

Rosamond Lee Naylor

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Education & Training

Stanford University	Applied Economics, Food Research Institute	PhD	1989
London School of Economics	Economics	MSc	1981
University of Colorado, Boulder	Economics, double major with Environmental Conservation	BA	1980

Professional Experience, Honors and Awards

Rosamond Naylor's full professional career since her PhD has been at Stanford University with evolving institutes, departments, and new endowed titles:

09/2009 – present:	Professor, Dept. of Earth System Science, Stanford University.
09/2009 – present:	Professor (by courtesy), Dept. Economics, Stanford University.
09/2000 – present:	Senior Fellow, Stanford Woods Institute for the Environment
09/2000 – present:	Senior Fellow, Freeman Spogli Institute for International Studies (FSI).
06/2005 – 01/2017:	Founder and Director, Center on Food Security and the Environment (FSE), Stanford University. (Remains a Senior Fellow at FSE to present.)
09/2000 – 08/2009:	Associate Professor (by courtesy), Dept. Economics, Stanford University.
10/1989 – 09/2000:	Research Scholar and Center Fellow, Institute for International Studies, Stanford University.
09/1992 – 09/2005:	Director of Studies, Goldman Honors Program in Environmental Science, Technology, and Policy, Stanford University.

Honors and Awards

08/2019	Member Sigma Xi , Stanford Chapter
04/2019	Ecological Society of America Fellow
02/2017	Recipient of inaugural Endowed Directorship: Gloria and Richard Kushel Director , Center on Food Security and the Environment (FSE), Stanford University.
12/2014	Recipient of inaugural Endowed Professorship: William Wrigley Professor in Earth System Science, Stanford University
09/2000	Recipient of inaugural Endowed Senior Fellowship: Julie Wrigley Senior Fellow at the Institute for International Studies, Stanford University.
01/1999	Aldo Leopold Leadership Fellow in Environmental Science and Public Policy
06/1994	Pew Fellow in Conservation and the Environment (now: Pew Marine Fellow), Pew Charitable Trusts.
07/1990	McNamara Post-Doctoral Fellow , The World Bank.

PUBLICATIONS (3 books and ~115 peer-reviewed scientific publications in total)

Books:

Byerlee, D., Falcon, W., & **Naylor, R.** (2017) *The Tropical Oil Crops Revolution: Food, Farmers, Fuels, and Forests*. New York, NY: Oxford University Press.

Naylor, R. L. (Ed.). (2014). *The Evolving Sphere of Food Security*. New York, NY: Oxford University Press.

Naylor, R. L. (Ed.). (1997). *Herbicides in Asian rice: Transitions in weed management*. Los Banos, The Philippines: International Rice Research Institute Publications.

Journal publications:

Herrero, M. et al. (**R. Naylor**, contributing author) (2020). Future technologies and food-systems innovation for accelerating progress towards the Sustainable Development Goals. *Nature Food*, vol. 1 (May): 266-272.

Barrett, S., Dasgupta, A., Dasgupta, P. et al. (**Naylor, R.**, contributing author) (2020). Social dimensions of fertility behavior and consumption patterns in the Anthropocene. *Proceedings of the National Academy of Sciences (PNAS)* (March 12). <https://doi.org/10.1073/pnas.1909857117>

Edwards, R. B., Falcon, W. P., Higgins, M. and **R. L. Naylor** (2020). Causes of Indonesia's forest fires. *World Development* (127). Available online at <https://doi.org/10.1016/j.worlddev.2019.104717>

Costello, C., L. Cao, S. Gelcich et al. (**Naylor, R.**, contributing author) (2020). The future of food from the sea. *Nature* (in press), May.

Zeppetello, L. R. V., Parsons, L. A., Spector, J. T. **Naylor, R. L.**, Battisti, D. S., Masuda, Y. J., and N. H. Wolff (2020). Large-scale tropical deforestation drives extreme warming, *Environmental Research Letters* (in press) May.

