

Hassan BENCHEKROUN

*Department of Economics,
McGill University
855 Sherbrooke West,
Montreal, QC, Canada. H3A-2T7.
E-mail: hassan.benchekroun@mcgill.ca*

Citizen of Canada and Morocco, Born in 08/28/1968.

CURRENT AND PAST POSITIONS

Professor: McGill University, since May 2015
Associate Professor (with tenure): McGill University, since June 2006.
Visiting Scholar: Tilburg University, September 2006-June 2007.
Assistant Professor (tenure track): McGill University, since July 2002.
Assistant Professor (tenure track): Florida Atlantic University, October 1999- June 2002.
Assistant Professor (limited term appointment): Concordia University, Jan. 98-May 99.

EDUCATION

Sep. 1993 - Apr. 1998: Ph.D. in Economics, Université Laval
Jan. 1993 - Aug. 1993: Graduate studies, department of mathematics, Université Laval.
Sep. 1989 - June 1992: Industrial Engineering, École Mohamedia des Ingénieurs,
(Morocco).
Sep. 1987 - June 1989: Mathématiques supérieures et spéciales, Lycée Moulay
Youssef, Rabat (Morocco).

AREAS OF INTEREST

Natural Resource and Environmental Economics, International Economics (Trade Theory), Industrial Organization, Applied Microeconomics, Game Theory.

PUBLICATIONS (authors listed in alphabetical order unless otherwise stated)

43) “*On agreements in a nonrenewable resource market: a cooperative differential game approach*”, M. Berthod and HB, forthcoming in *Journal of Economic Dynamics and Control*.

42) “*Mergers in Nonrenewable Resource Oligopolies and Environmental Policies*” with M. Breton, A. Ray Chaudhuri (2019), *European Economic Review*. 111, 35-52.

- 41) “*Nurturing an Infant Industry by Markovian Subsidy Schemes*” with N V. Long (2018), *Dynamic Games and Applications* 8 (3), 519-541.
- 40) “*Anticipated International Environmental Agreements*” with Ö. T. Açikgöz, (2017), *European Economic Review*, 92, 306–336.
- 39) “*An experimental study of a common property renewable resource game in continuous time*”, D. Tasneem, J. Engle-Warnick and HB, (2017), *Journal of Economic Behavior & Organization*, 140, 91-119.
- 38) “*Status concern and the exploitation of common pool renewable resources*”, with N. V. Long, (2016), *Ecological Economics*, 125, 70-82.
- 37) “*The impact of foresight in a transboundary pollution game*”, with G Martín-Herrán, (2016), *European Journal of Operational Research*, 251 (1), 300-309.
- 36) “*Self-regenerating environmental absorption efficiency and the soylent green scenario*”, F El Ouardighi, H B and D Grass, (2016), *Annals of Operations Research*, 238 (1-2), 179-198.
- 36) “Introduction to the Special Issue on Dynamic Games in Industrial Organization. “, with R. Amir and L. Lambertini, *Dynamic Games and Applications*, (2015), issue 4.
- 35) “*Environmental R&D in the Presence of an Eco-Industry*”, Alain-Desire Nimubona and HB, *Environmental Modeling and Assessment*, October 2015, Volume 20, [Issue 5](#), pp 491-507.
- 34) “*On the effects of mergers on equilibrium outcomes in a common property renewable asset oligopoly*” with G. Gaudet, (2015), *Journal of Economic Dynamics and control*, vol 52, p 209-223.
- 33) “*Harvests’ lifespan and North-South market share rivalry*”, with S. Benchekroun, (2015), *International Review of Economics and Finance*, vol 37, p: 114-124.
- 32) “*Cleaner Technologies and the Stability of International Environmental Agreements*” with A. Ray Chaudhuri, (2015), *Journal of Public Economic Theory*, [vol 17 \(6\)](#), p: 887–915.
- 31) “*Some Effects of Asymmetries in a Common Pool Natural Resource Oligopoly*”, with G. Gaudet and H. Lohoues, (2014), *Strategic Behavior and the Environment*, vol 4 (3), p: 213-235.
- 30) “*Transboundary Pollution and Clean Technologies*” with Amrita Ray Chaudhuri, (2014), *Resource and Energy Economics.*, vol 36 (2), p: 601-619.

