

## REFERENCE LIST

- AAAS (American Association for the Advancement of Science). 2012. "Statement by the AAAS Board of Directors on Labeling of Genetically Modified Foods."
- Abalos, D., S. Jeffery, A. Sanz-Cobena, G. Guardia, and A. Vallejo. 2014. "Meta-analysis of the Effect of Urease and Nitrification Inhibitors on Crop Productivity and Nitrogen Use Efficiency." *Agriculture, Ecosystems, and Environment* 189: 136–144.
- Abalos, D., S. Jeffery, C.F. Drury, and C. Wagner-Riddle. 2016. "Improving Fertilizer Management in the U.S. and Canada for N<sub>2</sub>O Mitigation: Understanding Potential Positive and Negative Side-Effects on Corn Yields." *Agriculture, Ecosystems, and Environment* 221: 214–221.
- Abbott, P. 2012. "Biofuels, Binding Constraints and Agricultural Commodity Price Volatility." Paper presented at the National Bureau of Economic Research conference, "Economics of Food Price Volatility," Seattle.
- Abraha, M., I. Gelfand, S.K. Hamilton, C. Shao, Y.J. Su, G.P. Robertson, and J. Chen. 2016. *American Geophysical Union, Fall General Assembly*. Abstract id. B51D-0439.
- Abram, N.K., D.C. Macmillan, P. Xofis, M. Ancrenaz, J. Tzanopoulos, R. Ong, B. Goossens, et al. 2016. "Identifying where REDD+ Financially Out-Competes Oil Palm in Floodplain Landscapes Using a Fine-Scale Approach." *PLOS ONE* 11 (6): e0156481.
- Access to Seeds Foundation. n.d. "Cases." *Access to Seeds Index*. <http://www.accesstoseeds.org/cases/>.
- ActionAid. 2012. *Biofueling Hunger: How US Corn Ethanol Policy Drives Up Food Prices in Mexico*. ActionAid International USA Report. Washington, DC: ActionAid.
- Adedipe, N.O., J.E. Olowoye, E.S. Olarinde, and A.Y. Okediran. 1997. "Rural Communal Tenure Regimes and Private Land Ownership in Western Nigeria." *Land Reform, Land Settlement, and Cooperatives* 2: 98–110.
- Adekanye, T.O., J.O. Otitolaiye, and H.I. Opaluwa. 2009. "Food and Agricultural Production in Nigeria: Some Empirical Considerations for Engendering Economic Policy for Africa." Paper presented at IAFFE Conference on Feminist Economics, Boston, June 26–28.
- Adhya, T.K., B. Linquist, T. Searchinger, R. Wassmann, and X. Yan. 2014. "Wetting and Drying: Reducing Greenhouse Gas Emissions and Saving Water from Rice Production." Working paper, installment 8 of *Creating a Sustainable Food Future*. Washington, DC: World Resources Institute.
- Adjoian, T., R. Dannefer, C. Willingham, C. Brathwaite, and S. Franklin. 2017. "Healthy Checkout Lines: A Study in Urban Supermarkets." *Journal of Nutrition Education and Behavior* 49: 615–622.
- Affognon, H., C. Mutungi, P. Sanginga, and C. Borgemeister. 2015. "Unpacking Postharvest Losses in Sub-Saharan Africa: A Meta-analysis." *World Development* 66: 49–68.
- African Agricultural Development Company. 2013. *Developing Sustainable Agriculture in Africa*. [http://www.agdevco.com/about\\_us.php](http://www.agdevco.com/about_us.php).
- Agnew, D.J., J. Pearce, G. Pramod, T. Peatman, R. Watson, J.R. Beddington, and T.J. Pitcher. 2009. "Estimating the Worldwide Extent of Illegal Fishing." *PLOS ONE* 4(2): e4570.
- Agostini, A., J. Giuntoli, and A. Boulamanti. 2014. "Carbon Accounting of Forest Bioenergy: Conclusions and Recommendations from a Critical Literature Review." Luxembourg: Publications Office of the European Union.
- AGRA (Alliance for a Green Revolution in Africa). 2013. *Africa Agriculture Status Report: Focus on Staple Crops*. Nairobi: AGRA. <http://agra-alliance.org/download/533977a50dbc7/>.
- AgResearch. 2016. "Shortlist of Five Holds Key to Reduced Methane Emissions from Livestock." *AgResearch News Release*. <http://www.agresearch.co.nz/news/shortlist-of-five-holds-key-to-reduced-methane-emissions-from-livestock/>.
- AHDB (Agriculture and Horticulture Development Board). 2017. "Average Milk Yield." *Farming Data*. [https://dairy.ahdb.org.uk/resources-library/market-information/farming-data/average-milk-yield/#WV0\\_N4jyu70](https://dairy.ahdb.org.uk/resources-library/market-information/farming-data/average-milk-yield/#WV0_N4jyu70).
- Ahmed, S.E., A.C. Lees, N.G. Moura, T.A. Gardner, J. Barlow, J. Ferreira, and R.M. Ewers. 2014. "Road Networks Predict Human Influence on Amazonian Bird Communities." *Proceedings of the Royal Society B* 281 (1795): 20141742.
- Ahrends, A., P.M. Hollingsworth, P. Beckschäfer, H. Chen, R.J. Zomer, L. Zhang, M. Wang, and J. Xu. 2017. "China's Fight to Halt Tree Cover Loss." *Proceedings of the Royal Society B* 284 (1854): 20162559. doi:10.1098/rspb.2016.2559.
- Aide, T.M., M. Clark, H.R. Grau, D. Lopez-Carr, M.A. Levy, D. Redo, M. Bonilla-Moheno, et al. 2012. "Deforestation and Reforestation of Latin America and the Caribbean (2001–2010)." *Biotropica* 45 (2): 262–271.
- AIIB (Asian Infrastructure Investment Bank). 2016. *Connecting Asia for the Future*. Beijing: AIIB.
- Ajani, U.A., P.A. Lotufo, J.M. Gaziano, I.M. Lee, A. Spelsberg, J.E. Buring, W.C. Willett, and J.E. Manson. 2004. "Body Mass Index and Mortality in US Male Physicians." *Annals of Epidemiology* 14 (10): 731–739.
- Akiyama, H., X. Yan, and K. Yagi. 2010. "Evaluation of Effectiveness of Enhanced-Efficiency Fertilizers as Mitigation Options for N<sub>2</sub>O and NO Emissions from Agricultural Soils: Meta-analysis." *Global Change Biology* 16 (6): 1837–1846.
- Aksoy, A., and B. Hoekman. 2010. *Food Prices and Rural Poverty*. Washington, DC: World Bank.
- "Alberta's Offset Market." n.d. "Carbon Sequestration and Agriculture in Alberta." <http://albertacarbon.weebly.com/albertas-offset-market.html>.
- Alexandratos, N., and J. Bruinsma. 2012. *World Agriculture towards 2030/2050: The 2012 Revision*. Rome: FAO (Food and Agriculture Organization of the United Nations).
- Alford, A.R., R.S. Hegarty, P.F. Parnell, O.J. Cacho, R.M. Herd, and G.R. Griffiths. 2006. "The Impact of Breeding to Crude Residual Feed Intake on Enteric Methane Emissions for the Australian Beef Industry." *Australian Journal of Experimental Agriculture* 46: 813–820.
- Ali, D.A., and K. Deininger. 2014. "Is There a Farm-Size Productivity Relationship in African Agriculture? Evidence from Rwanda." Policy Research Working Paper 6770. Washington, DC: World Bank.
- Ali, R., A. Federico Barra, C. Berg, R. Damania, J. Nash, and J. Russ. 2015. *Highways to Success or Byways to Waste: Estimating the Economic Benefits of Roads in Africa*. Washington, DC: World Bank.
- Allison, E. 2011. "Aquaculture, Fisheries, Poverty and Food Security." Working Paper 2011-2065. Penang, Malaysia: WorldFish Center.
- Allison, F.E. 1973. *Soil Organic Matter and Its Role in Crop Production*. New York: Elsevier.
- Alston, J.M., C. Chang-Kang, M. Marra, P. Pardey, and J. Wyatt. 2000. *Meta-analysis of Rates of Return to Agricultural R&D: Ex Pede Herculem?*

- International Food Policy Research Institute Research Report 113. Washington, DC: IFPRI.
- Alston, J., J. Beddow, and P.G. Pardey. 2010. "Agricultural Research, Productivity, and Food Prices in the Long Run." *Science* 325: 1209.
- AMA (American Medical Association). 2012. *Report 2 of the Council on Science and Public Health (2-A-12): Labeling of Bioengineered Foods (Resolution 508 and 509-A-11)*. <https://www.ama-assn.org/sites/default/files/media-browser/public/about-ama/councils/Council%20Reports/council-on-science-public-health/a12-csaph2-bioengineeredfoods.pdf>.
- American Diabetes Association. 2008. "Economic Costs of Diabetes in the U.S. in 2007." *Diabetes Care* 31: 596–615.
- AMIS (Agricultural Market Information System). 2017. *Market Monitor*. <http://www.amis-outlook.org/amis-monitoring/monthly-report/en/>.
- Anand, S.S., C. Hawkes, R.J. de Souza, A. Mente, M. Dehghan, R. Nugent, M.A. Zulyniak, et al. 2015. "Food Consumption and Its Impact on Cardiovascular Disease: Importance of Solutions Focused on the Globalized Food System." *Journal of the American College of Cardiology* 66 (14): 1590–1614.
- Andae, G. 2015. "Safaricom Wins Fertiliser Subsidy System Tender." *Business Daily*, February 5.
- Andrade, H. J., M. Ibrahim, F. Jiménez, B. Finegan, and D. Kass. 2000. "Dinámica productiva de sistemas silvopastoriles con *Acacia mangium* y *Eucalyptus deglupta* en el trópico húmedo." *Revista Agroforestería en las Américas* 7 (26): 50–52.
- Andreyeva, T., M.W. Long, and K.D. Brownell. 2010. "The Impact of Food Prices on Consumption: A Systematic Review of Research on the Price Elasticity of Demand for Food." *American Journal of Public Health* 100 (2): 216–222.
- Angelsen, A., and D. Kaimowitz, eds. 2001. *Agricultural Technologies and Tropical Deforestation*. Wallingford, UK: CABI International.
- AnimalChange. 2012. "Seventh Framework Programme, Theme 2: Food, Agriculture and Fisheries, and Biotechnologies, Deliverable 2.2: Preliminary Scenarios of the Developments in Agricultural Commodity Markets, Livestock Production Systems, and Land Use and Land Cover." Brussels: AnimalChange.
- Anna, M., H. Nianpeng, X. Li, W. Qiufeng, L. Meiling, and Y. Guirui. 2017. "Grassland Restoration in Northern China Is Far from Complete: Evidence from Carbon Variation in the Last Three Decades." *Ecosphere* 8 (4): e01750. <https://doi.org/10.1002/ecs2.1750>.
- ANTARA News. 2016. "Govt Revises Regulation on Peatland Protection." Jakarta: ANTARA News. <http://www.antaranews.com/en/news/108206/govt-revises-regulation-on-peatland-protection>.
- Antony, A.C. 2012. "Megaloblastic Anemias." In *Hematology: Basic Principles and Practice*, edited by R. Hoffman, E.J. Benz Jr., L.E. Silberstein, H. Heslop, J. Weitz, and J. Anastasi. London: Churchill Livingstone.
- Aramark Higher Education. 2008. "The Business and Cultural Acceptance Case for Trayless Dining." <http://www.aramarkhighered.com/assets/docs/whitepapers/ARAMARK%20Trayless%20Dining%20July%202008%20FINAL.PDF>.
- Ariga, J., and T.S. Jayne. 2011. "Fertilizer in Kenya: Factors Driving the Increase in Usage by Smallholder Farmers." In *Yes Africa Can: Success Stories from a Dynamic Continent*, edited by P. Chuhan-Pole and M. Angwafo. Washington, DC: World Bank.
- Armstrong, B., and R. Doll. 1975. "Environmental Factors and Cancer Incidence and Mortality in Different Countries, with Special Reference to Dietary Practices." *International Journal of Cancer* 15: 617–631.
- Arnold, H., and T. Pickard. 2013. *Sustainable Diets: Helping Shoppers*. London: IGD (Institute of Grocery Distribution).
- Arriagada, R.A., P.J. Ferraro, S.K. Pattanayak, and S. Cordero-Sancho. 2012. "Do Payments for Environmental Services Affect Forest Cover? A Farm-Level Evaluation from Costa Rica." *Land Economics* 88 (2): 382–399.
- Arslan, A., N. McCarthy, L. Lipper, S. Asfaw, and A. Cattaneo. 2013. "Adoption and Intensity of Adoption of Conservation Farming Practices in Zambia." *Agriculture, Ecosystems & Environment*. Paper no. 71. [http://saipar.org:8080/eprc/bitstream/handle/123456789/24/IAPRI\\_Adoption%20and%20Intensity%20of%20Adoption%20of%20Conservation%20Farming%202013.pdf?sequence=3](http://saipar.org:8080/eprc/bitstream/handle/123456789/24/IAPRI_Adoption%20and%20Intensity%20of%20Adoption%20of%20Conservation%20Farming%202013.pdf?sequence=3).
- Arslan, A., N. McCarthy, L. Lipper, S. Asfaw, A. Cattaneo, and M. Kokwe. 2014. "Food Security and Adaptation Impacts of Potential Climate Smart Agricultural Practices in Zambia." ESA Working Paper no. 14-13. Rome: FAO (Food and Agriculture Organization of the United Nations).
- Arslan, A., N. McCarthy, L. Lipper, S. Asfaw, A. Cattaneo, and M. Kokwe. 2015. "Climate Smart Agriculture? Assessing the Adaptation Implications in Zambia." *Journal of Agricultural Economics* 66 (3): 753–780. doi:10.1111/1477-9552.12107.
- Asche, F. 2008. "Farming the Sea." *Marine Resource Economics* 23: 527–547.
- Asner, G., and S. Archer. 2010. "Livestock and the Global Carbon Cycle." In *Livestock in a Changing Landscape*, edited by H. Steinfeld, H.A. Mooney, F. Schneider, and L.E. Neville. Vol. 1. Washington, DC: Island.
- Asseng, S., I. Foster, and N.C. Tuner. 2011. "The Impact of Temperature Variability on Wheat Yields." *Global Change Biology* 17: 997–1012.
- Assunção, J., C. Gandour, and R. Rocha. 2012. "Deforestation Slowdown in the Legal Amazon: Prices or Policies?" Climate Policy Initiative working paper. Rio de Janeiro: Climate Policy Initiative.
- Assunção, J., C. Gandour, and R. Rocha. 2013. "Does Credit Affect Deforestation? Evidence from a Rural Credit Policy in the Brazilian Amazon." Rio de Janeiro: Climate Policy Initiative.
- Atanasiu, B. 2010. *The Role of Bioenergy in the National Renewable Energy Action Plans: A First Identification of Issues and Uncertainties*. London: Institute for European Environmental Policy.
- Atlin, G.N., J.E. Cairns, and B. Das. 2017. "Rapid Breeding and Varietal Replacement Are Critical to Adaptation of Cropping Systems in the Developing World to Climate Change." *Global Food Security* 12: 31–37.
- Aune, J.B., and A. Bationo. 2008. "Agricultural Intensification in the Sahel: The Ladder Approach." *Agricultural Systems* 98: 119–125.
- Austin, K., F. Stolle, and S. Sheppard. 2012. "Indonesia's Moratorium on New Forest Concessions." Washington, DC: World Resources Institute.
- Ausubel, J., I.K. Wernick, and P.E. Waggoner. 2012. "Peak Farmland and the Prospect for Land Sparing." *Population and Development Review* 38 (supplement): 217–238.
- Averill, C., B.L. Turner, and A.C. Finzi. 2014. "Mycorrhiza-Mediated Competition between Plants and Decomposers Drives Soil Carbon Storage." *Nature* 505: 543–546.

- Azhar, B., D. Lindenmayer, J. Wood, J. Fischer, A. Manning, C. McElhinny, and M. Zakaria. 2011. "The Conservation Value of Oil Palm Plantation Estates, Smallholdings and Logged Peat Swamp Forest for Birds." *Forest Ecology and Management* 262 (12): 2306–2315.
- Babcock, B., and Z. Iqbal. 2014. "Using Recent Land Use Changes to Validate Land Use Change Models." *Staff Report 14-SR 109*. Ames: Iowa State University Center for Agricultural and Rural Development.
- Bachewe, F.N., G. Berhane, B. Minten, and A. Seyoum Taffesse. 2015. "Agricultural Growth in Ethiopia (2004–2014): Evidence and Drivers." EDRI and IFPRI working paper. <http://www.ifpri.org/publication/agricultural-growth-ethiopia-2004-2014-evidence-and-drivers>.
- Bacon, L., and D. Krpan. 2018. "(Not) Eating for the Environment: The Impact of Restaurant Menu Design on Vegetarian Food Choice." *Appetite* 125: 190–200.
- Badini, O., C.O. Stockle, J.W. Jones, R. Nelson, A. Kodio, and M. Keita. 2007. "A Simulation-Based Analysis of Productivity and Soil Carbon in Response to Time-Controlled Rotational Grazing in West African Sahel Region." *Agricultural Systems* 94: 87–96.
- Bai, Z.G., D.L. Dent, L. Olsson, and M.E. Schaepman. 2008. "Global Assessment of Land Degradation and Improvement." *Report 2008/01*. Washington, DC: International Soil Reference and Information Centre (ISRIC).
- Bai, Z., L. Ma, S. Jin, W. Ma, G.L. Velthof, O. Oenema, L. Liu, et al. 2016. "Nitrogen, Phosphorus, and Potassium Flows through the Manure Management Chain in China." *Environmental Science & Technology* 50 (24): 13409–13418.
- Bailey, R., and D. R. Harper. 2015. "Reviewing Interventions for Healthy and Sustainable Diets." London: Chatham House, Royal Institute of International Affairs.
- Bailey, R., A. Froggatt, and L. Wellesley. 2014. "Livestock—Climate Change's Forgotten Sector: Global Public Opinion on Meat and Dairy Consumption." London: Chatham House, Royal Institute of International Affairs.
- Bajzelj, B., K.S. Richards, J.M. Allwood, P. Smith, J.S. Dennis, E. Curmi, and C.A. Gilligan. 2014. "Importance of Food-Demand Management for Climate Mitigation." *Nature Climate Change* 4: 924–929.
- Baka, J., and R. Bailis. 2014. "Wasteland Energy-Scapes: A Comparative Energy Flow Analysis of India's Biofuel and Biomass Economies." *Ecological Economics* 108 (December): 8–17.
- Bakalar, N. 2006. "38 Million Sharks Killed for Fins Annually, Experts Estimate." *National Geographic*, October 12. <http://news.nationalgeographic.com/news/2006/10/061012-shark-fin.html>.
- Baker, J.M., T.E. Ochsner, R.T. Venterea, and T.J. Griffis. 2007. "Tillage and Soil Carbon Sequestration—What Do We Really Know?" *Agriculture, Ecosystems, and Environment* 118: 1–5.
- Baldock, D., H. Caraveli, J. Dwyer, S. Einschütz, J.E. Petersen, J. Sumpsi-Vinas, and C. Varela-Ortega. 2000. *The Environmental Impacts of Irrigation in the European Union*. Report to the Environment Directorate of the European Commission. London, Madrid, and Athens: Institute for European Environmental Policy, Polytechnical University of Madrid, and University of Athens.
- Ballis, R., M. Ezzati, and D.M. Kammen. 2005. "Mortality and Greenhouse Gas Impacts of Biomass and Petroleum Energy Futures in Africa." *Science* 308 (5718): 98–103.
- Baributsa, D., I. Baoua, J. Lowenberg-DeBoer, T. Abdoulaye, and L.L. Murdock. 2012. "Purdue Improved Cowpea Storage (PICS) Technology." <http://extension.entm.purdue.edu/publications/E-262>. pdf.
- Barneze, A.S., A.M. Mazzetto, C.F. Zani, T. Misselbrook, and C.C. Cerri. 2014. "Nitrous Oxide Emissions from Soil Due to Urine Deposition by Grazing Cattle in Brazil." *Atmospheric Environment* 92: 394–397.
- Barona, E., N. Ramankutty, G. Hyman, and O. Coomes. 2010. "The Role of Pasture and Soybean in Deforestation of the Brazilian Amazon." *Environmental Research Letters* 5 (024002).
- Barrangou, R., and J. Doudna. 2016. "Applications of CRISPR Technologies in Research and Beyond." *Nature Biotechnology* 34: 933–941.
- Barreto, P., and D. Silva. 2010. "Will Cattle Ranching Continue to Drive Deforestation in the Brazilian Amazon?" Paper presented at the International Conference on Environment and Natural Resources Management in Developing and Transition Economies, November 18–19, Clermont-Ferrand, France.
- Bationo, A., A. Hartemink, O. Lungu, M. Naimi, P. Okoth, E. Smaling, and L. Thiombiano. 2006. "African Soils: Their Productivity and Profitability for Fertilizer Use." Background paper for the Africa Fertilizer Summit, June 9–13, Abuja, Nigeria.
- Bationo, A., B. Waswa, J. Kihara, and J. Kimetu, eds. 2007. "Advances in Integrated Soil Fertility Management in Sub-Saharan Africa: Challenges and Opportunities." Dordrecht, the Netherlands: Springer.
- Battisti, D.S., and R.L. Naylor. 2009. "Historical Warnings of Future Food Insecurity with Unprecedented Seasonal Heat." *Science* 323: 240–244.
- Bauen, M. 2009. "Bioenergy—A Sustainable and Reliable Energy Source. A Review of Status and Prospects." Paris: International Energy Agency (IEA).
- Bautista, J.M., H. Kim, D.-H. Ahn, R. Zhang, and Y.-S. Oh. 2011. "Changes in Physicochemical Properties and Gaseous Emissions of Composting Swine Manure Amended with Alum and Zeolite." *Korean Journal of Chemical Engineering* 28 (1): 189–194. doi: 10.1007/s11814-010-0312-6.
- Bbaale, E., and A. Guloba. 2011. "Maternal Education and Childbirth Care in Uganda." *Australasian Medical Journal* 4 (7): 389–399.
- Bbaale, E., and P. Mpuga. 2011. "Female Education, Contraceptive Use, and Fertility: Evidence from Uganda." *Consilience: The Journal of Sustainable Development* 6 (1): 20–47.
- Beach, R.H., J. Creason, S.B. Ohrel, S. Ragnauth, S. Ogle, C. Li, P. Ingraham, and W. Salas. 2015. "Global Mitigation Potential and Costs of Reducing Agricultural Non-CO<sub>2</sub> Greenhouse Gas Emissions through 2030." *Journal of Integrative Environmental Sciences* 12: 87–105.
- Beattie, G., L. McGuire, and L. Sale. 2010. "Do We Actually Look at the Carbon Footprint of a Product in the Initial Few Seconds? An Experimental Analysis of Unconscious Eye Movements." *International Journal of Environmental, Cultural, Economic, and Social Sustainability* 6: 47–65.
- Beebe, S. n.d. "Successes and Challenges in Improving Common Bean Productivity." Cali, Colombia: International Center for Tropical Agriculture. <http://www.cgiar.org/www-archive/www.cgiar.org/pdf/Beebe-%20Summary-Challenges%20in%20Bean%20improvement.pdf>.
- Beintema, N., G.-J. Stads, K. Fuglie, P. Heisey. 2012. "ASTI Global Assessment of Agricultural R&D Spending: Developing Countries Accelerate Investment." Washington, DC: International Food Policy Research Institute, Agricultural Science and Technology Indicators, and Global Forum on Agricultural Research.

- Belder, P., B.A.M. Bouman, R. Cabangon, L. Guoan, E.J.P. Quilang, L. Yuanhua, J.H.J. Spiertz, and T.P. Tuong. 2004. "Effect of Water-Saving Irrigation on Rice Yield and Water Use in Typical Lowland Conditions in Asia." *Agricultural Water Management* 65 (3): 193–210.
- Bellemare, M. 2015. "Contract Farming: What's in It for Smallholder Farmers in Developing Countries?" *Choices* 30 (3): 1–4.
- Bello, D. 2013. "Cultured Beef: Do We Really Need a \$380,000 Burger Grown in Petri Dishes?" *Scientific American*, August 5. <http://blogs.scientificamerican.com/observations/2014/08/05/cultured-beef-a-380000-burger-grown-in-petri-dishes/>.
- Belton, B., M.M. Haque, and D.C. Little. 2012. "Does Size Matter? Reassessing the Relationship between Aquaculture and Poverty in Bangladesh." *Journal of Development Studies* 48 (7): 904–922.
- Benbrook, C. 2012. "Impacts of Genetically Engineered Crops on Pesticide Use in the U.S.: The First Sixteen Years." *Environmental Sciences Europe* 24: 24.
- Benbrook, C.M. 2016. "Trends in Glyphosate Herbicide Use in the United States and Globally." *Environmental Sciences Europe* 28 (1): 3. doi:10.1186/s12302-016-0070-0.
- Benítez, P.C., I. McCallum, M. Obersteiner, and Y. Yamagata. 2004. *Global Supply for Carbon Sequestration: Identifying Least-Cost Afforestation Sites under Country Risk Considerations*. IIASA Interim Report IR-04-022. Laxenburg, Austria: IIASA (International Institute for Applied Systems Analysis).
- Bentley, J. 2015. "Calculating Manure's Price Tag." *Hoard's Dairyman: Crops and Forages*. Fort Atkinson, WI: Hoard's Dairyman.
- Bentley, J. 2017. "U.S. Per Capita Availability of Red Meat, Poultry, and Fish Lowest since 1983." *Amber Waves*, February 6. Washington, DC: U.S. Department of Agriculture, Economic Research Service. <https://www.ers.usda.gov/amber-waves/2017/januaryfebruary/us-per-capita-availability-of-red-meat-poultry-and-fish-lowest-since-1983/>.
- Bento, A.M., K.D. Roth, and Y. Wang. 2015. "The Impact of CAFE Standards on Innovation in the US Automobile Industry." Agricultural & Applied Economics Association and Western Agricultural Economics Association Annual Meeting, San Francisco, July 26–28.
- Berglund, M., and P. Börjesson. 2006. "Environmental Systems Analysis of Biogas Systems. Part I: Fuel-Cycle Emissions." *Biomass and Bioenergy* 30 (5): 469–485.
- Berners-Lee, M., C. Kennelly, R. Watson, and C.N. Hewitt. 2018. "Current Global Food Production Is Sufficient to Meet Human Nutritional Needs in 2050 Provided There Is Radical Societal Adaptation." *Elementa: Science of the Anthropocene* 6 (1): 52.
- Bernier, P., and D. Paré. 2013. "Using Ecosystem CO<sub>2</sub> Measurements to Estimate the Timing and Magnitude of Greenhouse Gas Mitigation Potential of Forest Bioenergy." *Global Change Biology Bioenergy* 5: 67–72.
- Berry, S. 2011. *Biofuel Policy and Empirical Inputs to GTAP Models*. Report to the California Air Resources Board (CARB). Sacramento: CARB.
- Berry, S., and W. Schlenker. 2011. *Empirical Evidence on Crop Yield Elasticities*. Report of the International Council on Clean Transportation. Washington, DC: International Council on Clean Transportation.
- Bessau, P., S. Graham, and T. Christopherson, eds. 2018. *Restoring Forests and Landscapes: The Key to a Sustainable Future*. Vienna: Global Partnership on Forest and Landscape Restoration.
- Beveridge, M.C.M., and R.E. Brummett. 2013. "Impacts of and on Fisheries—Aquaculture." In *The Ecology of Freshwater Fisheries*, edited by J.F. Craig. Hoboken, NJ: Wiley-Blackwell.
- Bhatia, A., N. Jain, and H. Pathak. 2013. "Methane and Nitrous Oxide Emissions from Indian Rice Paddies, Agricultural Soils and Crop Residue Burning." *Greenhouse Gases: Science and Technology* 3 (3): 196–211.
- Biancalani, R., and A. Avagyan. 2014. *Towards Climate-Responsible Peatlands Management: Mitigation of Climate Change in Agriculture Series 9*. Rome: FAO (Food and Agriculture Organization of the United Nations).
- Bijl, D.L., P.W. Bogaart, S.C. Dekker, E. Stehfest, B.J.M. de Vries, and P. van Vuuren. 2017. "A Physically-Based Model of Long-Term Food Demand." *Global Environmental Change* 45: 47–62.
- Bindraban, P.S., C. Dimkpa, L. Nagarajan, A. Roy, and R. Rabbinge. 2015. "Revisiting Fertilisers and Fertilization Strategies for Improved Nutrient Uptake by Plants." *Biology and Fertility of Soils* 51 (8): 897–911.
- Binnie, M.A., K. Barlow, V. Johnson, and C. Harrison. 2014. "Red Meats: Time for a Paradigm Shift in Dietary Advice." *Meat Science* 98: 445–451.
- Birds Eye. 2015. "Leading the Way in Sustainable Fisheries Development." <http://www.birdseye.co.uk/forever-food-together/casestudies/casestudy3>.
- Birkenbach, A.M., D. J. Kaczan, and M.D. Smith. 2017. "Catch Shares Slow the Race to Fish." *Nature* 544: 223–226.
- Bittman, M. 2012. "A Chicken without Guilt." *New York Times*, March 11. <http://www.nytimes.com/2012/03/11/opinion/sunday/finally-fake-chicken-worth-eating.html>.
- Bittman, M. 2013. "How to Feed the World." *New York Times*, October 14. <http://www.nytimes.com/2013/10/15/opinion/how-to-feed-the-world.html>.
- Black, J. 2014. "The Meat-Mushroom Blend Makes Sense." *Washington Post*, August 1. [https://www.washingtonpost.com/lifestyle/food/the-meat-mushroom-blend-makes-sense/2014/08/01/769884e6-0e9b-11e4-b8e5-d0de80767fc2\\_story.html](https://www.washingtonpost.com/lifestyle/food/the-meat-mushroom-blend-makes-sense/2014/08/01/769884e6-0e9b-11e4-b8e5-d0de80767fc2_story.html).
- Blackman, A., L. Corral, E.S. Lima, and G.P. Asner. 2017. "Tittling Indigenous Communities Protects Forests in the Peruvian Amazon." *Proceedings of the National Academy of Sciences of the United States of America* 114 (16): 4123–4128.
- Blake, S., S. Strindberg, P. Doudjan, C. Makombo, I. Bila-Isia, O. Ilambu, F. Grossmann, et al. 2007. "Forest Elephant Crisis in the Congo Basin." *PLoS Biology* 5 (4): e111.
- Blanco-Canqui, H., and R. Lal. 2008. "No-Tillage and Soil-Profile Carbon Sequestration: An On-Farm Assessment." *Soil Science Society of America Journal* 72: 693–701.
- Blanco-Canqui, H., and R. Lal. 2009. "Crop Residue Removal Impacts on Soil Productivity and Environmental Quality." *Critical Reviews in Plant Sciences* 28: 139–163.
- Blas, J., and W. Wallis. 2009. "Buyer Sees Profit in Warlord's Land." *Financial Times*, January 2.
- Bloom, J. 2011. *American Wasteland: How America Throws Away Nearly Half of Its Food (and What We Can Do About It)*. New York: Da Capo Lifelong.
- Bloom, D.E., and D. Canning. 2004. "Global Demographic Change: Dimensions and Economic Significance." Paper presented at Federal Reserve Bank of Kansas City symposium on *Global Demographic Change: Economic Impacts and Policy Challenges*, August 26–28, Jackson Hole, WY.

- Bloom, D.E., and J.G. Williamson. 1998. "Demographic Transitions and Economic Miracles in Emerging Asia." *World Bank Economic Review* 12 (3): 419–455.
- Bloom, D.E., D. Canning, and P. Malaney. 2000. "Demographic Change and Economic Growth in Asia." *Population and Development Review* 26: 257–90.
- Bloom, D.E., D. Canning, and J. Sevilla. 2003. *The Demographic Dividend: A New Perspective on the Economic Consequences of Population Change*. Santa Monica, CA: RAND.
- BLS (U.S. Bureau of Labor Statistics, U.S. Department of Labor). 2015. "Average Retail Food and Energy Prices, U.S. and Midwest Region." Washington, DC: BLS. [http://www.bls.gov/regions/mid-atlantic/data/AverageRetailFoodAndEnergyPrices\\_USandMidwest\\_Table.htm](http://www.bls.gov/regions/mid-atlantic/data/AverageRetailFoodAndEnergyPrices_USandMidwest_Table.htm).
- Blummel, M., F.R. Bidingier, and C.T. Harsh. 2008. "Management and Cultivar Effects on Ruminant Nutritional Quality of Pearl Millet (*Pennisetum glaucum* (L.) R. Br.) Stover: II. Effects of Cultivar Choice on Stover Quality and Productivity." *Field Crops Research* 103: 129–138.
- Blummel, M., M. Samad, O. Singh, and T. Amede. 2009. "Opportunities and Limitations of Food-Feed Crops for Livestock Feeding and Implications for Livestock-Water Productivity." *Rangeland Journal* 31: 207–12.
- Bobenrieth, E., B. Wright, and D. Zeng. 2013. "Stocks-to-Use Ratios and Prices as Indicators of Vulnerability to Spikes in Global Cereal Markets." *Agricultural Economics* 44: 43–52.
- Boddey, R.M., R. Macedo, R.M. Tarré, E. Ferreira, O.C. de Oliveira, C. de P. Rezende, R.B. Cantarutti, et al. 2004. "Nitrogen Cycling in Brachiaria Pastures: The Key to Understanding the Process of Pasture Decline." *Agriculture, Ecosystems, and Environment* 103 (2): 389–403.
- Boddey, R.M., C.P. Jantalia, J.A. Zanatta, P.C. Conceição, C. Bayer, J. Mielniczuk, J. Dieckow, et al. 2010. "Carbon Accumulation at Depth in Ferralsols under Zero-Till Subtropical Agriculture in Southern Brazil." *Global Change Biology* 16 (2): 784–795.
- Bodirsky, B.L., A. Popp, H. Lotze-Campen, J.P. Dietrich, S. Rolinski, I. Weindl, C. Schmitz, et al. 2014. "Reactive Nitrogen Requirements to Feed the World in 2050 and Potential to Mitigate Nitrogen Pollution." *Nature Communications* 5: 3858.
- Bodirsky, B.L., S. Rolinski, A. Biewald, I. Weindl, A. Popp, and H. Lotze-Campen. 2015. "Global Food Demand Scenarios for the 21st Century." *PLOS ONE* 10 (11). doi: 10.1371/journal.pone.0139201.
- Bolaños, J., and G.O. Edmeades. 1996. "The Importance of the Anthesis-Silking Interval in Breeding for Drought Tolerance in Tropical Maize." *Field Crops Research* 48 (1): 65–80.
- Bongaarts, J. 2005. "The Causes of Stalling Fertility Transitions." Working paper. New York: Population Council.
- Bonn, A., T. Allott, M. Evans, H. Joosten, and R. Stoneman. 2016. *Peatland Restoration and Ecosystem Services: Science, Policy, and Practice*. Cambridge: Cambridge University Press.
- Bonn Challenge. 2019. "Commitments." <http://www.bonnchallenge.org/>.
- Borchers, A., E. Truex-Powell, S. Wallander, and C. Nickerson. 2014. "Multi-cropping Practices: Recent Trends in Double Cropping." *Economic Information Bulletin* 125. Washington, DC: USDA (U.S. Department of Agriculture).
- Borger, J. 2008. "Rich Countries Launch Great Land Grab to Safeguard Food Supplies." *Guardian*, November 22. <http://www.theguardian.com/environment/2008/nov/22/food-biofuels-land-grab>.
- Borras, S.M., J.C. Franco, D. Carranza, and M.L. Alano. 2011. "The Fundamentally Flawed 'Marginal Lands' Narrative: Insights from the Philippines." April. <https://www.future-agricultures.org/news/the-fundamentallyflawed-marginal-lands-narrative-insights-from-the-philippines/>.
- Bosma, R. H., C. T. T. Hang, and J. Potting. 2009. *Environmental Impact Assessment of the Pangasius Sector in the Mekong Delta*. Wageningen, The Netherlands: Wageningen University.
- Bot, A., and J. Benites. 2005. "The Importance of Soil Organic Matter." *FAO Soils Bulletin* 80. Rome: FAO (Food and Agriculture Organization of the United Nations).
- Botoni, E., and C. Reij. 2009. "La transformation silencieuse de l'environnement et des systèmes de production au Sahel: Impacts des investissements publics et privés dans la gestion des ressources naturelles." Ouagadougou, Burkina Faso, and Amsterdam: Comite Permanent Inter-États pour la Lutte contre la Sécheresse au Sahel and Vrije Universiteit Amsterdam.
- Boucher, D., P. Elias, K. Lininger, C. May-Tobin, S. Roquemore, and E. Saxon. 2011. *The Root of the Problem: What's Driving Tropical Deforestation Today?* Washington, DC: Union of Concerned Scientists.
- Boudsocq, S., A. Niboyet, J.C. Latam, X. Raynaud, N. Loeuille, J. Mathieu, M. Blouin, et al. 2012. "Plant Preference for Ammonium versus Nitrate: A Neglected Determinant of Ecosystem Functioning?" *American Naturalist* 180: 60–84.
- Bouman, B.A.M., and T.P. Tuong. 2001. "Field Water Management to Save Water and Increase Its Productivity in Irrigated Lowland Rice." *Agricultural Water Management* 49 (1): 11–30.
- Bouman, B.A.M., L. Feng, T.P. Tuong, G. Lu, H. Wang, and Y. Feng. 2007. "Exploring Options to Grow Rice Using Less Water in Northern China Using a Modelling Approach. II. Quantifying Yield, Water Balance Components, and Water Productivity." *Agricultural Water Management* 88 (1): 23–33.
- Bouvard, V., D. Loomis, K.Z. Guyton, Y. Grosse, F. El Ghissassi, L. Benbrahim-Tallaa, N. Guha, et al. 2015. "Carcinogenicity of Consumption of Red and Processed Meat." *Lancet Oncology*, published online October 26. Paper prepared on behalf of the International Agency for Research on Cancer Monograph Working Group. [http://dx.doi.org/10.1016/S1470-2045\(15\)00444-1](http://dx.doi.org/10.1016/S1470-2045(15)00444-1).
- Bouwman, L., K. van der Hoek, G. van Drecht, and B. Eickhout. 2006. "World Livestock and Crop Production Systems, Land Use and Environment between 1970 and 2030." *Environment & Policy* 46: 75–89.
- Bouwman, A. F., A. H. W. Beusen, C. C. Overbeek, D. P. Bureau, M. Pawlowski, and P. M. Glibert. 2013. "Hindcasts and Future Projections of Global Inland and Coastal Nitrogen and Phosphorus Loads Due to Finfish Aquaculture." *Reviews in Fisheries Science* 21 (2): 112–156.
- Boval, M., and R.M. Dixon. 2012. "The Importance of Grasslands for Animal Production and Other Functions: A Review on Management and Methodological Progress in the Tropics." *Animal* 6 (5): 748–762.
- Boval, M., H. Archimede, P. Cruz, and M. Duru. 2007. "Intake and Digestibility in Heifers Grazing a *Dichanthium spp.* Dominated Pasture, at 14 and 28 Days of Regrowth." *Animal Feed Science and Technology* 2007 134(1/2): 18–31.
- Bowman, M., B. Soares-Filho, F. Merry, D. Nepstad, H. Rodrigues, and O. Almeida. 2012. "Persistence of Cattle Ranching in the Brazilian Amazon: A

- Spatial Analysis of the Rationale for Beef Production." *Land Use Policy* 29 (3): 558–568.
- Boyd, W., C. Stickler, A. Duchelle, F. Seymour, N. Bahar, and D. Rodriguez-Ward. 2018. "Jurisdictional Approaches to REDD+ and Low Emissions Development: Progress and Prospects." Working paper. Washington, DC: World Resources Institute.
- Brack, D., and J. Hewitt. 2014. "Global Biomass Project: Scoping Paper: The Impacts on Global Forests of the Demand for Biomass for Power and Heat." Unpublished monograph.
- Branca, G., N. McCarthy, L. Lipper, and M.C. Jolejole. 2011. *Climate-Smart Agriculture: A Synthesis of Empirical Evidence of Food Security and Mitigation Benefits from Improved Cropland Management*. Rome: FAO (Food and Agriculture Organization of the United Nations).
- Brautigam, D. 2015. *Will Africa Feed China?* New York: Oxford University Press.
- Bravo, S. 2003. "Sea Lice in Chilean Salmon Farms." *Bulletin of the European Association of Fish Pathologists* 23 (4): 197–200.
- Braz, S.P., S. Urquiaga, B. Alves, C. Jantalia, A. Guimarães, C. dos Santos, S. dos Santos, et al. 2013. "Soil Carbon Stocks under Productive and Degraded *Brachiaria* Pastures in the Brazilian Cerrado." *Soil Science Society of America Journal* 77 (3): 914–928.
- Bregnballe, J. 2015. *A Guide to Recirculation Aquaculture: An Introduction to the New Environmentally Friendly and Highly Productive Closed Fish Farming Systems*. Rome: FAO and EUROFISH International Organisation.
- Brinsden, H.C., F.J. He, K.H. Jenner, and G.A. MacGregor. 2013. "Surveys of the Salt Content in UK Bread: Progress Made and Further Reductions Possible." *BMJ Open* 3: e002936.
- Brinson, A.A. and E.M. Thunberg. 2013. "The Economic Performance of U.S. Catch Share Programs." U.S. Department of Commerce, NOAA Technical Memorandum NMFS-F/SPO-133.
- Brisson, N., P. Gate, D. Gouache, G. Charret, F. Oury, and F. Huard. 2010. "Why Are Wheat Yields Stagnating in Europe? A Comprehensive Data Analysis for France." *Field Crops Research* 119 (1): 201–212.
- Bronson, K.F., H.-U. Neue, U. Singh, and E.B. Abao. 1997. "Automated Chamber Measurements of Methane and Nitrous Oxide Flux in a Flooded Rice Soil: I. Residue, Nitrogen, and Water Management." *Soil Science Society of America Journal* 61: 981–987.
- Brooke, C., B.M. Roque, N. Najafi, M. Gonzalez, A. Pfefferlen, V. DeAnda, D.W. Ginsburg, et al. 2018. "Evaluation of the Potential of Two Common Pacific Coast Macroalgae for Mitigating Methane Emissions from Ruminants." *BioRxiv*. <https://doi.org/10.1101/434480>.
- Browdy, C.L., G. Hulata, Z. Liu, G.L. Allan, C. Sommerville, T. Passos de Andrade, R. Pereira, et al. 2012. "Novel and Emerging Technologies: Can They Contribute to Improving Aquaculture Sustainability?" In *Farming the Waters for People and Food: Proceedings of the Global Conference on Aquaculture 2010, Phuket, Thailand, 22–25 September 2010*, edited by R.P. Subasinghe, J.R. Arthur, D.M. Bartley, S.S. De Silva, M. Halwart, N. Hishamunda, C.V. Mohan, and P. Sorgeloos, 149–191. Rome and Bangkok: FAO and NACA.
- Brown, L. 2009. *Plan B 4.0: Mobilizing to Save Civilization*. New York: Norton.
- Brown, N. 2014. "Half of Brits Are Trying to Drink Less—but Booze Sales Are Up." *Grocer*, October 31. <http://www.thegrocer.co.uk/reports/digital-features/alcohol-report-2014/half-of-brits-are-trying-to-drink-less-but-booze-sales-are-up/372782.article>.
- Bruinsma, J. 2009. *The Resource Outlook to 2050: By How Much Do Land, Water and Crop Yields Need to Increase by 2050?* Rome: FAO (Food and Agriculture Organization of the United Nations).
- Brummett, R.E., J. Lazard, and J. Moehl. 2008. "African Aquaculture: Realizing the Potential." *Food Policy* 33: 371–385.
- Bruun, S., L.S. Jensen, V.T.K. Vu, and S. Sommer. 2014. "Small-Scale Household Biogas Digesters: An Option for Global Warming Mitigation or a Potential Climate Bomb?" *Renewable and Sustainable Energy Reviews* 33: 736–741.
- Bryan, E., C. Ringler, B. Okoba, J. Koo, M. Herrero, and S. Silvestri. 2011. *Agricultural Land Management: Capturing Synergies among Climate Change Adaptation, Greenhouse Gas Mitigation, and Agricultural Productivity*. Washington, DC: IFPRI (International Food Policy Research Institute).
- Bryngelsson, D., S. Wirsenius, F. Hedenus, and U. Sonesson. 2016. "How Can the EU Climate Targets Be Met? A Combined Analysis of Technological and Demand-Side Changes in Food and Agriculture." *Food Policy* 59: 152–164.
- Buckingham, K., and C. Hanson. 2015a. "The Restoration Diagnostic—Case Example: Costa Rica." Washington, DC: WRI (World Resources Institute).
- Buckingham, K., and C. Hanson. 2015b. "The Restoration Diagnostic—Case Example: South Korea." Washington, DC: WRI (World Resources Institute).
- Buckland, G., A. Agudo, N. Travier, J.M. Huerta, L. Cirera, and M.J. Tormo. 2011. "Adherence to the Mediterranean Diet Reduces Mortality in the Spanish Cohort of the European Prospective Investigation into Cancer and Nutrition (EPIC-Spain)." *British Journal of Nutrition* 106 (10): 1581–1591.
- Budidarsono, S., A. Rahmanulloh, and M. Sofiyuddin. 2012. "Economics Assessment of Palm Oil Production." Technical Brief no. 26: Palm Oil Series. Bogor, Indonesia: World Agroforestry Centre (ICRAF, SEA Regional Office).
- Bunderson, W.T. 2012. *Faidherbia albida: The Malawi Experience*. Lilongwe, Malawi: Total LandCare.
- Bunn, C., P. Laderach, O. Ovalle Rivera, and D. Kirschke. 2015. "A Bitter Cup: Climate Change Profile of Global Production of Arabica and Robusta Coffee." *Climatic Change* 129 (1–2): 89–101.
- Bunting, S.W. 2013. *Principles of Sustainable Aquaculture: Promoting Social, Economic and Environmental Resilience*. London: Routledge.
- Bunting, S. W., and J. Pretty. 2007. "Aquaculture Development and Global Carbon Budgets: Emissions, Sequestration and Management Options." Colchester, UK: University of Essex.
- Burney, J., S. Davis, and D. Lobell. 2009. "Greenhouse Gas Mitigation by Agricultural Intensification." *Proceedings of the National Academy of Sciences of the United States of America* 107 (26): 12052–12057.
- Busch, J., and K. Ferretti-Gallon. 2017. "What Drives Deforestation and What Stops It? A Meta-analysis." *Review of Environmental Economics and Policy* 11 (1): 3–23.
- Bush, R. 2009. "Food Riots: Poverty, Power and Protest." *Journal of Agrarian Change* 10 (1): 119–129.
- BusinessDictionary. n.d. "Opportunity Cost." <http://www.businessdictionary.com/definition/opportunity-cost.html>.
- Butler, R. 2009. "Brazilian Beef Giants Agree to Moratorium on Amazon Deforestation." *Mongabay*. <http://news.mongabay.com/2009/10/brazilian-beef-giants-agree-to-moratorium-on-amazon-deforestation/>.

