July 2021

CURRICULUM VITAE

Yacov Tsur

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Education

1984	Ph.D*.	Agricultural & Resource Economics	University of California, Berkeley
1981	M.Sc.	Statistics	University of California, Berkeley
1979	M.Sc.	Agricultural Economics	Hebrew University of Jerusalem
1977	B.Sc.	Agricultural Economics	Hebrew University of Jerusalem

* Ph.D. Thesis: "The Formulation and Estimation of Discrete/Continuous Supply Models under Uncertainty"

Employment

Hebrew University of Jerusalem

2003 - Professor, Department of Environmental Economics and Management

1995-2003 Associate Professor, Dept. of Environmental Economics and Management

University of Minnesota

1995-2004: Adjunct Professor, Department of Applied Economics

1992-1995: Associate Professor, Department of Applied Economics.

1988-1992: Assistant Professor, Department of Applied Economics.

Ben Gurion University of the Negev

1984-1988: Lecturer, the J. Blaustein Institute for Desert Research and Department of Economics

Consulting

Israel Water Authority:

2007 – 2009: Water pricing and allocation; long term maintenance and development of water resources.

World Bank:

1993: Water Shadow Values and inter-sectoral competition for water.

1997: Efficiency and Equity Considerations of Irrigation Water Pricing. Duties included: (i) develop analytical framework and summarize economic principles of irrigation water pricing and their consequences in terms of efficient water use and effects on income distribution in agriculture; (ii) Develop a research proposal on Guidelines for Irrigation Water Pricing. Output of this effort were published in two World Bank Technical Reports and one World Bank Economic Review paper.

1998 - 2001: Guidelines for Pricing Irrigation Water Based on Efficiency, Implementation and Equity Considerations (with Ariel Dinar, Terry Roe and Rachid Doukkali). Duties included: (i) Leading the research team, comprised of seven consultants. (ii) Extending the analytical framework developed above and applying to regions in Morocco, South Africa, Turkey, China and Mexico. (iii) Visit Morocco and Turkey to supervise work of the local consultants. This effort has so far yielded an international conference (Irrigation Water Policies: Micro and Macro Considerations, held in Agadir, Morocco, 15-17 June 2002), two journal articles (in *Water Policy* and in *Environment and Development Economics*) and a book published by Resources For the Future Press (forthcoming).

2002: Served on the organization committee of the World Bank conference on Irrigation Water Policies: Micro and Macro Considerations, held in Agadir, Morocco, 15-17 June 2002.

2002 – 2008: Assessing Agricultural and Water Policy Options with Models of Macro-Micro Linkages: Applications to the Irrigated Agriculture Sector in Three Semi-Arid Countries (with Ariel Dinar, Terry Roe, Xinshen Dia, Rachid Doukkali, Erol Cakmak and Rachid Hassan). This is the first part of a larger research project that builds upon the "Guidelines" project. Its aim is to build a comprehensive methodology for analyzing agricultural policies in general and irrigation policies in particular. The underlying theme is that concentrating on the irrigation (or agricultural) sector only is insufficient for policy assessment and evaluation due to the strong feedback links that tie this sector to the rest of the economy. Instead, an economy-wide, general-equilibrium approach is employed, using recent methodological and computational developments.

2008: Evaluation of economic standards for biofuel production.

2009 - 2014: Member in the Study of Alternatives team for the Red Sea – Dead Sea projects.

Editorship

2000 – 2004: Associate Editor for Water Resources Research

2013 - 2018: Associate Editor for Strategic Behavior and the Environment

2017 - 2021: Co-editor, Resource and Energy Economics.

Publications

Books

The Economics of Water Resources: A Comprehensive Approach (with Ariel Dinar). 2021. Cambridge University Press.

Management of transboundary water resources under scarcity: A multidisciplinary approach (edited with Arial Dinar), 2017, World Scientific.

Pricing Irrigation Water: Principles and Cases from Developing Countries (with Ariel Dinar, Terry L. Roe and Rachid M. Doukkali), 2004, RFF Press: Washington, DC.

Decentralization and Coordination of Water Resource Management (edited with Douglas Parker), 1997, Kluwer Academic Publishers: Boston.

Journal Articles

Resource Management Under Catastrophic Threats (with Amos Zemel), *Annual Review of Resource Economics*, 2021, 13.

Reelection, growth and public debt (with Ohad Raveh), *European Journal of Political Economy*, 2020, 63, 101889

Resource Windfalls and Public Debt: A Political Economy Perspective (with Ohad Raveh), *European Economic Review*, 2020, 123, 103371.

Optima water pricing: Accounting for environmental externalities, *Ecological Economics*, 2020, 170, 106429.

A comprehensive framework for optimal management of water resources (with Amos Zemel), 2018, *Global Water Forum.*

Water policy guidelines: A comprehensive approach (with Amos Zemel), *Water Resources and Economics*, 2018, 23: 1 - 13.

