Addressing the economic burden of foodborne diseases

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With acknowledgements to: Steve Jaffee, World Bank; Lystra Antoine GFSP, Zusana Kristkova WUR

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Causes of Food Borne Disease

Burden LMIC (DALYs)

Microbes
Helminths (worms)
Aflatoxins
Other toxins

World Health Organisation, 2016
Cost of foodborne disease in India

Based on

“The economics of food safety in India – a rapid assessment” by Zuzana Smeets Kristkova (Wageningen Economic Research), Delia Grace (ILRI) & Marijke Kuiper (Wageningen Economic Research), 2018

Estimates using 2010 data of:
- FBD burden- FERG
- FBD attribution – 4 estimates
- FBD health costs - literature

Projection of India’s economy in 2030 using MAGNET (global general equilibrium model):
- Population
- Food consumption for 10 household types
Models and experience suggest Foodborne will worsen in LMIC

Expected FBD burden in India to rise from **100 up to 170 million in 2030** – increasing from **one out of 12 to one out of 9** people falling sick on average.

Increased labour supply but mostly reduced health cost of avoiding FBD amounts to 0.5% of GDP - equivalent to an annually recurring benefit of up to 28 billion USD

Kristkova et al., 2018
The Safe Food Imperative

Accelerating Progress in Low- and Middle-Income Countries

Steven Jaffee, Spencer Henson, Laurian Unnevehr, Delia Grace, and Emilie Cassou
Unsafe food costs $110 billion in productivity losses or costs of treating illness in LMIC.

Cost estimates for 2016 (US$ billion):
- Productivity loss: 95
- Illness treatment: 15
- Trade loss or cost: 5

‘Productivity Loss’ = Foodborne Disease DALYs x Per Capita GNI

Based on WHO/FERG & WDI Indicators Database

Illness treatment = US$27 x # of Estimated foodborne illnesses
Trade loss or costs = 2% of developing country high value food exports
The productivity loss is concentrated in middle income countries in Asia and Africa.

### a. Country income group

- Low: 4%
- Lower-middle: 43%
- Upper-middle: 53%

### b. Region

- Sub-Saharan Africa: 18%
- Middle East and North Africa and Europe and Central Asia: 8%
- Latin America and the Caribbean: 8%
- Asia: 66%

### Income group (2016 human capital loss in current US$, billions)

<table>
<thead>
<tr>
<th>Income group</th>
<th>2016 human capital loss (current US$, billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>3.8</td>
</tr>
<tr>
<td>Low Middle</td>
<td>40.6</td>
</tr>
<tr>
<td>Upper Middle</td>
<td>50.8</td>
</tr>
<tr>
<td>Total</td>
<td>95.2</td>
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</tbody>
</table>

### Region (2016 human capital loss in current US$, billions)

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<th>Region</th>
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<tbody>
<tr>
<td>Asia</td>
<td>63.1</td>
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<tr>
<td>Latin America and the Caribbean</td>
<td>7.4</td>
</tr>
<tr>
<td>Middle East and North Africa and Europe and Central Asia</td>
<td>7.9</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>16.7</td>
</tr>
<tr>
<td>Total</td>
<td>95.2</td>
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</tbody>
</table>

Investments pay off: countries with adequately funded vet services do better

NOTE: Countries with inadequate funding in red (rating = 1) and in orange (rating = 2); countries with adequate funding in green (rating =3 or 4).
African Food Safety Capacity Building
Mapping Current Efforts to Improve Targeting and Coordination

A Project of the Global Food Safety Partnership (GFSP),
A Public-private initiative hosted at the World Bank
Results 2: Investments helpful but small

• Donor investment since 2010 difficult to quantify but likely less than $40 million a year. Small in relation to burden and investments in other health areas.

• **Substantial focus on** –
  • National control systems
  • Exports and other formal markets
  • Chemical hazards

• **Little focus on** –
  • Market-based and demand-led approaches
  • Informal sector where most foods are sold
  • Biological hazards and risks to human
• **Health first:** Better address the health of domestic consumers dependent on informal markets.

• **Risk-not hazard:** Build capacity for well-governed, evidence-and risk-based food safety systems.

• **Market-led:** Harness marketplace drivers of progress on food safety.
better lives through livestock

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