

# Clean, Fed & Nurtured<sup>SM</sup>

Joining forces to promote child growth and development

---

## Integrated Programming Targeting the Whole Child and Improved Educational Attainment

---

**Renuka Bery**, USAID/WASHplus project, FHI 360

Carol da Silva, FHI 360

**Monica Woldt**, FANTA project, FHI 360

March 8, 2015

Comparative International Education Society Conference

# Objectives of today's session

*By the end of this workshop, participants will be able to:*

- Describe the 3 sectors and explain how integration can promote better child growth and development
- Explore ways to integrate the 3 sectors in ongoing work
- Examine challenges and solutions to integration



# What is Clean, Fed & Nurtured<sup>SM</sup>?

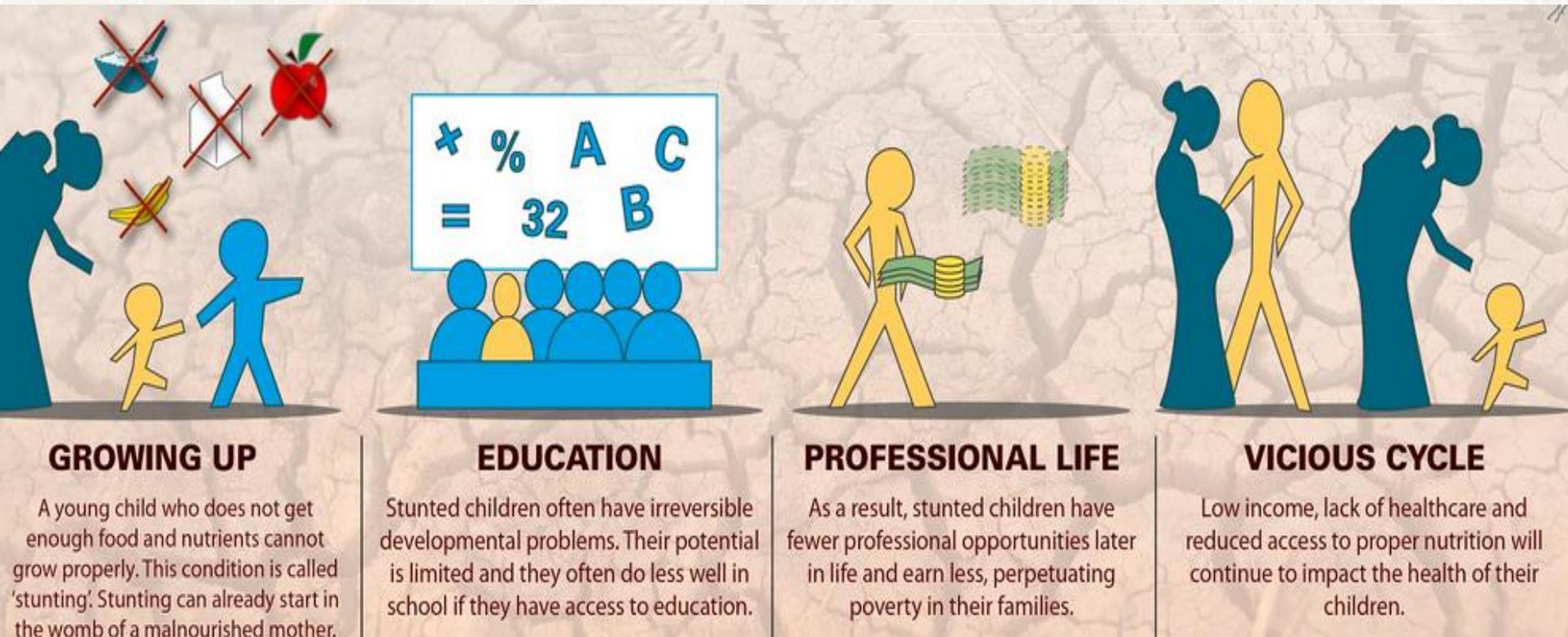
- Community of Practice focused on Integrated programming
  - Water, sanitation, hygiene (WASH)
  - Nutrition
  - Early childhood development (ECD)
- Goal
  - To promote thriving children



# Building the Case for Integration: The 3 Legged Stool



Stunting has lifelong implications...  
A stunted child will never learn or earn  
as much as if they'd been properly nourished...  
*And the damage can't be un-done...*



# Challenges of integration

- Challenges:
  - Staff motivation, workload
  - Coordination among agencies, organizations
  - Lack of common language and measurement, indicators
  - Funding by silo
  - Shaky evidence base
  - Overload for families