Coping with Multiple Catastrophic Threats (with Amos Zemel), *Environmental and Resource Economics*, 2017, 68(1): 175–196.

Bounding reasonable doubt: implications for plea bargaining, *European Journal of Law and Economics*, 2017, 44: 197-216.

Steady state properties of multi-state economic models (with Amos Zemel), *Canadian Journal of Economics*, 2017, 50: 506-521.

Policy tradeoffs under risk of abrupt climate change (with Amos Zemel), 2016, *Journal of Economic Behavior & Organization*, 132: 46-55.

The management of fragile resources: A long term perspective (with Amos Zemel). *Environmental and Resource Economics*, 2016, 65: 639–655.

Closing the (widening) gap between water resources and water needs in the Jordan Basin region: A long term perspective, *Water Policy*, 2015, 17:538–557.

On the existence of unbounded endogenous economic growth (with Alexander Zaslavski), *Nonlinear Analysis Forum*, 2014, 19: 155–171.

Steady-state properties in a class of dynamic models (with Amos Zemel). *Journal of Economic Dynamics and Control*. 2014. 39: 165–177.

Perennial crops under stochastic water supply (with Eli Feinerman). *Agricultural Economics*. 2014. 45:757- 766.

Preparing for catastrophic climate change (with Cees Withagen), *Journal of Economics*. 2013. 110: 225-239.

Agricultural landscape value and irrigation water policy (with Mara Thiene). *Journal of Agricultural Economics*. 2013. 64: 641–653.

Announcing climate policy: Can the Green Paradox arise without scarcity? (with Sjak Smulders and Amos Zemel). *Journal of Environmental Economics and Management*. 2012. 64: 364-376.

Resource management with stochastic recharge and environmental threats (with Arie Leizarowitz). *Journal of Economic Dynamics & Control*. 2012. 36: 736–753.

Time perspective and climate change policy (with Larry Karp). *Journal of Environmental Economics and Management*. 2011. 62: 1-14.

On the dynamics of competing energy sources (with Amos Zemel). *Automatica.* 2011. 47:1357–1365.

Cost–benefit tests for GHG emissions from biofuel production (with Harry de Gorter). *European Review of Agricultural Economics*. 2010. 37:133–145.

Dynamic-spatial management of coastal aquifers (with Iddo Kan and Arie Leizarowitz). *Optimal Control Applications and Methods.* 2010. 31:29-41.

Endogenous discounting and climate policy (with Amos Zemel). *Environmental and Resource Economics*. 2009. 44:507-520.

On the economics of water allocation and pricing. *Annual Reviews of Resource Economics*. 2009. 1:513-35.

Irrigation production functions with water-capital substitution (with Uri Shani, Amos Zemel and David Zilberman). *Agricultural Economics*. 2009. 40:55-66.

The amenity value of agricultural landscape and rural-urban land allocation (with Aliza Fleischer). *Journal of Agricultural Economics*. 2009. 60:132–153

Regulating Environmental Threats (with Amos Zemel). *Environmental and Resource Economics*. 2008. 39:297-310.

A General Equilibrium Analysis of Conjunctive Ground and Surface Water Use with an Application to Morocco (with Xinshen Diao, Ariel Dinar and Terry Roe). *Agricultural Economics*. 2008. 38:117-135.

Towards Endogenous Recombinant Growth (with Amos Zemel). *Journal of Economic Dynamics & Control*. 2007. 31: 3459-3477.

On the Dynamics of Knowledge-Based Economic Growth (with Amos Zemel). *Journal of Optimization Theory and Applications*. 2007. 135:101-115.

Bio-Economic Resource Management under Threats of Environmental Catastrophes (with Amos Zemel). *Ecological Research*. 2007. 22:431-438.

The Stabilization Value of Groundwater and Conjunctive Water Management under Uncertainty (with Masahiko Gemma). *Review of Agricultural Economics*. 2007. 29:540-548.

Welfare Measurement under Threats of Environmental Catastrophes (with Amos Zemel). *Journal of Environmental Economics and Management*. 2006. 52:421-429.

Scarcity, Growth and R&D (with Amos Zemel). *Journal of Environmental Economics and Management*. 2005. 49: 484-499.

Feedback Links Between Economy-wide and Farm Level Policies: With Application to Irrigation Water Management in Morocco (with Xihsnen Dia, Ariel Dinar and Terry Roe). *Journal of Policy Modeling*. 2005. 27:905-928.

Economic Aspects of Irrigation Water Pricing. *Canadian Water Resources Journal*. 2005. 30(1):31-46.

Irrigation Water Pricing (introduction to a Special Issue), 2004. *Water Resources Research*. 40(WO7SO1): 1-3.

