

CHENNAT GOPALAKRISHNAN
Curriculum Vitae

CONTACT INFORMATION

Department of Natural Resources and Environmental Management
University of Hawaii at Manoa
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EDUCATION

Ph.D., Agricultural Economics, Montana State University
M.A., Economics, Kerala University, India
B.A., Economics, Kerala University, India

RECOGNITION, AWARDS, AND HONORS

Excellence in Research Award, College of Tropical Agriculture and Human Resources,
University of Hawaii at Manoa, 2009.

Guest Editor, “Symposium on Garrett J. Hardin”, *Journal of Natural Resources Policy Research*, July 2009.

Fellow, International Water Resources Association.

Founding Editor of New Journal, *Journal of Natural Resources Policy Research*,
published quarterly by Routledge (Taylor & Francis, Oxford, UK), effective January
2009. www.tandf.co.uk/journals/JNRPR.

Member, Scientific Advisory Committee, International Conference on Integrated Disaster
Risk Management, Ravello, Italy, 2004, Beijing, September 2005, Istanbul, 2006, Stresa,
Italy, 2007, and Kyoto, 2009.

Listed in Marquis, “Who’s Who in American Education”, 2007-2008.

Listed in Marquis, “Who’s Who in America”, 60th Anniversary Edition, 2006.

Delegate, University Council on Water Resources (UCOWR), 2005-07.

Guest Editor, Special Issue on “Water and Disasters”, *Water Resources Development*,
December 2005.

Member, Editorial Board, *Water Resources Development and Management Series*, Springer, 2004- Present.

Fellow, American Water Resources Association.

Member, Scientific Advisory Committee, International Conference on Integrated Disaster Risk Management, Kyoto, July 2003.

Distinguished Visiting Researcher, IMDR, Disaster Prevention Research Institute, Kyoto University, Japan, Dec-Jan 2002-03.

Ka Pouhana (Mentor) Award, CTAHR, University of Hawai'i at Manoa, 2003.

Guest Editor, Special Issue on "Water Resource Management in the Western United States", *International Journal of Water Resources Development*, March 2003.

Member, Editorial Board, *International Journal of Water Resources Development*, 2001-Present.

Finalist, Outstanding Researcher Award (Full Professor Category), UH-Manoa, 1999.

Chairman, Western Regional Research Committee on "Water Conservation, Competition and Quality in Western Irrigated Agriculture", 1999.

Guest Editor, *International Journal of Water Resources Development*, Special Issue on "Water and Agriculture in the American West", June 2000.

Listed in "Who's Who Among America's Teachers", 1998.

Award for Outstanding Service, American Water Resources Association, 1995.

Fellowship to attend Carnegie Council Faculty Institute on Ethics, Washington, DC, June 1990.

Profiled in *Contemporary Authors (New Revision Series)*, Volume 30, 1990.

International Award for Distinguished Service, Gamma Sigma Delta, Hawaii Chapter, 1989.

National Fellow, Summer Institute for University Faculty on "Regional Conflict and Global Security: The Nuclear Dimension", University of Wisconsin, Madison, June 1988.

National Fellow, Law Institute for Economists, Emory University, May 18-30, 1986.

Listed in, "Who's Who in America" (Marquis), 43rd Edition, 1985.

Chairman, Organizing Committee, International Conference on Ocean Resource Development in the Pacific, Honolulu, 1981.

Reviewer, Science in Developing Countries Program, National Science Foundation, 1981.

Outstanding Researcher Award, Gamma Sigma Delta, 1980.

Finalist, Excellence in Teaching Award, University of Hawaii at Manoa, 1979.

Law of the Sea Institute Professor of Social Sciences. Appointed the first Law of the Sea Institute Professor of Social Sciences, January 1978.

Senior Fellow, East-West Center, Honolulu, Hawaii. Awarded for the study of the legal-institutional aspects of fisheries and aquatic resources management and its multiple facets, 1974.

EMPLOYMENT

Professor Emeritus, University of Hawaii at Manoa, Honolulu, Hawaii, 2011 onwards.

Professor, Department of Natural Resources and Environmental Management (formerly Department of Agricultural and Resource Economics), University of Hawaii at Manoa, Honolulu, Hawaii, 1974-2010.

Chairman, Graduate Program in Agricultural and Resource Economics, University of Hawaii at Manoa, 1993-96.

Visiting Professor, Division of Agricultural Economics, University of Wyoming, Laramie, Wyoming, 1982-83.

Acting Chairman, Department of Agricultural and Resource Economics, University of Hawaii at Manoa, Honolulu, Hawaii, 1978.

Visiting Professor, Institute for Marine and Coastal Studies, University of Southern California, Los Angeles, California, 1976-77.

Associate Professor, University of Hawaii at Manoa, Honolulu, Hawaii, 1969-74.

Assistant Professor, Department of Agricultural and Resource Economics, Montana State University, Bozeman, Montana, 1967-69.

RESEARCH EXPERIENCE

My research has been primarily in natural resource economics and policy, with a significant emphasis on water resources. Other areas of research include energy and ocean resources.

A. Current Research

1. “Water Policy and Management Challenges in the West” (W2190) (2009-2014)
The objectives of this project are to: 1) Develop farm-level water management strategies to address water quantity and quality problems; 2) Examine regional water-related impacts associated with energy, environmental policy, and climate change; 3) Investigate alternative water policy and management institutions.