Adapted from: DiGirolamo, A. M., Stansbery, P. and Lung'aho, M. (2014), *Advantages and challenges of integration: opportunities for integrating early childhood development and nutrition programming*. *Annals of the New York Academy of Sciences*, 1308: 46–53. doi: 10.1111/nyas.12323



# Advantages of integration

- Advantages:
  - Hypothetical synergies for improved growth and development
  - Efficiency through use of same facilities, personnel
  - Increased access to services for most disadvantaged
  - Seamless approach is the way families raise a child

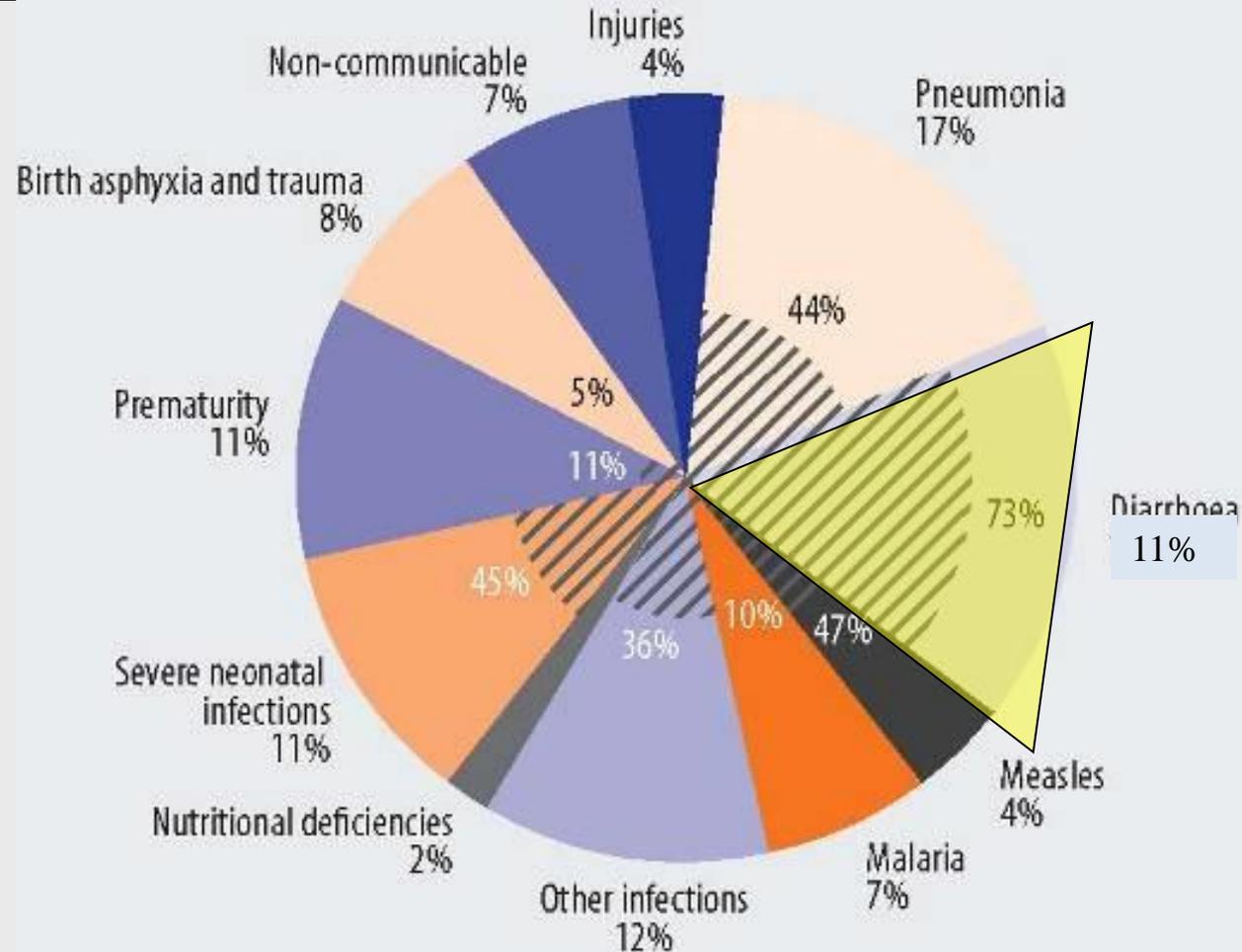
Adapted from: DiGirolamo, A. M., Stansbery, P. and Lung'aho, M. (2014), *Advantages and challenges of integration: opportunities for integrating early childhood development and nutrition programming*. *Annals of the New York Academy of Sciences*, 1308: 46–53. doi: 10.1111/nyas.12323



