

# Addressing the economic burden of foodborne diseases

*Delia Grace, ILRI, Kenya*

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

International Forum on Food Safety and Trade  
23–24 APRIL 2019 GENEVA, SWITZERLAND

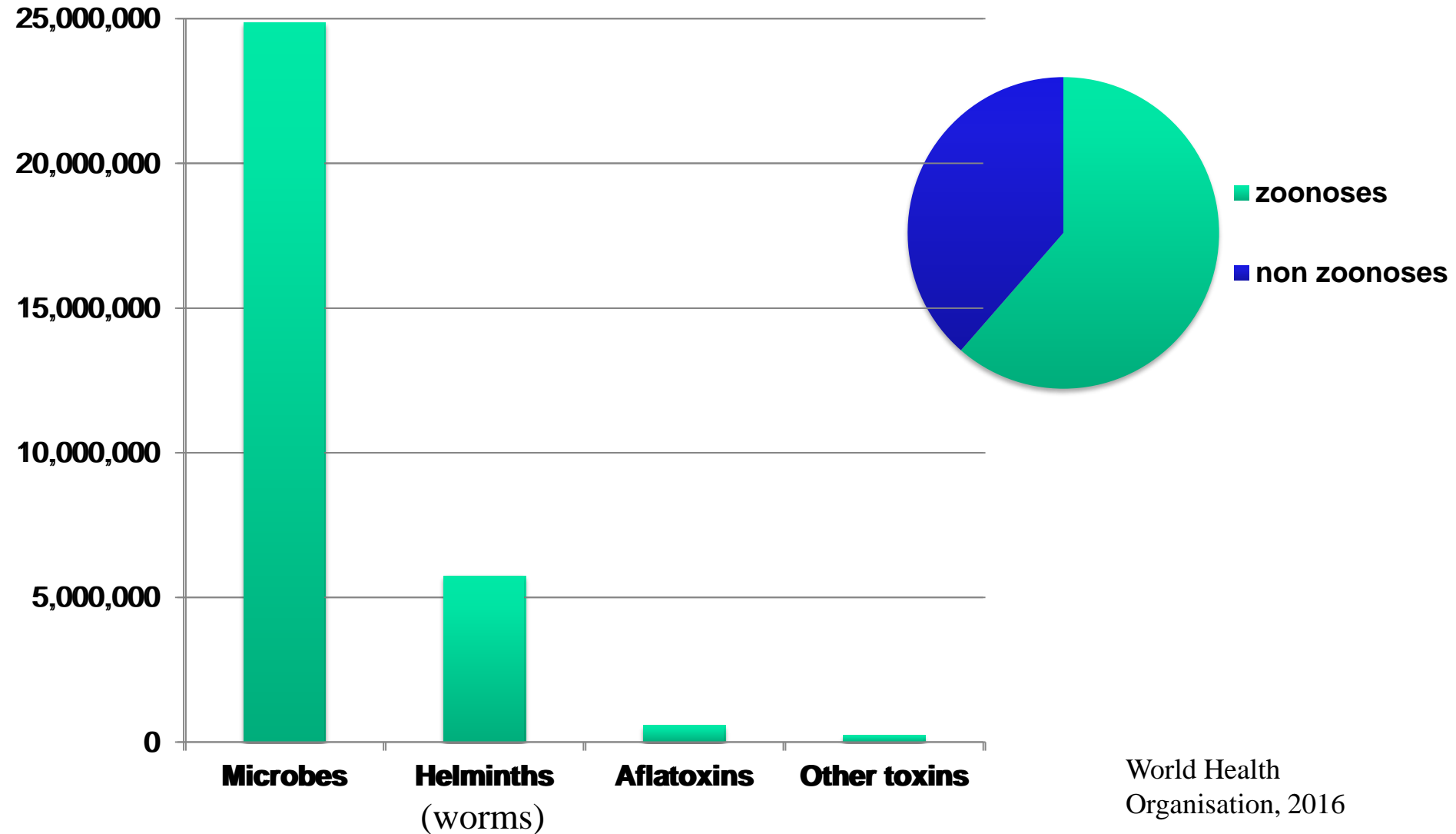


ILRI  
INTERNATIONAL  