Irrigation Water Pricing: Policy Implications Based on International Comparison (with Ariel Dinar, Rachid Doukkali and Terry Roe). *Environment and Development Economics*. 2004. 9:735-755.

Optimal Dynamic Irrigation Schemes (with Uri Shani and Amos Zemel). *Optimal Control Applications and Methods*. 2004. 25:91-106.

Endangered Aquifers: Groundwater Management under Threats of Catastrophic Events (with Amos Zemel). *Water Resources Research*. 2004. 40 (W06S20): 1-10.

Measuring the Recreational Benefit of Open Space (with A. Fleischer). *Journal of Agricultural Economics*. 2003. 54:269-283.

Optimal Transition to Backstop Substitutes for Nonrenewable Resources (with Amos Zemel). 2003. *Journal of Economic Dynamics & Control*. 27: 551-572.

The Regulation of Environmental Innovations (with Amos Zemel). 2002. *Journal of Environmental Economics and Management*. 44: 242-260.

Pricing and Allocation of Irrigation Water: A Review of Theory and Practice (with R. C. Johansson., T. L. Roe, R. M. Doukkali and A. Dinar), 2002. *Water Policy*. 4(2): 173-199.

The Infinite Horizon Dynamic Optimization Problem Revisited: A Simple Method to Determine Equilibrium States (with Amos Zemel). 2001. *European Journal of Operational Research*. 131: 482-490.

R&D Policies for Desalination Technologies (with Amos Zemel). 2000. *Agricultural Economics*. 24: 73-85.

Measuring the Recreational Value of Agricultural Landscape (with Aliza Fleischer). 2000. *European Review of Agricultural Economics*. 27(3): 385-398.

Long-term Perspective on the Development of Solar Energy (with Amos Zemel). 2000. *Solar Energy*. 68(5): 379-392.

Pollution Control in an Uncertain Environment (with Amos Zemel). 1998. *Journal of Economic Dynamics & Control*, 22(6), 967-975.

Count-data regression models of the time to adopt new technologies (with Bruce McWilliams, Eithan Hochman and David Zilberman). 1998. *Applied Economics Letters*. 5. 369-373.

The Relative Efficiency and Implementation Costs of Alternative Methods for Pricing Irrigation Water (with Ariel Dinar). 1997. *The World Bank Economic Review*. 11: 243-262.

Asymmetric Information and the Pricing of Natural Resources: The Case of Unmetered Water (with Rodney Smith). 1997. *Land Economics*. 73: 392-403.

Accounting for Global Warming Risks: Resource Management Under Environmental Uncertainty (with Amos Zemel). 1996. *Journal of Economic Dynamics & Control*. 20: 1289-1305.

Uncertainty and Irreversibility in Groundwater Resource Management (with Amos Zemel). 1995. *Journal of Environmental Economics and Management*. 29: 149-161.

Efficiency and Equity Considerations in Pricing and Allocating Irrigation Water (with Ariel Dinar), 1995, Policy Research Working Paper 1460, The World Bank.

Endangered Species and Natural Resource Exploitation: Extinction vs. Coexistence (with Amos Zemel). 1994. *Natural Resource Modeling*. 8: 389-413.

On a Simple Estimation Procedure for Censored Regression Models with Known Error Distribution (with Leo Breiman and Amos Zemel). 1993. *The Annals of Statistics*. 21: 1711-1720.

A Simple Procedure to Evaluate Ex-Ante Producer Welfare Under Price Uncertainty. 1993. *American Journal of Agricultural Economics*. 75: 44-51.

Stochastic Energy Demand and the Stabilization Value of Energy Storage (with Amos Zemel). 1992. *Natural Resource Modeling*. 6: 435-447.

The Buffer Value of Groundwater with Stochastic Surface Water Supplies (with Theodore Graham-Tomasi). 1991. *Journal of Environmental Economics and Management*. 21: 201-224.

Appeared also as a book chapter in Grafton R. Q. (ed), 2009, Economics Of Water Resources, Edward Elgar.

Explaining Policy Bias in Agriculture: the Calculus of Support Maximizing Politicians (with Harry de Gorter). 1991. *American Journal of Agricultural Economics*. 73: 1244-1254.

Dynamic Modelling of Innovation Process Adoption with Risk Aversion and Learning (with Menachem Sternberg and Eithan Hochman). 1990. *Oxford Economic Papers*. 42: 336-355.

The Stabilization Value of Groundwater when Surface Water Supplies are Uncertain: The Implications for Groundwater Development. 1990. *Water Resources Research*. 26: 811-818.

On Testing for Revealed Preference Conditions. 1989. *Economics Letters*. 31: 359-362.

Fossil Groundwater as a Basis for Arid Zone Development? An Economic Inquiry (with Hokyoun Park and Arie Issar). 1989. *International Journal of Water Resources Development*. 5:191-201.

