Enriching People’s Lives

William (Bill) Weldon, PhD and Susan Finn, PhD, RD, FADA
Almost certainly, the first essential component of social justice is adequate food for all mankind.

– Norman Borlaug
1970 Nobel Peace Prize winner

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Hunger is the #1 global health risk
– 870 million people chronically undernourished in 2010-2012

World Food Programme.
Significant economic cost
– 2-3% of a country’s national income is lost to malnutrition

Animal source foods fill a need

- High-quality protein
- Key micronutrients
• Achieving food security demands a **global vision to ensure that everyone has access to animal source foods** and the nutrition needed to strengthen themselves and their societies.
What is Food Security?

- Sufficient quantities of food available on a consistent basis
- Having sufficient resources to obtain appropriate foods for a nutritious diet
- Appropriate use based on knowledge of basic nutrition and care, as well as sufficient water and sanitation

Availability  Access  Utilization

World Health Organization

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Three Essentials

- Broadening the understanding of nutritional needs and role of animal source foods in the diet
- Advancing innovation that supports sustainable production of animal source foods
- Empowering collaboration that ensures choice, which increases access to and affordability of animal source foods
Growing Population

7 Billion TODAY

9 Billion 2050

3 Billion meat, milk & eggs


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A SPREADING MIDDLE CLASS

US
2009: 338m
2030: 322m

Central/South America
2009: 181m
2030: 313m

Europe
2009: 664m
2030: 680m

Middle East/Africa
2009: 137m
2030: 341m

Asia Pacific
2009: 525m
2030: 3228m

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People experiencing hidden hunger to the affluent needing to maintain proper weight. Animal source foods lessen chronic disease risk and obesity.

Nutrition Status Across the Spectrum

People living on $3-$10 and moving into middle class. Animal source foods help diversify diets. People living on less than $2 a day and malnourished. Animal source foods improve brain, muscle and skeletal development.

Often equated with amount of available calories, food security is in fact not only an issue of quantity, but also one of quality – in the form of nutrient density.

– Dr. Ricardo Uauy, MD, PhD
Professor, Nutrition & Pediatrics, University of Chile
The Need for a Balanced Diet

- Lack of calories and essential nutrients hinders mental and physical development.
- When people are weak, they never reach full productivity.
- Societies fall short of their full potential.

Beef Adds Key Nutrients

Protein, Vitamin B12, Zinc, Iron

Protein & Key Micronutrients

Beef, composite of trimmed retail ruts, cooked
Rice, white, long-grain-regular-cooked

Source: USDA SR-21.

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Chicken Adds Key Nutrients

Protein & Key Micronutrients

Chicken, broilers or fryers, meat and skin, cooked, roasted
Rice, white, long-grain-regular-cooked

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In cereal based diets, even a small amount of protein (100 grams) can make a significant difference in the ability of a person to get enough vitamin B12 and Zinc.
The Importance of Protein

• Composed of amino acids, which the human body needs to perform critical functions
  – Muscle
  – Bones
  – Blood
  – Immune system

Addressing Obesity

• High-quality dietary protein contributes to weight loss and maintenance
  – Metabolic rate
  – Satiety
  – Body composition

The Significance of an Egg

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Addressing Malnutrition

- Calories alone do not ensure good health
- 1 out of 3 people in developing countries are deficient in micronutrients
  - Iron, zinc, calcium, vitamins A, D and B12
Iodine deficiency adversely affects learning, motivation, performance, motor development, and cognitive function.

Zinc deficiency may delay cognitive development and impair gene expression, skeletal growth and maturation, taste perception, appetite, night vision, and more.

Vitamin B12 deficiency causes anemia, plus memory and cognitive impairment at all ages.

Importance of Animal Source Foods: Micronutrients

Vitamin A deficiency is the leading cause of preventable blindness in children. Join the conversation @Elanco

Iron deficiency is the most prevalent form of malnutrition, affecting 2 billion people.

WHO estimates that eradicating iron deficiency could improve national productivity levels by 20 percent.

