

# Céline Nauges

Senior Research Fellow

French Institute for Research in Agriculture and Environment (INRAE)  
& Toulouse School of Economics

Editor of the European Review of Agricultural Economics

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## MAIN DATA

### Personal data:

Date of birth: November 11th, 1973  
Citizenship: French  
Languages: French (native), English, Spanish

### Major fields of interest:

Microeconometrics applied to agriculture, natural resources, and environmental management; Urban water management in developed and developing countries; Risk and uncertainty in agriculture; Panel data econometrics.

### Academic positions:

Dec 2008 - present: Senior Research Fellow at the French Institute for Research in Agriculture and Environment (INRAE) and Toulouse School of Economics (France)

Aug 2015 – Jul 2020: Honorary Research Fellow, School of Economics, University of Queensland (Australia)

Jul 2016 – Jun 2020: Adjunct Senior Research Fellow in the Lee Kuan Yew School of Public Policy (Singapore)

Aug 2011 - Jul 2015: Australian Research Council Future Fellow, The University of Queensland (Australia)

Aug 2000 - Nov 2008: Junior research fellow at the French Institute for Research in Agriculture (INRA) and Toulouse School of Economics (France)

## Visiting academic positions

July 2010 - Feb 2011: Visiting fellow at the School of Economics, The University of Queensland

Nov 2007 - Apr 2008: Visiting fellow at the School of Economics, The University of Queensland

July-Aug 2007 & 2006: Visiting fellow at MTT Agrifood Research (Helsinki, Finland)

March-May 2004 and Oct-Nov 2004: Visiting fellow at the University of California, Berkeley (USA)

Sept 2000 - Sept 2001: Postdoctoral Research Fellow, University College London (UK)

## Education

Habilitation à diriger des recherches (University of Toulouse, France), 2007

Ph.D. in Economics (University of Toulouse, France), 1999

MA in Economics (University of Toulouse, France), 1996

## PUBLICATIONS

### Published and forthcoming research articles

How stable are Australian farmers' climate change risk perceptions? New evidence of the feedback loop between risk perceptions and behaviour (with Sarah Wheeler and Alec Zuo), *Global Environmental Change*, forthcoming

The relationship between wealth and climate change concern: The mediating role of control (with Kelly Fielding and Sarah Wheeler), *Environment, Development and Sustainability*, forthcoming

Do risk preferences really matter? The case of pesticide use in agriculture (with Christophe Bontemps and Douadia Bougherara), *Environmental Modeling and Assessment*, forthcoming

Risk taking with left- and right-skewed lotteries (with Douadia Bougherara and Lana Friesen), *Journal of Risk and Uncertainty*, forthcoming

Uncertainty, learning and technology adoption in agriculture (with Jean-Paul Chavas), *Applied Economic Perspectives and Policy*, 2020, 42(1) Special Issue: Adoption of Agricultural Innovations: 42-53

Production decisions with water markets: The role of initial allocations and forward trading (with Philippe Bontemps), *European Review of Agricultural Economics*, 2019, 46(4): 579-608

Social norms information treatments in the municipal water supply sector: Some new insights on benefits and costs (with Dale Whittington), *Water Economics and Policy*, 2019, 5(3): 1850026

The complex relationship between households' climate change concerns and their water and energy mitigation behaviour (with Sarah Wheeler), *Ecological Economics*, 2017, 141: 87-94

Returns to fertilizer use: does it pay enough? Some new evidence from sub-Saharan Africa (with Estelle Koussoubé), *European Review of Agricultural Economics*, 2017, 44(2): 183-210

State-contingent analysis of farmers' response to weather variability: Irrigated dairy farming in the Murray Valley, Australia (with Thilak Mallawaarachchi, Orion Sanders and John Quiggin), *The Australian Journal of Agricultural and Resource Economics*, 2017, 61(1): 36-55

Evaluating the performance of alternative municipal water tariff designs: Quantifying the trade-offs between equity, economic efficiency, and cost recovery (with Dale Whittington), *World Development*, 2017, 91: 125-143

Water hauling and girls' school attendance: Some new evidence from Ghana, *Environmental and Resource Economics*, 2017, 66(1): 65-88

