

PN 826  
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MEMORANDUM

October 24, 1990

TO: PFM/PM/TD, Douglas Broome  
PFM/PM/TD, Ellen Boissevain

FROM: ENE/EA, Ernesto Lucas 

SUBJECT: Economics of Sustainable Development: Selected Bibliography

I wish to transmit to you a "A Selected Bibliography of the Economics of Sustainable Development." It includes a book and a journal articles sections. Sixty-five of the one hundred books and twenty of the 135 journal articles have been annotated.

I wish to thank you for your encouragement and support while I was working on this project. Thanks also to Mr. Charles La Duca who has been very helpful in showing the use of the library facilities and equipment.

We have also completed a companion report entitled "Measurement of Agricultural and Environmental Sustainability." I will give you a revised draft as soon as the review is completed.

ECONOMICS OF SUSTAINABLE DEVELOPMENT:  
SELECTED BIBLIOGRAPHY

BOOKS

A. Annotated

1.

Anderson, F. et al, Environmental Improvement Through Economic Incentives. Johns Hopkins University Press, Baltimore, 1977.

Examines the economic, legal, engineering and political aspects of charging environmentally harmful conduct. Charges on air pollution, congestion, and noise. Monitoring these problems is technically feasible and economically viable. The courts are likely to support these charges as are new legislative strategies. Pollution charges have economic and administrative efficiency potential that are worth pursuing.

2. Bain, J.S., Environmental Decay, Economic Causes and Remedies. Little Brown, 1973.

Addresses the causes and effects of environmental degradation and public policies designed to arrest, control and reverse environmental deterioration. The bulk of the book is devoted to theoretical discussion of environmental decay and its control. It applies partial equilibrium analysis to the problem of environmental decay. Included are discussions of inefficient allocation when there are unrecognized externalities that merits government intervention in the form of taxes, regulation, fees and subsidies.

3. Barbier, E., Economics, Natural Resources, Scarcity and Development: Conventional and Alternative Views. Earthscan, London, 1989.

Explains the long run sustainability of economic activities. Outlines the conventional theory of natural resource economics. Argues for a more integrated approach to analysis of natural resource use and environment. Establishes an alternative model and its implications on environmentally sustainable economic growth.

4. Baumol, W., The Theory of Environmental Policy. Cambridge Press, New York, 1988.

Incorporates recent research results on environmental economics, price and quantity measures for environmental management. Discusses theory of expenditures, pricing, valuation, choice of policy instruments, externalities, and pricing of exhaustible resources.

- 5 Boulding, K., Stahr, E., Fabricant, S., and Gainsbrugh, M., Economics of Pollution. New York University Press, 1971.

This is a collection of lectures delivered at NYU and covers such topics as anti-pollution policies; the nature and impact of corporate profit; economic growth and environmental pollution; economic growth, its costs and profits.

6. Bromley, D. and Schmid, D., Public Water Resource Project Planning and Evaluation: Impacts, Incidence and Evaluation. Center for Resource Policy Studies, University of Washington, 1971.

Criticizes the inadequacy of economic logic and methods especially the cost benefit analysis to reflect the impact of water resources investment. It also discusses twelve issues relating to water resources project evaluation.

7. Bromley, D., Natural Resource Economics: Policy, Problems, and Contemporary Analysis. Kluwer Academic, Higham, Mass. 1986.

Discusses intertemporal allocation of exhaustible resources travel cost, hedonic price, land contingent valuation method of assigning monetary values to environmental amenities. Cost benefit analysis is defended in the context of valuation.

8. Butler, J.A.(ed). Economics of Environmental and Natural Resource Policy. Westview Press, Boulder, Colorado, 1981.

Focuses on the important role of economics on the formulation of environmental and resource policies. Mostly partial equilibrium analysis of natural resources and management problems of the environment.

9. Carlin, A., and Kocher, G., Environmental Problems: The Causes, Cures and Evolution Using Southern California as an Example. Rand Corporation, Sta. Monica, CA, 1971.

Examines the causes and remedies of environmental problems and issues, discussed from political economic and demographic standpoint.

10. Collier, B., Measurement and Environmental Deterioration. Bureau of Business Research, Research Monograph 34, University of Texas, 1971.

