

# David Leclère, PhD

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## Current position:

*Research Scholar*

Ecosystems Services and Management,  
IIASA

## EMPLOYMENT

- 2012-current **Research Scholar**; International Institute for Applied System Analysis IIASA (Austria, 7 years)  
2012 **Post-doctoral contract**; Centre National de la Recherche Scientifique CNRS (France, 6 months)  
2009-2012 **PhD grant**; Agence de l'Environnement et de la Maitrise de l'Energie ADEME & Commissariat a l'Energie Atomique et aux Energies Alternatives CEA (France, 3 years)

## EDUCATION

- 2009-2012 **PhD degree** in Environmental Sciences (AgroParisTech)  
"European agricultural supply & climate change: an integrated modeling approach of scale interactions at regional level"  
*Advisors:* N. De Noblet-Ducoudré (IPSL/LSCCE, Saclay, Fr.) & P.-A. Jayet (Public Economics Unit, Grignon, Fr.)  
2006-2008 **MSc. degree** in Climate and environment interactions (Versailles Saint-Quentin University – Paris XIII)  
**MSc. degree** in Fundamental & Applied Physics (Magistère d'Orsay - Paris Sud University – Paris XI)  
2005-2006 **BSc. degree** in Fundamental & Applied Physics (Magistère d'Orsay - Paris Sud University – Paris XI)  
2003-2005 Physics & Chemistry prepa-school (Lycée Chateaubriand – Rennes)  
2003 Baccalauréat Scientifique (high-school diploma, sciences section) (Lycée Saint-Joseph – Lamballe)

## EXPERIENCES

- 2012-2019 **Internships supervision**, PhD level (6 students)  
**Co-investigator of research projects:** FP7 and H2020 European research program projects (GLOBAL-IQ, IMPACT-2C, AGRICISTRATE, Animal Change, ECONADAPT, SIGMA, SUSFANS), tender for the European Commission (iLUC2), Austrian Research Climate Program project (CC2BBE), European Knowledge Hub project (FACCE-JPI MACSUR), GEF research projects (ISWEL, INMS)  
2009-2011 **Internships supervision**, MSc. level (2 students)  
2005-2008 **Internships** in various public research institutes:  
*IPSL-LSCCE* (Saclay, France, 4 months, Simulation of LUCC impacts on land-atmosphere exchanges over France),  
*IFM-GEOMAR* (Kiel, Germany, 3 months, In-situ measurement of upper layer Labrador Sea currents),  
*IPNO* (Orsay, France, 2 months, Simulation of long life-time nuclear waste reduction in fast breeder reactors).  
2003-2008 **Student jobs** as executant, waiter, benevolent positions in various music festivals

## SKILLS

- Langages** English (fluent oral and written), German (basics oral and written), Ukrainian (notions), French (native)
- Scientific & IT** Intensive experience in **scientific research project management**, in **academic articles & technical report writing**, good knowledge of **UNIX and Windows environments** and **scientific programming languages** (R/C/C++/Fortran/Python/Java/Sql), intensive development and use of agronomic, terrestrial biosphere, land use and biodiversity **models**, **mathematical programming** for agricultural systems and **data mining** and **spatial analysis** techniques

