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 entrepreneurism workshop
Phase 1: Commercial Farm
- Max WAD milk yield
- Profitable and operational demonstration farm (proof of concept)

Phase 2: Extension Service
- Semi-intensive farming → increased smallholder productivity and environmental stewardship
- Educational outreach targeting women & youth

Phase 3: Milk Processor
- Shift role from producer to processor of milk, creating domestic dairy market
- Provide 20% of Gambian protein

Impact

Scale

Year 5

Year 10

Year 20
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
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).
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
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

Source: Authors based on simulations with MIRAGRODEP model.
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

IFPRI 2020
COVID-19 impact on food security

Global awareness of inequities and resilience

Economic slowdown disproportionally 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

- 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?