Appeared also as a book chapter in R. Maria Saleth (ed.), 2002, Water Resources and Economic Development, Edward Elgar: Northampton.

Cooperative Labor Allocation Under Uncertainty (with Claudia Parliament and David Zilberman). 1989. *Journal of Comparative Economics*. 13: 539-552.

Optimizing Agriculture Management of a Single Species Fish Population (with Hovav Talpaz). 1982. *Agricultural System*. 9: 127-142.

Book Chapters

Closing the gap between water needs and renewable water supplies: Global perspective, local lessons. 2021. In H. de Gorter, J. McCluskey, J. Swinnen and D. Zilberman (Eds.) *Modern Agricultural and Resource Economics and Policy: Essays in Honor of Gordon C. Rausser*. Springer.

Closing the (Widening) Gap Between Natural water Resources and Water Needs in the Jordan River Basin: A Long-Term Perspective. 2017. In A. Dinar and Y. Tsur (Eds.) *Management of Transboundary Water Resources under Scarcity*. World Scientific.

Reclaiming the Dead Sea: Alternatives for action (with Abdallah I.H. Malkawi). 2015. In R. F. Hüttl, O. Bens, C. Bismuth, S. Hoechstetter (Eds.) *Society - Water - Technology: A Critical Appraisal of Major Water Engineering Projects*. Springer Open. 205 - 225.

Water Scarcity and Water Institutions (with Ariel Dinar). 2015. In K. Burnett, R. Howitt, J. A. Roumasset and C. A. Wada (Eds.) *The Routledge Handbook of Water Economics and Institutions*. Routledge. 218 - 235.

Conjunctive management of water resources in agriculture. 2015. In Dinar, A. and K. Schwabe (Eds.) *Handbook of Water Economics*. Cheltenham: Edward Elgar Publishing: 388 – 406.

Uncertain climate policy and the Green Paradox (with S. Smulders and A. Zemel). 2014. In: E. Moser, W. Semmler, G. Tragler and V.M. Veliov (Eds.) *Dynamic Optimization in Environmental Economics*, Springer-Verlag, Berlin, Heidelberg.

Dynamic and stochastic analysis of environmental and natural resources (with Amos Zemel), 2014, in M.M. Fischer and P. Nijkamp (Eds.) *Handbook of Regional Science*, Springer, Berlin.

Red Sea–Dead Sea Water Conveyance Study Program: Study of Alternatives (with J. Anthony Allan and Abdallah I. H. Malkawi), 2014

Resource Exploitation, Biodiversity Loss and Ecological Events (with Amos Zemel), 2007, in A. Kontoleon, U. Pascual and T. Swanson (Eds.) *Biodiversity Economics, Principles, Methods and Applications*, pp. 115 – 130, Cambridge University Press: Cambridge UK.

Characterizing Dynamic Irrigation Policies via Green's Theorem (with Uri Shani and Amos Zemel), 2005, in C. Deissenberg and R. Hartl (Eds.) *Optimal Control and Dynamic Games*, pp.105-117, Springer: New York.

Water Regulation via Pricing: The Role of Implementation Costs and Asymmetric Information, 2000, in Ariel Dinar (Ed.) *The Political Economy of Water Pricing Reforms*, Oxford University Press.

Trans-boundary Water Projects and Political Uncertainty (with Amos Zemel), 1997, in R.E. Just and S. Netaniyau (Eds) "*Conflict and Cooperation on Trans-Boundary Water Resources*, Kluwer Academic Publishers: Boston.

On Event Uncertainty and Natural Resource Management (with Amos Zemel), 1997, in D. Parker and Y. Tsur (Eds) *Decentralization and Coordination of Water Resource Management*, Kluwer Academic Publishers: Boston.

The Economics of Conjunctive Ground and Surface Water Irrigation Systems: Basic Principles and Empirical Evidence from Southern California, 1997, in D. Parker and Y. Tsur (Eds) *Decentralization and Coordination of Water Resource Management*, Kluwer Academic Publishers: Boston, 339-362.

Economic mechanism for managing water resources: pricing, permits and markets (with William K. Easter and Nir Becker), 1997, in Asit K. Biswas (Eed.) *Water Resources: Environmental Planning, Management, and Development*, McGraw-Hill: New York.

The Design of Institutional Arrangements for Water Allocation (with William K. Easter), 1995, in Ariel Dinar and Edna T. Loehman (Eds.) *Water Quantity/Quality Management and Conflicts and Resolution*, Praeger, Westport, CT: 107-118.

Managing Drainage Problems in a Conjunctive Ground and Surface Water System, 1991, in A. Dinar and D. Zilberman (Eds.), *The Economics and Management of Water and Drainage in Agriculture*, Kluwer Academic Publishers, Boston.

The Political Economy of Agricultural Policy and Trade (with Harry de Gorter), 1990, in C.A. Carter, A.F. McCalla and J.A. Sharples, (Eds.), *Imperfect Competition and Political Economy*, Westview Press.