Lee, J. Y., **Naylor, R. L.**, Figueroa, A. J., and S. M. Gorelick (2020). Water-food-energy challenges in India: Political economy of the sugar industry, *Environmental Research Letters*, (in press) May.

Stratton, A., Finley, J., Gustafson, D., Mitcham, E., Myers, S., **Naylor, R.**, Otten, J., and C. Palm (2020). Opportunities and tradeoffs as global fruit and vegetable systems expand to meet dietary recommendations. (submitted to *Global Food Security*, February).

Sumaila, U. R., Pierruci, A., Oyinlola, M. A., Cannas, R., Froese, R., Glaser, S., Jacquet, J., Kaiser, B., Micheli, F., **Naylor, R.**, and D. Pauly (2020). Aquaculture over-optimism. Fisheries Center, University of British Columbia (in prep, June).

Edwards, R. B., Falcon, W. P., Hadiwidjaja, G., Higgins, M. M, **Naylor, R. L.**, and S. Sumarto (2020). Fight fire with finance? A randomized field experiment to curtail land-clearing fire in Indonesia. Center on Food Security and the Environment, Stanford University (in prep. June).

Ray, S., **Naylor, R. L.**, and W. P. Falcon (2020). The role of electricity in agricultural intensification across India. (in prep., June).

Naylor, R. L. (2019). Long-run uncertainties for U.S. agriculture. *Economic Review*, Federal Reserve Bank of Kansas City Special Issue: 51-84 (October). Available online at <https://www.kansascityfed.org/~media/files/publicat/econrev/econrevarchive/2019/si19naylor.pdf>

Costello, C., L. Cao, S. Gelcich et al. (**Naylor, R. L.**, contributing author) (2019). The Future of Food from the Sea. Washington, DC: World Resources Institute. Available online at www.oceanpanel.org/future-food-sea

Ole-MoiYoi, L. K. and **R. L. Naylor** (2019). The contribution of smallholder aquaculture development to food security in Kenya. Under revision for the *Journal of Aquaculture* (under revision, December).

Alaofe, H, Burney, J., **Naylor, R.**, and Taren, D. (2019). The impact of solar market garden on dietary diversity, women's nutritional status and micronutrients levels in Kalalé district of northern Benin, *Public Health Nutrition* (July): doi:10.1017/S1368980019001599

Ordway, E. M., **Naylor, R. L.**, Nkongho, R. N., and E. F. Lambin (2019). Oil palm expansion at the expense of forests in Southwest Cameroon associated with proliferation of informal mills, *Nature Communications* 10:114, <https://doi.org/10.1038/s41467-018-07915-2>

Naylor, R. L., Higgins, M. M., Edwards, R. B., and W. P. Falcon (2019). Decentralization and the environment: assessing smallholder oil palm development in Indonesia. *Ambio* (January), <https://doi.org/10.1007/s13280-018-1135-7>

Deutsch, C.A., Tewksbury, J.J., Tigchelaar, M., Battisti, D.S., Merrill, S., Huey, R.B., and **R.L. Naylor** (2018). Insect metabolic and population growth rates predict increasing crop pest pressure under climate warming, *Science*, vol. 361, issue 6405 (August 31). DOI: 10.1126/science.aat3466

Tigchelaar, M., Battisti, D. S., **Naylor, R. L.**, and D. K. Ray (2018). Future warming increases global maize yield variability with implications for food markets, *Proceedings of the National Academy of Sciences (PNAS)* (June 11).

Wang, B., Cao, L., Fringer, O. B., Micheli, F., and **R. Naylor**. (2018). The effects of intensive aquaculture on residence time and nutrient transport in a coastal embayment, *Environmental Fluid Mechanics* (May): DOI: 10.1007/s10652-018-9595-7

Naylor, R. L. (2018). The elusive goal of food security. *Current History* (January).