Argues for adjustment of the national income account to reflect environmental deterioration.

11. Conrad, J., and Clark, C., Natural Resources Economics: Notes and Problems. Cambridge University Press, Cambridge, 1987.

Reviews the static/dynamic optimization techniques and applying them to renewable resources; examines the theory of exhaustible resources; and discusses optimal extraction and exploration rates. Each chapter contains solved problem exercises to illustrate the theory and solutions.

12. Cottrell, A., Environmental Economics: An Introduction for Students of the Resources and Environmental Sciences. Wiley Halsted Press, New York, 1978.

Discusses some concepts of economics relating to use of scarce resources on the determinants of price and cost of energy. Also discusses trade-offs between economic growth population, consumption of resources and environmental protection.

12. Crocker, T., and Rogers, A., Environmental Economics. Dryden Press, Hinsdale, 1971.

Uses economic tools to analyze the problems of environmental quality and air pollution.

13. Culbertson, J., Economic Development: An Ecological Approach. Alfred Knopf, New York, 1971.

Population growth press upon natural resources, resulting to lower levels of living, pollution and decline in the quality of life. Introduces technological advance to mitigate the negative effects. Emphasizes population control to balance the effects on environment and natural resources constraints. Culbertson weaves naturalistic approach to development with macroeconomics and development without great success. The resuoit is not realistic and relies on inspiration for its appeal. No useful economnic analysis of natural resources or the environment.

14. Dasgupta, P., and Heal, G., Economic Theory and Exhaustible Resources. Cambridge University Press, 1971.

Drawing on resource allocation theory, examines the market's ability to allocate exhaustible resources such that the marginal social value is equal in all users. Discusses alternative political economy to address problems of environment and resource use. Results show that efficient path solution has very little resemblance to market solution.

15. DeSouza, G., Systems Methods for Socio-Economic and Environmental Impact Analysis. Heath Lexington Books, 1979.

Describes the SIMPACT system which quantifies the various socio-economic and environmental variables. Describes the structure and conceptual design of the SIMPACT system

16. Dixon, J., and Hufschmidt, M. M., Economic Valuation Techniques for the Environment: A Case Study Workbook. Johns Hopkins, Baltimore, 1986.

Examines the general aspects of valuation techniques including identification, quantification, and analysis of environmental effects. Case studies illustrate the techniques.

17. Dolan, E., The Economic Strategy for Environmental Crisis. Holt, Rinehart and Winston, New York, 1971.

Brings together ecological consciousness and economic analysis. Includes topics on pollution and the price system, environmental problems and economic development and the preservation of the wilderness.

18. Downing, P. (ed), Air Pollution and the Social Sciences: Formulating and Implementing Control Programs. Praeger, New York, 1971.

Discusses the contributions of sociology, psychology, political science, law and economics on environmental quality problems.

19. Edel, M., Economics and the Environment. Prentice Hall, Englewood Cliffs, 1973.

Reviews the relationship between economics, ecology population, resources, growth and pollution. Other topics include food supply, social costs and environment.

19. Edwards, C. et al (eds), Sustainable Agricultural Systems Soil and Water Conservation Society, 1990.

Covers in a comprehensive fashion economic and environmental aspects of sustainability and what steps can be taken to successfully establish sustainable farming systems.

20. Enthoven, A. and Freeman, M., Pollution, Resources and the Environment. W. W. Norton, N.Y., 1973.

Twenty-five papers dealing with various aspects of environmental economics particularly pollution, population conservation and economic growth.

21. Environmental Studies Board, Men, Materials and the Environment. The MIT Press, 1973.

Looks into the economic and technological process involved in materials used to determine safeguards against physical and social deterioration. Recommends cost benefit analysis taking account of common property resources, health and safety standards, land use planning, energy policy, taxes and subsidies.

22. Faber, M., Niemes, H., and Stephan, G., Entropy, Environment and Resources. Springer Verlag, New York, 1987.

Resources is related to environment through the process of entropy. A linear structure of production is used to analyze policies affecting resource use. This approach is especially useful for central planning systems since price, discount rate and resource substitution are not emphasized.

