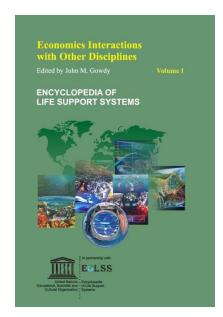
CONTENTS

ECONOMICS INTERACTIONS WITH OTHER DISCIPLINES



 ${\bf Economics\ Interactions\ With\ Other\ Disciplines\ -}$

Volume 1

No. of Pages: 316

ISBN: 978-1-84826-037-5 (eBook) **ISBN**: 978-1-84826-487-8 (Print Volume)

Economics Interactions With Other Disciplines -

Volume 2

No. of Pages: 320

ISBN: 978-1-84826-038-2 (eBook) **ISBN**: 978-1-84826-488-5 (Print Volume)

For more information of e-book and Print Volume(s) order, please **click here**

Or contact: eolssunesco@gmail.com

CONTENTS

VOLUME I

Economics Interactions with Other Disciplines

1

John M. Gowdy, Department of Economics, Rensselaer Polytechnic Institute, Troy, New York, USA

- 1. Introduction: Economics in the Twenty-First Century
- 2. Basic Concepts of Neo-Classical Economics
- 3. Environmental Economics
- 4. Natural Resource Economics
- 5. Ecological Economics
- 6. The Economics of Biological Diversity
- 7. The Economics of Health Care
- 8. Conclusion

Issues in Resource Allocation to Health Care

20

Stephen Onyeiwu, Department of Economics, Rensselaer Polytechnic Institute, Troy, New York, USA

- 1. Introduction
- 2. Financing Health Care through the Insurance System
- 3. A Health Insurance Loan Program
- 4. The Single-Payer System
- 5. Employer Mandates
- 6. Conclusion

Costs of Health Care Throughout the World

30

Rexford E. Santerre, Center for Health Care and Insurance Studies, Department of Finance, University of Connecticut, USA

- 1. Introduction
- 2. Costs of Health Care
- 3. Demand Factors Influencing Health Care Costs
 - 3.1. Out-of-Pocket Price and the Role of Health Insurance
 - 3.2. Income
 - 3.3. Time Costs
 - 3.4. Need
- 4. Supply Factors Influencing Health Care Costs
 - 4.1. Prices of Medical Inputs
 - 4.2. Medical Technology
 - 4.3. Organizational Form
 - 4.4. Market Power of Health Care Providers
- 5. Public Policies
- 6. Conclusions

Sources of Health Care Funding Throughout the Globe

44

Stephen P. Neun, Professor of Economics, Utica College of Syracuse University, New York USA

- 1. Introduction
- 2. A Model for Health Care Financing
- 3. Risk Sharing and Payment
- 4. The Rationale for Government Intervention
- 5. Health Care Funding across Nations

- 5.1. The Public Funding of Health Care
- 5.2. The Private Funding of Health Care
- 6. Conclusion

Health Economics in Developing Countries

58

Stephen Onyeiwu, Department of Economics, Rensselaer Polytechnic Institute, Troy, New York, USA

- 1. Introduction: Conceptual Issues in Health Economics
- 2. Determinants of Health in Developing Countries
- 3. Resource Allocation Methods in the Health Sector
- 4. The Economics of the AIDS Epidemic in Developing Countries
- 5. Market Reforms and Health Care in Developing Countries
- 6. Conclusion

Maximizing Health Impact Through Resource Allocation

68

Sajal Chattopadhyay, Epidemiology and Health Services Research Branch, Division of Cancer Prevention and Control, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, USA

