Healthy People, Healthy Ecosystems

Andrew T. Maccabe, DVM, MPH, JD
Chief Executive Officer

CUGH
April 8, 2017
Washington, DC
Healthy Animals, Healthy People, Healthy Ecosystems

Andrew T. Maccabe, DVM, MPH, JD
Chief Executive Officer

CUGH
April 8, 2017
Washington, DC
Food security, as defined by the USAID, means having, at all times, both physical and economic access to sufficient food to meet dietary needs for a productive and healthy life.
Global Food Security

Poverty Reduction

Livestock health
Global Food Security
- Increase productivity
- Improve animal husbandry
- Reduce endemic animal diseases

Poverty Reduction
- Income generation
- Gain access to international markets
- Eradicate transboundary animal diseases

Livestock health
Animal Health and minimizing risk from disease related losses is essential to incentivize investment to improve genetic potential.
Most (75%) emerging diseases come from animals and cost up to US $ 6 billion annually.
The World Health Organization's global target for reducing childhood stunting by 2025: rationale and proposed actions

Stunting among children under 5
ANIMAL SOURCED PROTEIN: AN ESSENTIAL PART OF THE SOLUTION

Nutritional Benefit of Livestock Products

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Best Source</th>
<th>Why ASFs are unique</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitamin A</td>
<td>Dairy, eggs</td>
<td>One egg yolk can provide 1/3 of a woman’s recommended daily intake</td>
</tr>
<tr>
<td>Iron</td>
<td>Meat (all)</td>
<td>Meats contain heme iron, which facilitates the absorption of non-heme iron from plant sources</td>
</tr>
<tr>
<td>Zinc</td>
<td>Meat (all)</td>
<td>Zinc found in meat is more bioavailable than from plant sources</td>
</tr>
<tr>
<td>Folate</td>
<td>Eggs, poultry meat</td>
<td></td>
</tr>
<tr>
<td>Calcium</td>
<td>Dairy</td>
<td>Moderate levels of intake can fully meet the recommended calcium requirements for children and women</td>
</tr>
<tr>
<td>Riboflavin</td>
<td>Dairy, eggs</td>
<td></td>
</tr>
<tr>
<td>Vitamin B12</td>
<td>Meat, eggs, dairy</td>
<td>ASFs are the only food-based source. Vitamin B12 deficiency results in poor cognitive function, neural tube defects, and some types of anemia.</td>
</tr>
<tr>
<td>IGF-1</td>
<td>Diary</td>
<td>Only found in dairy, studies show that insulin growth factor 1 improve child growth</td>
</tr>
<tr>
<td>Amino acid score</td>
<td>Dairy, eggs, goat and poultry meat</td>
<td>Exceeds 100 (high quality) for all of these sources</td>
</tr>
</tbody>
</table>
• Animals and vegetation have co-evolved
• Old grasslands depend on animal grazing
• Extensive grazing is the only possibility to produce agricultural products
• Pastoralism and agro-pastoralism are key production systems
  • 44% of global sheep, 29% of goats and 20% of cattle
  • Provide 22% of global beef production, and 16% of milk
Demand for livestock commodities in developing economies will be met – the question is how

Scenario #1
Meeting livestock demand by
importing livestock products

Scenario #2
Meeting livestock demand by
importing livestock industrial production know-how

Scenario #3
Meeting livestock demand by
transforming smallholder livestock systems
Livestock – Climate Change’s Forgotten Sector
Global Public Opinion on Meat and Dairy Consumption
Why Industrial Farms Are Good for the Environment

By JAYSON LUSK   SEP. 25, 2016

---

**Plows Into Sensors**

Estimates of savings in animals and farmland by using modern techniques rather than the technologies and methods of the 1950s.

<table>
<thead>
<tr>
<th>Animals used in 2015:</th>
<th>Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beef cows</td>
<td>29.3 million</td>
</tr>
<tr>
<td>Milk cows</td>
<td>9.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Acres harvested in 2015:</th>
<th>Extra acreage needed to achieve 2015 farm output if using 1950s methods and technology:</th>
<th>Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn</td>
<td>80.7 million</td>
<td>228.0</td>
</tr>
<tr>
<td>Soybeans</td>
<td>81.8</td>
<td>101.7</td>
</tr>
<tr>
<td>Wheat</td>
<td>47.1</td>
<td>56.9</td>
</tr>
<tr>
<td>Cotton</td>
<td>8.1</td>
<td>9.0</td>
</tr>
</tbody>
</table>

Source: Jayson Lusk, Oklahoma State University

By The New York Times
Protein supports physical growth and cognitive development

Just one egg provides 50% of the recommended daily allowance of protein & 100% of iron for developing children.

Experts say we should be consuming an egg every other day, or roughly 4 eggs per person per week.

By 2050, the global population will surpass 9 billion people.

There will be a 60% increase in demand for meat, milk, and eggs.

That equates to a demand of 1.9 trillion eggs by 2050.

ENOUGH
www.enoughmovement.com
There are 6.5 billion hens in the world today.

Each hen produces 184 eggs a year.