Funding Source: USDA

B. Recent Research

1. “Interfacing Technological, Economic, and Institutional Principles for Managing Inter-sectoral Mobilization of Water” (2004 – 2009). Objectives of this project are to: 1) develop and evaluate alternative technologies to monitor environmental effects of water allocation and management; 2) quantify comparative economic values of water in alternative uses; 3) assess the effectiveness of alternative management institutions, laws, and policies for water allocation.

Funding Source: USDA

2. “The Economic Impacts of Groundwater Pollution from Agricultural Chemicals in Hawaii” (2004-2006). Objectives of this project: to determine the economic effects of groundwater contamination in study area in relation to public health under plausible assumptions regarding levels of input use; to quantify the economics trade-offs between increased agricultural productivity from chemical use and the resulting welfare losses through increased health risks; and to estimate the economic costs and benefits of a range of policy options for controlling water quality.

Funding Source: USDA

3. “Agricultural Water Management Technologies, Institutions and Policies Affecting Economic Viability and Environmental Quality” (1999-2004). Objectives of this project: to develop and evaluate alternative technologies and farm management strategies for improved water management in irrigated agriculture; to investigate the economic of alternative water technologies, allocation and management strategies in irrigated agriculture; and to study the legal, institutional, and political factors affecting water allocation and their implications for efficiency and conservation.

Funding source: USDA

C. Previous Research

University of Hawaii

Examples of research conducted and completed include:

1. "Expanding Soviet Ties with the Pacific Basin". Objectives of the study: to model trade flows between the former Soviet Union and the Pacific Basin; to explore the possibilities for technology transfer between the former Soviet Union and the Pacific Basin, focusing on the mining sector; and to evaluate prospects for economic cooperation, especially in the minerals sector, based on Soviet policy directives, regional mineral market conditions, and domestic mineral requirements.

Funding Source: UH-EWC Collaborative Committee.

2. "Energy in Western Agriculture: Requirements, Adjustments, and Alternatives." Objectives of this project: to evaluate alternative governmental policies affecting energy use and availability in agriculture; to analyze impacts of changes in energy prices and supplies on production, distribution, and consumption. Methodologies involved the use of inter-regional competition models, optimization models, simulation, and inter-sectoral modeling. Several papers published in refereed journals.

Funding Source: USDA.

3. "The Economics of Biomass Energy." As part of a larger study on the economics of natural energy systems, explored the economic potential, operational viability, and environmental impact of two specific biomass sources: bagasse and pineapple trash. Papers reporting on research findings have been published in professional journals and presented at major conferences.

Funding Source: USDA.

4. "Multinational Corporations and Ocean Resource Development." Developed a comprehensive inventory of information on U.S. and Japanese multi-national corporations engaged in the extraction, processing, distribution and marketing of ocean resources; identified and appraised the potential impacts of a 200-mile exclusive economic zone on the development of ocean resources by MNCs and nation-states; examined the role of MNCs in ocean technology transfer. Several papers incorporating research findings were presented at conferences and published.

Funding Source: NOAA, US Department of Commerce.

5. "Economic and Institutional Aspects of Multiple Uses in Hawaii's Coastal Zone." The institutional constraints to the development of Hawaii's coastal zone were identified and analyzed; the patterns of use conflict delineated; alternate strategies for use conflict resolution were suggested. Several reports and journal articles have been published. Papers embodying research findings were presented at national conferences.

Funding Source: Sea Grant, NOAA.

6. "Institutional Constraints to Coastal Zone Management in Hawaii." Reviewed key developments, programs and legislation pertaining to coastal zone management in Hawaii and evaluated their effectiveness in removing or reducing constraints to effective management. Several papers drawing on research findings were presented at professional meetings and published in conference proceedings.

Funding Source: Sea Grant, NOAA.

7. "Economic Impact of Ocean Research Funding on the State of Hawaii." Studied the magnitude of Hawaii's ocean research sector in terms of funding for research carried out in the state; determined the direct and indirect economic impacts of ocean research funding on the state of Hawaii. A report embodying research findings was published.

Funding Source: Sea Grant, NOAA.

University of Southern California

While on sabbatical at the Institute for Marine and Coastal Studies at USC, I was engaged in a study of "Multinational Corporations and Ocean Resource Development," funded by the Office of Sea Grant Programs. A detailed inventory of basic information on U.S. - and Japanese-based, marine-oriented multinational corporations was collected through case studies of selected enterprises.

Montana State University

1. Worked on research projects dealing with the economic, legal, and institutional aspects of Montana's water resource development. Several papers drawing on this research were published in professional journals.
2. Worked on research project entitled, "The Economics of Water Transfer: An Institutional Appraisal." The research done on this project formed the basis for my doctoral dissertation.

D. Research Experience in Asia

I have worked on research projects dealing with different aspects of India's economy. Important among these are projects in agriculture, water resource development and management, and energy demand forecasts. During this five-year period I was associated with a variety of research endeavors involving survey research design and analysis, feasibility studies, cost-benefit analysis, and policy research (including "constraint" research). I have also conducted extensive field surveys in the rural areas of India,

including detailed personal interviews with farmers, as part of technoeconomic surveys for several Indian states undertaken by the National Council of Applied Economic Research in New Delhi. My work entailed data collection, compilation, its analysis and interpretation, and the preparation of research bulletins and papers reporting on research findings.

RESEARCH GRANTS

Proposals in Progress

1.) Title: Institutional Innovations in Integrated Disaster Risk Management.

