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Equity and barriers to animal-source food (ASF) consumption in low and middle income countries



MINAGRI



Goodyfoody blogspot



DSM

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**Feed the Future Innovation Lab for Livestock Systems
University of Florida**



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OUTLINE

1. Stunting
2. Livestock Systems Innovation Lab
3. Inequity in ASF consumption
4. Food taboos
5. Barriers to animal-source food consumption
 - Affordability and accessibility
 - Cultural traditions and taboos
 - Religious beliefs and traditions
6. Take home messages



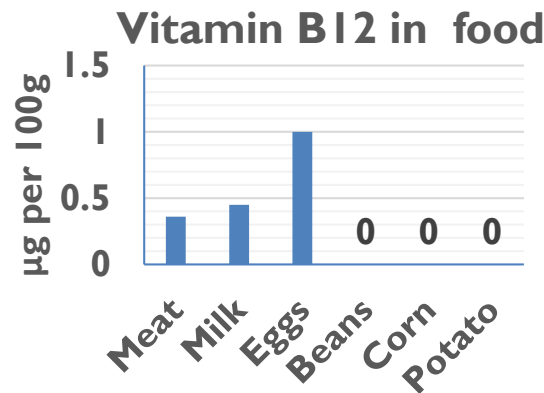


Stunting – the silent disaster

- One of the greatest causes of death among children
- Reduces growth, health, **cognitive development**, and earning potential
- Causes **lifelong** and **intergenerational** effects
- Penalizes African/Asian country **GDP by 10%**



Photo credit: L. Ianotti



Animal-source foods

- **Best source** of high-quality, nutrient-rich foods for 6 to 23 -month-olds (WHO 2017)
- Feeding one egg a day reduced stunting by **47%**
- Meat supplementation increased test scores in Kenyan school kids by **45 and 28%**, respectively



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FUNDS

USAID

\$49 million

Bill & Melinda Gates Foundation

\$8.7 million

Complementary new funds

\$10 million

VISION

To sustainably intensify livestock production to improve the nutrition, health, incomes and livelihoods of the poor



Photo credit: J. Vipham



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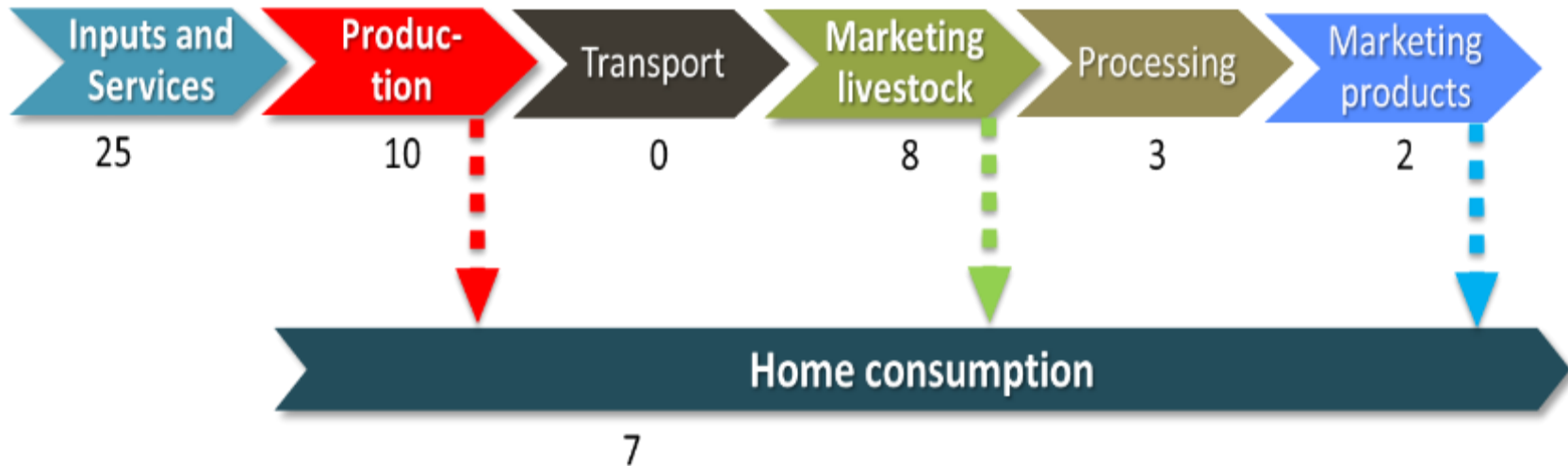