Iron deficiency anemia in 6-24 month-old infants are at risk for poorer cognitive, motor and social development. Babies whose mothers receive enough iron during pregnancy, are born with iron stores.

World Health Organization, "WHO Global Database on Anemia"
Kenya Nutrition Study

• Randomized, controlled feeding intervention study of 1\textsuperscript{st} and 2\textsuperscript{nd} grade children.
  – Tested meat, milk, energy and control
  – Observed diets rich in iron, zinc, vitamin B12 and riboflavin

UN Standing Committee on Nutrition, 2009.

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Sufficient amounts of nutrient-rich foods must be available to meet future needs
Economic Implications

- Investment in human capital, leadership initiative, and economic development
- Nutrition is critical for a productive work force
- Challenge is how to put affordable meat on the table for the family
Economic Implications

- Globally, the annual direct cost of child malnutrition is estimated to be between $20 billion to $30 billion.
  - In Zimbabwe, malnutrition reduced lifetime individual earnings by an estimated 12% due to its impact on educational achievement.
  - Iron deficiency anemia caused an estimated 17% loss in heavy manual labor productivity.

R Martorell et al. Weight gain in the first two years of life is an important predictor of schooling outcomes in pooled analyses from five birth cohorts from low- and middle-income countries, *Journal of Nutrition*. 2010; 140(2): 348-54.
Combating malnutrition is the best investment to make in the long-term viability of a developing country.

— 2008 Copenhagen Consensus
Access to animal source foods is important for physical, mental and economic development. But, providing enough meat, milk and eggs is a growing challenge.
By 2050, we’re expected to have more than 9 billion people on the planet.
Three Essentials

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In the year 2050, the world population will require 70% more food, and 70% of this food must come from efficiency-improving technology.

The Benefits of Technology

60 Years = 250% Output
Same Input

Innovation – with balance

Source: Center for Food Integrity “Sustainable Balance” model

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The Need For Innovation: Trends in Global Egg Production

## Resource Impact

- **Innovation ➔ 3.9B Fewer Hens to Meet Demand**

<table>
<thead>
<tr>
<th>Resource</th>
<th>Savings</th>
<th>Percent Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feed</td>
<td>117 million tons</td>
<td>26%</td>
</tr>
<tr>
<td>Land</td>
<td>67.5 million acres</td>
<td>26%</td>
</tr>
<tr>
<td>Water*</td>
<td>76.6 billion gallons</td>
<td>31%</td>
</tr>
</tbody>
</table>

*Note:* Accounts for bird water consumption only. Does not account for additional savings from crop irrigation and sanitation.
Protein for a Child

One egg a day equals half protein needs and all iron needs of a child

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Empowering Collaboration

- **Governments**: Establish global standards allowing movement of meat, dairy and eggs from areas of production to population centers
- **Agriculture**: Identifying production systems that enhance animal welfare and improve productivity
- **Food chain**: Allow for product choice, while enhancing confidence, quality, and wholesomeness of food
- **Nutrition/science community**: Provide accurate and clear information

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Choice, a Consumers Rights
The International Consumer Attitudes Study (ICAS)

28 STUDIES
26 COUNTRIES
OVER 97,000 CONSUMERS
2001-2010

Source:
1. See Appendix.

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ICAS: Lifestyle Buyer
The International Consumer Attitudes Study (ICAS)

Opinion polls

28 studies
26 countries
Over 97,000 consumers
2001 – 2010

Spending data

Food Buyer: 95%
- Taste
- Cost
- Nutrition

Lifestyle Buyer: 4%
- Luxury/Gourmet
- Organic/Local
- Gardens

Source:
1. See Appendix.

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ICAS: Lifestyle Buyer
The International Consumer Attitudes Study (ICAS)

A minority position trying to change the majority choice

- Taste
- Cost
- Nutrition
- Luxury/Gourmet
- Organic/Local
- Gardens

Source:
1. See Appendix.

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Vision

• Achieving food security demands a *global vision to ensure that everyone has access to animal source foods* and the nutrition needed to strengthen themselves and their societies.

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• Achieving global food security requires
  – Broadening the understanding of nutritional needs and role of animal source foods
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How will you help tell the story?

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