Naylor, R. L. and M. M. Higgins. (2017). The rise in global biodiesel production: implications for food security. *Journal of Global Food Security* (November).

Ordway, E. M., **Naylor, R. L.**, Nkongho, R. N., and E. F. Lambin. (2017). Oil palm expansion in Africa: insights into sustainability opportunities and challenges in Africa. *Global Environmental Change*, vol. 47.

Naylor, R. and M. Higgins (2017). The political economy of biodiesel in an era of low oil prices. *Renewable and Sustainable Energy Reviews*, vol. 77: <https://doi.org/10.1016/j.rser.2017.04.026>

Burney, J., Alaofe, H, **Naylor, R.**, and Taren, D. (2017). Impact of a rural solar electrification project on the level and structure of women's empowerment. *Energy Research Letters* (July).

Alaofe, H, Burney, J., **Naylor, R.**, and Taren, D. (2017). Association between women's empowerment and maternal and child nutrition in Kalalé district of northern Benin. *Food and Nutrition Bulletin*.

Cao, L., Chen Y., Dong S., Hanson A., Huang B., Leadbitter D., Little D., Pikitch E., Qiu Y., Sadovy Y., Sumaila R., Williams M., Xue G., Ye Y., Zhang W., Zhou Y., Zhuang P., and **R. L. Naylor (corresponding author)**. (2017). Opportunity for marine fisheries reform in China. *Proceedings of the National Academy of Sciences (PNAS)*, January: www.pnas.org/cgi/doi/10.1073/pnas.1616583114.

Alaofe, H, Burney, J., **Naylor, R.**, and Taren, D. (2017). Prevalence of anemia, deficiencies of iron and vitamin A and their determinants in rural women and young children: a cross-sectional study in Kalale district of northern Benin. *Public Health Nutrition* (January 25): <https://doi.org/10.1017/S1368980016003608>.

Naylor, R. L. (2016). Oil crops, aquaculture, and the rising role of demand: A fresh perspective on food security. *Journal of Global Food Security*. DOI: <http://dx.doi.org/10.1016/j.gfs.2016.05.001>.

Alaofe, H, Burney, J., **Naylor, R.**, and Taren, D. (2016). Solar-powered drip irrigation impacts on crop production diversity and dietary diversity in Northern Benin. *Food and Nutrition Bulletin* 1-12 (April). DOI: 10.1177/0379572116639710

Cao, L., **Naylor, R.**, (corresponding author) Henriksson, P., Leadbitter, D., Metian, M., Troell, M., & Zhang, W. (2015). China's aquaculture and the world's wild fisheries. *Science*, 347(6218), 133-135.

Naylor, R. L. (2015). A global perspective on food systems. *Journal of Agriculture, Food Systems, and Community Development*, 5(2) (Winter), ISSN 2152-0801 (online).

Naylor, R. L. (2015). "The tree of life", in Holten, K. (Ed.), *About Trees*. Broken Dimanche Press: 131-133.

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Naylor, R. L. (2014). Biofuels, rural development, and the changing nature of agricultural demand. In W. Falcon & R. Naylor (Eds.), *Frontiers in food policy: Perspectives on sub-Saharan Africa* (343-376). Stanford University: Center on Food Security and the Environment. Published by CreateSpace (Amazon).

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Chiu, A., Li, L., Guo, S., Bai, J., Fedor, C., & **Naylor, R. L.** (2013). Feed and fishmeal use in the production of tilapia and carps in China. *Journal of Aquaculture*, 414-415, 127-134.

