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
Foods implicated - literature

ILRI, 2018
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

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

Cost estimates for 2016 (US$ billion)

- Productivity loss: 95
- Illness treatment: 15
- Trade loss or cost: 5

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

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

<table>
<thead>
<tr>
<th>Region</th>
<th>2016 human capital loss (current US$, billions)</th>
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<tbody>
<tr>
<td>Asia</td>
<td>63.1</td>
</tr>
<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>
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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
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
Recommendations

• **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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