LIVESTOCK RESEARCH  
INSTITUTE

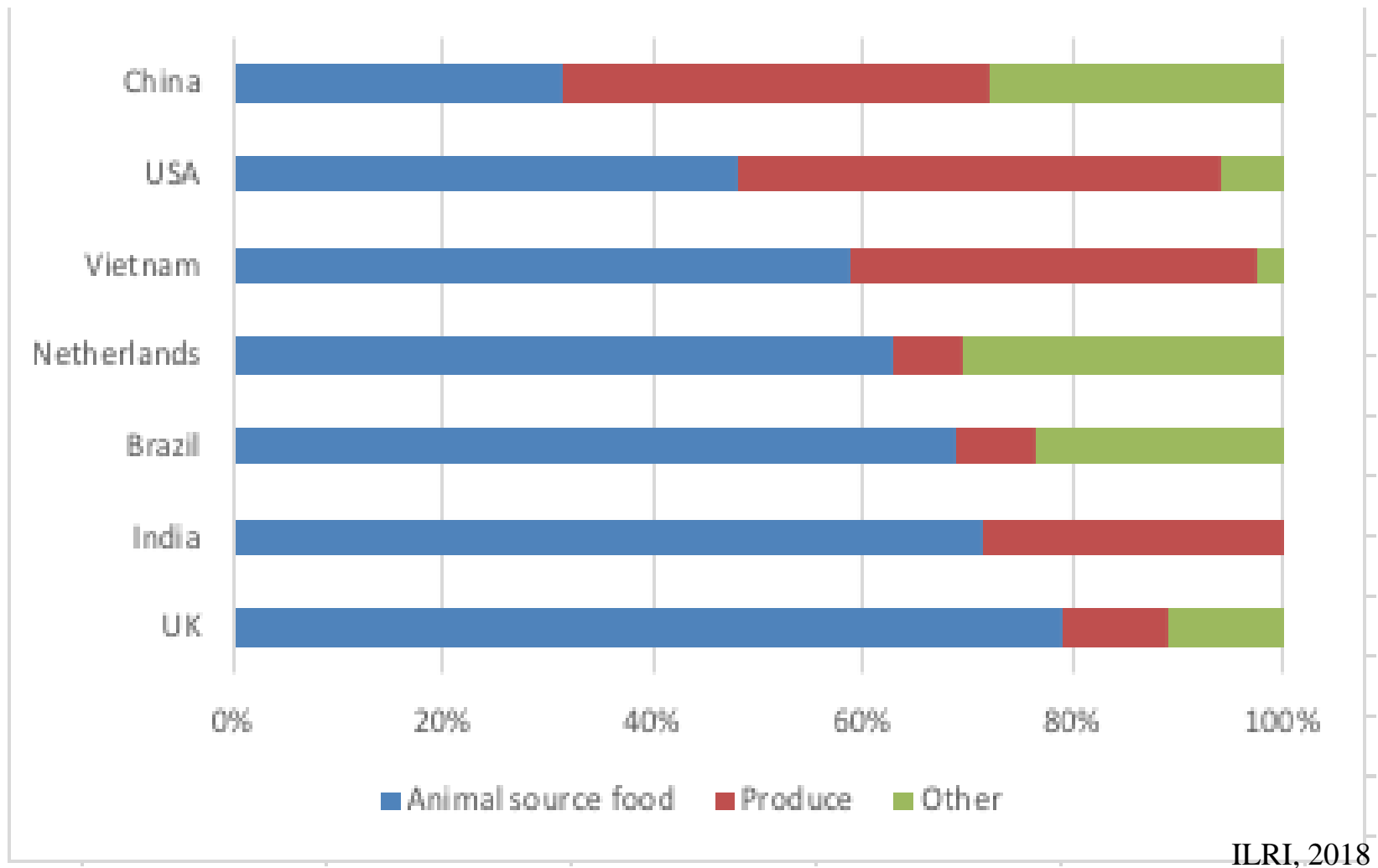
CGIAR

# Causes of Food Borne Disease

**Burden LMIC (DALYs)**



# Foods implicated - literature



# 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

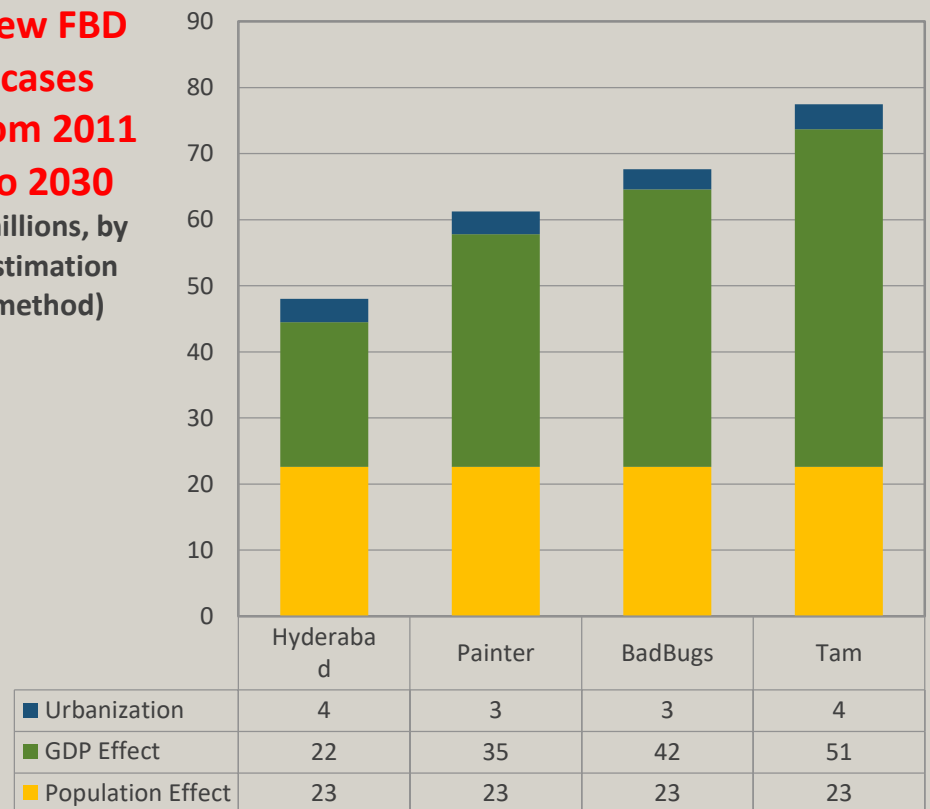
Expected FBD burden in India to rise from **100 up to 170 million in 2030** – increasing from **one out of 12 to one out of 9** people falling sick on average

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

GDP growth has largest impact on increase in FBD cases from 2011 to 2030, followed by population growth

