

Curriculum Vitae

Thomas Kastner

Academic degrees PhD (University of Groningen, 2012); Mag.rer.nat. (University of Vienna, 2007)

Current position Researcher and Lecturer, Institute of Social Ecology in Vienna, Alpen-Adria Universität, Klagenfurt-Wien-Graz, Austria

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Main areas of research

Relations between biomass use, international trade and land use change; long-term changes in land use systems and in the use of land-based resources; impacts on dietary patterns on land demand.

Professional employment history

Since 2011 Researcher and lecturer at the Institute of Social Ecology in Vienna

2007 - 2011 Ubbo Emmius PhD fellow at the Center for Energy and Environmental Sciences (IVEM) of the University of Groningen in the Netherlands

2005 - 2007 freelance researcher at the Institute of Social Ecology in Vienna

Education and Academic Qualification

2007 - 2012 PhD in Environmental Science at the Center for Energy and Environmental Sciences (IVEM) at the University of Groningen. Thesis: *Changes in Human Food and Wood Consumption and their Impacts on Global Land Demand* (available at: <http://dissertations.rug.nl/faculties/science/2012/t.kastner/>).

Successful completion of the Educational Programme of The Netherlands Research School for the Socio-Economic and Natural Sciences of the Environment SENSE (www.sense.nl).

2000 - 2007 Magister der Naturwissenschaften (equivalent to MSc) in Ecology at the University of Vienna; with highest honors; MSc thesis: *Human appropriation of net primary production (HANPP) in the Philippines 1910 - 2003: a socio-ecological analysis* (available at: http://www.uni-klu.ac.at/socec/downloads/kastner_web.pdf).

2005-2006 Visiting student at the University of the Philippines, Los Banos (2005-2006); performed research for my MSc thesis.

2003-2004 Visiting student at the Vrije Universiteit Brussel (2003-2004); participation in the MSc programs "Human Ecology" and "Ecological Marine Management".

Research projects

Since 2005 involvement in 15 international and national research projects, among others the FP7 project VOLANTE (Visions of Land Transitions in Europe) and the ERC starting grant LUISE (of Prof. Karl-Heinz Erb).

Review activity

Scientific journals: Ecological Economics, Land Use Policy, Journal of Industrial Ecology, Forest Policy and Economics, Polish Journal of Food and Nutrition Sciences, Environmental Research Letters, Agricultural Systems, Food Security, Regional Environmental Change, Proceedings of the National Academy of Sciences of the United States of America, Environmental Science & Technology, Food Policy, BioScience, Nutrients, Current Opinion in Environmental Sustainability, Journal of Agricultural Science, Global Environmental Change, Sustainability, Environmental Modelling and Software

Funding Agencies: Netherlands Organisation for Scientific Research (NWO), Czech Science Foundation, German-Israeli Foundation for Scientific Research and Development (GIF), Foundation for Research of Biodiversity (CESAB/FRB, France), Academy of Finland: Environmental Social Science review panel

Publications

Articles in ISI Journals

Niedertscheider, Maria, **Thomas Kastner**, Tamara Fetzl, Helmut Haberl, Christine Kroisleitner, Christoph Plutzer, and Karl-Heinz Erb. "Mapping and analysing cropland use intensity from a NPP perspective." *Environmental Research Letters* 11, no. 1 (2016): 014008.

<http://dx.doi.org/10.1088/1748-9326/11/1/014008>

de Ruiter, Henri, Jennie I. Macdiarmid, Robin B. Matthews, **Thomas Kastner**, and Pete Smith. "Global cropland and greenhouse gas impacts of UK food supply are increasingly located overseas." *Journal of The Royal Society Interface* 13, no. 114 (2016): 20151001.