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SCOPE

- **Countries:** Cambodia, Nepal, Burkina Faso, Niger, Rwanda, Ethiopia, Uganda, Kenya
- **Projects:** 45, spanning the ASF value chain and all livestock species
- **Themes:** Feed, marketing, genetics, policy, food safety, disease, management,
- **63 subaward partners:** 20 US subawardees of which 8 are Land Grant Universities and 43 International subawardees of which 13 are universities



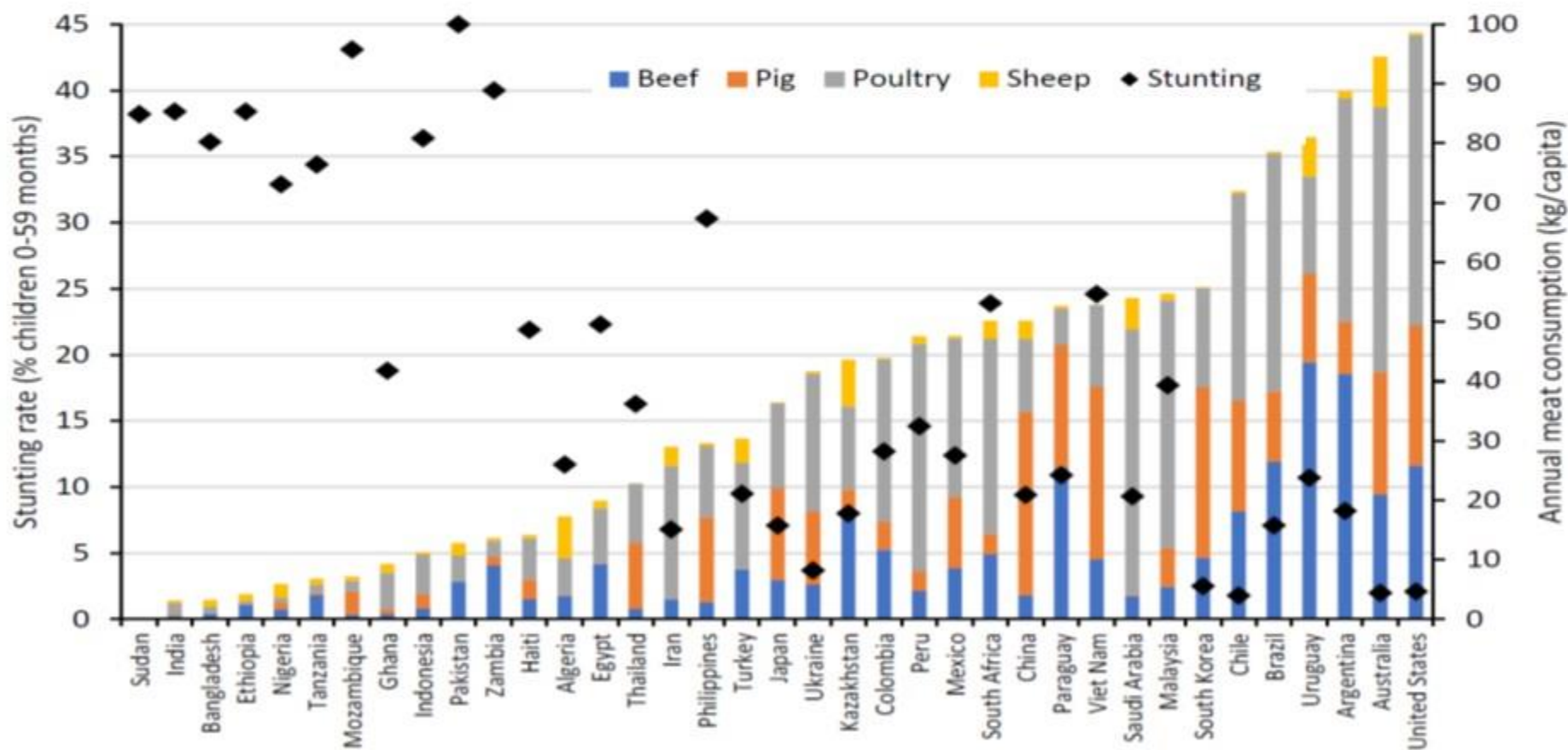
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Stunting is inversely related to meat consumption