23. Field, B., and Willis, C., Environmental Economics: A Guide to Information Sources. Gale Information Guide Library, 1978.

Annotated bibliography of sources for the physical, social and natural sciences of the economics of environmental management. Draws from periodicals, government documents, journal articles and books. The first part is a discussion of relevant theories and the second part is a discussion of empirical results.

24. Fisher, A., Resources and Environmental Economics. Cambridge University Press, 1987.

Discusses natural environment as a source of energy, extractive resources, life support and amenity services.

25. Gardner, B., Economics of Agricultural Policies. McMillan New York, 1987.

Combines welfare economics, public finance, and price theory using quantitative and qualitative techniques to analyze effects of agricultural policies.

25. Gave, M., Priorities in Planning: Cost Benefit Methodology and Simulations with Special Reference to Forestry and Economic Development in Trinidad. Commonwealth Forestry Institute, Oxford University, 1969.

Illustrates the application of simulation techniques used in cost benefit analysis of the wood based sector of Trinidad. The model offers possibilities of application outside of Trinidad.

26. Goldman, M. (ed), Ecology and Economics: Controlling Pollution in the Seventies. Prentice Hall, Englewood Cliffs 1972.

Economic analysis relies on empirical evidence and theory and various case studies that provide useful account of recent experiences.

27. Gregory, B., Forest Resource Economics. Ronald Press, 1972. This is a textbook for undergraduate students of forestry. Discusses price theory including forest product demand, production, supply and market structure. Also discusses marginal analysis, timber supply and demand. The last part provides investment guides, benefit cost analysis for evaluating projects and choosing among investment alternatives.
28. Gupta, A., Ecology and Development in the Third World. Routledge, New York, 1988.

Reviews ecological degradation associated with development in the third world. Discusses economics, technical and social measures that could be taken to prevent or reduce the effects of ecological degradation. Presents the effects of development on vegetation, environment, water resources, air quality and urban development.

29. Hines, L., Environmental Issues: Population, Pollution and Economics. W.W. Norton, N.Y., 1973.

Examines environmental pressures in the United States and determines the role of the market economy and government and presents corrective actions.

30. Hite, J., McCauley, H., Stepp, J., and Yandle, B., The Economics of Environmental Quality. American Enterprise for Public Policy Research, Washington, D.C., 1972

An elementary introduction to economics of the environment. Topics on scarcity, opportunity costs, supply and demand are introduced early in the book. Environmental quality needs to be measured and its relationship to economic growth should be established. Summary of economic measures for pollution abatement.

31. Hufschmidt, M., et al, Environment, Natural Systems and the Environment. Johns Hopkins, 1989.

Much of the book focuses on cost benefit analysis, input-output and mathematical programming techniques used in environmental quality management. Integrates both natural and economic analysis techniques.

32. Irland, C., Wilderness Economics and Policy. Lexington Books, Lexington, 1979.

Basic economic concepts are used in analyzing the economics of preserving the wilderness, estimates of opportunity costs and benefits of wilderness.

33. Jarrett, H. (ed), Environmental Quality in a Growing Economy. Johns Hopkins University Press, 1966.

Discusses environmental quality in relation to development of natural resources, economic growth, market mechanism, public attitudes and public policy.

34. Johnson, W., and Hardesty, J. (eds), Economic Growth Versus the Environment. Wadsworth, Belmont, 1971.

Attempts to reconcile economic needs of society with the quality of the environment. Twenty-four articles organized under ecological perspective, arguments against economic growth, and traditional wisdom of economic growth.

35. Johnston, G., Freshwater, D., and Favero, P. (eds), Natural Resources and Environmental Policy Analysis: Cases in Applied Economics. Westview Press, Boulder, 1988.

Focuses on political institutions and economic outcomes, economic efficiency in economic and policy analyses using mathematical models. Topics include role of economics and natural resources in environmental policy analysis, institutions and incentives and agricultural land policy. Case studies in water management policy in Florida, land use and water policy in Chesapeake Bay, forest management and pest management.

