

October 2018

## CV – Nir Becker

### A. Personal Details

- Nir Becker
- Date of birth: 31/12/1959
- Country of birth: Israel
- Citizenship: Israeli
- Family status: Married + 2
- Work: Department of Economics and Management, Tel-Hai College, Upper Galilee, 12210 Israel.
- Office Phone: +972-4-8181701.
- E-mail address: [nbecker@telhai.ac.il](mailto:nbecker@telhai.ac.il)

### B. Higher Education

From-To	Institute	Area of Specialty	Degree
1981 – 1984	Hebrew Univ.	Agricultural economics and Management	B.Sc.
1984 – 1986	Hebrew Univ.	Agricultural economics and Management	M.Sc. <b>Name of advisor:</b> Prof. David Bigman
1986 – 1990	University of Minnesota	Applied Economics	Ph.D. <b>Name of advisor:</b> Prof. K.W. Easter

### C. Academic Appointments and Academic Administrative Positions in Institutions of Higher Education

#### Academic positions

From-To	Institute	Research Area	Title
1990 – 1997	Haifa University	Environmental economics	Lecturer

1997 – 2006	Tel-Hai College	Environmental economics	Senior Lecturer
2007 – 2013	Tel-Hai College	Environmental Economics	Associate Professor
2013 -	Tel-Hai College	Environmental Economics	Professor

**Academic Administrative Positions:**

<b>From-To</b>	<b>Institute</b>	<b>Position</b>
2002 -2013	Fellowship committee, Tel-Hai College	Member
2000 - 2009	Tel-Hai College	Head, Department of Economics and Management
2010 – 2013	Tel-Hai College	Deputy Dean, Faculty of Humanities and social sciences
2010-2012	Tel-Hai College	In charge of the academic conferences
2013 -	Tel-Hai College	Dean, Faculty of Humanities and social sciences

**D. Teaching**

Describe teaching experience thoroughly, in chronological order (from old to new):

- The University of Haifa and Tel-Hai College: Operations Research, Natural and Environmental economics, Cost-Benefit Analysis, Managerial Economics and International Trade.
- Courses in Environmental Economics were also taught at the Hebrew University and Ben-Gurion University.
- Main courses taught in the past five years:
  - Managerial Economics - Undergraduate
  - Operation Research – Undergraduate
  - International Economics – Undergraduate
  - Cost Benefit Analysis – Undergraduate
  - Environmental Economics – Undergraduate/Graduate

### E. Supervision of Graduate Students:

Name of Student	Degree, Years Supervised	Thesis Title
Yaron Fisman (With M. Shechter)	M.A., 1999-2001	Dynamic externalities in fertilizer uses.
Yael Choresch (With M. Inbar)	M.A., 2001 - 2003	Cost benefit analysis of feeding stations for vultures
Vered Ben Shlomo (With M. Roman) Tel-Aviv U.	M.A., 1999 - 2003	The Value of Open spaces in Tel-Aviv
Naama Lindman (With I. Yitzhaki)	M.A., 2002 - 2004	Economic Analysis of the Hulla project
Eyal Shani (With O. Ayalon)	M.A., 2002 - 2004	Economic Analysis of the Hiria park project
Hagit Snir-Salinger (With U. Marinov)	M.A., 2002 - 2004	Sustainable development of the Dead Sea basin
Helena Segal (With E. Friedler)	M.A., 2002 - 2004	Cost Benefit Analysis of the Shafdan sludge
Yuval Cohen (With A. Chaim)	M.A., 2003 - 2005	Fish - Birds conflict in the Beit-Shean Valley
Oren Azaria (With M. Inbar)	M.A., 2004 - 2006	Economics of Invasive species.
Sharon Goldzon (With A. Haim)	M.A., 2002 - 2004	Economics of Sea turtle conservation in Marine Reserve Parks.
Vered Ben – Shlomo (With Y. Scnell) Tel-Aviv U.	Ph.D., 2004 - 2009	Urban parks components analysis: Application to Ayalon Park. (9.4)
Meira Segev (With P. Bar) Ben-Gurion U.	Ph.D, 2004 - 2009	Non-Market values of national coasts (9.6)
David Lehrer (With P. Bar) Ben Gurion U.	M.A., 2007 - 2009	A Bio-Economic model of risk assessment due to invasive species.
Chanoch Friedman (With E. Erell) Ben Gurion U.	Ph.D., 2010 - 2013	Cost Benefit Analysis of retrofit investment in green buildings
Hagit Navaro (With M. Inbar)	M.A., 2010 - 2011	Environmental, biological and economic consideration in the case of Thermal disinfection of dates
David Lehrar (With P. Bar) Ben Gurion U.	Ph.D., 2013-	The cost of nature conservation

Irit Manor (With Pua Bar) Ben Gurion U.	M.A. 2011-2013	Biodiversity opportunity cost according to different definitions
Itai Divinski (With Pua Bar) Ben Gurion U.	M.A., 2013-2015	Tradeoffs between biodiversity and other assets in 3 nature reserves
Marina Pogorelov (With Tamar Dayan from Tel-Aviv U.)	M.A. 2015-2017	Cost Benefit Analysis of the feeding program in the Agamon.
Yoni Yaacobi (With Avital Gasit from Tel-Aviv U.)	M.A. 2016-	Synchronization of local heritage and water resources: Is there any value added? Application to the Gold park in Kiryat Shemona.
Asael Greenfeld (With Janet Boardman from Curtin U., Australia)	Ph.D. 2016-	Economic analysis of Hydroponics