## PUBLICATIONS

### Peer-reviewed publications

- Leclère, D., ...; in revision; *Nature*; Reversing terrestrial biodiversity declines due to habitat loss: a model ensemble approach
- HJ Kim, ..., Leclère, D., ...; 2018; Geoscientific Model Development Discussions; A protocol for an intercomparison of biodiversity and ecosystem services models using harmonized land-use and climate scenarios
- Deppermann, A., Balkovič, J., Bundle, S., Di Fulvio, F., Havlík, P., Leclère, D., ...; 2018; *Environmental Research Letters*; Increasing crop production in Russia and Ukraine—regional and global impacts from intensification and recultivation
- Byers, E., Gidden, M., Leclère, D., ...; 2018; *Environmental Research Letters*; Global exposure and vulnerability to multi-sector development and climate change hotspots
- Baker, J., Havlík, P., Beach, R., Leclère, D., ...; 2018; *Environmental Research Letters*; Evaluating the effects of climate change on US agricultural systems: sensitivity to regional impact and trade expansion scenarios
- Ermolieva T., Boere, E., Biewald, A., Havlík, P., Mosnier, A., Leclère, D., ...; 2018; *Financial Statistical Journal*; Addressing climate change adaptation with a stochastic integrated assessment model: Analysis of common agricultural policy measures
- Ermolieva, T., Ermoliev, Y., Havlík, P., Mosnier, A., Leclère, D., Fritz, S., Valin, H., Obersteiner, M., Kyrzyzyuk, S. & Borodina, M. ; 2017 ; *Cybernetics and Systems Analysis* ; Dynamic Merge of the Global and Local Models for Sustainable Land Use Planning with Regard for Global Projections from GLOBIOM and Local Technical–Economic Feasibility and Resource Constraints
- Schipfer, F., Kranzl, L., Leclere, D., Leduc, S., Forsell, N., & Valin, H. ; 2017 ; *Biomass and Bioenergy* ; Advanced biomaterials scenarios for the EU28 up to 2050 and their respective biomass demand
- Ermoliev, Y., Ermolieva, T., Havlík, P., Mosnier, A., Leclère, D., Fritz, S., Obersteiner, M., M., Kyrzyzyuk, S. & Borodina, M. ; 2017 ; *Cybernetics and Systems Analysis* ; Robust downscaling approaches to disaggregation of data and projections under uncertainties: Case of land use and land use change systems
- Özkan, Ş., Vitali, A., Lacetera, N., Amon, B., Bannink, A., Bartley, D., Blanco-Penedo, I., de Haas, Y., Dufrasne, I., Elliott, J., Eory, V., Fox, N., Garnsworthy, P., Gengler, N., Hammami, H., Kyriozakis, I., Leclère, D., Lessire, F. & Kipling, R. ; 2016 ; *Environmental Research* ; Challenges and priorities for modelling livestock health and pathogens in the context of climate change
- Ermolieva, T., Havlík, P., Ermoliev, Y., Mosnier, A., Obersteiner, M., Leclère, D., Khabarov, N., Valin, H. & Reuter, W. ; 2016 ; *Journal of Agricultural Economics* ; Integrated Management of Land Use Systems under Systemic Risks and Security Targets: A Stochastic Global Biosphere Management Model
- Ermolieva, T., Ermoliev, Y., Havlík, P., Mosnier, A., Leclère, D., Kraxner, F., Khabarov, N., Obersteiner, M. ; 2015, *Cybernetics and Systems Analysis* ; Systems Analysis of Robust Strategic Decisions to Plan Secure Food, Energy, and Water Provision Based on the Stochastic Globiom Model.
- Leclère, D., Havlík, P., Fuss, S., Schmid, E., Mosnier, A., Walsh, B., ... Obersteiner, M. ; 2014, *Environmental Research Letters* ; Climate change induced transformations of agricultural systems: insights from a global model.
- Leclère, D., Havlík, P., Fuss, S., Mosnier, A., Schmid, E., Valin, H., ... Obersteiner, M. (2013). Climate change impacts on agriculture, adaptation & the role of uncertainty. In *Impacts World 2013, International Conference on Climate Change Effects, Potsdam, May 27-30*. Potsdam, Germany
- Leclère, D., Jayet P.-A. & De Noblet-Ducoudré N. ; 2013, *Ecological Economics* ; Farm-level autonomous adaptation of European agricultural supply to climate change
- Leclère, D., Jayet, P.-A., & De Noblet-Ducoudré, N. ; 2011 ; Short-term farm level adaptations of EU15 agricultural supply to climate change. In *EAAE 2011 Congress: Change and uncertainty, challenges for agriculture, food and natural resources, August 30th - Sept 3rd 2011, Zurich Switzerland*.
- Leclère, D., Jayet, P.-A., Zakharov, P., & De Noblet-Ducoudré, N. ; 2010 ; Quantifying the heterogeneity of abatement costs under climatic and environmental regulation changes: an integrated modeling approach. In *IATRC Public Trade Policy Research and Analysis Symposium “Climate Change in World Agriculture: Mitigation, Adaptation, Trade and Food Security”, Universität Hohenheim, Stuttgart, Germany, June 27-29, 2010*.