36. Kneese, A., Economics and the Environment. Penguin Books, Ontario, 1977.

Discusses relationship between economic development, population growth and environmental growth in the LDCs. For developed countries, it is possible to control pollution at fairly moderate cost along with improved environmental quality and economic growth. LDCs which experience rapid environmental degradation due to population growth find it difficult to pursue measures to improve the environment and economic growth. Very good discussions on the interplay between economics, technology and the environment. In terms of policy, economic incentives, e.g., pollution taxes are more effective than regulation, yet in most countries regulations are the rule and incentives are the exceptions.

37. Kneese, A., Ayres, R., and D'Arge, R., Economics and the Environment: A Material Balance Approach. Johns Hopkins University Press, 1970.

A report on the management of residuals resulting from modern consumption and production and their effects on the environment. Residuals are analyzed for each sector of the economy and presents a model uniting the materials balance approach to general equilibrium.

38. Kneese, A., and Bower, B. (eds), Environmental Quality Analysis: Theory and Methods of Social Science. Johns Hopkins University Press, 1972.

This is principally research book on environmental quality. It focuses on the methodological issues, environment and economic growth, developing management programs, designing legal and political institutions.

39. Krutilla, J., and Eckstein, O., Multiple Purpose River Basin Development: Studies in Applied Economic Analyses. Johns Hopkins, 1958.

Illustrates benefit cost analysis for evaluating river basin development project. A number of cases are discussed.

40. Kula, E., Economics of Forestry: Modern Theory and Practice. Timber Press, Portland, 1988.

Emphasizes the importance of discount rates in the evaluation of investment projects. Finds that the ordinary discounting principle is not appropriate and provides alternative methods for a variety of public sector investment projects using cost benefit analysis.

41. Ledec, G., and Goodland, R., Wildlands: Their Protection and Management in Economic Development. World Bank, Washington D.C., 1988.

Clarifies the trade-off between a policy of wildland management and economic sector planning.

42. Maler, K., Environmental Economics: A Theoretical Inquiry Johns Hopkins University Press, 1974.

Discusses environmental problems arising from highway construction, strip mining, hydroelectric dam, and exhaustion of non-renewable natural resources. Introduces environmental considerations in economics using general equilibrium model, economic growth and quality of environment.

43. Meadows, D., et al, The Limits to Growth: A Report for the Club of Rome Project on the Predicament of Mankind. Universe Books, New York, 1972.

This is a global model prepared by J. Forrester of MIT. The predicament of mankind is summarized as the exponential population growth causes a corresponding exponential growth in demand for food and industrial output which in turn results in pollution and progressive depletion of natural resources. Each has positive feedback on the others and these accelerate the collapse of the system. If the present trend continues, limits to growth will be reached in the next century. Successive computer runs relaxed certain assumptions about the growth rates with similar results. The model investigated five trends of population industrialization, malnutrition, depletion of natural resources and deterioration of the environment.

44. Miles, E., Pealey, R., and Stokes, R., Natural Resources Economics and Policy Application. University of Washington Press, 1986.

Reviews the interactions of economics and policy applied to fisheries.

45. Mills, E., The Economics of Environmental Quality. Norton New York, 1978.

Presents both theoretical and empirical analysis of environmental quality, environmental policy, discharges and the global problems of the environment.

46. Myrick, F., Haveman, R., and Kneese, A., The Economics of Environmental Quality. John Wiley, New York, 1973.

Discusses the material balance approach showing the relationship between the economy and the environment elucidating the feedback loops. The book presents the necessary background in economics and physics in terms that laymen can understand. The general principle of pollution control by regulation and effluent charges are described. Policy issues and their effects on environment, income redistribution, taxes vs subsidies. Very good, easy to comprehend.

47. Neary, P., and Wymbergern, S. (eds), Natural Resources and Energy. MIT Press, Cambridge, 1986.

Theoretical models and case studies dealing with natural resources discoveries. Examines the consequences of the 'Dutch Disease' associated with resources booms in the Netherlands, Egypt, Norway, Nigeria and Indonesia.

48. National Research Council, Alternative Agriculture. National Academy Press, 1990. Includes eleven studies that describe alternative farming systems in U.S. Case studies range from rice production in California, crop/livestock farm in Iowa, and fresh vegetable farm in Florida.