**New FBD cases from 2011 to 2030**  
(millions, by estimation method)



# The Safe Food Imperative

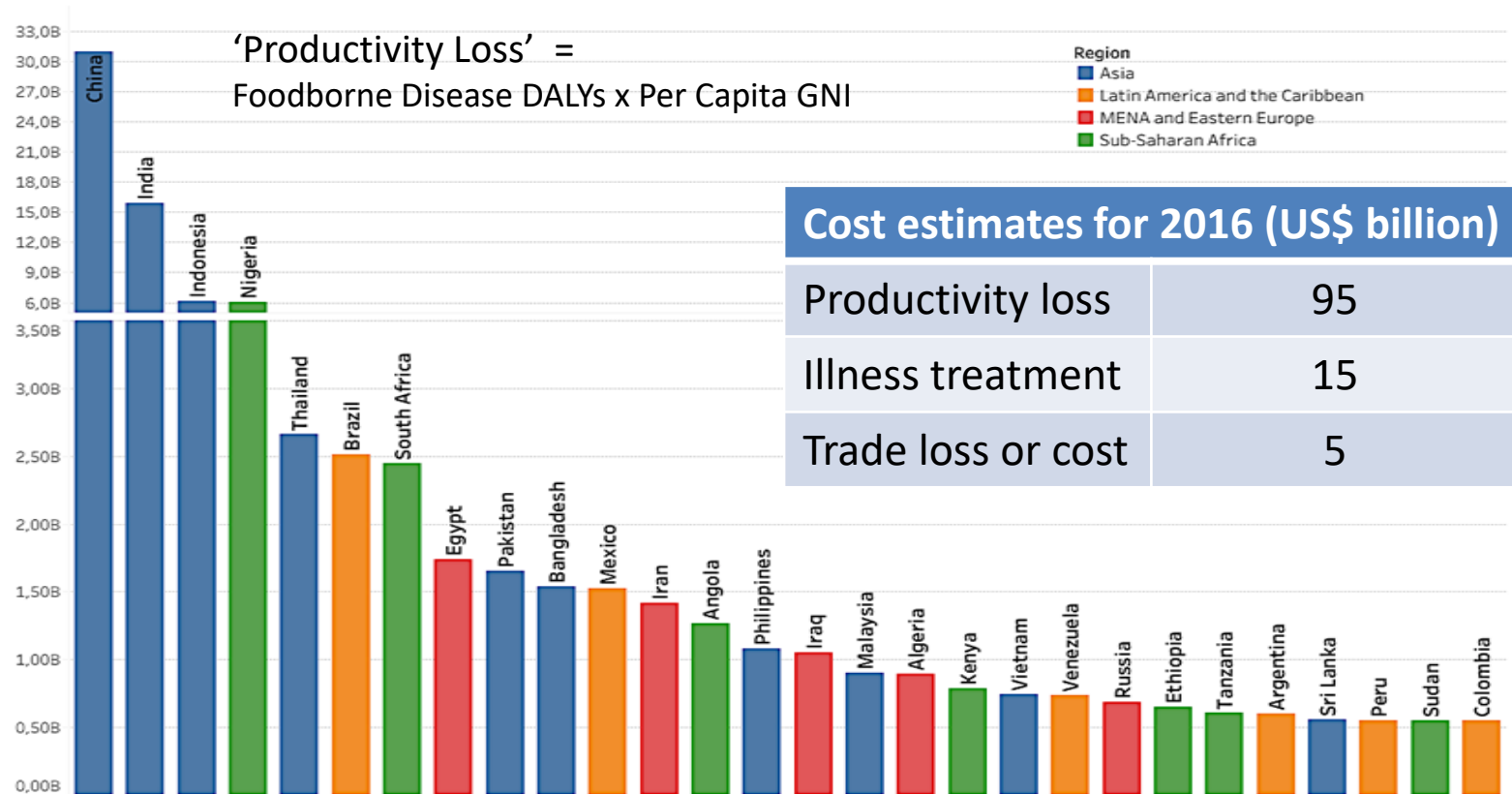
*Accelerating Progress in Low- and Middle-Income Countries*