#### F. Research Grants

From-To	Funding Agency	Title	Amount
1991 - 1993	European Commission (EC) (With N. Zeitouni)	Water trade in the middle east	50K Euro
1993 – 1994	Water commission	Water trade In Israel	100K NIS
1992 – 1994	Ministry of Infrastructure (With M. Schechter)	Air Basin management	150K NIS
1998 - 1999	Ministry of the environment	The value of statistical life	30K NIS
1997	Ministry of the environment	The value of Noise in Israel	20K NIS
1997	European commission	Sustainable use of groundwater	30K NIS
1999 - 2000	Israeli Electrical company (with Vered Ben Shlomo).	Survey of externalities in electricity production	10K

2001 – 2002	Ministry of the environment (With D. Lavee)	Voluntary agreements	25K NIS
2001 – 2005	Glowa Jordan river (Part of a scientific team with I. Litaor coordinating)	Population and hydropolitics dynamics in the Jordan river basin.	50K Euro
2002 – 2004	Ministry of the environment (With M. Inbar)	The economics of bird watching	125K NIS
2003 - 2004	The Jerusalem Institute, the Ministry of the Environment and FOEME ME.	Sustainable future of the Dead Sea basin (A governmental commission)	70K NIS
2003	The Jerusalem Institute	Green Accounting: Theory and Application to Israel	20K NIS
2003 - 2004	The EC – RAC/SPA	Sustainable use of Marine Reserves (With R. Ortal, B. Galili and M. Goren)	25K NIS
2003	Ministry of the Environment	Cost Benefit Analysis of Accelerated car retirement program (With D. Lavee)	20K NIS
2003 – 2005	Municipality of Kiryat Shemona	Action plan for the “ <b>Clean City project</b> ” (With Snait Tamir).	30K NIS.
2004	Ministry of the Environment (With D. Lavee and Itai Freeman)	Sustainable development in the Israeli government: An implementation plan.	20K NIS
2004	Friend of the Earth	Environmental costs of desalinization (With Doron Lavee).	11K NIS
2005-2007	KKL	Economic value of Forests in Israel	90K NIS
2004 – 2007	EC	Optima: An optimization module for integrated water management in Mediterranean countries	60K NIS
2005 - 2007	BMBF, Israeli ministry of science	Kidron river – Wadi Nar: The benefits of a cooperated management approach (With Eran Feitelson and Richard Laster)	150K NIS
2005	Adam Teva Vadin	Cost benefit Analysis of Energy conservation	24K NIS

2005	Femise - France	Country profile – Israel: Governance (With J. Kahn)	30K NIS
2007	Nature and parks protection agency	Cattle – Wolves conflict analysis	80K NIS
2006 – 2008	Glowa Jordan river part II	Cost benefit analysis of waste water re-use	18K Euro
2008	Coalition for public health	Economic cost of morbidity and mortality due to air pollution in Israel	40K NIS
2009	Nature and parks protection agency	The cost of nature protection (With A. Perevolutzki)	80K NIS
2010 - 2012	Ministry of Infrastructures	Cost Benefit Analysis of retrofit investment in green buildings (With E. Erell)	270K NIS
2010-2011	Ministry of Environmental Protection	Implementation of Polluters pays principle by benefit from non-compliance in Israel (With D. Lavee)	75K NIS
2010-2011	Ministry of Environmental Protection	Estimation of Air pollution damages from Industry and Transportation in Israel (With G. Rosental)	90K NIS
2011 - 2013	Ministry of Environmental Protection	Economic incentives in the green buildings industry (With Y. Gaarb, D. Perlmutter and E. Erell)	300K NIS
2011	The Coalition for public health	Risk assessment of different hazardous facilities in the Haifa bay (with V. Ben-Shlomo).	10K NIS
2011	Adam Teva Vadin	External effects of off shore natural gas drilling in the Mediterranean (with V. Ben-Shlomo).	30K NIS
2011	Kison River authority	Non-Market benefits of the Kison River restoration plan (With S. Shamir).	35 NIS
2011-2012	Friends of the Earth Middle East (FOEME)	Economic Benefits of restoring the lower Jordan River	50K
2012	Ministry of the Environment	Economic valuation of land use change in Israel	50K
2013-2014	Ministry of the Environment	Tradeoffs between ecological services and monetary services in LTER's in Israel (with P. Bar)	150K

2013 - 2015	Tel-Hai internal research funds	Cost benefit analysis of healthy aging (With Shirra Hantman and Snait Tamir)	50K
2014 – 2017*	Ministry of the Environment	Creating an environmental economic data set for the ministry	500K
2014 – 2018*	Ministry of Agriculture and rural development	Possible solutions to soil surpluses during mega projects.	750K
2015	Ministry of the Environment	Assessment of the monetary damage due to the oil spill in Evrona	150K
2015	Ministry of the Environment	Estimating a fee on polluted river flow for different water qualities.	
2016	Mifal Hapais	Costs and Benefits of managing open spaces: Application to Ramot Menashe Biosphere reserve	70K NIS
2016-2017	National research institute	Cost Benefit Analysis of active aging	150 NIS
2016-2018	Ministry of the Environment	Estimation of economic cost of air pollution in the Haifa bay area	200 NIS
2017-2018	Ministry of infrastructure	Cost benefit analysis of shadowing	50 NIS

### **G. Awards and Fellowships**

- Dissertation won an honorable mention of the American Association of Agricultural Economics, 1990.
- Herald Jensen Award for the best dissertation in 1990 in the department of Agricultural and Applied Economics in the University of Minnesota.
- John Wiley prize for the best applied article in the Multiple Criterion Decision Analysis area, 1997.