Collaborators:

Chennat Gopalakrishnan (Lead PI)

Ben Wisner, London School of Economics

Norio Okada, Kyoto University, Japan

Joanne Bayer, IIASA, Vienna, Austria

Adrian V. Gheorghe, Swiss Federal Institute of Technology

Potential Funding Sources:

National Science Foundation, USA

Japan Society for Science

Submission Date: August 2010

Proposed Funding: \$350,000

NREM has signed a Memorandum of Understanding (MOU) with Kyoto University to support research and other academic activities in this area of research.

2.) Title: An Economic Assessment of Aggregate Damages from the October 2004 Flash Flood in Honolulu, Hawaii: Conceptual Issues, Empirical Analysis and Policy Implications.

Co-PIs:

Chennat Gopalakrishnan

John Yanagida

Carl Evensen

Funding Sources: Commission on Water Resources Management, Hawaii

Date of Submission: To be determined.

Proposed Amount: \$75,000

3.) **Title: An Economic Analysis of Political Externalities in Water Resources Management in the Western United States.**

Lead PI: Chennat Gopalakrishnan, University of Hawaii

Co-PIs:

Jeffrey Peterson, Kansas State University

Robert Hearne, North Dakota State University

Brian Hurd, New Mexico State University

Edna Loehman, Purdue University

Proposal Submission Date: July 2010

Funding Source: Bureau of Reclamation; NIFA, USDA

Proposed Funding: \$250,000

Funded Proposals

1. **Title:** Expanding Soviet Ties with the Pacific Basin
Duration: 1990–93
Funding Source: UH-EWC Collaborative Committee
Amount: \$50,000
Role: Co-Principal Investigator
2. **Title:** Institutional Constraints to Coastal Zone Management
Duration: 1987-88
Funding Source: NOAA (Sea Grant)
Amount: \$10,638
Role: Principal Investigator
3. **Title:** Economic Impact of Ocean Research Funding on the State of Hawaii
Duration: 1986-87
Funding Source: DBEDT and NOAA (Sea Grant)
Amount: \$12,000
Role: Principal Investigator
4. **Title:** Socio-Economic Impact Assessment of the Kahe Point Ocean Thermal Energy Conversion (OTEC) Facility
Duration: 1985-86
Funding Source: NOAA and Argonne National Laboratory
Amount: \$65,000
Role: Co-Principal Investigator
(Note: Funded as a consulting project in competitive bidding)
5. **Title:** Energy from Marine Biomass
Duration: 1984-85
Funding Source: Gas Research Institute
Amount: \$186,000

Role: Investigator
(**Note:** Funded as a consulting project in competitive bidding)

6. **Title:** Multinational Corporations and Ocean Resource Development
Duration: 1976-79
Funding Source: NOAA (Sea Grant)
Amount: \$40,000
Role: Principal Investigator
7. **Title:** Economic and Institutional Aspects of Multiple Uses in Hawaii's Coastal Zone
Duration: 1971-73
Funding Source: NOAA (Sea Grant)
Amount: \$50,204
Role: Principal Investigator
8. **Title:** Marine Fuel Consumption and Tax Payments by Hawaii Boat Owners
Duration: 1973
Funding Source: State of Hawaii, Department of Transportation.
Amount: \$8,000 (Approx.)
Role: Principal Investigator

CONSULTING EXPERIENCE

Representative examples of consulting experience in the United States are noted below.

1. Prepared a critique of an environmental impact statement on OTEC for Argonne National Laboratory.
2. Undertook a consulting assignment for the Gas Research Institute of Chicago. Submitted a report on the economic feasibility of methane production from marine biomass.
3. Conducted a detailed study of marine fuel consumption and tax payments by Hawaii boat owners for the State Department of Transportation. Developed a methodology for accurately estimating marine fuel tax returns.
4. Prepared the economic component of an environmental impact statement (EIS) on a proposed small boat harbor in Hawaii for the Oceanic Institute of Honolulu.

TEACHING EXPERIENCE

University of Hawaii and Montana State University

- Resource and Environmental Policy (Ph.D. Core Course)

- Project Evaluation and Resource Management
- Natural Resource Economics
- Energy Economics and Policy
- Research Methodology
- Economics of Developing Areas
- International Economics
- Economic Thought
- Economics of Water Resources
- Land Economics

GRADUATE COMMITTEES

I have chaired and served as a member of numerous Ph.D. and Masters Committees in the field of agricultural and natural resource economics here at the University of Hawaii (A complete list is available upon request). The names of students whose Ph.D. committees I have chaired are given below.

Ph.D. Committees (Chairman)

Completed

1. Usukh Batsaikhan (2006)
2. Phuong Minh Dang (2002)
3. Parashar B. Malla (1996)
4. Ming Sheng Zhang (1993)
5. Yoshiki Inuma (1991)
6. Rajendra B. Shrestha (1988)
7. James P. Dorian (1987)
8. Gholam Hossein Khaleghi (1985)
9. Prahlad Kasturi (1983)
10. Egnonto N. Koffi-Tessio (1982)
11. Jagdeesh P. Bhati (1981)

ADMINISTRATIVE/COMMITTEE EXPERIENCE (last 20 years)

- Member, UH Manoa Tenure Promotion Review Committee, 2010.
- Member, Department Personnel Committee, 2008, 2009.