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- Liu, J., Hull, V., et al. (**Naylor, R. L.**, contributing author) (2013). Framing sustainability in a telecoupled world. *Ecology and Society* 18(2). Retrieved from <http://www.ecologyandsociety.org/vol18/iss2/art26/>
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- Garrett, R. D., Lambin, E. F., & **Naylor, R. L.** (2013). Land institutions and supply chain configurations as determinants of soybean planted area and yields in Brazil. *Land Use Policy*, 31, 385-396.
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- Naylor, R.**, & Falcon, W. (2011). The Yaqui Valley's agricultural transition to a more open economy. In P. A. Matson (Ed.), *Seeds of Sustainability: Lessons from the Birthplace of the Green Revolution in Agriculture* (107-138). Washington, DC: Island Press.
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- Chapin, F. S., Carpenter, S. R., et al. (**Naylor, R. L.**, contributing author). (2009). Ecosystem stewardship: Sustainability strategies for a rapidly changing planet. *Trends in Ecology and Evolution*, 25(4), 241-249.
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- Chapin, F. S., Trainor, S. F., et al. (**Naylor, R. L.**, contributing author) (2008). Increasing wildfire in the boreal forest: Causes, consequences, and pathways to potential solutions of a wicked problem. *BioScience*, 58(60), 531-540.

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EXTERNAL SERVICE - MEMBERSHIPS

Ongoing
Member of American Geophysical Union (AGU)
Member of American Economics Association (AEA)
Member of the Ecological Society of America (ESA)
Member of AAAS

EXTERNAL SERVICE

2019 – present
Co-Chair, Blue Food Assessment (Stanford University, Stockholm Resilience Center)

2019
Contributing author, High Level Panel for a Sustainable Ocean Economy, Blue Paper 1: The Future of Food from the Sea

2019 – present
Member, Forest Protection Advisory Panel, Cargill

2020- present
President, Board of Directors, Aspen Global Change Institute

2016 – 2019
Member, Board of Directors, Aspen Global Change Institute

2011 – 2015
Member, Advisory Board, Aspen Global Change Institute

2016 – present
Member, selection committee for Asian nominations, Pew Marine Fellows Program, Pew Charitable Trusts

2018 – present
Member, Scientific Advisory Board, Oceana

2017 – present
Fellow, Beijer Institute for Ecological Economics, Stockholm

2015 – present
Member, Scientific Advisory Board, Institute for Food and Agricultural Literacy (IFAL), University of California-Davis World Food Center

2012 – 2018	Trustee, The Nature Conservancy, California Chapter
2011 – 2017	Member, Scientific Board of the Beijer Institute, Stockholm
2013 – 2015	Science Advisor, United Nation’s Secretary General Ban Ki Moon’s initiative on Sustainable Development (Sustainable Agriculture section)
2012 – 2017	Member, Scientific Advisory Board, Aldo Leopold Leadership Program
2011 – 2012	Member, Advisory Panel for the African Human Development Report at UNDP (United Nations Development Program)
2009 – 2011	Member, U.S. National Committee for the Pacific Science Association, National Academy of Sciences
2007 – 2010	Member, Pew Fellows Advisory Committee
2005 – 2009	Member, Selection Committee, Aldo Leopold Leadership Program
2005 – 2009	Member, Scientific Advisory Board, COMPASS (Communication Partnership for Science and the Sea)
1998 – 2007	Member, Oversight Committee for the Collaborative Crop Improvement Program, McKnight Foundation
2006	Judge, Risser Environmental Journalism Prize for the American West
2003 – 2005	Member, NRC Committee on “Alaska Yukon Salmon: Research and Restoration Priorities”. National Academy of Sciences

EXTERNAL SERVICE - EDITORIAL

2019 – present	Editorial Advisory Panel, <i>Nature Food</i>
2018 – present	Senior Advisor, <i>Environmental Research Communications</i>
2009 – present	Editorial Board, <i>Aquaculture Environment Interactions</i>
2012 – 2016	Associate Editor, <i>Journal of Food Security</i>
2011 – 2016	Editorial Advisory Board, <i>Global Food Security</i>
2007 – 2011	Editorial Board, <i>Environmental Research Letters</i>