The Buffer Role of Groundwater when Supply of Surface Water is Uncertain (with Arie Issar), 1988, in E. Custadio and A. Gurginia (Eds.), *Groundwater Economics*, 373-379, Elsevier, Amsterdam.

Economic Aspects of the Management of Algal Production (with Eithan Hochman) 1986, in A. Richmond (Ed.) *Handbook of Microalgal Mass Culture*, CRC press.

Selected Conference Participation

Optimal water pricing: Accounting for environmental externalities, Presented at the 25th EAERE annual conference, Berlin (online), 24-26 June, 2020.

Resource management under catastrophic threats, Roundtable moderator at the international conference on Natural resource management under catastrophic threats, 12-13 January, 2020, Rehovot, Israel.

Water Economics guidelines. Presented at the Festschrift in Honor of Gordon C. Rausser. 24-25 October 2019. UC Berkeley, USA.

Closing the widening gap between water needs and renewable water supplies: Global perspective and local lessons. Presented at the 20th Global Conference on Environmental Taxation, 25 – 28 September, 2019, Limassol, Cyprus.

Closing the widening gap between water needs and renewable water resources, presented at the "Water Futures" conference, June 10-11, 2019, Padova, Italy.

Environmental policy under catastrophic threats, presented at the 3rd Workshop in Economics of Energy, Environment and Climate, April 6 - 7, 2019, Peking University, Beijing, China

Resource windfall and public debt: the role of political myopia, presented at the World Congress of Environmental and Resource Economics, Gothenburg Sweden, 25-29 June 2018.

Water policy guidelines, Presented at the 3rd International Workshop on Agriculture and Economic Development in Memory of Prof. Yair Mundlak, Rehovot, 21-22 May, 2018

Water policy guidelines: A comprehensive approach, Presented at EAERE 23rd Annual Conference, Athens, Greece, 28 June - 1 July, 2017.

The devil's many faces: Environmental policy under catastrophic threats, Presented at "Agriculture and Economic Development," The 2nd International Workshop in Memory of Yair Mundlak, Rehovot, Israel, May 25, 2017.

Integrated management of water resources in the Jordan River Basin: A long-term perspective. Presented in "Water Resources Management." Oviedo, Spain, 28 - 29 June 2016.

Coping with multiple catastrophic threats. Presented in "Combating Climate Change. Lessons from Macroeconomics, Political Economy, and Public Finance." Tinbergen Institute, Amsterdam, The Netherland, 21 – 22 April, 2016.

Closing the water gap: Israel's experience. Presented in "Water Pricing for a Dry Future: Policy Ideas from Abroad and their Relevance to California." UC Center, Sacramento CA, February 2-3, 2016

Economic aspects of 2nd gene.ration biofuel production (with Yitzhak Hadar and Omri Hasson). "Israel-Canada workshop on advanced biofuels". Rehovot, Israel, 8 – 9 November 2015.

Joint management of water resources in the Jordan River Basin. Presented at the UK-Israel-MENA Regional Water Meeting. University of Oxford, UK. 31 August – 2 September 2015.

Policy tradeoffs under risk of abrupt climate change (with Amos Zemel). Presented at the workshop on "Thresholds, tipping points & random events in dynamic economic systems," Howard H. Baker Jr. Center for Public Policy, University of Tennessee, Knoxville, USA. 27 – 28 July, 2015.

Closing the (widening) gap between water needs and water resources in the Jordan River Basin. Presented at the workshop "Management of transboundary water resources under scarcity: Perspectives on agriculture and food security," June 22- 25, 2015. Rehovot, Israel.

The management of fragile resources: A long term perspective. Presented at the 13th Viennese Workshop on Optimal Control and Dynamic Games, Vienna, Austria. 13 – 16 May, 2015.

Water Resources in the Jordan Basin Region. Presented at the 11th Annual Meeting of the International Water Resource Economics Consortium (IWREC): "Efficiency and Water Conservation: methodologies and case studies," The World Bank, Washington, DC, September 7-9, 2014.

On the economics of fragile natural resources. Presented at the workshop "The Economics of Complex Systems," at the Royal Swedish Academy of Sciences, Stockholm, Sweden. April 28-29, 2014.

Closing the (widening) gap between water resources and water needs in the Jordan Basin region: A long term perspective. Presented at the workshop on The Red Sea – Dead Sea Water Conveyance Project: An Opportunity for Regional Cooperation and Improved Water Management in the Jordan River Basin. Berlin-Brandenburg Academy of Science. Potsdam, Germany. 2-3 December, 2013.

Steady-state properties in a class of dynamic models with applications to natural resource management (with Amos Zemel). Presented at the Annual Meeting of the American Association of Environmental and Resource Economics, June 6-10, 2013, Banff, Canada.

