HUGO VALIN, PhD — ECONOMIST

KEY AREAS OF EXPERTISE

- Environmental and agricultural economics (biofuels, land use change)
- Trade policies (trade agreements, WTO)
- Computable General Equilibrium modeling
- Partial Equilibrium modeling

PERSONAL INFORMATION

Adress: Ecosystems Services and Management Program – International Institute on Applied Systems Analysis – Schlossplatz 1 – 2361 Laxenburg - AUSTRIA
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Email: valin@iiasa.ac.at
Citizenship: French

POSITION AND WORK EXPERIENCE

Current positions and work (since January 2020)

- Senior Research Scholar at the Ecosystems Services and Management Program (ESM), International Institute on Applied Systems Analysis (IIASA).

Responsibilities: principal investigator for a portfolio of projects on the following topics:

- Agriculture and land use change global foresight
- Food demand and food security
- Impact of biofuel policies in the EU and in the US
- Impact of climate change
- GHG emissions from agriculture and land use change

Past positions

- Jan 2010 – Dec 2019: Research Scholar, ESM Program, IIASA.
- Oct 2018 – Dec 2018: Seconded expert, Trade and Agriculture Directorate, OECD, Paris.
- Sept 2010 – Apr 2011: Engineer Expert, at the French National Institute for Agricultural Research (INRA)
- July-Dec 2009: Consultant for the International Food Policy Research Institute (IFPRI), Washington D.C., Market, Trade and Infrastructure Division (MTID).
  Collaboration relative to the assessment of the effects of biofuel policies using a general equilibrium modeling approach.
- 2008-2009: Secretary general of CIREM and economist at CIREM, Paris (Centre d'Information et de Recherche sur l'Economie Mondiale).
  In addition to research work, management of the association with 3 economists employed and one management assistant.
- 2006-2008: Economist with CIREM, Paris.
  In charge of studies realization in partnership with CEPII (Centre d'Etudes Prospectives et d'Informations Internationales) using economic modelling approach.
- 2006: Intern with Electricité de France for a research mission in the US on environmental negotiations under the federal hydropower relicensing framework.
  Two month field mission around the USA to analyse the US hydropower regulation.
- 2005: Intern with the French Agency for Development (AFD).
  Contribution to the Strategic Plan on integration of Climate concerns in AFD projets.

EDUCATION

2010-2014	PhD in Economics, ParisTech *Thesis: Land use change, agricultural markets and the environment*
2005-2006	Master in Energy and Environmental Resource Economics, Paris-Tech.
2004-2006	Engineer diploma in Environmental Sciences, AgroParisTech Executive (ENGREF).
2001-2004	Engineer diploma, Ecole Polytechnique, ParisTech.

LANGUAGES

French (mother tongue), English (fluent, TOEFL: 270/300), German (basic)

COMPUTER SKILLS

Economic and mathematic softwares:	GAMS, R, Maxima, SAS.
Other specific softwares:	LaTeX, MapInfo, SVN, Excel in Visual Basic.

TEACHING EXPERIENCE

Master degree course on the Economic and Environmental impact of Biofuel Policies (AgroParisTech, France)

CGE Course on Modelling trade policies for economists of DG Trade, European Commission and World Trade Organization (Economic research department)

CONTRIBUTION TO EXPERT GROUPS

Member of the Alternative Fuel Task Force of the UN International Civil Aviation Organization (nomination by the European Commission).

Member of the Agricultural Model Intercomparison Project (AgMIP, www.agmip.org).

PUBLICATIONS IN PEER-REVIEWED JOURNALS

van Meijl, H., Shutes, L., Valin, H., Stehfest, E., van Dijk, M., Kuiper, M., Tabeau, A., van Zeist, W.-J., et al. (2020), 'Modelling alternative futures of global food security: Insights from FOODSECURE'. *Global Food Security* 25: e100358.

van Dijk, M., Gramberger, M., Laborde, D., Mandryk, M., Shutes, L., Stehfest, E., Valin, H., & Faradsch, K. (2020), 'Stakeholder-designed scenarios for global food security assessments'. *Global Food Security* 24: e100352.