- Member, Faculty Selection Committee, 2006.
- Member, UH Manoa Tenure Promotion Review Committee, 2004.
- Member, Department Personnel Committee, 2004.
- Member, Graduate Program Committee, 2004.
- Member, UH Manoa Council on Program Review, 2002-03.
- Member, University of Hawaii Tenure Promotion Review Committee, 2001.
- Member, UH Manoa Library Committee, 2001.
- Member, UH Manoa Tenure Promotion Review Committee, 2000.
- Member, University of Hawaii Tenure Promotion Review Committee, 2000.
- Member, University of Hawaii Tenure Promotion Review Committee, 1993.
- Member, Department Personnel Committee, 1992-93.
- Chairman, Faculty Selection Committee for Resource Economics, 1991.
- Member, CTAHR Faculty Senate, 1990-91.
- Member, Faculty Selection Committee for International Trade, 1990.

CONFERENCE/WORKSHOP DELEGATE

- Delegate, World Conference on Disaster Reduction, UN ISDR, Kobe, January 18-22, 2005.
- Delegate, Oil and Gas Education Initiative, Southern Methodist University, Dallas, July 14-16, 1997.
- Delegate, National Workshop on Agricultural Ethics, University of Wyoming, Laramie, Feb. 15-20, 1988.
- Delegate, National Workshop on "Ethical Aspects of Food, Agriculture and Natural Resources," Lexington, June 14-26, 1987.
- Delegate, Workshop on "Marine Resource Economics: South-East Asian Seas in Transition," Environment and Policy Institute of the East-West Center, Honolulu, April 24-28, 1984.
- Delegate, International Research Planning Workshop on "Energy and Rural Development," Resource Systems Institute of the East-West Center, Honolulu, May 7-18, 1979.
- Delegate, Workshop on "U.S. University Role in Marine Resources Development in the LDCs," University of Rhode Island, Kingston, 1977.

PROFESSIONAL MEMBERSHIP/SERVICE

1. American Association for the Advancement of Science
2. American Water Resources Association
-International Affairs Committee, 1994-96
3. Agricultural and Applied Economics Association (Formerly American Agricultural Economics Association)
-Associate, Governing Board, 1988-95

- Committee on Economic Education, 1988
4. Western Agricultural Economics Association
-WAEA Council, 1991-92
 5. International Water Resources Association
 6. Association of Environmental and Resource Economists

PUBLICATIONS

A. Books

Gopalakrishnan, Chennat, Tortajada C., and Biswas, A.K., eds. (2011) *Water Institutions: Policies, Performance, and Prospects* (Springer), Chinese translation.

Gopalakrishnan, Chennat and N. Okada, eds. (2007) *Water and Disasters* (Routledge).

“Water and Disasters is a current and cross-cutting assessment of water resource institutions and management systems as they respond to and prepare for extreme and potentially devastating events . . . The quality of the contributions in this book is quite high . . ., with several providing leading-edge assessment methods and techniques.”

-Brian Hurd, Journal of Natural Resources Policy Research

Gopalakrishnan, Chennat, Tortajada C., and Biswas, A.K., eds. (2005) *Water Institutions: Policies, Performance, and Prospects* (Springer). This volume of original papers is a major first attempt to address comprehensively and in-depth the many issues associated with institutional innovation in water resource management.

“This book advances knowledge on the causes of institutional success and failure and on the process of institutional change . . . Such careful and well-documented descriptions are nearly impossible to find in one place.”

-Jeffrey M. Peterson, Water Resources Development

Gopalakrishnan, Chennat, ed. (2000) *Classic Papers in Natural Resource Economics* (Macmillan). A compact sourcebook of some of the most enduring academic writing dealing with the theory and practice of natural resource economics.

". . . this book is a must-have for any resource economist's library."

-Lynne Bennet, Yale University

"This collection of classic papers deserves space on the bookshelf of every natural resource economist."

-Ray Huffaker, Washington State University

"This edited volume by Professor Gopalakrishnan comprises an excellent selection of the theoretical underpinnings of much of natural resource economics..."

- Charles W. Howe, University of Colorado at Boulder

". . . the pieces [are] judiciously selected . . . [and] their value as a composite is enhanced by their organization into major topical areas."

-B. Delworth Gardner, Brigham Young University

Gopalakrishnan, Chennat. (1994) *The Economics of Energy in Agriculture* (Avebury). Explores conceptual and empirical issues in energy planning, development and management in the context of agriculture.

"I am not aware of a textbook that approaches energy resource economics in this realistic manner, including a unique case study, and which so clearly illustrates real-world supply-demand relationships. The book would make an excellent reference for energy economics in business or agriculture college courses."

-Wyatte Harman, Texas A&M University

Gopalakrishnan, Chennat, ed. (1984) *The Emerging Marine Economy of the Pacific* (Butterworth Publishers). A comprehensive, state-of-the-art survey of the wide-ranging dimensions of marine resource development and management in the Pacific Basin.

"It is an excellent presentation of many of the key issues surrounding the development and economic potential of the islands of the Pacific . . . the book should be read by all those interested in the economic development of the Pacific and by those interested in development issues in general."

-Allen Clark, Natural Resources Forum

"For students of marine resource development and management, the volume contains a

few examples of policy analysis that are about as concise and useful as any in the field."

-James Broadus (*Woods Hole Oceanographic Institution*),
Journal of Marine Resource Economics

Gopalakrishnan, Chennat. (1980) *Natural Resources and Energy: Theory and Policy* (Ann Arbor Science Publishers). A synthesis of theoretical insights and empirical research on some key issues in the natural resources and energy field.

In Progress

Gopalakrishnan, Chennat. *Institutional Entropy*. An application of the concept of "entropy" to an evaluation and analysis -of the decline and fall of natural resource institutions from a global historical perspective.