- Butler, R. 2013. "In Landmark Ruling, Indonesia's People Win Right to Millions of Hectares of Forest." *Mongabay*, May 17. <https://news.mongabay.com/2013/05/in-landmark-ruling-indonesias-indigenous-people-win-right-to-millions-of-hectares-of-forest/>.
- Butler, E.E., and P. Huybers. 2015. "Variations in the Sensitivity of U.S. Maize Yield to Extreme Temperatures by Region and Growth Phase." *Environmental Research Letters* 10.
- Butler, R. 2017. "Calculating Deforestation Figures for the Amazon." Blog. January 26. [http://rainforests.mongabay.com/amazon/deforestation\\_calculations.html](http://rainforests.mongabay.com/amazon/deforestation_calculations.html).
- Butler, R., L.P. Koh, and J. Ghazoul. 2009. "REDD in the Red: Palm Oil Could Undermine Payment Schemes." *Conservation Letters* 2: 67–73.
- Buzby, J.C., H. F. Wells, and J. Hyman. 2014. *The Estimated Amount, Value, and Calories of Postharvest Food Losses at the Retail and Consumer Levels in the United States*. Washington, DC: USDA Economic Research Service.
- Byamugisha, F. 2013. *Securing Africa's Land for Shared Prosperity: A Program to Scale Up Reforms and Investments*. Washington, DC: World Bank.
- Byrnes, R. C., J. Núñez, L. Arenas, I. Rao, C. Trujillo, C. Alvarez, J. Arango, et al. 2017. "Biological Nitrification Inhibition by *Brachiaria* Grasses Mitigates Soil Nitrous Oxide Emissions from Bovine Urine Patches." *Soil Biology and Biochemistry* 107: 156–163.
- Cacho, O. 2009. "Economics of Carbon Sequestration Projects Involving Smallholders." *Natural Resource Management and Policy* 31: 77–102.
- Cai, J., C. Jolly, N. Hishamunda, N. Ridler, C. Ligeon, and P. Leung. 2012. "Review on Aquaculture's Contribution to Socio-economic Development: Enabling Policies, Legal Framework and Partnership for Improved Benefits." In *Farming the Waters for People and Food*, edited by R.P. Subasinghe, J.R. Arthur, D.M. Bartley, S.S. De Silva, M. Halwart, N. Hishamunda, C.V. Mohan, and P. Sorgeloos. Proceedings of the Global Conference on Aquaculture 2010, Phuket, Thailand, September 22–25, 2010. Rome and Bangkok: FAO and NACA, 265–302.
- Cai, X., X. Zhang, and D. Wang. 2011. "Land Availability for Biofuel Production." *Environmental Science and Technology* 45 (1): 334–339.
- California Rice Research Board. 2014. "Improving Fertilizer Guidelines for California's Rice Climate, 2013." <http://www.carrb.com/13rpt/Fertilizer.html>.
- Calle, Z., E. Murgueitio, J. Chará, C.H. Molina, A.F. Zuluaga, and A. Calle. 2013. "A Strategy for Scaling-Up Intensive Silvopastoral Systems in Colombia." *Journal of Sustainable Forestry* 32 (7): 677–693.
- Calvo-Alvarado, J., B. McLennan, A. Sanchez-Azofeifa, and T. Garvin. 2009. "Deforestation and Forest Restoration in Guanacaste, Costa Rica: Putting Conservation Policies in Context." *Forest Ecology and Management* 258: 931–940.
- Calzadilla, A., K. Rehdanz, R. Betts, P. Falloon, A. Wiltshire, and R.S.J. Tol. 2013. "Climate Change Impacts on Global Agriculture." *Climatic Change* 120 (1): 357–374. doi:10.1007/s10584-013-0822-4.
- Cameron, B. 2014. "Creating a Green Republic: Payments for Environmental Services in Costa Rica, 1994–2005." *Innovations for Successful Societies*. Princeton, NJ: Princeton University.
- Campbell, B. and D. Pauly. 2013. "Mariculture: A Global Analysis of Production Trends since 1950." *Marine Policy* 39: 94–100.
- Campbell, T.C., T.M. Campbell II, H. Lyman, and J. Robbins. 2006. *The China Study: Startling Implications for Diet, Weight Loss and Long-Term Health*. Dallas: BenBella.
- Campbell, J.E., D.B. Lobell, R.C. Genova, and C.B. Field. 2008. "The Global Potential of Bioenergy on Abandoned Agricultural Lands." *Environmental Science & Technology* 42 (15): 5791–5794.
- Capacci, S., M. Mazzocchi, B. Shankar, J.B. Macias, W. Verbeke, F.J. Perez-Cueto, A. Koziol-Kozakowska, et al. 2012. "Policies to Promote Healthy Eating in Europe: A Structured Review of Policies and Their Effectiveness." *Nutrition Review* 70 (3): 188–200.
- Cardoso, A., A. Berndt, A. Leytem, B. Alves, I. de Carvalho, L. de Barros Soares, S. Urquiaga, and R. Boddey. 2016. "Impact of the Intensification of Beef Production in Brazil on Greenhouse Gas Emissions and Land Use." *Agricultural Systems* 143: 86–96.
- Carlson, K.M., J.S. Gerber, N.D. Mueller, M. Herrero, G.K. MacDonald, K.A. Brauman, P. Havlík, et al. 2017. "Greenhouse Gas Emissions Intensity of Global Croplands." *Nature Climate Change* 7: 63–68.
- Caro, T., A. Dobson, A.J. Marshall, and C.A. Peres. 2014. "Compromise Solutions between Conservation and Road Building in the Tropics." *Current Biology* 24 (16): R722–R725.
- Carré, F., R. Hiederer, V. Blujdea, and R. Koeble. 2010. *Background Guide for the Calculation of Land Carbon Stocks in the Biofuels Sustainability Scheme*. Luxembourg: Publications Office of the European Union.
- Cashion, T., F. Le Manach, D. Zeller, and D. Pauly. 2017. "Most Fish Destined for Fishmeal Production Are Food-Grade Fish." *Fish and Fisheries* 18 (5): 1–8.
- Cassman, K. 1999. "Ecological Intensification of Cereal Production Systems: Yield Potential, Soil Quality, and Precision Agriculture." *Proceedings of the National Academy of Sciences of the United States of America* 96: 5952–5959.
- Cassman, K., A. Dobermann, and D.T. Walters. 2002. "Agroecosystems, Nitrogen-Use Efficiency, and Nitrogen Management." *Ambio* 31: 132–140.
- Cassou, E. 2018. *Field Burning* (English). Agricultural Pollution. Washington, DC: World Bank Group. <http://documents.worldbank.org/curated/en/989351521207797690/Field-Burning>.
- CAST (Council for Agriculture Science and Technology). 1999. *Animal Agriculture and Global Food Supply*. Ames, Iowa: CAST.
- Castle, S. 2017. "As Wild Salmon Decline, Norway Pressures Its Giant Fish Farms." *New York Times*, November 6.
- CCAFS. 2016. "Improving Cassava Processing: Less Energy, Higher Efficiency and More Stable Prices." Research Program on Roots, Tubers, and Bananas. <http://www.rtb.cgiar.org/blog/2016/09/19/improving-cassava-processing-less-energy-higher-efficiency-stable-prices/>.
- CDC (Centers for Disease Control and Prevention). 2015. "Nutrition for Everyone: Protein." Atlanta: CDC. <http://www.cdc.gov/nutrition/everyone/basics/protein.html>.
- CEA (California Environmental Associates). 2012. *Charting a Course to Sustainable Fisheries*. San Francisco: CEA.
- Cecchini, M., F. Sassi, J.A. Lauer, Y.Y. Lee, V. Guajardo-Barron, and D. Chisholm. 2010. "Tackling of Unhealthy Diets, Physical Inactivity, and Obesity: Health Effects and Cost-Effectiveness." *Lancet* 376: 1775–1784.
- Center for Food Safety. 2014. "EPA Approves New 2,4-D Herbicide Blend, Paving Way for Controversial GE Crops." <http://www.centerforfoodsafety.org>.

org/press-releases/3536/epa-approves-new-24-d-herbicide-blend-paving-way-for-controversial-ge-crops.

Central Water Commission, Government of India. 2010. *Water Year Book*. New Delhi: Government of India.

Cerri, C.C., M.V. Galdos, S.M.F. Maia, M. Bernoux, B.J. Feigl, D. Powlson, and C.E.P. Cerri. 2010. "Effect of Sugarcane Harvesting Systems on Soil Carbon Stocks in Brazil: An Examination of Existing Data." *European Journal of Soil Science* 62 (1): 23–28.

Cervigni, R., and M. Morris, eds. 2016. "Confronting Drought in Africa's Drylands: Opportunities for Enhancing Resilience." Washington, DC: World Bank. <http://reliefweb.int/sites/reliefweb.int/files/resources/9781464808173.pdf>.

CFS (Center for Food Safety). 2014. "About Genetically Engineered Foods." <http://www.centerforfoodsafety.org/issues/311/ge-foods/about-ge-foods>.

CGIAR (Consultative Group on International Agricultural Research). 2017. "CGIAR Financial Reports." <https://cgispace.cgiar.org/bitstream/handle/10568/97418/2017-CGIAR-Financial-Report-Web.pdf>.

CGIAR Research Program on Roots, Tubers and Bananas. 2016. "New Technologies Make Cassava Processing More Efficient and Sustainable." Blog. <http://www.rtb.cgiar.org/blog/2016/02/10/new-technologies-make-cassava-processing-more-efficient-and-sustainable/d>.

Chaaban, J., and W. Cunningham. 2011. *Measuring the Economic Gain of Investing in Girls: The Girl Effect Dividend*. Policy Research Working Paper 5753. Washington, DC: World Bank.

Chadwick, D.R., L.M. Cardenas, M.S. Dhanoa, N. Donovan, T. Misselbrook, J.R. Williams, R.E. Thorman, et al. 2018. "The Contribution of Cattle Urine and Dung to Nitrous Oxide Emissions: Quantification of Country Specific Emission Factors and Implications for National Inventories." *Science of the Total Environment* 635 (September): 607–617. doi:10.1016/j.scitotenv.2018.04.152.

Challinor, A.J., J. Watson, D.B. Lobell, S.M. Howden, D.R. Smith, and N. Chhetri. 2014. "A Meta-analysis of Crop Yield under Climate Change and Adaptation." *Nature Climate Change* 4: 287–291.

Chambers, A., R. Lal, and K. Paustian. 2016. "Soil Carbon Sequestration Potential of US Croplands and Grasslands: Implementing the 4 per Thousand Initiative." *Journal of Soil and Water Conservation* 71 (3): 68A–74A. doi:10.2489/jswc.71.3.68.

Chand, R., P.A.L. Prasanna, and A. Singh. 2011. "Farm Size and Productivity: Understanding the Strengths of Smallholders and Improving Their Livelihoods." *Economic and Political Weekly* 46: 5–11. <http://www.syngentafoundation.org/db/1/983.pdf>.

Chang, J., P. Ciais, N. Viovy, N. Vuichard, M. Herrero, P. Havlík, X. Wang, et al. 2016. "Effect of Climate Change, CO<sub>2</sub> Trends, Nitrogen Addition, and Land-Cover and Management Intensity Changes on the Carbon Balance of European Grasslands." *Global Change Biology* 22 (1): 338–350.

Chaplin-Kramer, R., R.P. Sharp, L. Mandle, S. Sim, J. Johnson, I. Butnar, L. Mila i Canals, et al. 2015. "Spatial Patterns of Agricultural Expansion Determine Impacts on Biodiversity and Carbon Storage." *Proceedings of the National Academy of Sciences of the United States of America* 112 (24): 7402–7407.

Chara, J. 2012. Presentation at Pasture Intensification Workshop. Convened by WRI, INRA, and CIRAD. Paris, November.

Charles, D. 2012. "Farmers Face Tough Choices on Ways to Fight New Strains of Weeds." National Public Radio, March 7. <http://www.npr.org/blogs/>

thesalt/2012/03/07/147656157/farmers-face-tough-choice-on-ways-to-fight-new-strains-of-weeds.

Chauhan, B.S., G. Mahajan, J. Timsina, P.P. Singh, and K. Singh. 2012. "Crop Performance and Water- and Nitrogen-Use Efficiencies in Dry-Seeded Rice in Response to Irrigation and Fertilizer Amounts in Northwest India." *Field Crops Research* 134: 59–70.

Chen, K., and N. Rajewsky. 2007. "The Evolution of Gene Regulation by Transcription Factors and MicroRNAs." *Nature* 8: 93–103.

Chen, X.P., Z.L. Cui, P. Vitousek, K. Cassman, P. Matson, J.S. Bai, Q.F. Meng, et al. 2011. "Integrated Soil–Crop System Management for Food Security." *Proceedings of the National Academy of Sciences of the United States of America* 108 (16): 6399–6404.

Chen, Z., T.J. Griffis, D.B. Millet, J.D. Wood, X. Lee, J.M. Baker, K. Xiao, et al. 2016. "Partitioning N<sub>2</sub>O Emissions within the US Corn Belt Using an Inverse Modeling Approach." *Global Biogeochemical Cycles* 30 (8): 1192–1205.

Cheung, W.W.L., V.W.Y. Lam, J.L. Sarmiento, K. Kearney, R. Watson, D. Zeller, and D. Pauly. 2010. "Large-Scale Redistribution of Maximum Fisheries Potential in the Global Ocean under Climate Change." *Global Change Biology* 16: 24–35.

Cheung, W.W.L., J.L. Sarmiento, J. Dunne, T. Frölicher, V.W.Y. Lam, M.L.D. Palomares, R. Watson, and D. Pauly. 2013. "Shrinking of Fishes Exacerbates Impacts of Global Ocean Changes on Marine Ecosystems." *Nature Climate Change* 3: 254–258.

Chidumayo, E.N., and D.J. Gumbo. 2013. "The Environmental Impacts of Charcoal Production in Tropical Ecosystems of the World: A Synthesis." *Energy for Sustainable Development* 17 (2): 86–94.

*China Daily*. 2012. "Shark Fins Off Official Receptions' Menus Soon." July 3. [http://www.chinadaily.com.cn/xinhua/2012-07-03/content\\_6342306.html](http://www.chinadaily.com.cn/xinhua/2012-07-03/content_6342306.html).

Chomitz, K.M., and D.A. Gray. 1996. "Roads, Land Use, and Deforestation: A Spatial Model Applied to Belize." *World Bank Economic Review* 10: 487–512.

Chowdhury, R., S. Warpakula, S. Kunutsor, F. Crowe, H. Ward, L. Johnson, O. Franco, et al. 2014. "Association of Dietary, Circulating, and Supplement Fatty Acids with Coronary Risk: A Systematic Review and Meta-analysis." *Annals of Internal Medicine* 160 (6): 398–406. doi: 10.7326/M13-1788.

Chowdhury, F.A., M.L. Trudeau, H. Guo, and Z. Mi. 2018. "A Photochemical Diode Artificial Photosynthesis System for Unassisted High Efficiency Overall Pure Water Splitting." *Nature Communications* 9 (1): 1707.

Christiaensen, L. 2012. *The Role of Agriculture in a Modernizing Society—Food, Farms and Fields in China 2030*. Washington, DC: World Bank (East Asia & Pacific Sustainable Development Department).

Christiaensen, L., and L. Demery. 2007. *Down to Earth: Agriculture and Poverty Reduction in Africa*. Washington, DC: World Bank.

Chum, H., A. Faaij, J. Moreira, G. Berndes, P. Dharnija, H. Dong, and B. Gabrielle. 2011. "Bioenergy." In *Renewable Energy Sources and Climate Change Mitigation*. Special report of Working Group III of the Intergovernmental Panel on Climate Change, edited by O. Edenhofer, R. Pichs-Madruga, Y. Sokona, K. Seyboth, P. Matschoss, S. Kadner, T. Zwickel, et al. Cambridge: Cambridge University Press.

CIA (Central Intelligence Agency). 2012. *The World Factbook*. McLean, VA: CIA.

CIA. 2013. *The World Factbook*. McLean, VA: CIA. <https://www.cia.gov/library/publications/the-world-factbook/>.



Ciampitti, I.A., and T.J. Vyn. 2014. "Understanding Global and Historical Nutrient Use Efficiencies for Closing Maize Yield Gaps." *Agronomy Journal* 106 (6): 2107. doi:10.2134/agnonj14.0025.

Claassen, R., V. Breneman, S. Bucholtz, A. Cattaneo, R. Johansson, and M. Morehart. 2004. *Environmental Compliance in U.S. Agricultural Policy: Past Performance and Future Potential*. Agricultural Economic Report No. AER-832. U.S. Department of Agriculture, Economic Research Service.

Clark, H., F.M. Kelliher, and C. Pinares. 2011. "Reducing CH<sub>4</sub> Emissions from Grazing Ruminants in New Zealand: Challenges and Opportunities." *Asian Australian Journal of Animal Sciences* 24 (2): 295–302.

Clarke, L., K. Jiang, K. Akimoto, M. Babiker, G. Blanford, K. Fisher-Vanden, J.-C. Hourcade, et al. 2014. "Assessing Transformation Pathways." In *Climate Change 2014: Mitigation of Climate Change*, edited by O. Edenhofer, R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, A. Adler, et al. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge: Cambridge University Press.

Climate Analysis Indicators Tool (CAIT). 2017. "Historical Emissions." <http://cait.wri.org>.

Climate Focus. 2016. *Progress on the New York Declaration on Forests: Eliminating Deforestation from the Production of Agricultural Commodities—Goal 2 Assessment Report*. Prepared by Climate Focus in cooperation with the NYDF Assessment Coalition with support from the Climate and Land Use Alliance and the Tropical Forest Alliance 2020. Amsterdam: Climate Focus.

Close, D. 2014. "Ground Beef Nation: The Effect of Changing Consumer Tastes and Preferences on the U.S. Cattle Industry." *Rabobank AgFocus*, January 2014. Utrecht, the Netherlands: Rabobank.

Coale, A.J. 1973. "The Demographic Transition." *International Population Conference, Liège, Belgium*. Vol. 1: 53–72. Also published in *Pakistan Development Review* 23 (4): 531–552.

Cohn, A., M. Bowman, D. Zilberman, and K. O'Neill. 2011. "The Viability of Cattle Ranching Intensification in Brazil as a Strategy to Spare Land and Mitigate Greenhouse Gas Emissions." CCAFS Working Paper 11. Copenhagen: CCAFS (CGIAR Research Program on Climate Change, Agriculture, and Food Security).

Cohn, A., A. Mosnier, P. Havlík, H. Valin, M. Herrero, E. Schmid, M. O'Hare, and M. Obersteiner. 2014. "Cattle Ranching Intensification in Brazil Can Reduce Global Greenhouse Gas Emissions by Sparing Land from Deforestation." *Proceedings of the National Academy of Sciences of the United States of America* 111: 7236–7241.

Colchero, M.A., B.M. Popkin, J.A. Rivera, and S.W. Ng. 2016. "Beverage Purchases from Stores in Mexico under the Excise Tax on Sugar Sweetened Beverages: Observational Study." *BMJ* 2016: 352:h6704.

Colchester, M., M. Boscolo, A. Contreras Hermosilla, F. Del Gatto, J. Dempsey, G. Lescuyer, K. Obidzinski, et al. 2006. *Justice in the Forest: Rural Livelihoods and Forest Law Enforcement*. Bogor, Indonesia: Center for International Forestry Research (CIFOR).

Colchester, M., and S. Chao, eds. 2011. *Oil Palm Expansion in South East Asia: Trends and Implications for Local Communities and Indigenous Peoples*. Moreton-in-Marsh, UK, and Bogor, Indonesia: Forest Peoples Programme and Perkumpula Sawit Watch.

Collier, P. 2008. "The Politics of Hunger: How Illusion and Greed Fan the Food Crisis." *Foreign Affairs* 87 (6): 67. <https://www.foreignaffairs.com/articles/2008-11-01/politics-hunger>.

Collier, P., and S. Dercon. 2009. "African Agriculture in 50 Years: Smallholders in a Rapidly Changing World." *Proceedings of the Expert Meeting on How to Feed the World in 2050*, June 24–26, Rome. Rome: FAO (Food and Agriculture Organization of the United Nations).

Collins, M., R. Knutti, J. Arblaster, J.-L. Dufresne, T. Fichetef, P. Friedlingstein, X. Gao, et al. 2013. "Long-Term Climate Change: Projections, Commitments and Irreversibility." In *Climate Change 2013: The Physical Science Basis*, edited by T.F. Stocker, D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, et al. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge: Cambridge University Press.

Committee for Formulation of Agriculture Policy for Punjab State. 2013. "Agriculture Policy for Punjab." Chandigarh, India: Government of Punjab.

Conant, R., K. Paustian, and E.T. Elliot. 2001. "Grassland Management and Conversion into Grassland: Effects on Soil Carbon." *Ecological Applications* 11: 343–355.

Conant, R., M. Easter, K. Paustian, A. Swan, and S. Williams. 2007. "Impacts of Periodic Tillage on Soil C Stocks: A Synthesis." *Soil and Tillage Research* 95 (1–2): 1–10.

Conant, R.T., C.E.P. Cerri, B.B. Osborne, and K. Paustian. 2017. "Grassland Management Impacts on Soil Carbon Stocks: A New Synthesis." *Ecological Applications* 27 (2): 662–668. doi:10.1002/eap.1473.

Consumer Goods Forum. 2014. *Consumer Goods Forum*. <http://www.theconsumergoodsforum.com/>.

Conway, G. 2016. *One Billion Hungry: Can We Feed the World?* Ithaca, NY: Cornell University Press.

Cooke, M.A. 2018. "An Introduction to Animal Welfare Issues in Aquaculture." *Business of Farm Animal Welfare* 272 (285): 272–285. Routledge, in association with GSE Research.

Cooper, M., C. Gho, R. Leafgren, T. Tang, and C. Messina. 2014. "Breeding Drought-Tolerant Maize Hybrids for the US Corn-Belt: Discovery to Product." *Journal of Experimental Botany* 65 (21): 6191–6204.

Corley, R.H. 2009. "How Much Palm Oil Do We Need?" *Environmental Science and Policy* 12: 134–139.

Cornish Sardine Management Association. 2015. "Historical Background." <http://www.cornishsardines.org.uk/historical-background.html>.

Corton, T.M., J.B. Bajita, F.S. Grospe, R.R. Pamplona, C.A. Asis Jr., R. Wassmann, R.S. Lantin, and L.V. Buendia. 2000. "Methane Emission from Irrigated and Intensively Managed Rice Fields in Central Luzon (Philippines)." *Nutrient Cycling in Agroecosystems* 58: 37–53.

Corvalán, C., M. Reyes, M.L. Garmendia, and R. Uauy. 2013. "Structural Responses to the Obesity and Noncommunicable Diseases Epidemic: The Chilean Law of Food Labeling and Advertising." *Obesity Reviews* 14: 79–87.

Costa-Pierce, B.A., D.M. Bartley, M. Hasan, F. Yusoff, S.J. Kaushik, K. Rana, D. Lemos, et al. 2012. "Responsible Use of Resources for Sustainable Aquaculture." In *Global Conference on Aquaculture 2010, Sept. 22–25, 2010, Phuket, Thailand*, edited by R. Subasinghe. Rome: FAO (Food and Agriculture Organization of the United Nations).

Costello, C., S.D. Gaines, and J. Lynham. 2008. "Can Catch Shares Prevent Fisheries Collapse?" *Science* 321: 1678–1681.

- Costello, C., D. Ovando, R. Hilborn, S.D. Gaines, O. Deschenes, and S. Lester. 2012. "Status and Solutions for the World's Unassessed Fisheries." *Science* 338: 517–520.
- Costello, C., D. Ovando, T. Clavelle, C.K. Strauss, R. Hilborn, M.C. Melnychuk, T.A. Branch, et al. 2016. "Global Fishery Prospects under Contrasting Management Regimes." *Proceedings of the National Academy of Sciences of the United States of America* 113 (18): 5125–5129.
- Cotula, L., S. Vermeulen, R. Leonard, and J. Keeley. 2009. "Land Grab or Development Opportunity? Agricultural Investment and International Land Deals in Africa." Rome and London: FAO (Food and Agriculture Organization of the United Nations), IIED (International Institute for Environment and Development) and IFAD (International Fund for Agricultural Development).
- Cotula, L., C. Oya, E. Codjoe, A. Eid, M. Kakraba-Ampeh, J. Keeley, A.L. Kidewa, et al. 2014. "Testing Claims about Large Land Deals in Africa: Findings from a Multi-country Study." *Journal of Development Studies* 50: 903–925.
- Coulibaly, J., S. D'Alessandro, T. Nouhoheflin, C. Aitchedji, M. Damisa, D. Baributsa, and J. Lowenberg-DeBoer. 2012. "Purdue Improved Cowpea Storage (PICS) Supply Chain Study." Working Paper no. 12-4.
- Craig, W.J., and A.R. Mangels. 2009. "Position of the American Dietetic Association: Vegetarian Diets." *Journal of the American Dietetic Association* 109 (7): 1266–1282.
- Craparo, A.C.W., P.J.A. Van Asten, P. Läderach, L.T.P. Jassogne, and S.W. Grab. 2015. "Coffea arabica Yields Decline in Tanzania Due to Climate Change: Global Implications." *Agricultural and Forest Meteorology* 207: 1–10.
- Creutzig, F., N.H. Ravindranath, G. Berndes, S. Bolwig, R. Bright, F. Cherubini, H. Chum, et al. 2014. "Bioenergy and Climate Change Mitigation: An Assessment." *Global Change Biology Bioenergy* 7 (5): 916–944.
- Critchley, W., and J. Gowing, eds. 2012. *Water Harvesting in Sub-Saharan Africa*. Abingdon-on-Thames, UK: Routledge.
- Crost, B., B. Shankar, R. Bennett, and S. Morse. 2007. "Bias from Farmer Self-Selection in Genetically Modified Crop Productivity Estimates: Evidence from Indian Data." *Journal of Agricultural Economics* 58: 24–36.
- Crutzen, P.J., A.R. Mosier, K.A. Smith, and W. Winiwarter. 2008. "N<sub>2</sub>O Release from Agro-biofuel Production Negates Global Warming Reduction by Replacing Fossil Fuels." *Atmospheric Chemistry and Physics* 8: 389–395.
- Cui, B., J. Zhang, S. Liu, X. Liu, W. Xiang, L. Liu, H. Xin, et al. 2017. "Electrochemical Synthesis of Ammonia Directly from N<sub>2</sub> and Water over Iron-Based Catalysts Supported on Activated Carbon." *Green Chemistry* 19 (1): 298–304.
- Cui, Z., H. Zhang, X. Chen, C. Zhang, W. Ma, C. Huang, W. Zhang, et al. 2018. "Pursuing Sustainable Productivity with Millions of Smallholder Farmers." *Nature* 555 (7696): 363.
- Curtis, P.G., C.M. Slay, N.L. Harris, A. Tyukavina, and M.C. Hansen. 2018. "Classifying Drivers of Global Forest Loss." *Science* 361 (6407): 1108–1111. doi:10.1126/science.aau3445.
- Daily, G., P. Dasgupta, B. Bolin, P. Crosson, J. du Guerny, P. Ehrlich, C. Folke, et al. 1998. "Food Production, Population Growth, and the Environment." *Science* 281: 1291–1292.
- Dale, A., C. Fant, K. Strzepek, M. Lickley, and S. Solomon. 2017. "Climate Model Uncertainty in Impact Assessments for Agriculture: A Multi-ensemble Case Study on Maize in Sub-Saharan Africa." *Earth's Future* 3: 337–353.
- d'Alexis, S., M. Mahieu, F. Jackson, and M. Boval. 2012. "Cross-Infection between Tropical Goats and Heifers with *Haemonchus contortus*." *Veterinary Parasitology* 184 (2–4): 384–386.
- d'Alexis, S., D. Sauvaut, and M. Boval. 2013. "Mixed Grazing Systems of Sheep and Cattle to Improve Liveweight Gain: A Quantitative Review." *Journal of Agricultural Science* 152 (4): 655–666.
- d'Alexis, S., F. Periacarpin, F. Jackson, and M. Boval. 2014. "Mixed Grazing Systems of Goats with Cattle in Tropical Conditions: An Alternative to Improving Animal Production in the Pasture." *Animal* 8 (8): 1282–1289.
- Dargie, G.C., S.L. Lewis, I.T. Lawson, E.T.A. Mitchard, S.E. Page, Y.E. Bocko, and A. Suspense. 2017. "Age, Extent and Carbon Storage of the Central Congo Basin Peatland Complex." *Nature* 542: 86–90.
- Damania, R., A.F. Barra, M. Burnouf, and J.D. Russ. 2016. "Transport, Economic Growth, and Deforestation in the Democratic Republic of Congo: A Spatial Analysis." Washington, DC: World Bank.
- Danielsen, F., H. Beukema, N. Burgess, F. Parish, C. Bruhl, P. Donald, D. Murdiyarto, et al. 2009. "Biofuel Plantations on Forested Lands: Double Jeopardy for Biodiversity and Climate." *Conservation Biology* 23 (2): 348–358.
- Daryanto, S., L. Wang, and P. Jacinthe. 2016. *Global Synthesis of Drought Effects on Cereal Production*. Poster session presented at IUPUI Research Day 2016, April 8, Indianapolis.
- Dasgupta, S. 2017. "Do Protected Areas Work in the Tropics?" *Mongabay*, December 18. <https://news.mongabay.com/2017/12/do-protected-areas-work-in-the-tropics/>.
- Dasgupta, S., B. Laplante, C. Meisner, D. Wheeler, and J. Yan. 2009. "The Impact of Sea Level Rise on Developing Countries: A Comparative Analysis." *Climatic Change* 93 (3): 379–388.
- Davidson, S. 2007. "Forbidden Fruit: Transgenic Papaya in Thailand." *Plant Physiology* 147 (2): 487–493.
- Davidson, E.A., and D. Kanter. 2014. "Inventories and Scenarios of Nitrous Oxide Emissions." *Environmental Research Letters* 9 (105012).
- Davies, R. 2015. "The Indonesia-Australia Forest Carbon Partnership: A Murder Mystery." CGD Policy Paper 60. Washington, DC: Center for Global Development.
- Davis, S.J., and K. Caldeira. 2010. "Consumption-Based Accounting of CO<sub>2</sub> Emissions." *Proceedings of the National Academy of Sciences of the United States of America* 107 (12): 5687–5692.
- Dawczynski, C., M.E. Kleber, W. März, G. Jahreis, and S. Lorkowski. 2015. "Saturated Fatty Acids Are Not Off the Hook." *Nutrition, Metabolism and Cardiovascular Diseases* 25 (12): 1071–1078.
- Dawe, D. 2005. "Water Productivity in Rice-Based Systems in Asia: Variability in Space and Time." *Plant Production Science* 8: 219–228.
- DeBruin, J.L., J.R. Schussler, H. Mo, and M. Cooper. 2017. "Grain Yield and Nitrogen Accumulation in Maize Hybrids Released during 1934 to 2013 in the US Midwest." *Crop Science* 57 (3): 1431–1446. doi:10.2135/cropsci2016.08.0704.
- Decara, S., A. Goussebaile, R. Grateau, F. Levert, J. Quemener, and B. Vermont. 2012. "Land-Use Change and Environmental Consequences of Biofuels: A Quantitative Review of the Literature." Paris: Institut National de la Recherche Agronomique.
- DeConto, R.M., and D. Pollard. 2016. "Contribution of Antarctica to Past and Future Sea-Level Rise." *Nature* 531: 591–597.

- Decruyenaere, V., A. Buldgen, and D. Stilmant. 2009. "Factors Affecting Intake by Grazing Ruminants and Related Quantification Methods: A Review." *Biotechnologie, Agronomie, Société et Environnement* 13 (4): 559–573.
- Deemer, R., J. Harrison, S. Li, J. Beaulieu, T. Delsonro, N. Barros, J. Bezerra-Neto, et al. 2016. "Greenhouse Gas Emissions from Reservoir Water Surfaces: A New Global Synthesis." *Bioscience* 66 (11): 949–964.
- Deep Decarbonization Pathways Project. 2015. *Pathways to Deep Decarbonization 2015 Report. SDSN-IDDRI*. [http://deepdecarbonization.org/wp-content/uploads/2016/03/DDPP\\_2015\\_REPORT.pdf](http://deepdecarbonization.org/wp-content/uploads/2016/03/DDPP_2015_REPORT.pdf).
- de Figueiredo, E.B., S. Jayasundara, R. de Oliveira Bordonal, T.T. Berchielli, R. Andrade Reis, C. Wagner-Riddle, and N. la Scala Jr. 2016. "Greenhouse Gas Balance and Carbon Footprint of Beef Cattle in Three Contrasting Pasture-Management Systems in Brazil." *Journal of Cleaner Production*. <http://dx.doi.org/10.1016/j.jclepro.2016.03.132>.
- DEFRA (Department for Environment, Food, and Rural Affairs). 2014. "National Statistics: United Kingdom Egg Statistics, Quarter 2, 2014." London: DEFRA.
- de Freitas, P.L., and J.N. Landers. 2014. "The Transformation of Agriculture in Brazil through Development and Adoption of Zero Tillage Conservation Agriculture." *International Soil and Water Conservation Research* 2 (1): 35–46.
- Deiningner, K., and J.S. Chamorro. 2004. "Investment and Income Effects of Land Regularization: The Case of Nicaragua." *Agricultural Economics* 30 (2): 101–16.
- Deiningner, K., and S. Jin. 2005. "Tenure Security and Land-Related Investment: Evidence from Ethiopia." World Bank, Development Research Group. *European Economic Review* 50: 1245–1277.
- Deiningner, K., D. Byerlee, J. Lindsay, A. Norton, H. Selod, and M. Stickler. 2011. *Rising Global Interest in Farmland: Can It Yield Sustainable and Equitable Results?* Washington, DC: World Bank.
- de Klein, C.A.M., K.C. Cameron, H.J. Di, G. Rys, R.M. Monaghan, and R.R. Sherlock. 2011. "Repeated Annual Use of the Nitrification Inhibitor Dicyandiamide (DCD) Does Not Alter Its Effectiveness in Reducing N<sub>2</sub>O Emissions from Cow Urine." *Animal Feed Science and Technology* 166–167: 480–491.
- Delgado, C., J. Hopkins, V. Kelly, P. Hazell, A. McKenna, P. Gruhn, B. Hojjati, et al. 1998. *Agricultural Growth Linkages in Sub-Saharan Africa*. Washington, DC: IFPRI (International Food Policy Research Institute).
- Delgado, C., M. Rosegrant, H. Steinfeld, S. Ehui, and C. Courbois. 1999. "Livestock to 2020: The Next Food Revolution." IFPRI Food, Agriculture, and the Environment Discussion Paper 28. Washington, DC: IFPRI (International Food Policy Research Institute).
- Delgado, C., R. Townsend, I. Ceccacci, Y. Tanimichi Hoberg, S. Bora, W. Martin, D. Mitchell, et al. 2010. "Food Security: The Need for Multilateral Action." *Postcrisis Growth and Development: A Development Agenda for the G-20*: 383–438.
- Delgado, C., M. Wolosin, and N. Purvis. 2015. "Restoring and Protecting Agricultural and Forest Landscapes and Increasing Agriculture Productivity." Working paper. New Climate Economy Project. Global Commission on the Economy and Climate, London, December 5. <http://2015.newclimateeconomy.report/land-use>.
- Del Gobbo, L.C., S. Khatibzadeh, F. Imamura, R. Micha, P. Shi, M. Smith, S. Myers, and D. Mozaffarian. 2015. "Assessing Global Dietary Habits: A Comparison of National Estimates from the FAO and the Global Dietary Database." *American Journal of Clinical Nutrition* 101 (5): 1038–1046.
- Del Grosso, S.J., T. Wirth, S.M. Ogle, and W.J. Parton. 2009. "Estimating Agricultural Nitrous Oxide Emissions." *EOS: Transactions American Geophysical Union* 89: 529–540.
- Denholm, P., and R. Margolies. 2008. "Land Requirements and the Per Capita Solar Footprint for Photovoltaic Generation in the United States." *Energy Policy* 36: 3531–3543.
- Department of Agriculture, Forestry, and Fisheries. 2012. "A Framework for the Development of Smallholder Farmers through Cooperatives Development." Pretoria: Department of Agriculture, Forestry, and Fisheries of the Republic of South Africa.
- Department of Agriculture, Punjab. 2012. "National Conference on Agriculture for Kharif Campaign." Chandigarh, India: Department of Agriculture.
- de Pinto, A., M. Magalhaes, and C. Ringler. 2010. "Potential of Carbon Markets for Small Farmers: A Literature Review." IFPRI Discussion Paper 01004. Washington, DC: IFPRI (International Food Policy Research Institute).
- de Pinto, A., L. Lipper, C. Dutilly-Diane, and N. McCarthy. 2011. "Supplying Carbon Sequestration from West African Rangelands: Opportunities and Barriers." *Rangeland Ecology and Management* 63: 155–166.
- Derner, J.D., and G.E. Schuman. 2007. "Carbon Sequestration and Rangelands: A Synthesis of Land Management and Precipitation Effects." *Journal of Soil Water Conservation* 62: 77–85.
- de Sant-Anna, S., C.P. Jantalia, J.M. Sá, L. Vilela, R.L. Marchao, B.J.R. Alves, S. Urquiaga, and R.M. Boddey. 2016. "Changes in Soil Organic Carbon during 22 Years of Pastures, Cropping or Integrated Crop/Livestock Systems in the Brazilian Cerrado." *Nutrient Cycling in Agrosystems* 108 (1): 101–120.
- De Silva, S., and N.T. Phuong. 2011. "Striped Catfish Farming in the Mekong Delta, Vietnam: A Tumultuous Path to a Global Success." *Reviews in Aquaculture* 3: 45–73.
- De Silva, S.S., and D. Soto. 2009. "Climate Change and Aquaculture: Potential Impacts, Adaptation and Mitigation." In *Climate Change Implications for Fisheries and Aquaculture: Overview of Current Scientific Knowledge*, edited by K. Cochrane, C. De Young, D. Soto, and T. Bahri, 151–212. Rome: Food and Agriculture Organization of the United Nations.
- de Souza, R.J., A. Mente, A. Maroleanu, A. Cozma, V. Ha, T. Kishibe, E. Uleryk, et al. 2015. "Intake of Saturated and Trans Unsaturated Fatty Acids and Risk of All Cause Mortality, Cardiovascular Disease, and Type 2 Diabetes: Systematic Review and Meta-analysis of Observational Studies." *CCBYNC Open Access. BMJ* 2015: 351:h3978.
- de Souza, J.S., M.M.L. Kizys, R.R. Da Conceição, G. Glebocki, R.M. Romano, T.M. Ortega-Carvalho, G. Giannocco, et al. 2017. "Perinatal Exposure to Glyphosate-Based Herbicide Alters the Thyrotrophic Axis and Causes Thyroid Hormone Homeostasis Imbalance in Male Rats." *Toxicology* 377: 25–37.
- de Vries, M., and I.J.M. De Boer. 2009. "Comparing Environmental Impacts for Livestock Products: A Review of Life-Cycle Assessments." *Livestock Science* 128 (1): 1–11.
- de Vries, J.W., W.J. Corré, and H.J.C. van Dooren. 2010. *Environmental Assessment of Untreated Manure Use, Manure Digestion and Co-digestion with Silage Maize*. Report 372. Wageningen, the Netherlands: Wageningen UR Livestock Research.
- de Vries, J.W., A.J.A. Aarnink, P.W.G. Groot Koerkamp, and I.J.M. De Boer. 2013. "Life Cycle Assessment of Segregating Fattening Pig Urine and Feces Compared to Conventional Liquid Manure Management." *Environmental Science & Technology* 47 (3): 1589–1597. doi:10.1021/es302951a.

- Dewi, S., N. Khasanah, S.A.E. Rahayu, and M. van Noordwijk. 2009. *Carbon Footprint of Indonesian Palm Oil Plantation: A Pilot Study*. Bogor, Indonesia: World Agroforestry Centre (ICRAF), SEA Regional Office.
- Dhingra, R., E.R. Christensen, Y. Liu, B. Zhong, C.F. Wu, M.G. Yost, and J.V. Remais. 2011. "Greenhouse Gas Emission Reductions from Domestic Anaerobic Digesters Linked with Sustainable Sanitation in Rural China." *Environmental Science Technology* 45 (6): 2345–2352.
- Diao, X., P. Hazell, D. Resnick, and J. Thurlow. 2007. *The Role of Agriculture in Development: Implications for Sub-Saharan Africa*. Research Report 153. Washington, DC: IFPRI (International Food Policy Research Institute).
- Diaz, R., M. Selman, and C. Chique. 2011. "Global Eutrophic and Hypoxic Coastal Systems—Eutrophication and Hypoxia: Nutrient Pollution in Coastal Waters." Washington, DC: World Resources Institute. [http://docs.wri.org/wri\\_eutrophic\\_hypoxic\\_dataset\\_2011-03.xls](http://docs.wri.org/wri_eutrophic_hypoxic_dataset_2011-03.xls).
- Dickrell, J. 2014. "Reclaiming 75% of Manure Liquids to Potable Water." *Dairy Today Magazine*. Monticello, MN: Dairy Today.
- Dickrell, J. 2016. "From Manure to Drinking Water." *Dairy Herd Management Magazine*. Lenexa, KS: Dairy Herd Management.
- Di Maso, M., R. Talamini, C. Bosetti, M. Montella, A. Zucchetto, M. Libra, E. Negri, et al. 2013. "Red Meat and Cancer Risk in a Network of Case-Control Studies Focusing on Cooking Practices." *Annals of Oncology* 24 (12): 3107–3112.
- Dimkpa, C.O., and P.S. Bindraban. 2016. "Fortification of Micronutrients for Efficient Agronomic Production: A Review." *Agronomy for Sustainable Development* 36: 1–26.
- Directorate of Fisheries. 2019. "Statistics on Escapes" (Norwegian). <https://www.fiskeridir.no/Akvakultur/Statistikk-akvakultur/Roemmingsstatistikk>.
- Dixon, R., and D. Coates. 2009. "Review: Near Infrared Spectroscopy of Faeces to Evaluate the Nutrition and Physiology of Herbivores." *Journal of Near Infrared Spectroscopy* 17 (1): 1–31.
- Dobbs, R., C. Sawers, F. Thompson, J. Manyika, J. Woetzel, P. Child, S. McKenna, and A. Spatharou. 2014. *Overcoming Obesity: An Initial Economic Analysis*. New York: McKinsey Global Institute.
- Do Carmo, B.B. 2017. "Market Mechanisms to Compensate for Illegal Deforestation in the Brazilian Amazon and Their Connection to Land Tenure Governance." PhD diss., Stanford University School of Law.
- Dong, D., and B.-H. Lin. 2009. *Fruit and Vegetable Consumption by Low-Income Americans—Would a Price Reduction Make a Difference?* Economic Research Report no. 70, U.S. Department of Agriculture, Economic Research Service (USDA ERS). Washington, DC: USDA/ERS.
- Donnelly, L. 2015. "Britain Turns Its Back on Strong Beer." *Telegraph*, March 8. <http://www.telegraph.co.uk/news/health/news/11455150/Britain-turns-its-back-on-strong-beer.html>.
- Donofrio, S., P. Rothrock, and J. Leonard. 2017. "Supply Change: Tracking Corporate Commitments to Deforestation-Free Supply Chains, 2017." Washington, DC: Forest Trends.
- Doole, G.J., and U.H. Paragahawewa. 2011. "Profitability of Nitrification Inhibitors for Abatement of Nitrate Leaching on a Representative Dairy Farm in the Waikato Region of New Zealand." *Water* 3 (4): 1031–1049.
- Dore, M.H.I. 2005. "Climate Change and Changes in Global Precipitation Patterns: What Do We Know?" *Environment International* 31 (8): 1167–1181.
- Dorward, A. 2012. "The Short- and Medium-Term Impacts of Rising Staple Food Prices." *Food Policy* 4: 633–645.
- Dorward, A. 2013. "Agricultural Labour Productivity, Food Prices and Sustainable Development Impacts and Indicators." *Food Policy* 39: 40–50.
- Doumbia, M. 2010. *Conservation Agriculture in the Sahelian Region of West Africa*. Bamako: Institut d'Économie Rurale. [http://www.fondation-farm.org/zoe/doc/conf2010\\_presentation05\\_mdoumbia.pdf](http://www.fondation-farm.org/zoe/doc/conf2010_presentation05_mdoumbia.pdf).
- Doumbia, M., A. Jarju, M. Sene, K. Traore, R. Yost, R. Kablan, K. Brannan, et al. 2009. "Sequestration of Organic Carbon in West African Soils by *Aménagement en courbes de niveau*." *Agronomy for Sustainable Development* 29: 267–275.
- Downs, S.M., A.M. Thow, and S.R. Leeder. 2013. "The Effectiveness of Policies for Reducing Dietary Trans Fat: A Systematic Review of the Evidence." *Bulletin of the World Health Organization* 91: 262–269.
- Dror, D.K., and L.H. Allen. 2011. "The Importance of Milk and Other Animal-Source Foods for Children in Low-Income Countries." *Food Nutrition Bulletin* 32: 227–243.
- Druihe, Z., and J. Barreiro-Hurlé. 2012. "Fertilizer Subsidies in Sub-Saharan Africa." ESA Working Paper no. 12-04. Rome: FAO (Food and Agriculture Organization of the United Nations).
- Dugan, P., V.V. Sugunan, R.L. Welcomme, C. Béné, R.E. Brummett, and M.C.M. Beveridge. 2007. "Inland Fisheries and Aquaculture." In *Water for Food, Water for Life: A Comprehensive Assessment of Water Management in Agriculture*, edited by D. Molden, 459–483. London: Earthscan.
- Duin, E.C., T. Wagner, S. Shima, D. Prakash, B. Cronin, D. Yáñez-Ruiz, S. Duval, et al. 2016. "Mode of Action Uncovered for the Specific Reduction of Methane Emissions from Ruminants by the Small Molecule 3-Nitrooxypropanol." *Proceedings of the National Academy of Sciences of the United States of America* 113 (22): 6172–6177.
- Dumanovsky, T. 2011. "Changes in Energy Content of Lunchtime Purchases from Fast Food Restaurants after Introduction of Calorie Labelling: Cross Sectional Customer Surveys." *BMJ* 343: d4464.
- Dumortier, J., D. Hayes, M. Carriquiry, F. Deng, X. Du, A. Elobeid, J. Fabiosa, and S. Tokgoz. 2011. "Sensitivity of Carbon Emission Estimates from Indirect Land-Use Change." *Applied Economic Perspectives and Policy* 33: 428–448.
- Dumortier, J., J. Dermot, J. Hayes, M. Carriquiry, F. Dong, X. Du, A. Elobeid, et al. 2012. "The Effects of Potential Changes in United States Beef Production on Global Grazing Systems and Greenhouse Gas Emissions." *Environmental Research Letters* 7 (024023).
- Duncan, A.J., F. Bachewe, K. Mekonnen, D. Valbuena, G. Rachier, D. Lule, M. Bahta, and O. Erenstein. 2016. "Crop Residue Allocation to Livestock Feed, Soil Improvement and Other Uses along a Productivity Gradient in Eastern Africa." *Agriculture, Ecosystems & Environment* 228: 101–110.
- Dwyer, T., and B.S. Hetzel. 1980. "A Comparison of Trends of Coronary Heart Disease Mortality in Australia, USA, and England and Wales with Reference to Three Major Risk Factors—Hypertension, Cigarette Smoking and Diet." *International Journal of Epidemiology* 9: 65–71.
- Easterling, W.E., P.K. Aggarwal, P. Batima, K.M. Brander, L. Erda, S.M. Howden, A. Kirilenko, et al. 2007. "Food, Fibre and Forest Products." In *Climate Change 2007: Impacts, Adaptation and Vulnerability*, edited by M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden, and C.E. Hanson. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge: Cambridge University Press.

*Economist*. 2010. "Brazilian Agriculture: The Miracle of the Cerrado." August 26. <http://www.economist.com/node/16886442>.

*Economist*. 2012. "A Fat Chance: The Danish Government Rescinds Its Unwieldy Fat Tax." November 17. <http://www.economist.com/news/europe/21566664-danish-government-rescinds-its-unwieldy-fat-tax-fat-chance>.

*Economist*. 2014. "Chubby Little Emperors: Why China Is Under- and Over-nourished at the Same Time." June 14. <http://www.economist.com/news/china/21604221-why-china-under-and-over-nourished-same-time-chubby-little-emperors>.

*Economist*. 2015. "Silicon Valley Gets a Taste for Food." March 7. <http://www.economist.com/news/technology-quarterly/21645497-tech-startups-are-moving-food-business-make-sustainable-versions-meat>.

Ecorys. 2014. *Food Taxes and Their Impact on Competitiveness in the Agri-food Sector*. Rotterdam: Ecorys.

EDGAR (Emission Database for Global Atmospheric Research). 2011. *Release Version 4.2*. <http://edgar.jrc.ec.europa.eu>.

Edgerton, M.D. 2009. "Increasing Crop Productivity to Meet Global Needs for Feed, Food, and Fiber." *Plant Physiology* 149: 7–13.

Editors of Nature. 2013. "GM Crops: A Story in Numbers." *Nature* 497: 22–23.

Edwards, R., J. Larive, and J. Beziat. 2011. "Well to Wheel Analysis of Future Automotive Fuels and Powertrains in the European Context." WTT Appendix 2. Ispra, Italy: European Commission Joint Research Centre.

Edwards, D.P., S. Sloan, L. Weng, J. Sayer, P. Dirks, and W.F. Laurance. 2014. "Mining and the African Environment." *Conservation Letters* 7: 302–311.

E4tech. 2010. "A Causal Descriptive Approach to Modeling the GHG Emissions Associated with the Indirect Land Use Impacts of Biofuels." London: E4tech.

EIA (United States Energy Information Administration). 2012. *Annual Energy Outlook 2012: With Projections to 2035*. Washington, DC: EIA.

EIA. 2013. *International Energy Outlook 2013: With Projections to 2040*. Washington, DC: EIA.

EIA. 2014. "International Energy Statistics: Biofuel Consumption." <https://www.eia.gov/beta/international/data/browser/>.

EIA. 2015. "U.S. Energy-Related Carbon Dioxide Emissions, 2014." Washington, DC: EIA. <https://www.eia.gov/environment/emissions/carbon/>.

Eitzinger, A., P. Läderach, A. Quiroga, A. Pantoja, and J. Gordon. 2011. *Future Climate Scenarios for Kenya's Tea Growing Areas*. Decision and Policy Analyses group (DAPA) at Centro Internacional de Agricultura Tropical (CIAT). <http://dapa.ciat.cgiar.org/wp-content/uploads/2011/05/Future-Climate-Scenarios-for-Kenyan-Farmers-Final-Report2.pdf>.

Ejlertsen, M., J. Poole, and K. Marshall. 2012. *Sustainable Management of Globally Significant Endemic Ruminant Livestock in West Africa: Estimates of Livestock Demographic Parameters in Mali*. ILRI Research Report 31. Nairobi, Kenya: ILRI (International Livestock Research Institute).

Elias, P., and D. Boucher. 2014. *Planting for the Future: How Demand for Wood Products Could Be Friendly to Tropical Forests*. Cambridge, MA: Union of Concerned Scientists.

Elinder, L.S. 2005. "Obesity, Hunger and Agriculture: The Damaging Role of Subsidies." *BMJ* 331 (7528): 1333–1336.

Ellis, Jonathan. 2014. "Walmart Pushes Plan to Reduce Fertilizer." *USA Today*, March 16. <http://www.usatoday.com/story/money/business/2014/03/16/wal-mart-has-fertilizer-plan/6428637/>.

Enciso, J., and M. Mecke. 2004. "Using Renewable Energy to Pump Water." *Texas Cooperative Extension*. <http://aces.nmsu.edu/ces/windmill/documents/using-renewable-energy-to-pump-water.pdf>.

Environmental Working Group. 2011. *Meat Eaters' Guide to Climate Change + Health*. Washington, DC: Environmental Working Group.

EPA (U. S. Environmental Protection Agency). 2012. *Summary Report: Global Anthropogenic Non-CO<sub>2</sub> Greenhouse Gas Emissions, 1990–2030*. 430-S-12-002. Washington, DC: EPA.

EPA. 2013. *Food Waste Production and Prevention*. <http://www.epa.gov/foodrecovery/fd-reduce.htm>.

EPA. 2015a. *Inventory of US Greenhouse Gas Emissions and Sinks, 1990–2013*. Washington, DC: EPA.

EPA. 2015b. *Mississippi River/Gulf of Mexico Watershed Nutrient Task Force: 2015 Report to Congress*. Washington, DC: EPA.

EPA. 2016. "Bromoform Fact Sheet." <https://www.epa.gov/sites/production/files/2016-09/documents/bromoform.pdf>.

EPA. 2017. *AgSTAR: Biogas Recovery in the Agriculture Sector*. <https://www.epa.gov/agstar>.

Erb, K., V. Gaube, F. Krausmann, C. Plutzer, A. Bondeau, and H. Haberl. 2007. "A Comprehensive Global 5 Min Resolution Land-Use Data Set for the Year 2000 Consistent with National Census Data." *Journal of Land Use and Science* 2: 191–224. <https://doi.org/10.1080/17474230701622981>.

Erb, K.-H., S. Gingrich, F. Krausmann, and H. Haberl. 2008. "Industrialization, Fossil Fuels, and the Transformation of Land Use." *Journal of Industrial Ecology* 12 (5–6): 686–703. doi:10.1111/j.1530-9290.2008.00076.x.

Erb, K.-H., C. Lauk, T. Kastner, A. Mayer, M. C. Theurl, and H. Haberl. 2016. "Exploring the Biophysical Option Space for Feeding the World without Deforestation." *Nature Communications* 7: 11382.

Erb, K.-H., T. Kastner, C. Plutzer, A.L.S. Bais, N. Carvalhais, T. Fetzl, S. Gingrich, et al. 2017. "Unexpectedly Large Impact of Forest Management and Grazing on Global Vegetation Biomass." *Nature* 553 (December 20): 73–76. <https://www.nature.com/articles/nature25138>.

Ercin, A.E., and A.Y. Hoekstra. 2012. *Water Footprint Scenarios for 2050: A Global Analysis and Case Study for Europe*. Value of Water Research Report Series no. 59. Delft, the Netherlands: UNESCO-IHE Institute for Water Education.

Ercin, A. E., and A. Y. Hoekstra. 2014. "Water Footprint Scenarios for 2050: A Global Analysis." *Environment International* 64: 71–82.