# Percentage of Diarrheal Deaths Attributed to Undernutrition

Diarrhea: 11% of all child deaths

Undernutrition contributed to **73%** of these deaths



Shaded area indicates contribution of undernutrition to each cause of death

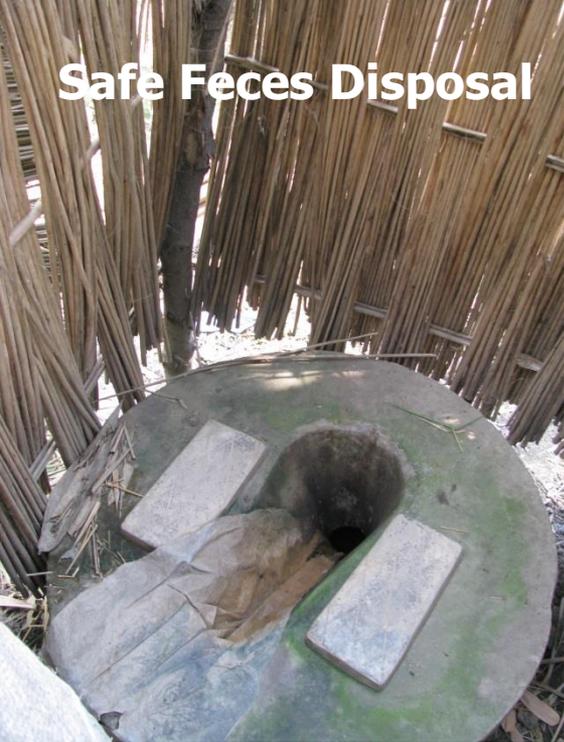
# What do we know about WASH + nutrition?



- Children with diarrhea tend to eat less
- With diarrhea, nutrients from food are not well-absorbed
- Undernourished children are more susceptible to diarrhea



**Safe Feces Disposal**



**30% ++**

# Review of the evidence

Focus on WASH behaviors for Diarrhea Disease Reduction...