- 1. Introduction
- 2. Definitions and Models of Health
 - 2.1. The Economic Model of Health
- 3. Global, National, and Personal Approaches to Health
 - 3.1. Age-Based Health Weight
 - 3.2. Gender-Based Health Weight
 - 3.3. Health-Weight for Races
- 4. Definition and Measurement of Health Resources
- 5. Decision Rules for Optimum Allocation of Health Resources
- 6. Health Impact of Medical Technology
- 7. Market-Guided Resource Allocation and the Question of Efficiency
 - 7.1. Externalities
 - 7.2. Imperfect Competition
- 8. Government Insurance and Public Health Programs
 - 8.1. Preventive Health Care
- 9. Conclusions

Environmental Degradation and Sustainable Health: A Review of the Contending Issues 90 John M. Gowdy, Department of Economics, Rensselaer Polytechnic Institute, Troy, New York, USA Stephen Onyeiwu, Department of Economics, Rensselaer Polytechnic Institute, Troy, New York, USA

- 1. Introduction
- 2. The Interconnection between Community Values, Ecology, and Human Health
- 3. Lifestyle Choices, the Environment, and Health Profiles: The Case of Hunter-Gatherer Societies
- 4. Colonialism, Materialism, and Environmental Degradation
- 5. Consumerism, Lifestyles, and Health
- 6. Conclusion

Environmental Economics

98

Jeroen C.J.M. van den Bergh, ICREA and Autonomous University of Barcelona, Spain & Free University, Amsterdam, The Netherlands

- 1. History and Demarcation
- 2. Externalities
- 3. Sustainable Development

- 4. International Issues
- 5. Spatial Issues
- 6. Macroeconomics and Growth
- 7. Monetary Valuation of Environmental Changes
- 8. Other Methods
- 9. Environmental Policy
- 10. Ecological versus Environmental Economics
- 11. Conclusion

Externalities, Efficiency and Equity

115

Snorre Kverndokk, Ragnar Frisch Centre for Economic Research, Oslo, Norway Adam Rose, Department of Geography, Pennsylvania State University, USA

- 1. Introduction
- 2. Efficiency
 - 2.1. Pareto Efficiency
 - 2.2. Imperfections
 - 2.2.1. Externalities
 - 2.2.2. Public Goods
 - 2.2.3. Government vs. Market Responses
- 3. Equity
 - 3.1. Welfare Maximization
 - 3.2. Efficiency-Equity Tradeoffs
 - 3.3. Social Justice
 - 3.3.1. Utilitarianism
 - 3.3.2. The Theory of John Rawls
 - 3.3.3. Libertarian Theory
- 4. Will Material Growth Increase Welfare?
 - 4.1. Environmental Degradation
 - 4.2. Social Status
 - 4.3. Aspiration Level Effects
 - 4.4. The Net Effects on Welfare
- 5. Future Trends and Perspectives
- 6. Conclusions

Designing Instruments for Resource and Environmental Policy

139

Thomas Sterner, Professor of Environmental Economics, Department of Economics, University of Gothenburg, Sweden

- 1. Introduction
- 2. The need for policy instruments
- 3. The Range of Policy Options
- 4. The Selection and Design of Policy Instruments
 - 4.1. Efficiency with heterogeneous abatement costs
 - 4.2. Difficult monitoring of emissions (but complementarity with products)
 - 4.3. Efficiency with heterogeneous damage costs
 - 4.4. Uncertainty in damage costs and efficiency
 - 4.5. Inter-temporal efficiency with technical change or inflation
 - 4.6. Measurability. Technical and ecological complexity
 - 4.7. Burden of cost and issues of political feasibility
 - 4.8. The need for funds for environmental management
 - 4.9. No monitoring of emissions but only of ambient conditions
 - 4.10. No direct monitoring of emissions but indirect proof possible
 - 4.11. Large risks
 - 4.12. Missing markets in insurance and banking
 - 4.13. Rent seeking and political economy

- 4.14. Economy-wide effects
- 5. Concluding comments

International Trade and Policy Co-ordination

155

Alistair Ulph, Professor Alistair Ulph, Department of Economics, University of Southampton, UK