- Leclère, D., De Noblet-Ducoudré N. & Jayet P.-A. ; *in revision*; Understanding the farm-scale response of European agriculture to climate change: evaluation of a coupled economic-crop model

#### Selected technical reports and book chapters

- Leclère, D., Obersteiner, M., ...; 2018; *IIASA e-print*; Towards pathways bending the curve terrestrial biodiversity trends within the 21st century; <http://pure.iiasa.ac.at/id/eprint/15241/>
- M Barrett, ..., Leclère, D.; *WWF Living Planet Report*; Living Planet Report 2018: Aiming Higher
- Leclère, D., Krisztin, T., Havlík, P., Fritz, S., Balkovič, J., Skalský, R., Valin, H., Mosnier, A. & Obersteiner; M.; 2017; Projection of cropland and cropping systems - Deliverable D52 of the SIGMA FP7 project.
- Leclère, D., Krisztin, T., Havlík, P., Fritz, S., Balkovič, J., Skalský, R., Valin, H., Mosnier, A. & Obersteiner; M.; 2017; Future crop production and its impacts on biodiversity, nutrient balances, greenhouse gas emissions and agricultural water use- Deliverable D53 of the SIGMA FP7 project.
- Havlík, P., Valin, H., Gusti, M., Schmid, E., Leclère, D., Forsell, N., Herrero, M., Khabarov, N., Mosnier, A., Cantele, M. & Obersteiner, M. ; 2015 ; *World Bank Policy Research Working Paper* ; Climate change impacts and mitigation in the developing world: An Integrated Assessment of the Agriculture and Forestry Sectors ; Background paper on *Shock Waves: Managing the Impacts of Climate Change on Poverty*
- Havlík, P., Leclère, D., Valin, H., Herrero, M., Schmid, E., Soussana, J.-F., & Obersteiner, M. (2015). Chapter 6: Global climate change, food supply and livestock production systems: A bioeconomic analysis. In Aziz Elbehri (eds), *Climate change and food systems: global assessments and implications for food security and trade*, pp.176-208. FAO, Rome, Italy

#### Oral presentations

- Leclère, D., ...; 2019; Reversing terrestrial biodiversity declines due to habitat loss: a multi-model assessment; Oral presentation to the 2019 Global Land Project Open Science Meeting, 24-27 April, 2019, Bern (Switzerland).
- Leclère, D., ...; 2019; Bending The Curve: use of models and scenarios for terrestrial biodiversity, Invited oral presentation to a *WWF-UK workshop on Bending the Curve of Freshwater Biodiversity, 12-13<sup>th</sup> February, London (UK)*.
- Leclère, D., ...; 2019; Bending the curve on terrestrial biodiversity loss: a multi-model assessment; *Invited seminar UNEP-WCMC, 14<sup>th</sup> February, London (UK)*
- Leclère, D., ...; 2018; Reversing terrestrial biodiversity declines due to habitat loss: A multi-model assessment; *Invited presentation & session chair at the Scenarios for Transformational change Day (Rio Conventions Pavilion) side event to the 14<sup>th</sup> COP of the Convention on Biological Biodiversity, 19<sup>th</sup> November, Sharm El Sheikh (Egypt)*
- Leclère, D., ...; 2018; Bending the curve: an example of what scenarios & models can do; *Invited talk at WWF 2018 Living Planet Report Deep Dive Day, 16<sup>th</sup> November, Utrecht (Netherlands)*
- Leclère, D., ...; 2018; Bending the curve on terrestrial biodiversity loss: a multi-model assessment; *Oral presentation to the 11<sup>th</sup> Annual Meeting of the Integrated Assessment Modelling Consortium, 14<sup>th</sup> November, Sevilla (Spain)*
- Leclère, D., ...; 2018; Towards pathways bending the curve of terrestrial biodiversity trends from land-use change within the 21st century; *Oral presentation to the 48<sup>th</sup> Annual Meeting of the Ecological Society of Germany, Austria and Switzerland, 10-14<sup>th</sup> September, Vienna (Austria)*
- Leclère, D., Krisztin, T., Balkovič, J. & Havlík, P.; 2018; Improving and calibrating the cropland expansion & intensification responses in GLOBIOM, *Oral presentation to the workshop on econometric time series & partial equilibrium land use modelling, 4<sup>th</sup> April 2018, Vienna (Austria)*
- Leclère, D., Havlík, P., Balkovič, J.; Obersteiner, M.; 2017, Land use change projections – linking economic constraints and constraints of the physical environment, *Invited talk to the 67<sup>th</sup> Life Cycle Analysis Discussion Forum, 3<sup>rd</sup> November 2017, Zurich (Switzerland)*
- Leclère, D., Hellweg, S., Krisztin, T., Di Fulvio, F., Havlík, P. & Obersteiner, M.; 2017; Hotspots of future land use change impacts on terrestrial biodiversity under global mitigation scenarios; *Oral presentation to the 2017 Impacts World Conference, 11-13<sup>th</sup> October 2017, Potsdam (Germany)*.