Elicitation of irrigators' risk preferences from observed behaviour (with Sarah Wheeler and Alec Zuo), *The Australian Journal of Agricultural and Resource Economics*, 2016, 60(3): 442-458

The impact of perceptions in averting-decision models: An application of the special regressor method to drinking water choices (with Christophe Bontemps), *American Journal of Agricultural Economics*, 2016, 98(1): 297-313

Pesticide handling practices: The case of coffee growers in Papua New Guinea (with Maria Belen Zapata Diomedi), *The Australian Journal of Agricultural and Resource Economics*, 2016, 60(1): 112-129

A diagnostic tool for estimating the incidence of subsidies delivered by water utilities in low- and medium-income countries, with illustrative simulations (with Dale Whittington, David Fuente, and Xun Wu), *Utilities Policy*, 2015, 34: 70-81

Farmers' exposure to risk and their temporary water trading (with Alec Zuo and Sarah Wheeler), *European Review of Agricultural Economics*, 2015, 42(1): 1-24

Evaluating greening farm policies: A structural model for assessing agri-environmental subsidies (with Marita Laukkanen), *Land Economics*, 2014, 90(3): 458-481

Technical efficiency and conversion to organic farming: The case of France (with Laure Latruffe), *European Review of Agricultural Economics*, 2014, 41(2): 227-253

Information transmission in irrigation technology adoption and diffusion: Social learning, extension services and spatial effects (with Margarita Genius, Phoebe Koundouri, and Vangelis Tzouvelekas), *American Journal of Agricultural Economics*, 2014, 96(1): 328-344. **This paper received the 2014 Quality of Policy Contribution Award in honour of Giovanni Anania.**

Households' pro-environmental habits and investments in water and energy consumption: Determinants and relationships (with Maria A. Garcia-Valiñas and Roberto Martínez-Españeira), *Journal of Environmental Management*, 2014, 133: 174-183

The willingness to pay for access to piped water: A hedonic analysis of house prices in Southwest Sri Lanka (with Caroline van den Berg), *Letters in Spatial and Resource Sciences*, 2012, 5(3):151-166

Uncertainty and technical efficiency in Finnish agriculture: A state-contingent approach (with Christopher O'Donnell and John Quiggin), *European Review of Agricultural Economics*, 2011, 38(4): 449-467. **This paper received the 2011 Outstanding ERAE Journal Article Award.**

Environmental and production cost impacts of no-till in Finland: Estimates from observed behavior (with Marita Laukkanen), *Land Economics*, 2011, 87(3): 508-527

Arsenic mitigation in Bangladesh: A household labor market approach (with Richard Carson and Phoebe Koundouri), *American Journal of Agricultural Economics*, 2011, 93(2): 407-414

The impact of tap connection on water use: The case of household water consumption in Dakar, Senegal (with Anne Briand, Jon Strand, and Muriel Travers), *Environment and Development Economics*, 2010, 15(1): 107-126

Estimation of water demand in developing countries: An overview (with Dale Whittington), *World Bank Research Observer*, 2010, 25(2): 263-294

Household adoption of water-efficient equipment: The role of socio-economic factors, environmental attitudes and policy (with Katrin Millock), *Environmental and Resource Economics*, 2010, 46(4): 539-565

Spatial heterogeneity in the cost structure of water and sanitation services: A cross-country comparison of conditions for scale economies (with Caroline van den Berg), *Oxford Development Studies*, 2010, 38(2): 199-217

Identifying the effect of unobserved quality and experts' reviews in the pricing of experience goods: Empirical application on Bordeaux wine (with Pierre Dubois), *International Journal of Industrial Organization*, 2010, 28(3): 205-212

Les déterminants du choix d'approvisionnement en eau des ménages de Dakar (with Anne Briand and Muriel Travers), *Revue d'Economie du Développement*, 2009, 3: 83-108

Carafe ou bouteille ? Le rôle de la qualité de l'environnement dans la décision du consommateur (with Christophe Bontemps), *Economie et Prévision*, 2009-2, 188: 61-79

