



CAREER PATHWAYS IN GLOBAL HEALTH

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Outline

- Introduction to Gambia Goat Dairy
- Food Security as Global Health
- My Story
- COVID-19 Impact on Global Food Security



Introduction to Gambia Goat Dairy



Problem Scope

- 25% of children under the age of 5 severely or moderately stunted
- Underproductive livestock systems yielding 3% of the milk and meat produced by U.S. livestock
- Heavily import reliant country
- Environmental degradation— human land use, livestock grazing, brush fires

→ ***Community-defined need and evidence-based interventions***



Gambia Goat Dairy

Not-for-profit social enterprise employing veterinary entrepreneurship to end hunger, empower communities, and preserve the biodiversity of the Gambia





Current status

Early implementation phase

Two employees, 50+ contractors

25 goats, 1 lactation data

Infrastructure: goat barn, feed storage, solar powered borehole, perimeter fencing, drought-tolerant pasture grasses

Data on community nutrition, feed supply chains, domestic milk market





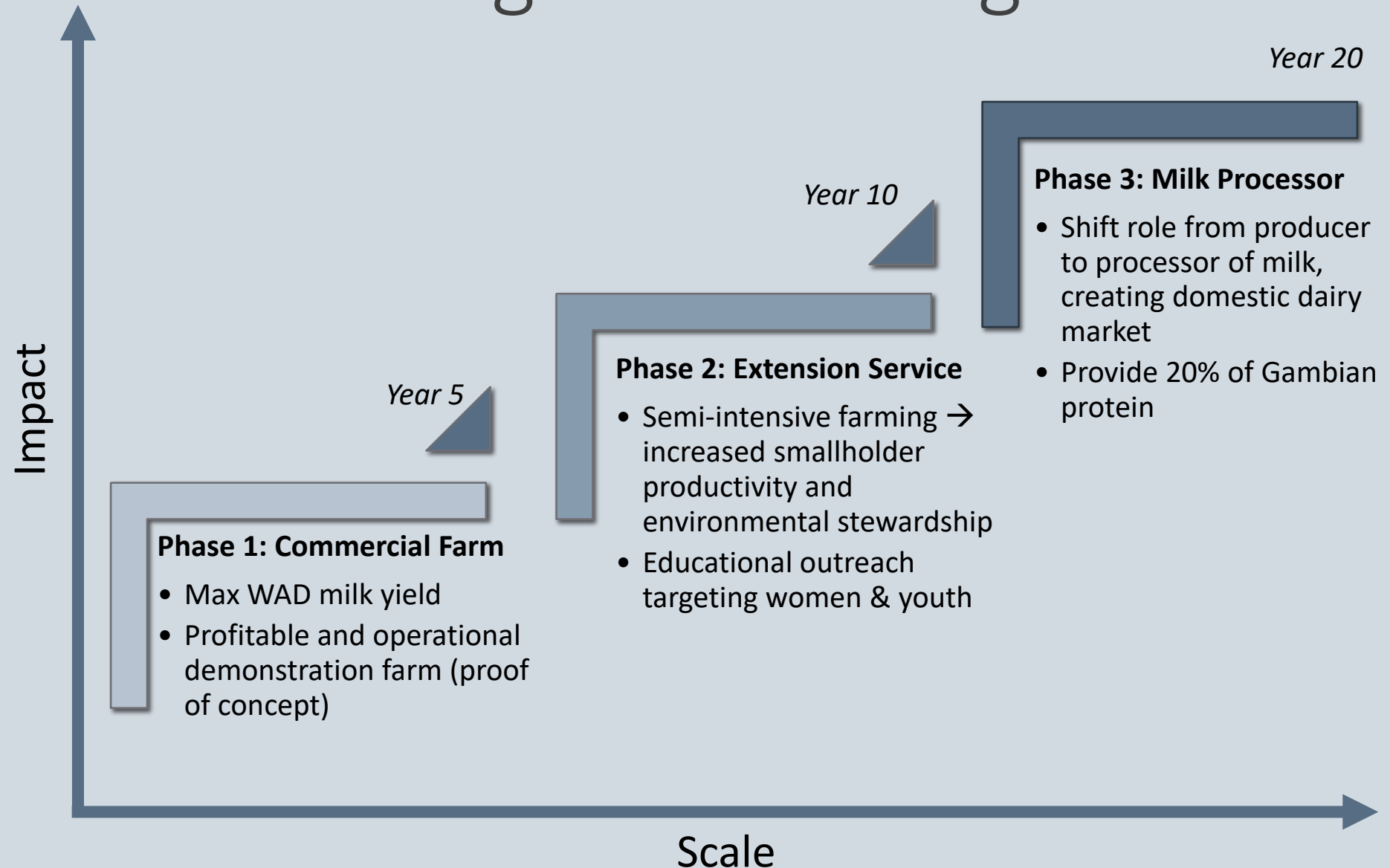
Short-term Plans

Build the commercial farm to serve as a demonstration and teaching site

Beta-test milk and milk products across target market

Inaugural agricultural productivity and entrepreneurship workshop

Long-term Scaling



OUTCOMES



Maternal and Child Health