PUBLICATIONS *Continued*

- 29) "*Do increases in risk mitigate the tragedy of the commons? Flow versus stock pollutants*", with N. V. Long, (2014), *Strategic Behavior and the Environment*, vol 4 (1), p:1-14.
- 28) "*Controlling pollution and carbon absorption capacity*", F. El Ouardighi, HB and Dieter Grass, (2014), *Annals of Operations Research*, vol 220, p: 111-133.
- 27) "*Adaptation and the allocation of the cost of pollution reduction*" with F. Taherkhani, (2014), *Dynamic Games and Applications*, vol. 4, pages: 32-57.
- 26) "*On price taking behavior in a nonrenewable resource cartel-fringe game*" with Cees Withagen, (2012) *Games and Economic Behavior*, vol. 76(2), pages 355-374.
- 25) "*Collaborative Environmental Management: A Review of the Literature*" with Ngo Van Long, (2012), *International Game Theory Review*, December 2012, Vol. 14, No. 04
- 24) "*Welfare Effects of Mergers and Trade Liberalization*", Amrita Ray Chaudhuri and HB, (2012), *Review of International Economics*, Vol. 20 (1), pages: 119–133.
- 23) "*The Optimal Depletion of Exhaustible Resources: A Complete Characterization*" with Cees Withagen, *Resource and Energy Economics*, 2011, vol. 33(3), pages 612-636
- 22) "*Free Trade, Autarky and the Sustainability of an International Environmental Agreement*" with Murat Yildiz, (2011), *B. E. Journal of Economic Analysis & Policy*: Vol. 11 (1), Article 9.
- 21) "*Environmental Policy and Stable Collusion: The Case of a Dynamic Polluting Oligopoly*" with Amrita Ray Chaudhuri, *Journal of Economic Dynamics and Control*, 2011, Vol. 35 (4), April, pages 479-490
- 20) "*When additional resource stocks reduce welfare*", with Alex Halsema and Cees Withagen, the *Journal of Environmental Economics and Management*, 2010, vol. 59 (1), pages 109-114. Appendix in: <http://www.econ.iastate.edu/jeem/supplement.htm>.
- 19) "*On nonrenewable resource oligopolies: the asymmetric case.*" with Alex Halsema and Cees Withagen, the *Journal of Economic Dynamics and Control*, 2009, vol. 33, issue 11, pages 1867-1879.
- 18) "*Could Myopic Pricing be a Strategic Choice in Marketing Channels? A Game Theoretic Analysis*", with Guiomar Martin-Herrán and Sihem Taboubi, the *Journal of Economic Dynamics and Control*, 2009, Vol. 33(9), Pages 1699-1718.
- 17) "*North's technology improvement and South's welfare in the presence of FDI* ", with Sharmila Vishwasrao, *Oxford Economic Papers*, 2009, Vol. 61 (3), Pages: 603-622.

PUBLICATIONS *Continued*

- 16) "*A class of performance-based subsidy rules*", co-author Ngo Van Long, the *Japanese economic Review*, 2008, vol. 59(4), pages 381-400.
- 15) "*The build-up of cooperative behavior among non-cooperative selfish agents*", co-author Ngo Van Long, the *Journal of Economic Behavior and Organization*, (2008), vol. 67(1), Pages 239-252.
- 14) "*Comparative dynamics in a productive asset oligopoly*", the *Journal of Economic Theory*, 2008, vol. 138(1), pages 237-261.
- 13) "*Tax differentials and environmental R&D strategic alliances*", co-author Denis Claude, *B.E. Journals of Theoretical Economics*, 2007, vol. 7: Iss. 1, Article 26.
- 12) "*A unifying differential game on the effect of promotions on goodwill*", the *International Game Theory Review*, 2007, vol. 9, No: 2, pages: 183-197.
- 11) "*Optimum tariffs and patent length in a model of North-South technology transfer*", Sharmila Vishwasrao, Srabana Gupta and HB, the *International Review of Economics and Finance*, 2007, vol. 16 (1), pages 1-14.
- 10) "*Trade liberalization and the profitability of mergers: a global analysis*", co-author Amrita Ray Chaudhuri, the *Review of International Economics*, November 2006, vol.14 (5), pages: 941-957.
- 9) "*Temporary natural resource cartels*", co-authors G. Gaudet and N. V. Long, the *Journal of Environmental Economics and Management*, 2006, vol. 52(3), p. 663-674.
- 8) "*The curse of windfall gains in a dynamic oligopoly*" co-author Ngo Van Long, the *Australian Economic Papers*, 2006, vol. 45(2), pages 99-105.
- 7) "*The closed-loop effect and the profitability of horizontal mergers*", *Canadian Journal of Economics*. Aug. 2003 Vol. 36 (3) p 523-764.
- 6) "*Unilateral production restrictions in a dynamic duopoly*", *Journal of Economic Theory*. Aug. 2003 Vol. 111 (2), p. 214-239.
- 5) "*On the profitability of production constraints in a dynamic natural resource oligopoly*", co-author Gérard Gaudet. *Journal of Economic Dynamics and Control*. 2003. Vol. 27 (7). p 1237-52.
- 4) "*Transboundary fishery: a differential game model*", co-author Ngo Van Long. *Economica*, 69 (2002): 207-229.