Herrero, M., Thornton, P.K., Mason-D'Croz, D., Palmer, J., Benton, T.G., Bodirsky, B.L., Bogard, J.R., Hall, A., et al. (2020). Innovation can accelerate the transition towards a sustainable food system. *Nature Food* 1 (5): 266-272.

de Andrade Junior, M. A. U., Valin, H., Soterroni, A. C., Ramos, F. M. & Halog, A. (2019), 'Exploring future scenarios of ethanol demand in Brazil and their land-use implications', *Energy Policy* **134**, 110958.

Hasegawa, T., Havlik, P., Frank, S., Palazzo, A. & Valin, H. (2019), 'Tackling food consumption inequality to fight hunger without pressuring the environment', *Nature Sustainability* **2**(9), 826--833.

Stehfest, E., van Zeist, W.-J., Valin, H., Havlik, P., Popp, A., Kyle, P., Tabeau, A., Mason-D'Croz, D., Hasegawa, T., Bodirsky, B. L., Calvin, K., Doelman, J. C., Fujimori, S., Humpenöder, F., Lotze-Campen, H., van Meijl, H. & Wiebe, K. (2019), 'Key determinants of global land-use projections', *Nature Communications* **10**(1).

Baker, J. S., Havlik, P., Beach, R., Leclère, D., Schmid, E., Valin, H., Cole, J., Creason, J., Ohrel, S. & McFarland, J. (2018), 'Evaluating the effects of climate change on US agricultural systems: sensitivity to regional impact and trade expansion scenarios', *Environmental Research Letters* **13**(6), 064019.

Deppermann, A., Havlik, P., Valin, H., Boere, E., Herrero, M., Vervoort, J. & Mathijs, E. (2018), 'The market impacts of shortening feed supply chains in Europe', *Food Security*.

Frank, S., Beach, R., Havlik, P., Valin, H., Herrero, M., Mosnier, A., Hasegawa, T., Creason, J., Ragnauth, S. & Obersteiner, M. (2018), 'Structural change as a key component for agricultural non-CO2 mitigation efforts', *Nature Communications* **9**(1).

Frank, S., Havlk, P., Stehfest, E., van Meijl, H., Witzke, P., Perez-Domnguez, I., van Dijk, M., Doelman, J. C., Fellmann, T., Koopman, J. F. L., Tabeau, A. & Valin, H. (2018), 'Agricultural non-CO2 emission reduction potential in the context of the 1.50.167emC target', *Nature Climate Change*.

Grubler, A., Wilson, C., Bento, N., Boza-Kiss, B., et al. (2018), 'A low energy demand scenario for meeting the 1.50.167emC target and sustainable development goals without negative emission technologies', *Nature Energy* **3**(6), 515--527.

Hasegawa, T., Fujimori, S., Havlik, P., Valin, H., et al. (2018), 'Risk of increased food insecurity under stringent global climate change mitigation policy', *Nature Climate Change* **8**(8), 699--703.

Lloyd, S. J., Bangalore, M., Chalabi, Z., Kovats, R. S., Hallegatte, S., Rozenberg, J., Valin, H. & Havlik, P. (2018), 'A Global-Level Model of the Potential Impacts of Climate Change on Child Stunting via Income and Food Price in 2030', *Environmental Health Perspectives* **126**(9), 097007.

van Meijl, H., Havlik, P., Lotze-Campen, H., Stehfest, E., Witzke, P., Domnguez, I. P., Bodirsky, B. L., van Dijk, M., Doelman, J., Fellmann, T., Humpenöder, F., Koopman, J. F. L., Müller, C., Popp, A., Tabeau, A., Valin, H. & van Zeist, W.-J. (2018), 'Comparing impacts of climate change and mitigation on global agriculture by 2050', *Environmental Research Letters* **13**(6), 064021.

