## Joint Production and Responsibility in Ecological Economics

On the Foundations of Environmental Policy

Stefan Baumgartner, Malte Faber

University of Heidelberg, Germany

Johannes Schiller

UFZ Centre for Environmental Research Leipzig-Halle, Germany

ADVANCES IN ECOLOGICAL ECONOMICS

Edward Elgar

Cheltenham, UK • Northampton, MA, USA

## Contents

Authors and Co/Authors .	VII
Preface '	ix
1. Introduction: Joint Production and Ecological Economics with Harald Dyckhoff and John Proops-	1
PART I CONCEPTUAL FOUNDATIONS	
2. Conceptualising Joint Production	19
3. Thermodynamics of Joint Production	46
<ul><li>with John Proops and Jakob de Swaan Arons</li><li>4. Joint Production, Stocks, and Dynamics</li></ul>	69
<ul><li>5. Joint Production and the Dynamics of Environmental Problems</li></ul>	
PART II ECONOMICS	
6. Joint Production in the History of Economic Thought	107
7. Joint Production and the Philosophy of Economics	152
8. Ambivalence of Joint Outputs	162
9. The Investment Decision under Joint Production with John Proops	183
10. Structural Change under Joint Production with Ralph Winkler	199
PART III ETHICS	
11. The Concept of Responsibility	225
with Thomas Petersen	222
12. Joint Production, Knowledge, and Responsibility with Thomas Petersen	238

13. Individual and Collective Responsibility with Thomas Petersen	253
14. Responsibility in Politics and in the Economy with Thomas Petersen	261
PART IV CASE STUDIES	
15. Waste Paper: Price Ambivalence with Ralph Winkler	273
16. Chlorine: Innovation and Industrial Evolution	292
with Frank Jost and Georg Muller-Fiirstenberger	>
17. Cement: Stock Dynamics and Complexity with Eva Kiesele	307
18. Sulphuric Acid: Joint Externalities	327
with Frank Jost and Georg Muller-Fiirstenberger	
19. Conclusions and Perspectives	339
References :	347
Index	373