Gopalakrishnan, Chennat. *Natural Resources, Economic Growth, and Quality of Life*. Building on Erich Zimmermann's "functional" approach to natural resources, the book attempts to explore the interconnections of resources, economic growth, and quality of life drawing on contemporary experience.

B. Refereed Journal Articles

Levy, J.K. & **C. Gopalakrishnan.** 2010. "A Policy-Focused Approach to Natural Hazards and Disasters-Towards Disaster Risk Reduction (DRR): *Introduction to a Special Issue of the Journal of Natural Resources Policy Research* 2(4): 317-323.

Levy, J.K. & **C. Gopalakrishnan.** 2010. "President Obama's Offshore Drilling Policy and Energy Security: A Game-Theoretic Policy Analysis" *Journal of Natural Resources Policy Research* 2(3): 195-212.

Levy, J.K. & **C. Gopalakrishnan.** 2010. "Promoting Ecological Sustainability and Community Resilience in the US Gulf Coast after the 2010 Deepwater Horizon Oil Spill" *Journal of Natural Resources Policy Research* 2(3): 297-315.

Gunatilake, H. & **C. Gopalakrishnan.** 2010. "Technical Efficiency of Sawmilling and the Conservation of Natural Forests: Evidence from Sri Lanka" *Journal of Natural Resources Policy Research* 2(2): 149-169.

Sheild, L. D., **C. Gopalakrishnan** & C. Chan-Halbrendt. 2009. "Aligning Stakeholders' Preferences with Public Trust in Managing In-stream Flow: The Case of Hawai'i",

Water Resources Development 25(4): 657-679.

Gunatilake, H., **C. Gopalakrishnan** & F.D. De Guzman. 2009. "Role of the Private Sector in Managing the Asian Environment: A Review", *Journal of Natural Resources Policy Research* 1(4): 335-351.

Levy, J.K. & **C. Gopalakrishnan**. 2009. "Multicriteria Analysis for Disaster Risk Reduction in Virginia, USA: A Policy-Focused Approach to Oil and Gas Drilling in the Outer Continental Shelf". *Journal of Natural Resources Policy Research* 1(3): 213-228.

Gopalakrishnan, C. and N. Okada. 2007. "Designing New Institutions for Implementing Integrated Disaster Risk Management (IDRM): Key Elements and Future Directions". *Disasters* 31 (4): 353-372.

Levy, J.K., **C. Gopalakrishnan**, and Z. Lin. 2005. "Advances in Decision-Support Systems for Flood Disaster Management: Challenges and Opportunities". *Intl. J. Water Res. Devl.* 21(4): 593-611.

Levy, J.K and **C. Gopalakrishnan**. 2005. "Promoting Disaster-Resilient Communities: The Great Sumatra-Andaman Earthquake of 26 December 2004 and the Resulting Indian-Ocean Tsunami". *Intl. J. Water Res. Devl.* 21(4): 543-559.

Gopalakrishnan, C., J. Levy, K.W. Li, and K.W. Hipel. 2005. "Water Allocation among Multiple Stakeholders: Conflict Analysis of the Waiahole Water Project, Hawaii." *Intl. J. Water Res. Devl.* 21:283-295.

Gopalakrishnan, C., W.A.R. Wickramasinghe, H.M. Gunatilake, P. Illukpitiya. 2005. "Estimating the Demand for Non-timber Forest Products among Rural Communities: A Case Study from the Sinharaja Rain Forest Region, Sri Lanka". *Agroforestry Systems.* 65:13-22.

Phuong, D.M. and **C. Gopalakrishnan**. 2004. "Optimal Management of Water for Sustainable Fisheries and Aquaculture". *Intl. J. Water Res. Devl.* 20(4): 493-506.

Illukpitiya, P. and **C. Gopalakrishnan**. 2004. "Decision-making in Soil Conservation: An Application of a Behavioral Model to Potato Farmers in Sri Lanka". *Land Use Policy* 21(4):321-31.

Phuong, D.M. and **C. Gopalakrishnan**. 2003. "An Application of the Contingent Valuation Method (CVM) to Estimate the Loss of Value of Water Resources due to Pesticide Contamination: The Case of the Mekong Delta, Vietnam". *Intl. J. Water Res. Devl.* 19(4):617-33.

Gopalakrishnan, C. and L. J. Cox. 2003. "Water Consumption by the Visitor Industry: The