Obersteiner, M., Bednar, J., Wagner, F., Gasser, T., Ciais, P., Forsell, N., Frank, S., Havlik, P., Valin, H., Janssens, I. A., Pecuelas, J. & Schmidt-Traub, G. (2018), 'How to spend a dwindling greenhouse gas budget', *Nature Climate Change* **8**(1), 7--10.

Parodi, A., Leip, A., Boer, I. J. M. D., Slegers, P. M., Ziegler, F., et al. (2018), 'The potential of future foods for sustainable and healthy diets', *Nature Sustainability* **1**(12), 782--789.

Rao, N. D., Min, J., DeFries, R., Ghosh-Jerath, S., Valin, H. & Fanzo, J. (2018), 'Healthy, affordable and climate-friendly diets in India', *Global Environmental Change* **49**, 154--165.

Rosenzweig, C., Ruane, A. C., Antle, et al. (2018), 'Coordinating AgMIP data and models across global and regional scales for 1.5C and 2.0C assessments', *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences* **376**(2119), 20160455.

Sandström, V., Valin, H., Krisztin, T., Havlk, P., Herrero, M. & Kastner, T. (2018), 'The role of trade in the greenhouse gas footprints of EU diets', *Global Food Security* **19**, 48--55.

Soterroni, A. C., Mosnier, A., Carvalho, A. X. Y., Свmara, G., et al. (2018), 'Future environmental and agricultural impacts of Brazil's Forest Code', *Environmental Research Letters* **13**(7), 074021.

Schipfer, F., Kranzl, L., Leclere, D., Leduc, S., Forsell, N., & Valin, H. (2017). Advanced biomaterials scenarios for the EU28 up to 2050 and their respective biomass demand. *Biomass and Bioenergy* 96: 19-27.

Frank, S., Havlík, P., Soussana, J.-F., Levesque, A., Valin, H., Wollenberg, E., Kleinwechter, U., Fricko, O., Gusti, M., Herrero, M., Smith, P., Hasegawa, T., Kraxner, F. & Obersteiner, M. (2017), 'Reducing greenhouse gas emissions in agriculture without compromising food security?', *Environmental Research Letters*.

Palazzo, A., Vervoort. J.M., Mason-D'Croz, D., Rutting, L., Havlik, P., Islam, S., Bayala, J., Valin, H., et al. (2017). Linking regional stakeholder scenarios and shared socioeconomic pathways: Quantified West African food and climate futures in a global context. *Global Environmental Change*: 1-16.

Gerssen-Gondelach, S.J., Lauwerijssen, R.B.G., Havlik, P., Herrero M, Valin, H., Faaij, A.P.C., & Wicke, B. (2017). Intensification pathways for beef and dairy cattle production systems: Impacts on GHG emissions, land occupation and land use change. Agriculture, Ecosystems & Environment 240: 135-147.

Fricko, O., Havlik, P., Rogelj, J., Klimont, Z., Gusti, M., Johnson, N., Kolp, P., Strubegger, M., et al. (2017). The marker quantification of the Shared Socioeconomic Pathway 2: A middle-of-the-road scenario for the 21st century. *Global Environmental Change* 42: 251-267.

Popp, A., Calvin, K., Fujimori, S., Havlik, P., Humpenöder, F., Stehfest, E., Bodirsky, B.L., Dietrich, J.P., et al. (2017). Land-use futures in the shared socio-economic pathways. *Global Environmental Change* 42: 331-345.