<http://dx.doi.org/10.1098/rsif.2015.1001>

- Teixidó-Figueras, Jordi, Julia K. Steinberger, Fridolin Krausmann, Helmut Haberl, Thomas Wiedmann, Glen P. Peters, Juan A. Duro, and **Thomas Kastner**. "International inequality of environmental pressures: Decomposition and comparative analysis." *Ecological Indicators* 62 (2016): 163-173. <http://dx.doi.org/10.1016/j.ecolind.2015.11.041>
- Henders, Sabine, U. Martin Persson, and **Thomas Kastner**. "Trading forests: land-use change and carbon emissions embodied in production and exports of forest-risk commodities." *Environmental Research Letters* 10, no. 12 (2015): 125012. <http://dx.doi.org/10.1088/1748-9326/10/12/125012>
- Bais, Anna Liza S., Christian Lauk, **Thomas Kastner**, and Karlheinz Erb. "Global patterns and trends of wood harvest and use between 1990 and 2010." *Ecological Economics* 119 (2015): 326-337. <http://dx.doi.org/10.1016/j.ecolecon.2015.09.011>
- Furukawa, Takuya, Chihiro Kayo, Taku Kadoya, **Thomas Kastner**, Hiroki Hondo, Hiroyuki Matsuda, and Nobuhiro Kaneko. "Forest harvest index: Accounting for global gross forest cover loss of wood production and an application of trade analysis." *Global Ecology and Conservation* 4 (2015): 150-159. <http://dx.doi.org/10.1016/j.gecco.2015.06.011>
- Christoph Plutzer, Christine Kroisleitner, Helmut Haberl, Tamara Fetzl, Claudia Bulgheroni, Tim Beringer, Patrick Hostert, **Thomas Kastner**, Tobias Kuemmerle, Christian Lauk, Christian Levers, Marcus Lindner, Dietmar Moser, Daniel Müller, Maria Niedertscheider, Maria Luisa Paracchini, Sibyll Schaphoff, Peter H. Verburg, Pieter J. Verkerk, Karl-Heinz Erb. "Changes in the spatial patterns of human appropriation of net primary production (HANPP) in Europe 1990–2006." *Regional Environmental Change*, online first (2015). <http://dx.doi.org/10.1007/s10113-015-0820-3>
- Gingrich, Simone, Maria Niedertscheider, **Thomas Kastner**, Helmut Haberl, Georgia Cosor, Fridolin Krausmann, Tobias Kuemmerle, Daniel Müller, Annabella Reith-Musel, Martin Rudbeck Jepsen, Angheluta Vadineanu, Karl-Heinz Erb. "Exploring long-term trends in land use change and aboveground human appropriation of net primary production in nine European countries." *Land Use Policy* 47 (2015): 426-438. <http://dx.doi.org/10.1016/j.landusepol.2015.04.027>
- Kastner, Thomas**, Karl Heinz Erb, and Helmut Haberl. "Global Human Appropriation of Net Primary Production for Biomass Consumption in the European Union, 1986-2007." *Journal of Industrial Ecology* 19 (2015): 825-836. <http://dx.doi.org/10.1111/jiec.12238>
- Schaffartzik Anke, Helmut Haberl, **Thomas Kastner**, Dominik Wiedenhofer, Nina Eisenmenger, and Karl-Heinz Erb. "Trading land: A review of approaches to accounting for upstream land requirements of traded products." *Journal of Industrial Ecology* 19 (2015): 703-714. <http://dx.doi.org/10.1111/jiec.12258>
- Kastner, Thomas**, Karl-Heinz Erb, and Helmut Haberl. "Rapid Growth in Agricultural Trade: Effects on Global Area Efficiency and the Role of Management." *Environmental Research Letters* 9, no. 3 (2014): 034015. <http://dx.doi.org/10.1088/1748-9326/9/3/034015>
- de Ruiter, Henri, **Thomas Kastner**, and Sanderine Nonhebel. "European Dietary Patterns and Their Associated Land Use: Variation Between and Within Countries." *Food Policy*, (February 2014): 158-166. <http://dx.doi.org/10.1016/j.foodpol.2013.12.002>
- Kastner, Thomas**, Anke Schaffartzik, Nina Eisenmenger, Karl-Heinz Erb, Helmut Haberl, and Fridolin Krausmann. "Title: Cropland Area Embodied in International Trade: Contradictory Results from

