foresight Project

- Placing **diets (not just nutrition)** in the wider policy space
- **Looking into the future** to inform today’s decisions
- Drawing on the best **science, evidence** and advice
- Distilling complexity into **priorities for action**
The problems
MALNUTRITION AFFECTS ALL REGIONS WORLDWIDE

ACROSS THE GLOBE

1.9 BILLION ADULTS, 18 years and older, are overweight

>600 MILLION of these are OBSESE

264 MILLION WOMEN of reproductive age are affected by iron-amenable anaemia

462 MILLION ADULTS are underweight

42 MILLION children under the age of 5 years are overweight or obese

156 MILLION children are stunted (too short for age)

50 MILLION children are wasted (too thin for height)

Source: WHO 2017
Multiple nutrition problems within countries – *diets link them!*

<table>
<thead>
<tr>
<th>Country</th>
<th>Stunting (%)</th>
<th>Anaemia (%)</th>
<th>LBW (%)</th>
<th>Obesity (%)</th>
<th>EBF (%)</th>
<th>Wasting (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haiti</td>
<td>29</td>
<td>54.4</td>
<td>25</td>
<td>4</td>
<td>41</td>
<td>10</td>
</tr>
<tr>
<td>Djibouti</td>
<td>31</td>
<td>46.4</td>
<td>10</td>
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<td>10</td>
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<tr>
<td>Timor-Leste</td>
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<td>31.5</td>
<td>12</td>
<td>6</td>
<td>52</td>
<td>19</td>
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<tr>
<td>Benin</td>
<td>43</td>
<td>63.2</td>
<td>15</td>
<td>11</td>
<td>43</td>
<td>8</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>44</td>
<td>62.9</td>
<td>11</td>
<td>10</td>
<td>32</td>
<td>9</td>
</tr>
<tr>
<td>Pakistan</td>
<td>44</td>
<td>27.9</td>
<td>32</td>
<td>6</td>
<td>37</td>
<td>15</td>
</tr>
<tr>
<td>Chad</td>
<td>39</td>
<td>52.4</td>
<td>20</td>
<td>3</td>
<td>3</td>
<td>16</td>
</tr>
<tr>
<td>Nigeria</td>
<td>41</td>
<td>62.0</td>
<td>12</td>
<td>11</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td>India</td>
<td>48</td>
<td>52.0</td>
<td>28</td>
<td>2</td>
<td>46</td>
<td>20</td>
</tr>
<tr>
<td>Niger</td>
<td>51</td>
<td>62.2</td>
<td>27</td>
<td>4</td>
<td>27</td>
<td>12</td>
</tr>
<tr>
<td>Yemen</td>
<td>58</td>
<td>51.0</td>
<td>32</td>
<td>5</td>
<td>12</td>
<td>15</td>
</tr>
</tbody>
</table>

Most global burden of disease risk factors are linked to diet

Source: Global Burden of Disease Study 2013 Collaborators (2015), Figure 5
Note: The graph shows global disability-adjusted life years (DALYs) attributed to level 2 risk factors in 2013 for both sexes combined.
Diets do not automatically improve over time

Source: Masters (2016), Global Dietary Database
Diets do not automatically improve over time.
Business as usual will generate catastrophic health burdens in the future

Globally, overweight and obese adults:
1.33 in 2005 → 3.28 billion in 2030

**China:** overweight & obese adults:
32.3% in 2012 → 51.2% by 2030.

**Nigeria:** adults with diabetes estimated to double between 2011 and 2030.

**Bangladesh:** more adults with diabetes by 2030 than in Mexico or Indonesia.
SDG target 3.4 (NCDs)
Indicator: Probability of dying from any of cardiovascular disease, cancer, diabetes, chronic respiratory disease between the ages of 30 and 70.
WHO estimates for 2015 (both sexes)
What are food systems?

Food systems go well **BEYOND Agriculture production**: to storage, transport, trade, transformation, provisioning, retail

Policy actions needed across these systems to achieve goals
Agriculture, food systems and people’s diets

Nutrition is linked to many factors that go beyond food production:

- the way the food is stored, processed, traded and prepared is fundamental too...
- the overall context natural, economic and socio-cultural context (for example, cultural habits and beliefs),
- But also food prices, etc.

→ need to look at the entire food system.
Food systems and diets

Diagram showing the food environment and its drivers:
- Agricultural production subsystem
- Food retail and provisioning subsystem
- Food supply system
- Food storage, transport, and trade subsystem

Drivers of food systems:
- Nutrient quality & taste of available food
- Physical access to food
- Food security
- Food price
- Food promotion
- Food labelling
- Preferences
- Time
- Knowledge

Source: Compiled by the authors
Recent example of unhelpful “food environment”

Meeting “5 a day” fruit and vegetable intake would cost low income households in Bangladesh, India, Pakistan and Zimbabwe 52% of their household income

Miller et al. Lancet August 2016
W glopan.org | @Glo_PAN
Consumer prices 1990-2010
(UK, Mexico, Brazil, South Korea & China)
Least-cost nutritionally-adequate diet for Uganda.

Poverty line is based on the World Bank’s global poverty standard of $1.25 a day using PPP GDP (LCU per international $). Reference group for diet is adult women, using US RDA for 14 nutrients following Hotz et al. (2012). Least-cost monthly food baskets constructed using retail prices for 10 commodities.

Source: Shively/Nutrition Innovation Lab/Global Panel
Opportunities
Why now?