The effects of EU agricultural policy changes on farmers' risk attitudes (with Phoebe Koundouri, Marita Laukkanen and Sami Myyrä), *European Review of Agricultural Economics*, 2009, 36(1): 53-77. **This paper received the 2009 Best Paper in the ERAE award.**

The value of water connections in Central American cities: A revealed preference study (with Jon Strand and Ian Walker), *Environment and Development Economics*, 2009, 14(3): 349-370

Demand for piped and non-piped water supply services: Evidence from Southwest Sri Lanka (with Caroline van den Berg), *Environmental and Resource Economics*, 2009, 42(4): 535-549

The effect of uncertainty on pollution abatement investments: Measuring hurdle rates for Swedish industry (with Åsa Löfgren and Katrin Millock), *Resource and Energy Economics*, 2008, 30(4): 475-491

Economies of density, scale and scope in the water supply and sewerage sector: A study of four developing and transition economies (with Caroline van den Berg), *Journal of Regulatory Economics*, 2008, 34(2): 144-163

Clean air regulation and heterogeneity in US gasoline prices (with Ujjayant Chakravorty and Alban Thomas), *Journal of Environmental Economics and Management*, 2008, 55(1): 106-122

The story of the moment: Risk averse Cypriot farmers respond to drought management (with Ben Groom, Phoebe Koundouri and Alban Thomas), *Applied Economics*, 2008, 40(3): 315-326

Estimation of non-tap water demand in Central American cities (with Jon Strand), *Resource and Energy Economics*, 2007, 29(3): 165-182.

The pricing of experience goods: The case of *en primeur* wine (with Héra Hadj Ali), *American Journal of Agricultural Economics*, 2007, 89(1): 91-103

Effets de la délégation sur le prix de l'eau potable en France : une analyse à partir de la littérature sur les effets de traitement (with Alain Carpentier, Arnaud Reynaud and Alban Thomas), *Economie et Prévision*, 2006-3, 174 : 1-20

Technology adoption under production uncertainty: Theory and application to irrigation technology (with Phoebe Koundouri and Vangelis Tzouvelekas), *American Journal of Agricultural Economics*, 2006, 88(3): 657-670

Ex post evaluation of an earmarked tax on air pollution (with Katrin Millock), *Land Economics*, 2006, 82(1): 68-84

On production function estimation with selectivity and risk considerations (with Phoebe Koundouri), *Journal of Agricultural and Resource Economics*, 2005, 30(3): 597-608

Is really all domestic water consumption sensitive to price control? (with Roberto Martínez-Españeira), *Applied Economics*, 2004, 36(15): 1697-1703

Some ex-post evidence on environmental taxes (with Katrin Millock and Thomas Sterner), *CESifo DICE Report - Journal for Institutional Comparisons*, 2004

Consistent estimation of dynamic panel data models with time-varying individual effects (with Alban Thomas), *Annales d'Economie et de Statistique*, 2003, 70: 53-75

Long run study of residential water consumption (with Alban Thomas), *Environmental and Resource Economics*, 2003, 26(1): 25-43

Vente en primeur et investissement : une étude sur les grands crus de Bordeaux (with Héla Hadj Ali), *Economie et Prévision*, 2003, 159: 93-103

Estimation de la demande domestique d'eau potable en France (with Arnaud Reynaud), *Revue Economique*, 2001, 52(1): 167-185

Privately-operated water utilities, municipal price negotiation, and estimation of residential water demand: The case of France (with Alban Thomas), *Land Economics*, 2000, 76(1): 68-85

Dynamique de la consommation domestique d'eau potable des ménages : une étude sur un panel de communes françaises (with Alban Thomas), *Economie et Prévision*, 2000, numéro spécial « Economie de l'environnement et des ressources naturelles », 175-184

### **Book chapters**

An assessment of the widespread use of increasing block tariffs in the municipal water supply sector (with Dale Whittington). In Oxford Research Encyclopedia of Global Public Health. Oxford University Press. doi: <http://dx.doi.org/10.1093/acrefore/9780190632366.013.243>, 2020.