**Safe Storage & Treatment of Water**

**33-45%**



**Handwashing**

**43%**

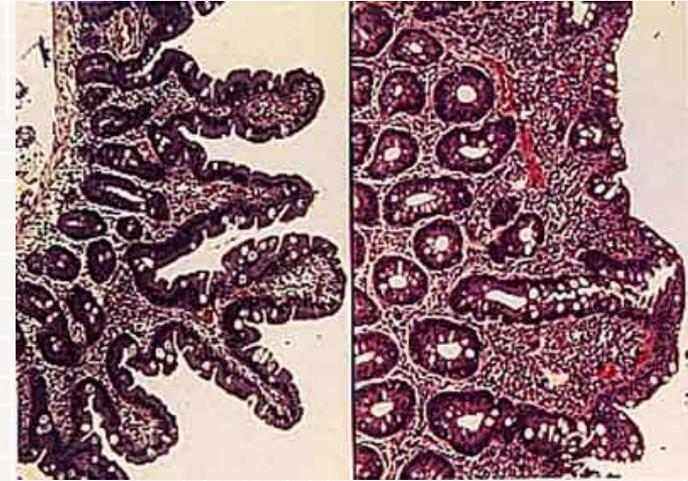


# Open defecation accounts for much of excess stunting

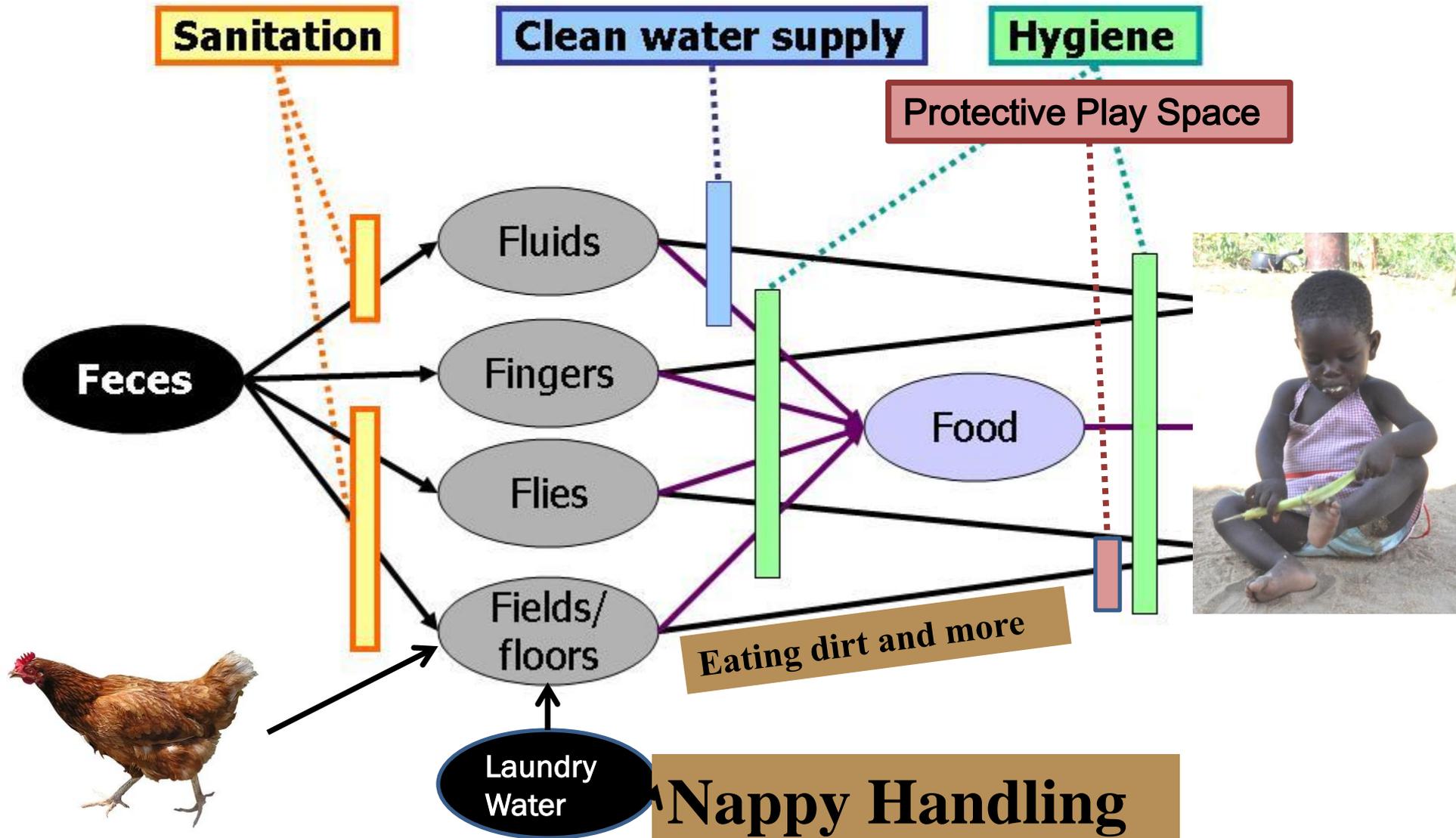


# The Environmental Enteropathy Hypothesis

- A subclinical condition of the small intestine, called environmental enteropathy (EE)
- Characterized by:
  - Flattening of the villi of the gut, reducing its surface area
  - Thickening of the surface through which nutrients must be absorbed
  - Increased permeability to large molecules and cells (microbes)
- Likely causes:
  - Too many microbes in the gut
  - Effects of toxins on the gut