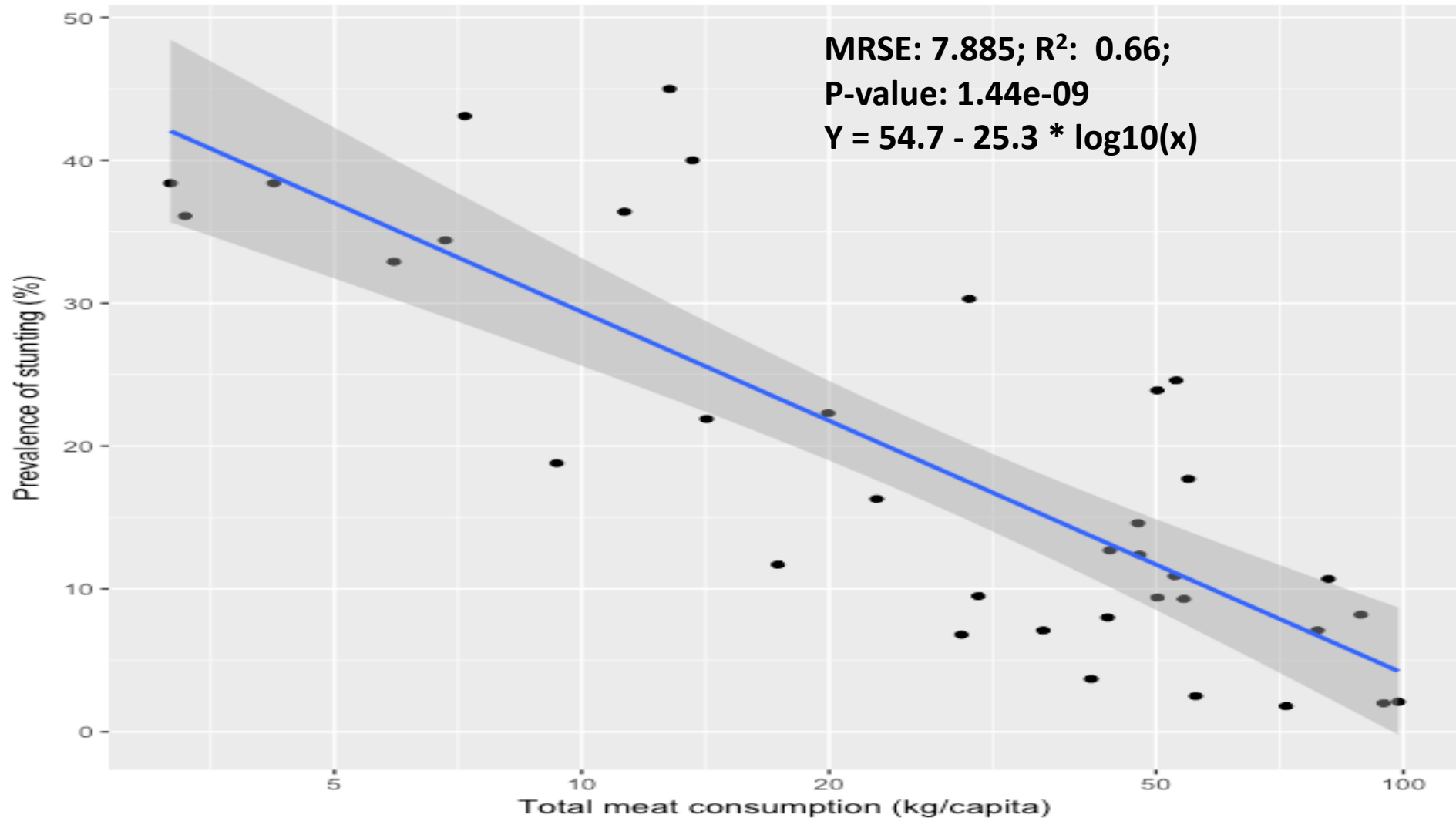
Adapted from OECD 2018 and UNICEF-WHO, 2017