A simulation model for understanding the consequences of alternative water and wastewater tariff structures: A case study of Fayoum, Egypt (with Dale Whittington and Mohamed El-Alfy), In *Understanding and Managing Urban Water in Transition* (Springer, The Netherlands), edited by R.Q. Grafton, K.A. Daniell, C. Nauges, J.D. Rinaudo, and W.W. Chan, 2015

Pricing urban water services: the case of France (with Alban Thomas), In *Water Resources, Planning and Management* (Cambridge University Press, England), edited by R.Q. Grafton and K. Hussey, February 2011

### **Books**

*Understanding and Managing Urban Water in Transition*. R.Q. Grafton, K.A. Daniell, C. Nauges, J.D. Rinaudo, W.W. Chan (Eds). ISBN 978-94-017-9801-3. Springer, Dordrecht (The Netherlands), 2015

*Economic Instruments for Water Management - The cases of France, Mexico and Brazil*. R. Seroa da Motta, A. Thomas, L. Saade Hazin, J.G. Feres, C. Nauges, A. Saade Hazin. Edward Elgar, Cheltenham (UK), 151 p., Oct. 2004

### **Working papers**

There is no cure that does not cost: The cost of drinking water during droughts in Brazil (with Caroline van den Berg), *submitted*

Relationship between risk preferences and input use: A lab experiment (with Douadia Bougherara), Toulouse School of Economics Working Paper n° 18-903, *submitted*

Endogenous variables in binary choice models: Some insights for practitioners (with Christophe Bontemps), Toulouse School of Economics Working Paper n° 17-855

Greening household behaviour and water, OECD Environment Working Papers, No. 73, OECD Publishing, 2014; <http://dx.doi.org/10.1787/5jxrclrr79f7-en>

What are households willing to pay for better tap water quality? A cross-country valuation study (with Olivier Beaumais, Anne Briand and Katrin Millock), Nota di Lavoro 24.2014, Milan, Italy: Fondazione Eni Enrico Mattei

Gasoline content regulation and compliance behavior among US refineries (with Ujjayant Chakravorty and Henry Thille), CESifo Working Paper No. 3978 (October 2012)

Heterogeneous responses to water conservation programs: The case of residential users in Los Angeles (with Michael Hanemann), Working paper n°1026, Department of Agricultural and Resource Economics, University of California, Berkeley

Unit roots: Identification and testing in micro panels (with Stephen Bond and Frank Windmeijer), Working paper CWP07/05, Centre for Microdata Methods and Practice, Institute for Fiscal Studies

Estimating residential water demand under block rate pricing: A nonparametric approach (with Richard Blundell)

## GRANTS AND CONSULTING ACTIVITIES

2019: Consultant for GIZ on the *assessment of tools and approaches towards linking water security to economic growth*.

2017: Consultant for the World Bank on the *measurement of performance of water and wastewater utilities*.

2017: Consultant for the OECD on the *dynamic effects of environmental policies on innovation, structural adjustment, and environmental performance in agriculture*.

2016: Consultant for the French Ministry of Agriculture on *public policies for irrigation water management*.

2016: Consultant for the OECD in relation to a *national policy dialogue on selected water issues in Korea and Brazil*.

2015: Consultant for the World Bank on the *measurement of performance of water and wastewater utilities in Africa*.

2012: Consultant for the OECD on *environmental policy and water-saving behaviour and investment*.

2011-2015: Australian Research Council Future Fellowship.

2011-2012: Consultant for USAID (Chemonics) on *Egypt water project regulatory reform*.

2011-2012: Consultant for the World Bank on *irrigation practices in Jordan*.

2011: Consultant for the OECD on *environmental policy and organic food consumption*.

2011: Consultant for the World Bank on *water infrastructure and school attendance in Ghana*.

2010-2012: Grant from INRA for a research project on *performance and conversion to organic farming in France* (coordinator: Laure Latruffe, INRA).

2010: Consultant for the German Technical Cooperation for a *water and wastewater tariff study in Egypt*.

2010: Grant from the French Ministry of Ecology, Energy, and Sustainable Development for a research project on *economic instruments to mitigate polluting emissions from the industrial sector into the air*.

2010: Fellowship from the OECD Trade and Agriculture Directorate Co-operative Research Programme for a six months visit at the University of Queensland, Australia.