49. Parikh, J. (ed), Sustainable Development in Agriculture Kluwer Academic, Lancaster, 1988.

Presents interaction between resource, technology, environment, and agriculture in the long run in terms of agricultural development. Discusses three models, crop production and environment, regional agricultural planning, and information systems for agricultural productivity.

50. Peskin, H., Portney, P., and Kneese, A. (eds), Environmental Regulation and the U.S. Economy. Johns Hopkins University Press, 1981.

Seven papers explore the relationship between federal environmental regulations and performance of the American economy emphasizing aggregate economic activity. In the summary, the editors discussed the effects of regulation and conclude that the environmental regulation has a small but perceptible and generally adverse effects on price level, economic growth, productivity, international trade and employment. Further, there may be negative indirect effects.

51. Perrings, C., Economy and the Environment: A Theoretical Essay in the Interdependence of Economic and Environmental Systems. Cambridge University Press, Cambridge, 1981.

Examines the link between the economy and the environment. Discusses various environmental strategies in an evolutionary economic environment in terms of time, uncertainty and external effects.

52. Price, C., Landscape Economics. McMillan, New York, 1978.

Discusses various methods of valuation of landscape. Identifies characteristics of landscape values and costs. Outlines the aesthetic, political and statistical approaches to land and environmental valuation.

53. Randall, A., Resource Economics: An Economic Approach to Natural Resources and Environmental Policy. John Wiley, New York, 1987.

This is an expanded, revised and upgraded edition of the 1981 edition. It discusses the economic theory of resource allocation, distribution, project and program evaluation and application including an extended treatment of cost benefit analysis.

54. Repetto, R., The Forest for the Trees?: Government Policies and the Misuse of Forest Resources. World Resources Institute, 1988.

Shows how a government which is committed to the principle of wise resource use is aggravating losses of forest resource through mistaken policies that can be changed to reduce forest waste without sacrificing economic objectives. Case studies in China, Indonesia, Philippines West Africa and U.S.

55. Rose, A., Steven, B., and Davis, G., Natural Resources Policy and Income Distribution. Johns Hopkins University Press, 1988.

Uses social accounting matrix to examine national resources policies and their distributional impacts.

55. Savage, D., et al, The Economics of Environmental Improvement. Houghton Mifflin, 1974.

Discusses cost of pollution abatement, equity issues, macro/micro environmental policy, public goods and market and non-market solutions to environmental problems.

56. Schramm, G., and Warford, J. (eds), Environment Management and Economic Development, Johns Hopkins University Press. 19889.

Examines the environmental, management and economic development problems facing agriculture and forestry in LDCs. Major issues are (1) environment management and economic policy, (2) environmental and natural resources accounting, (3) marginal opportunity costs as planning concept in natural resources management, (4) environmental basis for sustainable development, and (5) economic incentives for sustainable development.

57. Seneca, J. and Taussig, M., Environmental Economics. Prentice Hall, Englewood Cliffs, 1974.

Illustrates the application of cost benefit analysis to a wide variety of environmental problems.

58. Sewell, D. and Judy, R., Water Management Research: Social Science Priorities. Queens Printer, 1969.

Describes the need for social science research in water management.

59. Siebert, H., Economics of the Environment: Theory and Policy. Springer, New York, 1987.

Discusses resource allocation, production theory and transformation, optimal environmental use, environmental policy instruments, economic growth and environmental allocation.

60. Thompson, D., The Economics of Environmental Protection. Winthrop, Cambridge, 1973.

Presents the following issues: economics of environmental protection; air, water and chemical pollution; economic and legal approaches to environmental issues.

61. Tietenberg, T., Environmental and Natural Resources Economics. Scott Foresman, Glenview, Illinois, 1984.

Second edition includes new topics in benefit estimation greenhouse effects, economic incentives and technological change. Very policy oriented.

62. TRW Systems Group, A Methodology of Flood Plain Development and Management. Clearinghouse of Federal Scientific and Technical Information, 1969.

Presents criteria used to evaluate various flood control alternatives . Case studies demonstrate the procedure developed.

63. Turner, K., Sustainable Environmental Management: Principles and Practice. Westview Press, Boulder, 1988.

Provides detailed analysis of different aspects of sustainable growth and development. Topics include sustainability, conservation, pollution, control, politics of sustainability, economic models, technical change, valuation, cost benefit analysis in theory and practice.