2004 – 2008 Editorial Board, *Annual Review of Environment and Resources*

Frequent reviewer for *Science, Nature, PNAS, Food Policy, Global Environmental Change, World Development*

STANFORD UNIVERSITY SERVICE

2019 – present Co-Director, Graduate Studies, Earth System Science Department

2019 Stanford long term planning committee member:
Ethics of Science and Technology

2018 – present Advisory board, Stanford Sustainability Masters Program

2016 – present Advisory board, Stanford Farm

2013 – 2014 Faculty Representative, Advisory Panel on Investment Responsibility and Licensing (APIR-L)

2008 – 2018 Member, Executive Committee, Earth Systems Science Program

2006 – 2017 Member, Faculty Steering Committee, International Policy Studies Program

Ongoing Undergraduate advisor in Earth Systems, International Relations, and Human Biology

2008 –2012 Member, Advisory Committee, E-IPER

2004 – 2009 Environmental Ventures Program, Woods Institute for the Environment (Co-Chair, 2004-2006; member 2007-2009)

Various years Admissions Committee, E-IPER PhD Program

Various years Member of numerous search committees in the Department of Earth System Science, FSI, Woods Institute

STANFORD COURSES

The World Food Economy: Departments of Economics and Earth Systems Science (cross-listed), undergraduates and graduates, survey course on agricultural demand, supply, and trade theory; food security; food policy (Economics 106/206).

Human Society and Environmental Change: Departments of Earth Systems Science and History (cross-listed), core course on human-environment interactions (Anthrosphere) (ES112/History 103D).

Food and Security: Freshman and Sophomore seminar integrating concepts of food security and

international security as more traditionally defined (ES 61Q/EESS 61Q/INTNLREL 61Q).

Crop Genetic Improvement: Scientific Facts vs. Fiction: Department of Earth Systems, all students eligible, discussion of scientific evidence on the use and impacts of genetic engineering in global food and agricultural systems (ES 106C). 2018.

The Evolving Sphere of Food Security: graduate and upper-level undergraduate seminar on global food security, modeled after the volume by R. L. Naylor (ed.) 2014. (ES168/268)

Goldman Interschool Honors Program in Environmental Science, Technology, and Policy: Center for Environmental Science and Policy, undergraduates, students selected competitively (IIS 195). Directed the program from 1994-2008. A yearlong seminar with 8-12 undergraduate students selected competitively from all schools and departments.

GRADUATE ADVISING

(Based on the interdisciplinary nature of the E-IPER program, each student was advised by a committee of professors.)

Advisees who have completed PhD degrees:

David Lobell (Geological and Environmental Sciences)
Amy Luers (E-IPER)
Josh Goldstein (E-IPER)
Kirsten Oleson (E-IPER)
Geoff Shester (E-IPER)
Joanne Gaskell (E-IPER)
Kaitlin Shilling (E-IPER)
Rodrigo Pizarro (E-IPER)
Kristen Honey (E-IPER)
Rachel Garrett (E-IPER)
Dane Klinger (E-IPER)
Andy Gerhart (E-IPER)
Katrina ole-MoiYoi (E-IPER)
Joann de Zegher (E-IPER)
Elsa Ordway (Earth System Science)
Tannis Thorlakson (E-IPER)
Elinor Benami (E-IPER)
Chris Seifert (Earth System Science)
Ezgi Sonmez (E-IPER-GSB)

Current PhD advisees:

Casey Maue (E-IPER)
Sudatta Ray (E-IPER)
Ju Young Lee (Earth System Science)
Cesar Lopez (E-IPER)
Safari Fang (E-IPER)
Sahar El Abbadi (Civil and Environmental Engineering)
Nathan Dadap (Earth System Science)
Daniel Freeman (E-IPER-GSB)
Marius von Essen (E-IPER)

Post-docs (present and past)

Michelle Tigchelaar

Raymond Nkongho

Ryan Edwards

Esha Zavari

Ling Cao

William Burke

Jennifer Burney