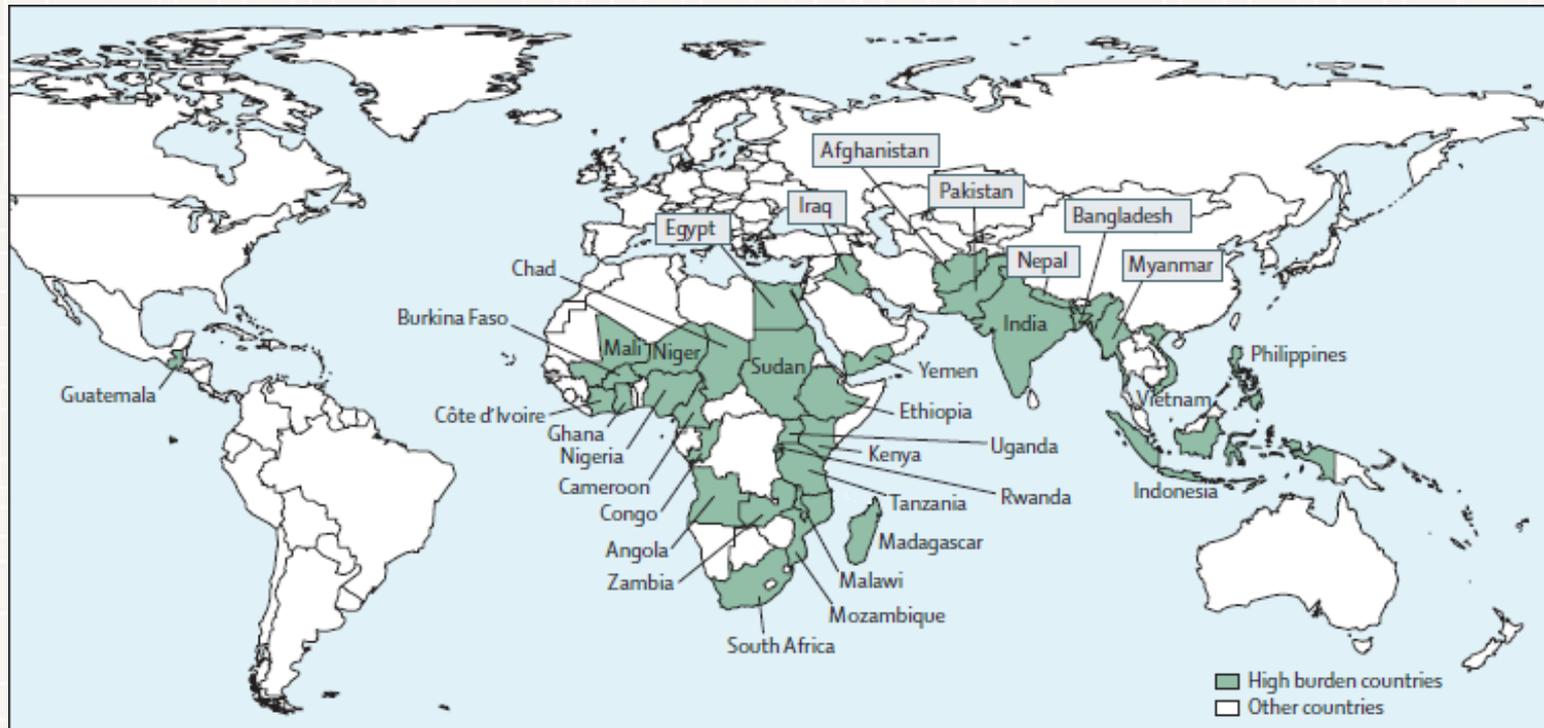
# Routes of fecal disease transmission and protective barriers