- 3) "*On the multiplicity of efficiency inducing tax rules*", co-author Ngo Van Long, *Economics Letters*, 76 (2002): 331-336.
- 2) "*Learning by doing and strategic trade policy*", co-authors Ngo Van Long and Huilan Tian, *Review of International Economics*, v7 issue 3 August 1999, pp. 493-508.
- 1) "*Efficiency inducing taxation for polluting oligopolists*", co-author Ngo Van Long, *Journal of Public Economics*, v70 n2 Nov 1998, pp. 325-42.

ONGOING RESEARCH: UNDER REVIEW AND WORK IN PROGRESS

“An Experimental Study of Sustainable Management of a Renewable Resource in Continuous Time”, with J. Engle-Warnick and D. Tasneem, revisions requested, *Applied Economics*.

“OPEC, Shale Oil, and Global Warming - On the Importance of the Order of Extraction”, with G. van der Meijden and C. Withagen, CESifo Working Paper Series No. 6746, submitted.

“An oligopoly-fringe non-renewable resource game in the presence of a renewable substitute” with G. van der Meijden and C. Withagen, submitted.

“Implementation of the Lindahl correspondence via simple indirect mechanisms” with C. Figuières and M. Tidball.

“Cartel stability in a dynamic oligopoly with sticky prices”, with L. Xue.

BOOK CHAPTERS

“Adaptation effectiveness and free-riding incentives in international environmental agreements” with A. Ray Chaudhuri and W. Marrouch, Chapter 11, in S. Cagatay, O. Kayalca and H. Mihci (eds.), *Economics of International Environmental Agreements: A Critical Approach*, Routledge U.K, 2017.

“On Common Property Resource Oligopolies”, Chapter 2, *The WSPC Reference on Natural Resources and Environmental Policy in the Era of Global Change, Volume 1, Game Theory*. World Scientific Publishing. Editors Ana Espinola-Arredondo and Felix Munoz-Garcia, 2016.

“Clean Technologies, Climate Change Mitigation and IEAs”, Chapter 11, with A. Ray Chaudhuri, *The WSPC Reference on Natural Resources and Environmental Policy in the Era of Global Change, Volume 1, Game Theory*. World Scientific Publishing. Editors Ana Espinola-Arredondo and Felix Munoz-Garcia, 2016.

“Game Theory and Environmental and Resource Economics”, with N. V. Long in Manfred M. Fischer and P. Peter Nijkamp, *Handbook of Regional Science*, Springer 2013.

“Static and Dynamic Games in Environmental and Resource Economics”, (with Ngo Van Long), (2011), in A. Batabayal and P. Peter Nijkamp (Eds.), *Research Tools in Natural Resource and Environmental Economics*, World Scientific Publishing.

“Capital resource substitution, overshooting, and sustainable development” co-authors N. V. Long and S. Katayama, in *Optimal Control and Dynamic Games Applications in Finance, Management Science and Economics Series, Vol. 7, pages 41-65, Deissenberg, Christophe; Hartl, Richard F. (Eds.) 2005*.

PROFESSIONAL RECOGNITION

EDITORIAL DUTIES

Associate Editor of *Dynamic Games and Applications* (2010-).