- 1. Introduction
- 2. Trade and Environmental Policies with Competitive Markets
 - 2.1. The Small Country Case
 - 2.2. Large Country Case
 - 2.3. Summary
- 3. Strategic Environmental Policy
 - 3.1. The Simplest Account of Strategic Environmental Policy
 - 3.2. Strategic Behaviour by Firms the Porter Hypothesis.
 - 3.3. Footloose Firms
- 4. International Environmental Problems
 - 4.1. Trade and Environmental Policies with Transboundary Pollution
 - 4.2. International Coordination of Environmental Policies
- 5. Empirical Evidence
 - 5.1. Effect of Trade on the Environment
 - 5.2. Effect of Environmental Policy on Trade
 - 5.3. Reconciling Empirical Evidence with Perceptions
- 6. Policy Implications
- 7. Directions for Further Research

Sustainable Development, Growth Theory, Environmental Kuznets Curves, and Discounting

178

Roger Perman, Department of Economics, University of Strathclyde, Glasgow, Scotland David I. Stern, Centre for Resource and Environmental Studies, Australian National UniversityCanberra ACT 0200, Australia

- 1. Introduction and Overview
- 2. Theory of Economic Growth, Natural Resources and Environment Quality
 - 2.1. Neoclassical growth models
 - 2.2. Endogenous growth models
 - 2.3. Growth models including environmental resources
 - 2.4. The optimal allocation of resources in growth models with environmental resources
 - 2.4.1. Model solution
 - 2.4.2. Hotelling's rule
 - 2.4.3. The role of discounting in the optimal solution
 - 2.5. Extending the optimal growth model
 - 2.6. Pollution damage and environmental taxes
 - 2.7. Resource substitutability and the consequences of increasing resource scarcity.
 - 2.8. Sustainability
 - 2.8.1. Definition and possibility of sustainability
 - 2.8.2. Sustainability and the Hartwick rule
 - 2.8.3. Optimal growth and sustainability
- 3. The Environmental Kuznets Curve
 - 3.1. Perspectives on the relationship between growth and degradation: biophysical vs. economic approaches:
 - 3.2. The environmental Kuznets curve hypothesis: a delinking of environmental degradation and growth?
 - 3.3. Empirical studies
 - 3.4. Criticism of the EKC
- 4. Future Trends and Perspectives

Economic Analysis of Climate Change Richard S.J. Tol, <i>Hamburg, Vrije and Carnegie Mellon Universities</i> , 20146 Hamburg, Germany	204		
 Introduction Impacts of Climate Change Impacts of Carbon Dioxide Emission Reduction Efficient Climate Control Cost-effective Climate Control Uncertainty and the Applicability of Models Policy Instruments Current Status of National and International Climate Policy 			
Economic Valuation and Cost-Benefit Analysis K.G. Willis, University of Newcastle upon Tyne, UK	217		
 Introduction Benefits provided by public goods Market based measures of environmental impacts Benefit based valuation methods Future directions in contingent valuation Benefit transfer Meta-analysis Cost-benefit analysis 			
An Economic Theoretical Perspective on Green and Sustainable National Income Cees Withagen, <i>Professor of Environmental Economics, Vrije Universiteit and Tinbergen Institute Amsterdam, and Tilburg University and Center, The Netherlands.</i>	237		
 Introduction National income Welfare interpretation of national income Green national income Non-renewable natural resources Renewable natural resources Pollution as a flow Pollution as a stock Non constant rate of time preference Exogenous technical progress Varying market prices Distortionary taxation Sustainable national income Green accounting in practice Conclusions 			
Index			
About EOLSS 25			
VOLUME II			
On The Economics of Non-Renewable Resources Neha Khanna Department of Economics and Environmental Studies Program Ringhamton University			