### **H. Active Participation in Conferences (Only from 2001)**

**\* denotes an invited or keynote lecture**

1. \*2001 - Water reform Policy: The Israeli Experience. Key note speech in **Designing Water reforms in Australia**. Melbourne, Australia.
2. 2001 – Economic analysis of air pollution from vehicles in Te Aviv. **Annual meeting of the Israeli Association of Ecology**.
3. 2001 – Dynamic use of water and inter-temporal use of marginal water. With Edna Leohman. **Annual meeting of the Israeli Association of Ecology**.
4. 2003 – Sustainable Management of the Dead Sea Water Resources. **University Council of Water Resources Centers, annual meeting**. Washington, DC, USA.
5. 2004 – Cooperation in a Hydro-Geologic Commons: New Institutions and Pricing to Achieve Sustainability and Security. With Edna Leohman. **International Water Demand Management Conference**. International Water Resources Association special meeting. The Dead Sea, Jordan.
6. \*2004 – Cost Benefit Analysis of the Dead Sea current Water Level Policy. Key note Speech in **The Economics of Sustainable Management and Development of the Dead Sea Basin**. International Conference organized by Friends of the Earth Middle East. Movenpick hotel – Dead Sea – Jordan.
7. 2004 – The Use and Non Use of the Agmon. **University Council of Water Resources Centers, annual meeting**. Portland, OR, USA.
8. 2004 – Groundwater Management in a Hydro-Economic Commons: Application to Israel and the West Bank. With Edna Leohman. **Water for Life in the Middle East**. International Conference organized by Israeli Palestinian Center for Research and Information (IPCRI). Antalya, Turkey.
9. 2004 – A Bio-Economic Valuation of Protecting Vultures. With Yael Choresch, Moshe Inbar and Ofer Bahat. **Sixth Annual Conference on Economics and the Analysis of Biology and Biodiversity**. Cambridge, England.
10. 2005 – Economic Analysis of Cross Boundary River Restoration Plan: The Alexander River Case Study. **University Council of Water Resources Centers, annual meeting**. Portland, ME, USA.
11. 2006 – Wildlife – Human Conflict The Economic perspective. **Cormorant – Fishery Conflict in the Hula Valley**. InterCafe and Natural Protection Agency International Conference. Kfar Blum, Israel.
12. 2006 – A comparative analysis of wastewater reuse as a possible solution to drought crisis. With Doron Lavee. **University Council of Water Resources Centers, annual meeting**. Santa Fe, NM, USA.



13. 2006 – The Economic Value of Coastal Natural Parks. With Meira Segev and Pua Bar. **The Israeli Geographical Society annual meeting.**
14. \*2006 – Cost Benefit Analysis of the Current Dead Sea Water Level Drop. **The Dead Sea annual Conference**, Kibutz Ein Geddy.
15. \*2006 - Conflicts between farmers and Nature. **Water and Agriculture**, Conference organized by the ministry of Agriculture, Kibutz Nir Etzion.
16. \*2007 - Conflicts between farmers and Nature. Invited lecture at the annual conference of the research department at the Nature Protection Agency. The Volkani Institute.
17. \*2007 – Wolves-Rancher's conflict at the Golan height. Invited lecture at the annual conference of Nekudat Hen. Kibutz Tzuva.
18. \*2008 – The economics of energy saving. **Israeli Economic Society. + Chair of the Environmental Economics session.**
19. 2008 - Water conflicts and market solutions in the Middle East. **University Council of Water Resources Centers, annual meeting**. Boise, ID USA.
20. 2009 - Cost effectiveness solutions for pollution reduction. **The European Society for Energy economists**. Vienna, Austria
21. 2009 – Wildlife-Human conflict: The Agmon case study. **Meeting in honor of Israel Levin**. The Hula Reserve.
22. \*2010 – The economics of Ecological tourism. Keynote speech at the Haifa conference for eco-tourism. The University of Haifa.
23. \*2010 – Session chair and organizer: Environmental Economics. **Israeli Ecology and environmental Society** (also deliver of the key lecture in the session).
24. 2010 – Internalization of air pollution in Israel based on optimization. **The European Society for Energy economists**. Vilna, Lithuania.
25. 2010 - The economics of pricing nature reserves. **BioEcon group**, Venice
26. 2011 – The economics of scrapping old appliances. **Society of Sustainable Development**. Dubrovnik, Croatia.
27. \*2011 – Chairman of the Macro session at: **Greening the Economy with Agriculture**. International conference organized by the UN. The Macabia Village.
28. \*2012 – Session chair and organizer: Environmental Economics. **Israeli Economic Society**.
29. \* 2012 – The Social value of Cranes in the Hula Valley. **The Cranes Conference**. Kibutz Kfar Blum (organized by the society for nature protection). Invited Lecture.
30. \* 2013 – Session moderator in **Economic modeling of ecosystems and Bio-invasion**. Organized by the Milken Institute.
31. \* 2013 – The economics of rivers restoration. Invited lecture for the **3<sup>rd</sup> water forum day**. The Technion, Haifa Israel.

32. \*2013- Water conflict in the Middle East. **A general lecture in the Faculty of Agriculture.** Both faculty and students (100 audited).
33. 2013 - CBA of retrofit of residential buildings in Israel. International conference of Sustainable Energy and Environmental Protection. Maribor, Slovenia.
34. \* 2013 – The benefit of Clean air act in Israel. Business and the Environment. Kfar Hamacabia, Israel.
35. \* 2014 – Aesthetic values in municipal gardens. **Landscape annual conference,** Eilat, Israel.
36. 2014 – Private and Social motivations for green building and retrofit actions. In **Sustainable environments** (Workshop organized by the Technion), Tel Aviv, Israel.
37. \* 2014 – Gas and Oil funds: Options for actions. Panel participant in **Environment 2050** (Organized by Globes with hundreds of participants), Tel Aviv, Israel.
38. 2014 - **American association of Water Resources annual conference,** Sparks, NV USA. Integrated water management in Israel.
39. 2014 – Session moderator of “Environmental indicators” in the **Israeli association of Ecology and Environmental Sciences** annual conference, Bar-Ilan University.
40. \*2015 – The Economics of wetland restoration: The case of the Lower Jordan River. Invited lecture at the Berlin-Brandenburg Academy of Science.
41. 2015 – Behavioral factors impact on increased risk of health symptoms for elderly people in Europe (and Israel) – Paper presented at the **annual meeting of the Israeli Economic Society.** Dan hotel, Tel-Aviv.
42. 2015 – Do Ecologists and the public see eye to eye the ecological damages; Application to the sand dunes in Israel – Paper presented at the **annual meeting of the Israeli Ecological and Environmental Science Society** – Hebrew University, Jerusalem.
43. \*2015 - Economics of Renewable energy resources. General invited lecture at the Weizmann institute, Rehovot Israel.
44. \*2016 – Water pricing experience in Israel: Various waters, various neighbors. Invited lecture for a **workshop in the University of California Water Resources Centre, Sacramento, CA.** Feb. 1-3<sup>rd</sup>. Water pricing for a dry future.