Associate Editor of *Resource and Energy Economics* (2015-).

Associate Editor (2010-2013) and Co-Editor (2013-2017) of *Environmental and Resource Economics*. Official journal of the European Association of Environmental and Resource Economists.

Guest Editor, with R. Amir and L. Lambertini, of the special issue 'Dynamic Games in Industrial Organization', *Dynamic Games and Applications* (2015).

Editorial Advisor for the *Canadian Journal of Economics* Editorial Board (2003-2006).

INVITED VISITS

University of Valladolid (2011 and 2012), LAMETA (INRA) (2012), Deakin University (2013), University of Barcelona (2014), Tilburg University (2014), Ifo Center for Energy, Climate and Exhaustible Resources (2014), Université Paris Ouest (Nanterre), (November 2015 and September 2016), Paris School of Economics (April 2018).

INVITED CONFERENCE PRESENTATIONS

New Dimensions in International Trade -Outsourcing, Merger, Technology Transfer, and Culture, Kobe University (Japan 2004).

Workshop on Dynamic Games in Economics, Rimini Center of Economic Analysis (Italy 2010).

Workshop on Dynamic Mathematical Models in Economics and Finance, Deakin University (Australia 2013).

Dynamic Interactions for Economic Theory Conference, Paris School of Economics (France 2013).

Combating Climate Change. Lessons from Macroeconomics, Political Economy, and Public Finance (Netherlands 2016).

International Conference on Applied Business and Economics (France 2016).

1st GREEN-Econ Spring School in Environmental Economics, Aix-Marseille School of Economics, (France 2018).

Tenth Workshop on Dynamic Games in Management Science, Invited speaker, (Morocco 2018).

INVITED SEMINAR PRESENTATIONS

Carleton University, Ecole Mohammadia des Ingenieurs, EconomiX (Paris Ouest), ESSEC Business School (Paris), Ifo Center for Energy, Climate and Exhaustible Resources, Florida Atlantic University, Florida International University, LAMETA (INRA-Montpellier), Paris School of Economics, Ryerson University, Timbergen Institute (Amsterdam), Tilburg University, Université de Sherbrooke, Université Laval, University of Barcelona, University of Ottawa, University of Queensland, University of Valencia, University of Valladolid, University of Victoria, University of Waterloo, VU University Amsterdam.

PROFESSIONAL RECOGNITION (Continued)

MEMBERSHIP ON SCIENTIFIC COMMITTEES

Member of the scientific committee of Thematic Semester, Biodiversity and Evolution, Centre de recherches mathématiques, Montreal, July-December 2013.

Member of the selection committee (3 members) of the best paper award, of *Environmental and Resource Economics*, official journal of the European Association of Environmental and Resource Economists, 2012-2015.

Member of the scientific committee of the 2012 and 2014 meetings of Société canadienne de science économique.

Member of the Program Committee of the fourth and fifth World Congress of Environmental and Resource Economists (2010 and 2014).

Member of the International Program Committee of the conference of the European Association of Environmental and Resource Economists (2009, 2011 and 2013).

Member of the selection committee of the Canadian Resource and Environmental Economics Conference (2006, 2008).

Member of the Scientific Committee of the conference "Environment, innovation and performance" (2007).

Member of the International Program Committee of the 12th International Symposium on Dynamic Games and Applications, July (2006).

Member of the International Program Committee of the "7th Meeting on Game Theory and Practice dedicated to Energy, Environment and Natural Resources", (2007).

OTHER

Research Fellow, the CESifo Research Network, Munich.

Research Fellow, CIREQ (Centre Inter-universitaire de Recherche en Economie Quantitative), Montréal.

RESEARCH GRANTS

Fond Québécois de la Recherche sur la Société et la Culture (FQRSC) :

- Team Grant: 2017-2021; \$ 356 000. With: R. Cairns (McGill), J. Leroux (HEC), N. V. Long (McGill), C. Seguin (UQAM), E. Billette de Villemeur (UQAM and Lille).