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

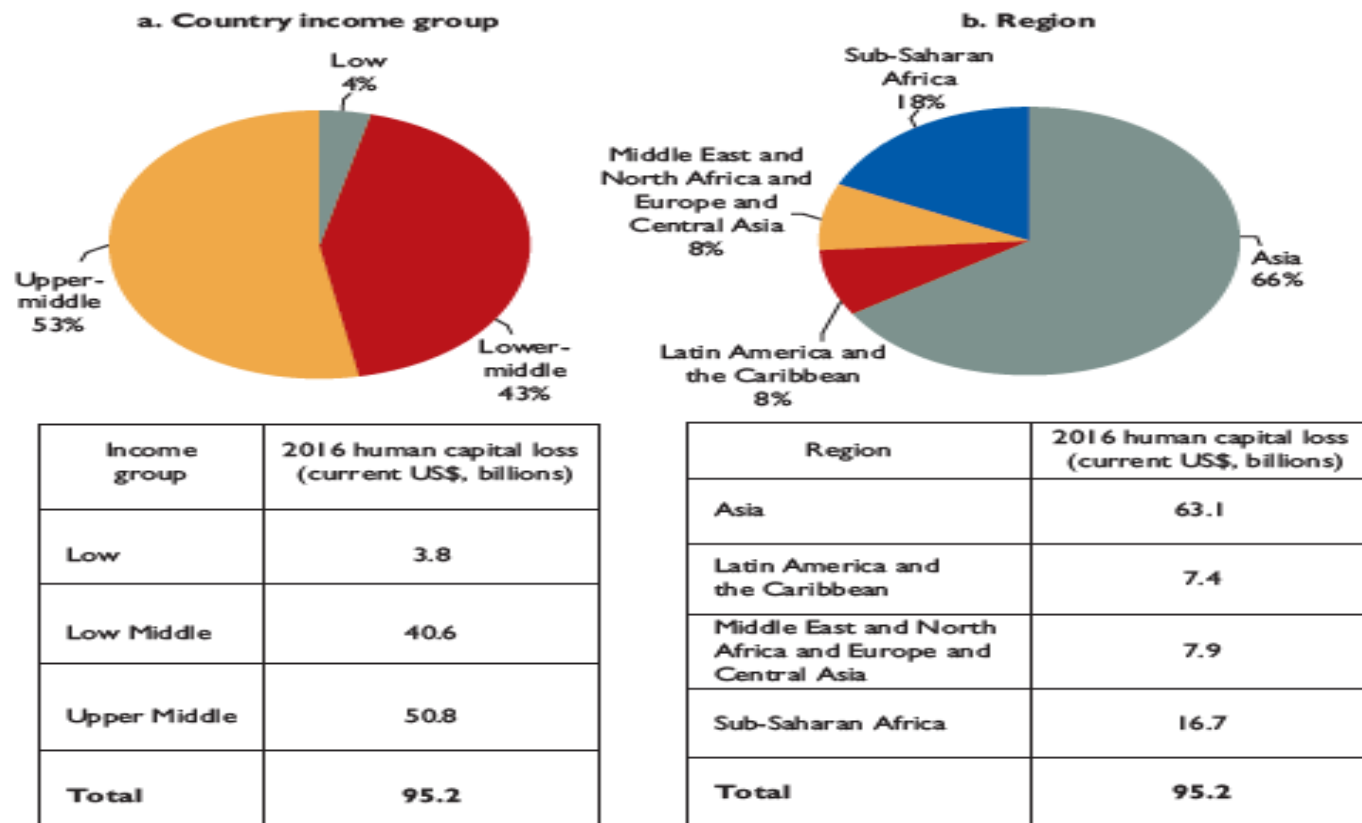


Based on WHO/FERG & WDI Indicators Database

Illness treatment =  
US\$27 x # of Estimated foodborne illnesses