- Different Approaches." *Ecological Economics* 104 (2014): 140–144.
<http://dx.doi.org/10.1016/j.ecolecon.2013.12.003>
- Erb, Karl-Heinz, **Thomas Kastner**, Sebastiaan Luyssaert, Richard A. Houghton, Tobias Kuemmerle, Pontus Olofsson, and Helmut Haberl. "Bias in the Attribution of Forest Carbon Sinks." *Nature Climate Change* 3, no. 10 (October 2013): 854–856. <http://dx.doi.org/10.1038/nclimate2004>
- Kuemmerle, T., Erb, K., Meyfroidt, P., Müller, D., Verburg, P.H., Estel, S., Haberl, H., Hostert, P., Jepsen, M.R., **Kastner, T.**, Levers, C., Lindner, M., Plutzer, C., Verkerk, P.J., van der Zanden, E.H., Reenberg, A. "Challenges and Opportunities in Mapping Land Use Intensity Globally." *Current Opinion in Environmental Sustainability* 5, no. 5 (2013): 484–493.
<http://dx.doi.org/10.1016/j.cosust.2013.06.002>
- Qiang, Wenli, Aimin Liu, Shengkui Cheng, **Thomas Kastner**, and Gaodi Xie. "Agricultural Trade and Virtual Land Use: The Case of China's Crop Trade." *Land Use Policy* 33 (2013): 141–150.
<http://dx.doi.org/10.1016/j.landusepol.2012.12.017>
- Haberl, Helmut, **Thomas Kastner**, Anke Schaffartzik, Nikolaus Ludwiczek, and Karl-Heinz Erb. "Global Effects of National Biomass Production and Consumption: Austria's Embodied HANPP Related to Agricultural Biomass in the Year 2000." *Ecological Economics* 84 (2012): 66–73.
<http://dx.doi.org/10.1016/j.ecolecon.2012.09.014>
- Kastner, Thomas**, Maria Jose Ibarrola Rivas, Wolfgang Koch, and Sanderine Nonhebel. "Global Changes in Diets and the Consequences for Land Requirements for Food." *Proceedings of the National Academy of Sciences* 109, no. 18 (2012): 6868–6872.
<http://dx.doi.org/10.1073/pnas.1117054109>
- Krausmann, Fridolin, Simone Gingrich, Helmut Haberl, Karl-Heinz Erb, Annabella Musel, **Thomas Kastner**, Norbert Kohlheb, Maria Niedertscheider, and Elmar Schwarzmüller. "Long-term Trajectories of the Human Appropriation of Net Primary Production: Lessons from Six National Case Studies." *Ecological Economics* 77 (2012): 129–138. <http://dx.doi.org/10.1016/j.ecolecon.2012.02.019>
- Kastner, Thomas**, Karl-Heinz Erb, and Sanderine Nonhebel. "International Wood Trade and Forest Change: A Global Analysis." *Global Environmental Change* 21, no. 3 (2011): 947–956.
<http://dx.doi.org/10.1016/j.gloenvcha.2011.05.003>
- Nonhebel, Sanderine, and **Thomas Kastner**. "Changing Demand for Food, Livestock Feed and Biofuels in the Past and in the Near Future." *Livestock Science* 139, no. 1–2 (2011): 3–10.
<http://dx.doi.org/10.1016/j.livsci.2011.03.021>
- Kastner, Thomas**, Michael Kastner, and Sanderine Nonhebel. "Tracing Distant Environmental Impacts of Agricultural Products from a Consumer Perspective." *Ecological Economics* 70, no. 6 (2011): 1032–1040. <http://dx.doi.org/10.1016/j.ecolecon.2011.01.012>
- Kastner, Thomas**, and Sanderine Nonhebel. "Changes in Land Requirements for Food in the Philippines: A Historical Analysis." *Land Use Policy* 27, no. 3 (2010): 853–863.
<http://dx.doi.org/10.1016/j.landusepol.2009.11.004>
- Kastner, Thomas**. "Trajectories in Human Domination of Ecosystems: Human Appropriation of Net Primary Production in the Philippines During the 20th Century." *Ecological Economics* 69, no. 2 (2009): 260–269. <http://dx.doi.org/10.1016/j.ecolecon.2009.08.019>

Book chapters and scientific reports (selection)

Erb, Karl-Heinz, Andreas Mayer, **Thomas Kastner**, Kristine-Elena Sallet, and Helmut Haberl. "The impact of industrial grain fed livestock production on food security: an extended literature review." IFF Social Ecology Working Papers 136. Vienna, Austria: IFF Social Ecology, 2012.

Erb, Karl-Heinz, **T. Kastner**, S. Zandl, H. Weisz, H. Haberl, and M. Jonas. Nutzen Der MFA Für Das Treibhausgas-Monitoring Im Rahmen Eines Full Carbon Accounting-Ansatzes. IFF Social Ecology Working Papers 89. Vienna, Austria: IFF Social Ecology, 2006.

Haberl, Helmut, Karl-Heinz Erb, Simone Gingrich, **Thomas Kastner**, and Fridolin Krausmann. "Human Appropriation of Net Primary Production, Stocks and Flows of Carbon, and Biodiversity." In Ecosystem Services and Carbon Sequestration in the Biosphere, edited by Rattan Lal, Klaus Lorenz, Reinhard F. Hüttel, Bernd Uwe Schneider, and Joachim von Braun, 313–331. Springer Netherlands, 2013.

Persson, Martin, Sabine Henders, and **Thomas Kastner**. "Trading Forests: Quantifying the Contribution of Global Commodity Markets to Emissions from Tropical Deforestation." Center For Global Development Working Paper 384 (2014). <http://www.cgdev.org/publication/trading-forests-quantifying-contribution-global-commodity-markets-emissions-tropical>.

Sonigo, P., J. Bain, A. Tan, S. Mudgal, D. Murphy-Bokern, L. Shields, H. Aiking, P. H. Verburg, K. H. Erb, and **T. Kastner**. "Assessment of resource efficiency in the food cycle." (2012).