Environnement et ressources naturelles en contexte dynamique et risqué : gestion, stratégies, politiques et institutions (2018-SE-206128)

- Team Grant: 2012-2016; \$ 444 928. With: R. Cairns (McGill), G. Gaudet (Université de Montreal), P. Lasserre (UQAM), J. Leroux (HEC) and N. V. Long (McGill).
- Team Grant: 2008-20012; \$426 700. With: With: R. Cairns (McGill), G. Gaudet (Université de Montreal), P. Lasserre (UQAM) and N. V. Long (McGill).
- Team Grant: 2004-2008; \$348 500. With: M. Breton (HEC), D. Vencatachelum (HEC) and G. Zaccour (HEC).
- Jeune Chercheur: 2003-2006; \$45 000.

The Canadian Social Science and Humanities Research Council (SSHRC):

- Insight Research Grant, 2018-2023; \$135 441 (with F. Alvarez-Cuadrado and N.V. Long).

Strategic and dynamic issues in the management of natural resources and the environment

- Insight Research Grant, 2017-2022; \$135 441 (with M. Breton, A. Ray Chaudhuri and N.V. Long).
- Canadian Environmental Issues, 2009-2012 (extended); \$249 458. With: Y. Dissou (University of Ottawa).
- Standard Research Grant, 2006-2009; \$90 000.
- Standard Research Grant, 2003-2006; \$69 001. The application was ranked 7/115.

PRESENTATIONS AT CONFERENCES

Workshop on Optimal Control, Dynamic Games and Nonlinear Dynamics (2003 and 2012 Austria, 2010 the Netherlands)

Fourth and Fifth World Congress of Environmental and Resource Economists (Canada 2010, Turkey 2014)

Workshop of the International Society of Dynamic Games (Spain 2005, Morocco 2007, Tunisia 2009, Italy 2011)

Dynamic Games in Management Science (Canada 2008)

Thematic Meeting of the French Economic Association: Frontiers in Environmental Economics and Natural Resources Management (France 2008)

Workshop on Game Theory in Energy, Resources and Environment (Canada 2007, 2014)

12th International Symposium on Dynamic Games and Applications (France 2006)

World Congress of the Econometric Society (United Kingdom 2005)

Society for the Advancement of Economic Theory (Spain 2005)

Optimization Days (Canada 2005)

World Congress of the Game Theory Society (Spain 2000 and France 2004)

International Conference on Industrial Organization, Law and Economics (Greece 2004)

Société Canadienne des Sciences Économiques (Canada 1995, 1997, 2004, 2005, 2013)

Canadian Economics Association (Canada 1997, 1998 and 2001)

South-East Economic Theory and International Economics Conference (USA 2001)

Society for Economic Dynamics (United Kingdom 1997)

Canadian Resource and Environmental Economics Study Group (1997, 2005, 2010, 2014)

Sustainable Resource Use and Economic Dynamics –conference (Switzerland 2014)

Meetings of the European Association of Environmental and Resource Economists (France 2013)

Twelfth annual International Industrial Organization Conference (USA 2014)

GRADUATE STUDENTS' SUPERVISION

PhD: Advisor or co-advisor

Amrita Ray Chaudhuri, (completed 2008)
Taweewan Sidthidet (completed 2011)
Farnaz Taherkhani (completed 2013)
Dina Tasneem (defended Feb 2015)
Fatemeh Behzadnejad (defended Aug 2015)
Guillaume Lord (ongoing).

PhD: Examiner

M.T. Vo, M.E. Postalci, H.E. Dalgic, C. Belford, V.D. Do, J. Zhang, S. Baksi, S. Chou, B. Sengupta, and S. Atallah (McGill University), H. Lehoues (Université de Montréal), T. Ayland, N. Masoudi, H. Rasata, A. Sokri (HEC), B. Tang, S. Bernard (University of Ottawa), Y. Boudribilla (Carleton University), A. Halsema, Karolina Ryszka, (VU University Amsterdam), Julia de Frutos (LAMETA, INRA).

MA: Main advisor

Sherry Hsu (October 2003), Omer Acikgoz (October 2004), Li Hui (October 2004).
Baffour Badu-Apraku (October 2005), Ksenya Gankina (October 2005), Rana El Halabieh (January 2006), Eric Madueno (April 2006), Paulina Chahine (October 2009), Benjamin Loper (October 2009), Itamar Megido (October 2009), Guillaume Lord (2011), Javad Samieenia (October 2016), Ogonna Anaekwe (October 2016).

