Animal Health, One Health, Nutrition, Livestock, Sustainability, and Growth: Briefing for Food Systems Summit

This briefing provides a fact base for FSS stakeholders, helping them to make game-changing, science-based policy recommendations. Improved animal health supports more sustainable livestock, resilient farming systems, strong animal welfare and safe, nutritious food. Five recommendations are made at the end for how the FSS can help enable access to animal health products/services, veterinary care, and finance.

Hunger, Malnutrition, and Safety: 690 million people worldwide went hungry in 2019, while between 25-33% of children under five (191 million) were stunted or wasted due to malnutrition. An estimated 600 million fall ill each year from contaminated food and 420,000 die.

Livestock and Nutrition: Animal-sourced products contribute 39% of protein and 17% of calories of global diets. Meat, milk, eggs and fish provide important micronutrients for growth, especially in children, and in many regions, foods from livestock are the only way to obtain them. Studies show children in developing regions who regularly drink milk and eat meat perform better in cognitive, physical tests and academic performance. The WHO's 2025 Nutrition Targets briefings described animal-sourced foods as "*the best sources of high-quality nutrients"* to address stunting.

'Food vs Feed': Livestock primarily eat plants that are inedible to people. 86% of their diet are grasses, leaves, oil seeds, etc., which means livestock convert materials that humans cannot eat into nutritious foods for people. The FAO states that livestock "*contribute directly to global food security."*

How Better Animal Health Can Help Achieve Action Track 1

Availability: 20% of livestock are lost to disease each year. Preventing animal disease through vaccination, nutrition, biosecurity and good husbandry increases the availability of safe food by reducing losses and waste on the farm. Rapid diagnosis and treatment are essential because disease cannot always be avoided. For bacterial diseases, the only current solution is antibiotic treatment. The global animal health sector invests approximately $1.8-2.7 billion per year in new R&D for better prevention, diagnosis and treatment.

Affordability: Animal disease increases food prices. One FAO study found egg prices rose 82% and remained high for 3 years after an Avian Influenza outbreak in one country, while African Swine Fever increased global commodity prices 20% in 2019. This creates systemic barriers for vulnerable populations that makes access to nutritious food more difficult.

Safety: Foods from sick animals can transfer zoonotic bacteria such as salmonella. Vaccinating animals against zoonoses and treating disease before slaughter provides communities with a safer food supply.

Population Predictions: The world population is expected to rise by nearly 1 billion in the next ten years to 8.5 billion. 5.3 billion of these people will be in the middle class. Therefore, even if per capita animal protein consumption were to fall (it is not projected to do so), more overall production is needed.

Animal Protein Predictions: The main predictions in the FAO/OECD Agricultural Outlook 2020-2029 for animal-derived foods are an ongoing expansion of livestock herd and aquaculture production in low- and middle-income countries, further intensification of livestock and fish production, and global livestock

production expansion by 14%. Researchers in the CGIAR system view increased production as valuable in developing regions where consumption levels remain low and nutrition is a challenge.

Plant-Based 'Alternatives': 'Alternative meats' are typically processed, plant-based products that aim to mimic traditional meats like ground beef. These are a small, growing market in western nations that could reach $55 billion by 2030. This means it will remain in the single percentage digits of the overall animal protein market, which will be in the $1.3 trillion range.

How Better Animal Health Contributes to Action Track 2

Sustainable Production: Animal protein will be part of food systems in the coming decades, no matter the region or desired consumption level. The goal must be to produce this protein in the most sustainable and efficient way possible to as to minimize impact on nature, whilst respecting animal welfare. Healthier animals mean less wastage, lower environmental impact and more nature-positive production.

Existing Tools: The FAO found that industrialized countries reduced land use by 20% while doubling meat production over the past forty years. This kept untouched lands out of production and was achieved primarily through technology like improved genetics and better health. FAO also stated that expanding these existing animal health practices and tools could help the livestock sector cut emissions by 30%.

Upcoming Decade: New, sophisticated animal health technologies will be available in the next decade. From heat sensors to monitor for signs of fever, to feed supplemented with health-boosting ingredients and RNA vaccines that target difficult diseases, these can further increase efficiency of production.

Emissions Share: Livestock is responsible for 5% of direct GHG emissions according to the IPCC. Direct emissions from livestock consist of methane and nitrous oxide from rumen digestion and manure management. Farm emissions are growing at a slower rate than energy and transport, which means their overall percentage of global emissions is falling.

Trends: Studies in major markets show efficiency of livestock production has improved. FAO found industrialized nations reduced land use by 20% while doubling meat production over the past forty years. Global dairy emission intensity decreased almost 11% from 2005-15. In the US, beef producers have a 16% lower carbon footprint compared to 1970, egg producers reduced emissions 71% over the past fifty years, chicken farmers use 75% fewer resources compared to 1965, and pork producers reduced land use by 76%.

Organic-Conventional: A comprehensive review found organic systems had higher income per animal and lower biodiversity impacts, conventional offered lower income risk per animal and less land use.

How Better Animal Health Contributes to Action Track 3

Efficiency: Healthy animals produce more milk, meat, eggs, which helps farmers meet demand with fewer animals, which limits the need for expansion into untouched lands. Fewer and healthier animals mean lower emissions with reduced land and water use. Healthier animals are more nature-positive.

Disease Impacts: Animals that fall ill have a larger footprint. 20% of livestock are lost to disease each year. In developing regions, the burden is even higher -- 50% of poultry are lost to disease along with 20% of ruminants. These losses mean more animals must be raised to meet local needs, which requires further emissions and natural resource use. One study shows cattle disease can increase GHG emissions by up to 24% per unit of milk and 113% per beef carcass, and the UNFAO found that one reason for high emission intensities in a region like South Asia is high mortality.