- Reduce stunting malnutrition by increasing animal-source food availability

Women in Agriculture and Business

- Women as target beneficiaries of agricultural and entrepreneurial training programs

Youth, Leadership and Education

- Practical education empowering youth to create domestic employment and change

Economics and Food Security

- Strengthen domestic food production through access to modern agricultural practices

Environment

- Widespread adoption of semi-intensive farming methods and environmental stewardship

Food Security is Global Health



SUSTAINABLE DEVELOPMENT GOALS

1 NO POVERTY



2 ZERO HUNGER



3 GOOD HEALTH AND WELL-BEING



4 QUALITY EDUCATION



5 GENDER EQUALITY



6 CLEAN WATER AND SANITATION



7 AFFORDABLE AND CLEAN ENERGY



8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



10 REDUCED INEQUALITIES



11 SUSTAINABLE CITIES AND COMMUNITIES



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



13 CLIMATE ACTION



14 LIFE BELOW WATER



15 LIFE ON LAND



16 PEACE, JUSTICE AND STRONG INSTITUTIONS



17 PARTNERSHIPS FOR THE GOALS



SUSTAINABLE DEVELOPMENT GOALS

Nutrition as global health

Malnutrition slows economic growth and perpetuates poverty

Disease and mortality:

- **60% of child mortality linked to malnutrition**
- Underweight as largest risk factor to global burden of disease
- Low birthweight infants 2-10x death risk

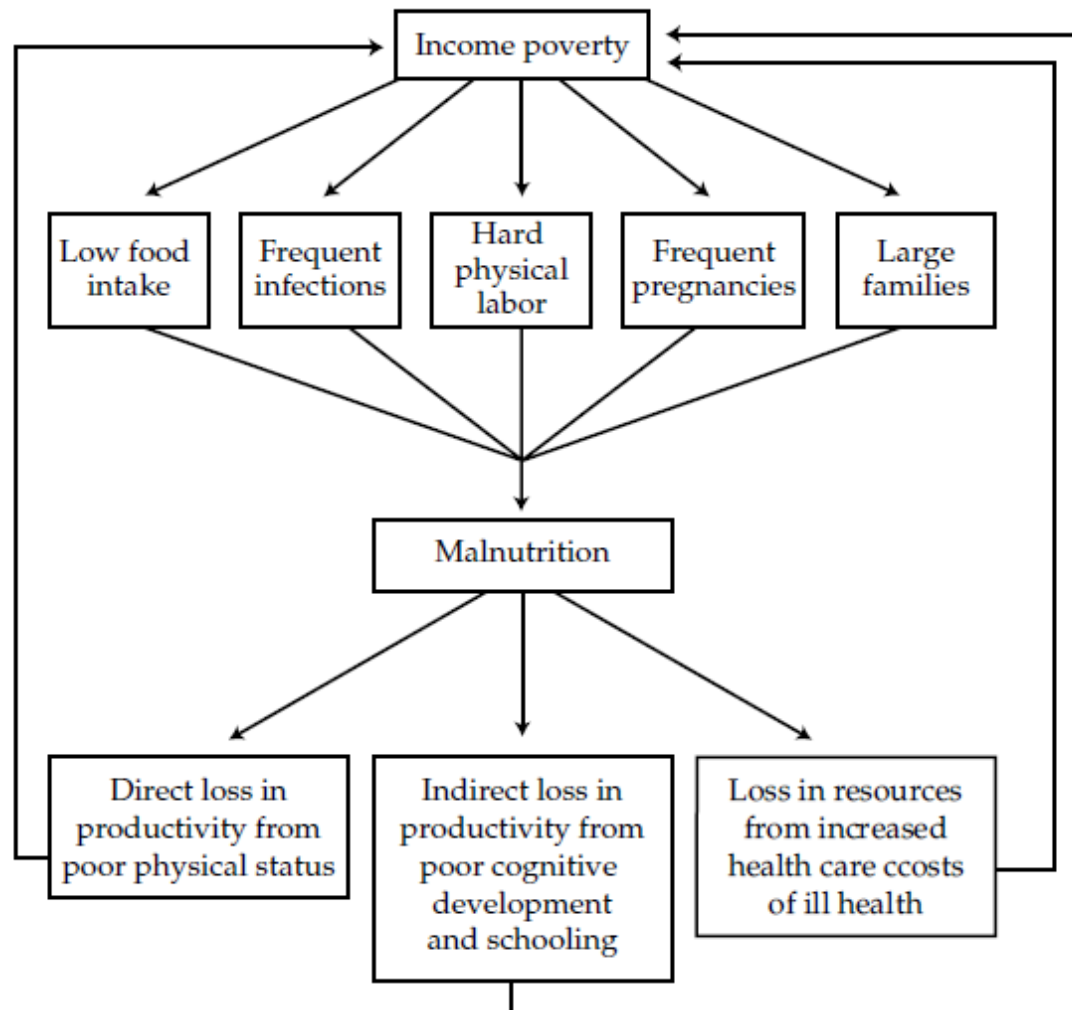
Cognitive development:

- Low birthweight reduces IQ by 5 percentage points
- Stunting 5-11 point reduction

Physical capacity and economic impact:

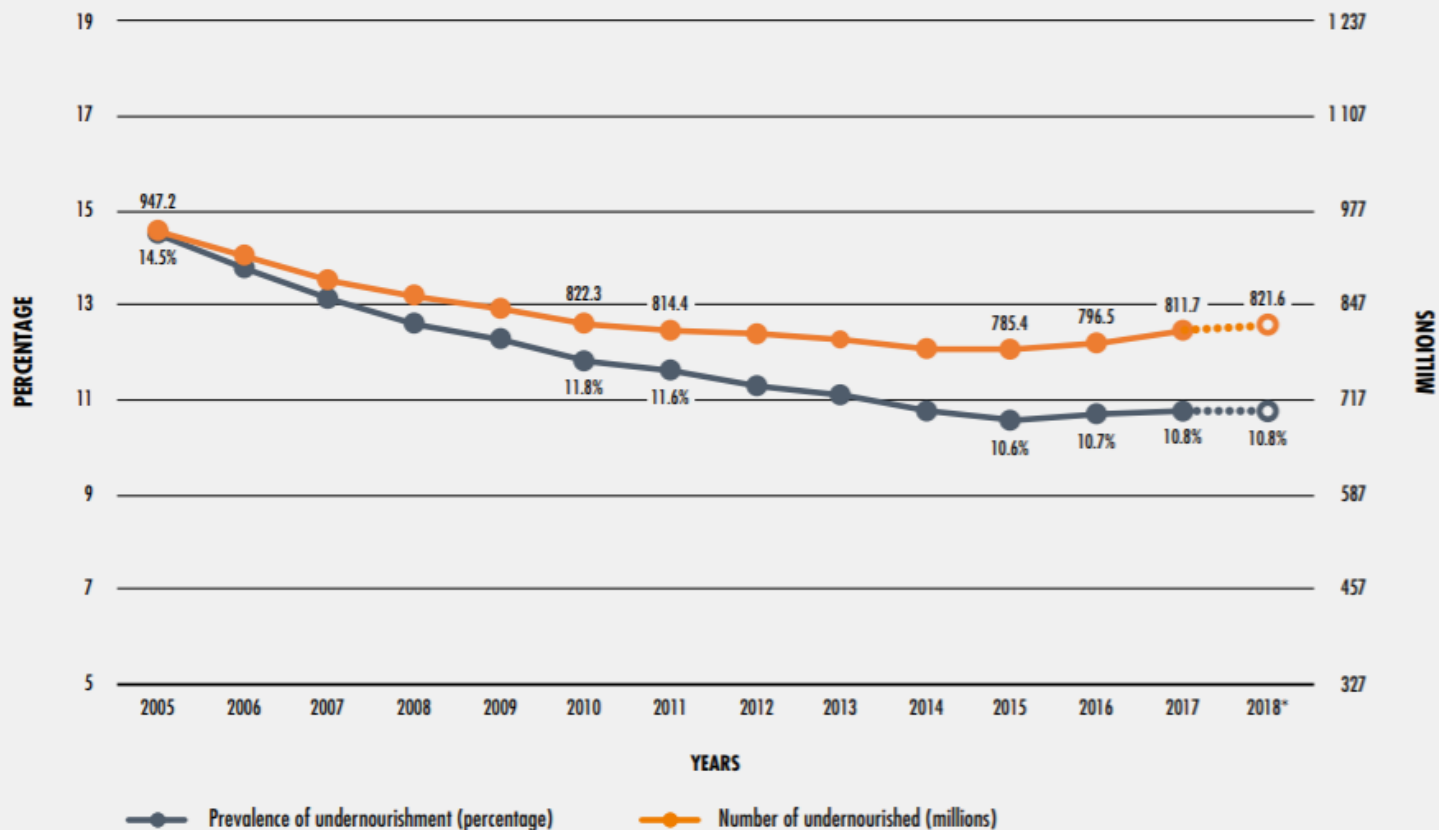
- 10% loss of individuals' lifetime earnings due to productivity losses
- 2-3% of GDP lost to malnutrition