The Production Opportunity

Today, we’re meeting demand by adding hens. If we continue on this path, we will need to double the global number of hens to meet 2050’s demand. Or, we can put innovation to work—and meet demand without adding hens.
Just ONE more egg per hen per year helps meet demand and requires 4 billion fewer hens.

Using innovation rather than adding hens would save:

- 113 million tons of feed
- 74 billion gallons of water
- 65 million acres of land
Increasing agricultural output

With proper tools and investment to overcome barriers to increasing production, agricultural output from Africa could increase from $280 billion per year in 2010 to $880 billion in 2030.

Smallholders: part of the solution

- Not sentimentality or a belief in “small is beautiful”
- Based on the evidence and the dual objectives of
  - increasing animal source food supply to consumers
  - supporting rural development and livelihoods
- The evidence:
  - They produce the bulk of the livestock (and half of crop) products in developing countries so need to be part of increase supply strategy
  - They continue to be competitive so won’t go away on their own
  - Does not detract from investing in larger commercial systems
• 70% of the world’s rural poor rely on livestock for important parts of their livelihoods
• Of the more than 600 million poor livestock keepers in the world, around two-thirds are rural women
• For the vulnerable, up to 40% of benefits from livestock keeping come from non-market, intangible benefits, mostly insurance and financing
• In the poorest countries, livestock manure comprises over 70% of soil fertility amendments
• 90% of animal products are produced and consumed in the same country or region
LIVESTOCK HEALTH AND FOOD SECURITY

**Who benefits?**

- **The poor**: with nearly 60% of population living with <$2 / day own livestock
- **Smallholders**: the majority of livestock production comes from smallholders in both SSA and SA
- **Women**: there are numerous livestock interventions and opportunities that benefit women specifically (e.g., evening milk)

**How do they benefit?**

- **Income**: an average 30% – 45% of annual income comes from livestock, with a maximum of 70% from dairy farmers
- **Nutrition**: livestock products provide micronutrients not found in other crops (e.g., zinc) that have been proven to improve school performance
- **Capital accumulation**: given high contribution of livestock as an asset, it helps develop financial security

Livestock also has the potential to go beyond simply increasing income in helping smallholder farmers develop both financial security and food security.
BEHIND EVERY GREAT WOMAN IS ANOTHER ONE

TOGETHER WE CAN CHANGE THE WORLD

FOR MORE THAN 70 YEARS
Heifer International has partnered with and helped communities.

WE'VE WORKED IN 125 COUNTRIES to attain sustainable livelihoods through community-owned interventions.

WE'VE HELPED 25 MILLION families lift themselves out of hunger and poverty.

NEARLY ONE BILLION people around the world still live in extreme poverty.

OUR APPROACH
Transformation Begins at the Foundation

Heifer International works with communities to strengthen local economies. Our values-based, holistic and community development approach focuses on:

- Increase in Income & Assets
- Food Security & Nutrition
- Environment

Two key foundational elements become the multiplier for change:

- Women's Empowerment
- Social Capital

IMPROVED GLOBAL SUSTAINABLE LIVELIHOODS

We know that no single organization and no number of isolated projects can address the systemic causes of poverty and hunger. Our approach involves enhancing the capacity of vulnerable small-scale farmers, especially women, to secure their livelihoods. Multiplied by strong social capital and women's empowerment, our work results in a sustainable solution to world hunger and poverty.
Rabbits for Resilience was started in rural Walungu Territory in 2013 as a response to the requests of rural parents who expressed concern about their children’s development and participation in school as a result of the poverty and instability that rural villages have endured over the years of conflict.

Parents described youth as needing improved developmental opportunities, increased engagement in their family and community and the opportunity to regularly participate in school. Rabbits for Resilience is a livestock microfinance intervention that works with male and female youth, aged 10-15 years, and their adult parents/caregivers. Youth members,
Why Rabbits?

• Rabbits reproduce frequently
• Food for rabbits is widely available in the villages
• There are no cultural taboos, age or gender-based responsibilities for raising or selling rabbits
• Rabbits are easy for youth to raise while participating in school and family and community activities
Pigs For Peace microfinance is focused on reducing the negative health, economic and social needs of rural families and communities affected by poverty and conflict.

- Loans in the form of a pig provide an opportunity to rebuild the rural economy in a way that is acceptable and familiar to villagers.
- Pigs consume a wide range of foods that are locally available.
- With the waste from the pigs, villagers can manage their personal compost, which can be used to cultivate their farms.
- Pigs reproduce frequently (two to three times per year) and generally produce 6-12 piglets at each breeding.
- Piglets are easy to sell on local markets for between $25-50 depending on their size and age allowing the member to have access to money that they can invest in their family.
What's the point?
• The problems of wild animals, domestic animals, humans and the environment are intertwined.

• A holistic, integrated approach is required to solve complex problems.

• Appropriate livestock interventions are an essential component of sustainable, small-scale agriculture and a critical component in rural economic development.
Livestock projects are an effective tool to empower women and strengthen civil institutions. Creating economic opportunity and food security for the rural poor can reduce pressure on habitat and help protect endangered species.