Opportunity: Reducing mortality and morbidity through better prevention, detection and treatment of animal disease can significantly shrink the footprint of farming. This means strengthening surveillance, vaccinating more animals, increasing use of rapid diagnostics, and training in responsible antibiotic use for bacterial

treatments. Expanding access to animal health practices and tools could help the sector cut emissions by 30%. FAO states that "*Animal health is necessary for sustainable livestock production".*

Sector Size: Livestock production employs 1.3 billion worldwide and about 600 million of the world's poorest households keep livestock as an essential source of income. Approximately 70% of the world's 'extreme poor' depend upon livestock.

Economic Impact: Livestock production accounts for 40% of agricultural output in developed countries, 20% in developing countries and produces US$1.27 trillion per year. Studies show that when a household in a developing region acquires livestock, they report higher incomes, improved nutrition, better credit access, improved farm equipment, etc.

How Better Animal Health Contributes to Action Track 4

Investment Protection: Most livestock farmers are smallholders in a developing region with a few chickens or head of cattle. When these producers lose animals to disease, it represents a significant loss of household income and accumulated wealth. Safeguarding animals against illness through vaccination and increasing veterinary access to tackle disease when it happens can help protect and promote equitable livelihoods.

Pathway out of Poverty: Livestock provide a 'path out of poverty' in many regions by helping households diversify and invest income. This can help producers grow and increase wealth. Helping producers access medicines that can protect or treat animals can strengthen this pathway.

Developed Markets: Livestock production is often an important industry in developed markets. Overall, livestock provides nearly half of agricultural output in developed regions. Farmers often produce at scale to meet market demand, which relies upon sophisticated animal health tools. New technologies such as digital monitoring driven by A.I., pen-side diagnostics, and herd-specific vaccines allows large-scale production while still providing individualized care that respects welfare.

Climate Exposure: Farmers are typically considered "highly exposed" to climate change and warmer temperatures. In certain regions this means animal diseases can spread to new areas. One reason Bluetongue was able to spread in Europe was because the vector that transmits the virus can now survive winters at higher latitudes.

Disease Risk: The biggest shock / risk to animal production is disease. Experts believe 700 million pigs will be lost due to the current African Swine Fever epidemic, which is half of the global swine population, with 7 out of 10 outbreaks occurring in small herds. Avian influenza has cost producers billions in numerous outbreaks leading to food price increases for consumers. Other major diseases such as Mastitis, Rift Valley Fever, PPR, and Brucellosis put farmer livelihoods at risk.

Health Risk: 60% of infectious diseases in humans are zoonotic, meaning they can pass from animals to people, and 3 out of 4 of these originate in wildlife. Zoonotic diseases can damage human health, with 12 zoonotic diseases sickening 2.5 billion people each year and killing 2.7 million people.

How Better Animal Health Contributes to Action Track 5

Climate Adaptation: Climate change is already affecting farmers and the effects may continue to grow. Better protection against disease means livestock are better equipped to adapt. This can include greater adoption of vaccines, use of new breeds that can better withstand climatic conditions, and increased surveillance of disease to understand how it is shifting.

Prevent Transmission: Vaccinating animals against zoonotic diseases is typically a cheaper, more effective way to protect people. Treating a zoonoses after transmission often requires costly treatment in regions where access may be scarce. New research is emerging in this area such as vaccines against zoonoses that could be used in both people and animals to offer greater protection.

Actions FSS stakeholders can propose to improve human health, animal health and sustainability:

1. Support better livestock health for more nature-positive protein production that improves natural resource use efficiency, limits the need for new farmland and meets the needs of a growing population.
2. Increase political support and financial resources for adoption of animal health products such as vaccines and parasiticides, especially in regions where use remains low or incentives are missing.
3. Promote rapid uptake of existing best practices and tools in animal health and husbandry that the UNFAO has found could reduce the emissions footprint of livestock farming by 30%.
4. Address regulatory and political hurdles limiting the ability for the private sector to deliver the next generation of innovation into the market such as digital monitoring, mRNA vaccines, new alternatives to using antibiotics, rapid diagnostics and more.
5. Promote balanced diets that support good health, including appropriate consumption of animal protein especially for vulnerable populations that face nutrition insecurity.

Additional Resources

This briefing was produced by HealthforAnimals, the global animal health association. Additional resources can be found at HealthforAnimals.org, including:

Roadmap to Reducing the Need for Antibiotics

The best way to preserve antibiotics is reduce the need for use. Better protection against illness can decrease disease levels, reduce the need for antibiotics and preserve welfare. The *Roadmap to Reducing the Need for Antibiotics* outlines a clear vision for achieving this goal.

The Roadmap also identifies 25 measurable actions our Members commit to achieving by 2025 and 50 recent activities our sector has undertaken to address AMR and responsible use.

Achieving the SDGs: The Value of Healthier Animals

'Achieving the SDGs: the Value of Healthier Animals' shows how improved animal health could accelerate efforts to achieve the Sustainable Development Goals by 2030. The document outlines the challenge ahead, the role of livestock and pets, and the ways better health could amplify their contributions.

How to Increase Animal Vaccination: 80 Recommendations to Overcome Existing Barriers

How to Increase Animal Vaccination identifies the six major barriers which limit uptake of vaccines around the globe: economic, political, technical and scientific, regulatory, social and perception, and field use barriers.

The report then analyses the underlying issues within each barrier (e.g. finances, trade, manufacturing, etc) and offers 80 clear, actionable recommendations to address them. The detailed, 50+ page report relies on extensive research and 20+ interviews with public and private sector experts to support the conclusions.

For more information on this briefing or any HealthforAnimals materials, contact info@healthforanimals.org