Erismann, J.W., J. Galloway, S. Seitzinger, A. Bleeker, N. Dise, R. Petrescu, A. Leach, and W. de Vries. 2013. "Consequences of Human Modification of the Global Nitrogen Cycle." *Philosophical Transactions of the Royal Society B* 368 (1621): 20130116.

Ernst, C., P. Mayaux, A. Verhegghen, C. Bodart, M. Christophe, and P. Defourny. 2013. "National Forest Cover Change in Congo Basin: Deforestation, Reforestation, Degradation and Regeneration for the Years 1990, 2000 and 2005." *Global Change Biology* 19 (4): 1173–1187. doi:10.1111/gcb.12092.

- Eshel, G., P. Martin, and E. Bowen. 2009. "Land Use and Reactive Nitrogen Discharge: Effects of Dietary Choices." *Earth Interactions* 14: 1–14.
- Eshel, G., A. Shepon, T. Makov, and R. Milo. 2014. "Land, Irrigation Water, Greenhouse Gas, and Reactive Nitrogen Burdens of Meat, Eggs, and Dairy Production in the United States." *Proceedings of the National Academy of Sciences of the United States of America* 111 (33): 11996–12001.
- Estes, L.D., H. Beukes, B.A. Bradley, S.R. Debats, M. Oppenheimer, A.C. Ruane, R. Schulze, and M. Tadross. 2013. "Projected Climate Impacts to South African Maize and Wheat Production in 2055: A Comparison of Empirical and Mechanistic Modeling Approaches." *Global Change Biology* 19 (12): 3762–3774. doi:10.1111/gcb.12325.
- Estes, L., T. Searchinger, M. Spiegel, D. Tian, S. Sickinga, M. Mwale, L. Kehoe, et al. 2016. "Reconciling Agriculture, Carbon and Biodiversity in a Savannah Transformation Frontier." *Philosophical Transactions of the Royal Society B* 371 (1703): 20150316.
- Estes, L., D. McRitchie, J. Choi, S. Debats, T. Evans, W. Guthe, D. Luo, et al. 2016. "A Platform for Crowdsourcing the Creation of Representative, Accurate Landcover Maps." *Environmental Modelling and Software* 80: 41–53.
- Estes, L., P. Chen, S. Debats, T. Evans, S. Ferreira, T. Kuemmerle, G. Ragazzo, et al. 2018. "A Large-Area, Spatially Continuous Assessment of Land-Cover Map Error and Its Impact on Downstream Analyses." *Global Change Biology* 24: 322–337.
- Estruch, R.E. Ros, J. Salas-Salvado, M.I. Covas, D. Corella, and F. Aros. 2013. "Primary Prevention of Cardiovascular Disease with a Mediterranean Diet." *New England Journal of Medicine* 368 (14): 1279–1290.
- Ethiopia Central Statistical Agency. 2017. *Ethiopia Demographic and Health Survey 2016*. Addis Ababa, Ethiopia: Central Statistical Agency.
- EU Joint Research Centre. 2008. *Scientific and Technical Contribution to the Development of an Overall Health Strategy in the Area of GMOs*. Luxembourg: Office for Official Publications of the European Communities.
- EU Nitrogen Expert Panel. 2015. "Nitrogen Use Efficiency (NUE): An Indicator for the Utilization of Nitrogen in Agriculture and Food Systems." Wageningen University.
- European Commission. 2010. "Commission Decision of 10 June 2010 on Guidelines for the Calculation of Land Carbon Stocks for the Purpose of Annex V to Directive 2009/28/EC." *Official Journal of the European Union* L151: 19–41. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:151:0019:0041:EN:PDF>.
- European Commission. 2016. *Impact Assessment Accompanying the Document Proposal for a Regulation of the European Parliament and of the Council on Binding Annual Greenhouse Gas Emission Reductions from 2021 to 2030 for a Resilient Energy Union and to Meet Commitments under the Paris Agreement and Amending Regulation No. 525/2013 of the European Parliament and the Council on a Mechanism for Monitoring and Reporting Greenhouse Gas Emissions and Other Information Relevant to Climate Change*. [https://ec.europa.eu/clima/sites/clima/files/docs/20160720\\_\\_\\_impact\\_assessment\\_1\\_en.pdf](https://ec.europa.eu/clima/sites/clima/files/docs/20160720___impact_assessment_1_en.pdf).
- European Commission Joint Research Centre. 2010. *Biofuels: A New Methodology to Estimate GHG Emissions from Global Land Use Change*. Luxembourg: Publications Office of the European Union.
- European Network for Rural Development. 2017. "Finding Solutions to Control AECM Support for Input Reductions." [https://enrd.ec.europa.eu/sites/enrd/files/w12\\_aecm\\_factsheet\\_input-reductions.pdf](https://enrd.ec.europa.eu/sites/enrd/files/w12_aecm_factsheet_input-reductions.pdf).
- European Parliament. 2012. "Avoiding Food Wastage." <http://www.europarl.europa.eu/sides/getDoc.do?type=TA&language=EN&reference=P7-TA-2012-14>.
- European Union Delegation to Malaysia, Trade and Economic Section. 2012. "The Malaysian Palm Oil Sector: Overview." [http://www.ice.gov.it/paes/asia/malaysia/upload/173/Palm%20oil\\_overview\\_2012.pdf](http://www.ice.gov.it/paes/asia/malaysia/upload/173/Palm%20oil_overview_2012.pdf).
- Evans, M. 2014. "Shark Fin Soup Sales Plunge in China." *Al Jazeera*, April 10. <http://www.aljazeera.com/indepth/features/2014/04/shark-fin-soup-sales-plunge-china-20144913514600433.html>.
- Evenson, R.E., and D. Gollin. 2003a. "Assessing the Impact of the Green Revolution 1960 to 2000." *Science* 300: 758–762.
- Evenson, R.E., and D. Gollin, eds. 2003b. *Crop Variety Improvement and Its Effect on Productivity: The Impact of International Agricultural Research*. Cambridge: CABI (Centre for Agriculture and Bioscience International).
- Ewer, R.M., J.P.W. Scharlemann, A. Balmford, and R.E. Green. 2009. "Do Increases in Agricultural Yield Spare Land for Nature?" *Global Change Biology* 15: 1716–1726.
- Fabiani, L., C. Lovatelli, and B. Rudorff. 2010. "Soy Moratorium: Mapping & Monitoring of Soy Plantings in the Amazon Biome in the Third Year." São Paulo: ABIOVE, GlobalSat, and INPE. [http://www.abiove.org.br/site/\\_files/english/04092012-161845-relatorio\\_moratoria\\_2012\\_ingles.pdf](http://www.abiove.org.br/site/_files/english/04092012-161845-relatorio_moratoria_2012_ingles.pdf).
- Fagan, M.E., R.S. DeFries, S.E. Sesnie, J.P. Arroyo, W. Walker, C. Soto, R.L. Chazdon, and A. Sanchu. 2013. "Land Cover Dynamics Following a Deforestation Ban in Northern Costa Rica." *Environmental Research Letters* 8 (034017).
- Fairhurst, T., and D. McLaughlin. 2009. *Sustainable Oil Palm Development on Degraded Land in Kalimantan*. Washington, DC: World Wildlife Fund.
- Fairhurst, T., M. McLeish, and R. Prasodjo. 2010. *Conditions Required by the Private Sector for Oil Palm Expansion on Degraded Land in Indonesia*. London and Washington, DC: Tropical Crop Consultants, Ltd., and World Resources Institute.
- Famiglietti, J.S. 2014. "The Global Groundwater Crisis." *Nature Climate Change* 4: 945–949.
- Fan, M., X. Liu, R. Jiang, F. Zhang, S. Lu, X. Zeng, and P. Christie. 2005. "Crop Yields, Internal Nutrient Efficiency, and Changes in Soil Properties in Rice-Wheat Rotations under Non-flooded Mulching Cultivation." *Plant and Soil* 277: 265–276.
- Fan, S., A. Gulati, and S. Thorat. 2007. "Investment, Subsidies, and Pro-poor Growth in Rural India." *Agricultural Economics* 39 (2): 163–170.
- Fanchone, A., H. Archimede, R. Delagarde, and M. Boval. 2012. "Comparison of Intake and Digestibility of Fresh *Digitaria decumbens* Grass Fed to Sheep, Indoors or at Pasture, at Two Different Stages of Regrowth." *Animal* 6 (7): 1108–1114.
- FAO (Food and Agriculture Organization of the United Nations). n.d. "Women and Sustainable Food Security." Prepared by the Women in Development Service for the Sustainable Development Department. Rome: FAO. <http://www.fao.org/sd/fsdirect/fbdirect/FSP001.htm>.
- FAO. 1989. *Yield and Nutritional Value of the Commercially More Important Fish Species*. Rome: FAO.
- FAO. 2002. *World Agriculture: Towards 2015/2030: Summary Report*. Rome: FAO.

- FAO. 2004. *The World Food Summit Five Years Later: Mobilizing the Political Will and Resources to Banish World Hunger*. Rome: FAO.
- FAO. 2006a. "Food Security: Policy Brief." FAO Agricultural and Development Economics Division, with support from FAO Netherlands Partnership Programme and the EC-FAO Food Security Programme. Rome: FAO.
- FAO. 2006b. *The State of World Fisheries and Aquaculture 2006*. Rome: FAO.
- FAO. 2007. *Gender Equality: Ensuring Rural Women's and Men's Equal Participation in Development*. Rome: FAO.
- FAO. 2008. *Glossary of Aquaculture*. Rome: FAO.
- FAO. 2010a. *Land Policy in Africa: A Framework to Strengthen Land Rights, Enhance Productivity and Secure Livelihoods*. Rome: FAO.
- FAO. 2010b. "Principles for Responsible Agricultural Investment That Respects Rights, Livelihoods and Resources, Synoptic Version." A discussion note prepared by FAO, International Fund for Agricultural Development, the UNCTAD Secretariat and the World Bank Group to contribute to an ongoing global dialogue. February 22.
- FAO. 2011a. *The State of Food and Agriculture: Women in Agriculture—Closing the Gender Gap for Development*. Rome: FAO.
- FAO. 2011b. *The State of the World's Land and Water Resources for Food and Agriculture—Managing Systems at Risk*. Rome and London: FAO and Earthscan.
- FAO. 2011c. *Global Food Losses and Food Waste—Extent, Causes, and Prevention*. Rome: FAO.
- FAO. 2011d. *The State of Food Insecurity in the World*. Rome: FAO.
- FAO. 2011e. *World Livestock 2011: Livestock in Food Security*. Rome: FAO.
- FAO. 2011f. "Issue Paper: Energy-Smart Food for People and Climate." Rome: FAO.
- FAO. 2012a. *Global Forest Land-Use Change, 1990–2005*. Rome: FAO.
- FAO. 2012b. *Conservation Agriculture*. Rome: FAO. [www.fao.org/ag/ca/index.html](http://www.fao.org/ag/ca/index.html).
- FAO. 2012c. *State of Food and Agriculture: Investing in Agriculture*. Rome: FAO.
- FAO. 2013a. "The Role of Food Systems in Nutrition." *The State of Food and Agriculture: Food Systems for Better Nutrition*. <http://www.fao.org/docrep/018/i3300e/i3300e01.pdf>.
- FAO. 2013b. *AQUASTAT—FAO's Information System on Water and Agriculture*. Rome: FAO. [http://www.fao.org/nr/water/aquastat/water\\_use/index.stm](http://www.fao.org/nr/water/aquastat/water_use/index.stm).
- FAO. 2014a. "Food Security Indicators." October 15 revision. Rome: FAO.
- FAO. 2014b. *Assisted Natural Regeneration of Forests*. Rome: FAO. <http://www.fao.org/forestry/anr/en/>.
- FAO. 2015a. *Food Wastage Footprint & Climate Change*. Rome: FAO.
- FAO. 2015b. *Statistical Pocketbook: World Food and Agriculture*. Rome: FAO.
- FAO. 2018. *The State of World Fisheries and Aquaculture: Meeting the Sustainable Development Goals*. Rome: FAO.
- FAO. 2019a. "FAOSTAT." Rome: FAO.
- FAO. 2019b. "FishStatJ: FAO Global Fishery and Aquaculture Production Statistics." Rome: FAO.
- FAO. 2019c. "Climate-Smart Agriculture." Rome: FAO. <http://www.fao.org/climate-smart-agriculture/en/>.
- FAO, WHO, and UNU (Food and Agriculture Organization of the United Nations, World Health Organization, and United Nations University). 1985. *Energy and Protein Requirements*. Geneva: WHO.
- FAO, NACA, UNEP, World Bank, and WWF (Food and Agriculture Organization of the United Nations, Network of Aquaculture Centres in Asia-Pacific, United Nations Environment Programme, World Bank, and World Wildlife Fund). 2006. *International Principles for Responsible Shrimp Farming*. Bangkok: NACA.
- FAO, WFP, and IFAD (Food and Agriculture Organization of the United Nations, World Food Programme, and International Fund for Agricultural Development). 2012. *The State of Food Insecurity in the World 2012: Economic Growth Is Necessary but Not Sufficient to Accelerate Reduction of Hunger and Malnutrition*. Rome: FAO.
- FAO, WFP, and IFAD (Food and Agriculture Organization of the United Nations, World Food Programme, and International Fund for Agricultural Development). 2013. *The State of Food Insecurity in the World 2013: The Multiple Dimensions of Food Security*. Rome: FAO.
- FAO, IFAD, and WFP (Food and Agriculture Organization of the United Nations, International Fund for Agricultural Development, and World Food Programme). 2015. *The State of Food Insecurity in the World 2015: Meeting the 2015 International Hunger Targets—Taking Stock of Uneven Progress*. Rome: FAO.
- FAO, IFAD, UNICEF, WFP, and WHO (Food and Agriculture Organization of the United Nations, International Fund for Agricultural Development, United Nations Children's Fund, World Food Programme, and World Health Organization). 2017. *The State of Food Security and Nutrition in the World 2017: Building Resilience for Peace and Food Security*. Rome: FAO.
- Fargione, J., J. Hill, D. Tilman, S. Polasky, and P. Hawthorne. 2008. "Land Clearing and the Biofuel Carbon Debt." *Science* 319: 1235–1238. Supporting online material accessible at <http://www.sciencemag.org/content/suppl/2008/02/06/1152747.DC1/Fargione.SOM.pdf>.
- Fearnside, P.M. 1982. "Deforestation in the Brazilian Amazon: How Fast Is It Occurring?" *Interciencia* 7 (2): 82–85.
- Feder, G., Y. Chalamwong, T. Onchan, and C. Hongladarom. 1988. *Land Policies and Farm Productivity in Thailand*. Baltimore: Johns Hopkins University Press.
- Federici, S., F. Tubiello, M. Salvatore, H. Jacobs, and J. Schmidhuber. 2015. "New Estimates of CO<sub>2</sub> Forest Emissions and Removals: 1990–2015." *Forest Ecology and Management* 352: 89–98.
- Feed the Future. 2012. "Feed the Future Helps Scale-Up Ridge Tillage in Mali." *Feed the Future*. <https://www.feedthefuture.gov/article/feed-the-future-helps-scale-up-ridge-tillage-mali>.
- Feed the Future. n.d. "Southern Agricultural Growth Corridor of Tanzania (SAGCOT)." <https://feedthefuture.gov/model/southern-agricultural-growth-corridor-tanzania-sagcot>.
- Felton, A.M., L.M. Engstrom, A. Felton, and C.D. Knott. 2003. "Effects of Selective Hand-Logging on Orangutan Population Density, Forest Structure and Fruit Availability in a Peat Swamp Forest in West Kalimantan." *Indonesia Biology Conservation* 114: 91–101.

- Fernald, L.C.H., P.J. Gertler, and L.M. Neufeld. 2008. "Role of Cash in Conditional Cash Transfer Programmes for Child Health, Growth, and Development: An Analysis of Mexico's *Oportunidades*." *Lancet* 371: 828–837.
- Fernandez-Cornejo, J., and S. Wechsler. 2012. "Revisiting the Impact of Bt Corn Adoption by U.S. Farmers." *Agricultural and Resource Economics Review* 41: 377–390.
- Fertilizer Institute. 2016. "Managing Nutrients." <https://www.tfi.org/introduction-fertilizer/environmental-stewardship/managing-nutrients>.
- Fetzel, T., P. Havlík, M. Herrero, J.O. Kaplan, T. Kastner, C. Kroisleitner, S. Rolinski, et al. 2017. "Quantification of Uncertainties in Global Grazing Systems Assessment." *Global Biogeochemical Cycles* 31 (7): 1089–1102.
- Field, C.B., J.E. Campbell, and D.B. Lobell. 2008. "Biomass Energy: The Scale of the Potential Resource." *Trends in Ecology and Evolution* 23 (2): 65–72.
- Figueres, C., H. Schellnhuber, G. Whiteman, A. Hogley, and S. Rahmstorf. 2017. "Three Years to Safeguard Our Climate." *Nature* 546: 593–595.
- Filipski, M., and K. Covarrubia. 2010. "Distributional Impacts of Commodity Prices in Developing Countries." In *Agricultural Policies for Poverty Reduction*, edited by J. Brooks. Paris: OECD.
- Filtration and Separation. 2014. "Technical Note: An Alternative Manure Treatment Technology." *Filtration and Separation* 51 (5): 44–45.
- Finger, R. 2010. "Impacts of Agricultural Policy Reforms on Crop Yields." *EuroChoices* 7: 24–25.
- Finkelstein, E.A., J.G. Trogon, J.W. Cohen, and W. Dietz. 2009. "Annual Medical Spending Attributable to Obesity: Payer- and Service-Specific Estimates." *Health Affairs* 28 (5): w822–w831.
- Finkelstein, E.A., M.C. DiBonaventura, S.M. Burgess, and B.C. Hale. 2010. "The Costs of Obesity in the Workplace." *Journal of Occupational and Environmental Medicine* 52 (10): 971–976.
- Fischer, C.G., and T. Garnett. 2016. "Plates, Pyramids, Planet: Developments in National Healthy and Sustainable Dietary Guidelines: A State of Play Assessment." Rome and Oxford: FAO and Food Climate Research Network.
- Fischer, T., D. Byerlee, and G. Edmeades. 2014. "Crop Yields and Global Food Security: Will Yield Increases Continue to Feed the World?" ACIAR Monograph no. 158. Canberra: Australian Centre for International Agricultural Research.
- Flannery, R. 2014. "Chinese Billionaire Guo Guangchang to Be Feted as Global 'Shark Guardian' in New York." *Forbes*, April 13. <http://www.forbes.com/sites/russellflannery/2014/04/13/chinese-billionaire-guo-guangchang-to-be-feted-as-global-shark-guardian-in-new-york/>.
- Foley, J.A., R. DeFries, G.P. Asner, C. Barford, G. Bonan, S.R. Carpenter, F.S. Chapin, et al. 2005. "Global Consequences of Land Use." *Science* 309: 570–574.
- Foley, J.A., N. Ramankutty, K.A. Brauman, E.S. Cassidy, J.S. Gerber, M. Johnston, N.D. Mueller, et al. 2011. "Solutions for a Cultivated Planet." *Nature* 478: 337–342.
- Food Loss and Waste Protocol (FLW Protocol). 2016. *Food Loss and Waste Accounting and Reporting Standard*. Washington DC: FLW Protocol.
- Foresight. 2011a. *The Future of Food and Farming*. Final project report. London: Government Office for Science.
- Foresight. 2011b. *Synthesis Report C6: Raising the Limits of Sustainable Production*. London: Government Office for Science.
- Fort, J. 2013. "Challenge: Aquaculture Investment." *Global Aquaculture Advocate*, January/February.
- Fort, R. 2007. *Property Rights after Market Liberalization Reforms: Land Titling and Investments in Rural Peru*. Wageningen, the Netherlands: University of Wageningen.
- Frank, S., P. Havlík, J.-F. Soussana, A. Levesque, H. Valin, E. Wollenberg, U. Kleinwechter, et al. 2017. "Reducing Greenhouse Gas Emissions in Agriculture without Compromising Food Security?" *Environmental Research Letters* 12 (105004).
- Franzluebbers, A.J., and J.A. Stuedemann. 2009. "Soil-Profile Organic Carbon and Total Nitrogen during 12 Years of Pasture Management in the Southern Piedmont USA." *Agriculture, Ecosystems, and Environment* 129 (1–3): 28–36.
- Fraser, D. 2008. "Understanding Animal Welfare." *Acta Veterinaria Scandinavica* 50 (suppl. 1): S1.
- Frelat, R., S. Lopez-Ridaura, K.E. Giller, M. Herrero, S. Douxchamps, A.A. Djurfeldt, O. Erenstein, et al. 2015. "Drivers of Household Food Availability in Sub-Saharan Africa Based on Big Data from Small Farms." *Proceedings of the National Academy of Sciences of the United States of America* 113 (2): 458–463.
- French, S. 2015. "Marketing Trends in Protein: Are You Capitalizing on the Opportunity?" Presentation at the Protein Trends & Technologies Seminar, Oak Brook, IL, May 5. Harleysville, PA: Natural Marketing Institute.
- French Ministry of Agriculture, Agrifood, and Forestry. 2017. "4 pour 1000." <http://4p1000.org/understand>.
- Frenken, K., and J. Faurès. 1997. "Environmental Considerations in Irrigation Development." In *Irrigation Potential in Africa: A Basin Approach*. Rome: FAO. <http://www.fao.org/docrep/W4347E/w4347e10.htm>.
- Frid-Nielsen, S., J. Norman, D. Dinesh, and S. Vermeulen. 2013. "Evidence of Success: A Waste-Reducing Rice Thresher in Six West African Countries." *CGIAR Program on Climate Change, Agriculture and Food Security (CCAFS)*. Wageningen, the Netherlands: CCAFS.
- Friedrich, J., M. Ge, and T. Damassa. 2015. "Infographic: What Do Your Country's Emissions Look Like?" Washington, DC: World Resources Institute. <http://www.wri.org/blog/2015/06/infographic-what-do-your-countrys-emissions-look>.
- Friends of the Earth. 2017. "Meat of the Matter: A Municipal Guide to Climate-Friendly Food Purchasing." Washington, DC: Friends of the Earth.
- Fritz, S., L. See, and F. Rembold. 2010. "Comparison of Global and Regional 729 Land Cover Maps with Statistical Information for the Agricultural Domain 730 in Africa." *International Journal of Remote Sensing* 31 (9): 2237–2256.
- Fry, J., and W. Finley. 2005. "The Prevalence and Costs of Obesity in the EU." *Proceedings of the Nutritional Society* 64: 359–362.
- Fry, J., N. Mailloux, D. Love, M. Milli, and L. Cao. 2018. "Feed Conversion Efficiency in Aquaculture: Do We Measure It Correctly?" *Environmental Research Letters* 13 (2) (024017).
- Fthenakis, V. 2012. "How Long Does It Take for Photovoltaics to Produce the Energy Used?" *National Association of Professional Engineers Magazine*, February 16–17.



- Fthenakis, V., and H.C. Kim. 2009. "Land Use and Electricity Generation: A Life-Cycle Analysis." *Renewable Sustainable Energy Review* 13: 1465–1474.
- Fuglie, K. 2012. "Productivity Growth and Technology Capital in the Global Agricultural Economy." In *Productivity Growth in Agriculture: An International Perspective*, edited by K. Fuglie, S.L. Wang, and V.E. Ball. Oxfordshire, UK: CAB International.
- Fuglie, K., and A. Nin-Pratt. 2012. *Agricultural Productivity: A Changing Global Harvest*. 2012 Global Food Policy Report. Washington, DC: IFPRI (International Food Policy Research Institute).
- Fuglie, K., P. Heisey, J. King, C.E. Pray, K. Day-Rubenstein, D. Schimmelpennig, S.L. Wang, and R. Karmarkar-Deshmukh. 2011. *Research Investments and Market Structure in the Food Processing, Agricultural Input, and Biofuel Industries Worldwide*. Economic Research Report 130. Washington, DC: USDA Economic Research Service.
- Fung, T.T., K.M. Rexrode, C.S. Mantzoros, J.E. Manson, W.C. Willett, and F.B. Hu. 2009. "Mediterranean Diet and Incidence of and Mortality from Coronary Heart Disease and Stroke in Women." *Circulation* 119 (8): 1093–1100.
- Future Agricultures Consortium. 2008. "The Malawi Fertilizer Subsidy Programme: Politics and Pragmatism." Policy Brief 022. Sussex, UK: Future Agricultures Consortium.
- Galbally, I.E., M.C.P. Meyer, Y. Wang, C. Smith, and I.A. Weeks. 2010. "Nitrous Oxide Emissions from a Legume Pasture and the Influences of Liming and Urine Addition." *Agriculture, Ecosystems & Environment* 136 (3–4): 262–272.
- Gale, F. 2013. *Growth and Evolution in China's Agricultural Support Policies*. Economic Research Service Report no. 153. Washington, DC: U.S. Department of Agriculture. <http://www.ers.usda.gov/publications/err-economic-research-report/err153.aspx>.
- Gallett, C. 2010. "Meat Meets Meta: A Quantitative Review of the Price Elasticity of Meat." *American Journal of Agricultural Economics* 92 (1): 258–272.
- GAO (U.S. General Accounting Office). 2003. *Agricultural Conservation: USDA Needs to Better Ensure Protection of Highly Erodible Croplands and Wetlands*. Report to Democratic Ranking Member, Committee on Agriculture, Nutrition, and Forestry, U.S. Senate. April. <https://www.gao.gov/new.items/d03418.pdf>.
- Gao, Y., G. Yu, C. Luo, and P. Zhou. 2012. "Groundwater Nitrogen Pollution and Assessment of Its Health Risks: A Case Study of a Typical Village in Rural-Urban Continuum, China." *PLOS ONE* 7 (4): e33982.
- Garfield, L. 2017. "Spray This Invisible, Edible Coating on Produce and It Will Last Five Times Longer." *Business Insider*, January 16. <http://www.businessinsider.com/apeel-sciences-food-edipeel-invisipeel-extend-life-2017-1>.
- Garnett, T. 2011. "Where Are the Best Opportunities for Reducing Greenhouse Gas Emissions in the Food System (Including the Food Chain)?" *Food Policy* 36: S23–S32.
- Garnett, T. 2014. "What Is a Sustainable Healthy Diet?" Discussion paper. Oxford, UK: Food Climate Research Network.
- Garnett, T., and A. Wilkes. 2014. "Appetite for Change: Social, Economic and Environmental Transformations in China's Food System." Oxford, UK: Food Climate Research Network.
- Garrity, D.P., M. Soekardi, M. van Noordwijk, R. de la Cruz, P.S. Pathak, H.P.M. Gunasena, N. Van So, et al. 1997. "The *Imperata* Grasslands of Tropical Asia: Area, Distribution and Typology." *Agroforestry Systems* 36: 3–29.
- Gasnier, C., C. Dumont, N. Benachour, E. Clair, M.C. Chagnon, and G.E. Seralini. 2009. "Glyphosate-Based Herbicides Are Toxic and Endocrine Disruptors in Human Cell Lines." *Toxicology* 262: 184–191.
- Gasparri, N.I., and H.R. Grau. 2009. "Deforestation and Fragmentation of Chaco Dry Forest in NW Argentina (1972–2007)." *Forest Ecology and Management* 258 (6): 913–921.
- Gasparri, N.I., T. Kuemmerle, P. Meyfroidt, Y. le Polain de Waroux, and H. Kreft. 2016. "The Emerging Soybean Production Frontier in Southern Africa: Conservation Challenges and the Role of South-South Telecouplings." *Conservation Letters* 9 (1): 21–31.
- Gassert, F., M. Landis, M. Luck, P. Reig, and T. Shiao. 2013. *Aqueduct Global Maps 2.0*. Washington, DC: World Resources Institute.
- Gassert, F., M. Luck, and M. Landis. 2015. *Aqueduct Water Stress Projections: Decadal Projections of Water Supply and Demand Using CMIP5 GCMs*. Washington, DC: World Resources Institute.
- Gathala, M.K., J.K. Ladha, V. Kumar, Y.S. Saharawat, V. Kumar, P.K. Sharma, S. Sharma, and H. Pathak. 2011. "Tillage and Crop Establishment Affects Sustainability of South Asian Rice-Wheat System." *Agronomy Journal* 103 (4): 961–971.
- GCP (Generation Challenge Programme). 2014. "About Us." Consultative Group on International Agricultural Research. [www.generationcp.org/aboutus](http://www.generationcp.org/aboutus).
- Gebhart, S., and R. Thomas. 2002. *Nutritive Value of Foods*. Washington, DC: USDA (U.S. Department of Agriculture).
- Gentry, R.R., H.E. Froehlich, D. Grimm, P. Kareiva, M. Parke, M. Rust, S.D. Gaines, and B.S. Halpern. 2017. "Mapping the Global Potential for Marine Aquaculture." *Nature Ecology & Evolution* 1: 1317–1324.
- Gepts, P. 2006. "Plant Genetic Resources Conservation and Utilization: The Accomplishments and Future of a Societal Insurance Policy." *Crop Science* 46: 2278–2292.
- Gerber, P., T. Wassenaar, M. Rosales, V. Castel, and H. Steinfeld. 2007. "Environmental Impacts of a Changing Livestock Production: Overview and Discussion for a Comparative Assessment with Other Food Production Sectors." In *Comparative Assessment of the Environmental Costs of Aquaculture and Other Food Production Sectors: Methods for Meaningful Comparisons*, edited by D.M. Bartley, C. Brugère, D. Soto, P. Gerber, and B. Harvey. FAO/WFT Expert Workshop, April 24–28, 2006, Vancouver. Rome: FAO (Food and Agriculture Organization of the United Nations).
- Gerber, P., T. Vellinga, K. Dietze, A. Falcucci, G. Gianni, J. Mounsey, L. Maiorano, et al. 2010. *Greenhouse Gas Emissions from the Dairy Sector: A Lifecycle Assessment*. Rome: FAO (Food and Agriculture Organization of the United Nations).
- Gerber, P.J., H. Steinfeld, B. Henderson, A. Mottet, C. Opio, J. Dijkman, A. Falcucci, and G. Tempio. 2013. *Tackling Climate Change through Livestock: A Global Assessment of Emissions and Mitigation Opportunities*. Rome: FAO (Food and Agriculture Organization of the United Nations).
- Gerber, J.S., K.M. Carlson, D. Makowski, N.D. Mueller, I. Garcia de Cortazar-Atauri, P. Havlík, M. Herrero, et al. 2016. "Spatially Explicit Estimates of N<sub>2</sub>O Emissions from Croplands Suggest Climate Mitigation Opportunities from Improved Fertilizer Management." *Global Change Biology* 22: 3383–3394.
- German, L., G. Schoneveld, M. Skutch, R. Andriani, K. Obidzinski, P. Pacheco, H. Komarudin, et al. 2010a. "The Local Social and Environmental Impacts of Biofuel Feedstock Expansion." In *A Synthesis of Case Studies from Asia, Africa*

- and Latin America. Bogor, Indonesia: CIFOR (Center for International Forestry Research).
- German, L., G.C. Schoneveld, and D. Gumbo. 2010b. "The Local Social and Environmental Impacts of Large-Scale Investments in Biofuels in Zambia." CIFOR working paper. Bogor, Indonesia: CIFOR (Center for International Forestry Research).
- German, L., G. Schoneveld, and E. Mwangi. 2011. "Contemporary Processes of Large-Scale Land Acquisition by Investors." Case Studies from Sub-Saharan Africa. Bogor, Indonesia: CIFOR (Center for International Forestry Research).
- Gershunov, A., and T.P. Barnett. 1998. "ENSO Influence on Intraseasonal Extreme Rainfall and Temperature Frequencies in the Contiguous United States: Observations and Model Results." *American Meteorological Society* 11: 1575–1586.
- Gewin, V. 2017. "Gen Z Is Creating a Market for Fake Fish." *Civil Eats*, October 26. <https://civileats.com/2017/10/26/gen-z-is-creating-a-market-for-fake-fish/>.
- Gewin, V. 2018. "Rewetting the Swamp: Indonesia's Bold Plan." *Scientific American*, July 31. <https://www.scientificamerican.com/article/rewetting-the-swamp-indonesia-rsqos-s-bold-plan/>.
- Geyer, R., D. Stoms, and J. Kallaos. 2013. "Spatially Explicit Life Cycle Assessment of Sun-to-Wheels Transportation Pathways in the U.S." *Environmental Science & Technology* 47: 1170–1176.
- Giannini, T.C., W.F. Costa, G.D. Cordeiro, V.L. Imperatriz-Fonseca, A.M. Saraiva, J. Biesmeijer, et al. 2017. "Projected Climate Change Threatens Pollinators and Crop Production in Brazil." *PLOS ONE* 12 (8): e0182274. <https://doi.org/10.1371/journal.pone.0182274>.
- Gibbs, H.K., and J.M. Salmon. 2015. "Mapping the World's Degraded Land." *Applied Geography* 57: 12–21.
- Gibbs, H.K., M. Johnston, J.A. Foley, T. Holloway, C. Monfreda, N. Ramankutty, and D. Zaks. 2008. "Carbon Payback Times for Crop-Based Biofuel Expansion in the Tropics: The Effects of Changing Yield and Technology." *Environmental Research Letters* 3 (034001).
- Gibbs, H.K., L. Rausch, J. Munger, I. Schelly, D.C. Morton, P. Noojipady, B. Soares-Filho, et al. 2015. "Brazil's Soy Moratorium." *Science* 347 (6220): 377–378.
- Gibbs, H.K., J. Munger, J. L'Roe, P. Barreto, R. Pereira, M. Christie, T. Amaral, and N.F. Walker. 2016. "Did Ranchers and Slaughterhouses Respond to Zero-Deforestation Agreements in the Brazilian Amazon?" *Conservation Letters* 9: 32–42.
- Gibson, L., T.M. Lee, L.P. Koh, B.W. Brook, T.A. Gardner, J. Barlow, C.A. Peres, et al. 2011. "Primary Forests Are Irreplaceable for Sustaining Tropical Biodiversity." *Nature* 478: 378–383.
- Giller, K.E., E. Witter, M. Corbeels, and P. Tittonell. 2009. "Conservation Agriculture and Smallholder Farming in Africa: The Heretics' View." *Field Crops Research* 114: 23–34.
- Giller, K.E., J.A. Andersson, M. Corbeels, J. Kirkegaard, D. Mortensen, O. Erenstein, and B. Vanlauwe. 2015. "Beyond Conservation Agriculture." *Frontiers in Plant Science* 6 (37).
- Gingold, B. 2010. "FAQ: Indonesia, Degraded Land and Sustainable Palm Oil." Washington, DC: World Resources Institute. <http://www.wri.org/stories/2010/11/faq-indonesia-degraded-land-and-sustainable-palm-oil>.
- Gingold, B., A. Rosenbarger, Y.K.D. Muliastira, F. Stolle, M. Sudana, M.D.M. Manessa, A. Murdimanto, et al. 2012. *How to Identify Degraded Land for Sustainable Palm Oil in Indonesia*. Washington, DC: World Resources Institute.
- Gingrich, S., K.-H. Erb, F. Krausmann, V. Gaube, and H. Haberl. 2007. "Long-Term Dynamics of Terrestrial Carbon Stocks in Austria: A Comprehensive Assessment of the Time Period from 1830 to 2000." *Regional Environmental Change* 7 (1): 37–47. doi:10.1007/s10113-007-0024-6.
- Gingrich, S., and F. Krausmann. 2018. "At the Core of the Socio-ecological Transition: Agroecosystem Energy Fluxes in Austria 1830–2010." *Science of the Total Environment* 645: 119–129.
- Gjedrem, T., N. Robinson, and M. Rye. 2012. "The Importance of Selective Breeding in Aquaculture to Meet Future Demands for Animal Protein: A Review." *Aquaculture* 350–353: 117–129.
- GKTODAY. 2012. "Nutrient Based Subsidy Scheme." *General Knowledge Today: India's Daily E-Magazine of GK and Current Affairs*, September 23. <https://www.gktoday.in/gk/nutrient-based-subsidy-scheme/>.
- Gleick, P., H. Cooley, M. Cohen, M. Morikawa, J. Morrison, and M. Palaniappan. 2009. *The World's Water, 2008–2009: A Biennial Report on Freshwater Resources*. Washington, DC: Island.
- Global Commission on the Economy and Climate. 2014. *Better Growth, Better Climate*. Chapter 3, "Land Use: Protecting Food, Forests and People." <http://newclimateeconomy.report/2014/>.
- Godfray, H.C.J., J.R. Beddington, I.R. Crute, L. Haddad, D. Lawrence, J. Muir, J. Pretty, et al. 2010. "Food Security: The Challenge of Feeding 9 Billion People." *Science* 327 (5967): 812–818.
- Gogoi, N., K.K. Baruah, and P.K. Gupta. 2008. "Selection of Rice Genotypes for Lower Methane Emission." *Agronomy for Sustainable Development* 28 (2): 181–186.
- Goldemberg, J., and P. Guardabassi. 2009. "The Potential for First-Generation Ethanol Production from Sugarcane." *Biofuels, Bioproducts, and Biorefining* 4: 17–24.
- Gollin, D., and R.D. Rogerson. 2010. *Agriculture, Roads, and Economic Development in Uganda*. Cambridge, MA: National Bureau of Economic Research.
- Gonsalves, C., D.R. Lee, and D. Gonsalves. 2007. "The Adoption of Genetically Modified Papaya in Hawaii and Its Implication for Developing Countries." *Journal of Development Studies* 43: 177–191.
- Good, D., S. Irwin, and T. Hubbs. 2016. "Assessing Brazilian Corn Yield Risks with the First and Second Crops: Historical Deviations from Trend." *farmdoc daily* 6 (6): 233. Urbana-Champaign, IL: Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign. <http://farmdocdaily.illinois.edu/2016/12/assessing-brazilian-corn-yield-risks-with-the-first.html>.
- Goodrich, A., T. James, and M. Woodhouse. 2012. "Residential, Commercial, and Utility-Scale Photovoltaic System Prices in the United States: Current Drivers and Cost-Reduction Opportunities." Golden, CO: National Renewable Energy Laboratory.
- Gortmaker, S., B.A. Swinburn, D. Levy, R. Carter, P.L. Mabry, D.T. Finegood, T. Huang, et al. 2011. "Changing the Future of Obesity: Science, Policy, and Action." *Lancet* 9793: 838–847.

Government of Brazil. 2008. "Executive Summary, Brazil National Plan on Climate Change." [http://www.mma.gov.br/estruturas/208/\\_arquivos/national\\_plan\\_208.pdf](http://www.mma.gov.br/estruturas/208/_arquivos/national_plan_208.pdf).

Government of Tamil Nadu. 2009. "Tamil Nadu State Perspective and Strategic Plan." Chennai, India: Government of Tamil Nadu.

Graesser, J., T.M. Aide, H.R. Grau, and N. Ramankutty. 2015. "Cropland/Pastureland Dynamics and the Slowdown of Deforestation in Latin America." *Environmental Research Letters* 10 (034017).

GRAIN. 2016. "The Global Farmland Grab in 2016, How Big, How Bad?" *Against the Grain*. <https://www.grain.org/article/entries/5492-the-global-farmland-grab-in-2016-how-big-how-bad>.

Grassini, P., K.M. Eskridge, and K.G. Cassman. 2013. "Distinguishing between Yield Advances and Yield Plateaus in Historical Crop Production Trends." *Nature Communications* 4: 2918.

Greco, A.M., and K.W. Rothhoff. 2015. "Economic Growth and Obesity: Findings of an Obesity Kuznets Curve." *Applied Economics Letters* 22 (7): 539–543.

Green Climate Fund. 2016. "Resource Mobilization." Yeonsu-gu, Incheon, Republic of Korea: Green Climate Fund. <http://www.greenclimate.fund/partners/contributors/resource-mobilization>.

Green Climate Fund. 2017. "Status of Pledges and Contributions Made to the Green Climate Fund." Yeonsu-gu, Incheon, Republic of Korea: Green Climate Fund. [https://www.greenclimate.fund/documents/20182/24868/Status\\_of\\_Pledges.pdf/eef538d3-2987-4659-8c7c-5566ed6afd19](https://www.greenclimate.fund/documents/20182/24868/Status_of_Pledges.pdf/eef538d3-2987-4659-8c7c-5566ed6afd19).

Greenhouse Gas Protocol. 2012. *Greenhouse Gas Protocol*. Washington, DC, and Geneva: World Resources Institute and World Business Council for Sustainable Development. <http://www.ghgprotocol.org>.

Greenpeace. 2012. *Palm Oil's New Frontier: How Industrial Expansion Threatens Africa's Rainforests*. Amsterdam: Greenpeace International.

Grenyer, R., C.D.L. Orme, S.F. Jackson, G.H. Thomas, R.G. Davies, T.J. Davies, K.E. Jones, et al. 2006. "Global Distribution and Conservation of Rare and Threatened Vertebrates." *Nature* 444: 93–96.

Grieg-Gran, M. 2008. *The Cost of Avoiding Deforestation: Update of the Report Prepared for the Stern Review of the Economics of Climate Change*. London: IIED (International Institute for Environment and Development).

Griffing, E.M., M.R. Overcash, and S. Kim. 2004. *Environmental Analysis of Swine Waste Management Technologies Using the Life-Cycle Method*. UNC-WRRI-350. University of North Carolina.

Griffith, R. 2000. "How Important Is Business R&D for Economic Growth and Should the Government Subsidise It?" Briefing Note no. 12. London: Institute for Fiscal Studies.

Griffiths, A.J.F., J.H. Miller, D.T. Suzuki, R.C. Lewontin, and W.M. Gelbart. 2000. *An Introduction to Genetic Analysis*, 7th ed. New York: W.H. Freeman.

Grimm, D., I. Barkhorn, D. Festa, K. Bonzon, J. Boomhower, V. Hovland, and J. Blau. 2012. "Assessing Catch Shares' Effects: Evidence from Federal United States and Associated British Columbian Fisheries." *Marine Policy* 36 (3): 644–657.

Griscorn, B.W., J. Adams, P.W. Ellis, R.A. Houghton, G. Lomax, D.A. Miteva, W.H. Schlesinger, et al. 2017. "Natural Climate Solutions." *Proceedings of the National Academy of Sciences of the United States of America* 114 (44): 11645–11650.

Grisso, R., J. Perumpral, G. Roberson, and R. Pittman. 2014. "Predicting Tractor Diesel Fuel Consumption." Publication 442-073, Virginia Cooperative Extension. [http://www.pubs.ext.vt.edu/content/dam/pubs\\_ext\\_vt\\_edu/442/442-073/442-073\\_pdf.pdf](http://www.pubs.ext.vt.edu/content/dam/pubs_ext_vt_edu/442/442-073/442-073_pdf.pdf).

Gross, R., H. Schoeneberger, H. Pfeifer, and H.-J.A. Preuss. 2000. *The Four Dimensions of Food Security: Definitions and Concepts*. Brussels: European Union, Internationale Weiterbildung und Entwicklung GmbH (InWEnt), and FAO (Food and Agriculture Organization of the United Nations).

Grueire, G., and Y. Sun. 2012. "Measuring the Contribution of Bt Cotton Adoption to India's Cotton Yields Leap." Washington, DC: IFPRI (International Food Policy Research Institute).

Grunwald, M. 2006. *The Swamp: The Everglades, Florida and the Politics of Paradise*. New York: Simon & Schuster.

Gulati, A., and P. Banerjee. 2015. "Rationalizing Fertilizer Subsidy in India: Key Issues and Policy Options." Working Paper 307. New Delhi: India Council for Research on International Economic Relations.

Gulati, A., and S. Narayanan. 2003. *The Subsidy Syndrome in Indian Agriculture*. Oxford: Oxford University Press.

Gumbrecht, T., R. Roman-Cuesta, L. Verchot, M. Herold, F. Wittmann, E. Householder, N. Herold, and D. Murdiyarto. 2017. "An Expert System Model for Mapping Tropical Wetlands and Peatlands Reveals South America as the Largest Contributor." *Global Change Biology* 23: 3581–3599.

Gunders, D. 2012. *Wasted: How America Is Losing Up to 40 Percent of Its Food from Farm to Fork to Landfill*. Washington, DC: NRDC (Natural Resources Defense Council).

Gurian-Sherman, D. 2012. "High and Dry: Why Genetic Engineering Is Not Solving Agriculture's Drought Problems in a Thirsty World." Washington, DC: Union of Concerned Scientists.

Gutser, R. 2006. "Nitrifikationsinhibitoren zur Steuerung der N-freisetzung aus mineralischen und organischen Düngemitteln." *Rationalisierungskuratorium für die Landwirtschaft (RKL)* 4: 379–396.

Haberl, H., K.H. Erb, F. Krausmann, V. Gaube, A. Bondeau, C. Plutzer, S. Gingrich, et al. 2007. "Quantifying and Mapping the Human Appropriation of Net Primary Production in Earth's Terrestrial Ecosystems." *Proceedings of the National Academy of Sciences* 104: 12942–12947.

Haberl, H., T. Beringer, S. Bhattacharya, K. Erb, and M. Hoogwijk. 2010. "The Global Technical Potential of Bioenergy in 2050 Considering Sustainability Constraints." *Current Opinion in Environmental Sustainability* 2: 394–403.

Haberl, H., K. Erb, F. Krausmann, A. Bondeau, C. Lauk, C. Muller, C. Plutzer, and J.K. Steinberger. 2011. "Global Bioenergy Potentials from Agricultural Land in 2050: Sensitivity to Climate Change, Diets, and Yields." *Biomass and Bioenergy* 35 (12): 4753–4769.

Haberl, H., D. Sprinz, M. Bonazountas, P. Cocco, Y. Desaubies, M. Henze, O. Hertel, et al. 2012. "Correcting a Fundamental Error in Greenhouse Gas Accounting Related to Bioenergy." *Energy Policy* 45: 18–23.

Haberl, H., K.-H. Erb, F. Krausmann, S. Running, T.D. Searchinger, and W.K. Smith. 2013. "Bioenergy: How Much Can We Expect for 2050?" *Environmental Research Letters* 8 (031004): 1–5.

Hafeez, M.M., B.A.M. Bouman, N. Van De Giesen, S. Mushtaq, P. Vlek, and S. Khan. 2008. "Water Reuse and Cost-Benefit of Pumping at Different Spatial Levels in a Rice Irrigation System in UPRIS, Philippines." *Physics and Chemistry of the Earth, Parts A/B/C* 33 (1): 115–126.

- Haley, M. 2001. "Changing Consumer Demand for Meat: The US Example, 1970–2000, in *Changing Structure of Global Food Consumption and Trade*." Washington, DC: USDA Economic Research Service.
- Haley, M. 2018. "Livestock, Dairy, and Poultry Outlook: January 2018." Washington, DC: USDA Economic Research Service.
- Hall, A.J., and R.A. Richards. 2012. "Prognosis for Genetic Improvement of Yield Potential and Water-Limited Yield of Major Grain Crops." *Field Crops Research* 143: 18–33.
- Hall, K., G. Sacks, D. Chandramohan, C. Chow, Y. Wang, S. Gortmaker, and B. Swinburn. 2011a. "Quantification of the Effect of Energy Imbalance on Bodyweight." *Lancet* 378: 826–837.
- Hall, S.J., A. Delaporte, M.J. Phillips, M. Beveridge, and M. O'Keefe. 2011b. *Blue Frontiers: Managing the Environmental Costs of Aquaculture*. Penang, Malaysia: WorldFish.
- Hammer, P., E. Riebe, and R. Kennedy. 2009. "How Clutter Affects Advertising Effectiveness." *Journal of Advertising Research* 49 (2): 159–163.
- Han, K., A.M. Trinkoff, C.L. Storr, and J. Geiger-Brown. 2011. "Job Stress and Work Schedules in Relation to Nurse Obesity." *JONA (Journal of Nursing Administration)* 41 (11): 488–495.
- Hanlon, M. 2012. "Fake Meat: Is Science Fiction on the Verge of Becoming Fact?" *Guardian*, June 22. <http://www.theguardian.com/science/2012/jun/22/fake-meat-scientific-breakthroughs-research>.
- Hannon, M., J. Gimpel, M. Tran, B. Rasala, S. Mayfield. 2010. "Biofuels from Algae: Challenges and Opportunities." *Biofuels* 1: 763–784.
- Hansen, B., T. Dalgaard, L. Thorling, B. Sørensen, and M. Erlandsen. 2012. "Regional Analysis of Groundwater Nitrate Concentrations and Trends in Denmark in Regard to Agricultural Influence." *Biogeosciences* 9: 3277–3286.
- Hansen, M.C., P.V. Potapov, R. Moore, M. Hancher, S.A.A. Turubanova, A. Tyukavina, D. Thau, et al. 2013. "High-Resolution Global Maps of 21st-Century Forest Cover Change." *Science* 342 (6160): 850–853.
- Hanson, C., and P. Mitchell. 2017. *The Business Case for Reducing Food Loss and Waste*. Washington, DC: Champions 12.3.
- Hanson, C., K. Buckingham, S. DeWitt, and L. Laestadius. 2015. *The Restoration Diagnostic: A Method for Developing Forest Landscape Restoration Strategies by Rapidly Assessing the Status of Key Success Factors*. Washington, DC: World Resources Institute.
- Hanspeter, L., and W. Critchley, eds. 2007. *WOCAT 2007: Where the Land Is Greener—Case Studies and Analysis of Soil and Water Conservation Initiatives Worldwide*. Bern: Stämpfli AG.
- Harper, S. 2012. "People and the Planet." Presentation at the Royal Society, London, April. Oxford: University of Oxford.
- Harper, L.A., R.R. Sharpe, and T.B. Parkin. 2000. "Gaseous Nitrogen Emissions from Anaerobic Swine Lagoons: Ammonia, Nitrous Oxide, and Dinitrogen Gas." *Journal of Environmental Quality* 29 (4): 1356–1365.
- Harrington, R., S.J. Clark, S.J. Welham, P.J. Verrier, C.H. Denholm, M. Hulle, D. Maurice, and M.D. Rounsevell. 2007. "Environmental Change and the Phenology of European Aphids." *Global Change Biology* 13 (8): 1550–1564.
- Harris, D., and A. Orr. 2014. "Is Rainfed Agriculture Really a Pathway from Poverty?" *Agricultural Systems* 123: 84–96.
- Harris, N., S. Minnemeyer, F. Stolle, and O. Payne. 2015. "Indonesia's Fire Outbreaks Producing More Daily Emissions than Entire U.S. Economy." Washington, DC: World Resources Institute.
- Hart, M. 2017. "Manure Separation Systems: Comparing Costs with Opportunities." *Progressive Dairyman Magazine*, January 6.
- Hart, K., B. Allen, C. Keenleyside, S. Nanni, A. Maréchal, K. Paquel, M. Nesbit, and J. Ziemann. 2017. "Research for the AGRI Committee—The Consequences of Climate Change for EU Agriculture: Follow-up to the COP21 UN Paris Climate Change Conference." [http://www.europarl.europa.eu/thinktank/en/document.html?reference=IPOL\\_STU\(2017\)585914](http://www.europarl.europa.eu/thinktank/en/document.html?reference=IPOL_STU(2017)585914).
- Hassanali, A., H. Herren, Z.R. Khan, J.A. Pickett, and C.M. Woodcock. 2008. "Integrated Pest Management: The Push-Pull Approach for Controlling Insect Pests and Weeds of Cereals, and Its Potential for Other Agricultural Systems Including Animal Husbandry." *Philosophical Transactions of the Royal Society B* 363 (1491): 611–621.
- Hassane, A., P. Martin, and C. Reij. 2000. "Water Harvesting, Land Rehabilitation and Household Food Security in Niger: IFAD's Soil and Water Conservation Project in Illela District." Rome and Amsterdam: International Fund for Agricultural Development and Vrije Universiteit.
- Hawkes, C. 2008. "Agro-food Industry Growth and Obesity in China: What Role for Regulating Food Advertising and Promotion and Nutrition Labelling?" *Obesity Reviews* 9 (suppl.1): 151–161.
- Hawkes, C. 2012. "Food Taxes: What Type of Evidence Is Available to Inform Policy Development?" *Nutrition Bulletin* 37: 51–56.
- Haya, B. 2009. "Measuring Emissions against an Alternative Future: Fundamental Flaws in the Structure of the Kyoto Protocol's Clean Development Mechanism." Energy and Resources Group Working Paper ERG09-001. Berkeley: University of California at Berkeley. [http://erg.berkeley.edu/working\\_paper/index.shtml](http://erg.berkeley.edu/working_paper/index.shtml).
- Hayashi, K., T. Abdoulaye, B. Gerard, and A. Bationo. 2008. "Evaluation of Application Timing in Fertilizer Micro-dosing Technology on Millet Production in Niger, West Africa." *Nutrient Cycling in Agroecosystems* 80: 257–265.
- Hazell, P. 2009. *The Asian Green Revolution*. Washington, DC: IFPRI (International Food Policy Research Institute).
- Hazell, P. 2011. "Five Big Questions about 500 Million Small Farms." Paper presented at the IFAD conference, "New Directions for Smallholder Agriculture," January 24–25. Rome: International Fund for Agricultural Development.
- Hazell, P., C. Poulton, S. Wiggins, and A. Dorward. 2007. *The Future of Small Farms for Poverty Reduction*. Washington, DC: IFPRI.
- Headey, D. 2014. "Food Prices and Poverty Reduction in the Long Run." IFPRI Discussion Paper 01331. Washington, DC: IFPRI (International Food Policy Research Institute).
- Health Care without Harm. 2017. "Redefining Protein: Adjusting Diets to Protect Public Health and Conserve Resources." Reston, VA: Health Care without Harm.
- Health Improvement Analytical Team. 2014. *Responsibility Deal: Monitoring the Number of Units of Alcohol Sold—Second Interim Report, 2013 Data*. London: Health Improvement Analytical Team, Department of Health. [www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/389574/second\\_interim\\_report.pdf](http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/389574/second_interim_report.pdf).