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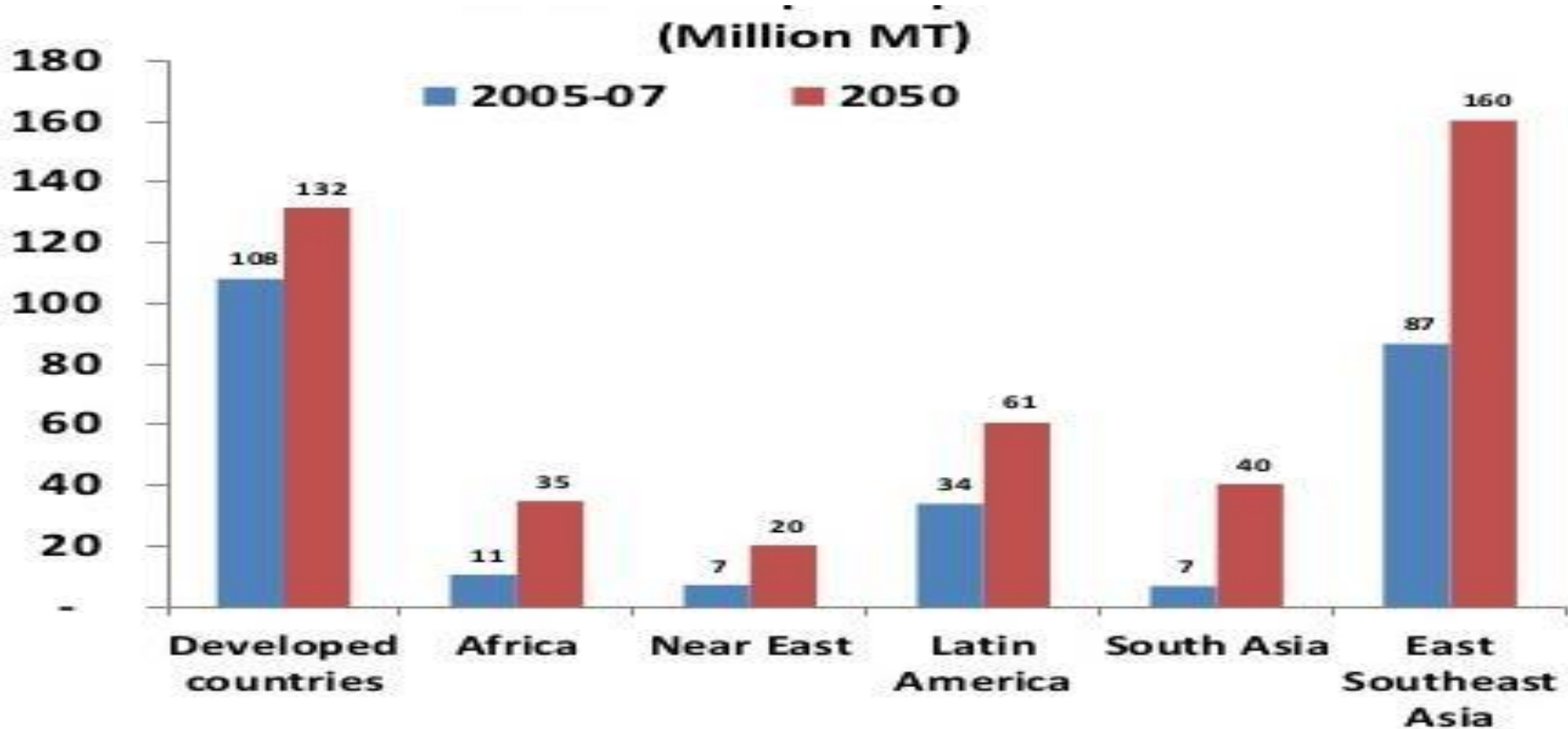
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Stunting prevalence vs. meat consumption





Global meat consumption in 2005-7 vs. 2050





INEQUITY IN ASF CONSUMPTION

In many LMICS,

- Men get the biggest and best ASF
- Children choose based on age
- Mothers get leftovers
- Preferred wives choose first