Dynamic regulation of nonpoint source pollution when the number of emitters is large (with Harry de Gorter). Presented at the annual meeting of the European Association of Environmental and Resource Economics, June 26 – 29, 2013, Toulouse, France.

Preparing for catastrophic climate change, USJI, Washington DC, February 25, 2013.

Natural resource management under uncertainty. Variational and Optimal Control Problems on Unbounded Domains, 9 – 12 January, 2012. Technion, Israel Institute of Technology (in Memory of Professor Arie Leizarowitz).

Innovations in water resource management, Global Economic Symposium, Kiel Institute for the World Economy, Kiel, Germany, 4 – 6 October, 2011.

Resource management in a stochastic and fragile environment. Sustainable growth, technology and the environment, Louvain-la-Neuve, Belgium, 19 – 20 May, 2011.

Regulating unobserved emissions (with Harry de Gorter), "Climate Change Policy in the U.S. and Japan," USJI, Washington DC, 11 February, 2011.

Uncertain climate policy and the Green Paradox (with Sjak Smulders and Amos Zemel), Fourth World Congress of Environmental and Resource Economists, June 28 to July 2, 2010, Montreal, Canada.

Announcing climate policy: Can the Green Paradox arise without scarcity? Fourth World Congress of Environmental and Resource Economists, June 28 to July 2, 2010, Montreal, Canada.

Resource management in a stochastic and fragile environment (with Arie Leizarowitz), Nature-Investment Interaction, 20-21 June 2010, University of Leicester, UK.

Market Structure and the Penetration of Alternative Energy Technologies (with Amos Zemeo), presented at the 17th annual conference of the European Association of Environmental and Resource Economists (EAERE), Amsterdam, Holland, 25-28 June 2009.

Dynamic-spatial management of coastal aquifers under risk of seawater intrusion (with Iddo Kan and Arie Leizarowitz), presented at the Workshop on the Management of Natural Resources and Dynamic Optimization, May, 30th – 31st, 2008, Girona (Spain).

Endogenous discounting and climate policy (with Amos Zemeo), presented at the 16th annual conference of the European Association of Environmental and Resource Economists (EAERE), Gothenburg, Sweden, 25-28 June 2008.

The Stabilization Value of Groundwater and Conjunctive Water Management under Uncertainty (with Masahiko Gemma), ASSA annual meeting, Chicago, Jan 5-7, 2007.

Regulating Environmental Threats (with Amos Zemel), 3rd World Congress of Environmental and Resource Economists, Kyoto (Japan), 3-7 July 2006.

Welfare Measurement Under Threats of Environmental Catastrophes (with Amos Zemel), 2nd Monteverita Conference on Sustainable Resource Use and Economic Dynamics, June 2006, Ascona Switzerland.

Resource Exploitation, Biodiversity and Ecological Events (with Amos Zemel), 6th Annual Bio-Econ conference on the Analysis of Biology and Biodiversity, Kings College, Cambridge, 2-3 September, 2004.

Economic Aspects of Irrigation Water Pricing, Policy Research Initiative's symposium on Economic Instruments in support of Integrated Water Resources Management in Canada: Potential, Limits and Barriers Ottawa, June 14 - 15, 2004

Knowledge spillover, learning incentives and economic growth (with Amos Zemel), EAERE 13th annual conference, Budapest Hungary, June 25-28, 2004.

Endangered aquifers: Groundwater management under threats of catastrophic events (with Amos Zemel), SURED conference, Ascona Switzerland, June 7-10, 2004.

Knowledge Spillover, Learning Incentives and Economic Growth (with Amos Zemel), 13th Annual EAERE conference, Budapest, Hungary, 25-28 June, 2004.

Scarcity, Growth and R&D (with Amos Zemel) The 2nd World Congress of Resource and Environmental Economists, June 24-27, 2002, Monterey, CA.

Irrigation Water Management: Micro and Macro Considerations, June 15-17, 2002, Agadir, Morocco (sponsored by the World Bank, IFPRI, The International Water and Resource Economic Consortium and other international organizations).

Growth, Scarcity and R&D, presented at the World Congress of Resource and Environmental Economists, June 24-27, 2002, Monterey, CA (with Amos Zemel).

Irrigation Water Pricing in Practice: To be presented at the International Conference on Irrigation Water Management: Micro and Macro Considerations, June 15-17, 2002, Agadir, Morocco (with Ariel Dinar)

The regulation of environmental innovations, The 11th annual meeting of the European Association of Environmental and Resource Economics, Southampton, UK, 2001 (With Amos Zemel).

Irrigation Management in a Dynamic Soil-Water-Yield System, 7th conference of the International Water and Resource Economic Consortium, June 3-5, 2001, Girona, Spain (with Uri Shani and Amos Zemel).