45. 2017 – Ramat Hanadiv ecological valuation. In the BioEcon annual conference, Tilburg. Netherlands.
46. 2017 – Cost Benefit Analysis of the Kishon river restoration plan. In the sustainable energy and water annual conference, Dubrovnik, Croatia.
47. \*2018 – World Congress of Environmental Economists, June 25-29<sup>th</sup>. Symposium on water policy.
48. 2018 – Shark tourism: Benefits and costs. Bio-Econ 20<sup>th</sup> conference, Cambridge, UK.

## **I. Publications**

### **1. M.Sc.**

Becker, N. An Economic Analysis of the Drought compensation Scheme. The Hebrew University, Israel. Supervisor: Prof. David Bigman. 1986. (Heb.)

### **2. Ph.D. thesis**

Becker, N. Dynamic Supply from a Common Property Resource. The University of Minnesota, USA. Supervisor: Prof. K.W. Easter. 1990.

### **3. Books**

Becker, N. and Y. Choresh. Economics of Marine Protected Areas (2006). UNEP – MAP. RAC/SPA, Tunis.

### **4. Edited books**

Becker, N. (Ed.). (2013). Water Policy in Israel: Context, Issues and Options. Springer Science & Business Media.

### **5. Articles in refereed journals**

1. Becker, N. and Easter, K. W. (1989). Residential Water Demand in Metro Manila-Discussion. *Water Resources Bulletin* 25(6), 1273-1274.
2. Easter, K. W., & Becker, N. (1989). Inter-basin Water Transfers: An Economic Panacea or a Political Ploy. *Journal of the Minnesota Academy of Science JMNAAC*, 55(1).
3. Becker N. and Easter, K. W. (1992). Dynamic Supply from A Common Property Resource: Water diversions From the Great Lakes. *Natural Resource Modeling*, 4, 343-371.
4. Becker, N., Baron, M. G., & Shechter, M. (1993). Economic instruments for emission abatement under appreciable technological indivisibilities. *Environmental and Resource Economics*, 3(3), 263-284.

5. Schechter M., Zeitouni N. & Becker, N. (1994). Trading in Water: An Illustrative Application to the Middle East. *International Irrigation Review* (Hebrew), 14(2), 12-16.
6. Zeitouni N., Becker, N. & Schechter, M. (1994). Auctions for Water Rights in a Regional Context: The Middle East. *Resource and Energy Economics*, 16 (4), 303 - 320.
7. Becker N., (1994). Public policy and the value of clean air: An alternative approach. *Journal of Environmental Planning and Management*, 37(1), 21-31.
8. Zeitouni N., Becker, N. & Schechter, M. (1994). Markets for Water in the Middle East. *Economic Quarterly* (Hebrew), 3, 400 - 416.
9. Zeitouni, N., Becker, N., & Shechter, M. (1994). Water sharing through trade in markets for water rights: An illustrative application to the Middle East. *Studies in Environmental Science*, 58, 399-412.
10. Becker, N. (1995). The value of institutional change in moving from central planning to a market system: the Israeli experience. *Agricultural Economics*, 21, 11-21.
11. Becker, N., & Easter, K. W. (1995). Water diversions in the great lakes basin analyzed in a game theory framework. *Water resources management*, 9(3), 221-242.
12. Becker, N. (1996). Reallocating water resources in the Middle East through market mechanisms. *International Journal of Water Resources Development*, 12(1), 17-32.
13. Becker, N., & Shechter, M. (1996). Decentralized economic incentives under technological indivisibilities: a cooperative game approach. *Ecological Economics*, 17(1), 9-20.
14. Becker, N., & Easter, K. W. (1997). Water diversion from the Great Lakes: is a cooperative approach possible? *International Journal of Water Resources Development*, 13(1), 53-66.
15. Becker N. and Soloveitchick, D. (1998). Dynamic Multi-objective Optimization of environmental regulations policies. *Journal of Multi-Criteria Decision Analysis*, 7, 3-19.
16. Becker, N., & Easter, K. W. (1998). Conflict and cooperation in utilizing a common property resource. *Natural Resource Modeling*, 11(3), 173-198.
17. Becker, N., & Zeitouni, N. (1998). A market solution for the Israeli-Palestinian water dispute. *Water International*, 23(4), 1-5.
18. Becker, N., & Easter, K. W. (1999). Conflict and cooperation in managing international water resources such as the Great Lakes. *Land Economics*, 233-245.
19. Becker, N. (1999). A comparative analysis of water price support versus drought compensation scheme. *Agricultural Economics*, 21(1), 81-92.