Figure 1.1 The vicious cycle of poverty and malnutrition



Source: Modified from World Bank (2002a); Bhagwati and others (2004).

FIGURE 1
THE NUMBER OF UNDERNOURISHED PEOPLE IN THE WORLD HAS BEEN ON THE RISE
SINCE 2015, AND IS BACK TO LEVELS SEEN IN 2010–2011

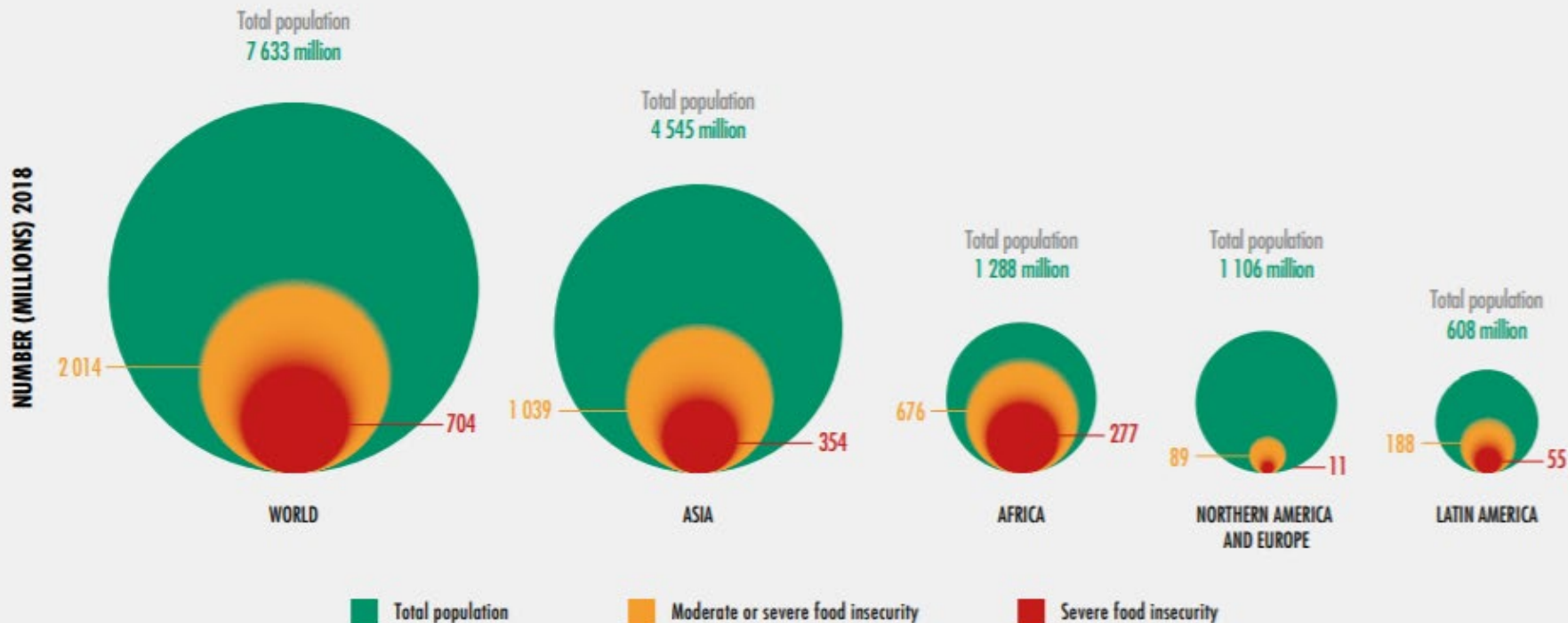


NOTES: * Values for 2018 are projections as illustrated by dotted lines and empty circles. The entire series was carefully revised to reflect new information made available since the publication of the last edition of the report; it replaces all series published previously. See Box 2.

SOURCE: FAO.

820 million hungry; 2 billion food insecure worldwide

FIGURE 11
THE CONCENTRATION AND DISTRIBUTION OF FOOD INSECURITY BY SEVERITY
DIFFERS GREATLY ACROSS THE REGIONS OF THE WORLD



SOURCE: FAO.

Role of Animal Source Foods

Importance of Animal Source Foods:

- First 1000 days of life critical period for cognitive development and linear growth
- Consumption of 1 ASF previous day decreases risk of stunting
- Consumption of multiple ASFs in previous day further decreases stunting risk

Barriers to consumption:

- Lack of nutritional knowledge & parental education
- Gender bias and low levels of maternal empowerment
- Food taboos
- ***Cost, underdeveloped value chains, food safety risks***

GGD's Approach

Community-centered and impact-driven

Increase domestic dairy production through a bottom-up, smallholder approach

- Local ownership of production, sales and processing
- Addressing nutrition at production level

Systems-level solutions addressing perpetuators of poverty



My Story



My story

Best career advice?

How'd GGD happen?