- Case of Hawaii." *Intl. J. Water Res. Devl.* 19(1):29-35.
- Gunatilake, H.M. and **C. Gopalakrishnan**. 2002. "Proposed Water Policy for Sri Lanka: The Policy versus the Policy Process." *Intl. J. Water Res. Devl.* 18(4):547-64.
- Gunatilake, H.M., **C. Gopalakrishnan** and I. Chandrasena. 2001. "The Economics of Household Demand for Water: The Case of Kandy Municipality, Sri Lanka." *Intl. J. Water Res. Devl.* 17(3): 277-88.
- Gopalakrishnan, C.** 2000. "Water and Agriculture in the American West: A Review". *Intl. J. Water Res. Devl.* 16(2): 177-85.
- Gunatilake, H. and **C. Gopalakrishnan**. 1999. "The Economics of Reservoir Sedimentation: A Case Study of Mahaveli Reservoirs in Sri Lanka", *Intl. J. Water Res. Devl.* 15(4): 511-26.
- Malla, P. and **C. Gopalakrishnan**. 1999. "The Economics of Urban Water Demand: The Case of Industrial and Commercial Water Use in Hawaii," *Intl. J. Water Res. Devl.* 15(3): 367-74.
- Malla, P. and **C. Gopalakrishnan**. 1997. "Residential Water Demand in a Fast-Growing Metropolis: The Case of Honolulu, Hawaii." *Intl. J. Water Res. Devl.* 13(1):35-51.
- Gopalakrishnan, C.**, P. Malla and G. H. Khaleghi. 1996. "The Politics of Water in Hawaii: An Institutional Appraisal." *Intl. J. Water Res. Devl.* 12(3):297-310.
- Malla, P. and **C. Gopalakrishnan**. 1995. "Conservation Effects of Irrigation Water Supply Pricing: A Case Study from Oahu, Hawaii." *Intl. J. Water Res. Devl.* 11(3):233-242.
- Gopalakrishnan, C.**, K. Gadepalli, L.J.Cox and P.S. Leung. 1993. "The Economics of Biomass Energy: A Case Study from Hawaii." *Bioresource Technology* 45(2): 137-47.
- Gopalakrishnan, C.**, X. Tian and D. Tran. 1993. "The Impact of Oil Price Shocks on Hawaii's Economy: A Case Study Using Vector Autoregression." *Energy Systems and Policy* 15(4):295-305.
- Shrestha, R. B. and **C. Gopalakrishnan**. 1993. "Adoption and Diffusion of Drip Irrigation Technology: An Econometric Analysis." *Economic Development and Cultural Change* 41(2):407-418.
- Shrestha, R. B. and **C. Gopalakrishnan**. 1991. "Water Use Efficiency under Two Irrigation Technologies: A Quadratic Production Function Analysis." *Intl. J. Water Res. Devl.* 7(3): 133- 137.
- Gopalakrishnan, C.**, G. H. Khaleghi and R. B. Shrestha. 1989. "Energy-Nonenergy

Input Substitution in U.S. Agriculture: Some Findings." *Applied Economics* 21(5):673-79.

Gopalakrishnan, C. 1989. "Transnational Corporations and Ocean Technology Transfer: Some Findings." *American Journal of Economics and Sociology* 47(4):455-58.

Gopalakrishnan, C. 1988. "Culture, Economic Development and Quality of Life: A Speculative Comment." *American Journal of Economics and Sociology* 47(4):455-58.

Turn, S.Q., J.K. Wang and **C. Gopalakrishnan.** 1988. "Energy Use in Cotton Production in China: An Economic Analysis." *International Journal of Energy Systems* 8(3):169-72.

Gopalakrishnan, C. 1987. "Energy-Nonenergy Input Substitution in Western U.S. Agriculture: Some Findings." *The Energy Journal* 8(1): 133-45.

Gopalakrishnan, C. 1985. "Natural Gas from Seaweed: Is Near-Term R&D Funding by the U.S. Gas Industry Warranted?" *The Energy Journal* 6(4):129-37.

Gopalakrishnan, C. 1985. "Energy Price Increase and Its Impact on Agricultural Production: Evidence from Hawaii." *Energy in Agriculture* 4(3): 179-88.

Gopalakrishnan, C. 1984. "Optimizing Energy Generation from Hawaii's Biomass Sources: A New Approach." *Agricultural Wastes* (Elsevier Applied Science) 12(3): 159-66.

Gopalakrishnan, C. and N. A. Patrick. 1981. "Estimating Energy Requirements for Agriculture: Some Methodological Issues." *Resource Management and Optimization* 1(2): 197-209.

Gopalakrishnan, C. and P. Kasturi. 1980. "The Economics of Biomass Energy: A Study of Two Agricultural Wastes." *Agricultural Wastes* (Elsevier Applied Science) 2(2):83-91.

Gopalakrishnan, C. 1979. "Multinational Corporations, Nation-States and Ocean Resource Management." *American Journal of Economics and Sociology* 38(3):253-60.

Gopalakrishnan, C. 1974. "Institutional Constraints to Coastal Zone Management." *American Journal of Economics and Sociology* 33:225-32.

Gopalakrishnan, C. 1973. "The Economics of Water Transfer." *American Journal of Economics and Sociology* 32(4):395-403.

Gopalakrishnan, C. 1973. "The Doctrine of Prior Appropriation and Its Impact on Water Development: A Critical Survey." *American Journal of Economics and Sociology* 32(1):61-73.

Gopalakrishnan, C. 1972. "Managing Hawaii's Coastal Zone: Programs, Problems, and Prospects." *Coastal Zone Communique* 4:1.

Gopalakrishnan, C. 1972. "Economic Growth through Water Development: India." *Water Resources Bulletin* 8(3):459-72.

Gopalakrishnan, C. 1971. "Water Resource Development: Some Institutional Aspects." *American Journal of Economics and Sociology* 30(4):421-72.

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G. Other

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MAJOR CONFERENCE PAPERS

Invited Conference Presentations

“Effective Implementation of Integrated Disaster Risk Management (IDRM): Toward an Implementation Science”, Ninth IIASA-DPRI Conference on Integrated Disaster Risk Management, Kyoto, Japan, October 13-16, 2009.

“A Legacy of Creative Scholarship: Norio Okada’s Contributions to Integrated Disaster Risk Management”, International Conference on Vitae Systems, Kyoto University, Kyoto, Japan, December 1-2, 2007.

“Perspectives on Implementation Science”, Seventh International IIASA-DPRI Forum on Integrated Disaster Risk Management, Stresa, Italy, September 19-21, 2007.

“Natural Disasters and Extreme Climate Change: Impacts and Implications for Water Resource Management”, World Water Week, Stockholm International Water Institute, Stockholm, August 20-26, 2006.