64. Walters, C., Adaptive Management of Renewable Resources. McMillan, New York, 1986.

This is an advance book on the management of renewable resources. Assumes knowledge of calculus, linear algebra and statistics. Topics include environmental assessment, and models of renewable resource systems.

65. Yandle, B., The Political Limits of Environmental Regulation Greenwood Press, Westport, 1989.

Examines U.S. experience in environmental regulation applying economic logic to politics. It explores how common interest between opposing groups can lead to mutual benefits.

B. Non-annotated

66. Anderson, D., The Economics of Afforestation: A Case Study in Africa. Johns Hopkins University Press, Baltimore, 1987.
67. Ayres, R., Resources, Environment and Economics: Application of the Material/Energy Balance Principles. Wiley Inter-science, New York, 1978.
68. Barlowe, R., Land Resource Economics: The Political Economy of Rural and Urban Land Resource Use. Prentice Hall, Englewood Cliffs, 1958.
69. Bromley, D. (ed), Natural Resources Economics: Policy, Problems and Contemporary Analysis. Kluwer Academic, Higham, Mass., 1986.
70. Chisolm, A., and Dumsday, R., Land Degradation Problems and Pricing. Cambridge University Press, 1987.
71. Ciriacy-Wantrup, S.V., Resource Conservation: Economics and Policies. University of California Press, Berkeley, 1952.
72. Collard, D., Pearce, D., and Ulph, D., Economic Growth and Sustainable Environment. St. Martin Press, New York, 1988.
73. Daly, H., Towards a Steady State Economy. W. H. Freeman, San Francisco, 1973.
74. Faber, M., Niemes, H., and Stephan, G., Entropy, Environment and Resources: an Essay in Physio-Economics. Springer, New York, 1987.
75. Garret, M., Land Use Regulation: The Impact of Alternative Land Use Rights. Praeger, Westport, 1987.
76. Gibbons D., The Economic Value of Water. Resources for the Future, Johns Hopkins University Press, 1986.
77. Gupta, A., Ecology and Development in the Third World Routledge, New York, 1988.
78. Hartwick, J. M., Non-renewable Resources: Extraction Programs and Markets, Fundamentals of Pure and Applied Economics. Harwood Academic, New York, 1989.
79. Hinote, H., Benefit Cost Analysis for Water Resources Project: A Selected Annotated Bibliography. Center for Business and Economic Research, University of Tennessee, 1969.

80. Hufschmidt, M., Hyman, E., Survey of Economic and Related Approaches to Analysis of Natural Resources and Environmental Approaches of Development. East-West Center, Honolulu, 1981.
81. Ives, J., and Pitt, J.C., Deforestation: Social Dynamics in Watershed and Mountain Ecosystems. Routledge, New York, 1988.
82. Jeffrey, L. (ed), Environment and the Poor: Development Strategies for a Common Agenda. Transaction Books, New Brunswick, 1989.
83. Jeffrey, L., Natural Resources and Economic Development in Central America: A Regional Environmental Profile. Transaction Books, New Brunswick, 1987.
84. Johansson, P., The Economic Theory and Measurement of Environmental Benefits. Cambridge University Press, 1987.
85. Johnston, G., Freshwater, D. and Favero, P. (eds), Natural Resources and Environmental Policy Analysis: Cases in Applied Economics. Westview Press, Boulder, 1988.
86. Kneese, A., Ayres, R., and D'Arge, R., Economics and the Environment. Johns Hopkins University Press, Baltimore, 1970.
87. Parikh, J. (ed), Sustainable Development in Agriculture. Norwell, Mass., 1988.
88. Pearce, D., and Turner, K., Economics of Natural Resources and the Environment. Johns Hopkins University Press, 1990.
89. Pearce, D., Barbier, E., and Markandya, A., Sustainable Development: Economics and Environment in the Third World. Gower Publishing Co., 1990.
90. Randall, A., Resource Economics: An Economic Approach to Natural Resource and Environmental Policy. Wiley, New York, 1981.
91. Redclift, M., Sustained Development: Exploring the Contradictions. Methuen, New York, 1987.
92. Richards, J., and Richards, T. (eds), World Deforestation in the Twentieth Century. Duke University Press, Durnham, 1988.
93. Robinson, g., Resources Economics for Foresters. Wiley, New York, 1987.