1. Introduction: Renewable Versus Non-Renewable Resources

Binghamton, NY, USA

- 2. The Hotelling Model of Resource Depletion
- 3. Variations on the Basic Hotelling Model
 - 3.1. Extraction Costs
 - 3.1.1. Exogenous Extraction Costs
 - 3.1.2. Reserve Dependent Costs
 - 3.2. Monopoly
 - 3.3. Multiple Sources of the Resource
 - 3.4. "Backstop" Resources
 - 3.5. Growing Demand
- 4. On Discount Rates
- 5. Case Study World Oil
- 6. Conclusions

Economics of Renewable Natural Resources

27

Jon D. Erickson, Department of Economics, Rensselaer Polytechnic Institute, Troy, NY, USA

- 1. Introduction
- 2. Dynamic Optimization
 - 2.1. Fundamental Equation of Renewable Resources
 - 2.2. Application: Open Access Fishery
- 3. Investment under Uncertainty
 - 3.1. Application: Forest Rotations
- 4. Scale, Resilience, and Sustainability
 - 4.1. Complex Adaptive Systems Management
 - 4.2. Application: Lake Management
- 5. Concluding Remarks

The Economics of Land-Use Change

43

Klaus Hubacek, Department of Economics, Rensselaer Polytechnic Institute, Troy, New York, USA Jose Vazquez, Department of Economics, Rensselaer Polytechnic Institute, Troy, New York, USA

- 1. Introduction
- 2. Land in the History of Economic Thought
- 3. Land and the Economic Process
- 4. Efficient Allocation of Land Resources
- 5. Driving Forces of Land-Use Change
- 6. The Search for an Interdisciplinary Approach

Environmental Stocks and Flows

57

Mark de Haan, Division of Macroeconomic Statistics and Dissemination, The Netherlands

- 1. Introduction
- 2. The Economic Sphere and the Natural Environment
 - 2.1. Economic Territory
 - 2.2. The Resident Criterion
- 3. Physical Flows and Their Linkage to the Economy
- 4. The Quantitative Decline in Natural Assets
- 5. The Qualitative Decline in Natural Assets

The Valuation Problem and Non-Market Valuation Theories

75

Clive L. Spash, *The Macaulay Institute, Aberdeen, and Department of Agriculture and Forestry, Aberdeen University, Scotland, U.K.*

Claudia Carter, The Macaulay Institute, Aberdeen, Scotland, U.K.

- 1. Introduction
- 2. The Range of Relevant Environmental Values
 - 2.1. Potential Impacts on Existing Markets
 - 2.2. Non-Market Values
 - 2.3. Intrinsic Value in Nature
- 3. Methods for Environmental Cost-Benefit Analysis
 - 3.1. Travel Cost Method
 - 3.2. Production Function Approach
 - 3.3. Hedonic Pricing
 - 3.4. Stated Preference Methods
- 4. Conclusions

Energy and the Macroeconomy

94

Brenda Kuhl, Department of Geography, Boston University, MA, USA

Robert K. Kaufmann, Center for Energy and Environmental Studies, Department of Geography, Boston University, MA, USA

- 1. Introduction
- 2. The Role of Energy in Economic Activity
- 3. The Macroeconomic Relation between Economic Activity and Energy Use: Empirical Analyses
 - 3.1. Energy Intensity
 - 3.2. Determinants of Macroeconomic Energy Intensity
- 4. Energy Use and Economic Fluctuations
 - 4.1. Long Run Relations: Economic Activity and Energy Supply
 - 4.2. Short Run Relations: Economic Activity and Energy Prices
 - 4.3. Causal Relations among Energy Use, Energy Prices, and Economic Activity
- 5. Policy Implications

Sustainability Concepts in Ecological Economics

111

John M. Gowdy, Department of Economics, Rensselaer Polytechnic Institute, Troy, New York, USA Marsha Walton, New York State Energy Research and Development Authority, USA

- 1. Introduction
- 2. Weak Sustainability
- 3. Varieties of Strong Sustainability
- 4. Sustainability and the Myth of Market Prices
- 5. Discounting and the Commensurability of Wants
- 6. Sustainability, Consilience, and the Role of Institutions
- 7. Strengthening Strong Sustainability