# WASH Improvement Framework



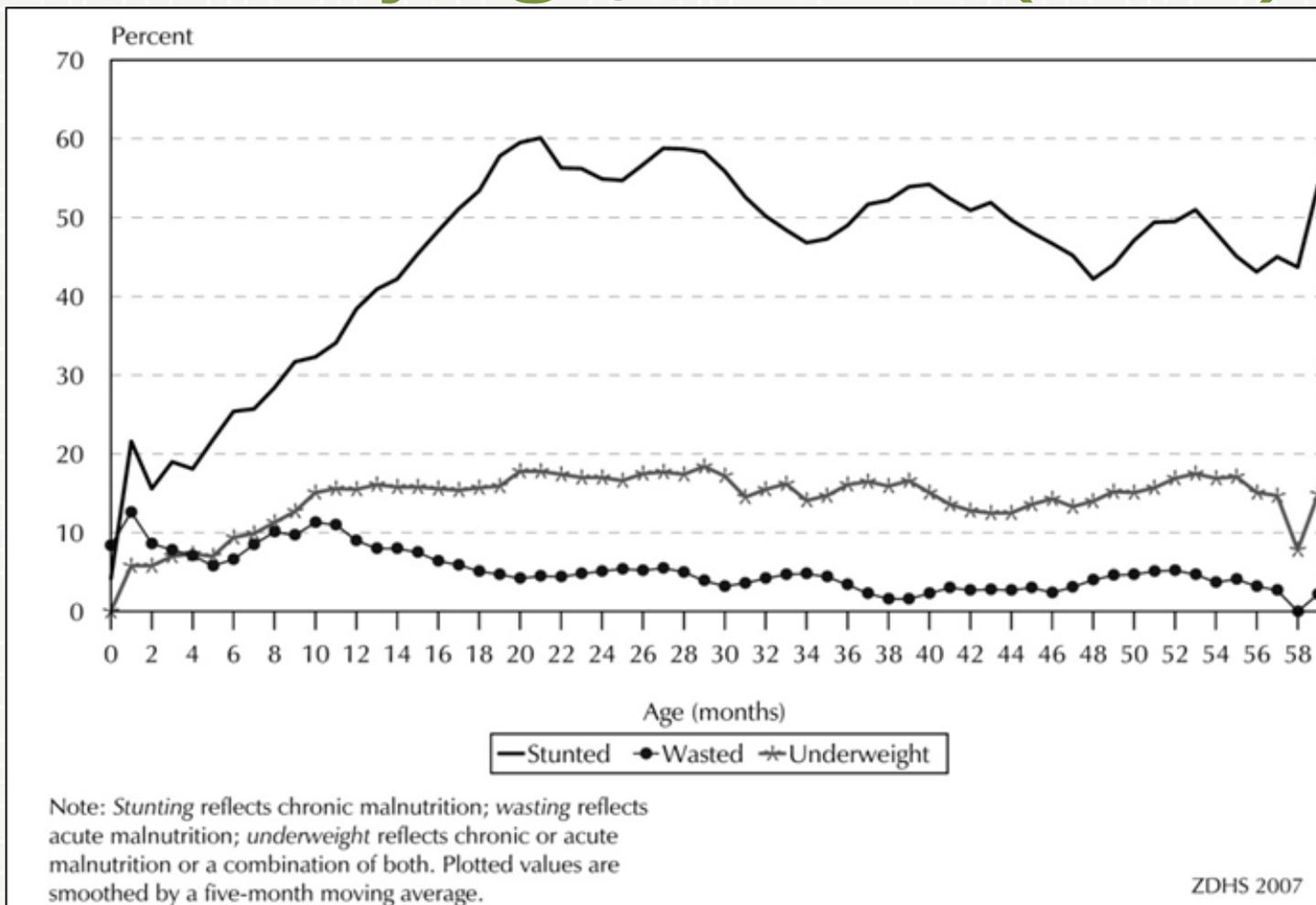
# Countries with the Highest Burden of Stunting



From: Bhutta et al. 2013



# Proportion of Children Stunted and Wasted by Age, Zambia (2007)



# Nutrition interventions and reduction in undernutrition: Potential impact

10 nutrition interventions at 90% coverage could reduce stunting by 20.3% (33.5 million children) and wasting by 61.4%

## Pregnancy and perinatal period

- Folic acid supplementation and or fortification
- Maternal balanced energy protein supplementation
- Maternal calcium supplementation
- Multiple micronutrient supplementation in pregnancy

## Infants and young children

- **Promotion of breastfeeding**
- **Appropriate complementary feeding**
- Vitamin A and preventive Zinc supplementation in children 6–59 months of age
- Management of severe acute malnutrition (SAM)
- Management of moderate acute malnutrition (MAM)



# Breastfeeding – Key Actions

- Early initiation of breastfeeding (immediately after birth)
- Exclusive breastfeeding for the first 6 months
- Continued breastfeeding until child is at least 24 months of age
- Appropriate breastfeeding in the context of HIV