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BARRIERS TO ASF CONSUMPTION

1. AFFORDABILITY AND ACCESSIBILITY



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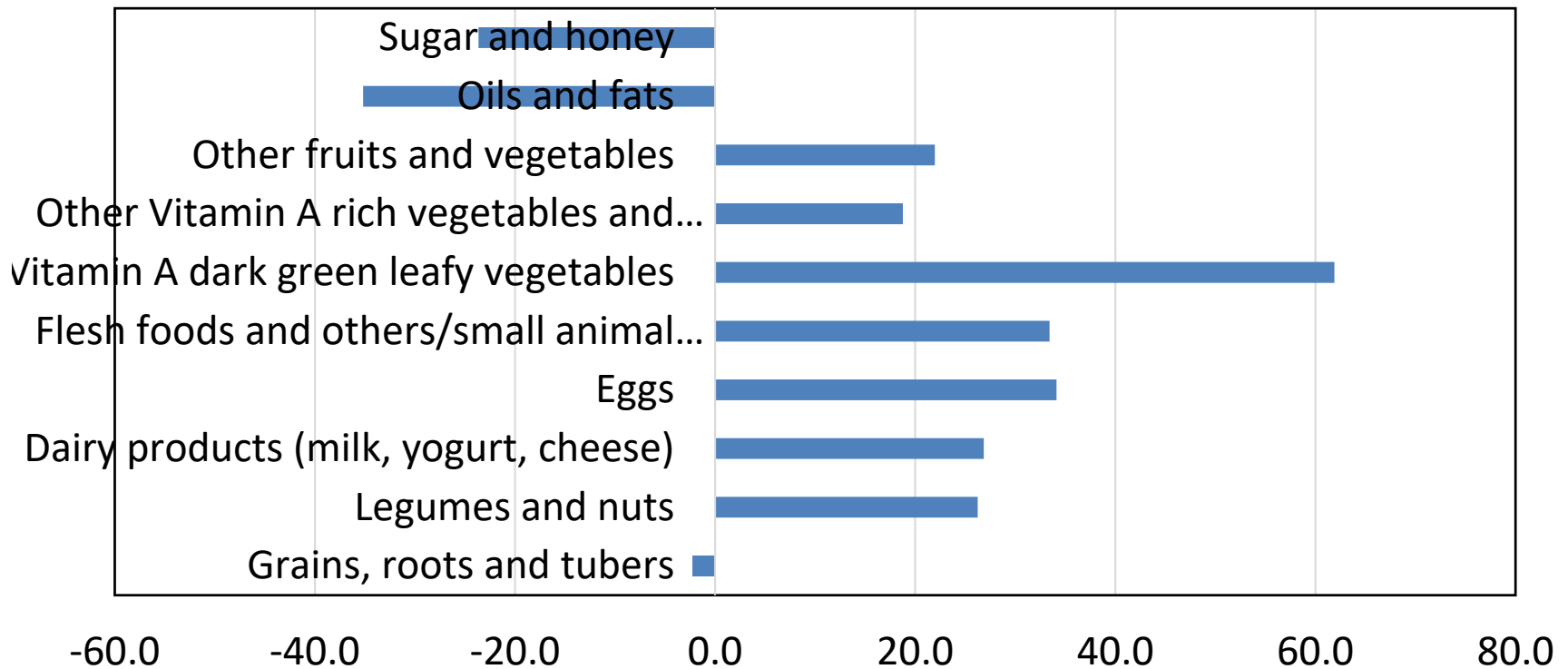
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CHANGE IN NUTRITIOUS FOOD PRICES IN ETHIOPIA, 2006 VS. 2017 (%)





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BARRIERS TO ASF CONSUMPTION 2. SOCIOCULTURAL NORMS AND TABOOS



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GENDER DISPARITY IN ASF CONSUMPTION NORMS

- Arbiters of cultural traditions, usually male, are especially likely to selectively maintain traditions that benefit themselves.
- This is readily apparent in the disproportionate number of meat taboos that only apply to women, such that meat consumption is monopolized by men

[\(Fessler and Navarrete, 2003\)](#)





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NIGER MEN AND ASF NORMS



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CULTURAL TRADITIONS AND TABOOS



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WHAT IS A FOOD TABOO?

- Foods forbidden to be eaten by all or some members of a community for health, cultural and religious reasons
(Demissie et al. 1998, Meyer-Rochow 2009; Vasilevski & Carolan-Olah, 2016)
- They exist in virtually all human societies (Meyer-Rochow, 2009)
- Taboos can be associated with”
 - key biological life stages (e.g., menstruation, pregnancy, lactation)
 - key social events (e.g., hunting, battle, wedding, funeral)
 - Or may be pervasive throughout life



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“... we old people believe that pregnant women should avoid consuming dairy products like yoghurt and cheese, particularly as the gestational age advances.

This is because dairy products can pass to the womb and attach to the baby's head...

*. I have seen this happen with my naked eye: **a baby born full of milk products on the head... full of cream and cheesy substances...** I have witnessed these babies dying immediately after delivery:”*

74 year-old-husband of a pregnant woman (Zerfu et al. 2016)





FOOD TABOO EXAMPLES – W. AFRICA

Nigeria

- In Benin, Igarra, the Delta and Owan divisions, giving coconut milk and liver to children could make them less intelligent.
- Giving fresh meat to mothers after delivery will cause abdominal pains.
- The Urhobo and Ika believe that eating snails will decrease men's strength during wars.

(Placek et al., 2017)

- Eating meat before the rest of the meal will teach children to steal

Niger

- Eating eggs will teach children to steal.





FOOD TABOO EXAMPLES – E. AFRICA

Kenya:

- Some parts of the animal are exclusively for men especially the chicken gizzard and the backbone of a cow.
- Eating eggs was highly discouraged due to possible long-term effects on the mental health of the baby (Kariuki et al. 2017)

Rwanda

- Women who eat meat with milk will grow a beard or become promiscuous





FOOD TABOO EXAMPLES – E. AFRICA

Ethiopia:

- Eating eggs and fruit together or meat with cheese is harmful to mother and baby (Zepro 2015; Vasilevski and Carolan-Olah 2016)
- White food items (e.g. milk, fatty meat, porridge, potato, banana) should be avoided so that babies are not ‘plastered’ on the head with white patches
(Demissie et al. 1998, Assefa et al. 2005) (Zepro 2015) (Vasilevski and Carolan-Olah 2016)
- Avoid “twice killed” (i.e. cooked meat)
- Milk is for cats not children