94. Savory, A. Holistic Resource Management. Island Press, 1988.
95. Schramm, G. and Wardord, J. (eds), Environmental Management and Economic Development. Johns Hopkins University Press, Baltimore, 1989.
96. Schurr, S. (ed), Energy, Economic Growth and the Environment. Johns Hopkins University Press, 1972.
97. Siebert, H., Economics of the Environment: Theory and Policy Springer, New York, 1987.
98. Singh, R. P., Parr, J. F., and Stewart, B. A., Dryland Agriculture: Strategies for Sustainability. Springer-Verlag, New York, 1990.
99. Smith, K., and Desvouges, W., Measuring Water Quality Benefits. Academic Press, Norwell, 1986.
100. WRI and Institute for Environment and Development, World Resources, 1988-1989, Basic Books, New York, 1988.

ECONOMICS OF SUSTAINABLE DEVELOPMENT:  
SELECTED BIBLIOGRAPHY

JOURNAL ARTICLES

A. Annotated

1. Burt, O. and Cummings, R., "Production and Investment in Natural Resources Industries", American Economic Review, 60(4), Sept. 1970.

Discret time optimization model was used to determine the equilibrium level of resources and investment. An implicit decision rule was derived to determine the optimal allocation of resources over time.

2. Chapman, D., "Computation Techniques for Inter-temporal Allocation of Natural Resources", American Journal of Agricultural Economics, 69(1), Feb. 1987.

This is an application of control theory to find the numerical solution to problems involving linear demand, cost trend and appropriation risk.

3. Conrad, K., "An Incentive Scheme for Optimal Pricing and Environmental Protection". Journal of Institutional and Environmental Economics, 143(3), Sept. 1987.

Proposes tax subsidy for correcting market failure to allocate natural resources. Provides incentives for the firm to produce and price efficiently and to provide socially optimal compliance. It requires the regulator to know prices and quantities of resources but not the cost function or technology of pollution control.

4. Commons, M. and Pearce, D., "Adaptive Mechanisms, Growth and the Environment: The Case of Natural Resources", Canadian Journal of Economics, 6(3), August 1973.

Discusses the conflicts between economic growth and environmental quality. It concludes that a potential conflict necessarily exists and that social science has the task of analyzing the extent to which socio-economic systems contain adaptive mechanisms to prevent potential conflict to become reality. It shows that the price system cannot break the link between rate of population growth and income and rate of resource depletion.

- 5. Coombs, H., "Matching Ecological and Economic Realities", Economic Record, 48(21), March 1972.

For men to live ecologically, certain problems need to be addressed: (1) divert resources into ecologically acceptable goals and services, (2) design economically acceptable growth consistent with ecological concerns which might require a more effective use of chemicals, and (3) a need for improved organizational, imaginative leadership and entrepreneurship in addressing environmental and ecological concerns.

- 6. Dixon, J. and Fallon, L., "Concept of Sustainability: Origin, Extensions and Usefulness for Policy", Society and Natural Resources, Vol. 2, 1989.

Examines the concept of sustainability and its application in a variety of context. Despite divergent views on what sustainability means, the discussion leads to findings that have identical implications.

- 7. Ervin, D. and Dicks, M., "Cropland Diversion for Conservation and Environmental Improvements: An Economic Welfare Analysis", Land Economics, 64(3), August 1988.

Impacts of land diversion and environmental improvements are identical. Estimate of benefits is short of the annual cost of the program.

- 8. Ehui, S. and Hertel, T., "Deforestation and Agricultural Productivity in Cote D'Ivoire", American Journal of Agricultural Economics, 71(3), August 1988.

An optimal control model was used to estimate a steady-state forest stock. The result shows that technical progress in agriculture and increase in social discount rate lowers the level of optimal stock

- 9. Fisher, A., Krutilla, J., and Cichetti, C., "The Economics of Environmental Preservation", American Economic Review, Sept. 1972.

Addresses the problem of preserving or developing natural resources using a control theoretic model. The result shows that it is optimal to refrain from development if in the near future underdevelopment is indicated. If benefits decrease over time, it is economic to develop at once if at all.