20. Becker, N. I. R., & Lavee, D. (2002). The effect and reform of water pricing: The Israeli experience. *International Journal of Water Resources Development*, 18(2), 353-366.
21. Becker, N., & Lavee, D. (2003). The benefits and costs of noise reduction. *Journal of Environmental Planning and Management*, 46(1), 97-111.
22. Becker, N. (2003). Water Pricing—Its Effects and Proposed Reforms: The Israeli Experience. *International Journal of Public Administration*, 26(3), 247-263.
23. Becker, N., Inbar, M., Bahat, O., Choresh, Y., Ben-Noon, G., & Yaffe, O. (2005). Estimating the economic value of viewing griffon vultures *Gyps fulvus*: A travel cost model study at Gamla Nature Reserve, Israel. *Oryx*, 39(04), 429-43
24. Becker, N., & Katz, D. (2006). Economic valuation of resuscitating the Dead Sea. *Water policy*, 8(4), 351-370.
25. Ayalon, O., Becker, N., & Shani, E. (2006). Economic aspects of the rehabilitation of the Hiriya landfill. *Waste management*, 26(11), 1313-1323.
26. Loehman, E. & Becker, N. (2006). Groundwater management in Hydro-Economic Commons. *Water resources development*, 22(4), 603 - 614. IF=0.881
27. Becker, N., Fishman, Y., & Lavee, D. (2008). Economic evaluation of investment in electricity conservation. *Energy Conversion and Management*, 49(12), 3517-3530.
28. Becker, N., Choresh, Y., Bahat, O., & Inbar, M. (2009). Economic analysis of feeding stations as a means to preserve an endangered species: The case of Griffon Vulture (*Gyps fulvus*) in Israel. *Journal for Nature Conservation*, 17(4), 199-211.
29. Becker, N., & Lavee, D. (2009). Commercial Development and Conservation Value The Case of Rosh Haniqra Marine Reserve in Israel. *Journal of Infrastructure Development*, 1(2), 193-217.
30. Fishman, Y., Becker, N., & Shechter, M. (2009). Treatment versus prevention of Nitrogen fertilizer pollution: An inter-sectoral externality policy model. *Natural resource modeling*, 22(1), 137-171.
31. Becker, N. (2009). A comparative analysis of the pricing systems of nature reserves. *Tourism Economics*, 15(1), 193-213.
32. Lavee, D., & Becker, N. (2009). Cost-benefit analysis of an accelerated vehicle-retirement programme. *Journal of Environmental Planning and Management*, 52(6), 777-795.
33. Becker, N., & Freeman, S. (2009). The economic value of old growth trees in Israel. *Forest Policy and Economics*, 11(8), 608-615.
34. Becker, N., Lavee, D., & Katz, D. (2010). Desalination and alternative water-shortage mitigation options in Israel: a comparative cost analysis. *Journal of Water Resource and Protection*, 2010.

35. Abramson, A., Tal, A., Becker, N., El-Khateeb, N., Asaf, L., Assi, A., & Adar, E. (2010). Stream restoration as a basis for Israeli–Palestinian cooperation: A comparative analysis of two transboundary streams. *Intl. J. River Basin Management*, 8(1), 39-53.
36. Dombrowsky, I., Almog, R., Becker, N., Feitelson, E Klawitter, S., Lindemann, and Mutlak, N. (2010). "How widely applicable is river basin management?" *Environmental Management*, 45(May), 1112-1126.
37. Becker, N., Chores, Y., Bahat, O., & Inbar, M. (2010). Cost benefit analysis of conservation efforts to preserve an endangered species: The Griffon Vulture (*Gyps fulvus*) in Israel. *Journal of bio economics*, 12(1), 55-70.
38. Becker, N. (2010). "Pricing nature reserves: Yes? No? How? The case of Darga nature reserve". *Israeli Economic Review*. 57(4), 356-380. (Hebrew)

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39. Becker, N., Soloveitchik, D., & Olshansky, M. (2011). Incorporating environmental externalities into the capacity expansion planning: an Israeli case study. *Energy Conversion and Management*, 52(7), 2489-2494.
40. Lehrer, D., Becker, N., & Bar, P. (2011). The economic impact of the invasion of *Acacia saligna* in Israel. *International Journal of Sustainable Development & World Ecology*, 18(2), 118-127.
41. Lavee, D., Ritov, M., & Becker, N. (2011). Is desalination the most sustainable alternative for water-shortage mitigation in Israel?. *International Journal of Sustainable Economy*, 3(4), 410-424.
42. Shelem, I., Lavee, D., & Becker, N. (2011). Contamination by the Israeli military industry and its impact on apartment sale prices in an adjacent Tel Aviv neighborhood: a hedonic pricing model study. *International Journal of Urban Sustainable Development*, 3(2), 221-231.
43. Abramson, A., N. Becker. Y. Garb and N. Lazarovitch. (2011). "Willingness to Pay, Borrow, and Work: Unlocking the potential of cost recovery for rural water service improvements in LDC's". *Water Resources Research*. 47(11). Article number 11512
44. Fishman, Y., Becker, N., & Shechter, M. (2012). The Polluter Pays Principle as a policy tool in an externality model for nitrogen fertilizer pollution. *Water Policy*, 14(3), 470.
45. Becker, N., Lavee, D., & Tavor, T. (2012). Desalinate or divert? Coastal non-market values as a decision tool for an integrated water management policy: The case of the Jordan River basin. *Ocean & Coastal Management*, 64, 27-36.