FOOD TABOO EXAMPLES – ASIA

Malaysia:

- Avoid meat, chicken liver and some seafoods to prevent abortion, difficult labor, sickness or vomiting, and cognitive impairment of the baby (Mohamad & Yee Ling 2016)

Indonesia:

- Chicken eggs will cause a longer labor (Hartini et al. 2005; Kholer et al. 2019)
- Eating meat while breastfeeding will make the breast milk sour and reduce suckling by the baby (Wulandari & Klinken Whelan 2011)

Lao PDR:

- Meat from a sow will cause headaches, dizziness, fever, bloating or other illness in postpartum women (Holmes et al. 2007)
- Eating beef or chicken while breastfeeding will cause sickness or coughing and damage the uterus (Holmes et al. 2007)





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BARRIERS TO ASF CONSUMPTION. 3. RELIGIOUS BELIEFS AND TRADITIONS



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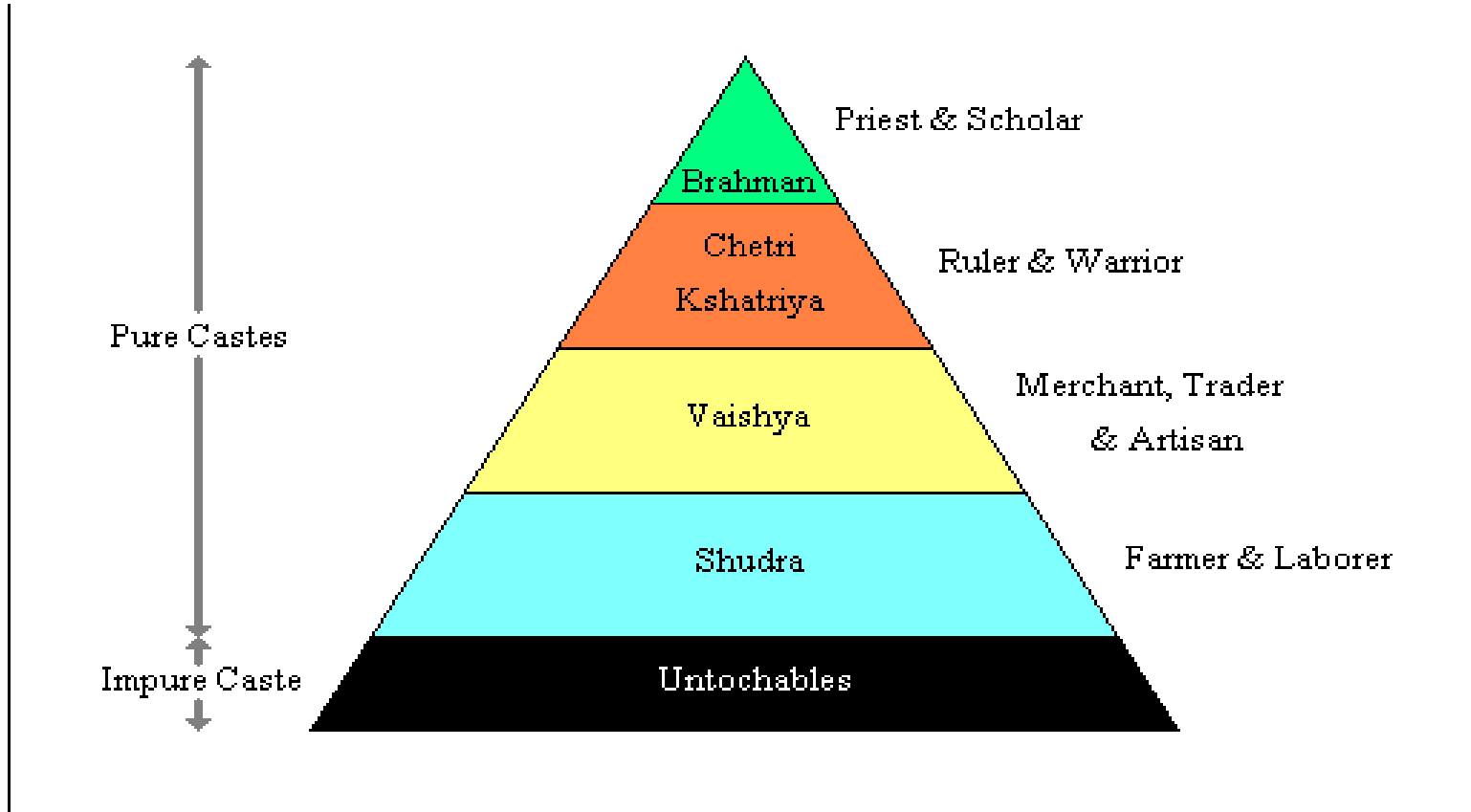
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VENERATION OF COWS IN NEPAL/INDIA