- 10. Gifford, A., "Pollution, Technology and Economic Growth", Southern Economic Journal, 40(2), October 1973.

A neo-classical economic model analyzes the effects of controlling pollution by imposing a pollution fee. An acceptable pollution level can be maintained with the fee system while total and per capita output continues to grow at slower rate.

- 11. Lichtenberg, E., Parker, D., and Zilberman, D., "Marginal Analysis of Welfare Cost of Environmental Policies: The Case of Pesticide Regulation", American Journal of Agricultural Economics 70(4), Nov. 1988.

A methodology of estimating social welfare cost and its distribution using price, quantity, elasticity of supply and demand, costs and yields.

- 12. Livingston, M., "Evaluating the Performance of Environmental Policy: Contributions of Neo-classical, Public Choice and Institutional Models", Journal of Economic Issues, 21(2), March 1987.

Neoclassical theory is not useful in comparing alternative approaches, and public choice is primarily descriptive. Despite the static nature of institutional theory, it contains normative characteristics that are useful in identifying strengths and weaknesses of environmental policy.

- 13. Lowrance, R., Hendrix, P., and Odum, E., "A Hierarchy Approach to Sustainable Agriculture", American Journal of Alternative Agriculture, 1(4), \_\_\_\_\_.

Agricultural sustainability is categorized as agronomic, micro-economic, ecological and macro-economic. Agronomic sustainability refers to the ability of a tract of land to maintain productivity over time, microeconomic sustainability refers to the ability of a farm to remain profitable, ecological sustainability refers to the maintenance of life support systems provided by nature (e.g. watershed, landscape) and macroeconomic sustainability refers to macroeconomic policies that supports the other sustainabilities and determine the viability of national agriculture.

- 14. Loehman, E. and Whinston, A., "The Welfare Economics of Water Resource Over Time", Applied Economics, 2(3), 1970.

Using Pontryagin maximum principle, it considers the optimum allocation of water quality between two firms when one is causing pollution damage to the other.

- 15. Mishan, E., "Post War Literature on Externalities: An Interpretive Essay", Journal of Economic Literature, 9(1), 1971.

Discusses recent advances on the economics of externalities. It discusses the problems of definition, external economies, public goods and concerns about environmental spillovers. Explores different solutions to externality problems such as prohibition, tax and subsidies, regulation, voluntary agreements and preventive devices.

- 16. Plourde, C., "Exploitation of Common Property Replenishable Natural Resources", Western Economic Journal, 9(3), Sept. 1971.

Given the production cost, forms of production function, welfare and biomass equations optimal control theory was used to determine the optimum exploitation and taxation rates.

- 17. Raucker, R., "Benefits and Costs of Policies Related to Groundwater Contamination", Land Economics, 62(1), Feb. 1986.

A simple probabilistic model was used to measure the benefits obtained among three alternative regulatory systems.

- 18. Shoemaker, R., "Agricultural Land Values and Rents Under Conservation Reserve Program", Land Economics, 65(2), May 1988.

The Conservation Reserve Program used an asymmetric information regarding land quality. Those enrolled in the CRP had their land values increased by \$132/acre in some and \$65/acre in others, otherwise, there is no effect nationwide.

- 19. Vousden, H., "Basic Theoretical Issues of Resource Depletion", Journal of Economic Theory, 6(2), April, 1973.

Discusses how society allocates exploitative and exhaustible resources over time to maximize the present value of the stream of consumption. Optimal control theory offers a solution but requires a utility function and positive discount rate. Whether a resource is exhausted in a finite period depends on the availability of alternative resources, social valuation of resources and discount rate.

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Yield increasing technology requires the adoption of erosion control practices. However, high rates of discount and modest rate of adoption of erosion control devices reduces the profitability of minimum tillage practices unless erosion penalties and subsidies are used

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Pareto optimality in the presence of external diseconomies can be achieved only by tax on pollutant. Conclusions are: (1) neither output tax nor monopoly power achieve Pareto optimality, (2) neither input or output taxes make abatement profitable. Pareto optimality can be obtained only through taxing the pollutant.

B. Non-annotated

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