Trade loss or costs =  
2% of developing country **high value** food exports

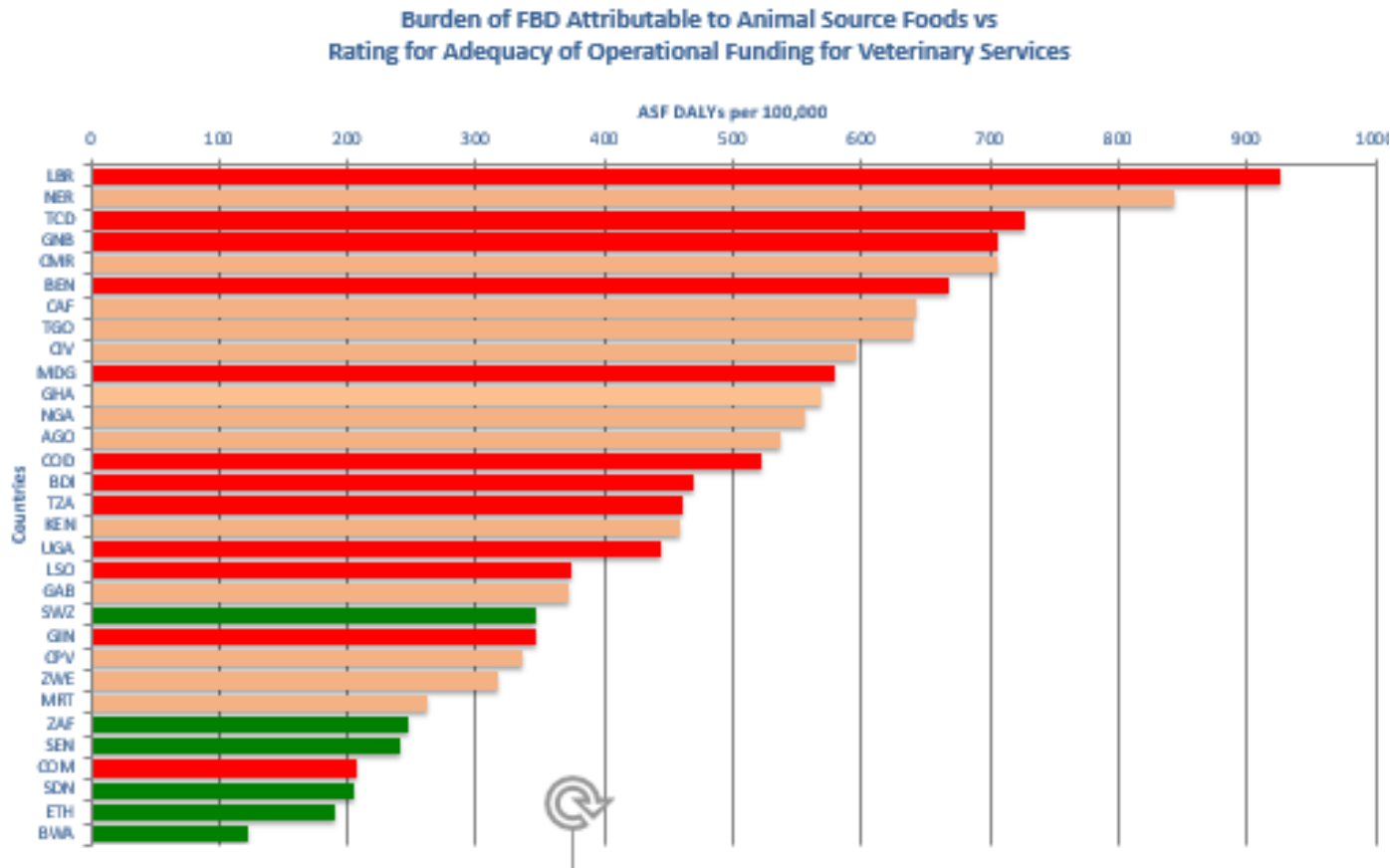
# The productivity loss is concentrated in middle income countries in Asia and Africa



Source: World Bank.