Nexus of Ecological Economics and Ecosystem Management

123

Tony Prato, University of Missouri-Columbia, Columbia, Missouri, USA

- 1. Introduction
- 2. Elements of Ecological Economics
- 3. Elements of Ecosystem Management
- 4. Nexus of Ecological Economics and Ecosystem Management
 - 4.1. Economy as Sub-system
 - 4.2. Economic Value
 - 4.3. Spatial and Temporal Scales
 - 4.4. Complexity and Uncertainty
- 5. Implications for Natural Resource Management and Policy
- 6. Implementation of Ecosystem Management
- 7. Conclusions

Identification of Ecological Economics Issues

139

John Proops, School of Politics, International Relations and the Environment, Keele University, Staffs, UK

- 1. Introduction
- 2. Conceptual Issues
 - 2.1. Ethical B the limits and degree of moral considerability
 - 2.1.1. Future generations
 - 2.1.2. Other species
 - 2.2. Epistemological B limits to our understanding of the world
 - 2.2.1. Risk and uncertainty
 - 2.2.2. Ignorance through novelty and chaos
 - 2.3. Social B the nature of human motivation
 - 2.3.1. Consumer versus citizen
 - 2.4. Ecological B living nature and social action
 - 2.4.1. Biodiversity and its definition
 - 2.4.2. Ecosystem resilience
 - 2.5. Physical B non-living nature and social action
 - 2.5.1. Laws of thermodynamics as constraints on human action
- 3. Practical Issues
 - 3.1. Evaluation techniques B conventional and alternative methods
 - 3.1.1. Limits to contingent valuation
 - 3.1.2. Evaluation of > natural= prices
 - 3.1.3. Social evaluation with citizens= juries
 - 3.2. Modelling B types of modelling and their applications
 - 3.2.1. Input-output applications
 - 3.2.2. Greening of accounting and macroeconomics
 - 3.3. Implementing sustainability B moving from concept to practice
 - 3.3.1. Indicators
 - 3.3.2. Technologies
 - 3.4. International relations and the environment B the effects of trade
 - 3.4.1. Ecological footprints
 - 3.4.2. International trade and the environment

Participatory Development Model for Sustainable Resource Management

151

Concepcion Lujan Alvarez, Facultad de Ciencias Agrícolas y Forestales, Universidad Autónoma de Chihuahua, México

- 1. Introduction
- 2. Participatory Development Model: a base for Sustainable Resource Management
 - 2.1. Participative Strategic Planning and Community
 - 2.2. Development of Community-based Forestry Initiatives
- 3. Search Conference (SC): A Participatory Development Model
 - 3.1. Concept and Philosophical Basis
 - 3.2. Stages of the Search Conference
- 4. Sustainable Resource Management in México
 - 4.1. An historical perspective
 - 4.2. Case study: Basihuare Community
- 5. General Conclusion