- Leclère, D., Hellweg, S., Krisztin, T., Di Fulvio, F., Havlík, P., Lenzner, B., Obersteiner, M.; 2017; IIASA-ETH cSAR model: model & application with LUH preliminary data, *Oral presentation to the Workshop: Scenarios for IPBES using the SSPs, October 2017, Leipzig (Germany)*.
- Krisztin, T., Leclère, D., Fritz, S. Havlík, P.; 2017; WP5.2 & WP5.3 – Projections of future cropland & environmental impacts, *Oral presentation to the final meeting of the SIGMA project, 25-27<sup>th</sup> June 2017, Rome (Italy)*.
- Leclère, D., Havlík, P., Valin, H. & Frank, S. ; 2016 ; Biofuel production from European grassland and impact on the livestock sector ; *Oral presentation to the 26<sup>th</sup> General Meeting of the European Grassland Federation, 4-8 September, 2016, Trondheim (Norway)*.
- Leclère, D., Azevedo, L., Skalský, R., Balkovič, J. & Havlík, P. ; 2016 ; Towards systematic evaluation of crop model outputs for global land-use models ; *Oral presentation to the iCROP Conference, 17<sup>th</sup> March, Berlin (Germany)*
- Leclère, D., & Havlík, P. ; 2016 ; Modelling heat stress on livestock: how can we reach long-term and global coverage? ; *Oral presentation to the 2016 MACSUR LiveM Conference, 15-16<sup>th</sup> June 2016, Potsdam, Germany*.
- Leclère, D. & Havlík, P. ; 2015 ; Changes in climate variability and potential for impacts of droughts on markets; *Oral presentation to the 2015 Climate Smart Agriculture Conference, 16<sup>th</sup> March 2016, Montpellier (France)*
- Leclère, D. et al. ; 2015 ; Recent developments and future directions in modeling climate impact on agriculture at IIASA. *Invited talk to the Institut Català de Ciències del Clima (IC3), Jan. 16<sup>th</sup> 2015, Barcelona, Spain*.
- Leclère, D., Havlík, P., Obersteiner, M. et al.; 2015 ; The GLOBIOM model: main features & applications, foreseen role in Imbalance-P; *Oral presentation to the Imbalance-P Project Kick-off Meeting, Barcelona (Spain)*
- Havlík, P., & Leclère, D. ; 2014 ; Climate change impacts and the global agricultural sector: An integrated assessment. *Invited talk to The InterDrought Project Summer School 4th July 2014, Mikulov, Czech Republic*.
- D. Leclère, P. Havlík, S. Fuss, E. Schmid, A. Mosnier, H. Valin, M. Herrero, N. Khabarov & M. Obersteiner ; 2014 ; Impact uncertainty & the design of climate-readiness in the global agricultural system. *Invited talk to 3rd Conference on Agriculture, Food and Nutrition Security and Climate Change, 4th Dec. 2013, Johannesburg, South-Africa*.
- Leclère, D. ; 2014 ; Tracking the spatial and temporal scales relevant to the understanding of climate change induced challenges to agricultural systems. *Oral presentation to the MACSUR Trade-M Workshop, "Scaling in global, regional and farm models", Sept. 24th 2014, Vienna (Austria)*.
- D. Leclère, P. Havlík and G. Dumollard ; 2014 ; Protecting forests and biodiversity. *Oral presentation to the Final Conference of the GLOBAL-IQ FP7 project, 17<sup>th</sup> June 2014, Brussels (Belgium)*.
- D. Leclère, T. Ermolieva, P. Havlík, A. Mosnier, E. Schmid, S. Fuss, H. Valin, J. Szolgayová & M. Obersteiner ; 2014 ; Towards robust adaptation to climate change in the agricultural sector. *Oral presentation to the 2014 Global Land Project Open Science meeting, 20<sup>th</sup> March 2014, Berlin (Germany)*.
- P. Havlík & D. Leclère ; 2014 ; Impacts, uncertainty and the design of climate-readiness in the global agricultural system. *Oral presentation at the OECD Workshop on Climate Change and Agriculture: results of some modelling exercises, 16<sup>th</sup> April 2014, OECD Conference Centre, Paris (France)*.
- D. Leclère, P. Havlík, S. Fuss, A. Mosnier, E. Schmid, H. Valin, M. Herrero, N. Khabarov & M. Obersteiner; 2013; Climate change impacts on agriculture, adaptation & the role of uncertainty; Impacts World 2013 *Oral presentation at Impacts World 2013 conference, Potsdam (Germany)*
- D. Leclère, Jayet P.-A. & De Noblet-Ducoudré N. ; 2011 ; Short-term farm level adaptations of EU15 agricultural supply to climate change *Oral presentation at EAAE 2011 Congress, Zurich (Switzerland)*
- D. Leclère, De Noblet-Ducoudré N. & Jayet P.-A. ; 2011 ; Modelling European agricultural supply impact on biosphere-atmosphere exchanges under climate change, adaptation and mitigation policies *Poster at the 2011 i-LEAPS Science Conference, Garmisch-Partenkirchen (Germany)*
- D. Leclère, Jayet P.-A. & De Noblet-Ducoudré N.; 2010 ; Impact du climat sur les rendements et les revenus: un essai d'évaluation à l'échelle européenne *Oral presentation at ACCAE conference 2010, Clermont-Ferrand (France)*
- D. Leclère, De Noblet-Ducoudré N. & Jayet P.-A. ; 2010 ; How will the European agricultural supply impact the net biosphere-atmosphere exchanges of GHG, water and energy under climate change? A modelling approach *Oral presentation at GLP Open Science Meeting, Phoenix (USA)*