- **Economic returns** from investments in nutrition:
  - 10% of global GDP gained by eliminating stunting
  - Investments to nutrition programs = **benefit-cost ratio 16:1**

- Low and middle income countries should not have to take same **damaging path** towards recommended diets as high income countries did.

- **SDGs, UN Decade of Action on Nutrition.**
• “food insecurity in resource-poor settings involving insufficient diets in terms of quantity, quality, and diversity.”
Nutrition policy is complex and challenging

It can be made less so

- **Tools** help link diet problems to food systems
- Evidence building on **what works** in the programme and policy space
- **Evidence** base on effective policy action growing
- Good **data** on actual diet patterns/trends missing...
A new global research agenda for food

Ten ways to shift the focus from feeding people to nourishing them
“Research in humans and relevant animal models is needed to establish the causal relationship between diet and disease.”
• Dietary factors “associated with a substantial proportion of deaths (stroke, diabetes)

• >salt, processed meats
• <nuts/seeds, omega 3s, fruits & veg.
• “Whether the authors overestimated or underestimated the potential effects of improved diet, the likely benefits are substantial and justify policies designed to improve diet quality.”
## Policy approaches

<table>
<thead>
<tr>
<th>Food system area</th>
<th>Policy type</th>
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<tbody>
<tr>
<td></td>
<td>Current “quality”</td>
</tr>
<tr>
<td>Production</td>
<td>biofortification</td>
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<tr>
<td>Storage, transport and trade</td>
<td>trade standards for foods to consider</td>
</tr>
<tr>
<td>Transformation</td>
<td>labeling; regulation of marketing; regulations on product formulation</td>
</tr>
<tr>
<td>Retail and provisioning</td>
<td>food procurement for public institutions (including social safety nets)</td>
</tr>
<tr>
<td>Food environment</td>
<td>taxes on “bads”; voluntary codes on product placement</td>
</tr>
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</table>
Tool for navigating complexity

Identify diet quality goal

→ establish causes
→ link to food system elements
→ identify actions to take
→ align for coherence
→ leverage for sustainability

<table>
<thead>
<tr>
<th>Diet quality goal</th>
<th>Agricultural production</th>
<th>Transformation</th>
<th>Storage, transport and trade</th>
<th>Retail and provisioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase intake of legumes/pulses</td>
<td>Agricultural research into new varieties to boost yield</td>
<td>Develop fast cooking bean flour</td>
<td>Train farmers in management practices to reduce loss to insect damage</td>
<td>Food price subsidies for legumes where consumption is low</td>
</tr>
</tbody>
</table>
Call to Action

Much is context specific, but there are common elements

1. Focus **food system policies** on diet quality.

2. Ensure that food-based **dietary guidelines** guide policy decisions to reshape food systems (not only consumer-focus).

3. Make **fruits, vegetables, pulses, nuts and seeds, fish** more available, affordable and safe.

4. Policy support for **animal source foods** should be pragmatically evidence-based rather than driven by ideology.
### Food availability (supply) and health outcomes

<table>
<thead>
<tr>
<th>Food Availability (100 kcal/cap/day increase)</th>
<th>% Change in Child Stunting (&lt;5y)</th>
<th>Change in IHD Mortality Rate/1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cereals</td>
<td>-0.01 (-0.15, 0.13)</td>
<td>-0.10 (-0.16, -0.04)</td>
</tr>
<tr>
<td>Meat</td>
<td>-1.00 (-1.39, -0.61)</td>
<td>0.41 (0.24, 0.58)</td>
</tr>
<tr>
<td>Milk/Dairy Products</td>
<td>-2.01 (-2.62, -1.57)</td>
<td>0.35 (0.15, 0.55)</td>
</tr>
<tr>
<td>Animal Fats</td>
<td>1.83 (1.16, 2.50)</td>
<td>0.24 (-0.01, 0.05)</td>
</tr>
<tr>
<td>Vegetable Oils</td>
<td>0.03 (-0.30, 0.36)</td>
<td>0.21 (0.05, 0.36)</td>
</tr>
<tr>
<td>Fruits</td>
<td>-1.27 (-1.83, -0.71)</td>
<td>-0.37 (-0.65, -0.10)</td>
</tr>
<tr>
<td>Vegetables</td>
<td>-3.85 (-4.86, -2.83)</td>
<td>0.53 (-0.21, 1.26)</td>
</tr>
<tr>
<td>Starchy Roots</td>
<td>0.62 (0.33, 0.91)</td>
<td>0.22 (-0.03, 0.48)</td>
</tr>
<tr>
<td>Sugar and Sweeteners</td>
<td>0.88 (0.55, 1.20)</td>
<td>-0.08 (-0.22, 0.06)</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>-0.31 (-0.38, -0.24)</strong></td>
<td><strong>-0.05 (-0.08, -0.02)</strong></td>
</tr>
</tbody>
</table>

Source: Green et al. (2015) BMJ
Call to Action

Much is context specific, but there are common elements


7. Improve **accountability** at all levels – food system **metrics**.

8. **Break down barriers within governments** for dealing with the multi-sector problems.

9. **Institutionalize** high-quality diets through public sector purchasing power (schools, prisons, etc.).

10. **Refocus agriculture research investments** to support quality diets...
1. Think *diet quality* (not just food supply or individual nutrients)

2. Think food *systems* not just sectors

3. Think policy/program innovation to *support choice* of nutritious diets
Thank you

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