7th conference of the International Water and Resource Economic Consortium, June 3-5, 2001, Girona, Spain

Optimal Transition to Backstop Substitutes for Nonrenewable Resources, The 8th World Congress of the Econometric Society, August 11-16, 2000, Seattle USA (with Amos Zemel)

Sustainable Water Management and R&D Policies for Desalination Technologies, The 10th annual meeting of the European Association of Environmental and Resource Economics, June 29-July2, 2000, Rethymno, Crete, Greece (with Amos Zemel)

Measuring the Economic Value of Agricultural Landscape, presented at the Annual Meetings of the American Agricultural Economics Association, August 5-10, 1999, Nashville, Tennessee, USA (with Aliza Fleischer).

R&D Policies for Desalination Technologies, presented at the 6th meeting of the International Water and Resource Economics Consortium, June 29 - July 2, 1999, Waikoloa, Hawaii, USA.

Global Energy Tradeoffs and the Optimal Development of Solar Technologies, the ISES Solar World Congress, July 4-9 1999, Jerusalem, Israel (with Amos Zemel).

Water Management through Pricing, presented at the British-Israeli Water Management and Treatment Workshop, 12-14 April, 1999, London, UK.

Water Regulation via Pricing: The Role of Implementation Costs and Asymmetric Information," presented at the Workshop on the Political Economy of Water Pricing Implementation, The World Bank, November 3-5, 1998, Washington DC.

On resource management under uncertainty: The case of pollution control." The 8th annual meeting of the European Association of Environmental and Resource Economics, Tilburg, the Netherlands, July 1997 (with Amos Zemel).

Trans-Boundary Water Projects and Political Uncertainty," presented at the 5th Meeting of the International Water and Resource Economics Consortium, Annapolis, Maryland, April 13-16, 1997 (with Amos Zemel)

On the Relative Efficiency of Water Pricing Mechanisms and their Implementation, presented at the AARES 40th Annual Conference, The University of Melbourne, 11-16 February, 1996.

Resource exploitation under Environmental uncertainty, Proc. 1st Trabzon Int. Energy and Environment Symp. TIEES-96, KTU, Trabzon, Turkey, (eds. T. Ayhan et al. pp. 1035-1041), 1996 (with Amos Zemel)

Natural Resource Management Under Uncertainty, the 8th G.I.F conference on Environmental Sciences, Leipzig, Germany, July 3-7, 1995.

Uncertainty and Irreversibility in Natural Resource Management, the International conference on Modern Agricultural and the Environment, Rehovot, October 2-6, 1994.

Groundwater Management Under Uncertainty, Coordination and decentralization in water resources management, the 3rd conference of the International Water and Resource Economic Consortium, Rehovot, October 3-6, 1994 (with Amos Zemel)

On event uncertainty and renewable resource management, Fourth Minnesota/Padova Conference on Food, Agriculture and the Environment, 1994, MN, USA (with Amos Zemel).

Israel's Water Economy: Resources, Institutions and Allocation Mechanisms, The 2nd Water and Resource Economics Consortium conference, Berkeley, CA, October, 1993.

Stock Uncertainty in Renewable Resource Theory: The Exploitation of Aquifers of Unknown Size," presented at the third University of Minnesota and Padova University Conference on Agricultural Policy and the Environment, Padova Italy, June 21-26, 1992.

Water shadow values and institutional arrangements for allocating water among competing sectors," presented at the conference on Water Quantity/Quality Disputes and Their Resolution, Washington, D.C., May, 2-3, 1992 (with William K. Easter)

Groundwater Contamination and the Management of a Conjunctive Ground and Surface Water System, presented at the 2nd annual meeting of the University of Minnesota and Padova University, Lake Itasca, Minnesota, September 23-28, 1990.

Iterative Least Squares Estimation of Censored Regression Models with Unknown Error Distributions," presented at the 6th World Congress of the Econometric Society, Barcelona, Spain, August 22-28, 1990 (with Amos Zemel)

The Buffer Value of Groundwater with Stochastic Surface Water Supply: the Case of a Confined Aquifer," presented at the annual meetings of the American Agricultural Economics Association, Vancouver, Canada, August 4-8, 1990 (Ted Tomasi)

The Political Economy of Price Policy Preferences in European Agriculture," the VIth European Congress of Agricultural Economics, The Hague, The Netherlands, September 3-7, 1990 (with de Gorter, Harry and Jo Swinnen)

Selected research grants

Environmental, technological and economic aspects of 2nd generation biofuel production from biomass (with Yitzhak Hadar). 300,000 NIS. 2014 – 2017. Israel Ministry of the Environment.

Dynamic Intraseasonal Irrigation Management under Water Scarcity, Water Quality, Irrigation Technology and Environmental Constraints, $200,000, BARD Project IS-3397-03, 2003-2006 (with David Zilberman, Uri Shani, Amos Zemel and David Sunding)

Optimal Management of Irrigation with Saline and Recycled Water, $34,000, 2001-2002, Ernest Bergman Foundation and The Ring Family Foundation Fund (with Uri Shani).

