## Contents

### Part I  Introduction and Background

1  **Introduction** ................................................................. 3  
   David Zilberman, Joachim Otte, David Roland-Holst,  
   and Dirk Pfeiffer

2  **The Eradication of Bovine Tuberculosis in the United States**  
   **in a Comparative Perspective** ........................................... 7  
   Alan L. Olmstead and Paul W. Rhode

3  **The Evolution of Animal Agricultural Systems and Supply**  
   **Chains: Theory and Practice** ............................................. 31  
   Jennifer Ifft and David Zilberman

### Part II  The Economics of Managing Animal Diseases

4  **The Economics of Zoonotic Diseases: An Application**  
   **to Avian Flu** .............................................................. 59  
   David Zilberman, Thomas W. Sproul, Steven Sexton,  
   and David Roland-Holst

5  **Animal Disease and the Industrialization of Agriculture** ............. 77  
   David A. Hennessy and Tong Wang

6  **Dynamic Perspectives on the Control of Animal Disease:**  
   **Merging Epidemiology and Economics** .................................. 101  
   Richard D. Horan, Christopher A. Wolf, and Eli P. Fenichel

7  **Border Inspection and Trade Diversion: Risk Reduction**  
   **vs. Risk Substitution** .................................................. 119  
   Qiong Wang, Eli P. Fenichel, and Charles A. Perrings
8 The Cost of Saving a Statistical Life: A Case for Influenza Prevention and Control
   Thomas W. Sproul, David Zilberman, David Roland-Holst, and Joachim Otte

9 The Effect of Social Norms and Economic Considerations on Purchases of Chicken
   Amir Heiman, Bruce McWilliams, and David Zilberman

Part III The Spread and Control of Avian Influenza

10 Epidemiology of Highly Pathogenic Avian Influenza Virus Strain Type H5N1
    Guillaume Fournie, Will de Glanville, and Dirk Pfeiffer

11 Mathematical Models of Infectious Diseases in Livestock: Concepts and Application to the Spread of Highly Pathogenic Avian Influenza Virus Strain Type H5N1
    Guillaume Fournié, Patrick Walker, Thibaud Porphyre, Raphaëlle Métras, and Dirk Pfeiffer

12 Large-Scale Vaccination for the Control of Avian Influenza: Epidemiological and Financial Implications
    Jan Hinrichs and Joachim Otte

13 Poultry Movement and Sustained HPAI Risk in Cambodia
    Maria D. Van Kerkhove

Part IV Institutional Approaches to Controlling Animal Diseases

14 AI Insurance/Indemnification: The Canadian Experience and Its Application to Developing Regions
    Robert Burden

15 Understanding Knowledge, Attitude, Perceptions, and Practices for HPAI Risks and Management Options Among Kenyan Poultry Producers
    Marites Tiongco, Clare Narrod, Rosemarie Scott, Mimako Kobayashi, and John Omiti

16 Controlling Animal Disease in Africa
    Karl M. Rich and Brian D. Perry