CASTE SYSTEM IN INDIA/NEPAL





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FASTING IN ETHIOPIA



<http://www.dailymail.co.uk/>



<http://www.abebatoursethiopia.com>



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FOOD TABOOS – WESTERN WORLD

- Eating meat with pasta in Italy is a taboo
- Eating horsemeat is against the law in the US but is common in Italy
- Other examples –haggis, frog legs, octopus, termites, tarantula, “cockroaches of the sea”, etc.





FOOD TABOOS – WESTERN WORLD

- Becoming a vegan or vegetarian used to be due to animal welfare or health reasons; It is now considered “greener / healthier”
- Among college students in Canada, vegetarian diets were perceived as more virtuous (a feminine quality); male vegetarians were perceived as less manly than omnivores (Ruby and Heine, 2011)
- Vegetarian men are considered more discerning but less manly





WHY DO ASF TABOOS MATTER?

- They make the most vulnerable avoid nutritionally valuable ASF when they need them most even when the ASF are available and affordable
- Contribute to low birth weight babies, breastfed but malnourished children, and increased risk of maternal and child death (Siega-Riz et al., 2009; Kohler et al. 2019).

Examples:

- 90% of 300 women surveyed in Kenya had inadequate breastmilk vitamin B12 concentrations (Allen, 2016)
- Rickets resurfaced among teenage girls in England; thought to be due to drinking milk substitutes (Givens, 2017)





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OVERCOMING EGG CONSUMPTION TABOOS IN BURKINA FASO

The gift of chickens:

An innovative behavior change strategy to improve infant and young child nutrition through increased egg consumption

Sarah Mckune et al., 2019



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INTERIM RESULTS: BURKINA ONE EGG PROJECT



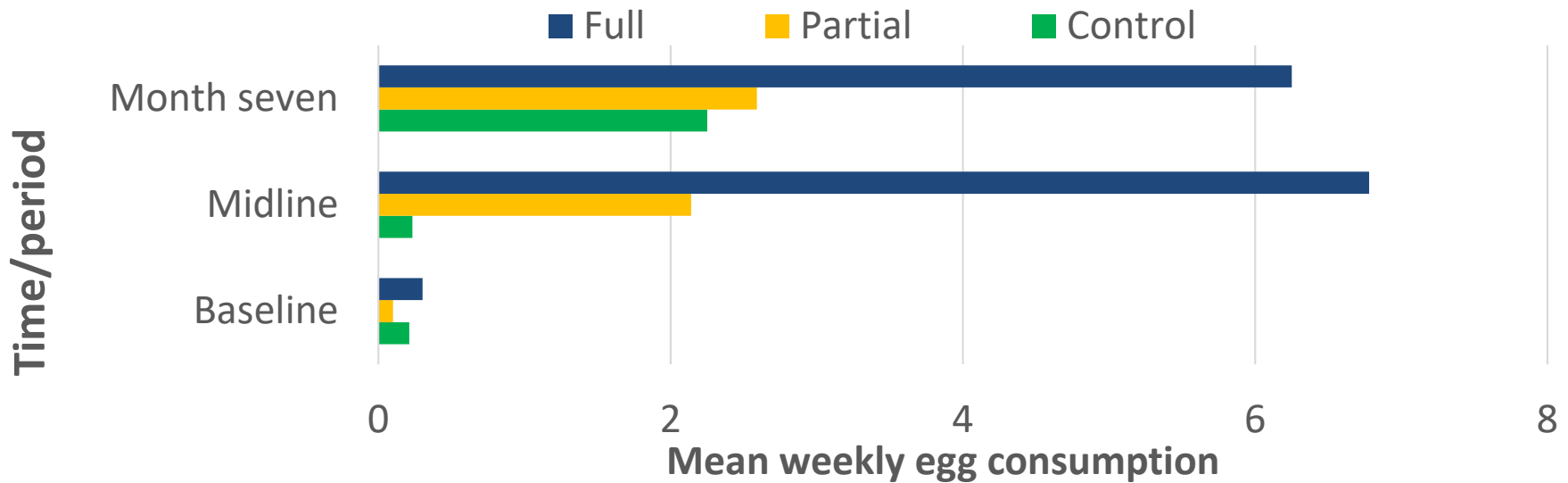
Mean egg consumption/week at Baseline and Months 4 in each treatment group