- Hedenus, F., S. Wirseniens, and D.J. Johansson. 2014. "The Importance of Reduced Meat and Dairy Consumption for Meeting Stringent Climate Change Targets." *Climate Change* 124: 79–91.
- Heinimann, A., O. Mertz, S. Frolking, A.E. Christensen, K. Hurni, F. Sedano, L.P. Chini, et al. 2017. "A Global View of Shifting Cultivation: Recent, Current, and Future Extent." *PLOS ONE* 12(9): e0184479.
- Heisey, P. W. 2009. "Science, Technology, and Prospects for Growth in U.S. Corn Yields." *Amber Waves*. <http://webarchives.cdlib.org/sw1vh5dg3r/http://ers.usda.gov/AmberWaves/December09/Features/USCornYields.htm>.
- Heldbo, J., and P. Klee. 2014. "Rethinking Aquaculture to Boost Resource and Production Efficiency: Sea and Land-Based Aquaculture Solutions for Farming High Quality Seafood." Copenhagen: Rethink Water Network and Danish Water Forum. [www.rethinkwater.dk](http://www.rethinkwater.dk).
- Hell, K., K.E. Ognakossan, A.K. Tonou, Y. Lamboni, K.E. Adabe, and O. Coulibaly. 2010. "Maize Stored Pests Control by PICS-Bags: Technological and Economic Evaluation." <https://ag.purdue.edu/ipia/pics/documents/presentation-%20hell%20-wcc%202010-%2029%20sept.pdf>.
- Hemaiswarya, S., R. Raja, R. Ravi Kumar, V. Ganesan, and C. Anbazhagan. 2011. "Microalgae: A Sustainable Feed Source for Aquaculture." *World Journal of Microbiology and Biotechnology* 27: 1737–1746.
- Hemphill, P. 2017. "China to Become Biggest Foreign Owner of Australian Farmland." *Weekly Times*, November 7. <https://www.weeklytimesnow.com.au/agribusiness/decisionag/china-to-become-biggest-foreign-owner-of-australian-farmland/news-story/ba27742491380f55568bc3d5ada296cb>.
- Henao, J., and C. Baanante. 2006. *Agricultural Production and Soil Nutrient Mining in Africa. Implications for Resource Conservation and Policy Development*. Muscle Shoals, AL: International Center for Soil Fertility and Agricultural Development.
- Henderson, B., A. Falcucci, A. Mottet, L. Early, B. Werner, H. Steinfeld, and P.J. Gerber. 2015. "Marginal Costs of Abating Greenhouse Gases in the Global Ruminant Livestock Sector." *Mitigation and Adaptation Strategies for Global Change*, August. doi:10.1007/s11027-015-9673-9.
- Henderson, B., C. Godde, D. Medina-Hidalgo, M. van Wijk, S. Silvestri, S. Douchamps, E. Stephenson, et al. 2016. "Closing System-wide Yield Gaps to Increase Food Production and Mitigate GHGs among Mixed Crop-Livestock Smallholders in Sub-Saharan Africa." *Agricultural Systems* 143: 106–113.
- Henderson, B., A. Falcucci, A. Mottet, L. Early, B. Werner, H. Steinfeld, and P. Gerber. 2017. "Marginal Costs of Abating Greenhouse Gases in the Global Ruminant Livestock Sector." *Mitigation and Adaptation Strategies for Global Change* 22 (1): 224.
- Henry, M., P. Tittonell, R.J. Manlay, M. Bernoux, A. Albrecht, and B. Vanlauwe. 2009. "Biodiversity, Carbon Stocks and Sequestration Potential in Aboveground Biomass in Smallholder Farming Systems of Western Kenya." *Agriculture, Ecosystems and Environment* 129: 238–252.
- Henry, S. 2015. "Can This Company Do Better than the Egg?" *Washington Post*, March 2. [http://www.washingtonpost.com/lifestyle/food/cracking-the-code/2015/03/02/43d36bfe-ae5d-11e4-9c91-e9d2f9fde644\\_story.html](http://www.washingtonpost.com/lifestyle/food/cracking-the-code/2015/03/02/43d36bfe-ae5d-11e4-9c91-e9d2f9fde644_story.html).
- Hernandez, R., B. Belton, T. Reardon, C. Hu, X. Zhang, and A. Ahmed. 2017. "The 'Quiet Revolution' in the Aquaculture Value Chain in Bangladesh." *Aquaculture* 493: 456–468.
- Herrero, M., and P.K. Thornton. 2013. "Livestock and Global Change: Emerging Issues for Sustainable Food Systems." *Proceedings of the National Academy of Sciences of the United States of America* 110 (52): 20878–20881.
- Herrero, M., S. Silvestri, E. Bryan, B. Okoba, and C. Ringler. 2011. "Mitigation of Climate Change in Livestock Systems in Kenya." Presented at the workshop "Climate Change Adaptation for Smallholder Agriculture in Kenya," Nairobi, February 24–25. Nairobi: ILRI (International Livestock Research Institute).
- Herrero, M., P. Havlík, H. Valin, A. Notenbaert, M.C. Rufino, P.K. Thornton, M. Blümmel, et al. 2013. "Biomass Use, Production, Feed Efficiencies, and Greenhouse Gas Emissions from Global Livestock Systems." *Proceedings of the National Academy of Sciences of the United States of America* 110 (52): 20888–20893.
- Herrero, M., B. Henderson, P. Havlík, P. Thornton, R. Conant, P. Smith, S. Wirseniens, et al. 2016. "Greenhouse Gas Mitigation Potentials in the Livestock Sector." *Nature Climate Change* 6: 452–461.
- Hertel, T.W., A. Golub, A.D. Jones, et al. 2010. "Global Land Use and Greenhouse Gas Emissions Impacts of U.S. Maize Ethanol: Estimating Market-Mediated Responses." *BioScience* 60: 223–231.
- Hertel, T., N. Ramunkutty, and U. Baldos. 2014. "Global Market Integration Increases the Likelihood That a Future African Green Revolution Could Increase Crop Land Use and CO<sub>2</sub> Emissions." *Proceedings of the National Academy of Sciences* 111 (38): 13799–13804.
- Hewitson, B.C., and R.G. Crane. 2006. "Consensus between GCM Climate Change Projections with Empirical Downscaling: Precipitation Downscaling over South Africa." *International Journal of Climatology* 26 (10): 1315–1337.
- HHS (Health and Human Services) and CDC (U.S. Department of Health and Human Services, Centers for Disease Control and Prevention). 2013. *Antibiotic Resistance Threats in the United States*. Atlanta: HHS and CDC.
- Hickman, M. 2008. "The Campaign That Changed the Eating Habits of a Nation." *Independent*, February 28. <http://www.independent.co.uk/life-style/food-and-drink/news/the-campaign-that-changed-the-eating-habits-of-a-nation-788557.html>.
- Hickman, J.E., C.A. Palm, P. Mutuo, J.M. Melillo, and J. Tang. 2014. "Nitrous Oxide (N<sub>2</sub>O) Emissions in Response to Increasing Fertilizer Addition in Maize Agriculture in Western Kenya." *Nutrient Cycling in Agroecosystems* 100: 177–187.
- Hickman, J., K. Tully, P. Groffman, W. Diru, and C. Palm. 2015. "A Potential Tipping Point in Tropical Agriculture: Avoiding Rapid Increases in Nitrous Oxide Fluxes from Agricultural Intensification in Kenya." *Journal of Geophysical Research: Biogeosciences* 120: 938–951.
- Hiederer, R., F. Ramos, C. Capitani, R. Koebe, V. Blujdea, D. Mulligan, L. Marelli, and O. Gomez. 2010. *Biofuels: A New Methodology to Estimate GHG Emissions Due to Global Land Use Change*. Luxembourg: Publications Office of the European Union.
- Hill, P.R. 2001. "Use of Continuous No-Till and Rotational Tillage Systems in the Central and Northern Corn Belt." *Journal of Soil and Water Conservation* 56 (4): 286–290.
- Himanshu. 2015. "India's Flawed Fertilizer Policy." *Live Mint*, April 1. <http://www.livemint.com/Opinion/XCCJwEzbwiyWFYfK1wRd0/Indias-flawed-fertilizer-policy.html>.
- Hine, M., S. Adams, J.R. Arthur, D. Bartley, M.G. Bondad-Reantaso, C. Chávez, J.H. Clausen, et al. 2012. "Improving Biosecurity: A Necessity for Aquaculture Sustainability." In *Farming the Waters for People and Food: Proceedings of the Global Conference on Aquaculture 2010, Phuket, Thailand, September 22–25, 2010*, edited by R.P. Subasinghe, J.R. Arthur, D.M. Bartley, S.S. De Silva, M. Halwart, N. Hishamunda, C.V. Mohan, and P. Sorgeloos. Rome and Bangkok: FAO and NACA, 437–494.

- Hiraiishi, T., T. Krug, K. Tanabe, N. Srivastava, J. Baasansuren, M. Fukuda, and T.G. Troxler. 2014. *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands*. Geneva: IPCC.
- Hirsch, A.I., W.S. Little, R.A. Houghton, N.A. Scott, and J.D. White. 2004. "The Net Carbon Flux Due to Deforestation and Forest Regrowth in the Brazilian Amazon Using a Process-Based Model." *Global Change Biology* 10 (5): 908–924.
- HLPE (High Level Panel of Experts on Food Security and Nutrition). 2011. *Price Volatility and Food Security*. Report by High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security. Rome: FAO (Food and Agriculture Organization of the United Nations).
- Hochman, G., D. Rajagopal, G. Timilsina, and D. Zilberman. 2014. "Quantifying the Causes of the Global Food Commodity Price Crisis." *Biomass and Bioenergy* 68: 106–114.
- Hoekstra, A.Y., A.K. Chapagain, M.M. Aldaya, and M.M. Mekonnen. 2011. *The Water Footprint Assessment Manual: Setting the Global Standard*. London: Earthscan.
- Hoering, U. 2013. *Alternatives to Food Import Dependency*. Berlin: FDCL (Centre for Research and Documentation Chile–Latin America).
- Hoff, K., A. Braverman, and J. Stiglitz. 1993. *The Economics of Rural Organization: Theory, Practice and Policy*. Oxford: Oxford University Press for the World Bank.
- Holden, S.T., and K. Otsuka. 2014. "The Roles of Land Tenure Reforms and Land Markets in the Context of Population Growth and Land Use Intensification in Africa." *Food Policy* 48: 88–97.
- Holt-Gimenez, E. 2012. "We Already Grow Enough Food for 10 Billion People—and Still Can't End Hunger." *Huffington Post*, May 2. [http://www.huffingtonpost.com/eric-holt-gimenez/world-hunger\\_b\\_1463429.html](http://www.huffingtonpost.com/eric-holt-gimenez/world-hunger_b_1463429.html).
- Holtmark, B. 2012. "Harvesting in Boreal Forests and the Biofuel Carbon Debt." *Climatic Change* 112 (2): 415–428.
- Homann-Kee Tui, S., D. Valbuena, P. Masikati, K. Descheemaeker, J. Nyamangara, L. Claessens, O. Erenstein, A. van Rooyen, and D. Nkomboni. 2015. "Economic Trade-offs of Biomass Use in Crop-Livestock Systems: Exploring More Sustainable Options in Semi-arid Zimbabwe." *Agricultural Systems* 134 (March): 48–60. doi:10.1016/j.agsy.2014.06.009.
- Hoogwijk, M., A. Faaij, B. Eickhout, B. de Vries, and W. Turkenburg. 2005. "Potential of Biomass Energy Out to 2100, for Four IPCC SRES Land-Use Scenarios." *Biomass Bioenergy* 29: 225257.
- Hoopman, A., H. North, A. Rajamohan, and J. Bowsher. 2018. "Toxicity Assessment of Glyphosate on Honey Bee (*Apis mellifera*) Spermatozoa [abstract]." Society for Integrative and Comparative Biology (SCIB) Annual Meeting, January 3–7, San Francisco, P2–21.
- Hosonuma, N., M. Herold, V. De Sy, R.S. De Fries, M. Brockhaus, L. Verchot, A. Angelsen, and E. Romijn. 2012. "An Assessment of Deforestation and Forest Degradation Drivers in Developing Countries." *Environmental Research Letters* 7 (044009).
- Hossain, M.B., J.F. Phillips, and T.K. LeGrand. 2005. "The Impact of Childhood Mortality on Fertility in Six Rural Thanas of Bangladesh." Working paper. New York: Population Council.
- Houghton, R.E. 2008. "Carbon Flux to the Atmosphere from Land-Use Changes: 1850–2005." In *TRENDS: A Compendium of Data on Global Change*. Oak Ridge, TN: Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory.
- Houmy, K., L.J. Clarke, J.E. Ashburner, and J. Kienzle. 2013. *Agricultural Mechanization in Sub-Saharan Africa: Guidelines for Preparing a Strategy*. Rome: FAO (Food and Agriculture Organization of the United Nations).
- House of Lords. 2011. *Behaviour Change*. Science and Technology Select Committee, 2nd Report of Session 2010–12. London: Authority of the House of Lords.
- Hristov, A.N., J. Oh, J.L. Firkins, J. Dijkstra, E. Kebreab, G. Waghorn, H.P.S. Makkar, et al. 2014. "Mitigation of Methane and Nitrous Oxide Emissions from Animal Operations: I. A Review of Enteric Methane Mitigation Options." *Journal of Animal Sciences* 91: 5045–5069.
- Hristov, A.N., J. Oh, F. Giallongo, T.W. Frederick, M.T. Harper, H.L. Weeks, A.F. Branco, et al. 2015. "An Inhibitor Persistently Decreased Enteric Methane Emissions from Dairy Cows with No Negative Effect on Milk Production." *Proceedings of the National Academy of Sciences* 112 (34): 10663–10668.
- Hua, F., X. Wang, X. Zheng, B. Fisher, L. Wang, J. Zhu, Y. Tang, et al. 2016. "Opportunities for Biodiversity Gains under the World's Largest Reforestation Programme." *Nature Communications* 7 (September): 12717. <https://doi.org/10.1038/ncomms12717>.
- Huang, J., S. Rozelle, and W. Martin. 2007. "Distortions to Agricultural Incentives in China." Agricultural Distortions Working Paper 29. Washington, DC: World Bank.
- Huang, J., A. Gualti, and I. Gregory. 2017. "Fertilizer Subsidies: Which Way Forward?" Muscle Shoals, AL: International Fertilizer Development Corporation. <https://ifdc.org/2017/01/23/new-publication-fertilizer-subsidies-which-way-forward>.
- Hudiburg, T., B.E. Law, C. Wirth, and S. Luysaert. 2011. "Regional Carbon Dioxide Implications of Forest Bioenergy Production." *Nature Climate Change* 1: 419–423.
- Huggins-Rawles, N. 2010. "Agricultural Carbon Offsets Activity Increases from 2007 to 2012." July 8. [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/cl13212](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/cl13212).
- Hughes, A., M. Kelly, K. Black, and M. Stanley. 2012. "Biogas from Macroalgae: Is It Time to Revisit the Idea?" *Biotechnology for Biofuels* 5: 86.
- Humane Society International. 2013. "Meatless Monday Video Showcases Healthy Eating for Animals, Health and the Planet." [http://www.hsi.org/news/press\\_releases/2013/09/meatless\\_monday\\_brazil\\_092513.html](http://www.hsi.org/news/press_releases/2013/09/meatless_monday_brazil_092513.html).
- Ibrahim, M., M. Chacon, J. Mora, S. Zamora, J. Gobbi, T. Llanderal, C.A. Harvey, et al. 2013. "Opportunities for Carbon Sequestration and Conservation of Water Resources on Landscapes Dominated by Cattle Production in Central America." In *Integrated Management of Environmental Services in Human-Dominated Tropical Landscapes*, edited by H.A. Wallace. Turrialba, Costa Rica: CATIE (Center for Tropical Agricultural Research and Higher Education).
- ICRISAT (International Crops Research Institute for the Semi-arid Tropics). 2009. "Fertilizer Microdosing: Boosting Production in Unproductive Lands." <http://www.icrisat.org/impacts/impact-stories/icrisat-is-fertilizer-microdosing.pdf>.
- IEA (International Energy Agency). 2008. *Energy Technology Perspectives: Scenarios and Strategies to 2050*. Paris: IEA.
- IEA. 2012. *World Energy Outlook 2012*. Paris: IEA.
- IEA. 2015a. *Technology Roadmap: Hydrogen and Fuel Cells*. <https://www.iea.org/publications/freepublications/publication/TechnologyRoadmapHydrogenandFuelCells.pdf>.

- IEA. 2015b. *Track the Energy Transition: Where We Are, How We Got Here, and Where We Need to Be*. [http://www.iea.org/publications/freepublications/publication/COP21EnergyTransition\\_DataBrief\\_08December.pdf](http://www.iea.org/publications/freepublications/publication/COP21EnergyTransition_DataBrief_08December.pdf).
- IEA. 2016a. *World Energy Outlook 2016*. Paris: IEA.
- IEA. 2016b. *World Energy Model Documentation*. [http://www.worldenergyoutlook.org/media/weowebsite/2016/WEM\\_Documentation\\_WEO2016.pdf](http://www.worldenergyoutlook.org/media/weowebsite/2016/WEM_Documentation_WEO2016.pdf).
- IEA. 2017. *International Energy Outlook 2017*. <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=1-IEO2017&&sourcekey=0>.
- IFA (International Fertilizer Association). 2009. *Feeding the Earth: Energy Efficiency and CO<sub>2</sub> Emissions in Ammonia Production*. [http://www.fertilizer.org/imis20/images/Library\\_Downloads/2009\\_IFA\\_energy\\_efficiency.pdf?WebsiteKey=411e9724-4bda-422f-abfc-8152ed74f306&=404%3bhttp%3a%2f%2fwww.fertilizer.org%3a80%2fen%2fimages%2fLibrary\\_Downloads%2f2009\\_IFA\\_energy\\_efficiency.pdf](http://www.fertilizer.org/imis20/images/Library_Downloads/2009_IFA_energy_efficiency.pdf?WebsiteKey=411e9724-4bda-422f-abfc-8152ed74f306&=404%3bhttp%3a%2f%2fwww.fertilizer.org%3a80%2fen%2fimages%2fLibrary_Downloads%2f2009_IFA_energy_efficiency.pdf).
- IFA. 2017. *Revisions of China's Consumption Statistics (2005–2014)*. [https://www.fertilizer.org/en/doc\\_library/Statistics/Changes%20to%20China%20s%20consumption%20estimates%20Sept%202017.pdf](https://www.fertilizer.org/en/doc_library/Statistics/Changes%20to%20China%20s%20consumption%20estimates%20Sept%202017.pdf).
- IFAD (International Fund for Agricultural Development). 2009. "Livestock and Land." Rome: IFAD.
- IFAD. 2010. *Rural Poverty Report 2011: New Realities, New Challenges: New Opportunities for Tomorrow's Generation*. Rome: IFAD.
- IFDC (International Fertilizer Development Center). 2011. *Strategic Alliance for Agricultural Development in Africa (SAADA): End of Project Report*. [www.ifdc.org](http://www.ifdc.org).
- IFDC. 2013. *Developing Competitive Fertilizer Markets in Sub-Saharan Africa: Policy and Non-policy Solutions*. Policy Experts Meeting on "Technical Convening on Seed and Fertilizer Policy in Africa," Addis Ababa, December 5–7.
- IFPRI (International Food Policy Research Institute). 2000. *Overcoming Child Malnutrition in Developing Countries*. Washington, DC: IFPRI.
- IFPRI. 2013. "CAADP 10 Years Out: How Have Countries Fared in Agricultural Development?" Washington, DC: IFPRI. <https://www.ifpri.org/news-release/caadp-10-years-out-how-have-countries-fared-agricultural-development>.
- Imamura, F., R. Micha, J.H.Y. Wu, M.C. de Oliveira Otto, F.O. Otite, A.I. Abioye, and D. Mozaffarian. 2016. "Effects of Saturated Fat, Polyunsaturated Fat, Monounsaturated Fat, and Carbohydrate on Glucose-Insulin Homeostasis: A Systematic Review and Meta-analysis of Randomised Controlled Feeding Trials." *PLoS Medicine* 13(7): e1002087.
- Impossible Foods. 2017. "Frequently Asked Questions." <https://www.impossiblefoods.com/faq/>.
- Institute of Medicine. 2005. *Dietary Reference Intakes for Water, Potassium, Sodium, Chloride, and Sulfate*. Washington, DC: National Academies Press.
- INPE (Brazilian National Institute for Space Research). 2009. *Revisiting the Use of Managed Land as a Proxy for Estimating National Anthropogenic Emissions and Removals*. IPCC Expert Meeting Report, May 5–7. São José dos Campos, Brazil: INPE.
- Inter Press Service. 2016. "Low Food Prices: Good for Your Pocket, Bad for Small Farmers." <http://www.ipsnews.net/2016/10/low-food-prices-good-for-your-pocket-bad-for-small-farmers/>.
- Ioffe, G. 2005. "The Downsizing of Russian Agriculture." *Europe-Asia Studies* 57 (2): 179–208.
- IPCC (Intergovernmental Panel on Climate Change). 2003. *Current Scientific Understanding of the Processes Affecting Terrestrial Carbon Stocks and Human Influences upon Them*. Expert Meeting Report, July 21–23. Geneva: IPCC.
- IPCC. 2006. *2006 IPCC Guidelines for National Greenhouse Gas Inventories*. Vol. 4, *Agriculture, Forestry and Other Land Use*. Geneva: IPCC.
- IPCC. 2007. *Climate Change 2007: Synthesis Report*. Contribution of Working Groups I, II, and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Geneva: IPCC.
- IPCC. 2014. *Climate Change 2014: Mitigation of Climate Change: Summary for Policymakers and Technical Summary*. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Geneva: IPCC.
- IRRI (International Rice Research Institute). 2007. *Planting the Rice: Nursery Systems*. [http://www.knowledgebank.irri.org/ericeproduction/II.5\\_Nursery\\_systems.htm](http://www.knowledgebank.irri.org/ericeproduction/II.5_Nursery_systems.htm).
- ISE (Institute for Solar Energy Systems). 2016. *Photovoltaics Report*. Freiburg, Germany: Fraunhofer Institute for Solar Energy Systems.
- Islam, A., P.K. Shitangsu, and Z. Hassan. 2015. "Agricultural Vulnerability in Bangladesh to Climate Change Induced Sea Level Rise and OPTIONS for Adaptation: A Study of a Coastal Upazila." *Journal of Agriculture and Environment for International Development* 109 (1): 19–39.
- Itoh, M., S. Sudo, S. Mori, H. Saito, T. Yoshida, Y. Shiratori, S. Suga, et al. 2011. "Mitigation of Methane Emissions from Paddy Fields by Prolonging Midseason Drainage." *Agriculture, Ecosystems and Environment* 141: 359–372.
- Ivanic, M., and W. Martin. 2014. "Short- and Long-Run Impacts of Food Price Changes on Poverty." Policy Research Working Paper 7011. Washington, DC: World Bank.
- Ivanic, M., W. Martin, and H. Zaman. 2011. "Estimating the Short-Run Poverty Impacts of the 2010–11 Surge in Food Prices." Policy Research Working Paper 5633. Washington, DC: World Bank, Development Research Group.
- Jackson, R. 2015. "A Credible Commitment: Reducing Deforestation in the Brazilian Amazon, 2003–2012." Case study for Innovations for Successful Societies. Princeton, NJ: Princeton University.
- Jacobs, A. 2018. "In Sweeping War on Obesity, Chile Slays Tony the Tiger." *New York Times*, February 7.
- Jacoby, H.G. 2013. "Food Prices, Wages, and Welfare in Rural India." Policy Research Working Paper 6412. Washington, DC: World Bank, Development Research Group.
- Jacoby, H.G., G. Li, and S. Rozelle. 2002. "Hazards of Expropriation: Tenure Insecurity and Investment in Rural China." *American Economic Review* 92 (5): 1420–1447.
- Jactel, H., J. Bauhus, J. Boberg, D. Bonal, B. Castagneyrol, B. Gardiner, J.R. González-Olabarría, J. Koricheva, et al. 2017. "Tree Diversity Drives Forest Stand Resistance to Natural Disturbances." *Current Forestry Reports* 3 (3) (September): 223. <https://doi.org/10.1007/s40725-017-0064-1>.
- Jaganathan, D., K. Ramasamy, G. Sellamuthu, S. Jayabalan, and G. Venkataraman. 2018. "CRISPR for Crop Improvement: An Update Review." *Frontiers in Plant Science* 9. doi:10.3389/fpls.2018.00985.

- Jannink, J., and A. Lorenz. 2010. "Genomic Selection in Plant Breeding: From Theory to Practice." *Briefings in Functional Genomics* 9: 166–177.
- Jayne, T.S., and S. Rashid. 2013. "Input Subsidy Programs in Sub-Saharan Africa: A Synthesis of Recent Evidence." *Agricultural Economics* 44: 547–562.
- Jayne, T.S., N. Mason, R. Myers, J. Ferris, D. Mather, N. Sitko, M. Beaver, et al. 2010. "Patterns and Trends in Food Staples Markets in Eastern and Southern Africa: Toward the Identification of Priority Investments and Strategies for Developing Markets and Promoting Smallholder Productivity Growth." International Development Working Paper 104. East Lansing: Michigan State University. <http://www.aec.msu.edu/fs2/zambia/idwp104.pdf>.
- Jayne, T.S., J. Chamberlin, L. Traub, N. Sitko, M. Muyanga, F.K. Yeboah, W. Anseeuw, et al. 2016a. "Africa's Changing Farm Size Distribution Patterns: The Rise of Medium-Scale Farms." *Agricultural Economics* 47: 197–214.
- Jayne, T.S., J. Chamberlin, L. Traub, N. Sitko, M. Muyanga, F.K. Yeboah, C. Nkonde, et al. 2016b. "Africa's Changing Farmland Ownership: The Rise of the Emergent Investor Farmer." Paper presented at the World Bank Land and Poverty Conference, March 15, Washington, DC.
- Jensen, J.D., and S. Smed. 2013. "The Danish Tax on Saturated Fat: Short-Run Effects on Consumption, Substitution Patterns, and Consumer Prices of Fats." *Food Policy* 42: 18–31.
- Jha, A. 2013. "Google's Sergey Brin Bankrolled World's First Synthetic Beef Hamburger." *Guardian*, August 5. <http://www.theguardian.com/science/2013/aug/05/google-sergey-brin-synthetic-beef-hamburger>.
- Ji, M.F., and W. Wood. 2007. "Purchase and Consumption Habits: Not Necessarily What You Intend." *Journal of Consumer Psychology* 17 (4): 261–276.
- Ji, X., S. Rozelle, J. Huang, L. Zhang, and T. Zhang. 2016. "Are China's Farms Growing?" *China and World Economy* 24: 41–62.
- Jiang, Y., X. Huang, X. Zhang, X. Zhang, Y. Zhang, C. Zheng, A. Deng, et al. 2016. "Optimizing Rice Plant Photosynthate Allocation Reduces N<sub>2</sub>O Emissions from Paddy Fields." *Scientific Reports* 6 (29333).
- Jiang, Y., K.J. van Groenigen, S. Huang, B.A. Hungate, C. van Kessel, S. Hu, J. Zhang, et al. 2017. "Higher Yields and Lower Methane Emissions with New Rice Cultivars." *Global Change Biology* 23 (11): 4728–4738.
- Johnson, P.M., K. Mayrand, and M. Paquin. 2006. "The United Nations Convention to Combat Desertification in Global Sustainable Development Governance." In *Governing Global Desertification: Linking Environmental Degradation, Poverty and Participation*, edited by P.M. Johnson, K. Mayrand, and M. Paquin. Farnham, UK: Ashgate.
- Johnson, R.K., L.J. Appel, M. Brands, B.V. Howard, M. Lefevre, R.H. Lustig, F. Sacks, et al. 2009. "Dietary Sugars Intake and Cardiovascular Health: A Scientific Statement from the American Heart Association." Arlington, VA: American Heart Association.
- Johnson, J.A., C. F. Runge, B. Senauer, J. Foley, and S. Polasky. 2014. "Global Agriculture and Carbon Trade-Offs." *Proceedings of the National Academy of Sciences* 111: 12342–12347.
- Jones, J. 2017. *Plant Immunity 101*. 2BLADES Foundation. [http://2blades.org/learn\\_more/#plant\\_imm](http://2blades.org/learn_more/#plant_imm).
- Jones, J.D.G., and J.L. Dangl. 2006. "The Plant Immune System." *Nature* 444: 323–329.
- Jones, P.G., and P.K. Thornton. 2009. "Croppers to Livestock Keepers: Livelihood Transitions to 2050 in Africa Due to Climate Change." *Environmental Science & Policy* 12 (4): 427–437.
- Jones, P.G., and P.K. Thornton. 2013. "Generating Downscaled Weather Data from a Suite of Climate Models for Agricultural Modelling Applications." *Agricultural Systems* 114: 1–5.
- Jones, P.G., and P.K. Thornton. 2015. "Representative Soil Profiles for the Harmonized World Soil Database at Different Spatial Resolutions for Agricultural Modelling Applications." *Agricultural Systems* 139: 93–99.
- Jones-Smith, J.C., P. Gordon-Larsen, A. Siddiqi, and B.M. Popkin. 2011. "Emerging Disparities in Overweight by Educational Attainment in Chinese Adults (1989–2006)." *International Journal of Obesity* 36: 866–875.
- Jong, H.N. 2015. "Jokowi to Sign Peat Land Decree before COP21." *Jakarta Post*. <http://www.thejakartapost.com/news/2015/11/25/jokowi-sign-peat-land-decree-cop21.html>.
- Jongeneel, R., K. Hart, M.-J. Zondag, and M. Bocci. 2016. *Mapping and Analysis of the Implementation of the CAP*. Final report. November. Brussels: European Commission.
- Joosten, H., M. Tapio-Bistrom, and S. Tol. 2012. "Peatlands: Guidance for Climate Change Mitigation through Conservation, Rehabilitation and Sustainable Use." Mitigation of Climate Change in Agriculture 5. Rome: FAO (Food and Agriculture Organization of the United Nations) and Wetlands International.
- Joshi, E., D. Kumar, V. Lal, V. Nepalia, P. Gautam, and A.K. Vyas. 2013. "Management of Direct Seeded Rice for Enhanced Resource-Use Efficiency." *Plant Knowledge Journal* 2 (3): 119.
- Jouanjean, M.A. 2013. *Targeting Infrastructure Development to Foster Agricultural Trade and Market Integration in Developing Countries: An Analytical Review*. London: Overseas Development Institute.
- JRC (European Joint Research Centre). 2011. "WTT Appendix 2: Description and Detailed Energy and GHG Balance of Individual Pathways." Ispra, Italy: JRC.
- Ju, X.T., G.X. Xing, X.P. Chen, S.L. Zhang, L.J. Zhang, X.J. Liu, Z.L. Cui, et al. 2009. "Reducing Environmental Risk by Improving N Management in Intensive Chinese Agricultural Systems." *Proceedings of the National Academy of Sciences of the United States of America* 106 (9): 3041–3046.
- Junk, W.J., P.B. Bayley, and R.E. Sparks. 1989. "The Flood Pulse Concept in River-Floodplain Systems." In *Proceedings of the International Large River Symposium*, edited by D.P. Dodge. Special issue of *Canadian Journal of Fisheries and Aquatic Sciences* 106.
- Kablan, R., R.S. Yost, K. Brannan, M.D. Doumbia, K. Traore, A. Yorote, Y. Toloba, et al. 2008. "Aménagement en courbes de niveau" (Increasing Rainfall Capture, Storage, and Drainage in Soils of Mali). *Arid Land Research and Management* 22 (1): 62–80.
- Kaffka, S., T. Barzee, H. El-Mashad, R. Williams, S. Zicari, and R. Zhang. 2016. *Evaluation of Dairy Manure Management Practices for Greenhouse Gas Emissions Mitigation in California: Final Technical Report to the State of California Air Resources Board*. Davis: University of California.
- Kalaiselvi, S., and I. Sundar. 2011. "Interstate Disparity in Cropping Intensity in India." *International Journal of Business Management, Economics and Information Technology* 3 (2): 269–273.



- Kanter, D., and T. Searchinger. 2018. "A Technology-Forcing Approach to Reduce Nitrogen Pollution." *Nature Sustainability* 1 (October). doi:10.1038/s41893-018-0143-8.
- Kapetsky, J. M., J. Aguilar-Manjarrez, and J. Jenness. 2013. *A Global Assessment of Offshore Mariculture Potential from a Spatial Perspective*. Rome: FAO.
- Karama, S., S. Sukmana, H. Suwardjo, S. Adiningsih, H. Subagjo, H. Suhardjo, and Y. Prawirasumantri, eds. 1993. *Prosiding Seminar Lahan Alang-Alang*. Bogor, Indonesia: Pusat Penelitian Tanah dan Agroklimat.
- Kathage, J., and M. Quaim. 2012. "Economic Impacts and Impact Dynamics of Bt (*Bacillus thuringiensis*) Cotton in India." *Proceedings of the National Academy of Sciences of the United States of America* 109: 11652–11656.
- Keats, S., and S. Wiggins. 2014. *Future Diets: Implications for Agriculture and Food Prices*. London: Overseas Development Institute.
- Kelliher, F.M., N. Cox, T.J. van der Weerden, C.A.M. de Klein, J. Luo, K.C. Cameron, H.J. Di, et al. 2014. "Statistical Analysis of Nitrous Oxide Emission Factors from Pastoral Agriculture Field Trials Conducted in New Zealand." *Environmental Pollution* 186: 63–66.
- Kellogg, R.L., C.H. Lander, D.C. Moffit, and M. Gollehon. 2000. *Manure Nutrients Relative to the Capacity of Cropland and Pastureland to Assimilate Nutrients*. Washington, DC: USDA (U.S. Department of Agriculture).
- Kemp, D.R., and D.L. Michalk, eds. 2011. "Development of Sustainable Livestock Systems on Grasslands in Northwestern China." *ACIAR Proceedings*, no. 134. Canberra: Australian Center for International Agricultural Research.
- Kennedy, K., M. Obeiter, and N. Kaufman. 2015. "Putting a Price on Carbon: A Handbook for U.S. Policymakers." Working paper. Washington, DC: World Resources Institute.
- Key, N., and D. Runsten. 1999. "Contract Farming, Smallholders, and Rural Development in Latin America: The Organization of Agroprocessing Firms and the Scale of Outgrower Production." *World Development* 27 (2): 381–401.
- Kharas, H. 2010. *The Emerging Middle Class in Developing Countries*. Paris: OECD (Organisation for Economic Co-operation and Development).
- Kherallah, M., C. Delgado, E. Gabre-Madhin, N. Minot, and M. Johnson. 2002. *Reforming Agricultural Markets in Africa*. Baltimore: Johns Hopkins University Press.
- Khoury, C.K., A.D. Bjorkman, H. Dempewolf, J. Ramirez-Villegas, L. Guarino, A. Jarvis, L.H. Rieseberg, and P.C. Struik. 2014. "Increasing Homogeneity in Global Food Supplies and the Implications for Food Security." *Proceedings of the National Academy of Sciences of the United States of America* 111 (11): 4001–4006.
- Killeen, T., A. Guerra, M. Calzada, L. Correa, V. Calderon, L. Soria, B. Quezada, and M. Steininger. 2008. "Total Historical Land-Use Change in Eastern Bolivia: Who, Where, When, and How Much?" *Ecology and Society* 13 (1): 36.
- Kim, D.-H., J.O. Sexton, and J.R. Townshend. 2015. "Accelerated Deforestation in the Humid Tropics from the 1990s to the 2000s." *Geophysical Research Letters* 42: 3495–3501.
- Kindermann G., M. Obersteiner, B. Sohngen, J. Sathaye, K. Andrasko, E. Rametsteiner, B. Schlamadinger, S. Wunder, and R. Beach. 2008. "Global Cost Estimates of Reducing Carbon Emissions through Avoided Deforestation." *Proceedings of the National Academy of Sciences of the United States of America* 105: 10302–10307.
- Kiprono, P., and T. Matsumoto. 2014. "Roads and Farming: The Effect of Infrastructure Improvement on Agricultural Input Use, Farm Productivity, and Market Participation in Kenya." Paper presented at CSAE conference "2014 Economic Development in Africa." Oxford: University of Oxford.
- Kirkby, C.A., J.A. Kirkegaard, A.E. Richardson, L.J. Wade, C. Blanchard, and G. Batten. 2011. "Stable Soil Organic Matter: A Comparison of C: N: P: S: Ratios in Australian and Other World Soils." *Geoderma* 163 (3–4): 197–208.
- Kirkby, C.A., A.E. Richardson, L.J. Wade, J.W. Passioura, G.D. Batten, C. Blanchard, and J.A. Kirkegaard. 2014. "Nutrient Availability Limits Carbon Sequestration in Arable Soils." *Soil Biology & Biochemistry* 68: 402–409.
- Kirkby, C.A., A.E. Richardson, L.J. Wade, M. Conyers, and J.A. Kirkegaard. 2016. "Inorganic Nutrients Increase Humification Efficiency and C-Sequestration in an Annually Cropped Soil." *PLOS ONE* 11 (5): e0153698. doi:10.1371/journal.pone.0153698.
- Kirtman, B., S.B. Power, J.A. Adedoyin, G.J. Boer, R. Bojariu, I. Camilloni, F.J. Doblas-Reyes, et al. 2013. "Near-Term Climate Change: Projections and Predictability." In *Climate Change 2013: The Physical Science Basis*, edited by T.F. Stocker, D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, et al. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge: Cambridge University Press.
- Kissinger, G., M. Herold, and V. De Sy. 2012. *Drivers of Deforestation and Forest Degradation: A Synthesis Report for REDD+ Policymakers*. Vancouver: Lexeme Consulting.
- Kitchen, N.R., J.F. Shanahan, C.J. Ransom, C.J. Bandura, G.M. Bean, J.J. Camerato, P.R. Carter, et al. 2017. "A Public-Industry Partnership for Enhancing Corn Nitrogen Research and Datasets: Project Description, Methodology, and Outcomes." *Agronomy Journal* 109 (5): 2371–2389.
- Kitinoja, L., S. Saran, S.K. Roy, and A.A. Kader. 2011. "Postharvest Technology for Developing Countries: Challenges and Opportunities in Research, Outreach and Advocacy." *Journal of the Science of Food and Agriculture* 91: 597–603.
- Kitzing, L., C. Mitchell, and P.E. Morthorst. 2012. "Renewable Energy Policies in Europe: Converging or Diverging?" *Energy Policy* 51: 192–201.
- Kling, C., and R. Machado. 2005. "Conservation of the Brazilian Cerrado." *Conservation Biology* 19: 707–713.
- Koh, L.P., and D.S. Wilcove. 2008. "Is Oil Palm Agriculture Really Destroying Tropical Biodiversity?" *Conservation Letters* 1: 60–64.
- Koh, L.P., and J. Ghazoul. 2010. "Spatially Explicit Scenario Analysis for Reconciling Agricultural Expansion, Forest Protection, and Carbon Conservation in Indonesia." *Proceedings of the National Academy of Sciences of the United States of America* 107 (24): 11140–11144.
- Kolbert, E. 2014. *The Sixth Extinction: An Unnatural History*. New York: Henry Holt.
- Kolka, R., S.D. Bridgman, and C.L. Ping. 2016. "Soils of Peatlands: Histosols and Gelisols." In *Wetlands Soils: Genesis, Hydrology, Landscapes and Classification*, edited by C.B. Craft and M.J. Vepraskas. Boca Raton, FL: CRC Press.
- Konde, A.B., R. Bjerselius, L. Haglund, A. Jansson, M. Pearson, J.S. Färnstrand, and A.-K. Johansson. 2015. *Swedish Dietary Guidelines: Risk and Benefit Management Report*. Stockholm: Livsmedelsverket National Food Agency.

- Koohafkan, P., and B.A. Stewart. 2008. "Water and Cereals in Drylands. Chapter 1: Drylands, People and Land Use." Rome: FAO (Food and Agriculture Organization of the United Nations).
- Koop, R.M., D.A. Bader, C.C. Hay, R.M. Horton, S. Kulp, M. Oppenheimer, D. Pollard, and B.H. Strauss. 2017. "Evolving Understanding of Antarctic Ice-Sheet Physics and Ambiguity in Probabilistic Sea-Level Projections." *Earth's Future*, December 13. <https://doi.org/10.1002/2017EF00066>.
- Koper, T. 2014. "FAQ: Agricultural Carbon Credit Projects." <https://www.climatetrust.org/faq-agricultural-carbon-credit-projects/>.
- Koplow, D. 2007. *Biofuels—At What Cost? Government Support for Ethanol and Biodiesel in the United States: 2007 Update*. Winnipeg, Canada: International Institute for Sustainable Development.
- Koplow, D. 2009. *A Boon to Bad Biofuels: Federal Tax Credits and Mandates Underwrite Environmental Damage at Taxpayer Expense*. Winnipeg, Canada: International Institute for Sustainable Development. [http://libcloud.s3.amazonaws.com/93/ac/e/635/Boon\\_to\\_bad\\_biofuels.pdf](http://libcloud.s3.amazonaws.com/93/ac/e/635/Boon_to_bad_biofuels.pdf).
- Koussoubé, E. 2013. "Land Purchases by Elites: The Other Face of Land Grab in Africa?" [bsi-economics.org](http://www.bsi-economics.org/222-land-purchases-by-elites-the-other-face-of-land-grab-in-africa). <http://www.bsi-economics.org/222-land-purchases-by-elites-the-other-face-of-land-grab-in-africa>.
- Kowitz, B. 2017. "This Startup Has a Natural Solution to the \$2.6 Trillion Food Waste Problem." *Fortune*, April 28. <http://fortune.com/2017/04/28/apeel-sciences-food-waste/>.
- Krause, A., T.A.M. Pugh, A.D. Bayer, M. Lindeskog, and A. Arneeth. 2016. "Impacts of Land-Use History on the Recovery of Ecosystems after Agricultural Abandonment." *Earth System Dynamics* 7: 745–766.
- Krausmann, F. 2016. "From Energy Source to Sink: Transformations of Austrian Agriculture." In *Social Ecology: Society-Nature Relations across Time and Space*, edited by H. Haberl, M. Fischer-Kowalski, F. Krausmann, and V. Winiwarter, 433–445. Human-Environment Interactions. Cham, Switzerland: Springer International. doi:10.1007/978-3-319-33326-7\_21.
- Krausmann, F., K.H. Erb, S. Gingrich, H. Haberl, A. Bondeau, V. Gaube, C. Lauk, et al. 2013. "Global Human Appropriation of Net Primary Production Doubled in the 20th Century." *Proceedings of the National Academy of Sciences of the United States of America* 110 (25): 10324–10329.
- Kravchenko, A.V., and P. Robertson. 2011. "Whole-Profile Soil Carbon Stocks: The Danger of Assuming Too Much from Analyses of Too Little." *Soil Science Society of America* 75: 235–240.
- Krishna, V.V., and M. Qaim. 2012. "Bt Cotton and Sustainability of Pesticide Reductions in India." *Agricultural Systems* 107: 47–64.
- Kritee, K., D. Nair, D. Zavala-Araiza, J. Proville, J. Rudek, T.K. Adhya, T. Loecke, et al. 2018. "High Nitrous Oxide Fluxes from Rice Indicate the Need to Manage Water for Both Long- and Short-Term Climate Impacts." *Proceedings of the National Academy of Sciences* 115 (39): 9720–9725.
- Kuemmerle, T., P. Olofsson, O. Chaskvoskyy, M. Baumann, K. Ostapowicz, C.E. Woodcock, R.A. Houghton, P. Hostert, W.S. Keeton, and V.C. Radeloff. 2010. "Post-Soviet Farmland Abandonment, Forest Recovery, and Carbon Sequestration in Western Ukraine." *Global Change Biology* 17: 1335–1349.
- Kuemmerle, T., C. Levers, K. Erb, S. Estel, M.R. Jepsen, D. Muller, C. Plutzer, J. Sturck, P. Verkerk, and P. Verburg. 2016. "Hotspots of Land Use Change in Europe." *Environmental Research Letters* 11 (6) (064020).
- Kummu, M., H. de Moel, M. Porkka, S. Siebert, O. Varis, and P.J. Ward. 2012. "Lost Food, Wasted Resources: Global Food Supply Chain Losses and Their Impacts on Freshwater, Cropland, and Fertiliser Use." *Science of the Total Environment* 438: 477–489.
- Kupferschmidt, K. 2014. "Scientists Fix Errors in Controversial Paper about Saturated Fats." *Science*, March 24. <http://www.sciencemag.org/news/2014/03/scientists-fix-errors-controversial-paper-about-saturated-fats>.
- Kura, Y., C. Revenga, E. Hoshino, and G. Mock. 2004. *Fishing for Answers: Making Sense of the Global Fish Crisis*. Washington, DC: World Resources Institute.
- Kurganova, I.N., A.M. Yermolaev, V.O. Lopes de Gerenyu, A.A. Larionova, Y.A. Kuzyakov, T. Keller, and S. Lange. 2007. "Carbon Balance in Abandoned Lands of Moscow Region of Russia." *European Soil Science* 40: 51–58.
- Kurganova, I.N., V.N. Kudeyarov, and V.O. Lopes de Gerenyu. 2010. "Updated Estimate of Carbon Balance on Russian Territory." *Tellus: Series B* 62 (5): 497–505. doi:10.1111/j.1600-0889.2010.00467.x.
- Kurkhalova, L.A., and D.Q. Tran. 2017. "Is the Use of No-Till Continuous or Rotational? Quantifying Tillage Dynamics from Time-Ordered Spatially Aggregated Data." *Journal of Soil and Water Conservation* 72 (2): 131–138. doi:10.2489/jswc.72.2.131.
- Kürschner, E., C. Henschel, T. Hildebrandt, E. Jülich, M. Leineweber, and C. Paul. 2010. "Water Saving in Rice Production—Dissemination, Adoption and Short Term Impacts of Alternate Wetting and Drying (AWD) in Bangladesh." Berlin: SLE Publication Series, Humboldt Universität zu Berlin.
- Laderach, P., M. Lundy, A. Jarvis, J. Ramirez, E.P. Portilla, K. Schepp, and A. Eitzinger. 2011. "Predicted Impact of Climate Change on Coffee Supply Chains." In *The Economic, Social and Political Elements of Climate Change*, edited by W. Leal Filho, 703–723. Climate Change Management. Berlin: Springer.
- Ladha, J.K., A. Tirol-Padre, C.K. Reddy, K.G. Cassman, S. Verma, D.S. Powlson, C. van Kessel, et al. 2016. "Global Nitrogen Budgets in Cereals: A 50-Year Assessment for Maize, Rice, and Wheat Production Systems." *Scientific Reports* 6 (19355).
- Lague, C., E. Gaudet, J. Agnew, and T. Fonstad. "Greenhouse Gas Emissions from Liquid Swine Manure Storage Facilities in Saskatchewan." *Transactions of American Society of Agricultural Engineers* 48 (6): 2289–2296.
- Lal, R. 2004. "Soil Carbon Sequestration Impacts on Global Climate Change and Food Security." *Science* 304 (5677): 1623–1627.
- Lal, R., P. Smith, H. Jungkunst, W. Mitsch, J. Lehmann, P.K. Ramachandran Nair, A. McBratney, et al. 2018. "The Carbon Sequestration Potential of Terrestrial Ecosystems." *Journal of Soil and Water Conservation* 73 (November): 145–152. doi:10.2489/jswc.73.6.145A.
- Lamb, K. 2015. "Indonesia's Fires Labelled a 'Crime against Humanity' as 500,000 Suffer." *Guardian*, October 26. <https://www.theguardian.com/world/2015/oct/26/indonesias-fires-crime-against-humanity-hundreds-of-thousands-suffer>.
- Lamb, A., R. Green, I. Bateman, M. Broadmeadow, T. Bruce, J. Burney, P. Carey, et al. 2016. "The Potential for Land Sparing to Offset Greenhouse Gas Emissions from Agriculture." *Nature Climate Change* 6: 488–492.
- Lambin, E.F., and P. Meyfroidt. 2011. "Global Land Use Change, Economic Globalization, and the Looming Land Scarcity." *Proceedings of the National Academy of Sciences of the United States of America* 108 (9): 3465–3472.
- Lampayan, R. 2013. "Smart Water Technique for Rice." Brussels: European Initiative for Agricultural Research for Development.