2009-2011: Grant from the French National Research Agency for a research project on the *efficiency and productivity of food industries* (coordinator: Vincent Réquillart, GREMAQ).

2009: Consultant for the World Bank on *energy efficiency of Brazilian water utilities*.

2008-2010: Grant from the French Ministry of Ecology, Energy, and Sustainable Development for a research project on the *quantitative management of water resources in South-West France* (coordinator: Arnaud Reynaud, INRA).

2008-2009: Consultant for the OECD on *household behaviour and environmental policy*.

2006-2007: Grant from LACEEP (Latin American and Caribbean Environmental Economics Program) for a research project on *the role of economic instruments for environmental management: Water charges in the Paraíba do Sul river basin* (coordinator: José Feres, IPEA Brazil).

2006: Consultant for the World Bank on *economies of scale and density in water supply and sewerage service provision*.

2005-2006: Grant from the Department of Economics Scientific Committee of INRA for a research project on optimal water pricing (with Richard Blundell, UCL, and Jon Strand, IMF).

2005: Consultant for the World Bank on *water and sanitation policies in South West Sri Lanka*.

2004-2005: Grant from the Department of Economics Scientific Committee of INRA for a research project on *urban water management* (with Pr. Hanemann, University of Berkeley, USA).

2004: Grant from the Climate Change Center (University of California, Berkeley) for a 5-months visit at UC Berkeley, for a research project on *urban water management* (with Pr. Hanemann, University of Berkeley, USA).

2003-2004: Grant from the French Ministry of Ecology and Sustainable Development for a project on *water prices in France* (with INRA-ESR Rennes, France and CREST Paris, France).

2002-2003: Consultant for the InterAmerican Development Bank for the project *water charge instruments for environmental management in Latin America: from theoretical to practical issues*” (with IPEA, Brazil).

2001-2003: Grant from the CNRS (French National Centre for Scientific Research) for a research project on the *regulation of air pollution* (with CIRED-CNRS, France, INERIS, France, and the University of Göteborg, Sweden).

2000-2001: Marie-Curie individual fellowship Category 30 - Program: “Improving Human Research Potential and the Socio-Economic Knowledge Base” – Funding of the project “Residential water demand: economic and econometric improvements”. Location: University College London (UK).

1996-1999: Bourse Lavoisier granted by the French Ministry of Foreign Affairs for the project “Residential water demand: economic and econometric improvements” (declined).

## SELECTED COMMUNICATIONS

### Seminars

SWELL (Seminar on Water Economics on Line); ISCTE-University Institute of Lisbon (Portugal); Adelaide University (Australia); University of Queensland, Brisbane (Australia); Monash University, Melbourne (Australia); Institute of Water Policy, National University of Singapore; University of Heidelberg (Germany); World Bank, Washington D.C. (USA); University of Western Australia, Perth (Australia); University of Paris I (France); University of Alberta, Edmonton (Canada); MTT Agrifood Research, Helsinki (Finland); Oviedo University, Oviedo (Spain); Crawford School of Economics and Government, Australian National University; IPEA (Institute of Applied Economic Research), Rio de Janeiro (Brazil); Goteborg University, Gothenburg (Sweden); University of Crete, Rethymnon (Greece); Athens University of Economics and Business, Athens (Greece)

### Conferences

Society for Benefit-Cost Analysis Annual Conference (online), 2021  
 Australasian Agricultural and Resource Economics Society Conference, Perth (Australia), 2020  
**[invited speaker]**  
 The LEEP Institute’s Meeting of International Excellence in Environmental and Resources Economics, Exeter (UK), 2019  
 Manchester Environmental Economics Workshop, Manchester (UK), 2017  
 French Association of Environmental and Resource Economists Conference, 2015, 2016, 2018  
 Australian Agricultural and Resource Economics Society Conference, 2014, 2015