Obersteiner M., Walsh B., Frank S., Havlik P., Cantele M., Liu J., Palazzo A., Herrero M., et al. (2016). Assessing the land resource-food price nexus of the Sustainable Development Goals. *Science Advances* 2 (9)

Ermolieva T., Havlík P., Ermoliev Y., Mosnier A., Obersteiner M., Leclère D., Khabarov N., Valin H., et al. (2016). Integrated Management of Land Use Systems under Systemic Risks and Security Targets: A Stochastic Global Biosphere Management Model. *Journal of Agricultural Economics* 67 (3): 584-601.

Herrero, M., Henderson, B., Havlík, P., Thornton, P. K., Conant, R. T., Smith, P., Wirsenius, S., Hristov, A. N., Gerber, P., Gill, M., Butterbach-Bahl, K., Valin, H., Garnett, T. & Stehfest, E. (2016), 'Greenhouse gas mitigation potentials in the livestock sector', *Nature Climate Change*.

Leclère, D., Havlik, P., Fuss, S., Schmid, E., Mosnier, A., Walsh, B., Valin, H., Herrero, M., Khabarov, N., Obersteiner, M. (2014) "Climate change induced transformations of agricultural systems: insights from a global model", *Environmental Research Letters*.

Cohn, A. S., Mosnier, A., Havlík, P., Valin, H., Herrero, M., Schmid, E., O'Hare, M. & Obersteiner, M. (2014). Cattle ranching intensification in Brazil can reduce global greenhouse gas emissions by sparing land from deforestation. *Proceedings of the National Academy of Sciences*, **111** (20)

Mosnier, A., Obersteiner, M., Havlík, P., Schmid, E., Khabarov, N., Westphal, M., Valin, H., Frank, S. & Albrecht, F. (2014). Global food markets, trade and the cost of climate change adaptation. *Food Security*, **6** (1).

Havlík, P., Valin, H., Herrero, M., Obersteiner, M., Schmid, E., Rufino, M. C., Mosnier, A., Thornton, P. K., Böttcher, H., Conant, R. T., Frank, S., Fritz, S., Fuss, S., Kraxner, F. & Notenbaert, A. (2014). Climate change mitigation through livestock system transitions. *Proceedings of the National Academy of Sciences*,**111** (10).

Valin, H., Sands, R. D., van der Mensbrugghe, D., Nelson, G. C., et al. (2014). The Future of Food Demand: Understanding Differences in Global Economic Models. *Agricultural Economics* **45** (1).

Von Lampe, M., Willenbockel D. et *al.* (2014). Why Do Global Long-term Scenarios for Agriculture Differ? An overview of the AgMIP Global Economic Model Intercomparison. *Agricultural Economics* **45** (1)

Lotze-Campen, H., von Lampe, M., Kyle, P., et al. (2014). Impacts of increased bioenergy demand on global food markets: an AgMIP economic model intercomparison. *Agricultural Economics* **45** (1)

Nelson, G. C., van der Mensbrugghe, D., et al. (2014). Agriculture and climate change in global scenarios: why don't the models agree. *Agricultural Economics* **45** (1)

Robinson, S., van Meijl, H., Willenbockel, D., Valin, H., et al. (2014). Comparing supply-side specifications in models of global agriculture and the food system. *Agricultural Economics* **45** (1)

Schmitz, C., van Meijl, H., et al. (2014). Land-use change trajectories up to 2050: Insights from a global agro-economic model comparison. *Agricultural Economics* **45** (1)

Wicke, B., van der Hilst, F., Daioglou, V., et al. (2014). Model collaboration for the improved assessment of biomass supply, demand and impacts. *GCB Bioenergy* **in press**.

Nelson, G. C., Valin, H., Sands, R. D., Havlík, P., et *al.* (2014). Climate change effects on agriculture: Economic responses to biophysical shocks. *Proceedings of the National Academy of Science*, **111** (9).

Herrero, M., Havlík, P., Valin, H., Notenbaert, A., Rufino, M. C., Thornton, P. K., Blümmel, M., Weiss, F., Grace, D. & Obersteiner, M. (2013). Biomass use, production, feed efficiencies, and greenhouse gas emissions from global livestock systems. *Proceedings of the National Academy of Sciences*, **110** (52).