Intervention	Baseline	Month 4
Control	0	0.1264
Partial	0	1.7356
Full	0	6.8519





FINAL RESULTS: BURKINA ONE EGG PROJECT



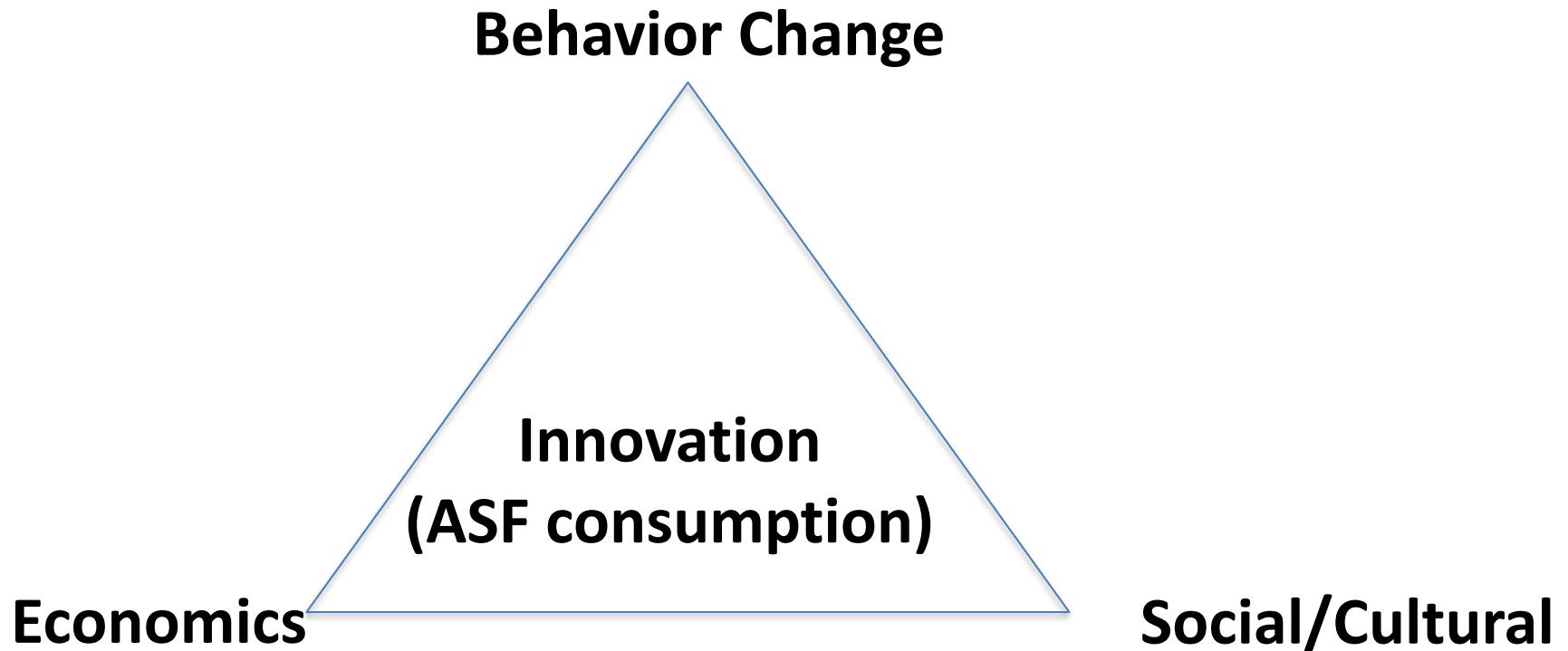
- Full intervention decreased wasting by month 7 ($p = 0.04$); Partial intervention had no effect and wasting was increased in Controls ($p = 2e-06$)
- No effect on stunting



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OVERCOMING ASF BARRIERS REQUIRES A MULTIFACETED APPROACH



Myer, 2019





TAKE HOME MESSAGES

- High costs and socio-cultural taboos are major barriers to ASF consumption in LMICS
- They prevent supply of critical nutrients to infants and mothers who need them most and have little or no other viable options for getting them
- Urgent attention should be paid to understanding and overcoming such barriers in to increase ASF consumption in LMIC
- Strategic collaboration among animal scientists, human nutritionists, economists and social behavior change experts is critical
- The end goal should be sustained increases in ASF consumption, not just more publications



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Thank you!

For more information:

<http://livestocklab.ifas.ufl.edu/>

[@Livestock_Lab](#)

www.facebook.com/LivestockLab

Or send us an email:

livestock-lab@ufl.edu



Photo credit: S. McKune



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