- Lampayan, R.M., F.G. Palis, R.B. Flor, B.A. M. Bouman, E.D. Quicho, J.L. de Dios, A. Espiritu, et al. 2009. "Adoption and Dissemination of 'Safe Alternate Wetting and Drying' in Pump Irrigated Rice Areas in the Philippines." In *60th International Executive Council Meeting of the International Commission on Irrigation and Drainage (ICID), 5th Regional Conference 6* (11). Manila: International Rice Research Institute.
- Lampayan, R.M., R.M. Reyes, G.R. Singleton, and B.A.M. Bouman. 2015. "Adoption and Economics of Alternate Wetting and Drying Water Management for Irrigated Lowland Rice." *Field Crops Research* 170: 95–108.
- Lansche, J., and J. Müller. 2012. "Life Cycle Assessment of Energy Generation of Biogas Fed Combined Heat and Power Plants: Environmental Impact of Different Agricultural Substrates." *Engineering in Life Sciences* 12 (3): 313–320.
- Laporte, N.T., J.A. Stabach, R. Grosch, T.S. Lin, and S.J. Goetz. 2007. "Expansion of Industrial Logging in Central Africa." *Science* 316 (5830): 1451.
- Land Matrix. n.d. Database. <http://www.landmatrix.org/en/about/>. (Accessed July 16, 2016.)
- Lark, T., J.M. Salmon, and H.K. Gibbs. 2015. "Cropland Expansion Outpaces Agricultural and Biofuel Policies in the United States." *Environmental Research Letters* 10 (4) (044003).
- Larsen, R.K., A. Atteridge, E. Kemp-Benedict, H. Nguyen, and M. Osbeck. 2015. *Biofuels, Oil Palm and Agribusiness in Southeast Asia—Planning for Sustainability?* Stockholm: SEI (Stockholm Environmental Institute).
- Larson, N., and M. Story. 2009. *Menu Labeling: Does Providing Nutrition Information at the Point of Purchase Affect Consumer Behavior?* Princeton, NJ: Robert Wood Johnson Foundation.
- Larson, D., A. Dinar, and J.A. Frisbie. 2012. *Agriculture and the Clean Development Mechanism*. Washington, DC: World Bank.
- Larson, D., K. Otsuka, T. Matsumoto, and T. Kilic. 2014. "Should African Rural Development Strategies Depend on Smallholder Farms? An Exploration of the Inverse-Productivity Hypothesis." *Agricultural Economics* 45: 355–365.
- Larsson, S.C., and N. Orsini. 2013. "Red Meat and Processed Meat Consumption and All-Cause Mortality: A Meta-analysis." *American Journal of Epidemiology* 179: 282–289.
- Larwanou, M., and T. Adam. 2008. "Impacts de la régénération naturelle assistée au Niger: Étude de quelques cas dans les régions de Maradi et Zinder." Synthèse de 11 mémoires d'étudiants de 3ème cycle de l'Université Abdou Moumouni de Niamey, Niger. Photocopy.
- Lassaletta, L., G. Billen, B. Grizzetti, J. Anglade, and J. Garnier. 2014. "50 Year Trends in Nitrogen Use Efficiency of World Cropping Systems: The Relationship between Yield and Nitrogen Input to Cropland." *Environmental Research Letters* 9 (105011).
- Lau, C., S. Schropp, and D.A. Sumner. 2015. "The 2014 US Farm Bill and Its Effects on the World Market for Cotton." Geneva: International Centre for Trade and Sustainable Development. <http://www.ictsd.org/themes/agriculture/research/the-2014-us-farm-bill-and-its-effects-on-the-world-market-for-cotton>.
- Laurance, W.F., B.M. Croes, L. Tchignoumba, S.A. Lahm, A. Alonso, M.E. Lee, P. Campbell, and C. Ondzeano. 2006. "Impacts of Roads and Hunting on Central African Rainforest Mammals." *Conservation Biology* 20 (4): 1251–1261.
- Laurance, W.F., M. Goosem, and S.G. Laurance. 2009. "Impacts of Roads and Linear Clearings on Tropical Forests." *Trends in Ecology and Evolution* 24: 659–669.
- Laurance, W.F., G.R. Clements, S. Sloan, C.S. O'Connell, N.D. Mueller, M. Goosem, O. Venter, et al. 2014. "A Global Strategy for Road Building." *Nature* 513: 229–232.
- Laurance, W.F., A. Peletier-Jellema, B. Geenen, H. Koster, P. Verweij, P. Van Dijk, T.E. Lovejoy, J. Schleicher, and M. Van Kuijk. 2015. "Reducing the Global Environmental Impacts of Rapid Infrastructure Expansion." *Current Biology* 25 (7): R259–R262.
- Lawry, S., C. Samii, R. Hall, A. Leopold, D. Hornby, and F. Mtero. 2014. *The Impact of Land Property Rights Interventions on Investment and Agricultural Productivity in Developing Countries: A Systematic Review*. Oslo: Campbell Systematic Reviews.
- Lea, E.J., D. Crawford, and A. Worsley. 2006. "Public Views of the Benefits and Barriers to the Consumption of a Plant-Based Diet." *European Journal of Clinical Nutrition* 60 (7): 828–837.
- Leakey, A.D.B., E.A. Ainsworth, C.J. Bernacchi, A. Rogers, S.P. Long, and D.R. Ort. 2009. "Elevated CO<sub>2</sub> Effects on Plant Carbon, Nitrogen, and Water Relations: Six Important Lessons from FACE." *Journal of Experimental Botany* 60 (10): 2859–2876.
- Lebel, L., P. Garden, A. Luers, D. Manuel-Navarrete, and D.H. Giap. 2016. "Knowledge and Innovation Relationships in the Shrimp Industry in Thailand and Mexico." *Proceedings of the National Academy of Sciences of the United States of America* 113 (17): 4585–4590.
- Ledford, H. 2016. "CRISPR: Gene Editing Is Just the Beginning." *Nature* 531: 156–159.
- Ledgard, S.F., J. Luo, M.S. Sprosen, J.B. Wyatt, S.F. Balvert and S.B. Lindsey. 2014. "Effects of the Nitrification Inhibitor Dicyandiamide (DCD) on Pasture Production, Nitrous Oxide Emissions and Nitrate Leaching in Waikato, New Zealand." *New Zealand Journal of Agricultural Research* 57 (4): 294–315.
- Leeson, G., and S. Harper. 2012. "Inequalities in Access to Education: Failing to Provide Skills-Building and Empowerment to Girls." *Journal of Population Ageing* 5 (4): 211–214.
- Lehmann, J. 2007. "Bio-energy in the Black." *Frontiers in Ecology and the Environment* 5 (7): 381–387.
- Leicester, A. 2011. "Small Beer? Assessing the Government's Alcohol Policies." London: Institute for Fiscal Studies. <http://www.ifs.org.uk/publications/5923>.
- Lemly, A.D. 1994. "Irrigated Agriculture and Freshwater Wetlands: A Struggle for Coexistence in the Western United States." *Wetlands Ecology and Management* 3 (1): 3–15.
- Lemmon, Z.H., N.T. Reem, J. Dalrymple, S. Soyk, K.E. Swartwood, D. Rodriguez-Leal, J.V. Eck, and Z.B. Lippman. 2018. "Rapid Improvement of Domestication Traits in an Orphan Crop by Genome Editing." *Nature Plants* 4 (10): 766. doi:10.1038/s41477-018-0259-x.
- Le Quéré, C., R.J. Andres, T. Boden, T. Conway, R.A. Houghton, J.I. House, G. Marland, et al. 2012. "The Global Carbon Budget, 1959–2011." *Earth System Science Data* 5: 165–185.
- Lesk, C., P. Rowhani, and N. Ramankutty. 2016. "Influence of Extreme Weather Disasters on Global Crop Production." *Nature* 529: 84–87.
- Lewis, R.R., M.J. Phillips, B. Clough, and D. Macintosh. 2002. *Thematic Review on Coastal Wetland Habitats and Shrimp Aquaculture*. Washington, DC: World Bank, Network of Aquaculture Centres in Asia-Pacific, World Wildlife Fund, and Food and Agriculture Organization of the United Nations.

- Li, N. 2008. *GHG Emission from Slurry Storage of Swine Farm*. Master's thesis. Beijing: Chinese Academy of Agricultural Sciences.
- Li, C., J. Qiu, S. Frolking, X. Xiao, W. Salas, B. Moore III, S. Boles, Y. Huang, and R. Sass. 2002. "Reduced Methane Emissions from Large-Scale Changes in Water Management of China's Rice Paddies during 1980–2000." *Geophysical Research Letters* 29 (20): 1972.
- Li, F., Q. Song, P. Jjemba, and Y. Shi. 2004. "Dynamics of Soil Microbial Biomass C and Soil Fertility in Cropland Mulched with Plastic Film in a Semiarid Agro-ecosystem." *Soil Biology and Biochemistry* 36: 1893–1902.
- Li, Y., L. Wu, L. Zhao, X. Lu, Q. Fan, and F. Zhang. 2007. "Influence of Continuous Plastic Film Mulching on Yield, Water Use Efficiency and Soil Properties of Rice Fields under Non-flooding Condition." *Soil and Tillage Research* 93: 370–378.
- Li, B.B., X.Q. Fang, Y. Yu, and X.Z. Zhang. 2010. "Accuracy Assessment of Global Historical Cropland Datasets Based on Regional Reconstructed Historical Data—A Case Study in Northeast China." Beijing: Beijing Normal University and Chinese Academy of Sciences.
- Li, Y., W. Zhang, L. Ma, G. Huang, O. Oenema, F. Zhang, and Z. Dou. 2014. "An Analysis of China's Fertilizer Policies: Impacts on the Industry, Food Security, and the Environment." *Journal of Environmental Quality* 42 (4): 972–981.
- Liang, B., J. Lehmann, D. Solomon, J. Kinyangi, J. Grossman, B. O'Neill, J.O. Skjemstad, et al. 2006. "Black Carbon Increases Cation Exchange Capacity in Soils." *Soil Science Society of America Journal* 70: 1719–1730.
- Liang, X., Y. Wu, R.G. Chambers, D.L. Schmoltdt, W. Gao, C. Liu, Y. Liu, et al. 2017. "Determining Climate Effects on US Total Agricultural Productivity." *Proceedings of the National Academy of Sciences of the United States of America* 114 (12): 2285–2292.
- Licht, S., B. Cui, B. Wang, F. Li, J. Lau, and S. Liu. 2014. "Ammonia Synthesis by N<sub>2</sub> and Steam Electrolysis in Molten Hydroxide Suspension of Nanoscale Fe<sub>2</sub>O<sub>3</sub>." *Science* 345 (6197): 637–640.
- Licker, R., M. Johnston, J.A. Foley, C. Barford, C.J. Kucharik, C. Monfreda, and N. Ramankutty. 2010. "Mind the Gap: How Do Climate and Agricultural Management Explain the 'Yield Gap' of Croplands around the World?" *Global Ecology and Biogeography* 19 (6): 769–782. doi:10.1111/j.1466-8238.2010.00563.x.
- Liebetrau, J., T. Reinelt, J. Clemens, C. Hafermann, J. Friehe, and P. Weiland. 2013. "Analysis of Greenhouse Gas Emissions from 10 Biogas Plants within the Agricultural Sector." *Water Science & Technology* 67 (6): 1370–1379.
- Lindquist, E.J., R. D'Annunzio, A. Gerrand, K. MacDicken, F. Achard, R. Beuchle, et al. 2012. *Global Forest Land-Use Change, 1990–2005*. Rome: FAO (Food and Agriculture Organization of the United Nations).
- Liniger, H.P., R.M. Studer, C. Hauert, and M. Gurtner. 2011. *Sustainable Land Management in Practice: Guidelines and Best Practices for Sub-Saharan Africa*. Berne, Switzerland: TerrAfrica, World Overview of Conservation Approaches and Technologies (WOCAT) and FAO (Food and Agriculture Organization of the United Nations).
- Linquist, B.A., M. Anders, M.A. Adviento-Borbe, R.L. Chaney, L.L. Nalley, E.E.F. da Rosa, and C. van Kessel. 2014. "Reducing Greenhouse Gas Emissions, Water Use and Grain Arsenic Levels in Rice Systems." *Global Change Biology*. doi:10.1111/gcb.12701.
- Lipinski, B., C. Hanson, J. Lomax, L. Kitinoja, R. Waite, and T. Searchinger. 2013. "Reducing Food Loss and Waste." Working paper, installment 2 of *Creating a Sustainable Food Future*. Washington, DC: World Resources Institute.
- Lipinski, B., C. O'Connor, and C. Hanson. 2016. *SDG Target 12.3 on Food Loss and Waste: 2016 Progress Report*. Washington, DC: Champions 12.3.
- Lipper, L. 2011. *Climate Change Mitigation Finance for Smallholder Agriculture: A Guide Book to Harvesting Soil Carbons Sequestration Benefits*. Rome: FAO (Food and Agriculture Organization of the United Nations).
- Lipper, L., C. Dutilly-Diane, and N. McCarthy. 2011. "Supplying Carbon Sequestration from West African Rangelands: Opportunities and Barriers." *Rangeland Ecology & Management* 63: 155–166.
- Liska, A., H. Yang, M. Milner, S. Goddard, H. Blanco-Canqui, M. Pelton, X. Fang, et al. 2014. "Biofuels from Crop Residue Can Reduce Soil Carbon and Increase CO<sub>2</sub> Emissions." *Nature Climate Change* 4: 398–401.
- Little, D.C., S.R. Bush, B. Belton, N.T. Phuong, J.A. Young, and F.J. Murray. 2012. "Whitefish Wars: Pangasius, Politics and Consumer Confusion in Europe." *Marine Policy* 36: 738–745.
- Liu, X., J. Wang, S. Lu, F. Zhang, X. Zeng, Y. Ai, S. Peng, and P. Christie. 2003. "Effects of Non-flooded Mulching Cultivation on Crop Yield, Nutrient Uptake and Nutrient Balance in Rice-Wheat Cropping Systems." *Field Crops Research* 83: 297–311.
- Liu, J., L. You, M. Amini, M. Obersteiner, M. Herrero, A. J. Zehnder, and H. Yang. 2010. "A High-Resolution Assessment on Global Nitrogen Flows in Cropland." *Proceedings of the National Academy of Sciences* 107 (17): 8035–8040.
- Liu, L., X. Xu, D. Zhuang, X. Chen, and S. Li. 2013. "Changes in the Potential Multiple Cropping System in Response to Climate Change in China from 1960–2010." *PLOS ONE* 8.
- Liu, X., A. Zhang, C. Ji, S. Joseph, R. Bian, L. Li, G. Pan, and J. Paz-Ferreiro. 2013. "Biochar's Effect on Crop Productivity and the Dependence on Experimental Conditions—A Meta-analysis of Literature Data." *Plant and Soil* 373 (1–2): 583–594.
- Lloyd, S. J., R.S. Kovats, and Z. Chalabi. 2011. "Climate Change, Crop Yields, and Undernutrition: Development of a Model to Quantify the Impact of Climate Scenarios on Child Undernutrition." *Environmental Health Perspectives* 119 (12): 1817–1823.
- Lobell, D.B. 2014. "Climate Change Adaptation in Crop Production: Beware of Illusions." *Global Food Security* 3 (2): 72–76.
- Lobell, D.B., and S. Asseng. 2017. "Comparing Estimates of Climate Change Impacts from Process-Based and Statistical Crop Models." *Environmental Research Letters* 12 (1).
- Lobell, D.B., and C.B. Field. 2007. "Global Scale Climate–Crop Yield Relationships and the Impacts of Recent Warming." *Environmental Research Letters* 2 (014002).
- Lobell, D.B., M.B. Burke, C. Tebaldi, M.D. Mastrandrea, W.P. Falcon, and R.L. Naylor. 2008. "Prioritizing Climate Change Adaptation Needs for Food Security in 2030." *Science* 319 (5863): 607–610.
- Lobell, D.B., K.G. Cassman, and C.B. Field. 2009. "Crop Yield Gaps: Their Importance, Magnitudes, and Causes." *Annual Review of Environmental Resources* 34: 179–204.
- Lobell, D.B., W. Schlenker, and J. Costa-Roberts. 2011. "Climate Trends and Global Crop Production since 1980." *Science* 333 (6042): 616–620.
- Lobell, D.B., A. Sibley, and I.J. Ortiz-Monasterio. 2012. "Extreme Heat Effects on Wheat Senescence in India." *Nature Climate Change* 2 (3): 186–189.

- Lobell, D.B., U.L.C. Baldos, and T.W. Hertel. 2013. "Climate Adaptation as Mitigation: The Case of Agricultural Investments." *Environmental Research Letters* 8 (1): 015012. doi:10.1088/1748-9326/8/1/015012.
- Long, S.P., E.A. Ainsworth, A.D.B. Leakey, J. Nösberger, and D.R. Ort. 2006. "Food for Thought: Lower-than-Expected Crop Yield Stimulation with Rising CO<sub>2</sub> Concentrations." *Science* 312 (5782): 1918–1921.
- Lopez, M.A.M. 2012. "The Problem with the Dependence on Food Imports in Africa and Pathways to Its Solution." *African Journal of International and Comparative Law* 20 (1): 132–140.
- Lorenzen, K., M.C.M. Beveridge, and M. Mangel. 2012. "Cultured Fish: Integrative Biology and Management of Domestication and Interactions with Wild Fish." *Biological Reviews* 87: 639–660. doi: 10.1111/j.1469-185X.2011.00215.x.
- Lory, J.A., R.E. Massey, J.M. Zulovich, J.A. Hohne, A.M. Schmidt, M.S. Carlson, and C.D. Fulhage. 2004. "Feasibility of Phosphorus-Based Application Rates on 39 Swine Operations." *Journal of Environmental Quality* 33: 1115–1123.
- Lowder, S.K., B. Carisma, and J. Scoet. 2012. "Who Invests in Agriculture and How Much? An Empirical Review of the Relative Size of Various Investments in Agriculture in Low- and Middle-Income Countries." ESA Working Papers 288992. Rome: Food and Agriculture Organization of the United Nations, Agricultural Development Economics Division (ESA).
- Lowder, S.K., J. Scoet, and T. Raney. 2016. "The Number, Size, and Distribution of Farms, Smallholder Farms, and Family Farms Worldwide." *World Development* 87: 16–29.
- Low Emission Capacity Building Project—Costa Rica. 2014. "Livestock NAMA Concept." New York: UNDP (United Nations Development Programme).
- Lu, Y., K. Wu, Y. Jiang, Y. Guo, and N. Desneux. 2012. "Widespread Adoption of Bt Cotton and Insecticide Decrease Promotes Biocontrol Services." *Nature* 487: 362–365.
- Lucas, G. 2013. "Dicyandiamide Contamination of Milk Powders." *Sri Lanka Journal of Child Health* 42 (2): 63–64.
- Lunduka, R., J. Ricker-Gilbert, and M. Fisher. 2013. "What Are the Farm-Level Impacts of Malawi's Farm Input Support Program? A Critical Review." *Agricultural Economics* 44 (6): 563–579.
- Luo, Z., E. Wang, and O. Sun. 2010. "Can No-Tillage Stimulate Carbon Sequestration in Agricultural Soils? A Meta-analysis of Paired Experiments." *Agriculture, Ecosystems, and Environment* 139: 224–231.
- Lusk, J., and F.B. Norwood. 2016. "Some Vegetarians Spend Less Money on Food, Others Don't." *Ecological Economics* 130: 232–242.
- Lusser, M., C. Parisi, D. Plan, and E. Rodriguez-Cerezo. 2012. "Deployment of New Biotechnologies in Plant Breeding." *Nature Biotechnology* 30: 231–239.
- Lynd, L.R., and J. Woods. 2011. "Perspective: A New Hope for Africa." *Nature* 474: S20–S21.
- Lynd, L.R., M. Sow, A.F. Chimphango, L.A. Cortez, C.H.B. Cruz, M. Elmirsy, M. Laser, et al. 2015. "Bioenergy and African Transformation." *Biotechnology for Biofuels* 8:18.
- Ma, J., N. Kennedy, G. Yorgey, and C. Frear. 2013. *Review of Emerging Nutrient Recovery Technologies for Farm-Based Anaerobic Digesters and Other Renewable Energy Systems*. Report prepared for Innovation Center for US Dairy. Pullman: Washington State University.
- Maastricht University. 2014. "First-Ever Public Tasting of Lab-Grown Cultured Beef Burger." July 3. <http://www.maastrichtuniversity.nl/web/Main/Research/ResearchUM/FirsteverPublicTastingOfLabgrownCulturedBeefBurger.htm>.
- Macedo, M.N., R.S. DeFries, D.C. Morton, C.M. Stickler, G.L. Galford, and Y.E. Shimabukuro. 2012. "Decoupling of Deforestation and Soy Production in the Southern Amazon during the Late 2000s." *Proceedings of the National Academy of Sciences of the United States of America*. <http://www.pnas.org/content/early/2012/01/06/1111374109.full.pdf+html>.
- Mackay, D. 2009. *Sustainable Energy without the Hot Air*. Cambridge, UK: UIT Cambridge Ltd.
- Maertens, M., and K. Vande Velde. 2017. "Contract-Farming in Staple Food Chains: The Case of Rice in Benin." *World Development* 95: 73–87.
- Magongoya, P.L., A. Bationo, J. Kihara, and B.S. Waswa. 2006. "Appropriate Technologies to Replenish Soil Fertility in Southern Africa." *Nutrient Cycling in Agroecosystems* 76 (2): 137–151.
- Maginnis, S., J. Rietbergen-McCracken, and W. Jackson. 2005. *Introduction—Restoring Forest Landscapes: An Introduction to the Art and Science of Forest Landscape Restoration*. Technical Series no. 23. Yokohama: ITTO (International Tropical Timber Organization). [http://www.itto.or.jp/live/Live\\_Server/1064/ts23e.pdf](http://www.itto.or.jp/live/Live_Server/1064/ts23e.pdf).
- Mahajan, G., and B.S. Chauhan. 2013. "Strategies for Boosting Rice Yield in the Face of Climate Change in India." *Journal of Rice Research*: Open Access.
- Malherbe, W., V. Wepener, and J. van Vuren. 2016. "The Effects of a Large-Scale Irrigation Scheme on the Fish Community Structure and Integrity of a Subtropical River System in South Africa." *Ecological Indicators* 69: 533–539.
- Malhi, Y., P. Meir, and S. Brown. 2002. "Forests, Carbon and Global Climate." *Philosophical Transactions of the Royal Society* 360: 1567–1591.
- Mallory, M.L., S.H. Irwin, and D.J. Hayes. 2012. "How Market Efficiency and the Theory of Storage Link Corn and Ethanol Markets." *Energy Economics* 34 (6): 2157–2166.
- Manomet Center for Conservation Sciences. 2010. *Massachusetts Biomass Sustainability and Carbon Policy Study: Report to the Commonwealth of Massachusetts Department of Energy Resources*. Natural Capital Initiative Report NCI-2010-03. Brunswick, ME: Manomet Center for Conservation Sciences.
- Marenya, P., and C. Barrett. 2009a. "Soil Quality and Fertilizer Use Rates among Smallholder Farmers in Western Kenya." *Agricultural Economics* 40: 561–572.
- Marenya, P., and C. Barrett. 2009b. "State-Conditional Fertilizer Yield Response on Western Kenyan Farms." *American Journal of Agricultural Economics* 91: 991–1006.
- Marfo, E., E. Acheampong, and E. Opuni-Frimpong. 2012. "Fractured Tenure, Unaccountable Authority, and Benefit Capture: Constraints to Improving Community Benefits under Climate Change Mitigation Schemes in Ghana." *Conservation & Society* 10: 161–172.
- Margat, J., and J. van der Gun. 2013. *Groundwater around the World: A Geographic Synopsis*. Boca Raton, FL: CRC Press.
- Mariano, M.J., R. Villano, and E. Fleming. 2012. "Factors Influencing Farmers' Adoption of Modern Rice Technologies and Good Management Practices in the Philippines." *Agricultural Systems* 110: 41–53.

- Marino, D. 2017. "Engineering Nitrogen-Fixing Cereals, between Science Fiction and Reality." *Mapping Ignorance*, May 1. <https://mappingignorance.org/2017/05/01/engineering-nitrogen-fixing-cereals-science-fiction-reality/>.
- MarketLine. 2014. "MarketLine Industry Profile: Global Meat, Fish & Poultry." London: MarketLine.
- MarketsAndMarkets. 2015. *Controlled-Release Fertilizers Market by Type (Condensation Products of Urea, Coated & Encapsulated Fertilizers, and N-stabilizers), Crop Type (Cereals & Oilseeds, Turf & Ornamentals, and Fruits & Vegetables) & Region—Global Trends and Forecast to 2020*. Pune, India: MarketsAndMarkets.
- MarketsAndMarkets. 2017. *Nitrogenous Fertilizers Market by Type (Urea, Ammonium Nitrate, Ammonium Sulfate, and Calcium Ammonium Nitrate), Form (Liquid and Dry), Mode of Application (Soil, Foliar, and Fertigation), Crop Type, and Region—Global Forecast to 2022*. Pune, India: MarketsAndMarkets.
- Marshall, K., M. Ejlersen, and J. Poole. 2013. *Sustainable Management of Globally Significant Endemic Ruminant Livestock in West Africa: Estimate of Livestock Demographic Parameters in Guinea*. ILRI Research Report 30. Nairobi, Kenya: ILRI (International Livestock Research Institute).
- Martínez-Fernández, G., L. Abecia, A. Arco, G. Cantalapiedra-Hijar, A.I. Martín-García, E. Molina-Alcaide,
- M. Kindermann, et al. 2014. "Effects of Ethyl-3-Nitrooxy Propionate and 3-Nitrooxypropanol on Ruminal Fermentation, Microbial Abundance, and Methane Emissions in Sheep." *Journal of Dairy Science* 97 (6): 3790–3799.
- Martinez-Gonzalez, M.A., M. Garcia-Lopez, M. Bes-Rastrollo, E. Toledo, E.H. Martinez-Lapiscina, and M. Delgado-Rodriguez. 2011. "Mediterranean Diet and the Incidence of Cardiovascular Disease: A Spanish Cohort." *Nutrition, Metabolism and Cardiovascular Diseases* 21 (4): 237–244.
- Mason, A. 2001. "Population and Economic Growth in Eastern and South-Eastern Asia." In *Population Change and Economic Development in Eastern and South-Eastern Asia: Challenges Met, Opportunities Seized*, edited by A. Mason. Stanford, CA: Stanford University Press.
- Masuda, T., and P.D. Goldsmith. 2009. "World Soybean Production: Area Harvested, Yield, and Long-Term Projections." *International Food and Agribusiness Management Review* 12 (4): 143–162.
- Mazvimavi, K., S. Twomlow, P. Belder, and L. Hove. 2008. *An Assessment of the Sustainable Adoption of Conservation Farming in Zimbabwe*. Global Theme on Agro Ecosystems Report 39. Bulawayo, Zimbabwe: ICRISAT (International Crops Research Institute for the Semi-arid Tropics).
- Mazzetto, A.M., A.S. Barneze, B.J. Feigle, J.W. van Groenigen, O. Oenema, C.A.M. de Klein, and C.C. Cerri. 2015. "Use of the Nitrification Inhibitor Dicyandiamide (DCD) Does Not Mitigate N<sub>2</sub>O Emissions from Bovine Urine Patches under Oxisol in Northwest Brazil." *Nutrient Cycling in Agroecosystems* 101: 83–92.
- McCarthy, N., L. Lipper, and G. Branca. 2011. *Climate Smart Agriculture: Smallholder Adoption and Implications for Climate Change Adaptation and Mitigation*. Mitigation of Climate Change in Agriculture Series. Rome: FAO (Food and Agriculture Organization of the United Nations).
- McClanahan, T.R. 2010. "Effects of Fisheries Closures and Gear Restrictions on Fishing Income in a Kenyan Coral Reef." *Conservation Biology* 24 (6): 1519–1528.
- McClanahan, T.R., C.C. Hicks, and E.S. Darling. 2008. "Malthusian Overfishing and Efforts to Overcome It on Kenyan Coral Reefs." *Ecological Applications* 18 (6): 1516–1529.
- McClanahan, T.R., and C.A. Abunge. 2014. "Catch Rates and Income Are Associated with Fisheries Management Restrictions and Not an Environmental Disturbance, in a Heavily Exploited Tropical Fishery." *Marine Ecology Progress Series* 513: 201–210.
- McDonald, C., B. Sharp, and A.S.C. Ehrenberg. 2002. "Impulse Purchasing Patterns." *Marketing Learning* 9. London: R&D Initiative, South Bank University.
- McDermott, J.J., S.J. Staal, H.A. Freeman, M. Herrero, and J.A. Van de Steeg. 2011. "Sustaining Intensification of Smallholder Livestock Systems in the Tropics." *Livestock Science* 130: 95–109.
- McGahuey, M. 2012. "Africa's Regreening: Its Integral Role in Increasing Agricultural Productivity and Strengthening Resiliency." Paper presented at World Resources Institute Symposium on Regreening, March 1. Washington, DC.
- McGhee, K. n.d. *Restoring China's Grasslands*. Canberra: Australian Centre for International Agricultural Research.
- McGrath, J.M., and D.B. Lobell. 2013. "Regional Disparities in the CO<sub>2</sub> Fertilization Effect and Implications for Crop Yields." *Environmental Research Letters* 8 (1): 1–9.
- McGrath, M. 2014. "Genetically Modified Potatoes 'Resist Late Blight.'" British Broadcasting Company, February 16. <http://www.bbc.com/news/science-environment-26189722>.
- McKechnie, J., S. Colombo, J. Chen, W. Mabee, and H.L. MacLean. 2011. "Forest Bioenergy or Forest Carbon? Assessing Trade-offs in Greenhouse Gas Mitigation with Wood-Based Fuels." *Environmental Science & Technology* 45 (2): 789–795.
- McKinsey & Co. 2009. *Pathways to a Low Carbon Economy: Version 2 of the Global Greenhouse Gas Cost Abatement Curve*. Conference Board and McKinsey & Co.
- McNicol, I.M., C.M. Ryan, and E.T.A. Mitchard. 2018. "Carbon Losses from Deforestation and Widespread Degradation Offset by Extensive Growth in African Woodlands." *Nature Communications* 9: 3045.
- McSwiney, C.P., and G.P. Robertson. 2005. "Nonlinear Response of N<sub>2</sub>O Flux to Incremental Fertilizer Addition in a Continuous Maize (*Zea mays* L.) Cropping System." *Global Change Biology* 11 (10): 1712–1719.
- McVeigh, T. 2011. "Biofuels Land Grab in Kenya's Tana Delta Fuels Talk of War." *Guardian*, July 2. <http://www.theguardian.com/world/2011/jul/02/biofuels-land-grab-kenya-delta>.
- Mehra, R., and M. Rojas. 2008. *Women, Food Security, and Agriculture in a Global Marketplace: A Significant Shift*. Washington, DC: International Center for Research on Women.
- Meinshausen, M., N. Meinshausen, W. Hare, S.C. Raper, K. Frieler, R. Knutti, D.J. Frame, and M.R. Allen. 2009. "Greenhouse-Gas Emission Targets for Limiting Global Warming to 2 Degrees C." *Nature* 458: 1158–1162.
- Mekdaschi Studer, R., and H. Liniger. 2013. *Water Harvesting: Guidelines to Good Practice*. Bern, Amsterdam, Wageningen, and Rome: Centre for Development and Environment (CDE), Rainwater Harvesting Implementation Network (RAIN), MetaMeta, and the International Fund for Agricultural Development (IFAD).
- Mekonnen, M.M., and A.Y. Hoekstra. 2011. "The Green, Blue and Grey Water Footprint of Crops and Derived Crop Products." *Hydrology and Earth System Sciences* 15: 1577–1600.

- Mekonnen, M.M., and A.Y. Hoekstra. 2012. "A Global Assessment of the Water Footprint of Farm Animal Products." *Ecosystems* 15: 401–415.
- Melillo, J., J.M. Reilly, D.W. Kicklighter, A.C. Gurgel, T.W. Cronin, S. Paltsev, B.S. Felzer, et al. 2009. "Indirect Emissions from Biofuels: How Important?" *Science* 326: 1397–1399.
- Melnychuk, M., E. Peterson, M. Elliott, and R. Hilborn. 2016. "Fisheries Management Impacts on Target Species Status." *Proceedings of the National Academy of Sciences of the United States of America* 114 (1): 178–183.
- Merino, G., M. Barange, J.L. Blanchard, J. Harlo, R. Holmes, I. Allen, E.H. Allison, et al. 2012. "Can Marine Fisheries and Aquaculture Meet Fish Demand from a Growing Human Population in a Changing Climate?" *Global Environmental Change* 22: 795–806.
- Mertz, O., C. Padoch, J. Fox, R.A. Cramb, S. Leisz, N.T. Lam, and T.D. Vien. 2009. "Swidden Change in Southeast Asia: Understanding Causes and Consequences." *Human Ecology* 37: 259–264.
- Micha, R., G. Michas, and D. Mozaffarian. 2012. "Unprocessed Red and Processed Meats and Risk of Coronary Artery Disease and Type 2 Diabetes—An Updated Review of the Evidence." *Current Atherosclerosis Reports* 14 (6): 515–524.
- Micha, R., J.L. Peñalvo, F. Cudhea, F. Imamura, C.D. Rehm, and D. Mozaffarian. 2017. "Association between Dietary Factors and Mortality from Heart Disease, Stroke, and Type 2 Diabetes in the United States." *JAMA* 317 (9): 912–924.
- Michalsky, R., B. Parman, V. Amanor-Boadu, and P. Pfromm. 2012. "Solar Thermochemical Production of Ammonia from Water, Air and Sunlight: Thermodynamic and Economic Analyses." *Energy* 42: 251–260.
- Miettinen, J., A. Hooijer, C. Shi, D. Tollenaar, R. Vernimmen, S.C. Liew, C. Malins, and S.E. Page. 2012. "Extent of Industrial Plantations on Southeast Asian Peatlands in 2010 with Analysis of Historical Expansion and Future Projections." *Global Change Biology* 4: 908–918.
- Miettinen, J., C. Shi, and S.C. Liew. 2016. "Land Cover Distribution in the Peatlands of Peninsular Malaysia, Sumatra and Borneo in 2015 with Changes since 1990." *Global Ecology and Conservation* 6: 67–78.
- Millennium Ecosystem Assessment. 2005. *Ecosystems and Human Well-Being: Synthesis*. Washington, DC: Island.
- Miller, R., J. Major, and P. Trinca. 2011. *How a Lagoon Works for Livestock Wastewater Treatment*. Logan, Utah: Utah State University Cooperative Extension. [http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1047&context=extension\\_curall](http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1047&context=extension_curall)[http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1047&context=extension\\_curall](http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1047&context=extension_curall).
- Miller, S.M., E.A. Kort, A.I. Hirsch, E.J. Klugokencky, A.E. Andrews, X. Xu, H. Tian, et al. 2012. "Regional Sources of Nitrous Oxide over the United States: Seasonal Variation and Spatial Distribution." *Journal of Geophysical Research: Atmospheres* 117 (D6). <https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2011JD016951>.
- Minasny, B., B.P. Malone, A.B. McBratney, et al. 2017. "Soil Carbon 4 per Mille." *Geoderma* 292 (2017): 59–86. doi:10.1016/j.geoderma.2017.01.002.
- Minayeva, T., and A. Sirin. 2009. "A Quick Scan of Peatlands in Central and Eastern Europe." Wageningen, the Netherlands: Wetlands International.
- Minet, E.P., S.F. Ledgard, G.J. Lanigan, J.B. Murphy, J. Grant, D. Hennessy, E. Lewis, et al. 2016. "Mixing Dicyandiamide (DCD) with Supplementary Feeds for Cattle: An Effective Method to Deliver a Nitrification Inhibitor in Urine Patches." *Agriculture, Ecosystems & Environment* 231: 114–121.
- Ministry of Commerce, People's Republic of China. 2013. "Regular Press Conference of the Ministry of Commerce on February 20, 2013." <http://english.mofcom.gov.cn/article/newsrelease/press/201302/20130200036119.shtml>.
- Mitchell, S.R., M.E. Harmon, and K.E.B. O'Connell. 2012. "Carbon Debt and Carbon Sequestration Parity in Forest Bioenergy Production." *Global Change Biology Bioenergy* 4 (6): 818–827.
- Molin, P.G., R. Chazdon, S.F. de Barros Ferraz, and P.H.S. Brancalion. Forthcoming. "A Landscape Approach for Optimizing the Cost-Effectiveness of Large-Scale Forest Restoration." *Journal of Applied Ecology* (in review).
- Monfreda, C., N. Ramankutty, and J.A. Foley. 2008. "Farming the Planet: 2. Geographic Distribution of Crop Areas, Yields, Physiological Types, and Net Primary Production in the Year 2000." *Global Biogeochemical Cycles* 22: 1–19.
- Montes, F., R. Meinen, C. Dell, A. Rotz, A.N. Hristov, J. Oh, G. Waghorn, et al. 2014. "Mitigation of Methane and Nitrous Oxide Emissions from Animal Operations: II. A Review of Manure Management Mitigation Options." *Journal of Animal Science* 91 (11): 5070–5094.
- Moody, J., C. McGinty, and J. Quinn. 2014. "Global Evaluation of Biofuel Potential from Microalgae." *Proceedings of the National Academy of Sciences of the United States of America* 111: 8691–8696.
- Moomaw, W.R., and J.R. Moreira. 2001. "Technical and Economic Potential of Greenhouse Gas Emissions Reduction." In *Climate Change 2001: Mitigation (Climate Change 2001) IPCC Third Assessment*, edited by B. Metz. New York: Cambridge University Press.
- Mora, C.V. 2001. "Fijación, emisión y balance de gases de efecto invernadero en pasturas en monocultivo y en sistemas silvopastoriles de fincas lecheras intensivas de las zonas altas de Costa Rica." MS Thesis. CATIE, Turrialba, Costa Rica.
- Morenoff, D. 2002. "Lost Food and Liability: The Good Samaritan Food Donation Law Story." *Food and Drug Law Journal* 57: 107.
- Morris, M., and D. Byerlee. 2009. *Awakening Africa's Sleeping Giant*. Washington, DC: World Bank.
- Morris, M., V.A. Kelly, R.J. Kopicki, and D. Byerlee. 2007. "Fertilizer Use in African Agriculture: Lessons Learned and Good Practice Guidelines." Directions in Development Series. Washington, DC: World Bank.
- Morrogh-Bernard, H., S. Husson, S.E. Page, and J.O. Rieley. 2003. "Population Status of the Bornean Orang-utan (*Pongo pygmaeus*) in the Sebangau Peat Swamp Forest, Central Kalimantan, Indonesia." *Biological Conservation* 110 (1): 141–152.
- Moset, V., M. Cambra-López, F. Estellés, A.G. Torres, and A. Cerisuelo. 2012. "Evolution of Chemical Composition and Gas Emissions from Aged Pig Slurry during Outdoor Storage with and without Prior Solid Separation." *Biosystems Engineering* 111 (1): 2–10.
- Moshfegh, A., J. Goldman, and L. Cleveland. 2005. "What We Eat in America, NHANES 2001–2002: Usual Nutrient Intakes from Food Compared to Dietary Reference Intakes." Washington, DC: U.S. Department of Agriculture.
- Motamayor, J.C., K. Mockaitis, J. Schmutz, N. Haiminen, D. Livingstone III, O. Cornejo, S.D. Findley, et al. 2013. "The Genome Sequence of the Most Widely Cultivated Cacao Type and Its Use to Identify Candidate Genes Regulating Pod Color." *Genome Biology* 14 (r53): 1–24.
- Mottet, A., C. de Haan, A. Falcucci, G. Tempio, C. Opio, and P. Gerber. 2017. "Livestock: On Our Plates or Eating at Our Table? A New Analysis of the Feed/Food Debate." *Global Food Security* 14: 1–8.

- Moussa, B., O. Coulibaly, T. Abdoulaye, D. Baributsa, and J. Lowenberg DeBoer. 2012. "Adoption of Hermetic Storage for Cowpea in West & Central Africa in 2012." Presentation at the PICS Lessons Learned Workshop, Accra, Ghana, April. <https://ag.purdue.edu/ipia/pics/pages/picsworkshop2012.aspx>.
- Mueller, N.D., J.S. Gerber, M. Johnston, D.K. Ray, N. Ramankutty, and J.A. Foley. 2012. "Closing Yield Gaps through Nutrient and Water Management." *Nature* 490: 254–257.
- Muhammad, A., J. Seale Jr., B. Meade, and A. Regmi. 2011. "International Evidence of Food Consumption Patterns: An Update Using 2005 International Comparison Program Data." Technical Bulletin 1929. Washington, DC: Economic Research Service, U.S. Department of Agriculture.
- Muhoza, D. N., P. C. Rutayisire, and A. Umubyeyi. 2013. "Measuring the Success of Family Planning Initiatives in Rwanda: A Multivariate Decomposition Analysis." Demographic and Health Survey Working Paper. ICF International for U.S. Agency for International Development. <http://www.measuredhs.com/pubs/pdf/WP94/WP94.pdf>.
- Mukherjee, S., D. Stamatis, J. Bertsch, G. Ovchinnikova, H.Y. Katta, A. Mojica, I.-M.A. Chen, et al. 2019. "Genomes OnLine Database (GOLD) v.7: Updates and New Features." *Nucleic Acids Research* 47 (D1): D649–659. doi:10.1093/nar/gky977.
- Müller, C., and R.D. Robertson. 2014. "Projecting Future Crop Productivity for Global Economic Modeling." *Agricultural Economics* 45: 37–50. doi:10.1111/agec.12088
- Mulyani, M., and P. Jepson. 2013. "REDD+ and Forest Governance in Indonesia: A Multistakeholder Study of Perceived Challenges and Opportunities." *Journal of Environment & Development* 22 (3): 261–283.
- Mungkung, R., M. Phillips, S. Castine, M. Beveridge, N. Chaiyawanakarn, S. Nawapakpilai, and R. Waite. 2014. "Exploratory Analysis of Resource Demand and the Environmental Footprint of Future Aquaculture Development Using Life Cycle Assessment." White Paper 2014-31. Penang, Malaysia: WorldFish.
- Murdiyarmo, D., S. Dewi, D. Lawrence, and F. Seymour. 2011. "Indonesia's Forest Moratorium: A Stepping Stone to Better Forest Governance?" Working Paper 76. Bogor, Indonesia: Center for International Forestry Research.
- Murgueitio, E., Z. Calle, F. Uribe, A. Calle, and B. Solorio. 2011. "Native Trees and Shrubs for the Productive Rehabilitation of Tropical Cattle Ranching Lands." *Forest Ecology and Management* 261 (10): 1654–1663.
- Mushroom Council. 2016. "Mushroom Council Partners with Sodexo to Promote Blend Burgers and Encourage Produce Consumption." Press release, February 9. Redwood Shores, CA: Mushroom Council. <http://www.mushroomcouncil.org/wp-content/uploads/2012/02/Mushroom-Council-Partners-Sodexo-Introduce-Blend-Burger.pdf>.
- Myers, J.P., M.N. Antoniou, B. Blumberg, L. Carroll, T. Colborn, L.G. Everett, M. Hansen, et al. 2016. "Concerns over Use of Glyphosate-Based Herbicides and Risks Associated with Exposures: A Consensus Statement." *Environmental Health* 615: 19.
- Nabuurs, G.J., O. Masera, K. Andrasko, P. Benítez-Ponce, R. Boer, M. Dutschke, E. Elsidig, et al. 2007. "Forestry." In *Climate Change 2007: Mitigation*, edited by B. Metz, O.R. Davidson, P.R. Bosch, R. Dave, and L.A. Meyer. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge: Cambridge University Press.
- Nair, P.K.R., R.G. Tonucci, R. Garcia, and V.D. Nair. 2011. "Silvopasture and Carbon Sequestration with Special Reference to the Brazilian Savanna (Cerrado)." In *Carbon Sequestration Potential of Agroforestry Systems: Opportunities and Challenges*, edited by B.M. Kumar and P.K.R. Nair. Special issue of *Advances in Agroforestry* 8 (1).
- Nakamura, A., Y. Ota, K. Koike, Y. Hidaka, K. Nishioka, M. Sugiyama, and K. Fujii. 2015. "A 24.4% Solar to Hydrogen Energy Conversion Efficiency by Combining Concentrator Photovoltaic Modules and Electrochemical Cells." *Applied Physics Express* 8 (10): 107101.
- Nakaya, A., and S. Isobe. 2012. "Will Genomic Selection Be a Practical Method for Plant Breeding?" *Annals of Botany* 110: 1303–1316.
- NAS (National Academies of Sciences, Engineering, and Medicine). 2016. *Genetically Engineered Crops: Experiences and Prospects*. Washington, DC: National Academies Press. <https://www.nap.edu/download/23395#>.
- Nasdaq Global Newswire. 2015. *Meat Substitutes Market by Product (Tofu, Tofu-Based Products, Tempeh, Textured Vegetable Protein (TVP), Other Soy Products, Seitan, Quorn), by Raw Material (Soy-Based, Wheat-Based, Mycoprotein) Is Expected to Reach \$5.81 Billion by 2022: New Report by Grand View Research, Inc.* <http://globenewswire.com/news-release/2015/05/14/735949/10134496/en/Meat-Substitutes-Market-By-Product-Tofu-Tofu-Based-Products-Tempeh-Textured-Vegetable-Protein-TVP-Other-Soy-Products-Seitan-Quorn-By-Raw-Material-Soy-Based-Wheat-Based-Mycoprotein.html>.
- National Geographic. 2014. "What to Do about Pig Poop? North Carolina Fights a Rising Tide." <http://news.nationalgeographic.com/news/2014/10/141028-hog-farms-waste-pollution-methane-north-carolina-environment/>.
- National Geographic. 2017. "Rivers Run Dry from Overuse." <http://www.nationalgeographic.com/environment/freshwater/rivers/>.
- National Human Genome Research Institute. 2015. "A Brief Guide to Genomics." *Nature*. 2013. "GM Crops: A Story in Numbers." *Nature* 497: 22–23.
- Naylor, R.L., W.P. Falcon, R.M. Goodman, M.M. Jahn, T. Sengooba, H. Tefera, and R.J. Nelson. 2004. "Biotechnology in the Developing World: A Case for Increased Investments in Orphan Crops." *Food Policy* 29: 15–44.
- Naylor, R.L., R.W. Hardy, D.P. Bureau, A. Chiu, M. Elliott, A.P. Farrell, I. Forster, et al. 2009. "Feeding Aquaculture in an Era of Finite Resources." *Proceedings of the National Academy of Sciences of the United States of America* 106: 15103–15110.
- NDC Partnership. 2017. "Initiatives Navigator." <http://ndcpartnership.org/initiatives-navigator>.
- NEAA (Netherlands Environmental Assessment Agency). 2010. *Rethinking Global Biodiversity Strategies: Exploring Structural Changes in Production and Consumption to Reduce Biodiversity Loss*. The Hague, the Netherlands: NEAA.
- Nefedova, T. 2011. "Agricultural Land in Russia and Its Dynamics." *Regional Research of Russia* 1 (3): 292–295.
- Nelson, R., R.L. Naylor, and M.A. Jahn. 2004. "The Role of Genomics Research in Improvement of 'Orphan' Crops." *Crop Science* 44: 1901–1904.
- Nelson, G.C., M. W. Rosegrant, J. Koo, R. Robertson, T. Sulser, T. Zhu, C. Ringler, et al. 2009. *Climate Change: Impact on Agriculture and Costs of Adaptation 21*. Washington, DC: International Food Policy Research Institute.
- Nelson, G.C., M.W. Rosegrant, A. Palazzo, I. Gray, C. Ingersoll, R. Roberston, S. Tokgoz, et al. 2010. "Food Security, Farming and Climate Change to 2050: Scenarios, Results, Policy Options." IFPRI research monograph. Washington, DC: International Food Policy Research Institute.