46. Becker, N., D. Soloveitchik and M. Olshanski. (2012). "A weighted average incorporation of pollution costs into the electrical expansion planning". *Energy and Environment*. 23(1): 1-16.
47. Fishman, Y., Becker, N., & Shechter, M. (2012). An input tax on nitrogen fertiliser pollution in the presence of transaction costs. *Journal of Environmental Planning and Management*, 55(9), 1206-1227.
48. Becker, N., & Friedler, E. (2013). Integrated hydro-economic assessment of restoration of the Alexander-Zeimar River (Israel-Palestinian Authority). *Regional Environmental Change*, 13(1), 103-114.
49. Segev, M., P. Bar (Kutiel) and N. Becker. (2014). The Ecological and Economic value of Coastal Sand Dunes in Israel. *Ecology and Environment* (Hebrew). Vol. 3: 245-253.
50. Becker, N., Helgeson, J., & Katz, D. (2014). Once there was a river: a benefit–cost analysis of rehabilitation of the Jordan River. *Regional environmental change*, 14(4), 1303-1314.
51. Friedman, C., Becker, N., & Erell, E. (2014). Energy retrofit of residential building envelopes in Israel: A cost-benefit analysis. *Energy*, 77, 183-193.
52. Becker, N. and F. Ward (2014). “Adaptive Water Management in Israel: Structure and Policy Options”. *International Journal of Water Resources Development*. DOI:10.1080/07900627.2014.940447. Vol. 30: 1-18.
53. Becker, N., Tavor, T., Friedler, L., & Bar, P. (2015). Two Stages Decision Process toward Organic Food: The Case of Organic Tomatoes in Israel. *Agro ecology and Sustainable Food Systems*, 39(3), 342-361.
54. Chen, A., Abramson, A., Becker, N., & Megdal, S. B. (2015). A tale of two rivers: Pathways for improving water management in the Jordan and Colorado River basins. *Journal of Arid Environments*, 112, 109-123.
55. Ward, F. A., and N. Becker (2015), Cost of water for peace and the environment in Israel: An integrated approach, *Water Resources Research*, 51, 5806–5826, doi: 10.1002/2014WR016783.
56. Bar, P., Becker, N., & Segev, M (2016), Sand dunes management: a comparative analysis of ecological versus economic valuations applied to the Coastal region in Israel. *Regional Environmental Change*, 1-10. <http://dx.doi.org/10.1007/s10113-015-0808-z>
57. Becker, N., T. Tavor, L. Friedler and P. Bar (2016), Consumers' preferences towards organic tomatoes: A combined two-stage revealed - stated approach. *Journal of International Food and Agribusiness Marketing* 28(1): 1-17.
58. Becker, N. and Y. Farja. (2017). The Cattle-Wolf Dilemma: Interactions among Three Protected Species. *Environmental Management*, 59(2), 175-188. doi:10.1007/s00267-016-0784-1

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63. Carmi, N. and Becker, N. (2018) Changing trip behavior in a higher education institution: The role of parking fees. *International Journal of Sustainable Transportation* (in press).
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## **6. Articles or chapters in refereed books**

1. Bigman, D., Becker, N. & Barak, H. (1990). An Economic Analysis of Wheat growing in the Northern Negev Region and Evaluation of the Drought compensation Scheme. in Y. Kislev (ed.). *Technology, Cooperation, Growth and Policy: Research in Economics* (pp. 253-289) (Hebrew). Magnes Press, Jerusalem.
2. Becker, N. & Easter. K. W. (1995). Cooperatives vs. Non-Cooperatives solutions for Water Diversions in the Great Lakes Basin. in A. Dinar and E. Lehoman (eds.). *Water Quantity/Quality Conflicts and their Resolutions* (pp. 321-336). Greenwood publishing group, Santa Barbara, CA USA.
3. Easter, K.W., Becker, N. & Tsur, Y. (1997). Economic instruments for Water Resource Management. In A.K. Biswas (ed.) *Water Resources: Environmental Planning, Management and Development* (pp. 579-621). McGraw-Hill, New York, NY, USA.
4. Becker, N, Zeitouni N. & Schechter, M. (1997). The Role of Markets in Achieving Efficient Water Resources Allocation in the Middle East. in D. D. Parker and Y. Tsur (Eds.). *Decentralization and Coordination of Water Resource Management* (pp. 199-220). Kluwer Academic Publishers, Dordrecht, Netherlands.



5. Easter, K.W., Becker, N. & Archibald, S. (1999). Benefit Cost Analysis and its use in Regulatory Decisions. in D. Sexton et.al. (eds.) *Better Decision-Making* (pp. 157-176). Island press, Washington DC., USA.
6. Becker, N., Zeitouni, N. & Zilberman, D. (2000). Issues in the Economics of Water Resource. in H. Folmer and T. Tietenberg (eds.) *the International Handbook of Environmental and Resource Economics 2000-2001* (pp. 55-99). Springer Publishing, Heidelberg, Germany.
7. Becker, N. & Tonin, S., (2001). Issues in the valuation of groundwater benefits. In C. Dosi (ed.) *Agricultural Use of Groundwater* (pp. 77-106). Springer Publishing: 77 – 106. Heidelberg, Germany.
8. Becker, N. (2002) Environmental Economics. In Ovrin Leyarok (Bar Ilan Publishing). 40 Pages.
9. Becker, N. and N., Zeitouni, (2005). Cost Benefit Analysis. Unit 12 in an upcoming series of the Open University: Managerial Economics. 60 pages.
10. Becker, N. J. Kahn and D. Lavee. Israel Country Profile. The Institute de la Mediterranee for European Commission - Femise 2005.
11. Becker, N., Choresh, Y., Inbar, M. & Bahat, O. (2007). Combining TCM and CVM of endangered species: Estimation of the marginal value of vultures in the presence of species – visitors' interaction. in A., Kontoleon A., U. Pascual and T. Swanson (eds.), *Biodiversity Economics: Issues, Methodologies and Applications* (pp. 313-342). Cambridge University Press, Boston, MA, USA.
12. Loehman E. and Becker. N. (2007). Groundwater in a cross country case: Application to Israel and the Palestinian authority. in H. Shuval and H. Dweik. (eds.), *Israel – Palestinian Water Issues: From Conflict to Cooperation*. (pp. 257– 262). Hexagon Series on Human and Environmental Security and Peace, vol. 2. Springer-Verlag, New-York, NY, USA.
13. Becker, N. (2009). A sustainable management of nature reserves. F. Brouwer & M. van der Heide (Eds), *Multifunctional Rural Land Management: Economics and Policies*. (pp. 85 – 104). Earthscan Publishing, London, UK.
14. Becker N. and Lavee, D. (2009). Rosh Haniqra Marine Reserve: Conflicts Values and Management. in\_F., N., McManos, & D., S., Bellinghouse. *Fisheries: Management, Economics and Perspectives*. Nova Publishing, New York, NY, USA.
15. Becker, N. and Katz, D. (2009). An economic assessment of Dead Sea preservation and restoration. In C., Lipchin, D., Sandler, D. and E., Cushman (eds.), *The Jordan River and Dead Sea Basin: Cooperation amid conflict* (pp. 275-296). NATO Science for Peace and Security Series: C - Environmental Security. Springer, Dordrecht, Netherlands.
16. Becker, N. (2009). Is economic valuation of natural Mediterranean marine ecosystems providing the correct signal for policy makers? in F. Briand (ed.),