Iain McLellan, FANTA/FHI 360



# Complementary Feeding – Key Actions

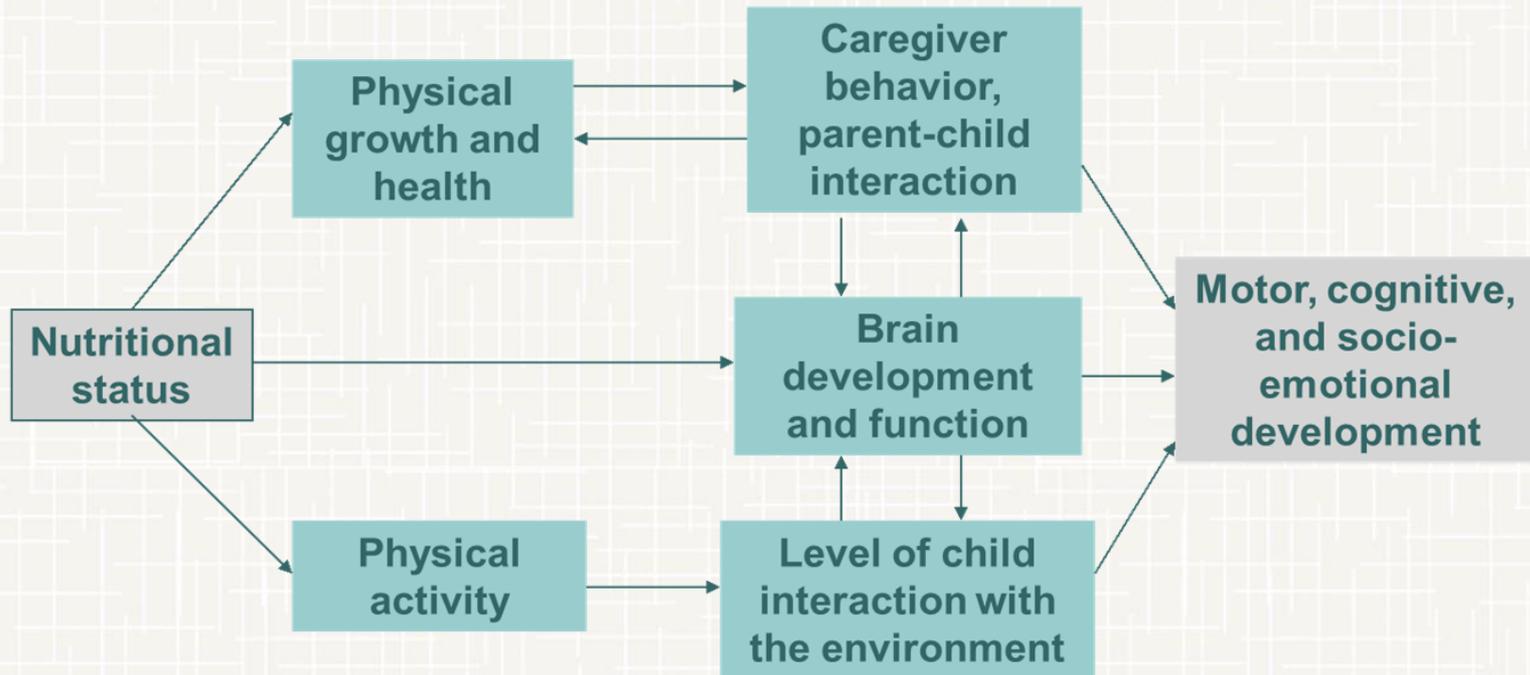
- Appropriate quality frequency, & diversity, including consumption of fortified foods e.g. commercial and/or in-home fortification
- Responsive feeding
- Food hygiene
- Recommendations for HIV positive children and children of HIV positive mothers who are unable to breastfeed



Iain McLellan, FANTA/FHI 360



# Potential mechanisms for the effect of nutrient deficiency on children's cognitive, motor, and socio-emotional development



From: Prado & Dewey, A&T Technical Brief



# Effects of various nutrition interventions on brain development

- Food supplementation
  - Food supplementation programs and food voucher programs for low-income families have been found to improve children's IQ, behavior, and school performance, although some studies show mixed results – more studies on long-term benefits are needed.
- Breastfeeding
  - In low- and middle-income countries, longer duration of breastfeeding was related to higher IQ and school achievement, controlling for potential confounders – strategies include education and social and behavior change communication (SBCC)



# Effects of various nutrition interventions on brain development

- Iron
  - Infants with iron deficiency anemia and who were treated continued to show deficits in IQ, social problems, and inattention in adolescence, while preventive iron supplementation led to improved cognitive/language, socio-emotional, and/or motor development – strategies include, e.g., home fortification with micronutrient powders.
- Iodine
  - Evidence indicates iodine is clearly necessary for normal brain development, and prevention of iodine deficiency, especially in pregnant mothers is important to promote healthy child brain development – strategies include salt iodization.



# Effects of various nutrition interventions on brain development

- Essential fatty acids
  - Evidence suggests supplementation with EFA may benefit child neuro- and motor development in low- and middle-income countries, but more studies are needed on impact of EFA supplementation on infants and pregnant women.
- Multiple micronutrients
  - Infant supplementation showed some immediate positive effects on motor development, but mixed results on cognitive development; effect of women's supplementation during pregnancy on child cognitive and motor development also showed mixed results.