“Integrated Disaster Risk Management: A Survey and Synthesis of “Key Concepts”, Sixth IIASA-DPRI Forum on Integrate Disaster Risk Management, Istanbul, August 13-17, 2006.

“Natural Resources and Environmental Economics and Policy: US Perspectives and their Application to PRC”, (a series of six talks), Beijing Normal University, Beijing, April 2006.

“Environmental Economics: Transcending Boundaries and Transforming Lives”, Maharaja’s College (Mahatma Gandhi University), Kerala, India, January 28, 2006.

“Institutional Entropy in Water Resources Management: Insights from the American West”, American Water Resources Association Conference, Honolulu, Hawaii, June 26-29, 2005.

“Case Stations and Field Campuses: Innovative Tools in Implementing Integrated Disaster Risk Management”, World Conference on Disaster Reduction, Kobe, Japan, January 18-22, 2005.

“Implementation Science and its Integration into Research and Higher Education: The Role of Field Campus and Case Stations”, World Conference on Disaster Reduction, Kobe, Japan, January 18-22, 2005.

“Reflections on Implementation Science”, Fourth Annual IIASA-DPRI Meeting on Integrated Disaster Risk Management, Ravello, Italy, July 3-7, 2004.

“Water Institutions in the Western United States: Key Elements and Future Directions”, W-190 Regional Research Project Technical Committee Meeting, Kona, Hawaii, October 2-5, 2003.

“Economics, Law and the Evolution of Water Management Institutions in the American West: Structure, Performance and Prospects”, Western Agricultural Economics Association Annual Meeting, Denver, July 11-15, 2003.

“Enhancing the Effectiveness of Integrated Management for Disaster Risk: The Case for Institutional Innovations”, Third International Symposium on Integrated Disaster Risk Management (IDRM), Kyoto, Japan, July 3-5, 2003.

“Water Allocation among Multiple Stakeholders: The Case of Waiahole Water Project, Hawaii”, UNESCO Conference on “Conflict to Co-operation: Challenges & Opportunities in Water Resources Management”, Delft, Netherlands, November 20-22, 2002.

“Hawaii’s Water Future: Institutions, Economics and Policy”, Special Seminar, College of Tropical Agriculture and Human Resources/Department of Natural Resources and Environmental Management, University of Hawaii, Honolulu, July 9, 2001.

“Water and Agriculture in the American West”, Two presentations at the USDA Economist Group Workshop, Washington, D.C. June 21, 2001.

“Global Climate Change Implications for Western Irrigated Agriculture”, W-190 Regional Research Project Technical Committee Meeting, Phoenix, Arizona September 9, 2000.

“Natural Resource Management in a Global Context: Some Reflections”, School of Communication and Management Studies, Cochin, India, April 2000.

“Leading Issues in Natural Resource Economics: An Overview and Synthesis”, Mahatma Gandhi University, Kerala, India, January 1999.

"Technology Transfer between the United States and Russia: Conceptual Issues and Empirical Dimensions", International Conference on Entrepreneurship Education, Training, Research and Practice, Moscow, Russia, June 16-19, 1993.

"Opportunities for Technology Transfer between the United States and CIS: A Focus on the Mining Sector", International Conference on Commonwealth Mining Development, Khabarovsk, Russia, June 2-5, 1992.

"U.S.-USSR Technology Transfer: Some Critical Issues", Conference on Geoeconomic Evaluation of Mineral Deposits in Market Economies, Moscow, USSR, May 20-22, 1991.

"On the Transition from a Centrally Planned to a Market Economy: Some Thoughts", Roundtable Discussion on U.S.-USSR Economic Cooperation, Khabarovsk, USSR, May 15, 1991.

"Role of Transnational Corporations in Marine Technology Development: An Economic Appraisal", International Seminar on Technology Transfer and the Developing Countries, Asian Institute of Technology, Bangkok, Thailand, January 21-23, 1988.

Selected Conference Presentations

"Conflict Resolution in Water Allocation Among Competing Stakeholders: The Case of Hawaii", American Water Resources Association Annual Conference, Philadelphia, November 1-4, 2010.

“Natural Disasters and Climate Change: Impacts and Implications for Water Governance”, American Water Resources Association Specialty Conference, Anchorage, Alaska, May 4-6, 2009.

“Policy Implications of Climate Change and Natural Disasters for Water Resource Management”, Seventh International IIASA-DPRI Forum on Integrated Disaster Risk

Management, Stresa, Italy, September 19-21, 2007.

“Water Allocation among Multiple Stakeholders: Conflict Analysis”, Workshop on Modeling and Control for Participatory Planning and Managing Water Systems, Venice, Italy, September 29 – Oct 21, 2004.

“Water Allocation among Multiple Stakeholders: The Case of Waiahole Project”, American Water Resources Association Annual Conference, San Diego, California, November 3-6, 2003.

“Private Gain at Public Loss: The Political Economy of Water Allocation and Use in Hawaii”, International Water History Association Conference, Bergen, Norway, August 10-12, 2001.

“Conflict Resolution among Competing Water Demands: Lessons from Hawaii”, American Water Resources Association and the Universities Council on Water Resources Conference, Snowbird, Utah, June 27-30, 2001.

“Residential Water Pricing and Its Conservation Effects: A Case Study from Hawaii”, American Water Resources Association Annual Conference, Seattle, Washington, December 5 – 9, 1999.

