

Sustainable Innovation Consultants

<u>Team Member Name</u>	<u>Year</u>	<u>Major</u>
Member 1: Andrew Tollman	Freshman	Operations
Member 2: Minnie Phan	Sophomore	Finance and Mathematics
Member 3: Jolie Duong	Junior	Mathematics and Computer Science
Member 4: Chi Nguyen	Sophomore	Finance and Managerial Economics
Member 5: Vanshika Modi	Sophomore	Finance and Quantitative Economics

Advisor(s): Brian Shea

Topic Title: Bird Flu and Global Health

Audience: Senior Leadership at Cal-Maine Foods

Sustainable Development Goal

SDG #2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Executive Summary

The poultry and egg industries are grappling with a critical crisis as the highly pathogenic avian influenza (HPAI) H5N1 outbreak continues to devastate flocks and disrupt supply chains. Since 2022, this crisis has forced the culling of 166 million birds, including 31 million hens in 2025 alone, triggering a significant rise in egg prices and placing unprecedented pressure on consumers and farmers alike. In December 2024, 13.2 million birds were culled, intensifying egg shortages and economic strain, while the rapid spread of H5N1 and resultant trade disruptions compound these challenges. Beyond the immediate public health and food security risks, Cal-Maine now faces a pressing ethical dilemma: balancing the imperative for disease control with the humane treatment of animals and long-term industry profitability. Traditional mass culling, though effective in containing outbreaks, raises concerns about environmental sustainability, ethical treatment of livestock, and the overall economic viability of poultry farming.

Our proposed strategy, presented today to the Cal-Maine board, addresses these intertwined challenges through a multi-faceted approach. It includes implementing advanced biosecurity protocols, integrated monitoring systems, and effective vaccination programs, thereby reducing reliance on mass culling. By prioritizing these alternatives, our approach acknowledges the ethical imperative to protect animal welfare while ensuring public health and financial stability. Long-term measures involve re-evaluating unsustainable culling practices, investing in research for disease-resistant poultry breeds, and strengthening international cooperation for enhanced disease surveillance and control.

Moreover, introducing an “Ethical Egg” certification and pricing model will assure consumers of responsibly farmed, disease-free eggs, similar to the growing market for organic and cage-free products. Clear, transparent labeling and proactive consumer education will further solidify market stability, enhance environmental stewardship, and affirm Cal-Maine’s commitment to ethical, sustainable practices.