# Summary: Nutrition and Brain Development in Early Life

- Adequate nutrition during pregnancy and the first two years is necessary for normal brain development, laying the foundation for future cognitive and social ability, school success, and productivity.
- Priority should be given to the prevention of:
  - Stunting
  - Severe acute malnutrition
  - Intrauterine growth retardation
  - Iron-deficiency anemia
  - Iodine deficiency

From: Dewey, Clean, Fed & Nurtured: Joining forces to promote child growth and development, Consultative Meeting, May 2-3, 2013



# Summary: Nutrition and Brain Development in Early Life

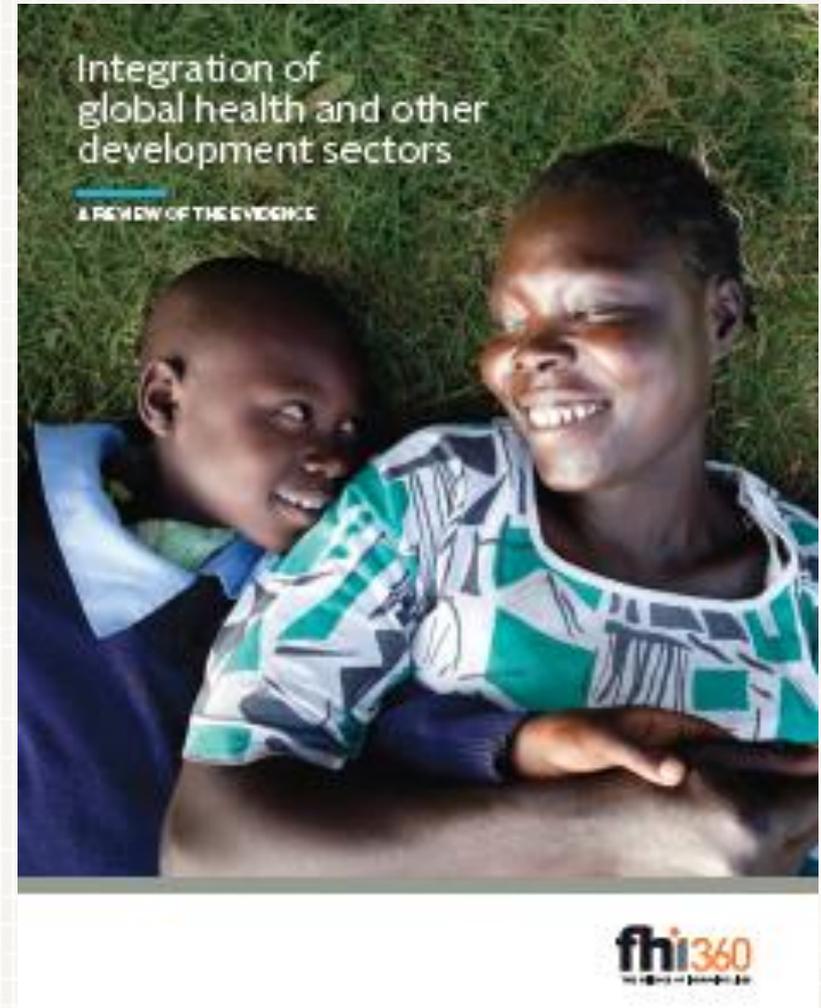
- There is growing evidence for beneficial effects of the following on ECD, but more robust studies are still needed:
  - Breastfeeding promotion
  - Pre- and post-natal multiple micronutrient supplementation
  - Pre- and post-natal supplementation with essential fatty acids
  - Fortified food supplements provided during pregnancy and to the child from 6 to 24 months
- An integrated approach is likely to be most effective for promoting optimal child development, i.e., interventions that combine improved nutrition with other strategies such as enhancing the home environment and the quality of caregiver-child interaction.

This presentation is made possible by the generous support of the American people through the support of the Office of Health, Infectious Diseases and Nutrition, Bureau for Global Health, U.S. Agency for International Development (USAID), under terms of Cooperative Agreement No. AID-OAA-A-12-00005, through the Food and Nutrition Technical Assistance III Project (FANTA), managed by FHI 360. The contents are the responsibility of FHI 360 and do not necessarily reflect the views of USAID or the United States Government.



# Integrated Development

- Are multi-sectoral efforts better at achieving development goals?
- Example: CCTs for health and education



# First 1,000 days of a child's life determines success: Focus on ages 0 to 3



# Health – Education Link

Prenatal care supports early brain development

Social and emotional development build curiosity and supports learning

Screenings catch hearing and vision problems before they interfere with learning

Language and print rich environments in the home and community predict later reading outcomes



# Early Grade Reading Acquisition and Development: Conceptual Framework



Literacy 360



# TALK: Training Adults to Promote Language Knowledge in Young Children

- Use health programming to reach families and caregivers of young children
- Use health practices (e.g. breastfeeding, WASH) as opportunities to build early language skills
- Train health workers to distribute information and materials to families and caregivers as part of overall healthy child model
- Provide incentives to families and caregivers (e.g. book distribution) to participate in ongoing health programming