- Nelson, G.C., and D. van der Mensbrugghe. 2014. "Public-Sector Agricultural Research Priorities for Sustainable Food Security: Perspectives from Plausible Scenarios." IFPRI Discussion Paper 01339. Washington, DC: IFPRI (International Food Policy Research Institute).
- Nelson, G.C., H. Valin, R.D. Sands, P. Havlík, H. Ahammad, D. Deryng, J. Elliott, et al. 2014. "Climate Change Effects on Agriculture: Economic Responses to Biophysical Shocks." *Proceedings of the National Academy of Sciences* 111 (9): 3274–3279. doi:10.1073/pnas.1222465110.
- Nenguwo, N. 2013. "Postharvest Training and Services Center." <http://crsp.net/site/wp-content/uploads/2013/03/WedM-3a-Nenguwo-AVRDC-TZ-PostHarvest-Center.pdf>.
- Nepstad, D., D. McGrath, C. Stickler, A. Alencar, A. Azevedo, B. Swette, T. Bezerra, et al. 2014. "Slowing Amazon Deforestation through Public Policy and Interventions in Beef and Soy Supply Chains." *Science* 344 (6188): 1118–1123.
- Netherlands Nutrition Centre. 2017. "Vis, peulvruchten, vlees, ei, noten en zuivel (Fish, legumes, meat, eggs, nuts and milk)." (In Dutch.) The Hague: Netherlands Nutrition Centre. <http://www.voedingscentrum.nl/nl/gezond-eten-met-de-schijf-van-vijf/wat-staat-er-in-de-vakken-van-de-schijf-van-vijf/vis-peulvruchten-vlees-ei-noten-en-zuivel.aspx>.
- Neumann, C.G., M.W. Demment, A. Maretzki, N. Drorbaugh, and K.A. Galvin. 2010. "The Livestock Revolution and Animal Source Food Consumption: Benefits, Risks and Challenges in Urban and Rural Settings of Developing Countries." In *Livestock in a Changing Landscape*. Vol. 1, *Drivers, Consequences, and Responses*, edited by H. Steinfeld, H.A. Mooney, and F. Schneider, eds. Washington, DC: Island.
- Neumann, K., P.H. Verburg, E. Stehfest, and C. Muller. 2010. "The Yield Gap of Global Grain Production: A Spatial Analysis." *Agricultural Systems* 103: 316–326.
- Neville, K. 2015. "New Markets Meet Old Grievances: The Fight over Biofuels in Kenya's Tana River Delta." *New Security Beat*. Washington, DC: Wilson Center. <http://www.newsecuritybeat.org/2015/02/markets-meet-grievances-fight-biofuels-kenyas-tana-river-delta/>.
- New Climate Economy. 2016. *The Sustainable Infrastructure Imperative: Energy*. <http://newclimateeconomy.report/2016/energy/>.
- Newton, R., and D. Little. 2013. "Aquaculture By-products Improve Sustainability of Seafood Value Chains." *Global Aquaculture Advocate* March–April 2013: 55–56.
- New Zealand Government. 2013. "Legislative Changes to the New Zealand Emissions Trading System (NZ ETS)." <https://www.climatechange.govt.nz/emissions-trading-scheme/ets-amendments>.
- New Zealand Government. 2015. *Climate Change Information: The New Zealand Emissions Trading Scheme*. <http://www.climatechange.govt.nz/emissions-trading-scheme>.
- Ng, M., T. Fleming, M. Robinson, et al. 2014. "Global, Regional, and National Prevalence of Overweight and Obesity in Children and Adults during 1980–2013: A Systematic Analysis for the Global Burden of Disease Study 2013." *Lancet* 384 (9945): 766–781.
- Ng, S.W., M.M. Slining, and B.M. Popkin. 2014. "Turning Point for US Diets? Recessionary Effects or Behavioral Shifts in Foods Purchased and Consumed." *American Journal of Clinical Nutrition* 99 (3): 609–616.
- Nguyen, N.V. 2005. "Global Climate Changes and Rice Food Security." *International Rice Commission Newsletter* (FAO) 54: 24–30.
- Nieburg, O. 2013. "Cocoa Genetics: Mars Unlocks Sequence to Higher Yield and Tastier Chocolate." *Confectionary News*, June 4. <http://www.confectionarynews.com/Commodities/Cocoa-genetics-Marsunlocks-sequence-to-higher-yields-and-tastier-chocolate>.
- Nijbroek, R.P., and S.J. Andelman. 2016. "Regional Suitability for Agricultural Intensification: A Spatial Analysis of the Southern Agricultural Growth Corridor of Tanzania." *International Journal of Agricultural Sustainability* 14 (2): 231–247.
- NIOSH (National Institute for Occupational Safety and Health). 2007. "Dicyandiamide." *NIOSH Toxicity Data*. <https://pubchem.ncbi.nlm.nih.gov/compound/Dicyandiamide#section=NIOSH-Toxicity-Data&fullscreen=true>.
- NOAA (National Oceanic and Atmospheric Administration). 2018. *Status of Stocks 2017: Annual Report to Congress on the Status of U.S. Fisheries*. Silver Spring, MD: NOAA.
- Noble, A. 2012. *The Slumbering Giant: Land and Water Degradation*. Battaramulla, Sri Lanka: IWMI (International Water Management Institute).
- Nolte, C., A. Agrawa, K. Silvius, and B. Soares-Filho. 2013. "Governance Regime and Location Influence Avoided Deforestation Success of Protected Areas in Brazilian Amazon." *Proceedings of the National Academy of Sciences of the United States of America* 110: 4956–4961.
- Nordström, J., and L. Thunström. 2009. "The Impact of Tax Reforms Designed to Encourage Healthier Grain Consumption." *Journal of Health Economics* 28 (3): 622–634.
- Notess, L., P.G. Veit, I. Monterroso, Andiko, E. Sulle, A.M. Larson, A.-S. Gindroz, et al. 2018. *The Scramble for Land Rights: Reducing Inequity between Communities and Companies*. Washington, DC: World Resources Institute.
- NRC (National Research Council). 2004. *Safety of Genetically Engineered Foods*. Washington, DC: National Academies Press.
- NRC. 2010. *The Impact of Genetically Engineered Crops on Farm Sustainability in the United States*. Washington, DC: National Academy of Sciences.
- NRC. 2011. *Nutrient Requirements of Fish and Shrimp*. Washington, DC: National Academies Press.
- NRC. 2012. *Sustainable Development of Algal Biofuels in the United States*. Washington, DC: National Academy Press.
- Nugraha, I., and H.N. Jong. 2017. "Indonesia Blocks Major Artery in Haze-Causing Mega Rice Canal Network." *Mongabay*. <https://news.mongabay.com/2017/07/indonesia-blocks-major-artery-in-haze-causing-mega-rice-canal-network/>.
- Nunez-Cordoba, J.M., F. Valencia-Serrano, E. Toledo, A. Alonso, and M.A. Martinez-Gonzalez. 2009. "The Mediterranean Diet and Incidence of Hypertension: The Seguimiento Universidad de Navarra (SUN) Study." *American Journal of Epidemiology* 169 (3): 339–346.
- Obidzinski, K., R. Andriani, H. Komarudin, and A. Andrianto. 2012. "Environmental and Social Impacts of Oil Palm Plantations and Their Implications for Biofuel Production in Indonesia." *Ecology and Society* 17 (1): 25.
- O'Connor, D.J., G.C. Wright, M.J. Dieters, D.L. George, M.N. Hunter, J.R. Tatnell, and D.B. Fleischfresser. 2013. "Development and Application of Speed Breeding Technologies in a Commercial Peanut Breeding Program." *Peanut Science* 40 (2): 107–114.

- OECD (Organisation for Economic Co-operation and Development). 2003. *Cyanoguanidine—CAS N° 461-58-5*. SIDS Initial Assessment Report. <http://www.inchem.org/documents/sids/sids/461585.pdf>.
- OECD. 2010a. *Healthy Choices*. Paris: OECD.
- OECD. 2010b. *Obesity and the Economics of Prevention: Fit Not Fat*. Paris: OECD.
- OECD. 2011. *Environmental Outlook to 2050: Climate Change* (pre-release version). Paris: OECD.
- OECD. 2012. *OECD Environmental Outlook to 2050: The Consequences of Inaction*. Paris: OECD.
- OECD. 2014. "Executive Summary." In *Agricultural Policy Monitoring and Evaluation 2014: OECD Countries*. [http://dx.doi.org/10.1787/agr\\_pol-2014-3-en](http://dx.doi.org/10.1787/agr_pol-2014-3-en).
- OECD. 2016. Agricultural Policy Monitoring and Evaluation. OECD Data. <http://www.oecd.org/tad/agricultural-policies/producerandconsumersupportestimatesdatabase.htm>.
- OECD and FAO (Organisation for Economic Co-operation and Development and Food and Agriculture Organization of the United Nations). 2012. *Agricultural Outlook, 2012–2021*. Paris: OECD.
- Oerke, E.C. 2006. "Crop Losses to Pests." *Journal of Agricultural Science* 144: 31–43.
- Oerke, E.C., H.W. Dehne, F. Schönbeck, and A. Weber. 1994. *Crop Production and Crop Protection: Estimated Losses in Major Food and Cash Crops*. Amsterdam: Elsevier.
- Oguntade, A.E. 2013. "Food Losses in Cassava and Maize Value Chains in Nigeria: Analysis and Recommendations for Reduction Strategies." Deutsche Gesellschaft für internationale Zusammenarbeit (GIZ).
- Oil World. 2015. *Oil World Annual*. Hamburg, Germany: Oil World.
- Olsen, Y. 2011. "Resources for Fish Feed in Future Mariculture." *Aquaculture Environment Interactions* 1: 187–200.
- Olsen, R., and M.R. Hasan. 2012. "A Limited Supply of Fishmeal: Impact on Future Increases in Global Aquaculture Production." *Trends in Food Science & Technology* 27 (2): 120–128.
- Oo, A.Z., S. Sudo, K. Inubushi, M. Mano, A. Yamamoto, K. Ono, T. Osawa, et al. 2018. "Methane and Nitrous Oxide Emissions from Conventional and Modified Rice Cultivation Systems in South India." *Agriculture, Ecosystems & Environment* 252: 148–158.
- Ooko, S. 2014. "EADD Farmers Changing Dairy Industry in East Africa." Heifer International. February 6. <http://www.heifer.org/join-the-conversation/blog/2014/February/eadd-farmers-changing-dairy-industry-in-east-africa.html>.
- Oregon State University. 2015. "OSU Researchers Discover the Unicorn—Seaweed That Tastes Like Bacon!" Corvallis: Oregon State University. <http://oregonstate.edu/ua/ncs/archives/2015/jul/osu-researchers-discover-unicorn-%E2%80%93-seaweed-tastes-bacon>.
- Orodho, A.B. 2006. "The Role and Importance of Napier Grass in the Smallholder Dairy Industry in Kenya." [http://www.fao.org/AG/AGP/AGPC/doc/newpub/napier/napier\\_kenya.htm](http://www.fao.org/AG/AGP/AGPC/doc/newpub/napier/napier_kenya.htm).
- Ortiz, R., K.D. Sayre, B. Govaerts, R. Gupta, G.V. Subbarao, T. Ban, D. Hodson, et al. 2008. "Climate Change: Can Wheat Beat the Heat?" *Agriculture, Ecosystems and Environment* 126 (1–2): 46–58.
- Oster, E. 2016. "Fallon, Venus Williams and DJ Khaled Celebrate 'The Power of Plants' for Silk." *Adweek*, June 7. <http://www.adweek.com/agency/fallon-venus-williams-and-dj-khaled-celebrate-the-power-of-plants-for-silk/110725>.
- Owen, J., and W. Silver. 2015. "Greenhouse Gas Emissions from Dairy Manure Management: A Review of Field-Based Studies." *Global Change Biology* 21 (2): 550–565.
- Owen, J., E. Kebreab, and W. Silver. 2014. *Greenhouse Gas Mitigation Opportunities in California Agriculture: Review of Emissions and Mitigation Potential of Animal Manure Management and Land Application of Manure*. N1 GGMOCA R 6. Durham, NC: Duke University.
- Oxfam. 2007. *Paying the Price: How US Farm Subsidies Hurt West African Cotton Farmers—And How Subsidy Reform Could Help*. Boston: Oxfam.
- Oxfam. 2012. "Food Crises Doomed to Repeat until Leaders Find Courage to Fix Problems." Media advisory. Boston: Oxfam.
- Pachauri, R.K., and L.A. Meyer. 2014. "Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change." In *Climate Change 2014: Synthesis Report*, edited by R.K. Pachauri and L.A. Meyer. Geneva: IPCC (Intergovernmental Panel on Climate Change).
- Pacheco, P. 2012. "Soybean and Palm Oil Expansion in South America: A Review of Main Trends and Implications." Working Paper 90. Bogor, Indonesia: Center for International Forestry Research.
- Padhee, A. 2018. "DBT in Fertilizers: Game Changing Reforms." Blog. *Times of India*, May 4. <https://blogs.timesofindia.indiatimes.com/voices/dbt-in-fertilizers-game-changing-reforms/>.
- Paeth, H., K. Born, R. Girmes, R. Podzun, and D. Jacob. 2009. "Regional Climate Change in Tropical and Northern Africa Due to Greenhouse Gas Forcing and Land Use Changes." *Journal of Climate* 22: 114–132.
- Page, S.E., R. Morrison, C. Malins, A. Hooijer, J.O. Rieley, and J. Jauhainen. 2011. "Review of Peat Surface Greenhouse Gas Emissions from Oil Palm Plantations in Southeast Asia." ICCT White Paper 15. Washington, DC: International Council on Clean Transportation.
- Palm, C.A., S.A. Vosti, P.A. Sanchez, and P.J. Ericksen. 2013. *Slash-and-Burn Agriculture: The Search for Alternatives*. New York: Columbia University Press.
- Palmer, L. 2015. "Will Indonesian Fires Spark Reform of Rogue Forest Sector?" *Yale Environment* 360 (November 5). <https://e360.yale.edu/features/will-indonesian-fires-spark-reform-of-rogue-forest-sector>.
- Pan, Y., R.A. Birdsey, J. Fang, R. Houghton, P.E. Kauppi, W.A. Kurz, O.L. Phillips, et al. 2011. "A Large and Persistent Carbon Sink in the World's Forests." *Science* 333: 988–993.
- Pan, A., Q. Sun, A.M. Bernstein, M.B. Schulze, J.E. Manson, M.J. Stampfer, W.C. Willett, and F.B. Hu. 2012. "Red Meat Consumption and Mortality: Results from 2 Prospective Cohort Studies." *American Journal of Clinical Nutrition* 172 (7): 555–563.
- Park, K.H., A.G. Thompson, M. Marinier, K. Clark, and C. Wagner-Riddle. 2006. "Greenhouse Gas Emissions from Stored Liquid Swine Manure in a Cold Climate." *Atmospheric Environment* 40 (4): 618–627.
- Parkhurst, R. 2015. "It's Official! Rice Farmers Now Eligible for Carbon Offset Payments." <http://blogs.edf.org/growingreturns/2015/06/25/its-official-rice-farmers-now-eligible-for-carbon-offset-payments/>.
- Pathak, H., B. Chakrabarti, A. Bhatia, N. Jain, and P.K. Aggarwal. 2012. "Potential and Cost of Low Carbon Technologies in Rice and Wheat Systems:

- A Case Study for the Indo-Gangetic Plains." In *Low Carbon Technologies for Agriculture: A Study on Rice and Wheat Systems in the Indo-Gangetic Plains*, edited by H. Pathak and P.K. Aggarwal, 12–40. New Delhi: Indian Agricultural Research Institute.
- Pathak, H., S. Sankhyan, D.S. Dubey, A. Bhatia, and N. Jain. 2013. "Dry Direct-Seeding of Rice for Mitigating Greenhouse Gas Emission: Field Experimentation and Simulation." *Paddy and Water Environment* 11 (1–4): 593–601.
- Patil, B., V. Hessel, J. Lang, and Q. Wang. 2016. "Plasma-Assisted Nitrogen Fixation Reactions." *Alternative Energy Sources for Green Chemistry*: 296–338.
- Paul, G.L. 1989. "Dietary Protein Requirements of Physically Active Individuals." *Sports Medicine* 8 (3): 154–176.
- Pauly, D., and D. Zeller. 2016. "Catch Reconstructions Reveal That Global Marine Fisheries Catches Are Higher than Reported and Declining." *Nature Communications* 7: 10244.
- Paustian, K., J. Lehmann, S. Ogle, D. Reay, G.P. Robertson, and P. Smith. 2016. "Climate-Smart Soils." *Nature* 532 (7597): 49–57. doi:10.1038/nature17174.
- Pauw, K., and J. Thurlow. 2014. *Malawi Strategy Support Program: Malawi's Farm Input Subsidy Program: Where Do We Go from Here?* Washington, DC: IFPRI
- Pearce, F. 2012. *The Land Grabbers: The New Fight over Who Owns the Earth*. Boston: Beacon.
- Pearson-Stuttard, J., P. Bandosz, C.D. Rehm, J. Penalvo, L. Whitsel, T. Gaziano, Z. Conrad, et al. 2017. "Reducing US Cardiovascular Disease Burden and Disparities through National and Targeted Dietary Policies: A Modelling Study." *PLOS Medicine*. <https://doi.org/10.1371/journal.pmed.1002311>.
- Pelster, D.E., B. Gisore, J. Goopy, D. Korir, J.K. Koske, M.C. Rufino, and K. Butterbach-Bahl. 2016. "Methane and Nitrous Oxide Emissions from Cattle Excreta on an East African Grassland." *Journal of Environmental Quality* 45 (5): 1531–1539.
- Pendrill, F., and U.M. Persson. 2017. "Combining Global Land Cover Datasets to Quantify Agricultural Expansion into Forests in Latin America: Limitations and Challenges." *PLoS ONE* 12 (7): e0181202.
- Peng, S., J. Huang, J. Sheehy, R. Laza, R. Visperas, X. Zhong, G. Centeno, et al. 2004. "Rice Yields Decline with Higher Night Temperature from Global Warming." *Proceedings of the National Academy of Sciences of the United States of America* 101 (27): 9971–9975.
- Peñuelas, J., B. Poulter, J. Sardans, P. Ciais, M. van der Velde, L. Bopp, O. Boucher, et al. 2013. "Human-Induced Nitrogen–Phosphorus Imbalances Alter Natural and Managed Ecosystems across the Globe." *Nature Communications* 4: 2934.
- Persson, M., J. Moberg, M. Ostwald, and J. Xu. 2013. "The Chinese Grain for Green Programme: Assessing the Carbon Sequestered via Land Reform." *Journal of Environmental Management* 126 (September): 142–46. <https://doi.org/10.1016/j.jenvman.2013.02.045>.
- Peters, P. 2009. "Challenges in Land Tenure and Land Reform in Africa: Anthropological Contributions." *World Development* 37: 1317–1325.
- Petersen, S.O., N. Dorno, S. Lindholm, A. Feilberg, and J. Eriksen. 2013. "Emissions of CH<sub>4</sub>, N<sub>2</sub>O, NH<sub>3</sub> and Odorants from Pig Slurry during Winter and Summer Storage." *Nutrient Cycling in Agroecosystems* 95 (1): 103–113.
- Pfromm, P.H. 2017. "Towards Sustainable Agriculture: Fossil-Free Ammonia." *Journal for Renewable and Sustainable Energy* 9 (3): 034702.
- Phillips, M., P.J.G. Henriksson, N.V. Tran, C.Y. Chan, C.V. Mohan, U-P. Rodriguez, S. Suri, et al. 2015. *Exploring Indonesian Aquaculture Futures*. Program report 2015–39. Penang, Malaysia: WorldFish.
- Phuong, N.T., and D.T.H. Oanh. 2010. "Striped Catfish Aquaculture in Vietnam: A Decade of Unprecedented Development." In *Success Stories in Asian Aquaculture*, edited by S.S. De Silva and F.B. Davy. Ottawa: International Development Research Centre.
- Pica-Ciamarra, U., L. Tasciotti, J. Otte, and A. Zezza. 2011. "Livestock Assets, Livestock Income and Rural Households: Cross-Country Evidence from Household Surveys." Joint Paper of the World Bank, FAO, AU-IBAR, ILRI. Washington, DC: World Bank.
- Pickup, F. 2017. "Why Indonesia Has to Save the Peatland." Jakarta: UNDP Indonesia. <http://www.id.undp.org/content/indonesia/en/home/presscenter/articles/2017/01/09/why-indonesia-has-to-save-the-peatland.html>.
- Pingali, P. 2007. "Westernization of Asian Diets and the Transformation of Food Systems: Implications for Research and Policy." *Food Policy* 32 (3): 281–298.
- Pingali, P., T. Raney, and K. Wiebe. 2008. "Biofuels and Food Security: Missing the Point." *Review of Agricultural Economics* 30: 505–516.
- Pinheiro, E.F., E. Lima, M. Ceddia, and R. Boddey. 2010. "Impact of Pre-harvest Burning versus Trash Conservation on Soil Carbon and Nitrogen Stocks on a Sugarcane Plantation in the Brazilian Atlantic Forest Region." *Plant and Soil* 333 (1–2): 71–80.
- Pinoy Rice Knowledge Bank. 2014. "Philippine Rice Industry: Facts and Figures." Manila: Department of Agriculture, Philippine Rice Research Institute. <http://pinoyrkb.com/main/resources/facts-and-figures>.
- Pires, G F., G.M. Abrahão, L.M. Brumatti, L.J.C. Oliveira, M.H. Costa, S. Liddicoat, E. Kato, and R.J. Ladle. 2016. "Increased Climate Risk in Brazilian Double Cropping Agriculture Systems: Implications for Land Use in Northern Brazil." *Agricultural and Forest Meteorology* 228: 286–298.
- Pittelkow, C.M., Y. Assa, M. Burger, R.G. Mutters, C.A. Greer, L.A. Espino, J.E. Hill, et al. 2014. "Nitrogen Management and Methane Emissions in Direct-Seeded Rice Systems." *Agronomy Journal* 106 (3): 968–980.
- Pittelkow, C., B. Linquist, M. Lundy, W. Liang, K.J. van Groenigen, J. Lee, N. Van Gestel, et al. 2015. "When Does No-Till Yield More? A Global Meta-analysis." *Field Crops Research* 183: 156–168.
- Place, F. 2009. "Land Tenure and Agricultural Productivity in Africa: A Comparative Analysis of Economic Theory, Empirical Results, and Policy Statements." *World Development* 37: 1326–1336.
- Place, F., R. Roothaert, L. Maina, J. Sinja, and J. Wanjiku. 2009. "The Impact of Fodder Shrubs on Milk Production and Income among Smallholder Dairy Farmers in East Africa and the Role of Research Undertaken by the World Agroforestry Centre." Occasional Paper 12. Nairobi: World Agroforestry Centre.
- Place, F., A. Meybeck, L. Colette, C. de Young, V. Gitz, E. Dulloo, S. Hall, et al. 2013. "Food Security and Sustainable Resource Use—What Are the Resource Challenges to Food Security?" Background paper for the conference "Food Security Futures: Research Priorities for the 21st Century," April 11–12, Dublin.
- Plevin, R. 2010. "Review of Final RFS2 Analysis." <http://plevin.berkeley.edu/docs/Plevin-Comments-on-final-RFS2-v7.pdf>.

- Plevin, R., M. O'Hare, A.D. Jones, M.S. Torn, and H.K. Gibbs. 2010. "Greenhouse Gas Emissions from Biofuels' Indirect Land Use Change Are Uncertain but May Be Much Greater than Previously Estimated." *Environmental Science & Technology* 44 (21): 8015–8021.
- Poeplau, C., D. Zopf, B. Greiner, R. Geerts, H. Korvaar, U. Thumm, A. Don, et al. 2018. "Why Does Mineral Fertilization Increase Soil Carbon Stocks in Temperate Grasslands?" *Agriculture, Ecosystems and Environment* 265: 144–155.
- Pool, I. 2007. "Demographic Dividends: Determinants of Development or Merely Windows of Opportunity?" *Ageing Horizons* 7: 28–35.
- Poorter, L., F. Bongers, T.M. Aide, A.M. Almeyda Zambrano, P. Balvanera, and J.M. Becknell. 2016. "Biomass Resilience of Neotropical Secondary Forests." *Nature* 530: 211–214.
- Popkin, B.M., and P. Gordon-Larsen. 2004. "The Nutrition Transition: Worldwide Obesity Dynamics and Their Determinants." *International Journal of Obesity* 28: S2–S9.
- Popkin, B.M., L.S. Adair, and S.W. Ng. 2012. "NOW AND THEN: The Global Nutrition Transition: The Pandemic of Obesity in Developing Countries." *Nutrition Reviews* 70 (1): 3–21.
- Popp, A., H. Lotze-Campen, and B. Bodirsky. 2010. "Food Consumption, Diet Shifts, and Associated Non-CO<sub>2</sub> Greenhouse Gases from Agricultural Production." *Global Environmental Change* 20: 451–462.
- Popp, A., F. Humpeöder, I. Weindl, B.L. Bodirsky, M. Bonsch, H. Lotze-Campen, C. Müller, et al. 2015. "Land-Use Protection for Climate Change Mitigation." *Nature Climate Change* 4: 1095–1098.
- Porter, J.R., L. Xie, A.J. Challinor, K. Cochrane, S.M. Howden, M.M. Iqbal, D.B. Lobell, et al. 2014. "Food Security and Food Production Systems." In *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects*, edited by C.B. Field, V.R. Barros, D.J. Dokken, K.J. Mach, M.D. Mastrandrea, T.E. Bilir, M. Chatterjee, et al. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge: Cambridge University Press.
- Porter-Bolland, L., E.A. Ellis, M.R. Guariguata, I. Ruiz-Mallén, S. Negrete-Yankelevich, and V. Reyes-García. 2012. "Community Managed Forests and Forest Protected Areas: An Assessment of Their Conservation Effectiveness across the Tropics." *Forest Ecology & Management* 268: 6–17.
- Porterfield, A. 2017. "Common Corn Pest Presents Major Challenge to Bt Crops." *Entomology Today*. <https://entomologytoday.org/2017/07/13/common-corn-pest-presents-major-challenge-to-bt-crops/>.
- Posa, M., L. Wijedasa, and R. Corlett. 2011. "Biodiversity and Conservation of Tropical Peat Swamp Forests." *BioScience* 61 (1): 49–57.
- Poulton, P., J. Johnston, A. Macdonald, R. White, and D. Powlson. 2018. "Major Limitations to Achieving '4 per 1000' Increases in Soil Organic Carbon Stock in Temperate Regions: Evidence from Long-Term Experiments at Rothamsted Research, United Kingdom." *Global Change Biology* 24 (6): 1–22.
- Powlson, D.S., A.P. Whitmore, and W.T. Goulding. 2011a?. "Soil Carbon Sequestration to Mitigate Climate Change: A Critical Reexamination to Identify the True and the False." *European Journal of Soil Science* 62: 42–55.
- Powlson, D.S., M.J. Glendining, K. Coleman, and A.P. Whitmore. 2011b?. "Implications for Soil Properties of Removing Cereal Straw: Results from Long-Term Studies." *American Society of Agronomy* 103 (1): 279–287.
- Powlson, D.S., A. Bhogal, B.J. Chambers, K. Coleman, A.J. Macdonald, K.W.T. Goulding, and A.P. Whitmore. 2012. "The Potential to Increase Soil Carbon Stocks through Reduced Tillage or Organic Material Additions in England and Wales: A Case Study." *Agriculture, Ecosystems, and Environment* 146: 23–33.
- Powlson, D.S., C. Stirling, M. Jat, B. Gerard, C. Palm, P. Sanchez, and K. Cassman. 2014. "Limited Potential of No-Till Agriculture for Climate Change Mitigation." *Nature Climate Change* 4 (8): 678–683.
- Powlson, D.S., C.M. Stirling, C. Thierfelder, R.P. White, and M.L. Jat. 2016. "Does Conservation Agriculture Deliver Climate Change Mitigation through Soil Carbon Sequestration in Tropical Agro-ecosystems?" *Agriculture, Ecosystems & Environment* 220: 164–174.
- Practical Action. 2003. "Evaporative Cooling." Technical brief. <http://practicalaction.org/evaporative-cooling-1>.
- Practical Action. 2010. "Refrigeration in Developing Countries." Technical brief. <http://practicalaction.org/refrigeration-in-developing-countries-1>.
- Pretty, J.N., A.D. Noble, D. Bossio, J. Dixon, R.E. Hine, F.W.T.P. de Vries, and J.I.L. Morison. 2006. "Resource-Conserving Agriculture Increases Yields in Developing Countries." *Environmental Science & Technology* 40 (4): 1114–1119.
- Prigge, V., X. Xu, L. Li, R. Babu, S. Chen, G.N. Atlin, and A.E. Melchinger. 2012. "New Insights into the Genetics of *in Vivo* Induction of Maternal Haploids, the Backbone of Doubled Haploid Technology in Maize." *Genetics* 190 (2): 781–793.
- Primrose, S.B. 1995. *Principles of Genome Analysis*. Oxford, UK: Blackwell Science.
- Punjabi, M. 2008. "Emerging Changes in the Indian Dairy Industry." Paper presented at Asia-Pacific Smallholder Dairy Strategy Workshop, Chiang Mai, Thailand, February 26–29.
- Punjabi, M. n.d. "India: Increasing Demand Challenges the Dairy Sector." *FAO Corporate Document Repository*. <http://www.fao.org/docrep/011/i0588e/i0588E05.htm>.
- Purdy, C. 2017. "Hampton Creek Is Now Growing Its Own Meat in Labs—and It Says It Will Get to Stores First." *Quartz*, June 27. <https://qz.com/1015757/vegan-mayo-startup-hampton-creek-is-producing-lab-made-meat-and-it-wants-to-sell-in-walmart-wmt-and-whole-foods-wfm/>.
- Putt del Pino, S., C. Cummis, S. Lake, and P. Reig. 2016. "From Doing Better to Doing Enough: Anchoring Corporate Sustainability Targets in Science." Washington, DC: World Resources Institute.
- Qiao, C., L. Liu, S. Hu, J.E. Compton, T.L. Greaver and Q. Li. 2015. "How Inhibiting Nitrification Affects Nitrogen Cycle and Reduces Environmental Impacts of Anthropogenic Nitrogen Input." *Global Change Biology* 21: 1249–1257.
- Qiu, J. 2009. "Nitrogen Fertilizer Warning for China." *Nature* doi:10.1038/news.2009.105.
- Qiu, H., D. Sun, S. Gunatilake, J. She, and T. Mlsna. 2015. "Analysis of Trace Dicyandiamide in Stream Water Using Solid Phase Extraction and Liquid Chromatography UV Spectrometry." *Journal of Environmental Sciences* 35: 38–42.
- Qiu, B., D. Lu, Z. Tang, D. Song, Y. Zheng, Z. Wang, C. Chen, et al. 2017. "Mapping Cropping Intensity Trends in China during 1982–2013." *Applied Geography* 79: 212–222.
- Ragasa, C., I. Lambrecht, and D.S. Kufuolior. 2018. "Limitations of Contract Farming as a Pro-poor Strategy: The Case of Maize Outgrower Schemes in Upper West Ghana." *World Development* 102 (2018): 30–56.

- Rainforest Foundation Norway. 2012. "Norway: Palm Oil Consumption Reduced by Two Thirds." Oslo: Rainforest Foundation Norway. <http://www.regnskog.no/en/rainforest-news/rainforest-foundation-norway/norwaypalm-oil-consumption-reduced-by-two-thirds>.
- Rainforest Foundation UK. 2013. *Seeds of Destruction: Expansion of Industrial Oil Palm in the Congo Basin: Potential Impacts on Forests and People*. London: Rainforest Foundation UK.
- Rajkishore, S.K., and R. Sunitha. 2013. "Soil Carbon Dynamics as Influenced by Moisture Regime and Nitrogen Levels." *Journal of Global Biosciences* 2 (5): 153–156.
- Rajkishore, S.K., P. Doraisamy, K.S. Subramanian, and M. Maheswari. 2013. "Methane Emission Patterns and Their Associated Soil Microflora with SRI and Conventional Systems of Rice Cultivation in Tamil Nadu, India." *Taiwan Water Conservancy* 61 (4): 126–134.
- Ramage, B.S., D. Shell, H.M. Salim, C. Fletcher, N.Z. Mustafa, J.C. Luruthusamay, R.D. Harrison, et al. 2013. "Pseudoreplication in Tropical Forests and the Resulting Effects on Biodiversity Conservation." *Conservation Biology* 27: 364–372.
- Ramankutty, N., A.T. Evan, C. Monfreda, and J.A. Foley. 2008. "Farming the Planet: 1. Geographic Distribution of Global Agricultural Lands in the Year 2000." *Global Biochemical Cycles* 22 (1). doi:10.1029/2007GB002952.
- Ranganathan, J. D. Vennard, R. Waite, B. Lipinksi, T. Searchinger, P. Dumas, A. Forslund, et al. 2016. "Shifting Diets for a Sustainable Food Future." Installment 11 of *Creating a Sustainable Food Future*. Washington, DC: World Resources Institute.
- Rao, B.B., P.S. Chowdary, V.M. Sandeep, V.U. M. Rao, and B. Venkateswarlu. 2014. "Rising Minimum Temperature Trends over India in Recent Decades: Implications for Agricultural Production." *Global and Planetary Change* 117: 1–8.
- Ravallion, M., S. Chen, and P. Sangraula. 2007. "New Evidence on the Urbanization of Global Poverty." World Bank Policy Research Working Paper 4199. Washington, DC: World Bank.
- Ray, D.K., and J.A. Foley. 2013. "Increasing Global Crop Harvest Frequency: Recent Trends and Future Directions." *Environmental Research Letters* 8 (4) (044041).
- Ray, D.K., N. Ramankutty, N.D. Mueller, P.C. West, and J.A. Foley. 2012. "Recent Patterns of Crop Yield Growth and Stagnation." *Nature Communications* 3: 1293.
- Ray, D.K., N. Mueller, P. West, and J. Foley. 2013. "Yield Trends Are Insufficient to Double Global Crop Production by 2050." *PLOS ONE* 8 (6): e66428.
- Reardon, T., and C.P. Timmer. 2012. "The Economics of the Food System Revolution." *Annual Review of Resource Economics* 4 (1): 225–264.
- Reardon, T., C.P. Timmer, C.B. Barrett, and J. Berdegue. 2003. "The Rise of Supermarkets in Africa, Asia, and Latin America." *American Journal of Agricultural Economics* 85 (5): 1140–1146.
- Reardon, T., S. Henson, and J. Berdegue. 2007. "'Proactive Fast-Tracking' Diffusion of Supermarkets in Developing Countries: Implications for Market Institutions and Trade." *Journal of Economic Geography* 7 (4): 399–431.
- Reardon, T., K.Z. Chen, B. Minten, L. Adriano, T.A. Dao, J. Wang, and S.D. Gupta. 2014. "The Quiet Revolution in Asia's Rice Value Chains." *Annals of the New York Academy of Sciences* 1331: 106–118.
- Reay, D., E. Davidson, K. Smith, P. Smith, J. Melillo, F. Dentener, and P. Crutzen. 2012. "Global Agriculture and Nitrous Oxide Emissions." *Nature Climate Change* 2: 410–416.
- Recio, M.E. 2015. *Honduras Resource Tenure and Sustainable Landscapes Assessment*. Washington, DC: USAID Tenure and Global Climate Change Program.
- Redo, D., and A. Millington. 2011. "A Hybrid Approach to Mapping Land-Use Modification and Land-Cover Transition from MODIS Time-Series Data: A Case Study from the Bolivian Seasonal Tropics." *Remote Sensing of Environment* 115 (2): 353–372.
- Regmi, A., and B. Meade. 2013. "Demand Side Drivers of Global Food Security." *Global Food Security* 2 (3): 166–171.
- Regmi, A., M.S. Deepak, J.L. Seale Jr., and J. Bernstein. 2001. "Cross-Country Analysis of Food Consumption Patterns." In *Changing Structure of Global Food Consumption and Trade*, edited by A. Regmi. Agriculture and Trade Report WRS-01-1. Washington, DC: USDA (U.S. Department of Agriculture), Market and Trade Economics Division, Economic Research Service.
- Reij, C., and D. Garrity. 2016. "Scaling Up Farmer-Managed Natural Regeneration in Africa to Restore Degraded Landscapes." *Biotropica* 48 (6): 834–843.
- Reij, C., and R. Winterbottom. 2015. *Scaling Up Regreening: Six Steps to Success—A Practical Approach to Forest and Landscape Restoration*. Washington, DC: World Resources Institute.
- Reij, C., G. Tappan, and A. Belemvire. 2005. "Changing Land Management Practices and Vegetation on the Central Plateau of Burkina Faso (1968–2002)." *Journal of Arid Environments* 63 (3): 642–659.
- Reij, C., G. Tappan, and M. Smale. 2009. *Agroenvironmental Transformation in the Sahel: Another Kind of Green Revolution*. Washington, DC: International Food Policy Research Institute.
- Reilly, J.M., and K.O. Fuglie. 1998. "Future Yield Growth in Field Crops: What Evidence Exists?" *Soil Tillage Research* 47: 275–290.
- Reisch, L.A., W. Gwozdz, G. Barba, S. De Henauw, N. Lascorz, and I. Pigeot. 2013. "Experimental Evidence on the Impact of Food Advertising on Children's Knowledge about and Preferences for Healthful Food." *Journal of Obesity*. <http://dx.doi.org/10.1155/2013/408582>.
- Reisner, M. 1993. *Cadillac Desert: The American West and Its Disappearing Water*. Rev. ed. London: Penguin.
- Reitsma, K.D., D.E. Clay, S.A. Clay, B.H. Dunn, and C. Reese. 2016. "Does the US Cropland Data Layer Provide an Accurate Benchmark for Land-Use Change Estimates?" *Agronomy Journal* 108 (1): 266–272.
- Rejesus, R.M., F.G. Palis, P. Rodriguez, R.M. Lampayan, and B.A.M. Bouman. 2011. "Impact of the Alternate Wetting and Drying (AWD) Water-Saving Irrigation Technique: Evidence from Rice Producers in the Philippines." *Food Policy* 36 (2): 280–288.
- Rejesus, R.B., M. Adrienne, M. Martin, and P. Gypmantasiri. 2013. *Meta-impact Assessment of the Irrigated Rice Research Consortium*. Los Baños, the Philippines: IRRI (International Rice Research Institute).
- Rejinders, L., and S. Soret. 2003. "Quantification of the Environmental Impact of Different Dietary Protein Choices." *American Journal of Clinical Nutrition* 78 (suppl): 664S–668S.
- REN21. 2017. *Renewables 2017 Global Status Report*. Paris: REN21 Secretariat.

- Renaud, F.G., T.T.H. Le, C. Lindener, V.T. Guong, and Z. Sebesvari. 2015. "Resilience and Shifts in Agro-ecosystems Facing Increasing Sea-Level Rise and Salinity Intrusion in Ben Tre Province, Mekong Delta." *Climatic Change* 133 (1): 69–84.
- Republic of Rwanda. 2015. "Intended Nationally Determined Contribution (INDC) for the Republic of Rwanda." [http://www4.unfccc.int/ndcregistry/PublishedDocuments/Rwanda%20First/INDC\\_Rwanda\\_Nov.2015.pdf](http://www4.unfccc.int/ndcregistry/PublishedDocuments/Rwanda%20First/INDC_Rwanda_Nov.2015.pdf).
- Reynolds, C.K., D.J. Humphries, P. Kirton, M. Kindermann, S. Duval, and W. Steinberg. 2014. "Effects of 3-Nitrooxypropanol on Methane Emission, Digestion, and Energy and Nitrogen Balance of Lactating Dairy Cows." *Journal of Dairy Science* 97 (6): 3777–3789.
- Richards, D.R., and D.A. Freiss. 2016. "Rates and Drivers of Mangrove Deforestation in Southeast Asia, 2000–2012." *Proceedings of the National Academy of Sciences of the United States of America* 113 (2): 344–349.
- Richardson, R.B. 2010. "Ecosystem Services and Food Security: Economic Perspectives on Environmental Sustainability." *Sustainability* 2 (2): 3520–3548.
- Richter, D., and R.A. Houghton. 2011. "Gross CO<sub>2</sub> Fluxes from Land-Use Change: Implications for Reducing Global Emissions and Increasing Sinks." *Carbon Management* 2 (1): 41–47.
- Ricker-Gilbert, J., and T. Jayne. 2012. "Do Fertilizer Subsidies Boost Staple Crop Production and
- Reduce Poverty across the Distribution of Smallholders in Africa? Quantile Regression Results from Malawi." Paper prepared for presentation at the International Association of Agricultural Economists (IAAE) Triennial Conference, Foz do Iguaçu, Brazil, August 18–24.
- Ricker-Gilbert, J., T. Jayne, and E. Chirwa. 2011. "Subsidies and Crowding Out: A Double-Hurdle Model of Fertilizer Demand in Malawi." *American Journal of Agricultural Economics* 93: 26–42.
- Riguero-Rodriguez, A. 2005. *Silvopastoralism and Sustainable Land Management: Proceedings of an International Congress on Silvopastoralism and Sustainable Management Held in Lugo, Spain, in April 2004*. Wallingford, UK: CABI (Center for Agriculture and Bioscience International).
- Ripple, W.J., P. Smith, H. Haberl, S.A. Montzka, C. McAlpine, and D.H. Boucher. 2014. "Ruminants, Climate Change and Climate Policy." *Nature Climate Change* 4: 2–5.
- Roberts, M., and W. Schlenker. 2013. "Identifying Supply and Demand Elasticities of Agricultural Commodities: Implications for the US Ethanol Mandate." *American Economic Review* 103 (6): 2265–2295.
- Roberts, T., and R. Welkmans. 2016. "Roadmap to Where? Is the '\$100 Billion by 2020' Pledge from Copenhagen Still Realistic?" Washington, DC: Brookings Institution.
- Robertson, G.P. 1997. "Nitrogen Use Efficiency in Row-Crop Agriculture: Crop Nitrogen Use and Soil Nitrogen Loss." In *Ecology in Agriculture*, edited by L. Jackson. New York: Academic.
- Robertson, G.P., and P. Vitousek. 2009. "Nitrogen in Agriculture: Balancing the Cost of an Essential Resource." *Annual Review of Environment and Resources* 34: 97–125.
- Robinson, R.S. 2016. "Population Policy Adoption in Sub-Saharan Africa: An Interplay of Global and Local Forces." *Population Horizons* 13 (1): 9–18.
- Robinson, E.J. Thomas, P. Aveyard, and S. Higgs. 2014. "What Everyone Else Is Eating: A Systematic Review and Meta-analysis of the Effect of Informational Eating Norms on Eating Behavior." *Journal of the Academy of Nutrition and Dietetics* 114 (3): 414–429.
- Rocheffort, L., and R. Andersen. 2017. "Global Peatland Restoration after 30 Years: Where Are We in This Mossy World?" *Restoration Ecology* 25 (2): 269–270.
- Rockström, J., J. Barron, and P. Fox. 2003. "Water Productivity in Rainfed Agriculture: Challenges and Opportunities for Smallholder Farmers in Drought Prone Tropical Agro-ecosystems." In *Water Productivity in Agriculture: Limits and Opportunities for Improvements*, edited by J.W. Kijne, R. Barker, and D. Molden. Wallingford, UK: CABI (Center for Agriculture and Bioscience International).
- Rockström, J., O. Gaffney, J. Rogelj, M. Meinshausen, N. Nakicenovic, and H.J. Schnellhuber. 2017. "A Roadmap for Rapid Decarbonization." *Science* 355 (6331): 1269–1271.
- Rogelj, J., D. Shindell, K. Jiang, S. Fifita, P. Forster, V. Ginzburg, C. Handa, et al. 2018. "Mitigation Pathways Compatible with 1.5°C in the Context of Sustainable Development." In *Global Warming of 1.5°C: An IPCC Special Report on the Impacts of Global Warming of 1.5°C above Pre-industrial Levels and Related Global Greenhouse Gas Emission Pathways, in the Context of Strengthening the Global Response to the Threat of Climate Change, Sustainable Development, and Efforts to Eradicate Poverty*, edited by V. Masson-Delmotte, P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, et al. Intergovernmental Panel on Climate Change. <https://www.ipcc.ch/sr15/>.
- Rohrmann, S., K. Overvad, H.B. Bueno-de-Mesquita, M.U. Jakobsen, R. Egeberg, A. Tjønneland, L. Nailler, et al. 2013. "Meat Consumption and Mortality: Results from the European Prospective Investigation into Cancer and Nutrition." *Cancer Causes and Control* 24: 685–693.
- Rojas-Downing, M., A.P. Nejadhashemi, T. Harrigan, and S.A. Woznicki. 2017. "Climate Change and Livestock: Impacts, Adaptation, and Mitigation." *Climate Risk Management* 16: 145–163.
- Rolex Awards for Enterprise. 2005. *Ancient Technology Preserves Food*. [http://www.rolexawards.com/profiles/laureates/mohammed\\_bah\\_abba/project](http://www.rolexawards.com/profiles/laureates/mohammed_bah_abba/project).
- Romaguera, D., T. Norat, T. Mouw, A.M. May, C. Bamia, and N. Slimani. 2009. "Adherence to the Mediterranean Diet Is Associated with Lower Abdominal Adiposity in European Men and Women." *Journal of Nutrition* 139 (9): 1728–1737.
- Romero-Perez, A., E.K. Okine, S.M. McGinn, L.L. Guan, M. Oba, S.M. Duval, M. Kindermann, and K.A. Beauchemin. 2015. "Sustained Reduction in Methane Production from Long-Term Addition of 3-Nitrooxypropanol to a Beef Cattle Diet." *Journal of Animal Science* 93 (4): 1780–1791.
- Ronald, P. 2011. "Genetically Engineered Crops—What, How and Why?" *Scientific American*. <http://blogs.scientificamerican.com/guest-blog/2011/08/11/genetically-engineered-crops/>.
- Rosenbarger, A., B. Gingold, R. Prasodjo, A. Alisjahbana, A. Putraditama, and D. Tresya. 2013. *How to Change Legal Land Use Classifications to Support More Sustainable Palm Oil Production in Indonesia*. Washington, DC: World Resources Institute.
- Roxburgh, C., N. Dorr, A. Leke, A. Tazi-Riffi, A. van Wamelen, S. Lund, M. Chironga, et al. 2010. *Lions on the Move: The Progress and Potential of African Economies*. New York: McKinsey Global Institute.
- Roy, S.K. n.d. "On-Farm Storage Technology Can Save Energy and Raise Farm Income." Presentation. <http://ucce.ucdavis.edu/files/datastore/234-2143.pdf>.

- Rozelle, S., and J.E.M. Swinnen. 2004. "Success and Failure of Reform: Insights from the Transition of Agriculture." *Journal of Economic Literature* 42 (2): 404–56.
- Rozin, P., J. Hormes, M. Faith, and B. Wansink. 2012. "Is Meat Male? A Quantitative Multimethod Framework to Establish Metaphoric Relationships." *Journal of Consumer Research* 39 (3): 629–643.
- Ruby, M.B., and S.J. Heine. 2011. "Meat, Morals, and Masculinity." *Appetite* 56 (2): 447–450.
- Rudel, T.K. 2009. "Agricultural Intensification and Changes in Cultivated Areas, 1970–2005." *Proceedings of the National Academy of Sciences of the United States of America* 106: 20675–20680.
- Rueda, B.L., R.W. Blake, C.F. Nicholson, D.G. Fox, L.O. Tedeschi, A.N. Pell, E.C.M. Fernandes, et al. 2003. "Production and Economic Potential of Cattle in Pasture-Based Systems of Western Amazon Region of Brazil." *Journal of Animal Science* 81: 2923–2937.
- Ruiz-Lopez, N., R.P. Haslam, J.A. Napier, and O. Sayanova. 2014. "Successful High-Level Accumulation of Fish Oil Omega-3 Long-Chain Polyunsaturated Fatty Acids in a Transgenic Oilseed Crop." *Plant Journal* 77: 198–208.
- Rulia, M.C., A. Savoria, and P. D'Odoricob. 2013. "Global Land and Water Grabbing." *Proceedings of the National Academy of Sciences of the United States of America* 110: 892–897.
- Rushing, J., and C. Lee. 2013. *New Oils for the New World*. Chicago: A.T. Kearney.
- Rwandan Ministry of Education. 2016. *2016 Education Statistics Yearbook*. Kigali: Ministry of Education.
- Ryals, R., and W. Silver. 2013. "Effects of Organic Matter Amendments on Net Primary Productivity and Greenhouse Gas Emissions in Annual Grasslands." *Ecological Applications* 23: 46–59.
- Sá, J.C., R. Lal, C.C. Cerri, K. Lorenz, M. Hungria, and P.C. de Faccio Carvalho. 2016. "Low-Carbon Agriculture in South America to Mitigate Global Climate Change and Advance Food Security." *Environment International* 98 (2017) 102–112.
- Saggar, S., D.L. Giltrap, R. Davison, R. Gibson, C.A.M. de Klein, M. Rollo, P. Ettema, and G. Rys. 2015. "Estimating Direct N<sub>2</sub>O Emissions from Sheep, Beef and Deer Grazed Pastures in New Zealand Hill Country: Accounting for the Effect of Land Slope on the N<sub>2</sub>O Emission Factors from Urine and Dung." *Agriculture, Ecosystems & Environment* 205: 70–78.
- SAIN (UK-China Sustainable Agriculture Innovation Network). 2011. "Improved Nutrient Management in Agriculture: A Neglected Opportunity for China's Low Carbon Growth Plan." Policy Brief no. 1. West Common, UK: Rothamsted Research. [http://www.sainonline.org/SAIN-website\(English\)/download/PolicyBrief%20No1final.pdf](http://www.sainonline.org/SAIN-website(English)/download/PolicyBrief%20No1final.pdf).
- Saini, S.S. 2013. "Pumpset Energy Efficiency: Agriculture Demand Side Management Program." *International Journal of Agriculture and Food Science Technology* 4 (5): 493–500.
- Sala, O.E., F.S. Chapin III, J.J. Armest, E. Berlow, J. Bloomfield, R. Dirzo, E. Huber-Sanwald, et al. 2000. "Global Biodiversity Scenarios for the Year 2100." *Science* 287 (5459): 1770–1774.
- Salk Institute. n.d. "Harnessing Plants, Saving the Future." Salk Institute for Biological Sciences. <https://www.salk.edu/wp-content/uploads/2017/11/Harnessing-Plants.pdf>. (Accessed April 30, 2019.)
- Sánchez-Azofeifa, G.A., A. Pfaff, J.A. Robalino, and J.P. Boomhower. 2007. "Costa Rica's Payment for Environmental Services Program: Intention, Implementation, and Impact." *Conservation Biology* 21 (5): 1165–1173.
- Sander, B.O., M. Samson, and R.J. Buresh. 2014. "Methane and Nitrous Oxide Emissions from Flooded Rice Fields as Affected by Water and Straw Management between Rice Crops." *Geoderma* 235: 355–362.
- Sanders, J., and B. Ouendeba. 2012. "Intensive Production of Millet and Sorghum for Evolving Markets in the Sahel." Lincoln: INTSORMIL CRSP, University of Nebraska–Lincoln.
- Sanderson, B.M., B.C. O'Neill, and C. Tebaldi. 2016. "What Would It Take to Achieve the Paris Temperature Targets?" *Geophysical Research Letters* 43 (13): 7133–7142.
- Sands, R., C. Jones, and E. Marshall. 2014. *Global Drivers of Agricultural Demand and Supply*. Economic Research Report 174. Washington, DC: USDA (U.S. Department of Agriculture).
- Sanginga, N., and P.L. Woomer, eds. 2009. *Integrated Soil Fertility Management in Africa: Principles, Practices and Development Process*. Nairobi: Tropical Soil Biology and Fertility Institute of the International Centre for Tropical Agriculture.
- Sant'Anna, S., C. Jantalia, J. Sá, L. Vilela, R. Marchão, B. Alves, S. Urquiaga, and R. Boddey. 2016. "Changes in Soil Organic Carbon during 22 Years of Pastures, Cropping or Integrated Crop/Livestock Systems in the Brazilian Cerrado." *Nutrient Cycling in Agroecosystems*, December. doi:10.1007/s10705-016-9812-z.
- Sathaye, J., W. Makundi, L. Dale, P. Chan, and K. Andrasko. 2005. "GHG Mitigation Potential, Costs and Benefits in Global Forests: A Dynamic Partial Equilibrium Approach." *Energy Journal* 27: 127–162.
- Sathaye, J., K. Andrasko, and P. Chan. 2011. "Emissions Scenarios, Costs, and Implementation Considerations of REDD Programs." *Environment and Development Economics*. doi:10.1017/S1355770X11000052.
- Savoie, L., R. Charbonneau, and G. Parent. 1989. "In Vitro Amino Acid Digestibility of Food Proteins as Measured by the Digestion Cell Technique." *Plant Foods for Human Nutrition* 39 (1): 93–107. *Save Our Seas Foundation*. 2015. "How Many Sharks Are Caught Each Year?" n.d. [http://saveourseas.com/articles/how\\_many\\_sharks\\_are\\_caught\\_each\\_year](http://saveourseas.com/articles/how_many_sharks_are_caught_each_year).
- Sawadogo, H. 2006. "Fertilisation organique et phosphatée en système de culture zaï en milieu soudano-sahélien du Burkina Faso." PhD diss. Faculté Universitaire des Sciences Agronomiques de Gembloux, Belgium.
- Sawadogo, H. 2013. "Effects of Microdosing and Soil and Water Conservation Techniques on Securing Crop Yields in Northwestern Burkina Faso." Unpublished manuscript.
- Scanlon, B.R., I. Jolly, M. Sophocleous, and L. Zhang. 2007. "Global Impacts of Conversions from Natural to Agricultural Ecosystems on Water Resources: Quantity versus Quality." *Water Resources Research* 43 (3).
- Scarborough, P., P.N. Appleby, A. Mizdrak, A.D.M. Briggs, R.C. Travis, K.E. Bradbury, and T.J. Key. 2014. "Dietary Greenhouse Gas Emissions of Meat-eaters, Fish-Eaters, Vegetarians and Vegans in the UK." *Climatic Change* 125: 179–192.
- Scarmeas, N., Y. Stern, M.X. Tang, R. Mayeux, and J.A. Luchsinger. 2006. "Mediterranean Diet and Risk for Alzheimer's Disease." *Annals of Neurology* 59 (6): 912–921.
- Schlenker, W., and D.B. Lobell. 2010. "Robust Negative Impacts of Climate Change on African Agriculture." *Environmental Research Letters* 5 (014010).