“Irrigation Water Supply Pricing and Its Conservation Effects: A Case Study from Hawaii”, Tenth International Soil Conservation Organization Conference, Purdue University, West Lafayette, Indiana, May 23-28, 1999.

“The Waiahole Water Wars: Conflict Resolution among Multiple Stakeholders”, American Water Resources Association Symposium, Keystone, Colorado, June 29-July 3, 1997.

" The Politics of Water in Hawaii: An Institutional Appraisal", Sixth International Symposium on Society and Resource Management, Pennsylvania State University, University Park, Pennsylvania, May 18-23, 1996.

“Oil Price Shocks and Macroeconomic Performance: A Case Study of Hawaii using Vector Autoregression”, Annual International Conference of the International Association for Energy Economics, Tours, France, May 18-20, 1992.

"Adoption and Diffusion of Drip Irrigation Technology: An Econometric Analysis using a Joint Discrete and Continuous Choice Framework", American Agricultural Economics Association Annual Meeting, Baton Rouge, Louisiana, July 30-August 2, 1989.

"Energy-Nonenergy Input Substitution Possibilities in United States Agriculture: The Outlook", Annual Meeting of International Association for Energy Economics, Caracas,

Venezuela, June 26-28, 1989.

"Water Use Efficiency Under Drip Irrigation: Evidence from Hawaii", American Water Resources Association, Tampa, Florida, September 17-22, 1989.

"Coastal Zone Planning and Management in Hawaii: A Study in Institutional Dynamics", International Symposium on Coastal Zone Management, Charleston, South Carolina, July 11- 14, 1989.

"Ethical Dimensions of Natural Resource Management", Second Symposium on Social Science in Resource Management, University of Illinois at Urbana-Champaign, June 6-8, 1988.

"Coastal Zone Use Conflicts, Their Identification and Resolution: The Case of Hawaii", American Water Resources Association Coastal Water Resources Symposium, Wilmington, North Carolina, May 22-25, 1988.

"Transnational Corporations and Technology Transfer: Some Thoughts", Tenth Pacific Regional Science Conference, Pusan, Korea, July 6-11, 1987.

"Some Institutional Constraints to Coastal Zone Management: A Case Study of Hawaii", International Symposium on Coastal and Ocean Management, Seattle, May 26-29, 1987.

"Energy-Nonenergy Input Substitution in Western U.S. Agriculture: Some Findings", American Association of Agricultural Economics, Reno, Nevada, July 27-30. 1986.

"Energy Intensity and Factor Substitution in Western U.S. Agriculture". Annual Meeting of the International Association of Energy Economists, Tokyo, 1986.

"Transnational Corporations and Technology Transfer: An Overview and Assessment", Pacific Congress on Marine Technology, Honolulu, 1986.

"The Economics of Biomass Energy: Evidence from Hawaii". Accepted for presentation at the Third European Communities Conference on Energy from Biomass, Venice, Italy, 1985.

"Energy Price Increases and Their Impact on Agricultural Production: Evidence from Hawaii", Western Regional Science Association Annual Meeting, Monterey, California, 1984.

"Marine, Technology Transfer: The Role of Multinational Corporations", Accepted for presentation at the 15th Pacific Science Congress, Dunedin, New Zealand, 1983.

"Hawaii's Biomass Energy Options: Some Economic and Policy Considerations", Accepted for presentation at the First U.S.-China Conference on Energy, Resources, and Environment, 1982.

"Toward an Institutional Framework for Natural Resource Management: Some Critical Linkages", American Society for Public Administration Annual Conference, Honolulu, 1982.

"Economic Potential of Biomass as an Alternate Energy Source: The Hawaiian Experience", International Symposia on Alternative Energy Sources and Technology, San Francisco, 1981.

"The Challenge of MNCs in the World Oceans: State of the Art", Annual Meeting of the Western Regional Science Association, Monterey, California, 1980.

"Natural Resource Management in a Global Context: The Role of the Multinational", Annual Meeting of the Marine Technology Society, New Orleans, 1979.

"MNCs, Ocean Resource Development and the New International Economic Order", Annual Meeting of the Marine Technology Society, Los Angeles, 1977.

"Marine Technology Transfer and MNCs: An Analytical Paradigm and its Implications for Growth Theory", Annual Meeting of the Academy of International Business, Orlando, Florida, 1977.

"Natural Resource Management and the International Economic Order: Some Key Issues", Annual Meeting of the Academy of International Business, New York, 1976.

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"Economic Potential of Bagasse as an Alternate Energy Source", National Conference on Energy in Agriculture, St. Louis, Missouri, 1976.

"Some Economic and Engineering Considerations for a Floating, Coal-Fired 100 MW Power Plant", Annual Meeting of the Marine Technology Society, San Diego, California, 1975.

"The Role of Multinational Corporations in an International Ocean Regime", International Conference, "Pacem in Maribus", Valetta, Malta, 1973.

"Some Institutional Aspects of Coastal Zone Management: A Case Study of Hawaii", Annual Conference of the Western Regional Science Association, Monterey, California, 1972.

"The Doctrine of Prior Appropriation and Its Impact on Water Resource Development: A Critical Survey", Eighth Annual Conference of the American Water Resources Association, St. Louis, Missouri, 1972.

"Economic Growth through Water Resource Development", Seventh Annual Conference of the American Water Resources Association, Washington, DC, 1971.

"Managing Hawaii's Coastal Zone: Program, Problems, and Prospects", Conference on Coastal Zone and Shoreline Management in the Great Lakes, Traverse City, Michigan, 1971.

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