European Association of Environmental and Resources Economists Conf., Toulouse (France), 2013  
 Australian Agricultural and Resource Economics Society Conference, Sydney (Australia), 2013  
 Congress of the Canadian Resource and Environmental Economics Study Group, Vancouver, 2012  
 Natural Resource Modelling Conference, Brisbane (Australia), 2012  
 European Association of Environmental and Resources Economists Conference, Prague (Czech Republic), 2012  
 Australian Agricultural and Resource Economics Society Conference, Fremantle (Australia), 2012  
 European Association of Agricultural Economists 114<sup>th</sup> seminar, Berlin (Germany), 2010  
 Allied Social Sciences Association (ASSA) meeting, Atlanta (USA), 2010  
 Congress of the Canadian Resource and Environmental Economics Study Group (CREE), Edmonton (Canada), 2009  
 Australian Agricultural and Resource Economics Society Conference, Cairns (Australia), 2009  
 European Association of Environmental and Resources Economists Conference, Gothenburg (Sweden), 2008  
 World Congress of Environmental and Resource Economists, Kyoto (Japan), 2006

## TEACHING EXPERIENCE

2015-2019: Water Economics, Toulouse School of Economics  
 2007: Econometrics of panel data, Institut Sous-régional de Statistique et d'Économie Appliquée de Yaoundé (Cameroun)  
 2006: Econometrics of panel data, Athens University of Economics and Business  
 2004-2010: Econometrics of panel data, ENSAI (French National School of Applied Statistics)  
 2003-2007: Microeconometrics for environmental management, University of Toulouse

## OTHER ACTIVITIES

**Editor:** European Review of Agricultural Economics (2020-)

**Associate editor:** American Journal of Agricultural Economics (2016- )  
 Review of Agricultural, Food and Environmental Studies (2013-2020)  
 Environmental and Resource Economics (2013-2020)  
 Water Resources and Economics (2014-2020)

**Member of editorial board:** Review of Environmental Economics and Policy (2020- )  
 European Review of Agricultural Economics (2010-2016)

**Advisor** for the SANDEE - South Asian Network for Development and Environmental Economics (2011-2019)

**Referee:** American Journal of Agricultural Economics, Environmental and Resource Economics, European Economic Review, European Review of Agricultural Economics, International Journal of Industrial Organization, Journal of Environmental and Economics Management, Journal of Regulatory Economics, Regional Science and Urban Economics, Resource and Energy Economics, Water Resources Research



**Member of Ph.D. committees:**

Natasha Auch (Newcastle University, UK), May 2021  
Simon de Bonviller (University of Strasbourg, France), September 2019  
François Bareille (Agrocampus Ouest, Rennes, France), November 2018  
Marine Favre (University of Montpellier, France), January 2018  
Marta Suárez-Varela Maciá (University of Valencia, Spain), January 2018  
Claire Settre (University of Adelaide, Australia), October 2017  
David Fuente (University of North Carolina, USA), May 2017  
Vicente Ruiz (Paris School of Economics, France), May 2016  
Ricardo Emanuel Sarmiento Correia (ISCTE-IUL, Lisbon, Portugal), April 2016  
Alvar Escrivá-Bou (Universitat Politècnica de Valencia, Spain), December 2015  
Daniel Andres Herrera Araujo (Toulouse School of Economics, France), September 2015  
Daniel Gregg (Central Queensland University, Australia), April 2015  
María Pérez-Urdiales (University of Oviedo, Spain) – external reviewer, January 2015  
Amandine Loyal Laré (University of Rouen, France), September 2014  
Muhammad Arif Watto (University of Western Australia), August 2014  
Ornella Boutry (University of Poitiers, France), November 2011  
Alberto Ruiz Villaverde (University of Granada, Spain), April 2011  
Sriram Shankar (University of Queensland, Australia), November 2010  
Anne Olivier (EHESS, Paris, France), May 2010

**Member of HDR (accreditation to supervise research) committees:**

Basak Bayramoglu (UMR Économie Publique, Université Paris-Saclay, France), June 2018  
Sabine Duvaleix-Tréguer (Agrocampus Ouest, SMART-LERECO, France), November 2017  
Julien Salanié (University Jean Monnet, GATE, France), November 2016

Member of the Scientific Council of the INRA Economics Department (2006-2011)

Member of the INRA Scientific Committee (2007-2010) – in charge of the evaluation of INRA researchers