- Schlenker, W., and M.J. Roberts. 2009. "Nonlinear Temperature Effects Indicate Severe Damages to U.S. Crop Yields under Climate Change." *Proceedings of the National Academy of Sciences of the United States of America* 106 (37): 15594–15598.
- Schmer, M.R., R.B. Mitchell, K.P. Vogel, W.H. Schacht, and D.B. Marx. 2010. "Spatial and Temporal Effects on Switchgrass Stands and Yield in the Great Plains." *BioEnergy Research* 3 (2): 159–171.
- Schmidinger, K., and E. Stehfest. 2012. "Including CO<sub>2</sub> Implications of Land Occupation in LCAs—Method and Examples for Livestock Products." *International Journal of Life Cycle Assessment*. doi:10.1007/s11367-012-0434-7.
- Schmidt, M.W.I., M.S. Torn, S. Abiven, T. Dittmar, G. Guggenberger, I.A. Janssens, et al. 2011. "Persistence of Soil Organic Matter as an Ecosystem Property." *Nature* 478: 49–56.
- Schmidt, L., T. Sobotka, J.G. Bentzen, and A.N. Andersen. 2012. "Demographic and Medical Consequences of the Postponement of Parenthood." *Human Reproduction Update* 18 (1): 29–43.
- Schmitz, C., H. van Meijl, P. Kyle, G.C. Nelson, S. Fujimori, A. Gurgel, P. Havlík, et al. 2014. "Land-Use Change Trajectories Up to 2050: Insights from a Global Agro-economic Model Comparison." *Agricultural Economics* 45: 69–84.
- Schneider, U.A., P. Havlík, E. Schmid, H. Valin, A. Mosnier, M. Obersteiner, H. Bottcher, et al. 2011. "Impacts of Population Growth, Economic Development, and Technical Change on Global Food Production and Consumption." *Agricultural Systems* 104290: 204–215.
- Schoneveld, G., L. German, and E. Nutakor. 2010. *Towards Sustainable Biofuel Development: Assessing the Local Impacts of Large-Scale Foreign Land Acquisitions in Ghana*. Ghana and Bogor, Indonesia: Forestry Research Institute of Ghana and CIFOR.
- Schönweger, O., A. Heinemann, M. Epprecht, J. Lu, and P. Thalongsengchanh. 2012. *Concessions and Leases in the Lao PDR: Taking Stock of Land Investments*. Lao PDR: Geographica Bernensia.
- Schroeder, J.I., E. Delhaize, W.B. Frommer, M.L. Guerinot, M.J. Harrison, L. Herrera-Estrella, et al. 2013. "Using Membrane Transporters to Improve Crops for Sustainable Food Production." *Nature* 497: 60–66.
- Schulze, E.D., S. Luysaert, P. Ciais, A. Freibauer, I.A. Janssens, J.F. Soussana, P. Smith, et al. 2009. "Importance of Methane and Nitrous Oxide for Europe's Terrestrial Greenhouse-Gas Balance." *Nature Geoscience* 2: 842–850.
- Schütte, G., M. Eckerstorfer, V. Rastelli, W. Reichenbecher, S. Restrepo-Vassalli, M. Ruohonen-Lehto, A.W. Saucy, et al. 2017. "Herbicide Resistance and Biodiversity: Agronomic and Environmental Aspects of Genetically Modified Herbicide-Resistant Plants." *Environmental Sciences Europe* 29 (1): 5.
- Seafish. 2011. *Fishmeal and Fish Oil Figures*. Grimsby, UK: Sea Fish Industry Authority.
- SeafoodSource. 2013. "Turning Fish Discards into Profit." SeafoodSource.com. <http://www.seafoodsource.com/newsarticledetail.aspx?id=20189>.
- Searchinger, T. 2009. "Government Policies and Drivers of World Biofuels, Sustainability Criteria, Certification Proposals and Their Limitations." In *Biofuels: Environmental Consequences and Interactions with Changing Land Use*, edited by R.W. Howarth and S. Bringezu. Ithaca, NY: Cornell University Press.
- Searchinger, T. 2010. "Biofuels and the Need for Additional Carbon." *Environmental Research Letters* 5 (024007).
- Searchinger, T. 2011. "Potential Clarifications to the UK Climate Committee's Bioenergy Review." Princeton, NJ: Princeton University STEP Program.
- Searchinger, T. 2012. *The Food, Forest and Carbon Challenge*. Washington, DC: National Wildlife Federation.
- Searchinger, T., and L. Amaral. 2009. "Assuring Environmental Benefits from Sugarcane Ethanol in Brazil—One Approach" (unpublished). Washington, DC: German Marshall Fund.
- Searchinger, T., and R. Heimlich. 2015. "Avoiding Bioenergy Competition for Food Crops and Land." Working paper, installment 9 of *Creating a Sustainable Food Future*. Washington, DC: World Resources Institute.
- Searchinger, T., R. Heimlich, R. Houghton, F. Dong, A. Elobeid, J. Fabiosa, S. Tokgoz, et al. 2008. "Use of U.S. Croplands for Biofuels Increases Greenhouse Gases through Emissions from Land Use Change." *Science* 319 (5867): 1238–1240.
- Searchinger, T., C. Hanson, J. Ranganathan, B. Lipinski, R. Waite, R. Winterbottom, A. Dinshaw, and R. Heimlich. 2013. *Creating a Sustainable Food Future: A Menu of Solutions to Sustainably Feed More than 9 Billion People by 2050*. *World Resources Report 2013–14: Interim Findings*. Washington, DC: World Resources Institute.
- Searchinger, T., C. Hanson, R. Waite, S. Harper, G. Leeson, and B. Lipinski. 2013. "Achieving Replacement Level Fertility." Working paper, installment 3 of *Creating a Sustainable Food Future*. Washington, DC: World Resources Institute.
- Searchinger, T., R. Edwards, D. Mulligan, R. Heimlich, and R. Plevin. 2015. "Do Biofuel Policies Seek to Cut Emissions by Cutting Food?" *Science* 347: 1420–1422.
- Searchinger, T., L. Estes, P.K. Thornton, T. Beringer, A. Notenbaert, D. Rubenstein, R. Heimlich, et al. 2015. "High Carbon and Biodiversity Costs from Converting Africa's Wet Savannahs to Cropland." *Nature Climate Change* 5: 481–486.
- Searchinger, T., T. Beringer, and A. Strong. 2017. "Does the World Have Low-Carbon Bioenergy Potential from the Dedicated Use of Land?" *Energy Policy* 110: 434–446.
- Searchinger, T. D., S. Wiersenius, T. Beringer, and P. Dumas. 2018a. "Assessing the Efficiency of Changes in Land Use for Mitigating Climate Change." *Nature* 564: 249–253.
- Searchinger, T., C. Malins, P. Dumas, D. Baldock, J. Glauber, T. Jayne, J. Huang, et al. 2018b. *Agricultural Support and Climate Smart Agriculture*. Washington, DC: World Bank.
- Searle, S. Y., and C. J. Malins. 2014. "Will Energy Crop Yields Meet Expectations?" *Biomass and Bioenergy* 65: 3–12.
- Sedano, F., J.A. Silva, R. Machoco, C.H. Meque, A. Siteo, N. Ribeiro, K. Anderson, et al. 2016. "The Impact of Charcoal Production on Forest Degradation: A Case Study in Tete, Mozambique." *Environmental Research Letters* 11 (9).
- Seeberg-Elverfeldt, C., and M. Tapio-Biström. 2010. *Global Survey of Agricultural Mitigation Projects*. Rome: FAO (Food and Agriculture Organization of the United Nations).
- Selman, M., and S. Greenhalgh. 2009. *Eutrophication: Sources and Drivers of Nutrient Pollution*. WRI Policy Note. Washington, DC: World Resources Institute.



- Semenov, M., R. Mitchell, A.P. Whitmore, M.J. Hawkesford, M. Parry, and P.R. Shewry. 2012. "Shortcomings in Wheat Yield Predictions." *Nature Climate Change* 2 (6): 380–382.
- Senapati, N., A. Chabbi, F. Gastal, P. Smith, N. Mascher, B. Loubet, P. Cellier, and C. Naisse. 2014. "Net Carbon Storage Measured in a Mowed and Grazed Temperate Sown Grassland Shows Potential for Carbon Sequestration under Grazed System." *Carbon Management* 5 (2): 131–144. doi:10.1080/17583004.2014.912863.
- Séralini, G., R. Mesnage, E. Clair, S. Gress, J. Spiroux de Vendomois, and D. Cellier. 2011. "Genetically Modified Crops Safety Assessments: Present Limits and Possible Improvements." *Environmental Sciences Europe* 23: 10.
- Séralini, G., R. Mesnage, N. Defarge, and J. Spiroux de Vendomois. 2014. "Conflicts of Interests, Confidentiality and Censorship in Health Risk Assessment: The Example of an Herbicide and a GMO." *Environmental Sciences Europe* 26: 13.
- Ser Huay Lee, J., J. Ghazoul, K. Obidzinski, and L. Pin Koh. 2014. "Oil Palm Smallholder Yields and Incomes Constrained by Harvesting Practices and Type of Smallholder Management in Indonesia." *Agronomy for Sustainable Development* 34: 501–513.
- Service, R. 2018. "Ammonia—a Renewable Fuel Made from Sun, Air, and Water—Could Power the Globe without Carbon." *Science*, July 12. <https://www.sciencemag.org/news/2018/07/ammonia-renewable-fuel-made-sun-air-and-water-could-power-globe-without-carbon>.
- Seto, K., B. Güneralp, and L. Hutyrá. 2012. "Global Forecasts of Urban Expansion to 2030 and Direct Impacts on Biodiversity and Carbon Pools." *Proceedings of the National Academy of Sciences of the United States of America* 109 (40): 16083–16088.
- Setyanto, P., A.K. Makarim, A.M. Fagi, R. Wassmann, and L.V. Buendia. 2000. "Crop Management Affecting Methane Emissions from Irrigated and Rainfed Rice in Central Java (Indonesia)." In *Methane Emissions from Major Rice Ecosystems in Asia*, edited by R. Wasserman, R.S. Lantin, and H-U. Neue. Dordrecht, the Netherlands: Kluwer Academic.
- Sexton, S., and D. Zilberman. 2011. "How Agricultural Biotechnology Boosts Food Supply and Accommodates Biofuels." NBER Working Paper 16699. Cambridge, MA: NBER (National Bureau of Economic Research).
- Seymour, F., and J. Busch. 2016. *Why Forests? Why Now?* Washington, DC: Center for Global Development.
- Shackelford, G.E., P.R. Steward, R.N. German, S.M. Sait, and T.G. Benton. "Conservation Planning in Agricultural Landscapes: Hotspots of Conflict between Agriculture and Nature." *Diversity and Distributions* 21 (3): 357–367.
- Shah, F., J. Huang, K. Cui, L. Nie, T. Shah, C. Chen, and K. Wang. 2011. "Impact of High-Temperature Stress on Rice Plant and Its Traits Related to Tolerance." *Journal of Agricultural Science* 149 (5): 545–556.
- Shapiro, D., and T. Gebreselassie. 2008. "Fertility Transition in Sub-Saharan Africa: Falling and Stalling." *African Population Studies* 23 (1): 3–23.
- Shark Savers. 2015. "The Impact of the Shark Fin Trade." <http://www.sharksavers.org/en/education/sharks-are-in-trouble/the-impact-of-the-shark-fin-trade/>.
- Sharp, B. 2010. *How Brands Grow: What Marketers Don't Know*. Oxford: Oxford University Press.
- Shcherbak, I., N. Millar, and G. P. Robertson. 2014. "Global Meta-analysis of the Nonlinear Response of Soil Nitrous Oxide (N<sub>2</sub>O) Emissions to Fertilizer Nitrogen." *Proceedings of the National Academy of Sciences of the United States of America* 111: 9199–9204.
- Shepherd, T., J. Karszes, and C. Gooch. 2008. Dairy Manure Storage Calculator. Cornell University Extension Service.
- Sherman, M., L. Berrang-Ford, S. Lwasa, J. Ford, D.B. Namanya, A. Llanos-Cuentas, M. Maillet, et al. 2016. "Drawing the Line between Adaptation and Development: A Systematic Literature Review of Planned Adaptation in Developing Countries." *WIREs Climate Change* 7: 707–726.
- Shiao, T., A. Maddocks, C. Carson, and E. Loizeaux. 2015. "3 Maps Explain India's Growing Water Risks." Washington, DC: World Resources Institute. <http://www.wri.org/blog/2015/02/3-maps-explain-india%E2%80%99s-growing-water-risks>.
- Shields, S., and G. Orme-Evans. 2015. "The Impacts of Climate Change Mitigation Strategies on Animal Welfare." *Animals: An Open Access Journal from MDPI* 5 (2): 361–394. <http://doi.org/10.3390/ani5020361>.
- Shiklomanov, I.A. 2000. "Appraisal and Assessment of World Water Resources." *Water International* 25: 11–32.
- Shimelis, H., and M. Laing. 2012. "Timelines in Conventional Crop Improvement: Pre-breeding and Breeding Procedures." *Australian Journal of Crop Science* 6: 1542–1549.
- Shitumbanuma, V. 2012. "Analyses of Crop Trials under *Faidherbia albida*." Lusaka: Conservation Farming Unit, University of Zambia.
- Sibayan, E.B., J.L. de Dios, and R.M. Lampayan. 2010. "Outscaling AWD in a Public-Managed Reservoir-Type Irrigation System: A Case Study in the Philippines." *Research to Impact: Case Studies for Natural Resource Management for Irrigated Rice in Asia*: 135.
- Siddique, I., V.L. Engel, J.A. Parrotta, D. Lamb, G.B. Nardoto, J.P.H.B. Ometto, L.A. Martinelli, and S. Schmidt. 2008. "Dominance of Legume Trees Alters Nutrient Relations in Mixed Species Forest Restoration Plantings within Seven Years." *Biogeochemistry* 88 (1): 89–101.
- Siebert, S., and P. Doll. 2010. "Quantifying Blue and Green Virtual Water Contents in Global Crop Production as Well as Potential Losses without Irrigation." *Journal of Hydrology* 384: 198–217.
- Siebert, S., F.T. Portmann, and P. Doll. 2010. "Global Patterns of Cropland Use Intensity." *Remote Sensing* 2 (7): 1625–1643.
- Siegel, N. 2014. "Startup's New Sprays Promise Longer-Lasting Fruit, Fewer Pesticides." *National Public Radio*, October 17. <http://www.npr.org/sections/thesalt/2014/10/17/356723087/startups-new-sprays-promise-longer-lasting-fruit-fewer-pesticides>.
- Sims, R. H. 2011. *"Energy-Smart" Food for People and Climate*. Rome: FAO (Food and Agriculture Organization of the United Nations).
- Singh, S., and J.E. Darroch. 2012. *Adding It Up: Costs and Benefits of Contraceptive Services—Estimates for 2012*. New York: Guttmacher Institute and United Nations Population Fund.
- Sinha, R., A.J. Cross, B.I. Graubard, M.F. Leitzmann, and A. Schatzkin. 2009. "Meat Intake and Mortality: A Prospective Study of over Half a Million People." *Archives of Internal Medicine* 169: 562–571.
- Siopongco, J.D.L.C., R. Wassmann, and B.O. Sander. 2013. "Alternate Wetting and Drying in Philippine Rice Production: Feasibility Study for a Clean Development Mechanism." *IRRI Technical Bulletin* 17: 14.

- Sippel, L., T. Kiziak, F. Woellert, and R. Klingholz. 2011. *Africa's Demographic Challenges: How a Young Population Can Make Development Possible*. Berlin: DSW (Deutsche Stiftung Weltbevölkerung).
- Sitch, S., P. Friedlingstein, N. Gruber, S.D. Jones, G. Murray-Tortarolo, A. Ahlström, S.C. Doney, et al. 2015. "Recent Trends and Drivers of Regional Sources and Sinks of Carbon Dioxide." *Biogeosciences* 12: 653–679.
- Six, J., S.M. Ogle, F.J. Breidt, R.T. Conant, A.R. Mosier, and K. Paustian. 2004. "The Potential to Mitigate Global Warming with No-Tillage Management Is Only Realized when Practiced in the Long Term." *Global Change Biology* 10: 155–160.
- Skinner, A.C., S.N. Ravanbakht, J.A. Skelton, E.M. Perrin, and S.C. Armstrong. 2018. "Prevalence of Obesity and Severe Obesity in US Children, 1999–2016." *Pediatrics* 141 (3): 1–9.
- Smale, M., P. Zambrano, G. Gruere, J. Falck-Zepeda, I. Matuschke, D. Horna, L. Nagarajan, et al. 2009. *Measuring the Economic Impacts of Transgenic Crops in Developing Agriculture during the First Decade: Approaches, Findings and Future Directions*. Washington, DC: IFPRI (International Food Policy Research Institute).
- Smil, V. 1999. "Crop Residues: Agriculture's Largest Harvest." *BioScience* 49 (4): 299–308.
- Smith, D. 2008. "Food Suppliers Poised to Cash In on Delia Effect." *Guardian*, February 10. <http://www.theguardian.com/books/2008/feb/10/news.supermarkets>.
- Smith, L., and Schallenberg, M. 2013. "Occurrence of the Agricultural Nitrification Inhibitor, Dicyandiamide, in Surface Waters and Its Effects on Nitrogen Dynamics in an Experimental Aquatic System." *Agriculture, Ecosystems and Environment* 164: 23–31.
- Smith, K. 2010. "What's Cooking? A Brief Update." *Energy for Sustainable Development* 14: 251–252.
- Smith, P. 2014. "Do Grasslands Act as a Perpetual Sink for Carbon?" *Global Change Biology* 20: 2708–2711.
- Smith, P., and P. Falloon. 2005. "Carbon Sequestration in European Croplands." *Society for Experimental Biology Series* 2005: 47–55.
- Smith, P., D. Martino, Z. Cai, D. Gwary, H. Janzen, P. Kumar, B. McCarl, et al. 2007. "Agriculture." In *Climate Change 2007: Mitigation*, edited by B. Metz, O.R. Davidson, P.R. Bosch, R. Dave, and L.A. Meyer. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge: Cambridge University Press.
- Smith, P., D. Martino, Z. Cai, D. Gwary, H. Janzen, P. Kumar, B. McCarl, et al. 2008. "Greenhouse Gas Mitigation in Agriculture." *Philosophical Transactions of the Royal Society B: Biological Sciences* 363 (1492): 789–813.
- Smith, V.H., B.S.M. Sturm, F.J. deNoyelles, and S.A. Billings. 2010. "The Ecology of Algal Biodiesel Production." *Trends in Ecology and Evolution* 25 (5): 301–309.
- Smith, K.A., A.R. Mosier, P.J. Crutzen, and W. Winiwarter. 2012. "The Role of N<sub>2</sub>O Derived from Crop-Based Biofuels, and from Agriculture in General, in Earth's Climate." *Philosophical Transactions of the Royal Society B Biological Sciences* 367 (1593): 1169–1174.
- Smith, P., M. Bustamante, H. Ahammad, H. Clark, H. Dong, E.A. Elsiddig, H. Haberl, et al. 2014. "Agriculture, Forestry and Other Land Use (AFOLU)." In *Climate Change 2014: Mitigation of Climate Change*, edited by O. Edenhofer, R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, A. Adler, et al. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge: Cambridge University Press.
- Smith, V., J. Glauber, and B. Goodwin. 2017. "Time to Reform the US Federal Agricultural Insurance Program." AEI (American Enterprise Institute), October 13. <http://www.aei.org/publication/time-to-reform-the-us-federal-agricultural-insurance-program/>.
- Snell, C., A. Bernheim, J.-B. Berge, M. Kuntz, G. Pascal, A. Paris, and A.E. Ricoch. 2012. "Assessment of the Health Impact of GM Plant Diets in Long-Term and Multigenerational Animal Feeding Trials: A Literature Review." *Food and Chemical Toxicology* 50: 1134–1148.
- Soares, F., S. Soares, M. Medeiros, and R.G. Osorio. 2006. "Cash Transfer Programmes in Brazil: Impacts on Inequality and Poverty." Working Paper no. 21. Brasília: International Poverty Centre, United Nations Development Programme.
- Sobal, J. 2005. "Men, Meat, and Marriage: Models of Masculinity." *Food & Foodways* 13: 135–158.
- SOFA Team and C. Doss. 2011. "The Role of Women in Agriculture." ESA Working Paper no. 11-02. Rome: FAO (Food and Agriculture Organization of the United Nations).
- Sohngren, B., and R. Sedjo. 2006. "Carbon Sequestration in Global Forests under Different Carbon Price Regimes." *Energy Journal, International Association for Energy Economics* 0 (Special I): 109–126.
- Solorio, F.J., S.K. Basu, L. Sarabia, A. Ayala, L. Ramirez, C. Aguilar, J.A. Eroles, et al. 2016. "The Potential of Silvopastoral Systems for Milk and Meat Organic Production in the Tropics." *Organic Farming for Sustainable Agriculture, Sustainable Development and Biodiversity* 9: 169–183.
- Song, X., C. Peng, G. Zhou, H. Jiang, and W. Wang. 2014. "Chinese Grain for Green Program Led to Highly Increased Soil Organic Carbon Levels: A Meta-analysis." *Scientific Reports* 4 (4460). <https://doi.org/10.1038/srep04460>.
- Sonntag, B., J. Huang, S. Rozelle, and J. Skerritt. 2005. *China's Agricultural and Rural Development in the Early 21st Century*. Canberra: Australian Center for International Agricultural Research.
- Sordi, A., J. Dieckow, C. Bayer, M. Ameral, J. Thiago, J. Acordi, and A. de Moraes. 2014. "Nitrous Oxide Emission Factors for Urine and Dung Patches in a Subtropical Brazilian Pastureland." *Agriculture, Ecosystems and Environment* 190: 94–103.
- Soto, D., J. Aguilar-Manjarrez, and N. Hishamunda, eds. 2008. "Building an Ecosystem Approach to Aquaculture." FAO/Universitat de les Illes Balears Expert Workshop, May 7–11, 2007, Palma de Mallorca, Spain. *FAO Fisheries and Aquaculture Proceedings* 14. Rome: FAO.
- Soussana, J.F., K. Klumpp, and F. Ehrhardt. 2014. "The Role of Grassland in Mitigating Climate Change." *EGF at 50: The Future of European Grasslands*: 75–87.
- Soussana, J.F., S. Lutfall, P. Smith, R. Lal, C. Chenu, and P. Ciais. 2017. "Letter to the Editor: Answer to the Viewpoint 'Sequestering Soil Organic Carbon: A Nitrogen Dilemma.'" *Environmental Science and Technology* 51 (20): 11502.
- Soyatech. n.d. "Palm Oil Facts." [http://www.soyatech.com/Palm\\_Oil\\_Facts.htm](http://www.soyatech.com/Palm_Oil_Facts.htm). (Accessed October 29, 2012).
- Spalding, M. 2013. "There Are Many Tools for Effective Fisheries Management: Preventing Unintended Negative Consequences of Catch Shares." Washington, DC: Ocean Foundation.

- Sperling, D., and S. Yeh. 2010. "Toward a Global Low Carbon Fuel Standard." *Transport Policy* 17 (1): 47–49.
- Sprague, M., J.R. Dick and D.R. Tocher. 2016. "Impact of Sustainable Feeds on Omega-3 Long-Chain Fatty Acid Levels in Farmed Atlantic Salmon, 2006–2015." *Scientific Reports* 6 (21892). doi: 10.1038/srep21892.
- Springmann, M., H.C.J. Godfray, M. Rayner, and P. Scarborough. 2016. "Analysis and Valuation of the Health and Climate Change Cobenefits of Dietary Change." *Proceedings of the National Academy of Sciences of the United States of America* 113 (15): 4146–4151.
- Springmann, M., D. Mason-D'Croz, S. Robinson, K. Wiebe, H.C.J. Godfray, M. Rayner, and P. Scarborough. 2016. "Mitigation Potential and Global Health Impacts from Emissions Pricing of Food Commodities." *Nature Climate Change* (advance online publication).
- Springmann, M., M. Clark, D. Mason-D'Croz, K. Wiebe, B.L. Bodirsky, L. Lassalsetta, W. de Vries, et al. 2018. "Options for Keeping the Food System within Environmental Limits." *Nature* 562: 519–525.
- Srinivathan, U.T., W.W.L. Cheung, R. Watson, and U.R. Sumaila. 2010. "Food Security Implications of Global Marine Catch Losses Due to Overfishing." *Journal of Bioeconomics* 12: 183–200.
- Staal, S., C. Delgado, and C. Nicholson. 1997. "Smallholder Dairying under Transactions Costs in East Africa." *World Development* 25 (5): 779–794.
- Stadler, K., R. Wood, T. Bulavskaya, C.-J. Södersten, M. Simas, S. Schmidt, A. Usubiaga, et al. 2018. "EXIOBASE 3: Developing a Time Series of Detailed Environmentally Extended Multi-regional Input-Output Tables." *Journal of Industrial Ecology*, January 13. <https://doi.org/10.1111/jiec.12715>.
- Stanley, P., J.E. Rowntree, D.K. Beede, M.S. DeLonge, and M.W. Hamm. 2018. "Impacts of Soil Carbon Sequestration on Life Cycle Greenhouse Gas Emissions in Midwestern USA Beef Finishing Systems." *Agricultural Systems* 162 (2018): 249–258.
- Statistics New Zealand. 2013. "Glossary Term—Replacement Fertility." <http://www2.stats.govt.nz/domino/external/omni/omni.nsf/wwwglsry/replacement+level>.
- Steenblik, R. 2007. *Biofuels—At What Cost? Government Support for Ethanol and Biodiesel in Selected OECD Countries*. Winnipeg, Canada: International Institute for Sustainable Development.
- Stehfest, E., L. Bouwman, D.P. van Vuuren, M.G.J. den Elzen, B. Eickhout, and P. Kabat. 2009. "Climate Benefits of Changing Diet." *Climatic Change* 95: 83–102.
- Steinfeld, H., P. Gerber, T. Wassenaar, V. Castel, M. Rosales, and C. de Haan. 2006. *Livestock's Long Shadow: Environmental Issues and Options*. Rome: FAO (Food and Agriculture Organization of the United Nations).
- Steinfeld, H., H.A. Mooney, F. Schneider, and L.E. Neville. 2010. *Livestock in a Changing Landscape*. Vol. 1, *Drivers, Consequences, and Responses*. Washington, DC: Island.
- Stern, N. 2006. *The Stern Review on the Economics of Climate Change*. London: Government of the United Kingdom.
- Stevens, C., R. Winterbottom, J. Springer, and K. Reytar. 2014. *Securing Rights, Combatting Climate Change: How Strengthening Community Forest Rights Mitigates Climate Change*. Washington, DC: World Resources Institute.
- Stockholm Environment Institute and Greenhouse Gas Management Institute. 2011. "Alberta-Based Greenhouse Gas Reduction Program and Offset Credit System." <http://www.co2offsetresearch.org/policy/Alberta.html>.
- Stockmann, U., M.A. Adams, J.W. Crawford, D.J. Field, N. Henakaarchchi, M. Jenkins, B. Minasny, et al. 2013. "The Knowns, Known Unknowns and Unknowns of Sequestration of Soil Organic Carbon." *Agriculture, Ecosystems & Environment* 164 (January): 80–99. doi:10.1016/j.agee.2012.10.001.
- Stone, G. 2012. "Constructing Facts: Bt Cotton Narratives in India." *Economic & Political Weekly* 47: 61–70.
- Stoorvogel, J.J., E.M.A. Smaling, and B.H. Janssen. 1993. "Calculating Soil Nutrient Balances in Africa at Different Scales." *Fertilizer Research* 35: 227–235.
- Strange, R.N., and P.R. Scott. 2005. "Plant Disease: A Threat to Global Food Security." *Annual Review of Phytopathology* 43: 83–116.
- Strassburg, B. 2012. *Increasing Agricultural Output while Avoiding Deforestation: A Case Study for Mato Grosso*. Rio de Janeiro: International Institute for Sustainability. [http://www.pcfisu.org/wp-content/uploads/2012/07/Mato\\_grosso\\_Final\\_Report.pdf](http://www.pcfisu.org/wp-content/uploads/2012/07/Mato_grosso_Final_Report.pdf).
- Strokal, M., L. Ma, Z. Bai, S. Lucan, C. Kroeze, O. Oenema, G. Velthof, and F. Zhang. 2016. "Alarming Nutrient Pollution of Chinese Rivers as a Result of Agricultural Transitions." *Environmental Research Letters* 11 (2) (024014).
- Strong, A., and S. Minnemeyer. 2015. "Satellite Data Reveals State of the World's Mangrove Forests." Washington, DC: World Resources Institute. <http://www.wri.org/blog/2015/02/satellite-data-reveals-state-world%E2%80%99s-mangrove-forests>.
- Stroosnijder, L., and W. B. Hoogmoed. 1984. "Crust Formation on Sandy Soils in the Sahel; II: Tillage and Its Effects on the Water Balance." *Soil Tillage Research* 4: 321–337.
- Stummer, R. 2003. "Who Are You Calling Pilchard? It's 'Cornish Sardine' to You . . ." *Independent*, August 17. <http://www.independent.co.uk/news/uk/home-news/who-are-you-calling-pilchard-its-cornish-sardine-to-you-536136.html>.
- Su, J., C. Hu, X. Yan, Y. Jin, Z. Chen, Q. Guan, Y. Wang, et al. 2015. "Expression of Barley SUSIBA2 Transcription Factor Yields High-Starch Low-Methane Rice." *Nature* 523: 62–606.
- Subbarao, G.V., O. Ito, K.L. Sahrawat, W.L. Berry, K. Nakahara, T. Ishikawa, T. Watanabe, K. Suenaga, M. Rondon, and I.M. Rao. 2006a. "Scope and Strategies for Regulation of Nitrification in Agricultural Systems—Challenges and Opportunities." *Critical Reviews in Plant Sciences* 25 (4): 303–335.
- Subbarao, G.V., T. Ishikawa, O. Ito, K. Nakahara, H.Y. Wang and W.L. Berry. 2006b. "A Bioluminescence Assay to Detect Nitrification Inhibitors Released from Plant Roots: A Case Study with *Brachiaria humidicola*." *Plant and Soil* 288 (1): 101–112.
- Subbarao, G.V., M. Rondon, O. Ito, T. Ishikawa, I.M. Rao, K. Nakahara, C. Lascano, and W.L. Berry. 2007. "Biological Nitrification Inhibition (BNI): Is It a Widespread Phenomenon?" *Plant and Soil* 294 (1): 5–18.
- Subbarao, G.V., K. Nakahara, M. Hurtado, H. Ono, D.E. Moreta, A.F. Salcedo, A.T. Yoshihashi, et al. 2009. "Evidence for Biological Nitrification Inhibition in *Brachiaria* Pastures." *Proceedings of the National Academy of Sciences of the United States of America* 106 (41): 17302–17307.
- Subbarao, G.V., K. Nakahara, T. Ishikawa, H. Ono, M. Yoshida, T. Yoshihashi, Y. Zhu, et al. 2013. "Biological Nitrification Inhibition (BNI) Activity in Sorghum and Its Characterization." *Plant and Soil* 366: 243–259.
- Subbarao, G.V., J. Arango, K. Masahiro, A.M. Hooper, T. Yoshihashi, Y. Ando, K. Nakahara, et al. 2017. "Genetic Mitigation Strategies to Tackle Agricultural

- GHG Emissions: The Case for Biological Nitrification Inhibition Technology." *Plant Science* 262: 165–168.
- Suher, J., R. Raghunathan, and W.D. Hoyer. 2016. "Eating Healthy or Feeling Empty? How the 'Healthy = Less Filling' Intuition Influences Satiety." *Journal of the Association for Consumer Research* 1 (1).
- Sumaila, R., and U. Rashid. 2016. "Trade Policy Options for Sustainable Oceans and Fisheries. E15 Expert Group on Oceans, Fisheries and the Trade System—Policy Options Paper." Geneva: E15 Initiative, International Centre for Trade and Sustainable Development (ICTSD) and World Economic Forum.
- Sumaila, R., A. Khan, A. Dyck, R. Watson, G. Munro, P. Tyedmers, and D. Pauly. 2010. "A Bottom-Up Re-estimation of Global Fisheries Subsidies." *Journal of Bioeconomics* 12: 201–225.
- Sumaila, R., W. Cheung, A. Dyck, K. Gueye, L. Huang, V. Lam, D. Pauly, et al. 2012. "Benefits of Rebuilding Global Marine Fisheries Outweigh Costs." *PLOS ONE* 7 (7): e40542.
- Sunarto, S., M. Kelly, K. Parakkasi, S. Klenzendorf, E. Septayuda, and H. Kurniawan. 2012. "Tigers Need Cover: Multi-scale Occupancy Study of the Big Cat in Sumatran Forest and Plantation Landscapes." *PLOS ONE* 7 (1): e30859.
- Swain, D.L., M.A. Friend, G.J. Bishop-Hurley, R.N. Handcock, and T. Wark. 2011. "Tracking Livestock Using Global Positioning Systems—Are We Still Lost?" *Animal Production Science* 51: 167–175.
- Swartz, W., E. Sala, S. Tracey, R. Watson, and D. Pauly. 2010. "The Spatial Expansion and Ecological Footprint of Fisheries (1950 to Present)." *PLOS ONE* 5 (12): e15143.
- Swift, M.J., and K.D. Shepherd, eds. 2007. *Saving Africa's Soils: Science and Technology for Improved Soil Management in Africa*. Nairobi: World Agroforestry Centre.
- Tabashnik, B., and Y. Carrière. 2017. "Surge in Insect Resistance to Transgenic Crops and Prospects for Sustainability." *Nature Biotechnology* 35 (10): 926.
- Tabbal, D.F., B.A.M. Bouman, S.I. Bhuiyan, E.B. Sibayan, and M.A. Sattar. 2002. "On-Farm Strategies for Reducing Water Input in Irrigated Rice: Case Studies in the Philippines." *Agricultural Water Management* 56 (2): 93–112.
- Tabo, R., A. Bationo, B. Gerard, J. Ndejeunga, D. Marchal, B. Amadou, G. Annou, et al. 2007. "Improving Cereal Productivity and Farmers' Income Using a Strategic Application of Fertilizers in West Africa." In *Advances in Integrated Soil Fertility Management in Sub-Saharan Africa: Challenges and Opportunities*, edited by A. Bationo, B. Waswa, J. Kihara, and J. Kimetu. New York: Springer.
- Tacon, A.G.J., and M. Metian. 2008. "Global Overview on the Use of Fish Meal and Fish Oil in Industrially Compounded Aquafeeds: Trends and Future Prospects." *Aquaculture* 285: 146–158.
- Tacon, A.G.J., M. Metian, G.M. Turchini, and S.S. de Silva. 2010. "Responsible Aquaculture and Trophic Level Implications to Global Fish Supply." *Reviews in Fisheries Science* 18 (1): 94–105.
- Tacon, A.G.J., M.R. Hasan, and M. Metian. 2011. "Demand and Supply of Feed Ingredients for Farmed Fish and Crustaceans." *FAO Fisheries and Aquaculture Technical Paper* 564. Rome: FAO.
- Taelman, S.E., S. De Meester, L. Roef, M. Michiels, and J. Dewulf. 2013. "The Environmental Sustainability of Microalgae as Feed for Aquaculture: A Life Cycle Perspective." *Bioresource Technology* 150: 513–522.
- Taranger, G.L., Ø. Karlsen, R.J. Bannister, K.A. Glover, V. Husa, E. Karlsbakk, B.O. Kvamme, et al. 2014. "Risk Assessment of the Environmental Impact of Norwegian Atlantic Salmon Farming." *ICES Journal of Marine Science*. doi:10.1093/icesjms/fsu132.
- Tariq, A., Q.D. Vu, L.S. Jensen, S. De Tourdonnet, B.O. Sander, R. Wassmann, T. Van Mai, and A. De Neergaard. 2017. "Mitigating CH<sub>4</sub> and N<sub>2</sub>O Emissions from Intensive Rice Production Systems in Northern Vietnam: Efficiency of Drainage Patterns in Combination with Rice Residue Incorporation." *Agriculture, Ecosystems & Environment* 249: 101–111.
- Taylor, R., and C. Streck. 2018. "The Elusive Impact of the Deforestation-Free Supply Chain Movement." Working paper. Washington, DC: World Resources Institute.
- Tefera, T., S. Mugo, M. Mwimali, B. Anani, R. Tende, Y. Beyene, S. Gichuki, et al. 2016. "Resistance of Bt-Maize (MON810) against the Stem Borers *Busseola fusca* (Fuller) and *Chilo partellus* (Swinhoe) and Its Yield Performance in Kenya." *Crop Protection* 89: 202–208.
- Teixeira, E.I., G. Fischer, H. van Velthuizen, C. Walter, and F. Ewert. 2013. "Global Hot-Spots of Heat Stress on Agricultural Crops Due to Climate Change." *Agricultural and Forest Meteorology* 170: 206–215.
- Teng, P.S., ed. 1987. "Crop Loss Assessment and Pest Management." St. Paul, MN: APS Press.
- Teng, P.S., and S.V. Krupa, eds. 1980. "Assessment of Losses Which Constrain Production and Crop Improvement in Agriculture and Forestry." *Proceedings of the E.C. Stackman Commemorative Symposium*. St. Paul: University of Minnesota.
- Tessari, P., A. Lante, and M. Giuliano. 2016. "Essential Amino Acids: Master Regulators of Nutrition and Environmental Footprint?" *Scientific Reports* 6: 1–13.
- Thaler, R.H., and C.R. Sunstein. 2008. *Nudge: Improving Decisions about Health, Wealth, and Happiness*. New Haven, CT: Yale University Press.
- Thomson Reuters Foundation. 2017. "Giant Farms Linked to Russia's Political Elite Fuel Fears for Smallholders." *Japan Times*, May 17. <https://www.japantimes.co.jp/news/2017/05/17/world/giant-farms-linked-russias-political-elite-fuel-fears-smallholders/#.XlQskRNKjxg>.
- Thornton, P., and M. Herrero. 2010. "Potential for Reduced Methane and Carbon Dioxide Emissions from Livestock and Pasture Management in the Tropics." *Proceedings of the National Academy of Sciences of the United States of America* 107: 19667–19672.
- Thornton, P., and L. Cramer, eds. 2012. "Impacts of Climate Change on the Agricultural and Aquatic Systems and Natural Resources within the CGIAR's Mandate." CCAFS Working Paper 23. Copenhagen: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS).
- Thornton, P.K., P.G. Jones, P.J. Eriksen, and A.J. Challinor. 2011. "Agriculture and Food Systems in Sub-Saharan Africa in a 4°C+ World." *Philosophical Transactions of the Royal Society* 369: 117–136.
- Thow, A.M., and S. Downs. 2014. "A Systematic Review of the Effectiveness of Food Taxes and Subsidies to Improve Diets: Understanding the Recent Evidence." *Nutrition Reviews* 72: 561–565.
- Thow, A.M., S. Jan, S. Leeder, and B. Swinburn. 2010. "The Effect of Fiscal Policy on Diet, Obesity and Chronic Disease: A Systematic Review." *Bulletin of the World Health Organization* 88 (8): 609–614.

Thow, A. M., S. Downs, and S. Jan. 2014. "A Systematic Review of the Effectiveness of Food Taxes and Subsidies to Improve Diets: Understanding the Recent Evidence." *Nutrition Reviews* 72: 561–565.

Tian, H., K. Banger, T. Bo, and V.K. Dadhwal. 2014. "History of Land Use in India during 1880–2010: Large-Scale Land Transformations Reconstructed from Satellite Data and Historical Archives." *Global and Planetary Change* 121: 78–88.

Tilman, D., and M. Clark. 2014. "Global Diets Link Environmental Sustainability and Human Health." *Nature* 515: 518–522.

Tilman, D., C. Balzer, J. Hill, and B. Beford. 2011. "Global Food Demand and the Sustainable Intensification of Agriculture." *Proceedings of the National Academy of Sciences of the United States of America* 118: 20260–20264.

Tischer, T.D., D. Byerlee, and G. Edmeades. 2014. "Crop Yields and Global Food Security: Will Yield Increases Continue to Feed the World?" ACIAR Monograph no. 58. Canberra: Australian Center for International Agricultural Research.

Tittonell, P., and K.E. Giller. 2013. "When Yield Gaps Are Poverty Traps: The Paradigm of Ecological Intensification in African Smallholder Agriculture." *Field Crops Research* 143: 76–90.

Todd, J.E., P.C. Winters, and T. Hertz. 2009. "Conditional Cash Transfers and Agricultural Production: Lessons from the *Oportunidades* Experience in Mexico." *Journal of Development Studies* 46 (1): 39–67.

Tollefson, J. 2016. "Next Generation of Carbon-Monitoring Satellites Faces Daunting Hurdles." *Nature* 533: 466–467.

Tom, M.S., P.S. Fischbeck, and C.T. Hendrickson. 2015. "Energy Use, Blue Water Footprint, and Greenhouse Gas Emissions for Current Food Consumption Patterns and Dietary Recommendations in the US." *Environment Systems and Decisions* 35 (4).

Tootelian, D.H., and K. Ross. 2000. "Products Labels: What Information Do Consumers Want and Will They Believe It?" *Journal of Food Products Marketing* 61 (1): 25–38.

Torgersen, Y., M. Bryde, and R.T. Kongtorp. 2010. "Norway: Aquaculture Zoning Policy and Competition for Marine Space in Aquaculture Management." In *Advancing the Aquaculture Agenda: Workshop Proceedings*. Paris: OECD (Organisation for Economic Co-operation and Development).

Trenkel, M.E. 2010. "Slow and Controlled-Release and Stabilized Fertilizers." Paris: International Fertilizer Association.

Treseder, K.K., and S.R. Holden. 2013. "Fungal Carbon Sequestration." *Science* 339 (6127): 1528–1529.

Tropical Forages. n.d. "*Leucaena Leucocephala*." [http://www.tropicalforages.info/key/forages/Media/Html/entities/leucaena\\_leucocephala.htm](http://www.tropicalforages.info/key/forages/Media/Html/entities/leucaena_leucocephala.htm).

*Tufts University Health & Nutrition Letter*. 2012. "Are You Getting Enough Protein? For Most Americans, the Answer Is an Emphatic 'Yes!' but Emerging Research Suggests Older Adults May Need More High-Quality Protein throughout the Day." [http://go.galegroup.com/ps/i.do?id=GALE%7CA305454472&v=2.1&u=c\\_hrca&it=r&p=HRCA&digest=608852c2ef4f34aa0546455c9af7893d&rsrc=rss](http://go.galegroup.com/ps/i.do?id=GALE%7CA305454472&v=2.1&u=c_hrca&it=r&p=HRCA&digest=608852c2ef4f34aa0546455c9af7893d&rsrc=rss).

Turner, P.A., T.J. Griffis, X. Leeb, J.M. Bakera, R.T. Venterea, and J.D. Wood. 2015. "Indirect Nitrous Oxide Emissions from Streams within the US Corn Belt Scale with Stream Order." *Proceedings of the National Academy of Sciences of the United States of America* 112: 9839–9843.

Turnwald, B.P., D.Z. Boles, and A.J. Crum. 2017. "Association between Indulgent Descriptions and Vegetable Consumption: Twisted Carrots and Dynamite Beets." *JAMA Internal Medicine*. doi:10.1001/jamainternmed.2017.1637.

Tyner, W.E. 2010. "The Integration of Energy and Agricultural Markets." *Agricultural Economics* 41 (s1): 193–201.

Tyukavina, A., M.C. Hansen, P. Potapov, D. Parker, C. Okpa, S.V. Stehman, I. Kommareddy, and S. Turbanova. 2018. "Congo Basin Forest Loss Dominated by Increasing Smallholder Clearing." *Science Advances* 4 (11): eaat2993. doi:10.1126/sciadv.aat2993.

Tyszler, M., G.F.H. Kramer, and H. Blonk. 2014. "Just Eating Healthier Is Not Enough: Studying the Environmental Impact of Different Diet Scenarios for the Netherlands by Linear Programming." Paper presented at the Ninth International Conference LCA of Food, San Francisco, October 8–10.

Umesh, N.R., A.B. Chandra Mohan, G. Ravibabu, P.A. Padiyar, M.J. Phillips, C.V. Mohan, and B. Vishnu Bhat. 2010. "Shrimp Farmers in India: Empowering Small-Scale Farmers through a Cluster-Based Approach." In *Success Stories in Asian Aquaculture*, edited by S.S. De Silva and F.B. Davy, 41–66. Ottawa: International Development Research Centre.

UN (United Nations). 2012. *Women's Rights and the Right to Food*. Report Submitted by Special Rapporteur on the Right to Food, Olivier De Schutter. [http://www.srfood.org/images/stories/pdf/officialreports/20130304\\_gender\\_en.pdf](http://www.srfood.org/images/stories/pdf/officialreports/20130304_gender_en.pdf).

UNCTAD (United Nations Conference on Trade and Development). n.d. "Infocomm Commodity Profile Palm Oil." <https://unctad.org/en/Pages/SUC/Commodities/Commodities-Profiles.aspx>. (Accessed July 14, 2015.)

UNDESA (United Nations Department of Economic and Social Affairs, Population Division). 2013. "Explaining Differences in the Projected Populations between the 2012 and 2010 Revisions of World Population Prospects: The Role of Fertility in Africa." New York: United Nations.

UNDESA. 2014. *World Urbanization Prospects*. New York: United Nations.

UNDESA. 2015. *Trends in Contraceptive Use Worldwide: 2015*. New York: United Nations.

UNDESA. 2017. *World Population Prospects: The 2017 Revision*. New York: United Nations.

UNEP (United Nations Environment Programme). 2011. *Towards a Green Economy*. Nairobi: UNEP.

UNEP. 2012. *The Emissions Gap Report 2012*. Nairobi: UNEP.

UNEP. 2013. *The Emissions Gap Report 2013*. Nairobi: UNEP.

UNEP. 2017. *The Emissions Gap Report 2017*.

UNFCCC (United Nations Framework Convention on Climate Change). 2015. "The Paris Agreement." <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>.

UNICEF (United Nations Children's Fund). 2008. "Botswana—Contraceptive Prevalence." <http://www.indexmundi.com/facts/botswana/contraceptive-prevalence>.

UNIDO (UN Industrial Development Organization). 2010. *Global Industrial Energy Efficiency Benchmarking*. [http://www.unido.org/fileadmin/user\\_media/Services/Energy\\_and\\_Climate\\_Change/Energy\\_Efficiency/Benchmarking\\_%20Energy\\_%20Policy\\_Tool.pdf](http://www.unido.org/fileadmin/user_media/Services/Energy_and_Climate_Change/Energy_Efficiency/Benchmarking_%20Energy_%20Policy_Tool.pdf).

United States International Trade Commission. 2014. "Pork and Swine Industry and Trade Summary." Washington, DC: U.S. International Trade Commission.

University of Cambridge, Institute for Sustainability Leadership. 2019. "The Banking Environment Initiative (BEI) and Consumer Goods Forum (CGF)'s 'Soft Commodities' Compact." <https://www.cisl.cam.ac.uk/business-action/sustainable-finance/banking-environment-initiative/programme/soft-commodities>.

University of Toronto. n.d. *Solar Aeration System for Aquaculture*. <http://werl.mie.utoronto.ca/research/aeration/>. (Accessed May 11, 2017.)

Upadhyay, A. 2014. "The Rise of Solar Pumps in India." *Clean Technica*. <https://cleantechnica.com/2014/08/11/rise-solar-pumps-india/>.

Upadhyay, S. 2016. "Meat Substitute Market by Product Type (Tofu, Tempeh, Textured Vegetable Protein, Quorn, Seitan), Source (Soy, Wheat, Mycoprotein), Category (Frozen, Refrigerated, Shelf-Stable): Global Opportunity Analysis and Industry Forecast, 2014–20." *Allied Market Research*. <https://www.alliedmarketresearch.com/meat-substitute-market>.

Upadhyay, U.D., and D. Karasek. 2010. "Women's Empowerment and Achievement of Desired Fertility in Sub-Saharan Africa." DHS Working Paper no. 80. Calverton, MD: ICF Macro.

Urban, D., M.J. Roberts, W. Schlenker, and D.B. Lobell. 2012. "Projected Temperature Changes Indicate Significant Increase in Interannual Variability of U.S. Maize Yields." *Climatic Change* 112 (2): 525–533.

USDA (U.S. Department of Agriculture). 2011. "Food Product Dating." Fact Sheet. [http://www.fsis.usda.gov/factsheets/food\\_product\\_dating/](http://www.fsis.usda.gov/factsheets/food_product_dating/).

USDA. 2012. *International Food Security Assessment, 2012–2022*. Washington, DC: USDA.

USDA. 2013a. National Nutrient Database for Standard Reference. Washington, DC: USDA. <http://ndb.nal.usda.gov/ndb/search/list>.

USDA. 2013b. "U.S. Department of Agriculture." Washington, DC: USDA. <http://www.usda.gov/wps/portal/usda/usdahome>.

USDA. 2013c. "Fertilizer Use and Price." Agricultural Chemical Use Program. Washington, DC: USDA. <http://www.ers.usda.gov/data-products/fertilizer-use-and-price.aspx#26730>.

USDA. 2014a. *What We Eat in America, NHANES, 2011–2012*. Washington, DC: USDA.

USDA. 2014b. "Rice: Trade." Washington, DC: USDA Economic Research Service. <http://www.ers.usda.gov/topics/crops/rice/trade.aspx>.

USDA. 2017. *Effects of Conservation Practices on Nitrogen Loss from Farm Fields: A National Assessment Based on the 2003–2006 CEAP Survey and APEX Modeling Databases*. Washington, DC: U.S. Department of Agriculture, Natural Resources Conservation Service.