*Economic valuation of natural coastal and marine ecosystems* (pp. 35-40). No.37 in CIESM workshop monographs, no. 37, Monaco.

17. Lehrer, D., Becker, N. & Bar (Kutiel), P. (2013). The value of coastal sand dunes as a measure to plan an optimal policy for invasive plant species: the case of the *Acacia saligna* at the Nitzanim coastal sand dune nature reserve. Gallego-Fernández, J.B. (ed.). *Restoration of Coastal Dunes*. pp. 273-289. Springer Publishing.
18. Becker, N. (2013). Israeli Water Economy: Context and Setting. Chapter 1 in Becker N. (ed.) *Water Policy in Israel: Context, issues and Options*. pp. 1-14. Springer publishing.
19. Becker, N. (2013). Concluding Remarks: Policy Options and Research Agenda. Chapter 18 in Becker N. (ed.) *Water Policy in Israel: Context, issues and Options*. pp. 287-290. Springer publishing.
20. Shcnell, Y., N. Becker and V. Ben Shlomo (2014). Willingness to pay for urban gardens characteristics. Chapter 14 in Scnhell, Y. et al. (ed.) *urban greenery: Social dimensions*. Pardes Publishing
21. Becker, N. (2015). Water pricing in Israel. Forthcoming in *Water Pricing theory and Experience*. Dinar, A. (ed.). pp. 181-199. Springer Publishing.
22. Becker, N., P. Bar and M. Segev (2015). Stabilization of sand dunes: Is Ecology and public perception goes hand in hand? In Chabai, I., M. Frick and J. Helgesson. *Land Restoration: Reclaiming Landscapes for a Sustainable Future*. Pp. 97-106. Elsevier publishing.
23. Becker, N. and D. Katz (2017). Regional cooperation in river basin rehabilitation. In Dinar, A. and Y. Tsur. *Management of transboundary water resources under scarcity*. World scientific publishing.
24. Becker, N. (2017). External cost of food production. In Koll, M. and Wienberg, E. *Environmental Pest Management*. Chapter 16. Pp. 369-381. Wiley publishing.

## **7. Refereed conference proceedings**

1. Bigman, D., Becker, N. & Barak, H. (1989). Wheat Production in Semi-arid Areas and the Role of Drought Compensation: The Israeli experience in the Northern Negev. in B. Greenshields and M. Bellamy (eds.). *Government Intervention in Agriculture: Cause and Effect* (pp. 21-27). Atheneum Press, Cambridge, MA, USA.
2. Becker, N., & Easter. K. W. (1990). Water Diversions from the Great Lakes as a Dynamic Game. in J.E. FitzGibbon (ed.), *International and Transboundaries Water Resources Issues* (pp. 495-505). American Water Resources Association Technical Publication Series TPS-90-1.
3. Zeitouni, N., Becker, N. & Schechter, M. (1994). Water Sharing through Trade in Markets for Water Rights: an Illustrative Application to the Middle East. in J. Isaac and H. Shuval (Eds.) *Water and Peace in the Middle East* (pp. 399-41). Elsevier science, Amsterdam, Netherlands.

4. Friedman, C., Erell, E. And Becker, N. "Economic Analysis of Retrofit for old residential properties in Israel". Forthcoming in SEEP, Maribor.

**8. Other articles (in collections or non-refereed journals)**

5. Becker, N. (1987). An Economic Analysis and Alternatives for the Drought Compensation Scheme in Israel. *Hasade (Hebrew)* 67(7).
6. Becker, N. (1987). Reagan's call to cancel the Levies on Agricultural Commerce until the end of the Century. *Hasade (Hebrew)* 68(2).
7. Becker, N. (1988). Agricultural Policy in the US for 1988 - an Outlook. *Hasade (Hebrew)* 69(2).
8. Becker, N. (1996). Environmental Preservation vs. Economic Growth. *The Quality of the Environment*.
9. Becker, N. and David, N. (1996). The Water Sector: Shifting from Central Planning to a market system. *Hasade. (Hebrew)* 76(9).
10. Becker N. and Peretz, A. (1996). Water Pricing Policy as a tool for economic efficiency and Project Appraisal. *Water and Irrigation. (Hebrew)*, 358 (Aug.), 4– 9.
11. Becker, N. (1999). Cross boundaries water trade. *Water and Irrigation. (Hebrew)* 394 (Aug.), 13 – 17.
12. Becker, N., Gresel, N. & Lavee, D. (2001). A national climate change policy plan for Israel. *Reading in Natural resources and environmental management (Hebrew)*, 1, 18 – 37.
13. Becker, N. (2001). The stragedy of water policy. *Water engineering (Hebrew)*, 76(2), 15 – 19.
14. Shani, E., Yehosua, N. & N. Becker. (2004). A Cost-Benefit Analysis of the Alexander river restoration Project. *Water engineering (Hebrew)* 80 (1), 40 – 45.
15. Shani, E., Becker, N. & Ayalon, O. (2005). Cost benefit analysis of the Hiria lanfill reclamation plan. *Reading in Natural Resources and Environmental Management*, 2 (2): 55 – 70.
16. Becker, N., Lavee, D. & Snir-Salinger, H. (2004). A first estimation of the environmental costs associated with water desalination in Israel. *Irrigation and water engineering (Hebrew)*, Vol. 14(1), 1 – 7.
17. Choresh, Y., Yaffe, O. & Becker, N. (2004). A Travel Cost Analysis of the Gamla Nature Reserve. *Reading in Natural Resources and Environmental Management* 1(3), 91 – 112.
18. Ribak Pnina, Becker, N. & Grinbaum, N. (2005). The Economic cost due to transportation pollution in Haifa. *Reading in Natural Resources and Environmental Management*, 2 (2), 28 – 40.