VMD & MSED Education Entrepreneurship

Real-life experience

Unpack your motivations for doing this work

Uncertainty & accountability



PennVet

Food security during COVID-19

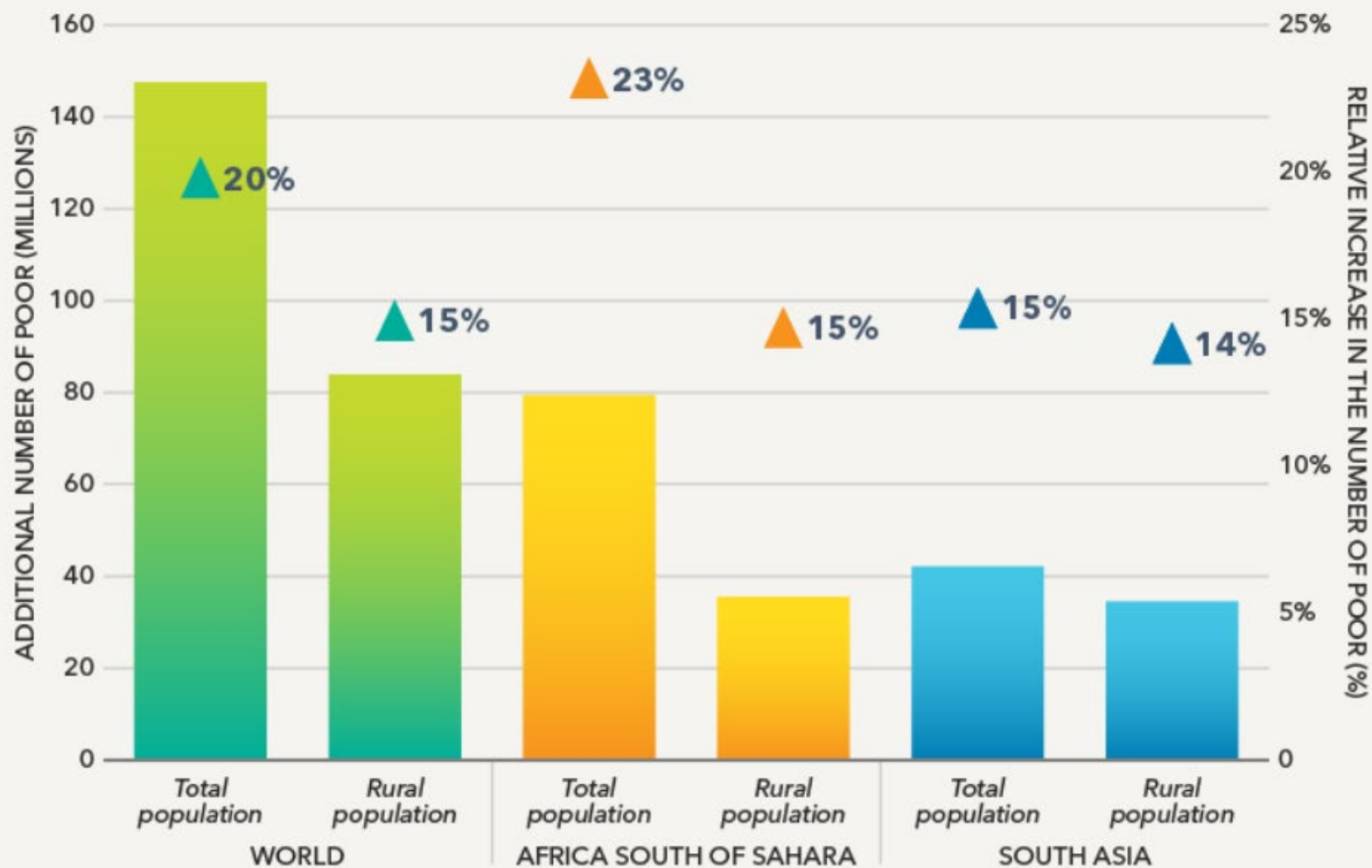


COVID-19 impact on food security

Global awareness of inequities and
resilience

Economic slowdown disproportionately
impacts the poor

FIGURE 1 Impact of COVID-19 Global Economic Crisis on Extreme Poverty





COVID-19 disproportional impact on the poor (LMIC)

1. Larger effects on poor people's income, food security and nutrition
2. Among productive assets, COVID-19 will mostly affect labor
3. Disruptions to private sector value chains in poor countries
4. Disruptions to public sector programs on food, nutrition, health and poverty
5. Poor countries have lower economic capacities to compensate for declining incomes



COVID-19 impact on food security

Global awareness of inequities and resilience

Economic slowdown disproportionately impacts the poor

Disruption of fragile, labor-intensive food supply chains

Impact on remittances

Food Security in The Gambia

Import reliance

Decline in remittances

Challenges of animal operations in pandemics

Limited personnel and need for protective equipment

Tremendous uncertainty—operations and funding landscape





Future of global agriculture?

Global awareness

- Importance of food security
- Effects of income inequality

Need for resiliency

Back to normal vs. creating a new normal

Tremendous opportunity



Recommended resources

Follow-up reading:

- [Winner's Take All](#)
- [The White Man's Burden](#)
- [Food Politics](#)
- [The Social Entrepreneur's Playbook](#)
- [Repositioning Nutrition as Central to Development--World Bank](#)
- [State of Food Security--FAO](#)
- [Animal Source Foods and Child Stunting—IFPRI](#)
- [The White Savior Industrial Complex--Teju Cole](#)





Our Partners



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- Paoli-Malvern-Berwyn Rotary Club
- Rotary Club of Chestnut Hill
- Rotary Club of Upper Main Line
- Longwood Rotary Club
- Rotary District 7450



Our Team

Gambian employees:

- Sulay Camara and Sainey Badgie

US Advisory team:

- Drs. Dave Galligan and Carla Chieffo
- Dr. Shannon Marquez and Lynn McConville
- Penn Vet

UPenn Student Interns:

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Questions?



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