USDA/ERS (Economic Research Service). 2014a. "Food Expenditures." <http://www.ers.usda.gov/data-products/food-expenditures.aspx>.

USDA/ERS. 2014b. "Food-away-from-Home." <http://www.ers.usda.gov/topics/food-choices-health/food-consumption-demand/food-away-from-home.aspx>.

USDA/ERS. 2015a. "Fruit and Vegetable Prices." <http://www.ers.usda.gov/data-products/fruit-and-vegetable-prices.aspx>.

USDA/ERS. 2015b. "Meat Price Spreads." <http://www.ers.usda.gov/data-products/meat-price-spreads.aspx>.

USDA/ERS. 2017a. "Datasheet, Cropland Used for Crops, by Region and States, United States, 1945–2012." [https://www.ers.usda.gov/webdocs/DataFiles/52096/Cropland\\_used\\_for\\_crops\\_19452012\\_by\\_state.xls?v=42975](https://www.ers.usda.gov/webdocs/DataFiles/52096/Cropland_used_for_crops_19452012_by_state.xls?v=42975).

USDA/ERS. 2017b. "Conservation Compliance in the Crop Insurance Era." <https://www.ers.usda.gov/amber-waves/2017/july/conservation-compliance-in-the-crop-insurance-era/>.

USDA/ERS. n.d. "U.S. Drought 2012: Farm and Food Impacts." <http://www.ers.usda.gov/topics/in-the-news/us-drought-2012-farm-and-food-impacts.aspx>. (Accessed December 8, 2012.)

USDA and HHS (U.S. Department of Agriculture and U.S. Department of Health and Human Services). 2015. *Scientific Report of the 2015 Dietary Guidelines Advisory Committee*. Washington, DC: USDA and HHS.

U.S. DoE (Department of Energy). n.d. *Science*. "Hydrogen and Fuel Cells Program." <https://www.hydrogen.energy.gov/science.html>. (Accessed May 10, 2017.)

U.S. DoE and the University of California. 2014. Genomes Online Database. 2014. [genomesonline.org/cgi-bin/GOLD/index.cgi](http://genomesonline.org/cgi-bin/GOLD/index.cgi).

U.S. Drive Partnership. 2017. *Hydrogen Production Tech Team Roadmap*. November. Washington, DC: U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. <https://www.energy.gov/eere/vehicles/downloads/us-drive-hydrogen-production-technical-team-roadmap>.

USGS (U.S. Geological Survey). 1999. "State Summary Highlights." In *National Water Summary on Wetland Resources*. [https://water.usgs.gov/nwsum/WSP2425/state\\_highlights\\_summary.html](https://water.usgs.gov/nwsum/WSP2425/state_highlights_summary.html).

Vaddella, V.K., P.M. Ndegwa, H.S. Joo, and J.L. Ullman. 2010. "Impact of Separating Dairy Cattle Excretions on Ammonia Emissions." *Journal of Environmental Quality* 39 (5): 1807–1812.

Vaitsman, J., and R. Paes-Sousa. 2007. *Evaluation of MDS Policies and Programs—Results*. Vol. 2, *Bolsa Familia Program and Social Assistance*. Brasília: Ministry of Social Development and the Fight against Hunger, Secretariat for Evaluation and Information Management.

Valin, H., R.D. Sands, D. van der Mensbrugge, G.C. Nelson, H. Ahammad, E. Blanc, B. Bodirsky, et al. 2014. "The Future of Food Demand: Understanding Differences in Global Economic Models." *Agricultural Economics* 45 (1): 51–67.

van der Hoeven, D. 2018. "Omega-3 Fatty Acids Produced from Corn by Marine Algae." Bio Based Press, February 18. <https://www.biobasedpress.eu/2018/02/omega-3-fatty-acids-produced-from-corn-by-marine-algae/>.

van der Werf, G.R., J.T. Randerson, L. Giglio, T.T. van Leeuwen, Y. Chen, B.M. Rogers, M. Mu, et al. 2017. "Global Fire Emissions Estimates during 1997–2015." *Earth System Science Data Discussions*. doi:10.5194/essd-2016-62.

VanderZaag, A.C., A.D. MacDonald, L. Evans, X.P.C. Verge, and R.L. Desjardins. 2013. "Towards an Inventory of Methane Emissions from Manure Management That Is Responsive to Changes on Canadian Farms." *Environmental Research Letters* 8 (3) (035008).

van Grinsven, H.J.M., H.F.M. ten Berge, T. Dalgaard, B. Frater, P. Durand, A. Hart, G. Hofman, et al. 2012. "Management, Regulation and Environmental Impacts of Nitrogen Fertilization in Northwestern Europe under the Nitrates Directive: A Benchmark Study." *Biogeosciences* 9: 5143–5160.

- van Grinsven, H.J., L. Bouwman, K.G. Cassman, H.M. van Es, M.L. McCrackin, and A.H. Beusen. 2015. "Losses of Ammonia and Nitrate from Agriculture and Their Effect on Nitrogen Recovery in the European Union and the United States between 1900 and 2050." *Journal of Environmental Quality* 44: 356–367.
- van Groenigen, J.W., G.L. Velthof, O. Oenema, K.J. van Groenigen, and C. van Kessel. 2010. "Towards an Agronomic Assessment of N<sub>2</sub>O Emissions: A Case Study for Arable Crops." *European Journal of Soil Science* 61: 903–913.
- van Groenigen, K.J., C. Osenberg, and B. Hungate. 2011. "Increased Soil Emissions of Potent Greenhouse Gases under Increased Atmospheric CO<sub>2</sub>." *Nature* 475: 214–216.
- van Groenigen, K.J., C. van Kessel, and B.A. Hungate. 2013. "Increased Greenhouse-Gas Intensity of Rice Production under Future Atmospheric Conditions." *Nature Climate Change* 3: 288–291.
- van Groenigen, J.W., C. van Kessel, B.A. Hungate, O. Oenema, D.S. Powlson, and K.J. van Groenigen. 2017. "Sequestering Soil Organic Carbon: A Nitrogen Dilemma." *Environmental Science & Technology* 51: 4738–4739.
- van Ittersum, M.K., K.G. Cassman, P. Grassini, J. Wolf, P. Tittonell, and Z. Hochman. 2013. "Yield Gap Analysis with Local to Global Relevance: A Review." *Field Crops Research* 143: 4–17.
- van Ittersum, M.K., L.G.J. van Bussel, J. Wolf, P. Grassini, J. van Wart, N. Guilpart, L. Claessens, et al. 2016. "Can Sub-Saharan Africa Feed Itself?" *Proceedings of the National Academy of Sciences of the United States of America* 113 (52): 14964–14969.
- van Kessel, C., R. Venterea, J. Six, M.A. Adviento-Borbe, B. Linquist, and K.J. van Groenigen. 2012. "Climate, Duration, and N Placement Determine N<sub>2</sub>O Emissions in Reduced Tillage Systems: A Meta-analysis." *Global Change Biology* 19 (1): 33–44.
- van Kooten, G.C., and B. Sohngren. 2007. "Economics of Forest Ecosystem Carbon Sinks: A Review." *International Review of Environmental and Resource Economics* 1: 237–269.
- Vanlauwe, B., J. Chianu, K.E. Giller, R. Merckx, U. Mokwunye, P. Pypers, K. Shepherd, et al. 2010. "Integrated Soil Fertility Management: Operational Definition and Consequences for Implementation and Dissemination." 19th World Congress of Soil Science, Soil Solutions for a Changing World, Brisbane, Australia, August 1–6.
- Vanotti, M., P. Hunt, M. Rice, A. Kunz, and J. Loughrin. 2013. *Evaluation of Generation 3 Treatment Technology for Swine Waste*. North Carolina's Clean Water Management Trust Fund project. <https://www.bae.ncsu.edu/topic/waste-mgmt-center/CWMTF-report/CWMTF%20Report%20Appendix%20A.2006A-522%20Final%20Report.pdf>.
- van Vuuren, D. 2011. "The Representative Concentration Pathways: An Overview." *Climatic Change* 109: 5–31.
- van Vuuren, D., J. van Vliet, and E. Stehfest. 2009. "Future Bio-energy Potential under Various Natural Constraints." *Energy Policy* 37: 4220–4230.
- Variyam, J.N. 2005. *Nutrition Labeling in the Food-away-from-Home Sector: An Economic Assessment*. Washington, DC: U.S. Department of Agriculture, Economic Research Service.
- Varshney, R.K., J. Ribaut, E.S. Buckler, R. Tuberosa, J.A. Rafalski, and P. Langridge. 2012. "Can Genomics Boost Productivity of Orphan Crops?" *Nature Biotechnology* 30: 1172–1176.
- Vasa, A., and K. Neuhoﬀ. 2011. "The Role of CDM Post-2012: Carbon Pricing for Low-Carbon Investment." Berlin: Climate Policy Initiative.
- Veit, P. 2011. "Brief: Women and Customary Land Rights in Uganda." Focus on Land in Africa. Washington, DC: World Resources Institute. <http://www.focusonland.com/fola/en/countries/brief-women-and-customary-land-rights-in-uganda/>.
- Veit, P., and R. Sarsfield. 2017. "Land Rights, Beef Commodity Chains, and Deforestation Dynamics in the Paraguayan Chaco." Washington, DC: USAID Tenure and Global Climate Change Program.
- Vellinga, T.V., and I.E. Hoving. 2011. "Maize Silage for Dairy Cows: Mitigation of Methane Emissions Can Be Offset by Land Use Change." *Nutrient Cycling in Agroecosystems* 89 (3): 413–426.
- Velthof, G.L., J.P. Lesschen, J. Webb, S. Pietrzak, Z. Miatkowski, M. Pinto, and O. Oenema. 2013. "The Impact of the Nitrates Directive on Nitrogen Emissions from Agriculture in the EU-27 during 2000–2008." *Science of the Total Environment* 468–469: 1225–1233.
- Vera-Diaz, M.C., R.K. Kaufmann, and D.C. Nepstad. 2009. "The Environmental Impacts of Soybean Expansion and Infrastructure Development in Brazil's Amazon Basin." Working Paper no. 09-05. Medford, MA: Global Development and Environment Institute.
- Veramaris. 2018. "Omega-3 from Natural Marine Algae." <https://www.veramaris.com/what-we-do-detail.html>.
- Verhage, F., L. Cramer, P. Thornton, and B. Campbell. 2018. "Climate Risk Assessment and Agricultural Value Chain Prioritisation for Malawi and Zambia." CCAFS Working Paper no. 228. Wageningen, the Netherlands: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS).
- Verlasso. 2013. "Fish In, Fish Out: Conserving Wild Fish Populations." Puerto Montt, Chile: Verlasso. <http://www.verlasso.com/farming/fish-in-fish-out/>.
- Vermeulen, S.J., A.J. Challinor, P.K. Thornton, B.M. Campbell, N. Eriyagama, J.M. Vervoort, J. Kinyangi, et al. 2013. "Addressing Uncertainty in Adaptation Planning for Agriculture." *Proceedings of the National Academy of Sciences of the United States of America* 110 (21): 8357–8362.
- Videl, J. 2014. "This Could Be the Year We Start to Save, Not Slaughter, the Shark." *Guardian*, January 11. <http://www.theguardian.com/environment/2014/jan/11/shark-finning-in-decline-in-far-east>.
- Vietnam MARD (Ministry of Agriculture and Rural Development). 2014. *Statistical Yearbook of Ministry of Agriculture and Rural Development*. Hanoi: MARD.
- Villoria, N., D. Byerlee, and J. Stevenson. 2014. "The Effects of Agricultural Technological Progress on Deforestation: What Do We Really Know?" *Applied Economic Perspectives and Policy* 36 (2): 211–237.
- Vinya, R., S. Syampungani, E.C. Kasumu, C. Monde, and R. Kasubika. 2011. *Preliminary Study on the Drivers of Deforestation and Potential for REDD+ in Zambia*. Consultancy report prepared for Forestry Department and FAO under the national UN-REDD+ Programme. Lusaka, Zambia: Ministry of Lands and Natural Resources.
- Visser, A. 2018. "Managing Resistance of African Stem Borer to Bt-Maize." *Farmers Weekly*. <https://www.farmersweekly.co.za/crops/field-crops/managing-resistance-african-stem-borer-bt-maize/>.
- Volpe, J.P., M. Beck, V. Ethier, J. Gee, and A. Wilson. 2010. *Global Aquaculture Performance Index: An Innovative Tool for Evaluating and Improving the Environmental Performance of Marine Aquaculture*. Victoria, BC: University of Victoria.

- Von Braun, J., R. Vargas Hill, and R. Pandya-Lorch. 2009. *The Poorest and Hungry. Assessments, Analysis, and Actions: An IFPRI 2020 Book*. Washington, DC: IFPRI (International Food Policy Research Institute).
- von Caemmerer, S., W.P. Quick, and R.T. Furbank. 2012. "The Development of C4 Rice: Current Progress and Future Challenges." *Science* 336: 1671–1672.
- von Lampe, M., D. Willenbockel, H. Ahammad, E. Blanc, Y. Cai, K. Calvin, S. Fujimori, et al. 2014. "Why Do Global Long-Term Scenarios for Agriculture Differ? An Overview of the AgMIP Global Economic Model Intercomparison." *Agricultural Economics* 45: 3–20.
- von Uexküll, H.R., and E.W. Mutert. 1994. "Rehabilitation and Lasting Improvement of Degraded Land in Indonesia." In *Giessener Beiträge zur Entwicklungsforschung*. Giessen, Germany: Wissenschaftliches Zentrum Tropeninstitute Giessen.
- Vu, T.K.V., D.Q. Vu, L.S. Jensen, S.G. Sommer, and S. Bruun. 2015. "Life Cycle Assessment of Biogas Production in Small-Scale Household Digesters in Vietnam." *Asian Australasian Journal of Animal Sciences* 28 (5): 716–729.
- Vyth, E.L., I.H.M. Steenhuis, A.J.C. Roodenburg, J. Brug, and J.C. Seidell. 2010. "Front-of-Pack Nutrition Label Stimulates Healthier Product Development: A Quantitative Analysis." *International Journal of Behavioral Nutrition and Physical Activity* 7: 65.
- Wade, T., R. Claasen, and S. Wallander. 2015. "Conservation-Practice Adoption Rates Vary Widely by Crop and Region." *USDA ERS Economic Information Bulletin* 147: 1–34.
- Waite, R., M. Beveridge, R. Brummett, S. Castine, N. Chaiyawanakarn, S. Kaushik, R. Mungkung, et al. 2014. "Improving Productivity and Environmental Performance of Aquaculture." Working paper, installment 5 of *Creating a Sustainable Food Future*. Washington, DC: World Resources Institute.
- Waithaka, M., P. Thornton, M. Herrero, and K. Shepard. 2006. "Bio-economic Evaluation of Farmers' Perceptions of Viable Farms in Western Kenya." *Agricultural Systems* 90: 243–271.
- Walker, R., J. Browder, E. Arima, C. Simmons, R. Pereira, M. Caldas, R. Shiota, and S. de Zen. 2009. "Ranching and the New Global Range: Amazonia in the 21st Century." *Geoforum* 40: 732–745.
- Wall Street Journal*. 2014. "Meet the Fake Burger That 'Bleeds.'" October 7. <http://www.wsj.com/video/meet-the-fake-burger-that-bleeds/76AE36FE-03D2-4783-A9D3-A44AC602F7A4.html>.
- Walli, T. 2011. "Improving Nutritional Qualities of Straw with Urea." Cattle Site. <http://www.thecattlesite.com/articles/2796/improving-nutritional-qualities-of-straw-with-urea>. (Accessed April 14, 2012.)
- Walpole, S.C., D. Prieto-Merino, P. Edwards, J. Cleland, G. Stevens, and I. Roberts. 2012. "The Weight of Nations: An Estimation of Adult Human Biomass." *BMC Public Health* 12: 439.
- Wang, H., B. Bouman, D. Zhao, C. Wang, and P. Moya. 2002. "Aerobic Rice in Northern China: Opportunities and Challenges." In *Water-wise Rice Production*, edited by B.A.M. Bouman, H. Hengsdijk, B. Hardy, P. S. Bindraban, T.P. Tuong, and J.K. Ladha, 143–154. Los Baños, the Philippines: International Rice Research Institute.
- Wang, Y. 2008. "Preliminary Study on High Yield Formation of Rice for Ridge Cultivation in Southern China." (In Chinese with English abstract.) Master's diss., Yangzhou University.
- Wang, Z., H. Lin, J. Huang, R. Hu, S. Rozelle, and C. Pray. 2009. "Bt Cotton in China: Are Secondary Insect Infestations Offsetting the Benefits in Farmer Fields?" *Agricultural Science in China* 8: 83–90.
- Wang, S., A. Wilkes, Z. Zhang, X. Chang, R. Lang, Y. Wang, and H. Niu. 2011. "Management and Land Use Change Effects on Soil Carbon in Northern China's Grasslands: A Synthesis." *Agriculture, Ecosystems, and Environment* 142: 329–340.
- Wang, L., P. D'Odorico, J.P. Evans, D.J. Eldridge, M.F. McCabe, K.K. Caylor, and E.G. King. 2012. "Dryland Ecohydrology and Climate Change: Critical Issues and Technical Advances." *Hydrology and Earth System Sciences* 16: 2585–2603.
- Wang, P., F. Chang, W. Gao, J. Guo, G. Wu, T. He, and P. Chen. 2016. "Breaking Scaling Relations to Achieve Low-Temperature Ammonia Synthesis through LiH-Mediated Nitrogen Transfer and Hydrogenation." *Nature Chemistry*. doi:10.1038/nchem.2595.
- Wang, Y., H. Dong, Z. Zhu, P.J. Gerber, H. Xin, P. Smith, C. Opio, et al. 2017. "Mitigating Greenhouse Gas and Ammonia Emissions from Swine Manure Management: A System Analysis." *Environmental Science and Technology* 51 (8): 4503–4511.
- Wanzala, M., and R. Groot. 2013. *Fertilizer Market Development in Sub-Saharan Africa*. Colchester, UK: International Fertilizer Society.
- Wanzala-Mlobela, M., P. Fuentes, and S. Mkumbwa. 2013. "Design and Implementation of Fertilizer Subsidy Programs in Sub-Saharan Africa: NEPAD Policy Study." Muscle Shoals, AL: NPCA (NEPAD Planning and Coordinating Agency), FAO (Food and Agriculture Organization of the United Nations), and IFDC (International Fertilizer Development Center).
- Ward, G.N., K.B. Kelly, and J.W. Hollier. 2016. "Greenhouse Gas Emissions from Dung, Urine and Dairy Pond Sludge Applied to Pasture: 1. Nitrous Oxide Emissions." *Animal Production Science* 58 (6): 1087–1093.
- Wardhana, B. 2016. *BRG's Roadmap for Peatland Restoration*. Poster session presented at CBD & FAO workshop "Forest Ecosystem Restoration." Bangkok.
- Washington State University Extension. 2015. *Anaerobic Digester Project and System Modifications: An Economic Analysis*. Pullman: Washington State University.
- Wassmann, R., R.S. Lantin, H.U. Neue, L.V. Buendia, T.M. Corton, and Y. Lu. 2000. "Characterization of Methane Emissions from Rice Fields in Asia: III. Mitigation Options and Future Research Needs." *Nutrient Cycling in Agroecosystems* 58 (1): 23–36.
- Water Technology Centre. 2009. *Report on the Implementation of SRI in Phase I and II Sub-basins under TN-IAMWARM Project*. Coimbatore, India: Tamil Nadu Agricultural University.
- Watson, R., and A. Tidd. 2018. "Mapping Nearly a Century and a Half of Global Marine Fishing: 1869–2015." *Marine Policy* 93: 171–177.
- Watson, S.-A., L.S. Peck, P.A. Tyler, P.C. Southgate, K.S. Tan, R.W. Day, and S.A. Morley. 2012. "Marine Invertebrate Skeleton Size Varies with Latitude, Temperature and Carbonate Saturation: Implications for Global Change and Ocean Acidification." *Global Change Biology* 18 (10): 3026–3038.
- Watts, C. 2016. *A Brewing Storm: The Climate Change Risks to Coffee*. Climate Institute. [http://www.climateinstitute.org.au/verve/\\_resources/TCI\\_A\\_Brewing\\_Storm\\_FINAL\\_WEB270916.pdf](http://www.climateinstitute.org.au/verve/_resources/TCI_A_Brewing_Storm_FINAL_WEB270916.pdf).



WCRF and AICR (World Cancer Research Fund and American Institute for Cancer Research). 2007. *Food, Nutrition, Physical Activity, and the Prevention of Cancer: A Global Perspective*. Washington DC: AICR.

Wei, C., M. Gao, Q. Huang, F. Che, J. Yang, D. Xie, Z. Cai, and H. Xu. 2000. "Effects of Tillage-Cropping Systems on Methane Emissions from Year-Round Flooded Paddy Field in Southwest China." (In Chinese.) *Acta Pedologica Sinica* 33 (2): 157–165.

Weimin, M. 2010. "Recent Developments in Rice-Fish Culture in China: A Holistic Approach for Livelihood Improvement in Rural Areas." In *Success Stories in Asian Aquaculture*, edited by S.S. de Silva and F.B. Davy. Ottawa: International Development Research Centre.

Welcomme, R. L. 2011. "An Overview of Global Catch Statistics for Inland Fish." *ICES Journal of Marine Science* 68: 1751–1756.

Wellesley, L., C. Happer, and A. Froggatt. 2015. "Changing Climate, Changing Diets: Pathways to Lower Meat Consumption." London: Chatham House.

Welten, B.G., S.F. Ledgard, L.A. Schipper, and A.A. Judge. 2013. "Effect of Amending Cattle Urine with Dicyandiamide on Soil Nitrogen Dynamics and Leaching of Urinary-Nitrogen." *Agriculture, Ecosystems & Environment* 167: 12–22.

Welten, B.G., S.F. Ledgard, and J. Luo. 2014. "Administration of Dicyandiamide to Dairy Cows via Drinking Water Reduces Nitrogen Losses from Grazed Pastures." *Journal of Agricultural Science* 152 (S1): 150–158.

West, P.C., H.K. Gibbs, C. Monfreda, J. Wagner, C.C. Barford, S.R. Carpenter, and J.A. Foley. 2010. "Trading Carbon for Food: Global Comparison of Carbon Stocks vs. Crop Yields on Agricultural Land." *Proceedings of the National Academy of Sciences of the United States of America* 107: 19645–19648.

Westhoek, H., J.P. Lesschen, T. Rood, S. Wagner, A. De Marco, D. Murphy-Bokern, A. Leip, et al. 2014. "Food Choices, Health and Environment: Effects of Cutting Europe's Meat and Dairy Intake." *Global Environmental Change* 16: 196–205.

Westhoek, H., J.P. Lesschen, A. Leip, T. Rood, S. Wagner, A. De Marco, D. Murphy-Bokern, et al. 2015. "Nitrogen on the Table: The Influence of Food Choices on Nitrogen Emissions and the European Environment." *European Nitrogen Assessment Special Report on Nitrogen and Food*. Edinburgh, UK: Centre for Ecology & Hydrology.

Wetlands International. 2011. "Peatlands in Indonesia's National REDD+ Strategy." Responding to the public consultation of the draft national REDD+ strategy of Indonesia issued August 18. <http://www.wetlands.org/LinkClick.aspx?fileticket=9Nesl6BC1U%3D&tabid=56>.

Wetlands International. 2016. "Restoring Peatlands in Russia—For Fire Prevention and Climate Change Mitigation: Project Outcomes 2012–2016." <http://russia.wetlands.org/WhatWeDo/Allourprojects/RestoringpeatlandsinRussia/Projectresults/Projectresults2016/tabid/3893/language/en-US/Default.aspx>.

Wetlands International. n.d. "Restoring Peatlands in Russia: Preventing Peat Fires, Mitigating Climate Change." <https://www.wetlands.org/publications/restoring-peatlands-in-russia/>.

Wetherald, R.T., and S. Manabe. 2002. "Simulation of Hydrologic Changes Associated with Warming." *Journal of Geophysical Research* 107 (4379).

WFP (World Food Programme). 2007. *Brazil: A Desk Review of the National Feeding Programme*. Rome: WFP.

WFP. 2016. "Hunger Statistics." Rome: WFP. <https://www.wfp.org/hunger/stats>.

W4RA (Web alliance for Regreening in Africa). 2017. "W4RA." <https://w4ra.org>.

Wheeler, C.E., P.A. Omeja, C.A. Chapman, M. Glipin, C. Tumwesigye, and S.L. Lewis. 2016. "Carbon Sequestration and Biodiversity following 18 Years of Active Tropical Forest Restoration." *Forest Ecology and Management* 373: 44–55.

White, R., and M. Hall. 2017. "Nutritional and Greenhouse Gas Impacts of Removing Animals from US Agriculture." *Proceedings of the National Academy of Sciences of the United States of America* E10301–E10308.

Whitehead, D., L.A. Schipper, J. Pronger, G. Moinet, P.L. Mudge, R. Calvelo Pereira, M.U.F. Kirschbaum, et al. 2018. "Management Practices to Reduce Losses or Increase Soil Carbon Stocks in Temperate Grazed Grasslands: New Zealand as a Case Study." *Agriculture, Ecosystems, and Environment* 265: 432–443.

Whitman, T., and J. Lehmann. 2009. "Biochar: One Way Forward for Soil Carbon in Offset Mechanisms in Africa?" *Environmental Science & Policy* 12 (7): 1024–1027.

WHO (World Health Organization). 2003. *WHO/FAO Release Independent Expert Report on Diet and Chronic Disease*. Geneva: WHO. <http://www.who.int/mediacentre/news/releases/2003/pr20/en/>.

WHO. 2012. "Fact Sheet No. 311: Obesity and Overweight." Geneva: WHO. <http://www.who.int/mediacentre/factsheets/fs311/en/index.html>.

WHO. 2013a. "Fact Sheet No. 351: Family Planning." Geneva: WHO. <http://www.who.int/mediacentre/factsheets/fs351/en/index.html>.

WHO. 2013b. "WHO Mortality Database." [http://www.who.int/healthinfo/mortality\\_data/en/index.html](http://www.who.int/healthinfo/mortality_data/en/index.html).

WHO. 2015. "Vaccinating Salmon: How Norway Avoids Antibiotics in Fish Farming." <http://www.who.int/features/2015/antibiotics-norway/en/>.

WHO, FAO, and UNU (World Health Organization, Food and Agriculture Organization of the United Nations, and United Nations University). 2007. *Protein and Amino Acid Requirements in Human Nutrition*. Geneva: WHO. [http://www.who.int/nutrition/publications/nutrientrequirements/WHO\\_TRS\\_935/en/](http://www.who.int/nutrition/publications/nutrientrequirements/WHO_TRS_935/en/).

WHO and UNICEF (United Nations Children's Fund). 2013. *Accountability of Maternal, Newborn & Child Survival*. Geneva: WHO.

Wiggins, S. 2009. *Big Farms or Small Farms: How to Respond to the Food Crisis?* Future Agricultures Consortium e-Debate Report. London: DFID (UK Department for International Development).

Wigmosta, M.S., A. Coleman, R. Skaggs, M. Huessemann, and L. Lane. 2011. "National Microalgae Production Potential and Resource Demand." *Water Resources Research* 47: W00H04.

Wilkes, J., J. Moccia, P. Wilczek, R. Gruet, V. Radvilaite, M. Dragan, J. Scola, and S. Azau. 2011. *EU Energy Policy to 2050: Achieving 80–95% Emissions Reductions*. Brussels: WindEurope (formerly European Wind Energy Association).

Williams, S.D., and H. Fritschel. 2012. "Farming Smarter." *IFPRI Insights* 2 (2). Washington, DC: International Food Policy Research Institute.

Willett, W., J. Rockström, B. Loken, M. Springmann, T. Lang, S. Vermeulen, T. Garnett, et al. 2019. "Food in the Anthropocene: The EAT–Lancet Commission on Healthy Diets from Sustainable Food Systems." *Lancet* 393 (10170): 447–492. [http://dx.doi.org/10.1016/S0140-6736\(18\)31788-4](http://dx.doi.org/10.1016/S0140-6736(18)31788-4).

- Winchester, N., and J. Reilly. 2015. "The Contribution of Biomass to Emissions Mitigation under a Global Climate Policy." Cambridge, MA: MIT Joint Program on the Science and Policy of Global Change.
- Winter, P.L., and J.R. Rossiter. 1988. "Pattern-Matching Purchase Behavior and Stochastic Brand Choice: A Low Involvement Product Category Model." Working paper. Los Angeles: Graduate School of Management, University of California, Los Angeles.
- Wirsenius, S. 2000. "Human Use of Land and Organic Materials: Modeling the Turnover of Biomass in the Global Food System." PhD thesis. Chalmers University of Technology and Göteborg University.
- Wirsenius, S., C. Azar, and G. Berndes. 2010. "How Much Land Is Needed for Global Food Production under Scenarios of Dietary Changes and Livestock Productivity Increases in 2030?" *Agricultural Systems* 103 (9): 621–638.
- Witty, C., M. Jones, A. Tollervy, and T. Wheeler. 2013. "Biotechnology: Africa and Asia Need a Rational Debate on GM Crops." *Nature* 497: 31–33.
- WOCAT (World Overview of Conservation Approaches and Technologies). 2015. "Knowledge Base." <https://www.wocat.net/en/knowledge-base.html>.
- Wood, W., and World Agroforestry Centre. n.d. "Creating an EverGreen Agriculture in Africa." <http://evergreenagriculture.net/sites/default/files/EGA%204pager%20alt%20050512.pdf>.
- World Bank. 2006. "Tamil Nadu Irrigated Agriculture Modernization and Water Bodies Restoration and Management Project, TN-IAMWARM." Washington, DC: World Bank.
- World Bank. 2008. *World Development Report 2008: Agriculture for Development*. Washington, DC: World Bank.
- World Bank. 2010a. *World Development Report 2010: Development and Climate Change*. Washington, DC: World Bank.
- World Bank. 2010b. *Fertility Decline in Botswana 1980–2006: A Case Study*. Washington, DC: World Bank.
- World Bank. 2011a. *World Development Report 2012: Gender Equality and Development*. Washington, DC: World Bank.
- World Bank. 2011b. *Missing Food: The Case of Postharvest Grain Losses in Sub-Saharan Africa*. Washington, DC: World Bank.
- World Bank. 2012a. *World Development Indicators*. <http://databank.worldbank.org/Data/Home.aspx>.
- World Bank. 2012b. *Global Monitoring Report 2012: Food Prices, Nutrition, and the Millennium Development Goals*. Washington, DC: World Bank.
- World Bank. 2014. *Turn Down the Heat: Confronting the New Climate Normal*. Washington, DC: World Bank.
- World Bank. 2015. *Food Price Watch*. Washington, DC: World Bank.
- World Bank. 2016a. "Databank: CO<sub>2</sub> Emissions (Metric Tons Per Capita)." Washington, DC: World Bank. <http://data.worldbank.org/indicator/EN.ATM.CO2E.PC>.
- World Bank. 2016b. "Databank: Contraceptive Prevalence (% of Women Ages 15–49)." Washington, DC: World Bank. <http://data.worldbank.org/indicator/SP.DYN.CONU.ZS>.
- World Bank. 2016c. "Databank: Mortality Rate, under-5 (per 1,000 Live Births)." Washington, DC: World Bank. <http://data.worldbank.org/indicator/SH.DYN.MORT?page=2>.
- World Bank. 2017a. "Databank: Agriculture and Rural Development." Washington, DC: World Bank. <http://data.worldbank.org/topic/agriculture-and-rural-development>.
- World Bank. 2017b. "Databank: Poverty." Washington, DC: World Bank. <http://data.worldbank.org/topic/poverty>.
- World Bank. 2017c. "Databank: Rural Population (% of Total Population)." Washington, DC: World Bank.
- World Bank. 2017d. *The Sunken Billions Revisited: Progress and Challenges in Global Marine Fisheries*. Washington, DC: World Bank.
- World Bank. 2017e. "Databank: Research and Development Expenditure (% of GDP)." Washington, DC: World Bank. <https://data.worldbank.org/indicator/GB.XPD.RSDV.GD.ZS>.
- World Bank. 2017f. "Databank: Agriculture, Value Added (Constant 2010 US\$)." Washington, DC: World Bank. <https://data.worldbank.org/indicator/NV.AGR.TOTL.KD>.
- World Bank. 2018. "Databank: Agriculture, Value Added (% of GDP)." Washington, DC: World Bank. <https://data.worldbank.org/indicator/NV.AGR.TOTL.ZS>.
- World Bank Development Committee (Joint Ministerial Committee of the Boards of Governors of the Bank and the Fund on the Transfer of Real Resources to Developing Countries). 2011. *Responding to Global Food Price Volatility and Its Impact on Food Security*. Washington, DC: World Bank Development Committee.
- World Bank and FAO (Food and Agriculture Organization of the United Nations). 2009. *The Sunken Billions*. Washington, DC: World Bank.
- World Bank, FAO (Food and Agriculture Organization of the United Nations), and IFAD (International Fund for Agricultural Development). 2009. *Gender in Agriculture Sourcebook*. Washington, DC: World Bank.
- World Bank, FAO, and IFPRI (World Bank, Food and Agriculture Organization of the United Nations, and the International Food Policy Research Institute). 2013. *Fish to 2030: Prospects for Fisheries and Aquaculture*. Washington, DC: World Bank.
- World Coffee Research. 2015. *Breeding for the Future: Coffee Plants for the 21st Century*. Portland, OR, and Marseille, France: World Coffee Research. <https://worldcoffeeresearch.org/work/breeding-future/>.
- WorldFish Center. 2011. *Aquaculture, Fisheries, Poverty and Food Security*. Penang, Malaysia: WorldFish Center.
- Worm, B., R. Hilborn, J.K. Baum, T.A. Branch, J.S. Collie, C. Costello, M.J. Fogarty, et al. 2009. "Rebuilding Global Fisheries." *Science* 325: 578.
- Wormington, J. 2016. "The Human Cost of Environmental Protection in Côte d'Ivoire." Dispatches, September 15. New York: Human Rights Watch.
- WRAP (Waste and Resources Action Programme). 2011. *Consumer Insight: Date Labels and Storage Guidance*. [http://www.wrap.org.uk/sites/files/wrap/Technical\\_report\\_dates.pdf](http://www.wrap.org.uk/sites/files/wrap/Technical_report_dates.pdf).
- WRAP. 2013. *Household Food and Drink Waste in the United Kingdom 2012*. Banbury, UK: WRAP.
- WRAP. 2015. *Estimates of Food and Packaging Waste in the UK Grocery Retail and Hospitality Supply Chains*. Banbury, UK: WRAP.
- WRI (World Resources Institute). 2013. "Interactive Map of Eutrophication and Hypoxia." Washington, DC: World Resources Institute. <http://www>.

wri.org/our-work/project/eutrophication-and-hypoxia/interactive-map-eutrophication-hypoxia.

WRI. 2014. "Climate Analysis Indicators Tool: WRI's Climate Data Explorer." Washington, DC: World Resources Institute. <http://cait.wri.org>.

WRI. 2016. "CAIT: Country Greenhouse Gas Emissions Data." <http://www.wri.org/resources/data-sets/cait-country-greenhouse-gas-emissions-data>.

WRI. 2017a. "Carbon Emissions from Peat Drainage on Plantations." [climate.globalforestwatch.org](http://climate.globalforestwatch.org).

WRI. 2017b. "Global Forest Watch." <http://www.wri.org/our-work/project/global-forest-watch>.

WRI, in collaboration with United Nations Development Programme, United Nations Environment Programme, and World Bank. 2005. *World Resources 2005: The Wealth of the Poor—Managing Ecosystems to Fight Poverty*. Washington, DC: WRI.

WWAP (World Water Assessment Programme). 2012. *The United Nations World Water Development Report 4: Managing Water under Uncertainty and Risk*. Paris: UNESCO.

WWF (World Wide Fund for Nature). 2012. "Forests and Wood Products." Chap. 4 of *WWF Living Forests Report*. Washington, DC: WWF.

WWF. 2016. *2016 Plowprint Report*. Bozeman, MT: WWF.

Wright, B. 2014. "Global Biofuels: Key to the Puzzle of Grain Market Behavior." *Journal of Economic Perspectives* 28: 73–98.

Wright, C., and M. Wimberly. 2013. "Recent Land Use Change in the Western Corn Belt Threatens Grasslands and Wetlands." *Proceedings of the National Academy of Sciences of the United States of America* 110 (10): 4134–4139.

Wullschleger, S., E. Davis, M. Borsuk, C. Gunderson, and L. Lynd. 2010. "Biomass Production in Switchgrass across the United States: Database Description and Determinants of Yield." *Agronomy Journal* 102: 1158–1167.

Xia, L., C. Ti, B. Li, Y. Xia, and X. Yan. 2016. "Greenhouse Gas Emissions and Reactive Nitrogen Releases during the Life-Cycles of Staple Food Production in China and Their Mitigation Potential." *Science of the Total Environment* 556: 116–125.

Xie, Z., J. Zhu, G. Liu, G. Cadisch, T. Hasegawa, C. Chen, H. Sun, et al. 2007. "Soil Organic Carbon Stocks in China and Changes from 1980s to 2000s." *Global Change Biology*. 13: 1989–2007. doi:10.1111/j.1365-2486.2007.01409.x.

Xie, H., L. You, B. Wielgosz, and C. Ringler. 2014. "Estimating the Potential for Expanding Smallholder Irrigation in Sub-Saharan Africa." *Agricultural Water Management* 131: 183–193.

Yamba, B. 2006. "Étude sahélienne: Rapport d'étude sur le foncier, les institutions locales et l'évolution de la pauvreté." Niamey, Niger: Centre régional d'enseignement spécialisé en agriculture (CRESA).

Yamba, B., and M. Sambo. 2012. *La régénération naturelle assistée et la sécurité alimentaire des ménages de 5 terroirs villageois des départements de Kantché et Mirriah (région de Zinder)*. Report for Fonds International pour le Développement Agricole.

Yan, X., and H. Akiyama. 2018. "Overestimation of N<sub>2</sub>O Mitigation Potential by Water Management in Rice Paddy Fields." *Proceedings of the National Academy of Sciences of the United States of America* 115 (48): E11204–E11205. doi:10.1073/pnas.1816208115.

Yan, X., K. Yagi, H. Akiyama, and H. Akimoto. 2005. "Statistical Analysis of the Major Variables Controlling Methane Emissions from Rice Fields." *Global Change Biology* 11: 1131–1141.

Yan, X., H. Akiyama, K. Yagi, and K. Akimoto. 2009. "Global Estimations of the Inventory and Mitigation Potential of Methane Emissions from Rice Cultivation Conducted using the 2006 Intergovernmental Panel on Climate Change Guidelines." *Global Biogeochemical Cycles* 23 (2): 20–23.

Yang, X., F. Chen, X. Lin, Z. Liu, H. Zhang, J. Zhao, K. Li, et al. 2015. "Potential Benefits of Climate Change for Crop Productivity in China." *Agricultural and Forest Meteorology* 208: 76–84.

Yang, M., Y. Fang, D. Sun, and Y. Shi. 2016. "Efficiency of Two Nitrification Inhibitors (Dicyandiamide and 3, 4-Dimethylpyrazole Phosphate) on Soil Nitrogen Transformations and Plant Productivity: A Meta-analysis." *Scientific Reports* 6 (22075).

Yasuhara, K., T. Shimo, K. Mitsumori, H. Onodera, K. Kitaura, and M. Takahashi. 1997. "Lack of Carcinogenicity of Cyanoguanidine in F344 Rats." *Food and Chemical Toxicology* 35 (5): 475–480.

Yongcun, Z., M. Wang, S. Hu, X. Zhang, Z. Ouyang, G. Zhang, B. Huang, et al. 2018. "Economics- and Policy-Driven Organic Carbon Input Enhancement Dominates Soil Organic Carbon Accumulation in Chinese Croplands." *Proceedings of the National Academy of Sciences of the United States of America* 115 (6): 4045–4050.

You, L., U. Wood-Sichra, S. Fritz, Z. Guo, L. See, and J. Koo. 2014. "Spatial Production Allocation Model (SPAM) 2005 v2.0." <http://mapspam.info>.

Young, L., and M. Nestle. 2002. "The Contribution of Expanding Portion Sizes to the US Obesity Epidemic." *American Journal of Public Health* 92 (2): 246–249.

Young, V., and P. Pellet. 1994. "Plant Proteins in Relation to Human Protein and Amino Acid Nutrition." *American Journal of Clinical Nutrition* 59 (5): 1203S–1212S.

Ytrestøyl, T., T.S. Aas, and T. Åsgård. 2015. "Utilisation of Feed Resources in Production of Atlantic Salmon (*Salmo salar*) in Norway." *Aquaculture* 448: 365–374.

Yu, Y., Z. Guo, H. Wu, J.A. Kahmann, and F. Oldfield. 2009. "Spatial Changes in Soil Organic Carbon Density and Storage of Cultivated Soils in China from 1980 to 2000." *Global Biogeochemical Cycles* 23 (2). doi:10.1029/2008GB003428.

Yu, Z., J. Loisel, D.P. Brosseau, D.W. Beilman, and S.J. Hunt. 2010. "Global Peatland Dynamics since the Last Glacial Maximum." *Geophysical Research Letters* 37 (13): L13402.

Yuxuan L., W. Zhang, L. Ma, G. Huang, O. Oenema, F. Zhang, and Z. Dou. 2014. "An Analysis of China's Fertilizer Policies: Impacts on the Industry, Food Security, and the Environment." *Journal of Environmental Quality* 42 (4): 972–981.

Zahn, J.A., J.L. Hatfield, D.A. Laird, T.T. Hart, Y.S. Do, and A.A. DiSpirito. 2001. "Functional Classification of Swine Manure Management Systems Based on Effluent and Gas Emission Characteristics." *Journal of Environmental Quality* 30 (2): 635–647.

Zalles, V., M.C. Hansen, P.V. Potapov, S.V. Stehman, A. Tyukavina, A. Pickens, X.-P. Song, et al. 2019. "Near Doubling of Brazil's Intensive Row Crop Area since 2000." *Proceedings of the National Academy of Sciences* 116 (2): 428–435. doi:10.1073/pnas.1810301115.

- Zanchi, G., N. Pena, and N. Bird. 2012. "Is Woody Bioenergy Carbon Neutral? A Comparative Assessment of Emissions from Consumption of Woody Bioenergy and Fossil Fuel." *Global Change Biology Bioenergy* 4 (6): 761–772.
- Zeng, L., and Y. Liu. 2012. "The Demonstrating Technology and Effect Analysis of Non-flooded Mulching Cultivation." (In Chinese with English abstract.) *Tillage and Cultivation* 5: 46.
- Zeng, Z., D.B. Gower, and E.F. Wood. 2018. "Accelerating Forest Loss in Southeast Asian Massif in the 21st Century: A Case Study in Nan Province, Thailand." *Global Change Biology* 24 (10): 4682–4695. doi:10.1111/gcb.14366.
- Zeng, Z., L. Estes, A.D. Zeigler, A. Chen, T. Searchinger, F. Hua, K. Guan, A. Jintrawet, and E.F. Wood. 2018. "Highland Cropland Expansion and Forest Loss in Southeast Asia in the Twenty-First Century." *Nature Geoscience* 11: 556–562.
- Zering, K. 2013. *Cost and Returns Analysis of the Terra Blue Generation 3 Manure Management System Evaluated at Jernigan Farms in North Carolina in 2012*. North Carolina State University, Department of Agricultural and Resource Economics.
- Zering, K., and M. Wohlgenant. 2006. *Cost and Returns Analysis of Manure Management Systems Evaluated in 2004 under the North Carolina Attorney General Agreements with Smithfield Foods, Premium Standard Farms, and Front Line Farmers*. North Carolina State University.
- Zering, K., M. Wohlgenant, and Task 1 Team. 2005. *Appendices A through I, Cost and Returns Methodology Document*. Report to Mike Williams at NCSU under the Agreements between the Attorney General of North Carolina and Smithfield Foods.
- Zering, K., M. Wohlgenant, and Task 1 Team. 2007. *Cost and Returns Analysis of Manure Management Systems Evaluated in 2007 under the North Carolina Attorney General Agreements with Smithfields Foods, Premium Standard Farms, and Front Line Farmers*. [https://www.bae.ncsu.edu/topic/waste-mgmt-center/smithfield-project/second-generation-reports/super-soils-appendix-economic\\_assessment.pdf](https://www.bae.ncsu.edu/topic/waste-mgmt-center/smithfield-project/second-generation-reports/super-soils-appendix-economic_assessment.pdf).
- Zhai, F.Y., S.F. Du, Z.H. Wang, J.G. Zhang, W.W. Du, and B.M. Popkin. 2014. "Dynamics of the Chinese Diet and the Role of Urbanicity, 1991–2011." *Obesity Reviews* 15 (Suppl. 1): 16–26.
- Zhang, Z., and Y. Li. 2003. "Control Effect of Film Mulching on Methane Gas Emission in Dry Culture Rice Field." *Journal of Hubei Agricultural College* 23 (5): 321–323. (In Chinese with English abstract.)
- Zhang, F., Z. Cui, M. Fan, W. Zhang, X. Chen, and R. Jiang. 2011. "Integrated Soil-Crop System Management: Reducing Environmental Risk while Increasing Crop Productivity and Improving Nutrient Use Efficiency in China." *Journal of Environmental Quality* 40: 1051–1057.
- Zhang, Y., Q. Tang, S. Peng, Y. Zou, S. Chen, W. Shi, J. Qin, and R. Laza. 2013a. "Effects of High Night Temperature on Yield and Agronomic Traits of Irrigated Rice under Field Chamber System Condition." *Australian Journal of Crop Science* 7 (1): 7–13.
- Zhang, J., C. Chen, Y. Zhang, Z. Song, Z. Deng, C. Zheng, and W. Zhang. 2013b. "Impacts of Cropping Practices on Yield-Scaled Greenhouse Gas Emissions from Rice Fields in China: A Meta-analysis." *Agriculture, Ecosystems & Environment* 164: 220–228.
- Zhang, W., Z. Dou, P. He, X. Ju, D. Powlson, D. Chadwick, D. Norse, et al. 2013c. "New Technologies Reduce Greenhouse Gas Emissions from Nitrogenous Fertilizer in China." *Proceedings of the National Academy of Sciences of the United States of America* 110 (21): 8375–8380.
- Zhang, S., P. Gao, Y. Tong, D. Norse, Y. Lu, and D. Powlson. 2015a. "Overcoming Nitrogen Fertilizer Over-use through Technical and Advisory Approaches: A Case Study from Shaanxi Province, Northwest China." *Agriculture, Ecosystems & Environment* 209: 89–99.
- Zhang, X., E. Davidson, D. Mauzerall, T. Searchinger, P. Dumas, and Y. Shen. 2015b. "Managing Nitrogen for Sustainable Development." *Nature* 528: 51–59.
- Zhang, J., Q. Sui, K. Li, M. Chen, J. Tong, L. Qi, and Y. Wei. 2016. "Influence of Natural Zeolite and Nitrification Inhibitor on Organics Degradation and Nitrogen Transformation during Sludge Composting." *Environmental Science and Pollution Research International* 23 (2): 1324–1334. doi:10.1007/s11356-015-5326-5.
- Zhang, Z., V.L. Fulgoni, P.M. Kris-Etherton, and S.H. Mitmesser. 2018. "Dietary Intakes of EPA and DHA Omega-3 Fatty Acids among US Childbearing-Age and Pregnant Women: An Analysis of NHANES 2001–2014." *Nutrients* 10 (4): 416.
- Zhang, L., I. Rana, R.M. Shaffer, E. Taioli, and L. Sheppard. 2019. "Exposure to Glyphosate-Based Herbicides and Risk for Non-Hodgkin Lymphoma: A Meta-analysis and Supporting Evidence." *Mutation Research/Reviews in Mutation Research*. <https://doi.org/10.1016/j.mrrev.2019.02.001>.
- Zhao, J., P. Ho, and H. Azadi. 2011. "Benefits of BT Cotton Counterbalanced by Secondary Pests: Perceptions of Ecological Change in China." *Environmental Monitoring and Assessment* 173: 985–994.
- Zhao, Y., M. Wang, S. Hu, X. Zhang, Z. Ouyang, G. Zhang, B. Huang, et al. 2018. "Economics- and Policy-Driven Organic Carbon Input Enhancement Dominates Soil Organic Carbon Accumulation in Chinese Croplands." *Proceedings of the National Academy of Sciences* 115 (16): 4045–4050. doi:10.1073/pnas.1700292114.
- Zhou, H.L., R. Harrington, I.P. Woiwod, J.N. Perry, J.S. Bale, and S.J. Clark. 1995. "Effects of Temperature on Aphid Phenology." *Global Change Biology* 1: 303–313.
- Zhou, Y., H. Yang, H.J. Mosler, and K. Abbaspour. 2010. "Factors Affecting Farmers' Decisions on Fertilizer Use: A Case Study for the Chaobai Watershed in Northern China." *Journal of Sustainable Development* 4: 80–102.
- Ziska, L.H., P.R. Epstein, and W.H. Schlesinger. 2009. "Rising CO<sub>2</sub>, Climate Change, and Public Health: Exploring the Links to Plant Biology." *Environmental Health Perspectives* 117 (2): 155.
- Ziv, G., E. Baran, S. Nam, I. Rodríguez-Iturbe, and S.A. Levin. 2012. "Trading-Off Fish Biodiversity, Food Security, and Hydropower in the Mekong River Basin." *Proceedings of the National Academy of Sciences of the United States of America* 109 (15): 5609–5614.
- Zomer, R., H. Neufeldt, J. Xu, A. Ahrends, D. Bossio, A. Trabucco, M. van Noordwijk, and M. Wang. 2016. "Global Tree Cover and Biomass Carbon on Agricultural Land: The Contribution of Agroforestry to Global and National Carbon Budgets." *Scientific Reports* 6 (29987).
- Zomer, R.J., D.B. Bossio, R. Sommer, and L. Verchot. 2017. "Global Sequestration Potential of Increased Organic Carbon in Cropland Soils." *Scientific Reports* 7 (15554).
- Zongxue, X., F. Yongfeng, C. Lei, S. Yongliang, Z. Tingju, and L. Jingzong. 2010. "Water Supply and Demand in the Yellow River Basin: Opportunities from Water Savings." Note prepared for IFPRI's Yellow River Basin: Living with Water Scarcity project. Washington, DC: IFPRI (International Food Policy Research Institute).
- Zotarelli, L., N.P. Zatorre, R.M. Boddey, S. Urquiaga, C.P. Jantalia, J.C. Franchini, and B.J.R. Alves. 2012. "Influence of No-Tillage and Frequency of a Green Manure Legume in Crop Rotations for Balancing N Outputs and Preserving Soil Organic C Stocks." *Field Crop Research* 132: 185–195.