COURSES TAUGHT

Undergraduate:

Environmental Economics, Principles of Microeconomics, Principles of Macroeconomics, Intermediate Microeconomics, Public Finance, Advanced International Trade (Majors and Honors), Industrial Organization, Advanced Mathematics for Economists, Advanced Economic Theory (Honors).

Graduate:

Topics in Environmental Economics, Microeconomic Theory II, Dynamic Optimization Methods in Economics, International Economics (Trade Theory), Mathematics for Economists.

REFEREE DUTIES

Reviewer for the Natural Sciences and Engineering Research Council of Canada (Discovery Grants), for Social Sciences and Humanities Research Council (Insight Grants) and Fonds de Recherche Société et Culture (FQRSC).

Reviewer for the Austrian Science Fund.

Reviewer for the University of Ottawa of a new program : « Baccalauréat ès sciences sociales spécialisé en économie et politiques publiques de l'environnement »

Referee for *Automatica*, *the B.E. Journal of Economic Analysis & Policy*, *the Canadian Journal of Economics*, *Ecological Economics*, *the Economic Journal*, *Economic Theory*, *Energy Economics*, *Environmental Modeling and Assessment*, *Environmental and Development Economics*, *Environmental and Resource Economics*, *European Journal of Operations Research*, *European Economic Review*, *International Economic Review*, *International Game Theory Review*, *International Journal of Industrial Organization*, *International Review of Economics and Finance*, *International Tax and Public Finance*, *Journal of Economic Dynamics and Control*, *Journal of Economic Theory*, *Journal of Environmental Economics and Management*, *Journal of Economics and Management Strategy*, *Journal of Optimization Theory and Applications*, *Journal of Development Economics*, *Journal of Public Economics*, *Journal of Public Economic Theory*, *Management Science*, *Mathematical Social Sciences*, *Natural Resource Modeling*, *Optimal Control Applications and Methods*, *Rand Journal of Economics*, *Resource and Energy Economics*, *Southern Economic Journal*, *Strategic Behavior and the Environment*, *Wiley Encyclopedia of Operations Research*.

Selected as “Outstanding Reviewer” for *Automatica*, a distinction given to approximately 40 reviewers from a pool of over 1300 reviewers.

Reviewer for Dryden "*Public Finance in Canada*" (by Hyman/Strick, 1999).

Reviewer for McGraw-Hill "*Principles of Microeconomics*" (by Frank/Bernanke, 2001).

Reviewer for Wiley "*LQ Dynamic Optimization and Differential Games*" (by Engwerda, 2005).

Reviewer for MIT Press (2014)

External Reviewer of tenure applications for two Canadian and three American universities.

SERVICE

Organization of workshops

Co-organizer of the workshop “Biodiversity and Environment: Viability and Dynamic Games Perspectives” (2013).

Co-organizer of the Montreal Natural Resource and Environmental Economics Workshop (Winter sessions 2004- 2006, 2008-2013, 2014-).

Co-organizer of the Montreal Economic Theory workshop (2004-2005)

Organizer of two CREE sessions at the CEA meetings: games and environmental economics and political economy and environmental economics.

Membership on committees

Member of the Promotion and Tenure Committee, the Department of Economics (2010-2011, 2012-2013, 2014-2015)

Member of the selection committee for the Chair of the Department of Economics (2010)
Chair of the Department of Economics’ graduate admissions committee (2007-2013, 2014-)

Member of the Department of Economics’ graduate admissions committee (since 2003, except 2005-06 and 2013-14)

Member of the Information Technology Support Oversight Committee (faculty of arts) (2007-2009)

Member of the B.A. & B.Sc. Program Administration Committee (2009-2012)

Member of the ad hoc committee on the Department of Economics’ review (2004)

Member of the Ph.D. comprehensive exam committee: Industrial Organization 2003 and 2004, Microeconomic Theory 2004 and 2008, International Economics 2005, 2006, 2009, 2012-14, Environmental and Resource Economics 2009 and 2012.

Administrative contributions

Majors/Minors Academic Advisor (2002-2005)

Advisor to students in the Qualifying Year (2004-2005)

Member of the ‘conseil d’administration’ of the Societe Canadienne des Sciences Economiques (2007-2010)