19. Cohen, Y., Becker, N. & A. Haim (2006). Night Herons and Fish Ponds in the Beit Shean Valley: The conflict and alternatives. *Fishing and fishery*, 37 (1), 950 – 960.
20. Becker, N. & Chores, Y. (2007). Economic valuation of nature recreation: Estimating the Biria forest value using Travel Cost Method. *Forest (Hebrew)*, 9, 33– 39.

## 9. Books Review:

Global Challenges. T. Sandler, for the *Southern Economic Review*. 1998.

The Water Economy of Israel. Y. Kislev, for *Water Economics and Policy*. 2005.

## J. Miscellaneous

**Referee service:** *Arboriculture and Urban Forestry, Applied Energy, Australian journal of Agricultural Economics, Biodiversity and conservation, Biological Conservation, Canadian Water Resources Journal, Cross Cultural Communication, Desalination and Water Treatment, Ecological Economics, Ecology and Environment, Ecosystem Services & Management, Energy, Energy Conversion and Management, Environment and Development Economics, European review of agricultural economics, European Transactions on Electrical Power, Forest Policy and Economics, Geography Research Forum, Human Dimension of Wildlife, International Journal of Biodiversity Science, Journal of Bio Economics, International Journal of Environmental Research and Public Health, Journal of Agricultural Economics, Journal of Environmental Management, Journal of Environmental Planning and Management, Journal of Nature Conservation, Journal of Research in International Business and Management, Land Use Policy, Ocean and coastal management Political Geography, Plos One, Policy Sciences, PNAS, Resources and Energy Economics, Rural Studies, Sustainable transportation, Tourism Geography, Urban water journal, Waste management, Water and environment, Water Research, Water Resources and Econ Economics, Water resources management, Water resources research, Water policy.*

<b><i>Membership in Scientific Associations</i></b>
<ul style="list-style-type: none"> <li>• <b><i>Israeli Society of Ecology</i></b></li> <li>• <b><i>Israeli Society of Economics</i></b></li> <li>• <b><i>European Society of Environmental and Resource Economists.</i></b></li> </ul>

<b>Public Scientific Activities</b>	
<b>From-To</b>	<b>Type of Activity or Appointment</b>
1990 -	<b>Advisor</b> to the ministry of the Environment, water commission and the ministry of National Infrastructure on economic and policy
2001	Scientific board of <b>WECUP</b> . An Israeli Palestinian NGO for cooperative solid waste management in the west bank
2004 - 2006	Scientific board of: <b>Transportation today and tomorrow</b> . An NGO for promoting public transportation
2002 - 2005	Member of the governmental committee for writing the policy document: <b>A sustainable future management of the dead Sea</b>
2004	Member of the planning committee for the conference: <b>Water for life</b> . Held in Turkey, Oct. 2004.
2004 – 2007	<b>Chairperson</b> , Professional committee for agricultural economics research proposals from the ministry of Agriculture and BARD.
2002 - 2005	<b>Member</b> , fellowship committee, Tel-Hai Academic College.
2003 - 2005	<b>Advisory committee</b> – "Clean City" project for Kiryat Shmona's municipality.
2006 - 2008	<b>Member</b> of the finance sub-committee of LIFE. A UN financed project for river reclamation in the northern part of Israel.
2007 - 2009	Member of the nature protection and heritage (economic sub – committee) – Nature and parks protection agency.
2010 - 2012	<b>In charge</b> of the conference facilities services at Tel-Hai College
2010	<b>Member</b> of the steering committee. Annual meeting of the Israeli Ecological and Environmental Sciences Society
2010	<b>Member</b> of the scientific committee for the French-Israel Water and Environment research foundation.
2010-2011	<b>Member</b> of the program committee, annual meeting of the European Association of Environmental and Resource Economists
2012-	<b>Chairperson</b> , Professional committee for agricultural economics research proposals from the ministry of Agriculture.
2012-	In charge of environmental economics continuing education programs at the Israeli Electrical Company.
2013	In charge of a course in environmental economics for employees at the Ministry of the Environment.
2013-	Economic consultant to the Ministry of the Environment through professional consulting to TAVOR company.

- Membership in editorial boards of journals: *The Open Economic Journal*, *Ecology and Society (Heb.)*, *Water Economics and Policy*
- Organization of conferences:
  - 1999 – **The Economics of Peace**. Organized in Tel – Hai, Dec. 1999. Main topic was the economic potential for peace among Israel – Lebanon – Syria.

- 2006 – **Social, Economic and Ecological considerations in managing natural parks.** Organized in Tel-Hai in June 2006. Main topic was for or against entrance fees to parks as a management tool.
- 2013 – **The Economics and other social aspects of aging.** Organization is under process with collaboration between Migal and Tel-Hai College. Dec. 2013.