Quantity and Quality (salinity) Water Management in the Israeli Negev Desert, $20,000, 2000-2001, The Bruno Godberg Endowment Fund (with Uri Shani).

The Economics of Closed-System Aquaculture, Israel Ministry of Agriculture, 240,000 NIS, 1998-2001 (with Noam Mozes).

Economic Valuation of Open Spaces in Israel, Keren Kayemet Le'Israel, 60,000 NIS, 1998-1999 (With Aliza Fleischer).

Measuring the economic value of agricultural landscape, Israel Ministry of Agriculture, 70,000 NIS, 1998 (with Aliza Fleischer).

Managing Conjunctive Ground and Surface water Irrigation Systems Under Uncertainty; GIFRID, DM 40,000, 1996-1998 (with Uri Shani).

The Economic Value of Park Goren, Keren Kayemet Le'Israel, 60,000 NIS, 1996 (with Aliza Fleisher).

Economical, Hydrological and Environmental Aspects of Inter- and Intra-regional Allocation of Water, Israel Ministry of Agriculture, Chief Scientist's Office, 90,000 NIS, 1995-96 (with Eithan Hochman and Ronit Nativ).

Managing Conjunctive Ground and Surface Water Irrigation Systems Under Uncertainty, GIFRID, DM 58,000, 1993-1995 (with Uri Shani).

Economic Feasibility of Flood Water Utilization in the Negev, Arava R&D, $10,000, 1993-1994

Optimal Management of Renewable Resources Under Uncertainty, The Research Committee of The Hebrew University of Jerusalem, $10,000, 1993.

The Time to Adopt: Using Count-data Regression Analysis to Model Technology Adoption Decisions, USDA, Grant No. USDA/43-3 AEM-2-80100, $25000, 1992-1993.

Water Institutions: An Economic Inquiry, The Graduate School of The University of Minnesota, $10,200, 1992.

Adoption of Multicomponent Technologies: Computers in USA, Irrigation in Israel. BARD Project US-1161-86R, $150,000, 1987-1990 (with Zilberman, David, Eithan Hochman and Richard Just).

Techno-Economic Evaluation of Algal Biomass Energy Production and Conversion Systems, Annex VII to the agreement between the USA Department of Energy and the Israeli Ministry of Energy and Infrastructure, $6000, 1986.

Productivity, Technology Adoption and Welfare in Agriculture Production Process, Minnesota Agricultural Experiment Station, $13,000 per year, 1988-1994.

The Adoption and Spread of Drip Irrigation in Israel, BARD feasibility study F-0885-85, $15,000, 1985.

Service

2009 - : Head, Department of Agricultural Economics and Management, the Hebrew University.

2009 - : Board member (Vaad Menahel), Tel Hai college.

2007 -2009: Head of the Computer Committee, Faculty of Agricultural, Food and Environmental Sciences, the Hebrew University.

2004 - : Member of the Academic Council, Tel Hai College.

2001: Member of the Israel Science Ministry's committee for the review of regional R&D institutions in Israel.

2000 – 2005: Head of the Hotel Management, Food and Tourism Program.

1997 – 2001: Director, the Center for Agricultural Economic Research (A Research Center near the Department of Agricultural Economics and Management).

1997 – 2000: Head of the recreational center committee at the Faculty of Agriculture, The Hebrew University of Jerusalem.

1999: Review committee for the selection of excellence centers, Israel's National Science Foundation.

1995-1999: Member of the Teaching committee of the Faculty of Agricultural, Food and Environmntal Sciences, The Hebrew University of Jerusalem,

G.I.S committee (a university-wide committee), The Hebrew University of Jerusalem, 1993-1995

Teaching

Hebrew University of Jerusalem (1993-present)
Natural Resource Economics (M.Sc. & Ph.D.)
Environmenal Economics (B.Sc.)
Econometrics A&B (M.Sc. & Ph.D.)
Statistical Methods in Economics (B.Sc.)
Linear Programming (B.Sc.)

University of Minnesota (1988-present)
AgEc 8264 Resource Economics (Ph.D.)
AgEc 8210 Applied Econometrics (Ph.D.)
AgEc 5030 Methods of Economic Data Analysis (M.S.)

Warsaw School of Economics (1992)
Econometrics A (M.S.)

Ben-Gurion University of the Negev (1984-1988)
Linear programming (B.A.)
Econometrics A&B (M.S.)

University of California, Berkeley (1983)
Linear Programming (B.A.)

Student advising

Ph.D. Students: Main advisor for 7 students; Member in more than 25 committees

Masters Students*:* Main adviser for 10 students; Member in more than 20 committees.