Valin, H., Havlík, P., Mosnier, A., Herrero, M., Schmid, E. & Obersteiner, M. (2013). Agricultural productivity and greenhouse gas emissions: trade-offs or synergies between mitigation and food security? *Environmental Research Letters* **8** (3).

Kraxner, F., Nordstrom, E.-M., Havlik, P., Gusti, M., Mosnier, A., Frank, S., Valin, H., Fritz, S., Fuss, S., Kindermann, G., McCallum, I., Khabarov, N., Bottcher, H., See, L., Aoki, K., Schmid, E., Mathé, L. & Obersteiner, M. (2013). Global bioenergy scenarios - Future forest development, land-use implications, and trade-offs. *Biomass and Bioenergy*, **57**

Mosnier, A., Havlík, P., Valin, H., Baker, J., Murray, B., Feng, S., Obersteiner, M., McCarl, B., Rose, S. & Schneider, U. (2013). Alternative U.S. biofuel mandates and global GHG emissions: The role of land use change, crop management and yield growth. *Energy Policy*, **57** (0).

Havlík, P., Valin, H., Mosnier, A., Obersteiner, M., Baker, J. S., Herrero, M., Rufino, M. C., Schmid, E. (2013). Crop Productivity and the Global Livestock Sector: Implications for Land Use Change and Greenhouse Gas Emissions. *American Journal of Agricultural Economics*, **95** (2).

Frank, S.; Böttcher, H.; Havlik, P.; Valin, H.; Mosnier, A.; Obersteiner, M.; Schmid, E. & Elbersen, B. (2013). Assessing impacts of European biofuel targets and sustainability criteria on biodiversity and GHG emissions at global scale, *Global Change Biology: Bioenergy*, **5** (3).

Louhichi, K. and Valin, H. (2012). Impacts of EU biofuel policies on the French arable sector: A micro-level analysis using global market and farm-based supply models. *Review of Agricultural and Environmental Studies*, **93** (3), 233-272.

Laborde, D. and Valin, H (2012). Modeling Land Use Changes in a Global CGE: Assessing the EU Biofuel Mandates with the MIRAGE-BioF Model. *Climate Change Economics*, **3** (3).

Davis, S. C., House, J. I., Diaz-Chavez, R. A., Molnar, A., Valin, H., DeLucia, E. H. (2011) How can land-use modelling tools inform bioenergy policies?, *Interface Focus*, **2**

Schneider, U., A., Havlík, P., Schmid, E., Valin, H., Obersteiner, M., Böttcher, H., Skalsky, R., Sauer, T., Fritz, S. (2011). Impacts of population growth, economic development, and technical change on global food production and consumption, *Agricultural Systems*, **104-2**.

Valin , H., Dimaranan, B. and Bouët, A. (2010). Evaluating the environmental cost of biofuels policy: an illustration with bioethanol. *Economie Internationale*, **122.**

Boumellassa, H. and Valin, H. (2009). Vietnam's Accession to the WTO: Ex-Post Evaluation in a Dynamic Perspective, *Economie Internationale*, **118**.

BOOK CHAPTERS

Havlík, P., Leclère, D., Valin, H., Herrero, M., Schmid, E., Soussana, J.-F., Müller, C. & Obersteiner, M. (2015), Global climate change, food supply and livestock production systems: a bioeconomic analysis, *in* Aziz Elbehri, ed., *Climate change and food systems: Global assessment and implications for food security and trade*, FAO.

Bureau, J.-C., Treguer, D., Valin, H. (forthcoming). The impact of EU biofuel policies on developing countries, *in European agricultural policies and effects on developing countries,* German Marshall Fund. Accepted for publication.

OTHER PUBLICATIONS

Fritz, S., See, L. & Valin, H. (2013). Current issues and uncertainties in estimating global land availability for biofuel production. *Biofuels* **4** (4), 343--345.