- D. Leclère, Jayet P.-A., P. Zakharov & De Noblet-Ducoudré N.; 2010 ; Quantifying the heterogeneity of abatement costs under climatic and environmental regulation changes: an integrated modelling approach  
*Oral presentation at IATRC Symposium 2010, Stuttgart (Germany)*
- D. Leclère, Jayet P.-A. , Zakharov P., Godard C., Galko E., De Noblet-Ducoudré N. & Vuichard N.; 2010 ; La production des grandes cultures au niveau européen sous changement climatique, bilans biophysique, biogéochimique et économique : une analyse multi-modèles.  
*Oral presentation at STICS Seminar, 2010, Sorèze (France)*

## Posters

- Leclère, D., Azevedo, L., Skalsky, R., Balkovič, J. & Havlík, P. ; 2016 ; Towards systematic evaluation of crop model outputs for global land-use models.  
*Poster at European Geosciences Union (EGU) General Assembly 2016, Vienna, Austria.*
- Havlík, P., Valin, H., Mosnier, A., Forsell, N., Frank, S., Leclère, D., Palazzo, A., Ermolieva, T. ; 2015 ; Integrated Multi-scale Modeling Framework for Assessment of Land-use Related Challenges under Global Change.  
*Poster at Systems Analysis 2015 Conference, 2015, Laxenburg (Austria)*
- Krisztin, T., Havlík, P., Leclère, D. & Moreau I.; 2015 ; Global High-resolution Land-use Change Projections: A Bayesian Multinomial Logit Downscaling Approach Incorporating Model Uncertainty and Spatial Effects.  
*Poster at Systems Analysis 2015 Conference, 2015, Laxenburg (Austria).*
- Ermolieva, T., Havlík, P., Yermoliev, Y., Mosnier, A., Obersteiner, M., Leclère, D., Khabarov, N., Valin, H. & Reuter, W. ; 2015 ; Integrated Management of Land-use Systems under Systemic Risks and Food-(bio)energy-water-environmental Security Targets: A Stochastic Global Biosphere Management Model.  
*Poster at Systems Analysis 2015 Conference, 2015, Laxenburg (Austria).*
- Yermoliev, Y., Ermolieva, T., Havlík, P., Mosnier, A., Obersteiner, M., Leclère, D., Fritz, S. & Kyryzyuk, S. ; 2015 ; Robust Rescaling Methods for Integrated Water, Food, and Energy Security Management under Systemic Risks and Uncertainty.  
*Poster at Systems Analysis 2015 Conference, 2015, Laxenburg (Austria).*
- Leclère D, Azevedo L, Skalsky R, Balkovič J, Havlik P, & Obersteiner M (2015). Towards Systematic Evaluation of Crop Model Outputs for Global Land-use Models.  
*Poster at Systems Analysis 2015 Conference, 2015, Laxenburg (Austria)*