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

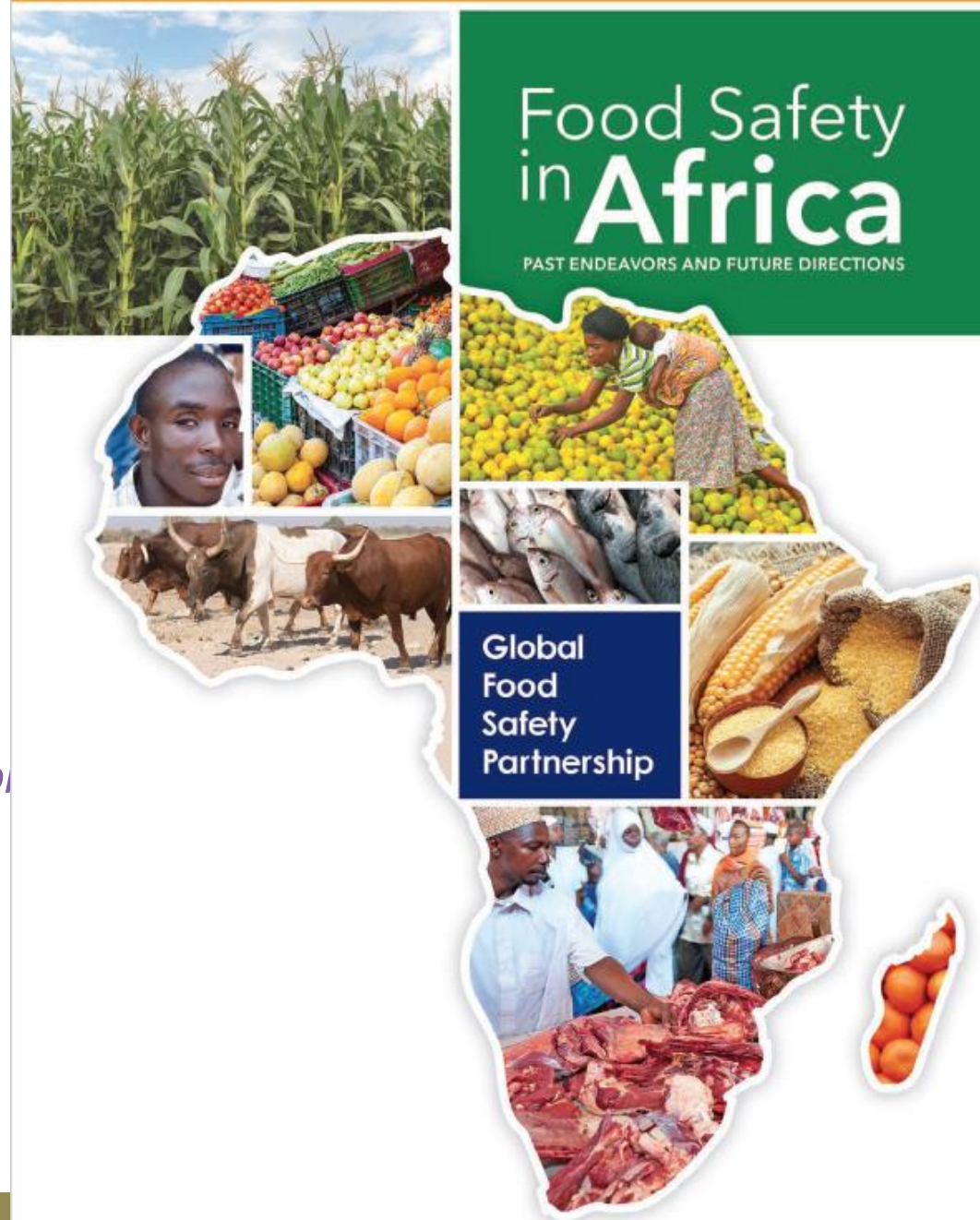


Inadequate  
Spending is  
Costly!

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*

ilri.org

ILRI thanks all donors and organizations who globally supported its work through their contributions to the **CGIAR system**

Patron: Professor Peter C Doherty AC, FAA, FRS

*Animal scientist, Nobel Prize Laureate for Physiology or Medicine—1996*

Box 30709, Nairobi 00100 Kenya  
Phone +254 20 422 3000  
Fax +254 20 422 3001  
Email [ilri-kenya@cgiar.org](mailto:ilri-kenya@cgiar.org)

ilri.org  
*better lives through livestock*

ILRI is a CGIAR research centre

Box 5689, Addis Ababa, Ethiopia  
Phone +251 11 617 2000  
Fax +251 11 667 6923  
Email [ilri-ethiopia@cgiar.org](mailto:ilri-ethiopia@cgiar.org)

*ILRI has offices in East Africa • South Asia • Southeast and East Asia • Southern Africa • West Africa*



This presentation is licensed for use under the Creative Commons Attribution 4.0 International Licence.