Valin, H. (2010). The quantification of the effects of biofuel development worldwide. *Sud, Sciences & Technologies*. Vol. 19-20. pp 38-50

Magnani, R. and Valin, H. (2009). Different Approaches to Modelling Regional Issues, *Scienze Regionali*, **2009-1**, Franco Angeli Editore.

EXPERTISE REPORTS

Forsell, N., Korosuo, A., Havlik, P., Valin, H., Lauri, P., Gusti, M., Kindermann, G., Obersteiner, M., et al. (2016). Study on impacts on resource efficiency of future EU demand for bioenergy (ReceBio). Final report. Luxembourg: Publications Office of the European Union. ISBN 978-92-79-58757-3

Valin, H., Peters, D., van den Berg, M., Frank, S., Havlik, P., Forsell, N. & Hamelinck, C. *The land use change impact of biofuels consumed in the EU: quantification of area and greenhouse gas impacts*, Report to the European Commission, Ecofys, IIASA & E4tech. 2015.

Herrero, M., Havlik, P., McIntire, J., Palazzo, A. & Valin, H., *African Livestock Futures: Realizing the potential of livestock for food security, poverty reduction and the environment in Sub-Saharan Africa*, Report to the Office of the Special Representative of the UN Secretary General for Food Security and Nutrition and the United Nations System Influenza Coordination. 2014

Bouet, A., Curran L., Dimaranan, B., Ramos M.-P., Valin, H. Biofuels: Global Trade and Environmental Impact Study. Framework contract DG Trade, ATLASS Consortium. 2009.

Gouel C. & Valin, H. *The World in 2025 : Economic projections with the MIRAGE model*. DG Research consultation. 2008.
http://ec.europa.eu/research/social-sciences/pdf/report-the-world-in-2025_en.pdf

Laborde V. & Valin H. *Exposition of EU Regions to Economic Changes linked to Some Potential EU Trade Agreements*. Framework contract, DG Trade, NECTAR Consortium. 2008.

WORKING & CONFERENCES PAPERS

Havlík, P., Valin, H., Gusti, M., Schmid, E., Leclère, D., Forsell, N., Herrero, M., Khabarov, N., Mosnier, A., Cantele, M. & Obersteiner, M. (2015), Climate Change Impacts and Mitigation in the Developing World: An Integrated Assessment of the Agriculture and Forestry Sectors, World Bank Paper Series 7477, Washington D.C., USA.
http://documents.worldbank.org/curated/en/2015/11/25250682/climate-change-impacts-mitigation-developing-world-integrated-assessment-agriculture-forestry-sectors

Valin, H., Havlík, P., Mosnier, A. & Obersteiner, M. (2010). Climate Change Mitigation Policies and Future Food Consumption Patterns. *1st Joint EAAE/AAEA Seminar ''The Economics of Food, Food Choice and Health'', Freising, Germany, September 15–17, 2010*.
http://ageconsearch.umn.edu/handle/116392.

Bureau, J.C., Treguer, D., Valin, H. (2010) Biofuel Programs and Farm Support: New Tools for Old Policies? *14th ICABR Conference "Bioeconomy Governance: Policy, Environmental and Health Regulation, and Public Investments in Research", Ravello, Italy, June 16-18.*

Bouet, A., Dimaranan, B. and Valin, H. (2010), 'Biofuels in the world markets: CGE assessment of environmental costs related to land use changes', IFPRI Discussion Paper, 1018. Available at: http://www.ifpri.org/publication/modeling-global-trade-and-environmental-impacts-biofuel-policies

Decreux Y. & Valin H. (2009). MIRAGE, Updated Version of the Model for Trade Policy Analysis: Focus on Agriculture and Dynamic, CEPII working paper, 2007-15. Available at: http://www.cepii.fr/anglaisgraph/workpap/summaries/2007/wp07-15.htm