Presentations at international conferences (presenting author only):

Kastner, Thomas, Martin Persson, and Sabine Henders. "Trading Forests: Quantifying the Contribution of Global Commodity Markets to Tropical Deforestation and Associated Carbon Emissions." Talk presented at the First Annual FLARE Network Conference: November 27th – 30th, 2015, Paris, November 28, 2015.

Kastner, Thomas, Karl-Heinz Erb, and Helmut Haberl. "Global Human Appropriation of Ecosystem Capacity for Biomass Consumption in the EU-27, 1986 - 2007." Talk presented at the International Society for Ecological Economics (ISEE) 13th Biennial Conference: "Wellbeing and Equity within Planetary Boundaries", August 13-15 2014, Reykjavik, Iceland, August 14, 2014.

Kastner, Thomas, Karl-Heinz Erb, and Helmut Haberl. "Global Patterns of Embodied HANPP: Relations to Population Density and Income Levels." Talk presented at the GLP-OSM 2014 - Land Transformations: Between Global Challenges and Local Realities, March 19-21, 2014, Berlin, March 19, 2014.

Kastner, Thomas, Nina Eisenmenger, Karl-Heinz Erb, Helmut Haberl, Michael Kastner, Fridolin Krausmann, Sanderine Nonhebel, and Anke Schaffartzik. "Establishing Consistent, Global Level Accounts of Cropland Embodied in the International Trade of Agricultural Products." Talk presented at the 2nd Global Soil Week "Losing Ground?", October 27-31, 2013, Berlin, October 29, 2013 (invited presentation).

Kastner, Thomas, Karl-Heinz Erb, and Helmut Haberl. "Global Land Savings through International Trade: Crop Management Versus Natural Endowment." Poster presented at the First International Conference on Global Food Security, September 29 - October 2, 2013, Noordwijkerhout, The Netherlands, October 1, 2013.

Kastner, Thomas, Christian Lauk, Karl-Heinz Erb, Andreas Mayer, and Helmut Haberl. "Trade-offs and Synergies in Global Food Systems: Exploring the Option Space of Global Food Production-consumption Trajectories Until 2050." Talk presented at the First International Conference on Global Food Security, September 29 - October 2, 2013, Noordwijkerhout, The Netherlands, September 30, 2013.

Kastner, Thomas, and Karl-Heinz Erb. "Effects of International Wood Trade and National Patterns of Forest Change." Talk presented at the IAMO Forum 2012 Land Use in Transition, June 20-22, 2012, Halle (Saale), Germany, June 20, 2012.

Kastner, Thomas, Karl-Heinz Erb, and Helmut Haberl. "Europe's Footprint on the Global South." Talk presented at the Planet under Pressure, March 26-29, 2012, London, UK, March 26, 2012.

Kastner, Thomas, Karl-Heinz Erb, and Sanderine Nonhebel. "Establishing Links Between Wood Trade and Forest Change: a Global Analysis Within a Land Use Transition Framework." Talk presented at the Ester Boserup Conference 2010: a Centennial Tribute, Long-term trajectories in population, gender relations, land use, and the environment, November 15-17, 2010, Vienna, Austria, November 15, 2010.

Kastner, Thomas, Michael Kastner, and Sanderine Nonhebel. "Tracing Distant Environmental Impacts from a Consumer Perspective, Using Bi-lateral Trade Matrices and Matrix Algebra." Talk presented at the International Society for Ecological Economics (ISEE) 11th Biennial Conference: "Advancing Sustainability in a Time of Crisis", October 22-25 2010, Oldenburg, Germany, August 25, 2010.

Kastner, Thomas, and Sanderine Nonhebel. "Relations Between Land Use Change and Food Consumption in the Philippines over the 20th Century." Talk presented at the 1st World Congress of Environmental History 2009, held in Copenhagen, Denmark, August 4-8, 2009, Copenhagen, Denmark, August 7, 2009.

Kastner, Thomas, and Sanderine Nonhebel. "Land Demand of Food in the Philippines over the 20th Century: Non-linearities in the Face of Continuous Population Growth." Talk presented at the 7th Open Meeting of the International Human Dimensions of Global Environmental Change, "Social Challenges of Global Change", April 26-30, 2009, Bonn, Germany, April 27, 2009.

Kastner, Thomas, Sanderine Nonhebel, and Fridolin Krausmann. "Land Use Change and HANPP in the Philippines over the 20th Century." Talk presented at the 10th Biennial Conference of the International Society for Ecological Economics held in Nairobi, August 7-11, 2008, Nairobi, Kenya, August 8, 2008.