Indicators of Human Consequences for Ecological Economic Planning and Policy

169

Robert Rattle, Ottawa, Ontario, Canada

- 1. Introduction
- 2. Quality of Life
- Indicators

- 3.1. What They Are
- 3.2. Types of Indicators
- 3.3. Indicator Selection
- 3.4. Top-Down and Bottom-Up Indicators
- 4. Human Indicators
- 5. Human Indicators for Planning and Monitoring Sustainable Development: Conceptualization
 - 5.1. Overview
 - 5.2. Community-Driven Human Indicators
 - 5.3. Benefits
 - 5.3.1. Efficient and Appropriate Allocation of Resources
 - 5.3.2. Establishing Baseline Information
 - 5.3.3. Increasing Participation and Cooperation
 - 5.3.4. Consensual and Participatory Decision Making
 - 5.3.5. Create Community Empowerment
 - 5.3.6. Increased Awareness, Learning and Community Development
 - 5.3.7. Stimulate Change
 - 5.3.8. Create a Complementary and Holistic Set of Indicators
 - 5.3.9. Reveal Unique Information
 - 5.3.10. Generate Valuable Information Yet to be Realised
 - 5.4. Community-Driven Human Indicator Development Implementation
 - 5.4.1. Getting Started
 - 5.4.2. Establishing Goals and Objectives
 - 5.4.3. Selecting Indicators
 - 5.4.4. Dialogue and Feedback
 - 5.4.5. Identifying Data Sources and Collecting Data
 - 5.4.6. Revising, Monitoring and Assessing
 - 5.5. Human Impacts and Monitoring Requirements Omitted by Community Driven Indicators
 - 5.6. Existing Community Indicators
- 6. Indicator Framework Development
 - 6.1. Facilitation
 - 6.2. Integration
 - 6.3. Framework
- 7. Conclusions

Feminist Ecological Economics

192

Patricia E. Perkins, Faculty of Environmental Studies, York University, Toronto, Canada

- 1. Introduction
- Theoretical Foundations of Feminist Ecological Economics
 - 2.1. Ecological Economics
 - 2.2. Feminist Economics
 - 2.3. Ecofeminism
 - 2.4. Political Ecology and Green Socialism
- 3. Theoretical Contributions of Feminist Ecological Economics
- 4. Applications of Feminist Ecological Economics
- 5. Future Trends and Perspectives
- 6. Conclusion

Political Arithmetick: Problems with GDP as an Indicator of Economic Progress

206

Geoff Edwards, Department of Politics and Public Policy, Griffith University, Queensland, Australia Dedicated to Professor John Kenneth Galbraith, who in The Affluent Society in 1958 brought the consequences of consumer-led growth to the attention of the world.

- 1. Introduction
 - 1.1. Three Dimensions
 - 1.2. Relevance to this Encyclopedia

	1.3. Scope of the Article	
2.	Background economics	
	2.1. The Assumptions	
	2.2. Theories of Growth	
3.	Kuznets to Keuning	
	3.1. History of GDP	
	3.2. Satellite Accounts	
	3.3. How GDP is Calculated	
4.	The Arithmetical Dimension: Is GDP a Satisfactory Measure of Current Economic Activity?	
	4.1. Statistical Aspects	
	4.2. Deliberate Exclusions	
	4.3. Globalisation	
	4.4. Aggregation	
5.	The Diagnostic Dimension: Is GDP a Satisfactory Measure of Future Beneficial Economic Ac	ctivity?
	5.1. Rundown of Capital Resources	
	5.2. The Price Mechanism is Broken	
	5.3. Defensive Expenditures	
	5.4. Consumption vs Production	
	5.5. Consumption vs Investment	
	5.6. Sharemarket Activity is Not Wealth Creation	
	5.7. Is Industrialisation Necessary for Growth?	
6.	, , , , , , , , , , , , , , , , , , ,	
	6.1. Growth is a Political Objective	
	6.2. Disparages Government	
	6.3. Disregards Distribution	
	6.4. Economic Activity – To What End?	
	6.5. Is it GDP or the Way it is Used?	
7.	• • • • • • • • • • • • • • • • • • • •	
	7.1. Growth, Development and GDP	
	7.2. Hidden Assumptions	
	7.3. Adequacy Depends on Definition of 'Progress'	
Nat	tural Resource Economics	232
	on Fredrick Shogren, <i>University of Wyoming, Laramie, USA</i>	252
1.	Introduction	
2.	Non-renewable Resources	
	2.1. Optimal Depletion	
	2.2. Resource Scarcity	
	2.3. Energy	
3.	Renewable Resources	
	3.1. Fisheries (or Groundwater)	
	3.2. Forests	
	3.3. Commons and Property Rights	
	3.4. Regulation and Incentives	
4.	Protecting Biodiversity	
5.	Climate Protection	

Index	257
About EOLSS	263

6. Non-market Valuation7. Concluding Comments